



**INTERCONNECTION APPLICATION/AGREEMENT
FOR NET METERING SYSTEMS WITH CAPACITY
OF ONE HUNDRED KILOWATTS (100kW) OR LESS**

For Customers Applying for Interconnection:

Customers interested in applying for interconnection to Carthage Water & Electric Plant's electrical system should first contact Carthage Water & Electric Plant and ask for information related to interconnection of parallel generation equipment to Carthage Water & Electric Plant's system and should understand this information before proceeding with this Application.

Customers wishing to apply for interconnection to Carthage Water & Electric Plant's electrical system, or to modify an existing generator system, shall complete sections A, B, C, and D, and attach detailed plans and specifications, including, but not limited to, a wiring diagram, a site plan for equipment placement, and documentation or pictures showing brand and model numbers of all components associated with the net metering, parallel generation, and interconnection facilities (hereinafter collectively referred to as the "Customer-Generator's System") and submit them to Carthage Water & Electric Plant at:

**Director of Power Services
Carthage Water & Electric Plant
P.O. Box 611
Carthage, MO 64836**

Carthage Water & Electric Plant will provide notice of approval or denial within thirty (30) days of receipt by Carthage Water & Electric Plant for Customer-Generators of ten kilowatts (10 kW) or less and within ninety (90) days of receipt for Customer-Generators of greater than ten kilowatts (10 kW). If this Application is denied, notice will be provided to the customer with the reason(s) for the denial. If this Application is approved and signed by both the customer and Carthage Water & Electric Plant, it shall become a binding contract and shall govern the relationship between the customer and Carthage Water & Electric Plant. There may be subsequent requirements upon completion of this Application. **Do not begin construction of the Customer-Generator System until written approval of the application is provided by Carthage Water & Electric Plant.**

**For Customers Who Have Received Approval of
Customer-Generator System Plans and Specifications:**

Upon approval of the Application by Carthage Water & Electric Plant, it will be necessary to construct the Customer-Generator System in compliance with the plans and specifications described in the Application. Prior to installation of the Customer-Generator System, a wiring permit must be obtained by a Qualified Professional Electrician as defined in Carthage Water & Electric Plant's Net Metering Policy. Installation of the hardware may be completed by either the homeowner or a Qualified Professional Electrician and constructed in compliance with the plans and specifications described in the Application. All wiring must be completed by a Qualified Professional Electrician. Upon completion of the installation, a Professional Electrical Engineer or a Qualified Professional Electrician must inspect the Customer-Generator System and complete section E of this Application. Upon completion of section E, the customer shall complete section F of this Application and forward to Carthage Water & Electric Plant for approval.

Upon approval, Carthage Water & Electric Plant will complete section G of this Application and will interconnect the Customer-Generator System to Carthage Water & Electric Plant's electrical system. If electric service already exists, this will normally be completed within thirty (30) days. If sections E and F are denied, Carthage Water & Electric Plant will provide written notification of the reason(s) for the



denial. In some circumstances, Carthage Water & Electric Plant may require the Customer-Generator to make the interconnection. If the interconnection is not completed within one (1) year after receipt of notice of the approval, the approval shall expire, and the Customer-Generator shall be responsible for filing a new application.

For Customers Who Are Assuming Ownership or Operational Control of an Existing Customer-Generator System:

If no changes are being made to the existing Customer-Generator System, complete sections A, D, and F of this Application and forward to Carthage Water & Electric Plant at the above address. Carthage Water & Electric Plant will review the Application and will provide written approval or denial within thirty (30) days. If denied, Carthage Water & Electric Plant will provide the reason(s) for the denial.

A. Customer-Generator’s Information

Name on Carthage Water & Electric Plant Electric Account: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Service/Street Address (if different from above): _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____ Fax: _____ Email: _____

Emergency Contact Phone: _____

Carthage Water & Electric Plant Account Number: _____

B. Customer-Generator’s System Information

Manufacturer Name Plate (if applicable) AC Power Rating: _____kW

Voltage: _____ Volts

System Type: __Solar __Wind __Biomass __Fuel Cell __Other (describe) _____

Inverter/Interconnection Equipment Manufacturer: _____

Inverter/Interconnection Equipment Model No.: _____

Inverter/Interconnection Equipment location (describe): _____

Disconnect Switch Location: _____

Existing Electrical Service Capacity: _____ Amperes Voltage: _____ Volts

Service Character: _____ Single Phase _____ Three Phase



NOTE: System Plans, Specifications, and Wiring Diagram must be attached for a valid application.

C. Installation Information/Hardware and Installation Compliance

Company Installing System: _____

Company Contact Person: _____ Phone: _____

Contractor's License No. (if applicable): _____

Approximate Installation Date: _____

Mailing address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____ Fax: _____ Email: _____

Person who will inspect/certify installation: _____

The Customer-Generator's proposed System complies with all applicable National Electric Safety Code (NESC), National Electric Code (NEC), Institute of Electrical and Electronics Engineers (IEEE), and Underwriters Laboratories (UL) requirements for electrical equipment and their installation. As applicable to system type, these requirements include, but are not limited to, UL 1741, IEEE 1547, and IEEE 929-2000. The proposed installation complies with all applicable local electrical codes and all reasonable safety requirements of Carthage Water & Electric Plant. The Customer-Generator's system is only required to include one lockable, visible disconnect device, accessible to Carthage Water & Electric Plant. If the interconnection equipment is equipped with a visible, lockable, and accessible disconnect, no redundant device is needed to meet this requirement. The proposed Customer-Generator's System has functioning controls to prevent voltage flicker, DC injection, overvoltage, undervoltage, overfrequency, underfrequency, and overcurrent, and to provide for system synchronization to Carthage Water & Electric Plant's electrical system. The proposed Customer-Generator's System must comply with Carthage Water & Electric Plant's Power Quality Standards, Service Standards, and Rules and Regulations. The proposed Customer-Generator's System has an anti-islanding function that prevents the generator from continuing to supply power when Carthage Water & Electric Plant's electrical system is not energized or operating normally. If the proposed Customer-Generator's System is designed to provide uninterruptible power to critical loads, either through energy storage or back-up generation, the proposed System includes a parallel blocking scheme for this backup source that prevents any backflow of power to Carthage Water & Electric Plant's electrical system when the electrical system is not energized or not operating normally.

Signed (Installer): _____ Date: _____

Name (Print): _____

D. Additional Terms and Conditions

In addition to abiding by Carthage Water & Electric Plant's other applicable rules, regulations, and policies, the Customer-Generator understands and agrees to the following specific terms and conditions:

1) Operation/Disconnection

If it appears to Carthage Water & Electric Plant, at any time, in the reasonable exercise of its judgment, that operation of the Customer-Generator's System is adversely affecting safety, power, quality, or reliability of Carthage Water & Electric Plant's electrical system, Carthage Water & Electric Plant may immediately disconnect and lock-out the Customer-Generator's System from Carthage Water & Electric Plant's electrical system. The Customer-Generator shall permit Carthage Water & Electric Plant's employees and inspectors reasonable access to inspect, test, and examine the Customer-Generator's System.

2) Liability and Insurance

Liability insurance is not required for Customer-Generators of ten kilowatts (10 kW) or less. For generators greater than ten kilowatts (10 kW), the Customer-Generator agrees to carry no less than one hundred thousand dollars (\$100,000) of liability insurance that provides for coverage of all risk of liability for personal injuries (including death) and damage to property arising out of or caused by the operation of the Customer-Generator's System. Insurance may be in the form of an existing policy or an endorsement on an existing policy. Approval of this Application or the plans for or construction of the Customer-Generator System shall not relieve the Customer-Generator of his or her responsibility for the proper installation, operation, maintenance, repair, or inspection of the Customer-Generator System. Carthage Water & Electric Plant does not, by any such approval, or by any inspection, assume any responsibility or liability due to the Customer-Generator System or the Customer-Generator's acts or omissions. Customer-Generators, including those whose systems are ten kilowatts (10 kW) or less, may have legal liabilities not covered under their existing insurance policy in the event that the Customer-Generator's negligence or other wrongful conduct causes personal injury (including death), damage to property, or other actions and claims.

3) Interconnection Costs and Maintenance and Operation

A Customer-Generator's facility shall be equipped with sufficient metering equipment that can measure both the net amount of electrical energy produced and consumed by the Customer-Generator. If the Customer-Generator's existing meter equipment does not meet these requirements or if it is necessary for Carthage Water & Electrical Plant to install additional distribution equipment to accommodate the Customer-Generator's facility, the Customer-Generator shall reimburse Carthage Water & Electric Plant for the costs to purchase and install the necessary additional equipment. Any subsequent meter testing, maintenance, or meter equipment change necessitated by the Customer-Generator shall be paid for by the Customer-Generator.

4) Energy Pricing and Billing

Net electrical energy measurement will be calculated in the following manner:

- a. Carthage Water & Electric Plant will measure the net electrical energy produced or consumed during the billing period in accordance with normal metering practices for customers in the same rate class as the customer-generator, either by employing a single, bidirectional meter that measures the amount of electrical energy produced and consumed, or by employing multiple meters that separately measure the customer-generator's consumption and production of electricity.
- b. If the electricity supplied by Carthage Water & Electric Plant exceeds the electricity generated by the customer-generator during a billing period, the customer-generator shall be billed for the net electricity supplied by Carthage Water & Electric Plant in accordance with normal practices for customers in the same rate class.
- c. If the electricity generated by the customer-generator exceeds the electricity supplied by Carthage Water & Electric Plant during a billing period, the customer-generator shall be billed for the appropriate customer charges for that billing period and shall be credited an amount at least equal to the avoided fuel cost of the excess kilowatt-hours generated during the billing period, with this credit applied to the following billing period.
- d. Any credits granted by this subsection shall expire without any compensation at the earlier of either twelve months after their issuance or when the customer-generator disconnects service or terminates the net metering relationship with Carthage Water & Electric Plant.

5) Term

This Agreement becomes effective when signed by both the Customer-Generator and Carthage Water & Electric Plant, and shall continue in effect until terminated. The Customer-Generator may terminate this Agreement at any time by giving Carthage Water & Electric Plant at least thirty (30) days prior written notice. In such event, the Customer-Generator shall, no later than the date of termination of the Agreement, completely disconnect the Customer-Generator's System from parallel operation with Carthage Water & Electric Plant's System. Either party may terminate this Agreement by giving the other party at least thirty (30) days prior written notice that the other party is in default of any of the terms and conditions of this Agreement, so long as the notice specifies the basis for termination, and there is an opportunity to cure the default. This Agreement may also be terminated at any time by mutual agreement of the Customer-Generator and Carthage Water & Electric Plant. Sections D.2, 9, 10, and 11 shall survive termination of this Agreement.

6) Assignment

If operational control of the Customer-Generator's System transfers to any other person than the Customer-Generator, a new Application must be completed by the person or persons taking over operational control of the existing system. Carthage Water & Electric Plant shall be notified no less than thirty (30) days before the Customer-Generator anticipates transfer of operational control of the Customer-Generator's System. If Customer-Generator is assuming ownership or operational control of an existing Customer-Generator's System, then he or she shall be bound by all previous Applications, requirements, approvals, and denials for such Customer-Generator's System, except as modified herein.

7) Testing Requirement

IEEE 1547 requires periodic testing of all interconnection related protective functions. The Customer-Generator must, at least once every year, conduct a test to confirm that the Customer-Generator's net metering unit automatically ceases to energize the output (interconnection equipment output voltage goes to zero) within two (2) seconds of being disconnected from Carthage Water & Electric Plant's electrical system. Disconnecting the net metering unit from Carthage Water & Electric Plant's electrical system at the visible disconnect switch and measuring the time required for the unit to cease to energize the output shall satisfy this test. The test must be performed by a Professional Electrical Engineer or a Qualified Professional Electrician. If the Customer-Generator's equipment fails any test, the Customer-Generator shall immediately disconnect the Customer-Generator's System from Carthage Water & Electric Plant's system. The Customer-Generator shall maintain a record of the results of these tests and, upon request by Carthage Water & Electric Plant, shall provide a copy of the test results to Carthage Water & Electric Plant. Carthage Water & Electric Plant may immediately disconnect the Customer-Generator's System if (1) the test results show that the Customer-Generator's System is not functioning properly, or (2) the Customer-Generator does not provide a copy of the test results within 30 days of Carthage Water & Electric Plant's request. The Customer-Generator's System shall not be reconnected to Carthage Water & Electric Plant's electrical system by the Customer-Generator until the Customer Generator's System is repaired and operating in a normal and safe manner.

8) Modifications

Customer-Generator shall not modify the Customer-Generator's System without prior written approval from Carthage Water & Electric Plant.

9) Indemnification

Customer-Generator shall indemnify, defend, and hold harmless Carthage Water & Electric Plant, its officers, directors, agents, and employees, from and against all claims, damages, losses, and expenses, including attorney's fees, arising out of this Agreement and caused by Customer-Generator's acts or omissions or by Customer-Generator's System, except to the extent that such claims, damages, losses, and expenses are caused by the negligence of Carthage Water & Electric Plant. This indemnification agreement shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Customer-Generator under workers' compensation acts, disability benefit acts, or other employee benefit acts.

10) No Third Party Beneficiaries

This Application/Agreement is solely for the benefit of the parties hereto and there are no third party beneficiaries of this Application. Nothing contained herein shall create or assume any duty to anyone who is not a party to this Application.

11) Dispute Resolution

This Application shall be governed by Missouri law. Any controversy or claim arising out of or relating to this Application shall be settled by arbitration in accordance with the Rules of the American Arbitration Association under its Commercial Arbitration Rules. The venue for all arbitrations arising out of this Application shall be Jasper County, Missouri.



12) Entire Agreement

This Application and all written approvals and denials given in connection with it constitute the entire agreement and supersede all other prior oral and written agreements pertaining to the subject matter hereof. This Application may only be modified by a writing signed by the parties.

I have read, understood, and accept the provisions of section D, subsections 1 through 12, of this Application/Agreement.

Signed (Customer-Generator): _____ **Date:** _____

Must be signature of Carthage Water & Electric account holder (customer).

E. Post-Installation Electrical Inspection

I hereby certify that the Customer-Generator's System referenced above satisfies all requirements noted in the "Generator Installation Information" section of this application.

Inspector Name (Print): _____

Inspector Certification: I am (check one):

____ a Professional Electrical Engineer licensed in the State of Missouri; or

____ a Qualified Professional Electrician, meeting the requirements set forth in Carthage Water & Electric Plant's Net Metering Policy.

License No. _____

Signed (Inspector): _____

Date: _____



F. Post-Installation Customer-Generator Acknowledgement

I am aware of the Customer-Generator System installed on my premises and I have been given warranty information and/or an operational manual for that system. Also, I have been provided with a copy of Carthage Water & Electric Plant's Net Metering Policy. I am familiar with the operation of the Customer-Generator System. I agree to abide by the terms of this Application and I agree to operate and maintain the Customer-Generator System in accordance with the terms of this Application and agree to maintain the Customer-Generator System in accordance with the manufacturer's recommended practices as well as Carthage Water & Electric Plant's standards, requirements, and policies. If, at any time and for any reason, I believe that the Customer-Generator System is operating in an unusual or defective manner that may result in any disturbances on Carthage Water & Electric Plant's electrical system, I shall disconnect the Customer-Generator System and not reconnect it to Carthage Water & Electric Plant's electrical system until the Customer-Generator System is operating normally after repair or inspection.



Further, I agree to notify Carthage Water & Electric Plant no less than thirty (30) days prior to modification of the components or design of the Customer-Generator System that in any way may degrade or significantly alter that System's output characteristics. I acknowledge that any such modifications will require submission of a new Application to and approval by Carthage Water & Electric Plant. I agree not to operate the Customer-Generator System in parallel with Carthage Water & Electric Plant's electrical system until all sections of this Application (including sections E, F, and G) have been approved by Carthage Water & Electric Plant.

Signed (Customer-Generator): _____ Date: _____

G. Utility Application Approval (completed by Carthage Water & Electric Plant after Customer-Generator completes all above sections, prior to interconnection)

Carthage Water & Electric Plant does not, by approval of this Application, assume any responsibility or liability for damage to property or physical injury to persons due to malfunction of the Customer-Generator's System or the Customer-Generator's negligence.

This Application is hereby approved by Carthage Water & Electric Plant on this _____ day of _____, 20__.

Carthage Water & Electric Plant Representative: _____

Representative Name (print): _____

Representative Title: _____