APPLICATION FOR THE CONNECTION OF EMBEDDED GENERATION

This application form is for the connection all forms of embedded generation to the electricity network of Blue Crane Route Municipality (solar photovoltaic (PV), wind, diesel, hydro etc.). It applies to residential, commercial or industrial customers. **Applications for systems up to and including 1MVA may use this form**. Applications that fall within the 'Simplified Connection Criteria' as specified in the NRS097-2-3 are likely to be approved by the municipality. Applicants should familiarise themselves with these criteria to avoid delays (refer to the municipality's 'Requirements' document for an overview, and the NRS097-2-3 document itself for detail). Systems that exceed these criteria, including those between 350kVA and 1MVA, may require grid impact studies before their approval is considered. The municipality will advise if such studies are required after this application form is submitted. For systems over 1MVA, refer to the 'Requirements' document for licensing requirements and engage with the Municipality separately before filling in this form.

It is recommended that this form is filled in by personnel familiar with the technical details of the intended generation technology. 'Competent person' sign-off of the Commissioning Report is mandatory, but such sign-off is not required at the Application stage.

If the applicant does not yet have an electricity connection, an application for a new connection will need to be submitted together with this application form.

PLEASE NOTE: FAILURE TO PROVIDE ALL RELEVANT INFORMATION AS REQUIRED BELOW MAY LEAD TO DELAYS IN THE APPLICATION PROCESS

Project name:	Nominal AC capacity of generator (kVA):
System type: Solar PV ☐	Other generator (specify):
If solar PV (tick): Rooftop ☐	Ground mounted ☐ Building integrated ☐

SECTION A: Applicant, Property and Installer information

Property Erf number:
Physical address:

Township / Suburb / Farm:		Post code:
Site GPS coordinates:	Latitude (dd mm ss)	S ° ‘ ‘‘
	Longitude (dd mm ss)	E ° ‘ ‘‘

Account Holder/Customer Details*

Name:	
Electricity Account Number:	
Telephone Number:	Land: Mobile:
Email Address:	

* - if the applicant does not yet have an electricity connection, this should be stated above and an application for a new connection will need to be submitted together with this application form.

Installer Details

Company name:		
List any professional memberships, certifications, industry accreditations etc.:		
Address:	Physical:	Postal:
Website:		
Contact Person Name:		
Telephone:	Land: Mobile:	
Email address:		

Construction Schedule*

Anticipated Construction Start Date:		Anticipated Commissioning Date:	

* - if system already installed (i.e. a retrospective application) – state 'existing system' under start date

Existing Connection

Existing main switch:	Current (A):	Phases (tick): Single ☐ Three ☐
NMD (kVA) (non-residential):		

SECTION B: Embedded Generator Technical Information

Embedded Generator (EG) system details

Total AC capacity of EG (kVA and PF) (inverter capacity if solar PV):	kVA[1]: PF[2]:		If solar PV: Total PV panel (nameplate) capacity (kWp):		
Type of energy conversion[3]:					
Manufacturer (if PV, fill in for inverter):					
Model (if PV, fill in for inverter):			Quantity:		
Number of Phases[4]:	Single Phase (✓)		Three Phase (✓)		
Earthing arrangements i.e. TN-C-S:					
Grid Connection mode (tick appropriate):	Energy from generator to be used solely within the consumers electricity network and no excess power to be exported to Municipal electricity network at any time (i.e. reverse power blocking to be installed)				
	Energy from generator to be used within consumers electricity network and excess power to be exported to Municipal electricity network				

Embedded Generator (EG) Protection Details

EITHER: NRS097-2-1 certification must be produced (inverters **must** have such certification)	
NRS097-2-1 test certificate is attached to this application (✓):	
OR: fill in the below -	
Method of synchronising (auto/manual, make and type of relay, etc.)	
Method of anti-islanding (details of scheme, relays used, etc.)	
Method of generator control (AVR, speed, power, PF, excitation system requirements etc. relays to be used)	
Other main protection to be applied (O/C, E/F, over/under voltage, over/under frequency, reverse power flow, back-up impedance, generator transformer back-up	

[1] Note that if storage is included in the EG configuration and is set up in such a way that it can contribute additional export onto the grid – i.e. a separate storage inverter - such output must be included in this figure.

[2] This will mainly apply to systems that make use of rotating machines and/or transformer type power converters e.g. wind power, hydro, battery connected inverters or diesel generators. For transformer-less static power converters (e.g. inverters with a solar PV system), the power factor is generally unity and the kW of the system will be the same as the kVA.

[3] e.g. synchronous generator, induction generator, static inverter, fuel-cell, dyno set. Will typically be an inverter for residential EGs.

[4] see NRS097-2-3 for phase balancing requirements

earth fault, HV breaker fail, HV breaker pole disagreement, etc.)	

Storage (e.g. battery)

Does the EG include storage capabilities? (✓ appropriate):				
No storage				
Yes *(but only as standby power – cannot operate in parallel and feed onto the grid)*				
Yes *(connected in parallel to EG – can feed onto the grid)*		Capacity of storage (kWh)	kWh:	C rating[5]:
	If connected in parallel – separate NRS097-2-1 certificate provided? (tick)			

Estimated Consumption and Generation Levels

Current electricity consumption/month (kWh)	Range from (low):	to (hi):
Estimated average output of generator/month (kWh)	Max:	Min:
Monthly reverse feed (export) estimation (kWh)	Max:	Min:
Maximum (peak) expected export power onto Municipal grid (kVA)[6]		

Preliminary design details (for systems >100kVA only):

Attach a preliminary circuit diagram and design showing major components, proposed point of common coupling, isolating and interfacing devices with the municipal electrical network, protection schemes, customer electrical installation, earthing arrangements, etc.

SECTION C: Regulatory requirements and standards

List of regulatory approvals, requirements and references that the installation will comply with:
(note that the latest version of all of the below standards are applicable) ✓

NRS 097-2 : Grid interconnection of embedded generation: Part 2: Small scale embedded generation (NRS097-2-1 and NRS097-2-3)	
SANS 10142-1 and SANS 10142-1-2: The wiring of premises (as amended and published)	

NERSA license

Does the system require a license from NERSA? (tick)	No	

[5] 'C' rating is relevant to battery storage, and relates to the discharge time at which the kWh capacity figure applies (different discharge rates change the kWh that a battery can deliver)

[6] Note that if storage is included in the EG configuration and is set up in such a way that it can contribute additional export onto the grid – i.e. a separate storage inverter - such output needs to be considered in here.

	Yes	

Clearance by other Municipal departments (only if needed – see 'Requirements' document)

SECTION	COMMENTS	NAME	SIGNATURE	DATE
Buildings/Planning department				
Environment (noise pollution)				
Health (air pollution – burning fuels)				

Notes:

1. Electricity department will require **prior** approval from this department if necessary. Applications to connect to the municipal electrical grid will not be considered until relevant approval has been obtained.
2. Photovoltaic (PV) SSEG applications will require approval from Planning and Building Development Management if:
   a) Roof top installations: PV panel(s) in its installed position projects more than 1.5m, measured perpendicularly, above the roof and/or projects more than 600mm above the highest point of the roof;
   b) Installations on the ground: PV panel(s) in its installed position projects more than 2.1 metres above the natural/finished ground level.

SECTION D: Declaration

I request the Municipality to proceed with a preliminary review of this embedded generation interconnection application and I agree to pay the cost associated with completing this review and obtaining written consent of the Municipality, though such costs are unlikely except if grid studies are required. Should such grid studies be required, a quotation for such work will be provided beforehand, giving me the opportunity to cancel or modify the application should I wish to do so.

I further consent to the Municipality providing this information to the National Electricity Regulator of SA (NERSA) and other Distributors as required.

I declare that this installation has been designed such that it complies with the requirements laid out in the latest version of the Municipality's *Requirements for Embedded Generation* document. I agree not to interconnect and operate this proposed SSEG system without written approval from the Municipality to do this.

Acceptance of Terms and Conditions

I, the Customer (Account Holder), acknowledge that I have read and understood the General Terms and Conditions: Contract for Connection of Embedded Generator and that by signing this application form, I agree to be bound by the General Terms and Conditions: Contract for Connection of Embedded Generator, should approval for the Embedded Generator be granted by the municipality. A copy of the General Terms and Conditions: Contract for Connection of Embedded Generator can be found on the Municipal website or is obtainable from the Electricity Department offices on request. Any amended terms and conditions found on the aforementioned website will form part of the terms and conditions of the General Terms and Conditions: Contract for Connection of Embedded Generator, to which terms I, the Customer, agree to be bound. The information provided in this Application Form also will form part of the General Terms and Conditions: Contract for Connection of Embedded Generator.

Customer (Account Holder) Signoff:

_____	_____	_____
Name	Date	Signature

Installer Signoff:

Organisation name:

Person:

_____	_____	_____
Name	Date	Signature

Return completed form to the relevant office, or email address:

(Electricity Department/electrical@bcrm.gov.za)
(042 243 3004)

Attachments to this application checklist (tick) ✓

Preliminary circuit diagram (if >100kVA)	
Type test Certificate of Compliance and Test Report according to NRS 097-2-1, issued by accredited 3rd party test house (all inverters must have this)	
For storage inverter in parallel (if installed) – separate NRS097-2-1 certificate	