



PART 1. OVERVIEW

1. PURPOSE:

The purpose of this document is to establish a standard policy for eligible customers (“Customer”) to interconnect and operate a customer-owned Renewable Electric Generation Facility (“Facility”) in parallel with the City of Painesville Electric Distribution System (“System”). The City of Painesville (“City”) does not offer Net Metering or compensate the Customer for any excess power generated.

2. ELIGIBILITY:

- a. Must be a Residential, Commercial, or Industrial electric consumer with the City and have a single-phase or three-phase service operating at 60 Hertz with a nominal voltage of 120/240 volts or 480 volts furnished through a single bidirectional electric meter.
- b. Customer’s utility account must be in good standing and in compliance with all Rules and Regulations of the City’s Utility Office.
- c. The Facility shall not be sized to exceed the capacity of the Customer’s electric service.
- d. The Facility: 1) must be owned by the Customer; 2) must be located on the Customer’s premises; and 3) must serve only the Customer’s premises.

3. INTERCONNECTION REQUEST:

The Customer shall request interconnection of a Facility by completing and submitting the document entitled “Interconnection Application” to the City. The City may require additional information or clarification to evaluate the Customer interconnection request.

4. ELECTRIC DISTRIBUTION SYSTEM EFFECTS ANALYSIS:

After receiving a properly completed Interconnection Application, the City will analyze the potential impacts of the Facility on the System and on other electric utility customers near the location. Such analyses will be based on prudent utility practice to determine the possibility of issues such as thermal effects, voltage ranges, power quality, system stability, etc.

5. SYSTEM UPGRADES:

Where System upgrades are required prior to interconnection of the Facility as a result of the System Effects Analysis, the City will provide the Customer with an estimated schedule and cost for the needed System upgrades. If the Customer desires to proceed with the System upgrades, the Parties shall enter into a written agreement for the same. The agreement will contain an estimated construction schedule, including commencement and completion dates, and the estimated costs for said System Upgrades.

6. INTERCONNECTION AGREEMENT:

After the Customer and the City have identified and mutually agreed on the project scope including the Facility, System upgrades and estimated costs, the Customer and the City shall execute the attached

document entitled "Interconnection Agreement." The Interconnection Agreement shall be between the City and the Customer and will not include third parties.

7. CODES AND PERMITS:

- a. The Customer shall be responsible for procuring all building, operating, environmental, zoning, or other permits for the Facility and for the necessary ancillary structures to be installed that are required by any Governmental Authority having jurisdiction.
- b. The Facility and interconnecting equipment shall meet the requirements listed in "Part 2. Technical Requirements" of this Policy
- c. The construction and facilities shall meet all applicable building, zoning, and electrical codes.

8. CERTIFICATE OF COMPLETION:

Upon completion of the Facility and prior to the commencement of operation, the Customer shall complete and submit a signed copy of the attached document entitled "Certificate of Completion."

9. NORMAL OPERATION:

The Customer may begin operation of the Facility upon receipt of written approval from the City.

PART 2. TECHNICAL REQUIREMENTS

1. CHARACTER OF SERVICE:

The electric service shall be 60 cycles per second (60 Hertz) alternating current (AC) at supply voltages and number of phases under the electric rate schedule that would apply if the Customer did not have an interconnected generation facility.

2. CODE REQUIREMENTS:

The Facility shall meet all requirements established by the National Electrical Code (NEC), National Electrical Safety Code (NESC), Institute of Electrical and Electronics Engineers (IEEE), Underwriters Laboratories (UL), and the Occupational Safety and Health Administration. Specific applicable codes are shown in Section 7 of this Part 2 below as "Standards for Interconnection, Safety and Operating Reliability." Upon request, a copy of the manufacturer's ownership, operating and maintenance manuals or documents shall be provided to the City with the Customer Interconnection Application.

3. FACILITY CONTROL:

The control system of the Facility shall comply with IEEE and UL specifications and standards for parallel operation with the System and in particular as follows:

- a. Power output control system shall automatically disconnect from the System upon loss of System voltage and shall not reconnect until System voltage has been restored by the City.

- b. Power output control system shall automatically disconnect from the System if System voltage fluctuates beyond plus or minus 10% (ten percent).
- c. Power output control system shall automatically disconnect from the System if frequency fluctuates plus or minus two cycles (2 Hertz).
- d. Inverter output Harmonic Distortion shall meet IEEE and UL standards.
- e. The Facility shall meet applicable IEEE and UL standards concerning impacts to the System with regard to harmonic distortion, voltage flicker, power factor, direct current injection and electromagnetic interference.

4. FAULT CURRENT CONTRIBUTION:

The Facility shall be equipped with protective equipment designed to automatically disconnect from the System during fault current conditions and remain disconnected until System voltage and frequency have stabilized.

5. RECLOSING COORDINATION:

The Facility shall be coordinated with System reclosing devices by disconnecting from the System during de-energized System operation. The Facility shall remain disconnected until System voltage and frequency have stabilized.

6. EXTERNAL GENERATOR AC DISCONNECT SWITCH:

The Customer must install an external alternating current (AC) disconnect switch within six (6) feet of the City electric meter that is visible and readily accessible to City representatives. This switch must be clearly labeled as "Generator AC Disconnect Switch". The switch shall be capable of being locked in an open position and shall prevent the generator from supplying power to the System while in the open position.

7. STANDARDS FOR INTERCONNECTION, SAFETY AND OPERATING RELIABILITY:

The interconnection of a Facility and associated equipment to the System shall meet the applicable provisions of the following publications or successor standards:

- a. ANSI/IEEE1547-2003 Standard for Interconnecting Distributed Resources with Electric Power Systems (including use of IEEE 1547.1 testing protocols to establish conformity). The following standards shall be used as guidance in applying IEEE 1574:
 - i. IEEE Standard 519-1992, IEEE Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems
 - ii. IEC/TR3 61000-3-7 Assessment of emission limits for fluctuating loads in MV and HV power systems

b. UL 1741 Standard for Inverters, Converters and Controllers for Use in Independent Power Systems

c. ANSI/NFPA 70 (2008), National Electrical Code

d. OSHA (29 CFR § 1910.269)

8. ACCESS AND INSPECTION BY CITY:

Customer must provide the City reasonable opportunity to inspect the Facility prior to its interconnection and operation date and to witness initial testing and commissioning of the Facility. The City may witness any commissioning tests required by IEEE 1547/UL 1741.

Following initial testing and inspection of the Facility and upon reasonable advance notice to Customer, the City shall have access at reasonable times to the Facility to perform on-site inspections to verify that the installation, maintenance and operation of the Facility complies with the requirements of these Interconnection Standards. The City cost of such inspection(s) shall be at the City's expense; however, the City shall not be responsible for any other cost Customer may incur as a result of such inspection(s). Upon written request, Customer shall inform the City of the next scheduled maintenance and allow the City to witness the maintenance program and any associated testing.

The City shall at all times have immediate access to the external Generator AC Disconnect Switch to isolate the Facility from the System.

9. FACILITY OPERATION:

a. Customer shall install, operate, and maintain, at Customer's sole cost and expense, the Facility in accordance with the manufacturer's suggested practices for safe, efficient and reliable operation in parallel with the System. Customer shall bear full responsibility for the installation, maintenance and safe operation of the Facility. Upon request from the City, Customer shall supply copies of periodic test reports or inspection logs.

b. Customer shall be responsible for protecting, at Customer's sole cost and expense, the Facility from any condition or disturbance on the System, including, but not limited to, voltage sags or swells, system faults, outages, loss of a single phase of supply, equipment failures, and lightning or switching surges.

c. Customer agrees that, without prior written permission from the City, no changes shall be made to the configuration of the Facility and no relay or other control or protection settings shall be set, reset, adjusted or tampered with, except to the extent necessary to verify that the Facility complies with City-approved settings.

d. Customer shall operate the Facility in such a manner as not to cause undue voltage fluctuations, power quality issues, intermittent load characteristics, or to otherwise interfere with the operation of the System. At all times when the Facility is operated in parallel with the System, Customer shall operate said Facility in such a manner that no disturbance will be produced thereby to the service

rendered by the City to any of its other customers or to any electric system interconnected with the System. Customer understands and agrees that the interconnection and operation of the Facility pursuant to these Interconnection Standards is secondary to, and shall not interfere with, the City's ability to meet its primary responsibility of furnishing reasonably adequate service to its customers.

e. Customer's control equipment for the Facility shall immediately, completely, and automatically disconnect and isolate the Facility from the System in the event of a fault on the System, a fault on Customer's electric system, or loss of a source or sources on the System. The automatic disconnecting device included in such control equipment shall not be capable of reclosing until after service is restored on the System. Additionally, if the fault is on Customer's electric system, such automatic disconnecting device shall not be reclosed until after the fault is isolated from the Customer's electric system.

10. RIGHT TO DISCONNECT FACILITY:

The City shall have the right and authority to isolate the Facility without notice at the City's sole discretion if the City believes that any of the following have occurred or are occurring:

- a. Adverse electrical effects (such as power quality problems) imposed on the System and/or the electrical equipment of other electric utility customers attributed to the Facility as determined by the City.
- b. System emergencies or maintenance requirements.
- c. Hazardous conditions existing on the System as a result of the operation of the Facility or protective equipment.
- d. Failure of the Customer to maintain the required insurance and to provide the City with proof of insurance within ten (10) days of request.
- e. City identification of uninspected or unapproved equipment or modifications to the Facility after initial approval.
- f. Recurring abnormal operation, substandard operation or inadequate maintenance of the Facility.
- g. In non-emergency situations, the City shall give Customer notice of noncompliance including a description of the specific noncompliance condition and allow Customer a reasonable time not to exceed thirty (30) days to cure the noncompliance prior to isolating the Facility.
- h. In the event that the City isolates the Facility for routine maintenance, the City shall make reasonable efforts to reconnect the Facility within seven (7) business days of isolation.
- i. The Customer retains the option to temporarily disconnect the Facility from the System at any time. Such temporary disconnection shall not constitute termination of the Interconnection Agreement unless the Customer exercises its termination rights under Section 13.

11. INSURANCE:

Customer shall maintain reasonable amounts of insurance coverage against risks related to the Facility for which there is a reasonable likelihood of occurrence. Customer shall agree to provide the City with proof of such insurance upon the City's request. The City's receipt of evidence of insurance coverage does not imply an endorsement of the terms and conditions of said coverage.

12. LIMITATION OF LIABILITY AND INDEMNIFICATION:

Customer agrees to assume all liability for and shall indemnify the City for any claims, losses, costs, and expenses of any kind or character to the extent that they result from the design, construction, operation or maintenance of the Facility. Such indemnity shall include, but is not limited to, financial responsibility for: (a) the City's monetary losses; (b) reasonable costs and expenses of defending an action or claim made by a third party; (c) damages related to the death or injury of a third party; (d) damages to the property of the City; (e) damages to the property of a third party; (f) damages for the disruption of the business of a third party. This paragraph does not create a liability on the part of the Customer to the City or a third party, but requires indemnification where such liability exists. The limitations of liability provided in this paragraph do not apply in cases of gross negligence or intentional wrongdoing.

13. EFFECTIVE TERM AND TERMINATION RIGHTS:

The Interconnection Agreement shall become effective when executed by both Parties and shall continue in effect until terminated in accordance with the provisions of this Section. The Interconnection Agreement may be terminated for the following reasons:

a. Customer may terminate the Interconnection Agreement at any time by giving the City at least sixty (60) days' prior written notice stating Customer's intent to terminate the Agreement at the expiration of such notice period;

b. The City may terminate the Agreement at any time following Customer's failure to generate energy from the Facility in parallel with the System by the later of two (2) years from the date of execution of the Interconnection Agreement or twelve (12) months after completion of the interconnection provided for by the Agreement;

c. Either party may terminate the Interconnection Agreement at any time by giving the other Party at least sixty (60) days' prior written notice that the other Party is in default of any of the material terms and conditions of the Interconnection Agreement or the Interconnection Standards for Installation and Parallel Operation of this Policy, so long as the notice specifies the basis for termination and there is reasonable opportunity for the Party in default to cure the default; or

d. The City may terminate the Interconnection Agreement at any time by giving Customer at least sixty (60) days' prior written notice in the event that there is a change in an applicable rule or statute affecting the Agreement.

Upon termination of the Interconnection Agreement, Customer's Facility shall be permanently disconnected from the System.

Termination of the Interconnection Agreement shall not relieve either party of its liabilities and obligations, owed or continuing at the time of said termination.

14. TERMINATION OF ANY APPLICABLE PRIOR AGREEMENT:

From and after the date when service commences under the Interconnection Agreement, the Agreement shall supersede any oral and/or written agreement or understanding between the City and Customer concerning the interconnection service covered by the Agreement. Any such prior agreement or understanding shall be deemed to be terminated as of the date interconnection service commences under the Interconnection Agreement.

15. FORCE MAJEURE:

For purposes of the Interconnection Agreement, the term "Force Majeure" means any cause or event not reasonably within the control of the Party claiming Force Majeure, including, but not limited to, the following: acts of God, strikes, lockouts, or other industrial disturbances; acts of public enemies; orders or permits or the absence of the necessary orders or permits of any kind which have been properly applied for from the government of the United States, the State of Ohio, any political subdivision or municipal subdivision or any of their departments, agencies or officials, or any civil or military authority; unavailability of a fuel or resource used in connection with the generation of electricity; extraordinary delay in transportation; unforeseen soil conditions; equipment, material, supplies, labor or machinery shortages; epidemics; landslides; lightning; earthquakes; fires; hurricanes; tornadoes; storms; floods; washouts; drought; arrest; war; civil disturbances; explosions; breakage or accident to machinery, transmission lines, pipes or canals; partial or entire failure of utilities; breach of contract by any supplier, contractor, subcontractor, laborer or materialman; sabotage; injunction; blight; famine; blockade; or quarantine.

If either Party is rendered wholly or partly unable to perform its obligations under the Interconnection Agreement because of Force Majeure, both Parties shall be excused from whatever obligations under the Agreement are affected by the Force Majeure (other than the obligation to pay money) and shall not be liable or responsible for any delay in the performance of, or the inability to perform, any such obligations for so long as the Force Majeure continues. The Party suffering an occurrence of Force Majeure shall, as soon as is reasonably possible after such occurrence, give the other Party written notice describing the particulars of the occurrence and shall use reasonable efforts to remedy its inability to perform; provided, however, that the settlement of any strike, walkout, lockout or other labor dispute shall be entirely within the discretion of the Party involved in such labor dispute.