



## Application for Interconnection of Distributed Generation Facility

The following application must be completed in its entirety and returned to the City of Cartersville Electric System (CES) at least 30 days prior to the anticipated interconnection date so that ample time is given to process the request. **At no point is the customer permitted to operate their distributed generation facilities in parallel with CES's electric distribution system until written authorization has been received from CES. In addition, applicable permits must be obtained from the City of Cartersville Building Inspections Department prior to installation of the distributed generation and any associated equipment.**

### APPLICATION FEE

Residential Generators:	No charge
Non-residential Generators:	No charge

### DISTRIBUTED GENERATION POLICY

Customers desiring to interconnect and/or sell electrical energy to CES produced by a distributed generation facility must be eligible for participation.

A distributed generation facility must:

1. Be owned and operated by an electrical customer of CES for production of electric energy; and,
2. Be located on the customer's premises; and,
3. Be connected to and operate in parallel with CES's distribution facilities; and,
4. Be intended primarily to offset part or all of the customer's requirement for electricity; and,
5. Be a "Renewable Energy Source" as defined by the State of Georgia such that energy supplied is from a technology approved in the Georgia Green Pricing Accreditation Program.

CES is not obligated to permit interconnection or to purchase energy from a distributed generation facility that does not meet the requirements above or that has a peak generating capacity exceeding 10 kW per residential installation or 100 kW per nonresidential installation in accordance with The Georgia Cogeneration and Distributed Generation Act of 2001. Requests outside the scope of this policy will be evaluated on a case-by-case basis.

CES will only be required to purchase energy from eligible distributed generation facilities on a first-come, first-served basis until the cumulative generating capacity of all renewable energy sources from all customers equals 0.2% of the City's annual peak demand in the previous year. CES may purchase, but is not obligated to purchase, additional energy at a cost agreed to by it and the customer.

### Metering:

CES will install single directional metering or bi-directional metering for an approved distributed generation facility depending on the customer's method of installation. All installed costs for metering and associated equipment will be paid by the customer prior to distributed generation service being initiated. Net metering is not employed by CES.

Bi-directional metering uses one (1) meter to separately measure both the flow of electricity from the utility to the customer and the flow of electricity from the customer to the utility. Bi-directional metering shall be used where distributed generation facilities are connected on the customer's side of the utility meter.

Single directional metering uses two (2) meters and is used where the generation facilities are not located on the customer's side of the utility meter. One meter measures the flow of electricity from the utility to the customer for the non-generating facility and the other meter measures the flow of electricity from the customer to the utility for the generating facility.

**Payment for energy:**

Payment for electricity shall be consistent with The Georgia Cogeneration and Distributed Generation Act of 2001 (OCGA § 46-3-50).

Bi-directional metering:

- CES shall own the bi-directional meter. CES shall measure electricity provided to customer and electricity received from customer during the billing period.
- Electricity provided to customer shall be billed in accordance with the standard tariff.
- Customer shall be credited for energy delivered to CES in accordance with the distributed generation energy rider.

Single directional metering:

- CES shall own both single directional meters. CES shall measure electricity provided to customer and electricity received from customer during the billing period.
- Electricity provided to customer shall be billed in accordance with the standard tariff.
- Customer shall be billed an administration charge each billing period and credited for energy delivered to CES in accordance with the distributed generation energy rider.

**Application and approval:**

The customer shall be responsible for all costs associated with distributed generation and ensure a safe and reliable interconnection with CES. All fees, metering, engineering, and installation costs must be paid and the following documents must be completed and approved in their entirety prior to interconnection:

- Application for Interconnection of Distributed Generation Facility
- Electrical Interconnection and Power Exchange Agreement
- Electrical Permit

**Power quality requirements:**

Power accepted from customer shall conform to the following power quality requirements:

Voltage – The system must operate within 88 to 110% of nominal voltage and must trip off-line in response to voltages outside this range as follows:

V<50%	10 cycles max.
50%≤V<88%	120 cycles max.
88%≤V≤110%	normal operation
110%<V≤120%	60 cycles max.
V>120%	10 cycles max.

Flicker – The system shall not create objectionable flicker for other City customers. Flicker is considered objectionable when it either causes a modulation of the light level of lamps sufficient to be irritating to humans or causes equipment malfunction.

Frequency – The system must operate within a frequency range of 59.3 to 60.5 Hz. and must trip off-line in response to frequencies outside this range within 10 cycles.

Waveform Distortion (Harmonics) – The system must have low current-distortion levels to ensure that no adverse effects are caused to other equipment connected to the City's electric system. When the system is serving balanced linear loads, harmonic current injection into the City's network shall not exceed the following levels:

Odd harmonics (h):				
h<11	11≤h<17	17≤h<23	23≤h<35	h≥35
4.0%	2.0%	1.5%	0.6%	0.3%

Maximum Total Demand Distortion (TDD) 5.0%

Even harmonics: Even harmonics are to be limited to 25% of the odd harmonics shown above.

Power Factor – The system must operate at a power factor >0.85 (leading or lagging) when output is greater than 10% of full load.

Islanding Protection – The system must trip off-line and remain off-line in the event of a fault on the customer’s system or loss of source on the City’s electric system.

**Physical requirements:**

The customer’s over-current protective device at the service panel must be dedicated and must be capable of interrupting the maximum available fault current and shall be clearly marked to indicate power source and connection to the City’s electric system.

Customer is required to provide CES a readily accessible solid blade disconnect switch adjacent to the service point on the exterior of the building suitable for a utility lock. As determined by CES, the switch must meet “visible air gap” requirements, be placed at an approved location, be dedicated to utility, permanently marked “GENERATION DISCONNECT”, and must be capable of interrupting the maximum available fault current of customer’s distributed generation system.

**Renewable energy credits:**

The City may accept, but is not obligated to accept, renewable energy credits from the customer. If customer anticipates transferring renewable energy credits to the City, an approved meterbase must be installed adjacent to the above mentioned disconnect suitable for a City meter (production meter). CES shall own the production meter and CES shall measure electricity produced during the billing cycle.

**Inspection and disconnection:**

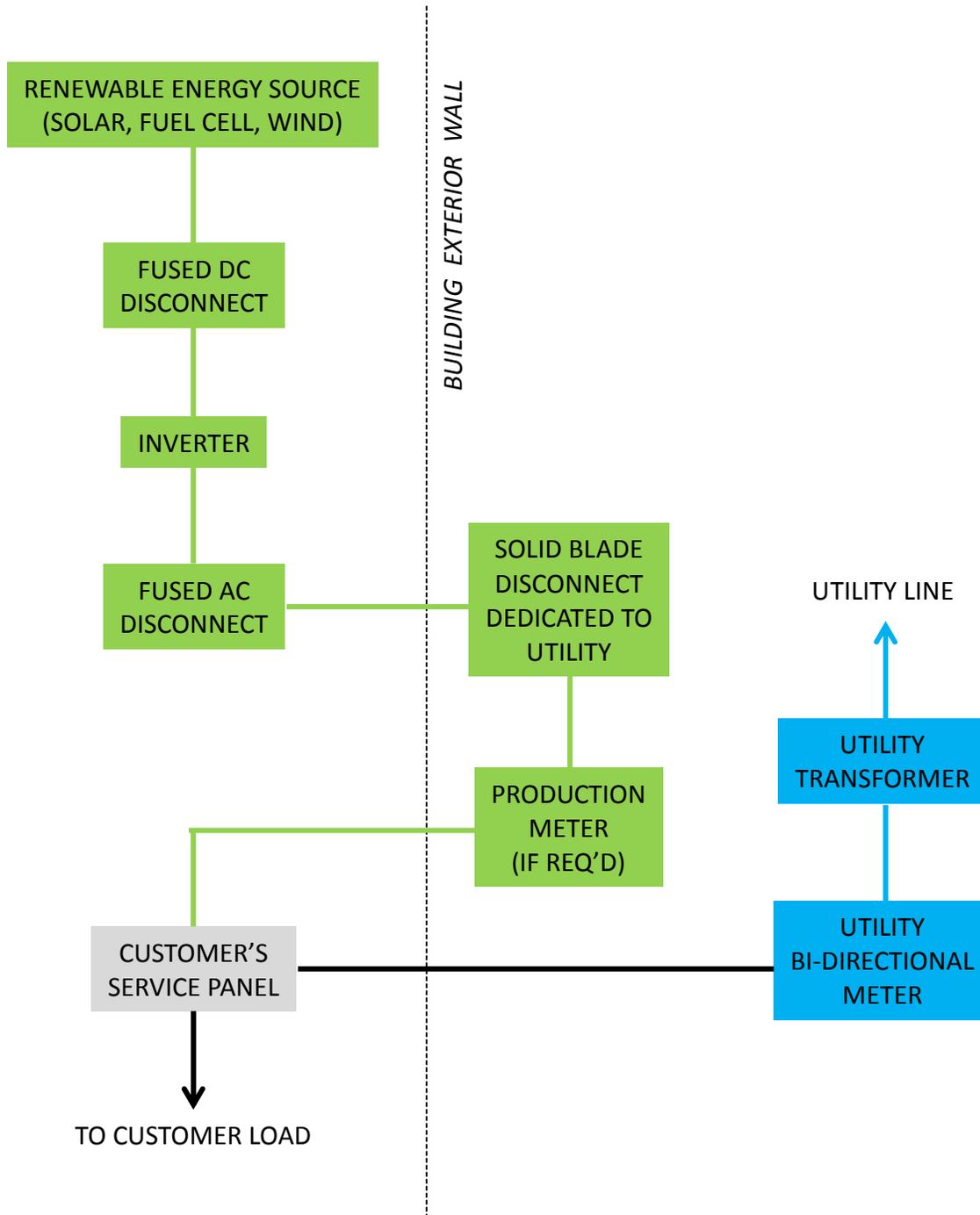
CES reserves the right to inspect and test customer’s equipment at any time to ensure proper operation, compliance with safety requirements, or compliance with power quality requirements. CES may separate customer generation from utility system when, as determined by CES, customer system is unsafe or not in compliance.

CES reserves the right to separate customer generation from utility system when, as determined by CES, continued parallel operation with distribution system is unsafe or may cause damage to persons or property or when working on de-energized lines to isolate all sources of generation.

If utility service to customer is disconnected for any reason, distributed generation service will also be disconnected.

CES shall not be liable to any person, directly or indirectly, for loss of property, injury, or death resulting from the interconnection of a cogenerator or distributed generation facility to its electrical system.

# CUSTOMER DISTRIBUTED GENERATION TYPICAL CONNECTION – BI-DIRECTIONAL METERING



**SECTION 1 – APPLICANT CONTACT INFORMATION**

CES Account Number: \_\_\_\_\_

Applicant Contact: \_\_\_\_\_

Applicant Owner/Company: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

**SECTION 2 – GENERATING FACILITY LOCATION**

Address: \_\_\_\_\_

**SECTION 3 – CONSULTING ENGINEER OR CONTRACTOR CONTACT INFORMATION**

Consultant/Contractor Contact: \_\_\_\_\_

Consultant/Contractor Company: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

**SECTION 4 – GENERATING FACILITY/INVERTER INFORMATION**

Generator Type: (circle one) Photovoltaic Wind Fuel Cell Hydro Geothermal Other (specify)

Manufacturer: \_\_\_\_\_

Model Name and Number: \_\_\_\_\_

kW Rating: \_\_\_\_\_ kVA Rating: \_\_\_\_\_ Interconnection Voltage: \_\_\_\_\_

Will you supply the necessary var requirements?: (circle one) yes no

Disconnect Switch Manufacturer/Model Number: \_\_\_\_\_

Disconnect Switch Rating: \_\_\_\_\_ THD: \_\_\_\_\_ Max. Fault Current: \_\_\_\_\_

External Disconnect: (circle one) yes no If yes, location: \_\_\_\_\_

Can the system export power? (circle one) yes no Rated Frequency: \_\_\_\_\_

**SECTION 5 – RENEWABLE ENERGY CREDITS (REC’s)**

Is transfer of REC’s to City anticipated? (circle one) yes no

External utility production meter: (circle one) yes no

**SECTION 6 – ONE-LINE DIAGRAM AND ADDITIONAL INFORMATION**

One-Line Diagram Attached: (circle one) yes no Product Literature Attached: (circle one) yes no

Obtained Electrical Permit: (circle one) yes no

**Note: One-line diagram must include all major equipment including, but not limited to, generators, inverters, circuit breakers, and protective relays.**

**SECTION 7 – EXISTING ELECTRIC SERVICE**

Main Panel Ampere Rating: \_\_\_\_\_ Main Panel Voltage Rating: \_\_\_\_\_

Service Character: (circle one) Single phase Three phase

**SECTION 8 – DISTRIBUTED GENERATION INSTALLATION INFORMATION**

Is the normal operation of this generator intended to provide power to meet base load, demand management, standby, back-up, or other? (describe) \_\_\_\_\_

Estimated In-Service Date: \_\_\_\_\_ Estimated Interconnection Date: \_\_\_\_\_

**SECTION 9 – APPLICANT’S CERTIFICATION**

**I, the Applicant, certify that I have read and understand CES’s Distributed Generation Policy and that the information provided in this Application is true and accurate to the best of my knowledge.**

Printed Name of Applicant: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**SECTION 10 – TO BE COMPLETED BY CES PERSONNEL**

CES Contact: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

Address: \_\_\_\_\_

Application accepted for review: (circle one) yes no If no, why: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Project Approval: (circle one) Approved Not Approved If not approved, why: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Type customer: (circle one) Residential Non residential

Utility metering: (circle one) Bi-directional Single directional

Production meter: (circle one) Yes No

Renewable Energy Credits: (circle one) Yes No

Fees: Metering: \_\_\_\_\_

Engineering: \_\_\_\_\_

Installation: \_\_\_\_\_

Total Fee: \_\_\_\_\_

Director's Signature (if approved): \_\_\_\_\_

Date Interconnection/Power Exchange Agreement forwarded to Applicant: \_\_\_\_\_

Date Interconnection/Power Exchange Agreement received from Applicant: \_\_\_\_\_

Date Interconnection/Power Exchange Agreement approved by Council: \_\_\_\_\_