



# Central Texas Electric Co-op

P.O. Box 553 • Fredericksburg, Texas 78624-0553

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## CENTRAL TEXAS ELECTRIC COOPERATIVE, INC. Interconnection with Small Power Producing Facilities Basic Outline & Steps for Interconnection

1. Member contacts CTEC and requests information for interconnection.
2. CTEC sends packet of information, containing Tariff, Interconnection Agreement, and basic one-line electric drawing.
3. If needed, member requests meeting to obtain additional information.
4. Member submits completed agreement, including insurance certificate.
5. Member informs CTEC of completed installation and requests on-site inspection by CTEC.
6. CTEC inspects system and approves interconnection, or requests changes to installation.
7. Upon approval, CTEC executes agreement and informs Billing Department of interconnection, with notice of metering option selected by Member.

Central Texas Electric Cooperative, Inc.  
Tariff for Electric Service

340 Interconnection with Distributed Generation

Section 340 of this tariff and all subsections thereof apply to the interconnection and parallel operation of all qualifying (QF) and non-qualifying (NQF) power generating installations having a design capacity of 10 Megawatts (10MW) or less, as well as to electric utility service to such generating installations. Qualifying generating facilities are those facilities using renewable resources, (such as wind, photovoltaics, biomass, etc.), to power the generating unit (see 340.5 Definitions). Power generating installations having a design capacity of 100 kilowatts or less shall be classified as "Small Power Producers". Power generating installations having a design capacity of more than 100 kilowatts, up to 10 MW, shall be classified as "Large Power Producers". If any other part of these tariffs shall be in conflict with this section, Section 340 shall govern with respect to both small and large power production generating installations. By agreement, the Cooperative and a Large Power Producer may establish additional or different terms, conditions, or rates for the sale or purchase of electricity. Nothing in this tariff shall be construed or interpreted to require the Cooperative to enter into a "Purchase Power" agreement with any Producer.

340.1 Obtaining Interconnection

Any person owning or operating a power generating installation (hereafter called "Producer") and desiring to interconnect with the Cooperative's system shall:

A. Comply with Tariff

Producer shall apply for interconnection, provide an easement satisfactory to the Cooperative, and otherwise comply with the tariffs of the Cooperative.

B. Provide Information

1. Small Power Producers

At least 60 days in advance of interconnection, Producer shall submit a plan showing the electrical design of the generating installation including equipment for interconnection with the Cooperative's system. Producer shall also provide such additional information as may be required by the Cooperative. In the event Producer's plan involves the use of non-standard equipment or design techniques the Cooperative may require such plan be approved by a registered professional engineer. Any review or acceptance of such plan by the Cooperative shall not impose any liability on the Cooperative and does not guarantee the adequacy of Producer's equipment to perform its intended function.

The Cooperative disclaims any expertise or special knowledge relating to the design or performance of generating installations and does not warrant the efficiency, cost-effectiveness, safety, durability or reliability of generating installations.

Central Texas Electric Cooperative, Inc.  
Tariff for Electric Service

2., Large Power Producers

At least 180 days in advance of interconnection, Producer shall submit a plan showing the electrical design of the generating installation including equipment for interconnection with the Cooperative's system. Producer shall also provide such additional information as may be required by the Cooperative. In the event Producer's plan involves the use of non-standard equipment or design techniques the Cooperative may require Producer's plans be approved by a registered professional engineer.

Any review or acceptance of such plan by the Cooperative shall not impose any liability on the Cooperative and does not guarantee the adequacy of Producer's equipment to perform its intended function.

The Cooperative disclaims any expertise or special knowledge relating to the design or performance of generating installations and does not warrant the efficiency, cost-effectiveness, safety, durability or reliability of generating installations.

C. Pay for Extension of Cooperative's Facilities

Comply with conditions for extension of the Cooperative's distribution system as may be determined by the Cooperative in accordance with the following extension policy:

If an extension of Cooperative's distribution system is required for sale or receipt of electric energy to or from a generating installation, whether or not in conjunction with another use, the Cooperative shall exercise prudent judgment in determining the conditions under which such extension will be made. Each case shall be viewed individually considering (1) cost to provide service, (2) longevity of the load, (3) annual load factor, (4) possibility of other loads developing along the proposed line extension, (5) longevity, capacity, and dependability of power to be received by the Cooperative, (6) anticipated annual revenue, and (7) compatibility with planned system improvements.

The Cooperative may require Producer to pay a contribution in aid-of-construction, advance for construction, or increased annual or monthly minimums and may require a contract term of up to five years.

D. Provide Liability Insurance

1. Small Power Producers

Furnish a certificate from Producer's insurance carrier showing satisfactory homeowner's or company insurance which insures Producer against all claims for property damage and for personal injury or death arising out of, resulting from or in any manner connected with the installation, operation and maintenance of the Producer's generating equipment. The amount of such

**Central Texas Electric Cooperative, Inc.  
Tariff for Electric Service**

insurance coverage shall be at least \$500,000.00 per occurrence. The certificate shall also provide that the insurance policy will not be changed or canceled during its term without thirty (30) days written notice to the Cooperative.

2. Large Power Producers

Furnish a certificate from Producer's insurance carrier showing satisfactory liability insurance including contractual liability insurance covering indemnity agreements which insures Producer against all claims for property damage and for personal injury or death arising out of, resulting from or in any manner connected with the installation, operation and maintenance of the Producer's generating equipment. The amount of such insurance coverage shall be at least \$1,000,000.00 per occurrence. The certificate shall also provide that the insurance policy will not be changed or canceled during its term without thirty (30) days written notice to the Cooperative.

E. Sign Contract

1. Small Power Producers

Sign and deliver to the Cooperative an Agreement for Interconnection and Parallel Operation of a Cogeneration or Small Power Production Installation; 100 KW or less, the form of which is contained in these tariffs.

2. Large Power Producers

Sign and deliver to the Cooperative an Agreement for Interconnection and Parallel Operation of a Large Power Production Installation; 10 MW or less, the form of which is contained in these tariffs.

F. Complete Construction

Construct the power generating installation and install a disconnect switch and other protective equipment as may be required by the Cooperative to protect its personnel, facilities, and operations.

G. Comply with Laws

Comply with all applicable federal, state, and local laws, ordinances and regulations applicable to power generating installations.

H. Notify Cooperative

Notify the Cooperative in writing at least thirty (30) days in advance of energizing the power generating installation and permit the Cooperative to inspect and test protective equipment.

Central Texas Electric Cooperative, Inc.  
Tariff for Electric Service

I. Eliminate Conditions Preventing Interconnection

In the event that it comes to the attention of the Cooperative that there are conditions preventing safe interconnection and proper parallel operation it shall notify Producer and Producer shall not interconnect and/or initiate parallel operation until such conditions are corrected and Producer has provided at least ten (10) days written notice to the Cooperative.

The foregoing are conditions precedent to any obligation of the Cooperative to interconnect to provide any form of electric utility service.

340.2 Parallel Operation

A. Installation

With the exception of only the Cooperative's meter(s), the Producer shall own and be solely responsible for all expense, installation, maintenance and operation of the power generating installation at and beyond the point where Producer's conductors contact Cooperative's system. The Producer's generating installation shall be designed and installed in accordance with applicable codes, regulations and prudent engineering and utility practices.

B. Self Protected Generating Installation

The Producer shall meet all requirements as specified for its particular installation as described in IEEE Standard 1547 – Standard for Interconnecting Distributed Resources with Electric Power Systems and IEEE Standard 1547.1—Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems.

The Producer will furnish, install, operate and maintain in good order and repair all equipment necessary for the safe operation of the power generating installation in parallel with the Cooperative's electric distribution system. The equipment will have the capability to both establish and maintain synchronism with the Cooperative's system and to automatically disconnect and isolate the generating installation from the Cooperative's system in the event of an outage of the Cooperative's system or a malfunction of the power generating installation.

The Producer's power generating installation will also be designed, installed and maintained to be self-protected from normal and abnormal conditions in the Cooperative's electric distribution system. The conditions for which the power generating installation shall be self-protected shall include, but not be limited to, overvoltage, undervoltage, overcurrent, frequency deviation, and faults. The self protection will be compatible with the Cooperative's system protection arrangements and operating policies. Specialized protective functions may be required by the Cooperative when, in the sole judgment of the Cooperative, the

Central Texas Electric Cooperative, Inc.  
Tariff for Electric Service

particular generating installation characteristics and/or distribution system characteristics so warrant.

C. Quality of Service

Producer's generating installation will generate power at the nominal voltage of the Cooperative's electric distribution system at the Producer's delivery point plus or minus five percent (5%) at the nominal system frequency of 60 hz plus or minus one-tenth (1/10) hz. Producer shall generate at a power factor that is as near one hundred percent (100%) as is practicable. In the event that the power factor is less than ninety eight percent (98%) lagging or leading, the Producer will provide proper power factor correction (within two percent (2%) of unity) or reimburse the Cooperative for the cost of any necessary correction.

The overall quality of the power provided by Producer including, but not limited to, the effects of harmonic distortion, voltage regulation, voltage flicker, switching surges and power factor, will be such that the Cooperative's electric distribution system is not adversely affected in any manner. In the event that adverse effects are caused in whole or in part by Producer's power generating installation, the Producer will correct the cause of such effects or reimburse the Cooperative for the cost of any required correction.

D. Safety Disconnect

The Producer, or at the Producer's option, the Cooperative, shall provide and install, at the Producer's expense, a visible break disconnect switch. The disconnect switch will be located so as to be readily accessible to Cooperative personnel in a location acceptable to both the Producer and the Cooperative. It shall be the type of switch which can be secured in an open position by a Cooperative padlock. The Cooperative shall have the right to lock the switch open whenever, in the judgment of the Cooperative, (1) it is necessary to maintain safe electrical operating or maintenance conditions, (2) the Producer's power generating installation adversely affects the Cooperative's electric distribution system, or (3) there is a system emergency or other abnormal operating condition which warrants disconnection.

The Cooperative reserves the right to operate the disconnect for the protection of the Cooperative's system even if it affects Producer's power generating installation. In the event the Cooperative opens and closes the disconnect switch it shall not be responsible for energization or restoration of parallel operation of the generating installation. The Cooperative will make reasonable efforts to notify the Producer in the event the disconnect switch shall be operated. The Producer will not bypass the disconnect switch at any time for any reason.

Central Texas Electric Cooperative, Inc.  
Tariff for Electric Service

E. Access

Persons authorized by the Cooperative will have the right to enter the Producer's property for the purpose of operating or inspecting the disconnect switch or metering. Such entry onto the Producer's property may be without notice. If the Producer erects or maintains locked gates or other barriers, the Producer will furnish the Cooperative with convenient means to circumvent the barrier for access to the disconnect switch and meter(s).

F. Modifications of Cooperative System

In the event that it is necessary at the time of initial interconnection or at some future time for the Cooperative to modify its electric distribution system in order to purchase or continue to purchase Producer's output, the Producer will reimburse the Cooperative for all just and reasonable costs of modifications which are allocable to the Producer's small power generating installation. The modifications may include, but are not limited to, special interconnection equipment, protective devices, control devices or upgrading of distribution system components.

G. Liability for Injury and Damages

Producer assumes full responsibility for electric energy furnished to him at and past the point of interconnection and will indemnify the Cooperative against and hold the Cooperative harmless from all claims for both injuries to persons, including death resulting therefrom, and damages to property occurring or in any way arising directly or indirectly from Producer's generating installation, regardless of any cause or any fault or negligence or gross negligence of the Cooperative. It is the expressed intention of Producer and the Cooperative that the indemnity provided herein applies not only to protect Cooperative from the consequences of Producer's negligence, but specifically and expressly, to protect the Cooperative from the consequences of Cooperative's own negligence or gross negligence, whether that negligence or gross negligence is the sole or a concurring cause of the injury, death or damages.

The Cooperative shall not be liable for either direct or consequential damages resulting from failures, interruptions, or voltage and wave form fluctuations occasioned by causes reasonable beyond the control of the Cooperative, including, but not limited to, acts of God or public enemy, sabotage and/or vandalism, accidents, fire, explosion, labor troubles, strikes, order of any court or judge granted in any bona fide adverse legal proceeding or action, or any order of any commission, tribunal or governmental authority having jurisdiction.

For claims resulting from failures, interruptions, or voltage and wave form fluctuations occasioned in whole or in part by the negligence of the Cooperative or its agent (s), the Cooperative shall be liable only for that portion of the damages arising from personal injury, death of persons, or costs of necessary

## Central Texas Electric Cooperative, Inc. Tariff for Electric Service

repairs to or reasonable replacement of electrical equipment proximately caused by the negligent acts of the Cooperative or its agent (s). The Cooperative shall not be liable in any event for consequential damages.

### H. Metering

If the output of the Producer's generating installation is to be purchased by the Cooperative, it will be measured by meters as required for the metering option chosen by the Producer. Any necessary meter(s) or meter modification in addition to one standard service meter will be installed, maintained and operated by the Cooperative at the Producer's expense. A connection will be provided for the meter(s) at the Producer's expense in a location that is acceptable to both the Cooperative and the Producer. The Cooperative may, at its own expense, supply, install and maintain load research metering for the purpose of monitoring and evaluating the Producer's generating installation.

The metered output of Producer's generating installation will be read by the Cooperative and, at the election of the Cooperative, accumulated or monthly readings may be checked at least monthly by representatives of the Cooperative.

The meter(s) will, by comparison with accurate standards, be tested and calibrated as often as necessary. The Producer or the Cooperative may reasonably request such tests, and shall be given notice of not less than five (5) working days when such tests are to be made. Both the Producer and the Cooperative will have the right to be present at such tests. If a meter is found to be inaccurate, it shall be restored to an accurate condition or replaced. If the tests disclose that no unacceptable inaccuracies exist in the meter(s), then the party requesting the tests shall bear the expense of the tests. A report of the results of any tests shall be furnished promptly by the party making such tests to the other party. Any meter(s) registering a deviation of not more than two percent (2%) from normal shall be deemed accurate. The readings of any meter(s) which have been inaccurate shall be corrected according to the percentage of inaccuracy as determined by the tests for a period of no more than ninety (90) days prior to the tests. If any meter fails to register for any period, the facility output during such period shall be estimated in the best manner possible as agreed upon by the Cooperative and the Producer.

### I. Additional Metering Option

Producers using renewable resources with an aggregate design capacity of 100 kilowatts or less shall be offered the option of interconnecting through a single meter that runs forward and backward ("net metering").



Central Texas Electric Cooperative, Inc.  
Tariff for Electric Service

J. Notice of Change in Installation

Producer will notify the Cooperative in writing fifteen (15) days in advance of making any change affecting the characteristics, performance, or protection of the generating installation. If it comes to the Cooperative's attention that the modification will create or has created conditions which may be unsafe or adversely affect the Cooperative's system then it shall notify Producer and Producer shall immediately correct such condition.

K. Insurance

Producer shall continue to maintain insurance as required by the Cooperative prior to interconnection and shall provide proof of such insurance to the Cooperative at least annually.

340.3 Sales to Producer

Producer's rate class shall be designated by the Cooperative in accordance with the availability and type of service provisions in its rate schedules for all service including Backup, Supplementary, Interruptible, and Maintenance.

340.4 Purchases from Producer

A. Rate

The Cooperative will pay Producer for all power purchased at the following rates:

1. Capacity – No payment unless:

Producer provides firm power by contract and Producer's installation has a nominal operating output of 50 KW or more. The capacity payment shall be negotiated by and between the Cooperative and Producer.

2. Energy

The metered KWH output from the Producer will be purchased at the Cooperative's total purchased power cost divided by the total kilowatt hours purchased as calculated from the Cooperative's most recent wholesale power bill.

In the event that the Producer exercises the option to sell power to the Cooperative, there will be, in addition to the minimum monthly bill requirements and access charges under the applicable service rate schedule(s), a customer service charge of \$15.00 per month for metering and billing.

Central Texas Electric Cooperative, Inc.  
Tariff for Electric Service

B. Refusal to Purchase

The Cooperative may, at certain times and as operating conditions warrant, reasonably refuse to accept part or all of the output of the Producer's facility. Such refusal shall be based on system emergency constraints, special operating requirements, adverse effects of the Producer's facility on the Cooperative's system or violation by the Producer of the terms of the Interconnection Agreement.

340.5 Definitions

- A. Power Generating Installation shall mean a small or large power production or cogeneration facility, including any generator, and associated equipment, wiring, protective devices, or switches owned or operated by Producer.
- B. A "qualifying facility" shall mean a power production facility qualifying under Subpart B of the Federal Energy Regulatory Commission's Regulations under Section 201 of the Public Utility Regulatory Policies Act of 1978, including any generator, and associated equipment, wiring, protective devices, or switches owned or operated by Producer.
- C. Producer means any person, firm, corporation, partnership, or other entity owning or operating a power generating installation.

340.6 Tariff Revision

This tariff and its requirements are subject to review, reconsideration and updates every five years, or more frequently if the Cooperative determines such review, reconsideration, and updates are necessary.

**AGREEMENT FOR INTERCONNECTION AND PARALLEL OPERATION OF  
COGENERATION OR SMALL POWER PRODUCTION INSTALLATION; 100 KW OR LESS**

THIS AGREEMENT made this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between \_\_\_\_\_, hereinafter referred to as the "Producer," and Central Texas Electric Cooperative, Inc., hereinafter referred to as the "Cooperative" is as follows:

1. Purpose

Producer owns or intends to own and/or operate a qualifying electric power generating installation and desires to interconnect and operate such installation in parallel with Cooperative's electric distribution system. This agreement defines the relationship between the Cooperative and Producer including terms affecting purchase and sale of electricity as well as reasonable conditions for interconnection and parallel operation.

2. Producer's Generating Installation

The generating installation to which this agreement applies is described as:

Make: \_\_\_\_\_  
Model: \_\_\_\_\_  
Serial #: \_\_\_\_\_  
Fuel or Energy Source: \_\_\_\_\_  
Nameplate Output Rating: \_\_\_\_\_ kw  
Operating Voltage: \_\_\_\_\_ volts  
Connection: \_\_\_\_\_ phase  
Located at: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Emergency Contact:

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_

3. Terms

The Cooperative agrees to use reasonable diligence to provide simultaneous electric service. Interconnection, parallel operation, sales and purchases of electricity will be governed by the Cooperative's Tariff including any and all amendments that may hereafter be approved or ordered by any regulatory authority having jurisdiction, said tariff including all service rules, regulations, and rates is a part of this agreement to the same extent as if fully set out herein and is on file and available at the Cooperative's office in Fredericksburg, Texas.

#### 4. Interconnection

Prior to interconnection Producer shall have (1) fulfilled all requisites for the provision of electric utility service contained in the tariff, (2) provide an interconnection plan and other information; (3) comply with conditions for line extension; **(4) provide satisfactory liability insurance;** (5) sign and deliver this Agreement; (6) complete construction; (7) comply with laws; (8) give notice of intent to energize; and (9) eliminate any conditions preventing interconnection. Producer warrants to Cooperative that Producer's power generating installation is constructed and will be maintained in a safe and reliable condition and will comply with the latest applicable codes.

#### 5. Parallel Operation

Producer is responsible for installation, safe operation, protection, and maintenance of all equipment and wiring at and beyond the point where Producer's conductors contact the Cooperative's conductors. The electrical power generated shall be compatible with Cooperative's standard distribution system at the point of delivery and of such quality that Cooperative's system is not adversely affected. Producer shall install and/or pay for a visible break disconnect switch. The Cooperative shall have access to the disconnect switch and meter(s) at all times.

The Cooperative's liability is limited in accordance with its tariff and Producer agrees to indemnify and hold the Cooperative harmless from all claims except as specified in the tariff.

#### 6. Purchases of Electricity from Producer

Select one of the following options:

- a) The Cooperative will not purchase any output from the generating installation; the Producer's meter(s) shall be modified to prevent reverse metering;
- b) The Cooperative will purchase the net surplus output from the generating installation as measured by a second service meter which records the net surplus output of Producer into the Cooperative's system, where the net surplus is defined to be the accumulated instantaneous output of the Producer in excess of Producer's simultaneous instantaneous load;
- c) The Cooperative will purchase the output of Producer's generating installation as measured by a second meter which records the output while charging the Producer for the Producer's consumption; or
- d) Producer certifies that he/she is using renewable resources and hereby elects to interconnect through a single meter that runs forward and backward ("net metering").

\_\_\_\_\_ **Producer initials here to confirm selection of option listed above.**

The Cooperative will pay for electricity purchased from Producer at the applicable tariff rate for qualifying small power generation installations.

At the option of the Producer, the Cooperative will:

Credit the value of all output purchased from the Producer's generating installation against the monthly bill for service for the month following receipt of the Producer's meter reading(s) for the monthly billing cycle; or

Pay Producer by check for all output purchased from Producer's generating installation within \_\_\_\_\_ days from receipt of the Customer's meter reading(s) for the monthly billing period.

#### 7. Sales of Electric Service to Producer

Producer agrees to pay for electric service in accordance with the rate schedule applicable to \_\_\_\_\_ class. If any tariff or rate is changed by the Cooperative, or by order or consent of any regulatory authority having a jurisdiction thereof whether or not at the request of the Cooperative, such changed tariff, rate, or redefined class of service shall be applicable to service provided hereunder from and after the effective date of such change. Periodically, Cooperative will render to Producer a statement of services rendered. Producer agrees to pay the total amount shown on such statement within sixteen (16) days from its date. Payment shall be made to Cooperative at its office in Fredericksburg, Gillespie County, Texas.

#### 8. Term

The acceptance of this instrument by the Cooperative shall constitute an agreement between the Producer and the Cooperative which shall continue in force for an initial term of \_\_\_\_\_ years (not to exceed 5 years) from the date service is made available by the Cooperative to the Producer. After the initial term, this agreement may be terminated by either party giving at least thirty (30) days written notice to the other.

#### 9. Breach

The failure or refusal to perform any obligation contained in this agreement shall constitute a breach of this agreement. The parties shall have such remedies for breach as may be provided for at law or in equity. Notwithstanding any other provision of this agreement, Cooperative may discontinue service if Producer has breached any portion of this agreement by failure to make timely payment or otherwise.

#### 10. Entire Agreement

This agreement constitutes the entire agreement between the parties and supersedes all prior agreements between Producer and Cooperative for the service herein described, and the Cooperative, its agents and employees have made no representations, promises, or made any inducements, written or verbal, which are not contained herein. Producer agrees that it is not relying on any statements not herein contained.

11. Assignment

This agreement shall not be assigned by Producer except in accordance with the Articles, Bylaws, and rules and regulations of Cooperative. This agreement shall inure to the benefit of Cooperative's assigns.

12. Interconnection Cost

Producer agrees to pay for extension of Cooperative's facilities and other interconnection costs as follows:

\$ \_\_\_\_\_ in advance of any work by the Cooperative;

or

\$ \_\_\_\_\_ per month as an increased monthly minimum over and above the applicable minimum stated in the Cooperative's tariff.

13. Receipt of Tariff

Producer acknowledges receipt of a copy of the Cooperative's tariff.

Central Texas Electric Cooperative, Inc.:

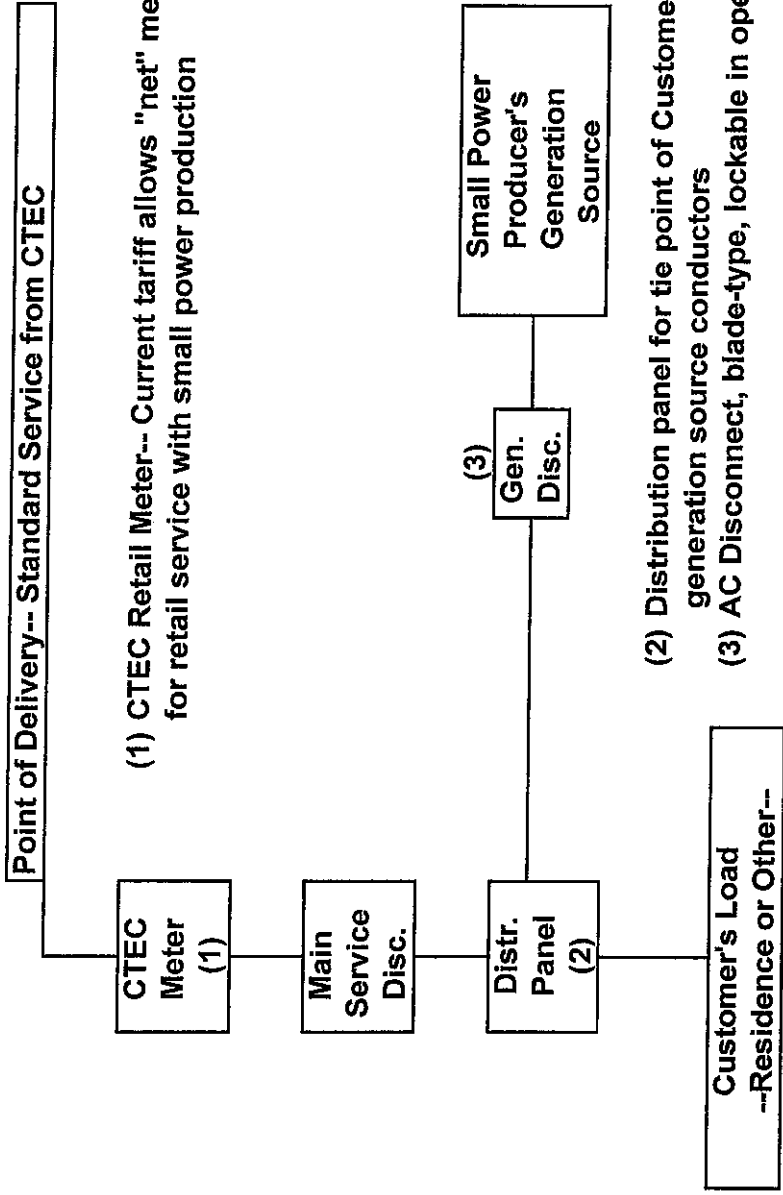
Producer:

By: \_\_\_\_\_  
Robert Loth III

\_\_\_\_\_

Title: Chief Executive Officer

CENTRAL TEXAS ELECTRIC COOPERATIVE, INC.  
Small Power Producers, 100 KW or Less



(1) CTEC Retail Meter-- Current tariff allows "net" metering for retail service with small power production

(2) Distribution panel for tie point of Customer's small power generation source conductors  
(3) AC Disconnect, blade-type, lockable in open position