

City of Brenham
Distributed Generation Ordinance – Summary

The City of Brenham DG Ordinance accomplishes the following:

1. **Allows the interconnection and parallel operation of Distributed Generation facilities** within the City of Brenham electric system under carefully controlled and managed conditions and will provide for the safety and non-interference with the quality and reliability of electric service to other customers and is in the best interests of the general welfare of the City and its residents.
2. **Establishes the requirements and conditions for the interconnection and parallel operation of Distributed Generation facilities** within the City of Brenham electric system that are necessary to protect the health and safety of the City, its employees and residents, are necessary to protect the quality and reliability of the electric distribution system.

The City of Brenham DG Ordinance makes / uses the following definitions:

1. **Definition of Distributed Generation:** An electrical generating facility located at a customer's point of delivery (point of common coupling) of ten (10) megawatts (MW) or less and connected at a voltage less than 60 kilovolts (kV) which may be connected in parallel operation to the Brenham electric system.
2. **Definition of Interconnection:** The physical connection of distributed generation to the utility system so that parallel operation of the City of Brenham distribution system and the distributed generation system can occur.

The City of Brenham establishes the process for a person or entity interested in connecting / operating in parallel:

1. Customer must complete and submit a DG Application to the City of Brenham.
2. Customer must execute an agreement with the City of Brenham that establishes the terms and conditions for the interconnection and parallel operation of the distributed generation system.
3. The City Manager has the authority to execute Agreements with Customers for the interconnection and parallel operation of distributed generation.
4. The Director of Public Utilities is the designated contact person and shall review applications for distributed generation with the required technical documentation and determine compliance with the City of Brenham technical requirements for interconnection and parallel operation of distributed generation.
5. When satisfied that a Customer has complied with the application requirements and that the Customer's system complies with the technical requirements for interconnection and parallel operation of distributed generation, the City Manager will execute an Agreement with the Customer.

The City of Brenham DG Ordinance establishes technical requirements for all DG in the City of Brenham:

1. All interconnections shall comply with P.U.C. SUBST. R. 25.212 and successors. In addition, all interconnections must comply with applicable state and federal laws and regulations.
2. All interconnections must comply with local building and electric codes as adopted by the City of Brenham. Installation of all interconnections shall be inspected by the City of Brenham. Inspection and approval of the installation by the City of Brenham is a condition of interconnection and parallel operation of distributed generation.
3. Variations from the Technical Requirements must be reviewed and approved by the City Manager prior to implementation. Variations in the point of interconnection must be approved by the City Manager and included in the Agreement approved by the City Council.

The City of Brenham DG Ordinance technical requirements require a manual load break switch:

1. The Customer must install a manual load break switch that provides clear indication of the switch position at the Point of Interconnection to provide separation between the City of Brenham (COB) electrical system and the Customer's electrical generation system.
2. The location of the disconnect switch must be approved by the City of Brenham.
3. The disconnect switch must be easily visible, mounted separately from metering equipment, readily accessible to City of Brenham personnel at all times, and capable of being locked in the open position with a City of Brenham padlock.
4. The City of Brenham reserves the right to open the disconnect switch isolating the Customer's electrical generating system (which may or may not include the Customer's load) from COB electrical system for the following reasons:
 - a. To facilitate maintenance or repair of the COB electrical system.
 - b. When emergency conditions exist on the COB electrical system.
 - c. When the Customer's electrical generating system is determined to be operating in a hazardous or unsafe manner or unduly affecting the COB electrical system waveform.
 - d. When the Customer's electrical generating system is determined to be adversely affecting other electric consumers on the COB electrical system.
 - e. Failure of the Customer to comply with applicable codes, regulations and standards in effect at the time.
 - f. Failure of the Customer to abide by any contractual arrangement or operating agreement with the City of Brenham.

The City of Brenham DG Ordinance technical requirements establish the following power quality standards:

1. The Customer must provide an automatic method of disconnecting generation equipment from the COB electrical system.
2. There are important power quality standards that must be met by DG installations / interconnections. These include standards for the following:
 - Voltage
 - Frequency
 - Harmonics
 - Flicker
 - Power factor

The City of Brenham DG Ordinance technical requirements establish requirements related to a loss of source situation.

The Customer must provide approved protective equipment necessary to immediately, completely and automatically disconnect the Customer's electrical generation equipment from the COB electrical system in the event of a fault on the Customer's system, a fault on the COB system or loss of source on the COB system. Such protective equipment shall conform to the criteria specified in UL 1741 and IEEE 1547.

The Customer's generating system must automatically disconnect from the grid within 10 cycles if the voltage on one or more phases falls and stays below 70% of nominal voltage for at least 10 cycles. The automatic disconnecting device may be of the manual or automatic reclose type and shall not be capable of reclosing until after the COB service voltage and frequency are restored to within the normal operating range and the system is stabilized.

The City of Brenham DG Ordinance technical requirements establish requirements related to coordination and synchronization.

The Customer is solely responsible for coordination and synchronization of the Customer's electrical generating system with all aspects of the COB electrical system, and the Customer assumes all responsibility for damage or loss that may occur from improper coordination and synchronization of its generating system with the COB electrical system.

The City of Brenham DG Ordinance technical requirements establish policies and procedures related to metering of DG systems.

The actual metering equipment is dependent upon the type, size and location of the electric service provided. In situations where power may flow both in and out of the Customer's electrical system, power flowing into the Customer's electrical system may be measured separately from power flowing out of the Customer's electrical system. City of Brenham will provide, subject to existing rate schedules at the time of application, the metering equipment necessary to measure capacity and energy delivered to and from the Customer.

The City of Brenham DG Ordinance technical requirements establish policies and procedures for interconnection studies and the specific requirements for “pre-certified” DG systems.

If City of Brenham determines that an interconnection study is necessary, City of Brenham will perform the study under reasonable terms and conditions agreed upon by both the Customer and COB and at the Customer’s sole expense. No study fee will be charged if the proposed generation site is not on a networked secondary and if all of the following apply:

1. Proposed generation equipment is pre-certified.
 - Generation equipment that are less than 20 kW AC shall be considered pre-certified:
 - a. If a UL 1741 listed inverter that also meets IEEE 1547 specifications is used as well as UL 1703 listed PV modules.
 - b. Proposed generation system does not expect to export more than 15% of total load on the feeder.
 - c. Proposed generation system does not contribute more than 25% of the maximum possible short circuit current of the feeder.

The City of Brenham DG Ordinance technical requirements establish policies and procedures for protection of the City of Brenham electric system.

The distributed generation facility must have interrupting devices capable of interrupting the maximum available fault current, an interconnection disconnect device, a generator disconnect device, an over-voltage trip, an under-voltage trip, an over/under frequency trip and a manual or automatic synchronizing check (for facilities with standalone capability). Facilities rated over 10kW, three-phase, must also have reverse power sensing and either a ground over-voltage or a ground over-current trip depending on the grounding system. Grounding shall be done in accordance with UL 1741, IEEE 1547 and NEC Article 250.

Three-Phase generators have additional technical devices with electronic or electromechanical control.

The City of Brenham DG has attached in “Exhibit A”, an Application Form for the “Interconnection and Parallel Operation of Distributed Generation within the City of Brenham Electric System”.

The application applies to interconnection and parallel operation of distributed generation on the electric service at the Customer’s location and agrees that the service will be supplied and used in accordance with the terms and conditions of The City of Brenham Distributed Generation Ordinance.

The application form includes sections for the following information:

1. Customer – Account Information
2. Generator Information
3. Project checklist
4. Signatures and approval section

The City of Brenham DG has attached in "Exhibit B", an Agreement for the "Interconnection and Parallel Operation of Distributed Generation within the City of Brenham Electric System".

The DG agreement is for City of Brenham customers that intend to construct, own, operate, maintain and connect to the COB electric distribution system, a Distributed Generation system less than 10MW in size.

The Customer is required to install, operate and maintain the DG System in full and faithful compliance with all applicable federal, state and local laws, ordinances, rules and regulations, and generally accepted industry codes and standards, including the National Electrical Safety Code and the National Electrical Code.

The Customer is responsible for all permits, inspections, approvals, and/or licenses necessary for the installation or operation of the DG System. The Customer must ensure that the installed DG system has been successfully tested to UL 1741, IEEE 1547 or IEEE 929 standards, or has been satisfactorily tested by an independent laboratory with published results. The Customer shall provide manufacturer's data or other written proof acceptable to City of Brenham to verify the accuracy of the foregoing warranties and representations.

The City of Brenham will purchase from Customer, the electrical output made available to City of Brenham at the point of delivery from the DG system. City of Brenham shall pay Customer for the Electrical Output of the DG system that exceeds the electric energy purchased by Customer from COB at the avoided cost rate.

The Customer is solely responsible for the design, installation, operation, maintenance, and repair of the DG System and Customer's interconnection facilities. The interconnection of the DG System to the COB electrical system shall comply with the Public Utility Commission of Texas Substantive Rules §25.212 relating to Technical Requirements for Interconnection and Parallel Operation of On-Site Distributed Generation.

The City of Brenham will inspect the DG System and the interconnection equipment. All costs to interconnect with the City of Brenham are the responsibility of Customer.

The City of Brenham has the right to require Customer to temporarily curtail, interrupt, or reduce, deliveries of energy in order to construct, install, maintain, repair, replace, remove, investigate, inspect, or test any part of the interconnection facilities, equipment, or any part of the COB electric system.

City of Brenham can disconnect, without notice, the DG System from the electric distribution system, if, in COB's opinion, a hazardous condition exists and such immediate action is necessary to protect persons, or COB's facilities or other Customers' facilities from damage or interference caused by Customer's DG System or lack of properly operating protective devices.

The Customer must maintain liability insurance including contractual liability insurance covering the indemnity with City of Brenham. The amount of such insurance coverage shall be at least \$500,000 per occurrence, \$1,000,000 general aggregate. The Customer must furnish a certificate showing proof of insurance. This insurance requirement will not apply to systems of 20 kW or less that are UL 1741 listed and meet the requirements of IEEE 1547 and are installed in accordance with the National Electric Code.