



APPLICATION FOR THE CONNECTION OF GRID-TIED SMALL-SCALE EMBEDDED GENERATION

This application form is for the connection of any type of grid-tied small-scale embedded generation (SSEG)¹ to the electrical installation of residential, commercial or industrial customers.

- A separate '[Application for a new or modified electricity supply service](#)' form must also be completed where the City will replace the existing credit meter with a prepayment meter or AML meter.
- Grid-tied hybrid SSEG² must be connected to the existing wiring of the property via a suitably interlocked change-over switch. In such cases, the Certificate of Compliance (CoC) and test report for electrical installations from a qualified electrician must indicate accordingly.
- If you are declaring a system that is off-grid, you must complete the '[Declaration for off-grid small scale embedded generation \(GEN/OFF-GRID\)](#)' form.
- Please note that registration is **NOT** required for solar water heaters or geysers.

SUBMIT COMPLETED FORM TO

CUSTOMER SUPPORT SERVICES: AREA NORTH		
Electricity House City Cnr Buitengracht & Hout Street Cape Town CBD	Electricity House City 51 Buitengracht Street Cape Town CBD 8000	Tel: 021 444 2096 / 7 Fax: 021 444 2112 Email: sseq.north@capetown.gov.za

OR

CUSTOMER SUPPORT SERVICES: AREA EAST		
Electricity Generation & Distribution Head Office Bloemhof Centre Bloemhof Street BELLVILLE	Private Bag X44 BELLVILLE 7535	Tel: 021 444 8511 / 2 Fax: 021 444 8787 Email: sseq.east@capetown.gov.za

OR

CUSTOMER SUPPORT SERVICES: AREA SOUTH		
1 st Floor Wynberg Electricity Depot Rosmead Avenue WYNBERG	Wynberg Electricity Depot Rosmead Avenue WYNBERG 7800	Tel: 021 400 4750 Fax: 021 400 4753 Email: sseq.south@capetown.gov.za

For a detailed area map see the **Electricity Distribution Licensee Area Boundaries** map available under **Reference documents** at <http://www.capetown.gov.za/elecserviceforms>

A. PROPERTY OWNER

You, as the property owner, will need to provide the following details:

SERVICE LOCATION	
ERF NUMBER	
PHYSICAL ADDRESS	
TOWNSHIP / SUBURB / FARM	
POSTAL CODE	

PROPERTY OWNER (APPLICANT)	
TITLE	
FIRST NAME	
SURNAME	
BUSINESS PARTNER NO.	
CONTRACT ACCOUNT NO. <i>(Please refer to your municipal rates account.)</i>	

PROPERTY OWNER CONTACT DETAILS			
WORK NO.		CELLPHONE NO.	
FAX NO.			
E-MAIL ADDRESS			

¹ Typically, photovoltaic (PV)

² Grid-tied hybrid SSEG is configured such that the system islands after interruption of the utility supply, or when the applicable electrical service conditions are outside stated limits or out of required tolerances; and then supplies the load from the inverter, operating in the stored-energy mode.

APPLICATION TYPE <i>(Tick the appropriate boxes)</i>	
RESIDENTIAL	
COMMERCIAL / INDUSTRIAL	
NEW	
REVISED APPLICATION	
SYSTEM MODIFICATION OR EXPANSION	
CHANGE OF PROPERTY OWNER	
OTHER (SPECIFY)	

PLANNED CONSTRUCTION SCHEDULE	
PROJECTED CONSTRUCTION START DATE	
PROJECTED IN-SERVICE DATE OF EMBEDDED GENERATOR	
MODE OF EMBEDDED GENERATION <i>(Tick the appropriate box)</i>	
Energy from embedded generation to be used within a customer's electrical installation and excess to be exported to City of Cape Town Electricity's distribution network.	
Energy from embedded generation to be used within a customer's electrical installation and no excess to be exported to City of Cape Town Electricity's distribution network. <i>(If you do not have reverse power blocking, you will be exporting back into the grid.)</i>	

PRIMARY ENERGY SOURCE FOR EMBEDDED GENERATION <i>(e.g. photovoltaic, concentrated solar power, small hydro, landfill gas, biomass, biogas, wind, co-generation)</i> Residential: This will typically be a photo-voltaic (PV) system. Commercial / Industrial: This could be any, or a combination, of the examples listed above. Please consult your installer in you have any uncertainties.

BATTERY STORAGE <i>(Tick the appropriate box)</i> Please consult your installer in you have any uncertainties.				
YES		NO		kWh

TYPE OF ENERGY CONVERSION <i>(e.g. synchronous generator, induction generator, static inverter, fuel-cell, dyno set. Include operating characteristics.)</i> Residential: This will typically be an inverter. Commercial / Industrial: It could be any of the examples listed. Please provide details. Please consult your installer in you have any uncertainties.

SITE PLAN										
LATITUDE (DD MM SSS)	S			°			'			"
LONGITUDE (DD MM SSS)	E			°			'			"
FOR COMMERCIAL / INDUSTRIAL ONLY Attach plan showing location and dimensions of intended installation infrastructure in relation to the existing buildings and property point of connection. <i>(Tick box if plan is attached)</i>										

SITE LAND USE ZONING <i>(Domestic / commercial / industrial / other)</i>	
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B. INSTALLER

Your installer will need to complete, or provide information for the following:

PRELIMINARY DESIGN ³ <i>(To be attached)</i>	
Schematic diagram and design showing major components, proposed point of common coupling, isolating and interfacing devices with City of Cape Town electrical network, protection schemes, customer electrical installation, operating characteristics, etc.	
Earthing arrangements i.e. TN-C-S	

TOTAL CAPACITY OF EMBEDDED GENERATION (KVA AND PF) ⁴ <i>(Attach schedule for each unit if more than one generation unit or location.)</i>

³ For guidance here, it is recommended that an installer/supplier be consulted.

⁴ This will mainly apply to systems that make use of rotating machines e.g. wind power, hydro or diesel generators. For static power converters (e.g. inverters with a solar PV system), the power factor is generally unity and the kWp of the system will be the same as the kVA.

PROPERTY DISTRIBUTION BOARD MAIN CIRCUIT BREAKER

AMPERE (A)		PHASE <i>(Tick the appropriate box)</i>	SINGLE		THREE	
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PROPERTY NOTIFIED MAXIMUM DEMAND (kVA)	
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PROPERTY EXISTING METERING DETAILS

METER NO.	
METER TYPE <i>(Conventional / prepayment / AMI)</i>	

PROPOSED CONSUMPTION AND GENERATION LEVELS

(Use the information from your Load Profile Study to complete the table below)

MONTH	Estimated imported energy for the month (kWh) (Electricity bought from utility once SSEG is installed)	Estimated exported energy for the month (kWh) (Electricity generated by SSEG and not utilised for own use)	Estimated maximum instantaneous exported power (kVA)	Day of the 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

MAKE AND MODEL OF KEY GENERATING EQUIPMENT

MANUFACTURER		MODEL				
QUANTITY		PHASE <i>(Tick the appropriate box)</i>	SINGLE		THREE	

ELECTRICAL PARAMETERS OF EMBEDDED GENERATION⁵

(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 MVA_r LIMIT	
INERTIA CONSTANT	
MAXIMUM PEAK SHORT-CIRCUIT CURRENT (A)	
SINGLE-PHASE OR THREE-PHASE	
NEUTRAL TO EARTH RESISTANCE (Ω)	
X_d – SYNCHRONOUS REACTANCE (p.u.)	
X'_d – DIRECT AXIS TRANSIENT REACTANCE (p.u.)	
X''_d – DIRECT AXIS SUB-TRANSIENT REACTANCE (p.u.)	
X₂ – NEGATIVE SEQUENCE REACTANCE (p.u.)	
X₀ – ZERO SEQUENCE REACTANCE (p.u.)	

⁵ Professional or reputable installer/supplier should provide. For static power converter-based systems (e.g. solar PV inverters) many of these electrical parameters do not apply.

ELECTRICAL PARAMETERS OF GENERATOR AND UNIT TRANSFORMERS⁶ <i>(Not all of these parameters apply to all modes of SSEG. Insert N/A if not applicable.)</i>	
VOLTAGE AND POWER RATINGS	
WINDING CONFIGURATION	
NEUTRAL EARTH RESISTOR OR REACTORS (NER / NECR IMPEDANCE)	
POSITIVE AND ZERO SEQUENCE IMPEDANCES (p.u.)	
R1	X1
R0	X0

NETWORK CONNECTION POINT <i>(In the case of the applicant not currently being a consumer of energy only, attach a single line diagram showing arrangement.)</i>

PROTECTION DETAILS⁷	
METHOD OF SYNCHRONISING <i>(Auto / Manual, make and type of relay, etc.)</i>	
METHOD OF ANTI-ISLANDING <i>(Details of scheme, relays to be used, etc.)</i>	
METHOD OF GENERATOR CONTROL <i>(AVR, speed, power, PF, excitation system requirements etc. relays to be used)</i>	
OTHER MAIN PROTECTION TO BE APPLIED <i>(O/C, E/F, over/under voltage, over/under frequency, reverse power flow, back-up impedance, generator transformer back-up earth fault, HV breaker fail, HV breaker pole disagreement, etc.)</i>	
RECORDING OF QUALITY OF SUPPLY DEVICES	

LIST OF REGULATORY APPROVALS, REQUIREMENTS AND NORMATIVE REFERENCES <i>(Tick appropriate box or mark not applicable N/A.)</i>	
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	
City of Cape Town Electricity Supply By-Law	
SANS 474 / NRS 057: Code of Practice for Electricity Metering	
SANS 10142- Parts 1 to 4: The wiring of premises (as amended and published)	
SANS/IEC 61646: Thin film terrestrial PV modules – design qualification and type approval	
SANS/IEC 62109-1: Safety of power converters for use in photovoltaic power systems Part 1: General Requirements	
SANS/IEC 61215: 2005 Crystalline silicon terrestrial PV modules – Design qualification and type approval	
SANS/IEC 60364-7-712: Requirements for special installations or locations – Solar photovoltaic (PV) power supply systems: 2016	
NRS 048: Electricity Supply – Quality of Supply	
NRS 097-1: Code of Practice for the interconnection of embedded generation to electricity distribution networks: Part 1 MV and HV	
NRS 097-2: Grid interconnection of embedded generation: Part 2: Small scale embedded generation	

⁶ Professional or reputable installer/supplier should provide. For static power converter-based systems (e.g. solar PV inverters) many of these electrical parameters do not apply.

⁷ Professional or reputable installer/supplier should provide.

C. CLEARANCE BY OTHER CITY OF CAPE TOWN DEPARTMENTS (Only relevant in certain circumstances. See notes.)

FUNCTION	Zoning / subdivision / building structure plans	NAME	
SECTION	Planning and Building Development Management (Area offices)	SIGNATURE	
COMMENTS (Fill in your comments below.)		DATE	

FUNCTION	Noise impact assessment and ventilation	NAME	
SECTION	City Health Specialised Services 22nd floor Cape Town Civic Centre (021) 4003781	SIGNATURE	
COMMENTS (Fill in your comments below.)		DATE	

FUNCTION	Air pollution and quality (only applicable to fuel burning technologies)	NAME	
SECTION	City Health Specialised Services 246 Voortrekker Road VASCO (021) 5905200	SIGNATURE	
COMMENTS (Fill in your comments below.)		DATE	

- Notes:
- Energy & Climate Change Directorate will require prior approval from these departments, where applicable. Applications will not be considered until all relevant approvals have been obtained.
 - Photovoltaic (PV) SSEG applications will require approval from Planning and Building Development Management only if:
 - 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;
 - Installations on the ground: PV panel(s) in its installed position projects more than 2,1 metres above the natural/finished ground level.
 - PV SSEG applications typically do not require approvals for noise impact assessment and ventilation nor air pollution and quality.

D. INSTALLER DETAILS AND DECLARATION

INSTALLER DETAILS			
INSTALLER			
ACCREDITATION / QUALIFICATION			
PROFESSIONAL REGISTRATION (if applicable)			
PROFESSIONAL REGISTRATION NO.			
ADDRESS			
			POSTAL CODE
CONTACT PERSON			
WORK NO.		CELLPHONE NO.	
E-MAIL ADDRESS			

ANY OTHER ADDITIONAL INFORMATION (continue on separate sheet if necessary)

I acknowledge that the City of Cape Town Energy & Climate Change Directorate will proceed with the review of this grid-tied 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 further acknowledge that the City of Cape Town will provide this information to the National Energy Regulator of South Africa (NERSA) and other Distributors, as required.

APPLICATION COMPLETED BY

TITLE		NAME AND SURNAME	
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ECSA-REGISTERED PROFESSIONAL⁸

NAME AND SURNAME			
REGISTRATION NO.		REGISTRATION CATEGORY	

(Note: Sign-off by an ECSA-registered professional is optional at application stage. However, it is recommended that an ECSA registered professional that is familiar with the technical details of the intended generation technology, assist in the completion of this application form. The ECSA professional sign-off is mandatory at commissioning stage in accordance with Appendix 1)

DECLARATION

I/we, the owner(s) of the property, hereby declare that I/we have taken the necessary steps to ensure all information contained in this declaration form is correct. I/we further acknowledge and agree to comply with the provisions of the City of Cape Town Electricity Supply By-law and Conditions of Supply⁹.

SIGNED (PROPERTY OWNER¹⁰)			
DATE			

If signing on behalf of the property owner(s), an approved letter of proxy¹¹ must be attached to this declaration.

PROXY DETAILS

TITLE			
FIRST NAME			
SURNAME			
SIGNED (PROXY)			
DATE			

⁸ "ECSA professional" refers to an electrical professional engineer, professional technologist, professional certificated engineer or professional engineering technician who is registered with the Engineering Council of South Africa (ECSA).

⁹ Available under Reference Documents at <http://www.capetown.gov.za/elecserviceforms>

¹⁰ Only the property owner may sign this declaration. Proof of property ownership must be attached to the application form. This can be a property rates account, title deed or proof of registration. If applying on behalf of the property owner(s), an approved letter of proxy must be attached to the application. If the owner is a private person, a copy of his/her identity document or passport must be attached to the declaration form. If the owner is not a private person, a copy of the business/trust/body corporate registration form must be attached to the declaration form, together with a copy of the signatory's identity document.

¹¹ If the owner is a natural person, a letter is required wherein the property owner appoints the signatory as proxy. The letter must be signed by the owner and accompanied by a copy of his/her identity document. If the owner is not a natural person, a resolution of the board (or equivalent strategic body, depending on the nature of the company) is required, authorising the signatory to sign on behalf of the company. The property owner's details should still be completed in the property owner section. The only change is in the Declaration section where, in the case of a proxy, the owner's name is filled in without his/her signature and the proxy signs on behalf of the owner in the appropriate field. All other documentation required have to be submitted, including proof of ownership.

FOR OFFICE USE

DATE APPLICATION RECEIVED			
APPLICATION NOTIFICATION NO.			
FURTHER INFORMATION REQUIRED <i>(e.g. Competent Person detail required in terms of Occupational Health and Safety Act, General Machinery Regulations: Supervision of Machinery, Section 2)</i>	YES		DATE RECEIVED
	NO		
MORE DETAILED STUDIES REQUIRED <i>(fault level, voltage rise, unbalance, flicker, harmonics, protection, etc.)</i>	YES		DATE COMPLETED
	NO		
APPROVED IN PRINCIPLE	YES		DATE APPLICANT ADVISED
	NO		
COPY TO NETWORK CONTROL	YES		DATE COMPLETED
	NO		
COPY TO DISTRIBUTION DISTRICT CONSTRUCTION SUPERVISOR	YES		DATE COMPLETED
	NO		
COPY TO MV / HV SECTION FOR SSEG > 1KV	YES		DATE COMPLETED
	NO		

APPENDIX 1 – GRID-TIED SSEG INSTALLATION COMMISSIONING REPORT

The Commissioning Report must be completed by an ECSA registered professional once you have received permission and your system has been installed.

The following SSEG Commissioning Report must be submitted for each installation, confirming compliance with the City's requirements.

SITE DETAILS			
PROPERTY ADDRESS			
SUBURB		POSTAL CODE	
ERF NUMBER			
BUSINESS PARTNER NO.		CONTRACT ACCOUNT NO.	
CONTACT DETAILS			
SSEG PROPERTY OWNER			
CONTACT PERSON			
CONTACT TELEPHONE NO.			
SSEG DETAILS			
MANUFACTURER AND MODEL TYPE			
SERIAL NUMBER/S OF INVERTER/S AND INDEPENDENT DISCONNECTION SWITCHING UNIT/S <i>(if not integrated into one of the components of the embedded generator)</i>			
SSEG RATING (kVA) AND POWER FACTOR <i>(under normal running conditions)</i>			
SINGLE-PHASE OR THREE-PHASE			
INSTALLER DETAILS			
INSTALLER			
ACCREDITATION / QUALIFICATION			
ADDRESS			POSTAL CODE
CONTACT PERSON			
WORK NO.		CELLPHONE NO.	
E-MAIL ADDRESS			
INFORMATION TO BE ENCLOSED			
FINAL COPY OF CIRCUIT DIAGRAM	ELECTRICAL INSTALLATION CERTIFICATE OF COMPLIANCE	SIGNED CONTRACT FOR SSEG	
COMPULSORY DECLARATION – TO BE COMPLETED BY ECSA-REGISTERED PR ENG, PR TECH ENG, PR CERT ENG FOR ANY SSEG INSTALLATION OR PR TECHNI ENG FOR RESIDENTIAL SSEG INSTALLATIONS ONLY.			
THE SSEG INSTALLATION COMPLIES WITH THE RELEVANT SECTIONS OF NRS 097-2-1: 2017 AND SOUTH AFRICAN GRID CODES.			
THE LOSS OF MAINS PROTECTION HAS BEEN PROVED BY A FUNCTIONAL TEST CARRIED OUT AS PART OF THE ON-SITE COMMISSIONING <i>(e.g. a momentary disconnection of the grid supply to the SSEG in order to prove that the loss of mains protection operates as expected.)</i>			
PROTECTION SETTINGS HAVE BEEN SET TO COMPLY WITH NRS 097-2-1: 2017 AND THE APPROVED GENERATION CAPACITY MAXIMUM OUTPUT OF THE INVERTER HAS BEEN LIMITED BY APPROPRIATE HARDWARE OR SOFTWARE SETTINGS.			
SAFETY LABELS HAVE BEEN FITTED IN ACCORDANCE WITH NRS 097-2-1: 2017 AND SANS 10142-1.			
THE GRID-TIED SSEG INSTALLATION COMPLIES WITH THE RELEVANT SECTIONS OF SANS 10142-1 AND AN INSTALLATION CERTIFICATE OF COMPLIANCE AND TEST REPORT FOR ELECTRICAL INSTALLATIONS, ARE ATTACHED.			
AND, WHERE APPLICABLE FOR A GRID-TIED HYBRID SSEG INSTALLATION, THE SUITABLY INTERLOCKED CHANGE-OVER SWITCH CONFORMS TO THE REQUIREMENTS OF APPENDIX 4 OF THE REQUIREMENTS FOR SSEG DOCUMENT.			
REVERSE POWER FLOW BLOCKING PROTECTION HAS BEEN INSTALLED AND COMMISSIONED TO PREVENT REVERSE POWER FLOW INTO THE DISTRIBUTION ELECTRICITY NETWORK <i>(where applicable)</i>			
COMMENTS <i>(continue on separate sheet if necessary)</i>			
NAME AND SURNAME			
ECSA-PROFESSIONAL CATEGORY			
ECSA REGISTRATION NO.			
SIGNATURE			
DATE			

APPENDIX 2 – GRID-TIED SSEG DECOMMISSIONING REPORT¹²

SITE DETAILS			
PHYSICAL ADDRESS			
		POSTAL CODE	
ERF NO.			
BUSINESS PARTNER ACCOUNT NO.			
CONTRACT ACCOUNT NO.			
TELEPHONE NO.			
CONTACT DETAILS			
CONTACT PERSON			
WORK NO.		CELLPHONE NO.	
SSEG DETAILS			
MANUFACTURER AND MODEL TYPE			
SERIAL NUMBER/S OF INVERTER/S AND INDEPENDENT DISCONNECTION SWITCHING UNIT/S <i>(if not integrated into one of the components of the embedded generator)</i>			
SSEG RATING (A)			
TYPE OR PRIME MOVER AND FUEL SOURCE			
DECOMMISSIONING AGENT DETAILS			
NAME			
ACCREDITATION / QUALIFICATION			
ADDRESS			
		POSTAL CODE	
CERTIFICATE OF COMPLIANCE NUMBER <i>(provide copy of the CoC which confirms that the SSEG has been disconnected effectively from the city's electricity distribution network)</i>			
CONTACT PERSON			
WORK NO.		CELLPHONE NO.	
FAX NO.			
E-MAIL ADDRESS			
FULL NAME			
SIGNATURE			
DATE			

Form version: 2019-02-11

¹² This form is for notifying the City of Cape Town of the decommissioning and removal of a grid-tied SSEG system.