



Lodi Electric Utility

Rules and Regulations No.21

NON-CITY-OWNED PARALLEL GENERATION

Revision: 04

Summary of changes:

Revision	Date	Council Resolution	Summary of Changes	Comments
1	3/22/1989	89-29	-Initial Release	
2	5/18/1994	94-58	-Minor revisions were made	
3	6/21/2006	2006-120	-Changed the amount of liability insurance required for small electrical generators in accordance to the California Public Utilities Commission	
4	9/4/2019	2019-182	-Revisions page added -Formatting changes -Made Smart Inverters and receiving data from them necessary for future installations -Added references to “Lodi Municipal Code” Sections 13.20.290 and 13.20.300 -Updated the “Application Process” Section -Updated the “Liability” Section to match the “Lodi Municipal Code” -Updated the “Metering Requirements” Section	



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NON-CITY-OWNED PARALLEL GENERATION

A. General

1. The City will interconnect and operate in parallel with co-generators and small power producers. Such facilities shall be termed "Generating Facilities (GF)."
2. The City has the option of purchasing the power output of such GF per "Lodi Municipal Code" Sections 13.20.290 and 13.20.300, or providing facilities and services to allow sale to an adjacent utility with whom the owner of the GF has made prior contractual arrangements for receiving of such power. City has the option to allow sale but is not required to do so.
3. Nothing in these Rules shall limit the City's ability to evaluate each GF and determine terms and conditions that are mutually satisfactory to all parties and insure safe and effective operation without adverse effects on other customers and City equipment or personnel.

B. Application Process for a GF

1. GF generating under 1 MW
 - a. Turn in two sets of electric drawings, a "Service & Meter Application", an "Electrical Interconnection Agreement", and a copy of "CSI EPBB Results" to LEU for pre-approval.
 - b. After pre-approval, apply for a building permit from the Community Development Department- Building and Safety Inspection Division, as further described in the "Photovoltaic Solar Installation Guidelines".
 - c. Reference "Lodi Municipal Code" Section 13.20.290.
2. GF generating 1 MW or more
 - a. Turn in two sets of electric drawings, a "Service & Meter Application", an "Electrical Interconnection Agreement", and a copy of "CSI EPBB Results" to LEU, for pre-approval.



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- b. After pre-approval, apply for a building permit from the Community Development Department- Building and Safety Inspection Division, as further described in the “Photovoltaic Solar Installation Guidelines”.
- c. A contractual agreement must be made by the Applicant and City Council, as further described in the “Lodi Municipal Code” Section 13.20.300.

C. Interconnection Costs

1. All costs incurred by the City for interconnection with the GF must be borne by the GF.
2. The GF shall pay all monthly costs incurred by the City and directly associated with having the GF connected to its system, i.e. communication, administration, etc.
3. If the City agrees to provide the means for a GF to sell its power to an adjacent utility, the GF shall pay the facility charge (wheeling cost) periodically to the City for the cost of providing the facilities to sell to an adjacent utility.
4. Metering and Interconnection Fees, as further described in the “Photovoltaic Solar Installation Guidelines.”

D. Liability

1. The GF shall defend, indemnify and hold harmless the City from any and all liability arising from the operation and interconnection of the GF. The GF shall bear full responsibility for the installation and safe operation of the equipment required to generate and deliver energy to the point of interconnection.
2. The City shall not be liable whether in contract or in tort or under any other legal theory to the owner of a GF, or the owner's customers, or any other person or entity for (1) lost generation revenue, (2) loss of use revenue or profit, (3) cost of capital, (4) substitute use or performance or (5) for any other incidental, indirect, special, or consequential damages.



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3. GF generating 1 MW or more
 - a. The GF shall maintain Worker's Compensation Insurance; the coverage amount will be decided within the contract made with the City.
 - b. The GF shall maintain Public Liability Insurance; the coverage amount will be decided within the contract made with the City.
 - c. Each public liability policy shall name the City as an additional insured. A copy of the said policy or certificate of insurance shall be sent to the City Clerk of the City of Lodi. Provisions shall be made for the City Clerk to be notified within five days of any cancellation of the said insurance policy.

E. Conditions of Interconnection

1. The City shall allow interconnection between its facilities and GF on a continuing basis as long as the parallel operation of the GF does not degrade, in any way, the quality of electric service provided to the City's other customers. The GF shall insure that its operation in no way creates unsafe conditions either at its facility or on the City's facilities.
2. The owner of the GF shall enter into a written agreement with the City for interconnection, sale or disposal of its power prior to actual connection and operation of the GF.
3. The GF shall comply with all requirements of the National Electrical Safety Code, American National Standards Institute (ANSI), Institute of Electrical and Electronic Engineers (IEEE), American Society of Mechanical Engineers (ASME), the National Electric Code, General Order No. 95 and all local, state and federal rules and regulations or codes which may be applicable.

F. Interconnection

1. The owner of the GF shall, to the point of interconnection; furnish, install, operate and maintain in good repair and without cost to the City that includes but isn't limited to relays, locks and seals,



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breakers, automatic synchronizers and other control and protective equipment as shall be designated by the City as suitable for operation of such a facility.

2. The owner of the GF shall provide at no cost to the City a manually operated and lockable, visual disconnect device that shall be for the exclusive use of the City and accessible by City representatives at all times. Usually such device will be an air switch or fused cutouts located near the point of interconnection.
3. The protective switching equipment outlined above in paragraph two (2) may be operated without notice or liability by the City or City representative if, in the opinion of the City or its representative, continued operation of the GF in connection with the utility's system may create or contribute to a system emergency or safety hazard. The City shall endeavor to minimize any adverse effects of such operation on the GF.
4. Any costs of interconnection incurred by the City due to the interconnection of the GF, which are over and above the interconnection costs that would be incurred due to the connection of a comparable non-generating customer, shall be the responsibility of the GF. Special modifications to the City's system may be required if the generator output is large in relation to the feeder capacity. It may be necessary to build a new feeder or re-conductor to the nearest substation that is large enough to accommodate the energy. Station modification may be necessary, such as: voltage check scheme, supervisory control, special protective relaying metering and a new circuit breaker position.
5. The City shall be advised of the proposed start up and parallel time for such facilities and a City representative shall be in attendance and approve parallel operation. The design requirements may change and will be reviewed in each instance.
6. The City will require the GF to install a Smart Inverter.
7. The City will be allowed to gather data given by the Smart Inverter.

G. Protective Equipment

The function of protective equipment, such as fuses, relays and circuit breakers, is to promptly remove the in feed from the GF whenever a fault



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occurs. The protective equipment requirements are not intended to protect the GF from every possible source of damage. The GF may wish to install additional protective equipment to protect its equipment. The requirements have been summarized into three groups with division by the size of the total generation. The division is only approximate and the requirements will be reviewed in each instance.

1. Generator Size Less Than 10 kW:
 - a. The GF is to provide phase over current protection by means of an over current relay or a breaker that provides over current protection on each phase. The generator over current breaker must have the following features, if used:
 1. Thermal, magnetic over current
 2. Under voltage release
 3. Solenoid tripping
 - b. A ground over current sensing scheme must be provided to assure the isolation of the GF from the Distribution System in the event a ground fault occurs - on the distribution line. The protection scheme will vary depending on the transformer connection. As an example, a transformer connected Delta on the generator side of the transformer and grounded Wye on the line side, will require a ground over current relay be connected to the high voltage neutral of the transformer.
 - c. Over and under voltage protection is required.
 - d. Electrical relays or mechanical interlocks must be provided to prevent the GF from being connected parallel to the City's system, if the City's system is de-energized.
2. Generator Size 10 kW - 100 kW:

In addition to the requirements for generators less than 10 kw, under and over frequency protection is required.
3. Generator Size Greater Than 100 kW:

In addition to the requirements for generators 10 kw - 100 kw, directional over current voltage restrained relays will be required in lieu of the phase over current relays.



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H. Power Factor

The power output of the GF must approach unity Power Factor when operated in parallel with the City's facilities. Equipment shall be installed to correct any deficiencies in Power Factor by the owner of the GF and at the GF'S expense.

I. Metering Requirements

1. The point of metering shall be the interface of ownership between the GF and the City.
2. For meter connection requirements, refer to latest City solar installation guidelines.
3. The City shall own and maintain all necessary meters and associated equipment utilized for billing and monitoring the GF as well as the customer's load.

J. GF Operating Requirements

This section provides the operating requirements that the GF must follow.

1. The operation of the GF must not reduce the quality of service to other customers. Abnormal voltages, currents, frequencies, or interruptions are not permitted.
2. The GF will at no time energize a de-energized City circuit, unless directed otherwise by the City.
3. The GF shall not bypass or modify any of the protective equipment.
4. Before the GF attempts to reconnect his system in parallel with the City's system approval from the City Utility Operator must be obtained. Approval is not required if parallel operation ceased due to a lack of sufficient power to the prime mover (such as lack of wind).
5. The GF shall maintain a daily operation log for the generation facility. Such log shall contain information on unit parallel and separation time, maintenance, outages, trip operation and other unusual events. kW and kVAR operating levels may also be



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required. The City shall have the right to periodically review these logs.

6. The GF is responsible for performing scheduled maintenance on the equipment to keep the facility in proper operating condition. The City reserves the right to inspect the GF.
7. The City reserves the right to discontinue parallel generation with reasonable notice for any of the following reasons:
 - a. The City needs to perform non-emergency maintenance, repair or other work on the City system.
 - b. The GF degrades the quality of service to other customers.
 - c. Inspection of the GF or operation log reveals a hazardous condition or a lack of scheduled maintenance.
8. The City reserves the right to open the main disconnecting device and cease parallel operation without prior notice in the event of a system emergency.

K. Billing and Compensation for GF

1. GF generating under 1 MW
 - a. Reference "Lodi Municipal Code" Chapter 13.20, Article III and Section 13.20.290.
2. GF generating 1 MW or more
 - a. Reference "Lodi Municipal Code" Chapter 13.20, Article III and Section 13.20.300.

(End)