ANNEXURE B

TECHNICAL SERVICES DEPARTMENT

APPLICATION FOR THE CONNECTION OF SMALL SCALE EMBEDDED GENERATION **Page 1**

This application form for the connection of small scale embedded generation is for same to be installed by residential, commercial or industrial customers. It is applicable to all forms of embedded electricity generation, including renewable energy and cogeneration.

- A separate "Application for a new or modified electricity supply service" form must also be completed.
- If the embedded generator is to be configured as a standby supply after islanding from the Estate's electrical grid, the generator will have to be connected to the existing internal wiring of the property. In such a case, the property owner must obtain a Certificate of Compliance from a qualified electrician.

Submit completed form to:	Pinnacle Point Estate Technical Services Department:		
	General Manager	Carl van der Linde	E-mail: carlvdl@pinnaclepointestate.co.za Cell: 073 036 7965
And copies to			
	Building Control	Same as above	Same as above

Property name and location:	Project name:
	Erf number:
	Physical address (Republic of South Africa):
	Postal code:

Name and account numbers of property owner:	First name:		Last name:		Title:	

TECHNICAL SERVICES DEPARTMENT

Property owner contact details:

	Office / Home	Mobile
Telephone number		

E-mail address	

Application type
(Tick appropriate boxes)

	✓
Residential	
Commercial/Industrial	
New	
Revised application	
Upgrade existing system	
Change of property owner	
Other (specify)	

Planned construction schedule:

Projected construction start date	
Projected in-service date of embedded generator	

Mode of small scale embedded generation :
(Tick appropriate box)

	✓
Energy from small scale embedded generation to be used within a Customer's own electricity grid and no excess to be exported to Estate's electrical grid.	
Energy from small scale embedded generation to be used within a Customer's electricity grid and excess to be exported to Estate's electrical grid.	

Type of prime mover and fuel source for small scale embedded generation : e.g. photo-voltaic, concentrated solar power, small hydro, landfill gas, biomass, biogas, wind, co-generation

Battery storage[1]
(Tick appropriate box)

			✓
Yes		No	

Amp hours/kWh	

[1] Note minimum requirements under Clause 3.1

TECHNICAL SERVICES DEPARTMENT

Type of energy conversion: E.g. Synchronous generator, induction generator, inverter, fuel-cell, dyno set. (Include operating characteristics).	

Site location:	Latitude (dd mm sss)	S ° ‘ ‘’
	Longitude (dd mm sss)	E ° ‘ ‘’
	Show location and dimensions of intended installation infrastructure on site plan and other drawings in relation to the existing property point of connection and buildings. Provide site and electrical plan. Reference/s of drawings attached to this application form.	

Site land use zoning:	

Preliminary design[2]:	Circuit diagram and design showing major components, proposed point of common coupling, isolating and interfacing devices with Estate's electrical grid, protection schemes, customer grid, operating characteristics, etc. Reference/s of drawings / documents attached to this application form.	
	Earthing arrangements i.e. TN-C-S	

Total capacity of small scale embedded generation (kVA and PF[1]): (Attach schedule for each unit if more than one generation unit and location)	

Property distribution board main circuit breaker size:	Ampere (A)	Single- or three-phase

[1] Note minimum requirements under Clause 3.1
[2] For guidance here, the installer/supplier must be consulted.

TECHNICAL SERVICES DEPARTMENT

Proposed consumption and generation levels:
(Complete the table below)

Month	Actual / Estimated imported energy for the month (kWh) bought from Estate before SSEG is installed	Estimated imported energy for the month (kWh) bought from Estate grid after SSEG is installed	Estimated exported energy for the month (kWh) generated by SSEG and not utilised for own use	Estimated maximum instantaneo-us exported power (kVA)	Day of week that maximum power export occurs	Time of day that maximum power export occurs
January						
February						
March						
April						
May						
June						
July						
August						
September						
October						
November						
December						
Total				N/A	N/A	N/A

Brief explanation of the reasons for the general load profile and electricity export profile as demonstrated above, and to include typical daily kWh graphs of energy consumption and generation as per Clause 2.9 (to be attached to this form).

Make & model of key generating equipment:

(Tick appropriate box)

Manufacturer:				
Model:				
Serial Number:				✓
Phase:	Single		Three	

Electrical parameters of small scale embedded generation[3]**:**
(All units in parallel, to be used for fault-level studies. Not all of these parameters apply to all modes of SSEG. Insert N/A if not applicable)

Rated voltage	Maximum MVAR limit	Inertia constant

Maximum peak short-circuit current(A)	Single- or three-phase

Neutral to earth resistance in ohms	Xd – Synchronous reactance in p.u.	X'd – Direct axis transient reactance in p.u.

[3] Professional or reputable installer/supplier must provide the required information. For static power converter-based systems (e.g. solar PV inverters) many of these electrical parameters do not apply.

X"d – Direct axis sub-transient reactance in p.u.	X2 – Negative sequence reactance in p.u.	X0 – Zero sequence reactance in p.u.

Electrical parameters of generator and unit transformers[3]:
(Not all of these parameters apply to all modes of SSEG. Insert N/A if not applicable)

Voltage and power ratings	Winding configuration

Neutral earth resistor or reactors (NER / NECR impedance)

Positive and zero sequence impedances in p.u.	
R1	X1
R0	X0

Grid connection point:
(In the case of applicant not being an existing customer only, attach a single line diagram showing arrangement)

Protection details[4]:

Method of synchronising: (Auto/Manual, make and type of relay, etc.) Profide reference/s of additional documentation if provided	

Method of anti-islanding: (Details of scheme, relays to be used, etc.) Profide reference/s of additional documentation if provided	

[3] Professional or reputable installer/supplier must provide the required information. For static power converter-based systems (eg. Solar PV inverters) many of these electrical paramters do not apply.

[4] Professional or reputable installer/supplier shall provide the required information.

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, back-up impedance, generator transformer back-up earth fault, MV breaker fail, MV breaker pole arrangement, etc.)	

Recording of quality of supply devices	

List of regulatory approvals, requirements and normative references[5]**:**
(Tick appropriate box or mark not applicable N/A)

	✓
Electricity Regulation Act, Act 4 of 2006 and Electricity Regulation Amendment Act, Act 28 of 2007	
Occupational Health & Safety Act, No. 85 of 1993 as amended	
South African Distribution Code (all parts)	
South African Grid Code (all parts)	
South African Renewable Power Plants Grid Code	
SANS 474 / NRS 057 : Code of Practice for Electricity Metering	
SANS 10142- Parts 1 to 4: The wiring of premises (as amended and published)	
NRS 048: Electricity Supply – Quality of Supply	
NRS 097-1 : Code of Practice for the interconnection of small scale embedded generation to electricity distribution networks : Part 1 MV and HV	
NRS 097-2 : Grid interconnection of small scale embedded generation : Part 2: Small scale small scale embedded generation	

[5] Note: It is the responsibility of the ECSA registered professional engineer/technologist to ensure compliance through their professional sign-off of the installed system in Annexure C – SSEG Installation Commissioning Report.

TECHNICAL SERVICES DEPARTMENT

Clearance by Estate Management

FUNCTION	COMMENTS	NAME	SIGNATURE	DATE
Zoning/subdivision/ building structure plans				
Noise impact assessment and ventilation				
Air pollution and quality (Fuel burning)				

Registered Installer Details

Installer:					
Accreditation/qualification:					
Professional registration[6]:				Reg. No.	
Address:					
				Postal code:	
Contact person:					
Telephone no:	Office:		Mobile:		

Any other additional information:

I, ……, the Owner, request the Estate Management to proceed with the review of this small scale embedded generation interconnection application. I understand that:

- I will have to pay for both in-house and outsourced engineering studies conducted as part of this review, should these be required; and
- 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, ……, the Owner, further consent to the Estate Management providing this information to the National Electricity Regulator as required.

6 Note: This requirement can be waived for PV installations up to and including 15 kVA if the requirements stipulated in Clause 2.1 can be met.

If this option is chosen the Installer shall annexur to this form proof of the firm's accreditation with SAPVIA as a registered GreenCard Installer.

TECHNICAL SERVICES DEPARTMENT

Application completed by:	Name:	Title:

ECSA registered professional [6]	Name:	Reg. no:	Registration category:

Note: It is recommended that an ECSA registered professional engineer or professional technologist that is familiar with the technical details of the intended generation technology, complete this application form.

Electrical Contractor to issue COC	Name:	Reg. no:	Registration category:

Signed (Applicant): _____

Date:

Signed (property owner): _____

Date:

Telephone number:

Email address:

FOR OFFICE USE

Date application received:					**Application notification No.**		
Further Information Required (e.g. Competent Person details required in terms of Occupational Health and Safety Act, General Machinery Regulations: Supervision of Machinery, Section 2):	YES		NO		**Date received:**		
More detailed studies Required (fault level, voltage rise, unbalance, flicker, harmonics, protection, etc.):	YES		NO		**Date complete:**		
Approved in Principle:	YES		NO		**Date applicant advised:**		
Copy to Estate Management Department:	YES		NO		**Date completed:**		

[6] Note: This requirement can be waived for PV installations up to and including 15 kVA if the requirements stipulated in Clause 2.1 can be met.

If this option is chosen the Installer shall annexur to this form proof of the firm's accreditation with SAPVIA as a registered GreenCard Installer.