



<b>Unit</b>	Electricity
<b>Document Type</b>	Guideline
<b>Title</b>	Connection of <b>Residential</b> Embedded Generation
<b>Revision</b>	1.0
<b>Effective Date</b>	01 July 2016
<b>Purpose</b>	<p>The purpose of this guideline is to:</p> <ol style="list-style-type: none"> <li>I. Highlight the principles associated with the connection of a small scale embedded generation (SSEG) facility to the Municipal network.</li> <li>II. Highlight important safety and technical criteria for embedded generation.</li> <li>III. Clarify roles and responsibilities of the relevant stakeholders.</li> </ol>

<b>Acknowledged by:</b>	<b>Acknowledged by:</b>	<b>Acknowledged by:</b>
Registered Home Owner	Registered Installer / Contractor	Registered ECSA Professional
Name: _____	Name: _____	Name: _____
ID No.: _____	ID No.: _____	ID No.: _____
Signature: _____	Signature: _____	Signature: _____
Date: _____	Date: _____	Date: _____

<b><u>Contents</u></b>		<b><u>Page</u></b>
	General Information	2
1.	Application Process	3
2.	Applicable standards and guidelines	5
3.	Supply Parameters	5
4.	Tariff Details	7
5.	Safety and Protection	8
6.	Annexure A – APPLICATION FOR THE CONNECTION OF EMBEDDED GENERATION	9
7.	Annexure B – COMMISSIONING REPORT FOR EMBEDDED GENERATION	14
8.	Annexure C – GUIDE TO GENERATING YOUR OWN ELECTRICITY	18



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**ETHEKWINI MUNICIPALITY**  
Trading Services  
Electricity Unit

## General Information

Dear Residential Embedded Generator

The aim of this document is to provide you with information regarding the connection of your embedded generator to the Municipal grid. The guidelines / processes as defined in this document have been drafted to ensure that your connection to the grid remains safe under normal and abnormal network conditions.

**Under no circumstance should you connect your generator to the grid without gaining written approval from the Municipality.**

Anyone intending to install a residential small scale embedded generation (SSEG) system shall follow the process as attached, prior to installation. It is mandatory for customers with embedded generation systems already installed to follow the same process and register / regularize their installations with this process.

The connection shall be in compliance with all, but not limited to, the standards and conditions outlined in this document. This document covers residential embedded generator installations (<13.8 kVA) under the purview of the NERSA Small Scale Embedded Generator (SSEG) guidelines.

All applications should have a valid electricity connection and an account in good standing with eThekweni Municipality.

eThekweni Municipality fully supports embedded generation and would like to encourage such installations within the applicable regulations that govern generation within the country. Embedded generation is a new concept to the city and we want to ensure that all connections are safe and technically correct. Reverse power flow can be dangerous if not properly identified and managed.

As a result, we have designed an application process so that we can engage and exchange the relevant information pertaining to the connection of your generation system to the grid. The application process has been designed to be simple, yet comprehensive. It is primarily administered via electronic documents for your convenience.

The National Energy Regulator of South Africa (NERSA) has approved an interim tariff structure to allow for limited credits to be given in such instances where power is exported onto the grid. This has created a mechanism to promote small scale embedded generation at a local level.

We are expecting a national framework to be finalized in the near future. The principles of which will override the current framework. The current processes and remuneration mechanism will be aligned accordingly where necessary.

Yours faithfully,

THE GENERATION TEAM

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# 1. Application Process

The Residential Embedded Generator applicant shall follow the necessary steps as detailed below:



You will require a computer and an internet connection to gain access to the relevant online application forms

- 1.1. Download the “APPLICATION FOR CONNECTION OF EMBEDDED GENERATION” form from the following link : [www.durban.gov.za](http://www.durban.gov.za)

The successful completion and submission of this form will initiate your application process



- 1.2. An example of the application form can be found in Annexure A. The purpose of this form is to formally request for the connection of your SSEG system to the grid, bi-directional metering and a tariff change to the embedded generation tariff structure (Scale 15). Three requests are captured via this application.

The capturing of this form onto our system will generate a unique reference number, i.e. an “E” number. This will be used to track your application throughout the process. Upon capturing your form, this reference number will be forwarded to you.



Forms should be completed in full and signed prior to submission

- 1.3. Forms must be emailed to [residentialgeneration@elec.durban.gov.za](mailto:residentialgeneration@elec.durban.gov.za) together with all supporting documentation and attachments as specified in the application form.

Do not submit incomplete application forms or application forms that have not been signed.

Please also refrain from submitting unnecessary data sheets and generic product information.

Make sure all the *RELEVANT* supporting documents are submitted



- 1.4. EThekwini Electricity’s Planning Department shall perform a desktop network study on the technical feasibility of the residential embedded generator connecting to the grid.

The Planning Department may approve the application in cases where the simplified connection criteria as detailed in NRS 097-2-3 are met. The approval may be accompanied by applicable fees.

Applicable fees may be raised for meter costs, additional network strengthening, etc. A proforma invoice will be sent to you detailing the amount due and payment options. This will also serve as confirmation to connect to the grid, subject to the terms and conditions.



Your written approval to connect will be confirmed via the pro-forma invoice

- 1.5. If the simplified connection criteria is not met, then a detailed network study will be required. To enable a detailed network study, eThekweni Municipality shall provide a standard design quotation to the applicant.

On receipt of the requisite payment, a detailed network study will be conducted. Subsequently, the results of such a study will detail the terms and conditions under which the connection may commence. Additional fees may apply.

Make sure you submit your Certificate of Compliance (CoC) to the Municipality



- 1.6. On approval of the photovoltaic (PV) application, the installation and testing of the SSEG system shall be conducted and the installer shall issue a Certificate of Compliance to the applicant and the Municipality (Quote the relevant “E” number). The Municipality shall be informed of the completion of the SSEG installation.



Download the “COMMISSIONING REPORT FOR EMBEDDED GENERATION” from: [www.durban.gov.za](http://www.durban.gov.za)

- 1.7. The applicant shall download and complete the “COMMISSIONING REPORT FOR EMBEDDED GENERATION” as detailed in Annexure B. This form must be signed by a registered Pr. Eng. or Pr. Tech. This form must be emailed to [residentialgeneration@elec.durban.gov.za](mailto:residentialgeneration@elec.durban.gov.za). EThekweni Municipality may request to be present to witness the testing and commissioning.

**Note:**

- Any modification to the system that deviates from the approved application shall undergo a new application process.
- Upon payment of the relevant fee (if any) and receipt of your signed commission form, the Municipality will trigger the process to have your meter retrofitted and tariff amended.
- Every connection to the grid must undergo an application and approval process irrespective if similar installations have been previously approved.
- Once your meter has been installed and tariff changed, the offsets between import and export energy will occur automatically via the account billing system as per the embedded generation tariff structure (Scale 15).
- All commissioning documentation as requested shall be submitted for record and filing purposes. Until the application is approved, the applicant shall **not** connect the PV system to the grid under any circumstances.
- The customer must allow Municipal staff access to the generation system for the purpose of compliance testing and monitoring.

## 2. Applicable standards and guidelines

- a) The technical requirements for Small Scale Embedded Generation are covered in the following standards and guidelines. The applicant shall comply with the latest versions of the standards and guidelines indicated below, amongst other recognized standards:

Table 1. Applicable standards / guidelines for SSEG installations

No.	Applicable Standards / Guidelines	No.	Applicable Standards / Guidelines
a)	EThekwini Electricity Supply Bylaws	e)	<b>NRS 097-2-3</b> Grid connection of Embedded Generation (Simplified utility connection criteria for low-voltage connected generators).
b)	<b>SANS 10142</b>	f)	<b>IEC 62116</b> Test procedure of islanding prevention measures for utility-interconnected photovoltaic inverters.
c)	<b>SANS 959</b>	g)	<b>IEC 62109-2</b> Safety of power converters for use in PV power systems – Part 1: General requirements.
d)	South African Renewable Power Plant Grid Code.	h)	<b>IEC 62053-22</b> Electricity Metering Equipment
e)	<b>NRS 097-2-1</b> Grid interconnection Generation (Utility interface).	i)	<b>IEC 60364 - 1</b> Low Voltage Electricity Installation

- b) The above standards cover aspects such as voltage range; flicker; DC injection; frequency operating range; harmonics and waveform distortion; power factor; synchronization; safe disconnection from the network; over voltage and under voltage; sudden voltage dips and peaks; voltage change; over frequency and under frequency; anti-islanding; DC current injection; network faults; response to utility recovery; isolation; earthing; short-circuit protection; and labelling.

## 3. Supply Parameters

### 3.1. Metering

- a) A meter change will be required in the event of an SSEG installation.
- b) A bi-directional metering configuration will apply to the embedded generation tariff in the case of properties where SSEG systems are operated.
- c) It must also be noted that without a meter change or upgrade, any power exported at any time will not be credited. In instances where the meter is being reversed as a result of reverse power flow, all credits will be reversed and account adjusted. The cost of the meter change will be confirmed upon application.

### 3.2. Network Studies

- a) Should there be any network studies required for connecting the PV installation to the network; the Planning Department will conduct such studies at a cost to the applicant. Network studies would be necessitated if the SSEG installation does not fall within the simplified NRS connection criteria.

### **3.3. Testing of Islanding Procedures**

- a) Grid-tied inverters must have an anti-islanding function (immediate disconnection when there is a general power outage) as stipulated in the NRS 097-2-1.
- b) Should the inverter or SSEG installation have the facility to both comply with these anti-islanding requirements AND operate in “islanded mode” where the SSEG installation supplies power to a portion of the customer’s electrical grid during a general power outage, it shall be effectively isolated from the municipal electrical grid during operation (as is legally required of any standby generator).
- c) If the SSEG installation is to be configured as a standby supply after islanding from the municipal electrical grid, a registered person in terms of the Electrical Installation Regulations (2009) shall issue a Certificate of Compliance to the owner if the generator is to be connected to the existing internal wiring of the property.
- d) Requirements of SANS 10142-1 – Clause 7.12 (Alternative supplies including low voltage generating sets, installations, etc) apply. A fire safety and emergency shut off switch shall be installed where the SSEG installation is to be configured as a standby supply after islanding.

### **3.4. Decommission of a SSEG System and Transfer / Change Of Ownership**

- a) The Municipality requires notice of any SSEG system which has been decommissioned. The system shall be removed at the owners cost and a decommissioning report filed. If transfer/change of ownership takes place, a new certificate of compliance is required and a new application shall be submitted, or, alternatively, the SSEG system shall be decommissioned.

### **3.5. Professional Sign Off**

- a) Until SANS 10142-Part 3: *The Wiring of Premises– Embedded Generators* and SANS 10142-Part 4: *The Wiring of Premises – Direct Current and PV* are published, all SSEG projects shall be signed off via the commissioning form by an ECSA registered professional and a certificate of compliance shall be issued.
- b) The sign off by a professional ECSA registered engineer or technician is MANDATORY and must be complied with for all installations

### **3.6. Right to Deny Access**

- a) All customers wishing to install a SSEG system, regardless of generation capacity, must complete all sections of the application process in full. The Municipality needs to ensure that, amongst other considerations, the SSEG installation can be accommodated on the municipal electrical grid and that the total SSEG capacity of the municipal electrical grid has not been exceeded.
- b) Equipment should not be purchased prior to obtaining written approval from the Municipality as approval is not guaranteed and the Municipality shall not be held liable for equipment expenses where approval is denied.

### **3.7. Illegal Connections**

- a) The Electricity Supply By-Law states that no equipment may be connected to the municipal electrical grid without the express consent of the Municipality.
- b) Failure to obtain this consent constitutes an offence.

- c) Furthermore, the installation may also be in contravention of the Occupational Health and Safety Act, for which punitive sanctions also apply.
- d) Customers found to have illegally connected SSEG to the municipal electrical grid (either before or after their electricity meter) shall be instructed to have the installation disconnected from the municipal electrical grid. A Certificate of Compliance issued by a registered electrical contractor shall be required as proof of such disconnection.
- e) Should the customer fail to have the SSEG disconnected from the municipal electrical grid, the Municipality shall disconnect the electricity supply to the property

### **3.8. Testing of Inverters**

- a) Until such time as a SABS mark is issued for inverters, the Municipality shall require proof in the form of test certificates, of type tests having been successfully carried out by a third party testing authority certifying compliance of the inverters with NRS097-2-2. The use of inverters without such certification is not permitted, both in new and existing installations.
- b) The certification body must be SANAS accredited or be recognised by the International Laboratory Accreditation Co-operation (ILAC) or the International Accreditation Forum (IAF) in terms of ISO/IEC 17025:2005 for photovoltaic systems. The accreditation bodies must provide accreditation documentation for the specific test location.

### **3.9. General**

- a) The approval by eThekweni Municipality only agrees to grid connection. Approval does not abdicate the applicant's responsibility in abiding to the necessary acts, regulation, policy, standards and specifications that are currently in force.
- b) **Availability and operational performance of the network is not guaranteed.** EThekweni Municipality reserves the right to withdraw authority for synchronisation at its sole discretion, under normal or abnormal conditions, or as a result of new standards/procedures being adopted in this regard.
- c) Details pertaining to this application may be shared with relevant stakeholders as deemed necessary, including reporting to the National Energy Regulator of South Africa (NERSA)
- d) Upon synchronisation to the grid, eThekweni Municipality reserves the right to carry out audits (technical and safety), and issue recommendations/ instructions where necessary
- e) It is the responsibility of the customer to ensure that the embedded generation system is correctly designed and operated in line with the relevant standards. The protection of the system as well as any insurance cover is the responsibility of the customer.

## **4. Tariff Details**

- a) The National Framework for Embedded Generation is currently being finalised. In the interim, the National Energy Regulator of South Africa (NERSA) has allowed eThekweni Municipality to facilitate SSEG via a bidirectional tariff structure. This is a temporary tariff structure and will be amended as national guidelines unfold.
- b) Please refer to eThekweni Electricity's Tariff booklet for the latest tariff structure and rates. Refer: [http://www.durban.gov.za/City\\_Services/electricity/Tariffs/Pages/default.aspx](http://www.durban.gov.za/City_Services/electricity/Tariffs/Pages/default.aspx)

## 5. Safety and Protection

The following requirements for a SSEG installation are further applicable:

- a) For all installations of any given size, a Residual Current Device Detector in line with IEC shall be installed on the circuit connecting the PV array. It shall be located between the inverter and the customer's installation.
- b) The applicant shall be responsible for ensuring that the installation complies with the Occupational Health and Safety Act (Act 85 of 1993) or relevant safety legislation. The applicant shall also forward the details of the appointee or certificate of compliance, duly completed and signed by the ECSA registered electrical engineer / technician, to eThekweni Municipality.
- c) The upstream protection devices shall be coordinated with the protection installation of your installation. The details hereof shall be made available to you for co-ordination purposes. The applicant will provide overcurrent and earth fault protection that is capable of isolating the applicant's network from eThekweni Municipality's supply in the event of a fault on your network.
- d) All equipment from the electrical grid up to the point of metering (also referred to as point of connection) shall be provided, installed, operated and maintained by eThekweni Municipality.
- e) The applicant will, at their own expense, provide, erect, connect, operate and maintain all circuits required to connect their electrical installation to the point(s) of connection and equipment necessary for controlling such circuits. This will be undertaken to the reasonable satisfaction of eThekweni Municipality.
- f) The applicant shall be responsible for all costs including, installation, maintenance and operation of their own SSEG plant.
- g) Prior to commissioning the plant, the engineer shall perform test(s) as per eThekweni Municipality's commissioning report and thereafter, furnish eThekweni Municipality with the signed commissioning form indicating the results of the test(s) performed before the equipment may be permanently connected. EThekweni may request for such tests to be performed in the presence of an authorized municipal official.

-----END-----

- Annexure A
- Annexure B
- Annexure C





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**ETHEKWINI MUNICIPALITY**  
**Trading Services**  
**Electricity Unit**

## ANNEXURE A

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The purpose of this annexure is to provide a guideline for completing the “APPLICATION FOR CONNECTION OF EMBEDDED GENERATION”

The application form consists of 8 sections categorized into 3 parts as follows:

- Part A: Particulars of Owner and Site Details
- Part B: Connection / Embedded Generation Details
- Part C: Compliance / Signature and Approval

The application form must be completed in the electronic pdf version. No hand written application forms will be accepted. You may however provide a neat hand drawn sketch for the single line diagram required in section 6.

Please complete the form in **BLOCK LETTERS** and ensure that all fields are completed. Where a field is irrelevant, mark that field as “not applicable” or “n/a”. Do not leave blank.

Where a block has to be marked, you may use a “tick” (✓) against your relevant option.

Once the form has been completed, print out and obtain the relevant signatures. You may then scan and email the document together with the relevant supporting documents. All documents should be in pdf format.



## PART A – SECTION 3

**3. APPLICATION DETAILS**  
*Indicate in this section, the purpose of this application*

**Preferred Meter Type**

Bi-Directional  This will allow for the metering of power in the forward and reverse direction

Existing Meter Number to be replaced

**Embedded Generation**

Embedded Generation  This indicates that your generation system will be synchronised with the grid

**Preferred Tariff Type**

Scale 15  This will allow for the off-set of power in line with the tariff terms and conditions

Existing Account Number

*Note : Your account number will not change as a result of this tariff change*

Existing Connection Number

*Note : This can be found on your electricity account*

Section 3 is where you apply for the services required. A mark in the appropriate block confirms your application for that particular service.

The existing meter number can be obtained from your electricity account or can be read off from your meter onsite.

Your account number and your existing connection number can be found on your electricity account.

## PART B– SECTION 4

### PART B - CONNECTION / EMBEDDED GENERATION DETAILS

**4. CONNECTION DETAILS**  
*Provide the information regarding your existing and proposed connection requirements*

**DETAILS OF MAIN SWITCH**

	Voltage	Current	Fault Rating	Protective Device
Existing Entire Site	V	A	kA	
Proposed Entire Site	V	A	kA	
Existing For this application	V	A	kA	
Proposed for this application	V	A	kA	

This section requires some technical information regarding your main switch. This application is for the connection of your generator to the grid, a bidirectional meter and a tariff change to Scale 15 so there will be no changes to this section. Provide the information as per your existing connection onsite. You may include information of any additional protective devices that will be connected as a result of your generation system.

\*\* We recommend an electrician assist in populating this information.

## PART B– SECTION 5

### 5. EMBEDDED GENERATION

**Embedded Generation Details** ◀ Note: Maximum generation capacity of 4.6 kVA single phase and 13.8 kVA three phase is allowed for residential connections

Does the premises have existing embedded generation? Yes  No  ▶ If yes, Rated Output  kW Type: \_\_\_\_\_ (solar, wind, gas etc)

Are you upgrading an existing or installing a new embedded generating unit? Upgrade  New Installation

**Type of Generation** Solar PV  Wind  Hydro  Other  Specify \_\_\_\_\_

**Generation Location** Rooftop  Carport  Outdoor yard  Other  Specify \_\_\_\_\_

Size of Proposed Generation (kVA)     Power Factor of operation

Number of Inverter / generator Units

Is the inverter or generator single or three phase Single  Three

Number of PV Panels   Power rating per panel (W)

Number of Battery Units   Power rating per unit (Ah)

**Energy Generation Details**  
▶ Provide estimate values per annum

Indicate total kWh's expected to be generated  kWh

Indicate total kWh's to be self consumed  kWh

Indicate total kWh's to be exported to the grid  kWh

This information is specific to your SSEG. Populate this section based on your design. When populating the energy generating details, ensure that the information is formatted and calculated on a per annum basis.

**Embedded Generation Details / Datasheets Information Required** ◀ Type information in the space provided below. Reference the relevant standards where necessary

Information Required	Typical information that should be provided
Method of synchronizing	Auto / Manual, Make and type of relay etc..
Method of anti-islanding	Details of scheme, relays to be used etc
Protection Details	O/C,E/F, over/under voltage, over/under frequency
Point of common coupling and method of isolation	Show proposed point of coupling, isolating and interfacing devices with eThekweni Electricity electrical network, protection, consumer network, operating characteristic, earthing arrangement, etc
Provide method of isolation in the event of fire	Detail of fireman switch, protection, point of isolation
Provide orientation and inclination for rooftop PV installation	eg. 30° North Facing

Type the relevant information in the grey block on the right hand side of the page. Keep answers brief and to the point, ensuring that the relevant information has been captured.

Typical information required:

Data Request	Typical Information required
Method of synchronizing	Auto / Manual, Make and type of relay etc.
Method of anti-islanding	Details of scheme, relays to be used etc.
Protection Details	O/C,E/F, over/under voltage, over/under frequency
Point of common coupling and method of isolation	Show proposed point of coupling, isolating and interfacing devices with eThekweni Electricity electrical network, protection, consumer network, operating characteristic, earthing arrangement, etc.
Provide method of isolation in the event of fire	Detail of fireman switch, protection, point of isolation
Provide orientation and inclination for rooftop PV installation	e.g. 30° North Facing Panels

## PART B– SECTION 6

### 6. SINGLE LINE DIAGRAM

Include a single line diagram of the installation and connection to the municipal grid. Clearly show any protective devices between the generation system and the grid. Clearly show the meter connection and the meter number regarding this application. Ensure hand drawn sketches are neat and legible.

Page 2

Exercise your hand drawing skills and provide us with a single line diagram from the inverter to the point of connection to the grid. Include all protection devices as well as the meter and meter number of the connection in the drawing. Be mindful of the size of the drawing and the space available.

## PART C– SECTION 7

### PART C - COMPLIANCE / SIGNATURE AND APPROVAL

#### 7. COMPLIANCE

##### Area of compliance

- Is the embedded generation system designed to comply with the South African Renewable Energy Grid Code
- Is the embedded generation system designed to comply to the relevant sections within NRS 097
- Is the embedded generation system designed to comply to the relevant sections within NRS 048

Complied		Certificate Attached	
Yes	No	Yes	No
Yes	No	Yes	No
Yes	No	Yes	No

It is mandatory for the embedded generation system to comply to respective parts of the above mentioned specifications. Non-Compliance to any of the above will result in the non-approval of this application. Attached the necessary certification where applicable.

This section deals with compliance of your proposed SSEG system. Indicate in this section if the SSEG system complies with the relevant standards. It is mandatory to attach a certificate issued by a third party laboratory confirming compliance to the relevant standards.

Note: Your application will not be processed if a certificate / test report proving compliance to NRS 097-2-1 is not attached.

## PART C– SECTION 8

### 8. SIGNATURE AND APPROVAL

This is to confirm that the information contained in this application is true and correct. We understand our respective roles and responsibilities in terms of connecting such generation to the grid. We confirm that we are familiar with the relevant regulatory, technical and safety aspects thereof.

Owner Name / Surname	Installer Name / Surname	Engineer Name / Surname
_____	_____	_____
Signature _____	Accreditation: _____	Accreditation: <u>Engineering Council of South Africa (ECSA)</u>
Date <input type="text"/> / <input type="text"/> / <input type="text"/>	Accrediation No _____	Accrediation No: _____
	Contact No. _____	Contact No. _____
	Signature _____	Signature _____
	Date <input type="text"/> / <input type="text"/> / <input type="text"/>	Da <input type="text"/> / <input type="text"/> / <input type="text"/>

This section must be signed by the Owner, Installer and the Engineer. Ensure all fields are completed and signed. This form will not be processed unless all information is provided and correctly signed off.



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## ANNEXURE B

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The purpose of this annexure is to provide a guideline for completing the "COMMISSIONING REPORT FOR EMBEDDED GENERATION"

The report consists of 9 sections categorized into 3 parts as follows:

Part A: Site Details / Particulars Installer and Engineer  
Part B: Embedded Generator Details  
Part C: Compulsory Declaration

The report must be completed in the electronic pdf version. No hand written reports will be accepted. You may however provide neat hand drawn sketches if required in section 7.

Please complete the report in **BLOCK LETTERS** and ensure that all fields are completed. Where a field is irrelevant, mark that field as "not applicable" or "n/a". Do not leave blank.

Where a block has to be marked, you may use a "tick" (✓) confirming your relevant option.

Once the report has been completed, print out and obtain the relevant signatures. You may then scan and email the report together with the relevant supporting documents. All documents should be in pdf format.

**NOTE: THIS REPORT MUST BE COMPLETED BY AN ECSA REGISTERED PROFESSIONAL (i.e. Pr. Eng. or Pr. Tech.).**



## COMMISSIONING REPORT FOR EMBEDDED GENERATION RESIDENTIAL SMALL SCALE

REFERENCE NUMBER : E

Note: This is the reference number that was allocated to your application

This is the reference number that has been provided to you when your application was captured. Ensure that this number is correctly populated as it provides a reference to your application as entered into our electronic database.

### PART A – SECTION 1 & 2 & 3

**1. SITE DETAILS**

Floor No.	Unit No.	Street No.	Lot No.	ERF Number / Property Key
Street Name				Post Code
Suburb			Town	
GPS Co-ordinates Latitude:		GPS Co-ordinates Longitude:		Rates Account Number
Use decimal degree format e.g. Latitude: -29.847538, Longitude: 31.025368				

**2. INSTALLER DETAILS**

Title	First Name	Surname	ID Number
Company Name			Landline
Physical Address			Cellphone
Email Address			Fax No.
State any Accreditation			Reg Number

**3. ENGINEER DETAILS**

Title	First Name	Surname	ID Number
Company Name			Landline
Physical Address			Cellphone
Email Address			Fax No.
State ECSA Accreditation ( Pr-Eng, Pr Tech.)			Reg Number

Page 1

Section 1 requires the basic details of the site. This information should be as per the site details of the application. "Site" refers to the property where the SSEG installation has been carried out.

Section 2 requires the details of the installer. This refers to the individual / company that was responsible for the physical installation of your SSEG.

Section 3 requires the details of the engineer. This refers to the individual / company that was responsible for commissioning your SSEG system. The engineer must be an ECSA registered professional.

## PART B – SECTION 4

4. MANDATORY INFORMATION TO BE SUBMITTED		
Information for submission	Submitted	File Name <i>(prefer pdf file)</i>
Final copy of circuit diagram	Yes <input type="checkbox"/> No <input type="checkbox"/>	◀ Circuitdiagram.pdf
Inverter type test certificate & test report according to NRS 097-2-1	Yes <input type="checkbox"/> No <input type="checkbox"/>	◀ Inverter.pdf
Factory setting sheet indicating that the inverter has been set in accordance to NRS 097-2-1	Yes <input type="checkbox"/> No <input type="checkbox"/>	◀
An electrical installation certificate of compliance	Yes <input type="checkbox"/> No <input type="checkbox"/>	◀
Operation and Maintenance procedure	Yes <input type="checkbox"/> No <input type="checkbox"/>	◀
Decommissioning procedure	Yes <input type="checkbox"/> No <input type="checkbox"/>	◀

*Failure to submit the above mentioned information will result in the non-acceptance of this commissioning report and withdrawal of any approval for the connection of the embedded generator to the grid.*

This section indicates the mandatory information that must be submitted with your report. Confirm the submission and indicate the name of the file that contains this information in your attachments. Please only attach relevant documents and refrain from providing unnecessary datasheets and generic product information.

## PART B – SECTION 5

5. SMALL SCALE EMBEDDED GENERATOR DETAILS	
<i>Type information in the space provided below. Where additional space is required, make use of the additional information section.</i>	
<b>Embedded Generation Details</b>	
<b>Type of Generation</b> Solar PV <input type="checkbox"/> Wind <input type="checkbox"/> Hydro <input type="checkbox"/> Other <input type="checkbox"/> Specify _____	
Size of Installed Generation <input type="text"/> <input type="text"/> <input type="text"/> kVA	Power Factor of operation <input type="text"/> Maximum peak AC short circuit current (A) <input type="text"/> A
Number of Inverter / generator Units <input type="text"/> <input type="text"/>	
Manufacturer / Model of PV Panels	Enter Manufacturer details here
Manufacturer / Model of Inverter / Generator	Enter Manufacturer / Model of Inverter
Manufacturer / Model of battery storage device	Enter Manufacturer / Model of battery storage device
Serial Number (s) of Inverter / Generator	Enter serial number (s) of inverters / generators

*Note: Datasheets may be required for certain equipment. Do not submit datasheets unless otherwise requested.*

This section requires details of the equipment installed and relevant serial and model numbers. Enter information in the grey space provided on the right hand side of the page. Keep information clear, concise and to the point.



## PART C – SECTION 6

### PART C - COMPULSARY DECLARATION

#### 6. COMPLIANCE AND DECLARATION BY ENGINEER

##### Area of compliance

The generation installation complies with the relevant sections of NRS 091-2-3

The loss of mains protection (anti-islanding) has been proved by a functional test carried out as part of the on-site commissioning.

Protection settings have been set to comply with NRS 097-2-1

Safety labels have been fitted in accordance with NRS 097-2-1

The generation installation complies with the relevant sections of SANS 10142-1

Installation certificate of compliance attached

Reverse power blocking system installed to prevent reverse power flow onto the municipal grid ( Where applicable)

	Complied	Date Comissioned
Y	<input type="checkbox"/>	<input type="checkbox"/>
	N	<input type="checkbox"/>
Y	<input type="checkbox"/>	<input type="checkbox"/>
	N	<input type="checkbox"/>
Y	<input type="checkbox"/>	<input type="checkbox"/>
	N	<input type="checkbox"/>
Y	<input type="checkbox"/>	<input type="checkbox"/>
	N	<input type="checkbox"/>
Y	<input type="checkbox"/>	<input type="checkbox"/>
	N	<input type="checkbox"/>
Y	<input type="checkbox"/>	<input type="checkbox"/>
	N	<input type="checkbox"/>

*It is mandatory for the embedded generation system to comply to respective parts of the above mentioned specifications. Non-Compliance to any of the above will result in the non-approval of this application. Attached the necessary certification where applicable.*

This sections seeks to confirm that the SSEG installation complies with the relevant standards and guidelines. Mark the status of compliance for each line of information and provide the relevant date of commissioning.

## PART C – SECTION 7 and 8

#### 7. ADDITIONAL DRAWINGS / SKETCHES

#### 8. ADDITIONAL TECHNICAL INFORMATION

Section 7 can be used to provide additional drawings or sketches relevant to the SSEG installation. This may include the layout of PV panels on the roof, the location of the inverter, the location of the isolation switch, etc.

Section 8 can be used to provide additional technical information relevant to the SSEG installation.

## PART C – SECTION 9

#### 9. SIGNATURE AND APPROVAL

This is to confirm that the information contained in this commissioning report and the supporting documentation is true and correct.

Engineer Name / Surname

Signature

Date   /   /

This section must be signed by the engineer. Ensure all fields are completed. This report will not be accepted unless all information is provided and signed off.



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**ETHEKWINI MUNICIPALITY**  
**Trading Services**  
**Electricity Unit**

## ANNEXURE C

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The purpose of this annexure is to provide a simplified guideline for generating your own electricity.