

GUIDELINES REGARDING COGENERATION AND SMALL POWER PRODUCTION

NEBRASKA CITY UTILITIES
CITY OF NEBRASKA CITY, NEBRASKA

I. Summary:

- A. The Nebraska Legislature has found that it is in the public interest to:
1. Encourage customer-owned renewable energy resources;
 2. Stimulate the economic growth of this state;
 3. Encourage diversification of the energy resources used in this state; and
 4. Maintain low-cost, reliable electric service.
- B. Pursuant to those findings and Nebraska Revised Statute §§70-2001 to 70-2005, the Nebraska City Utilities have enacted this policy regarding Cogeneration and Small Power Production.

II. Definitions:

- A. **“Customer-generator”** means an end-use electricity customer that generates electricity on the customer's side of the meter from Nebraska City Utilities;
- B. **“Interconnection agreement”** means an agreement between Nebraska City Utilities and a customer-generator that establishes the financial, interconnection, safety, performance, and reliability requirements relating to the installation and operation of a qualified facility in accordance with the standards prescribed herein;
- C. **“Local distribution system”** means the equipment and facilities used for the distribution of electric energy to the end-use electricity customer;
- D. **“Local distribution utility”** means Nebraska City Utilities;
- E. **“Net excess generation”** means the net amount of energy, if any, by which the output of a qualified facility exceeds a customer-generator's total electricity requirements during a billing period;
- F. **“Net metering”** means a system of metering electricity in which Nebraska City Utilities:
1. Credits a customer-generator at the applicable retail rate for each kilowatt-hour produced by a qualified facility during a billing period up to the total of the customer-generator's electricity requirements during that billing period.
 - a) A customer-generator may be charged a minimum monthly fee that is the same as other non-customer-generators in the same rate class but shall not be charged any additional standby, capacity, demand, interconnection, or other fee or charge; and

2. Compensates the customer-generator for net excess generation during the billing period at a rate equal to Nebraska City Utilities' avoided cost of electric supply over the billing period. The monetary credits shall be applied to the bills of the customer-generator for the preceding billing period and shall offset the cost of energy owed by the customer-generator. If the energy portion of the customer-generator's bill is less than zero in any month, monetary credits shall be carried over to future bills of the customer-generator until the balance is zero. At the end of each annualized period, any excess monetary credits shall be paid out to coincide with the final bill of that period; and

G. "Qualified facility" means a facility for the production of electrical energy that

1. Uses as its energy source either methane, wind, solar resources, biomass, hydropower resources, or geothermal resources;
2. Is controlled by the customer-generator and is located on premises owned, leased, or otherwise controlled by the customer-generator;
3. Interconnects and operates in parallel with Nebraska City Utilities;
4. Is intended to meet or offset the customer-generator's requirements for electricity;
5. Is not intended to offset or provide credits for electricity consumption at another location owned, operated, leased, or otherwise controlled by the customer-generator or for any other customer;
6. Has a rated capacity at or below twenty-five kilowatts (25 KW);
7. Meets all applicable safety, performance, interconnection, and reliability standards established by the National Electrical Code filed with the Secretary of State and adopted by the State Electrical Board under subdivision (5) of section 81-2104, the National Electrical Safety Code, the Institute of Electrical and Electronics Engineers, and the Underwriters Laboratories, Inc. ("UL"); and
8. Is equipped to automatically isolate the qualified facility from the electrical system in the event of an electrical power outage or other conditions where the line is de-energized.

III. Nebraska City Utilities Obligations:

A. Nebraska City Utilities is obligated to:

1. Interconnect with qualified facilities who have entered into an interconnection agreement with Nebraska City Utilities;
2. Provide a metering system, that is capable of measuring the flow of electricity in both directions, to qualified facilities;
3. Provide net metering to qualified facilities;

B. Nebraska City Utilities is not required to provide net metering to additional qualified facilities once the total generating capacity of all qualified facilities

using net metering is equal to or exceeds one percent (1%) of the capacity to meet Nebraska City Utilities' average aggregate customer monthly peak demand forecast for that calendar year.

- C. Nebraska City Utilities may, at its sole discretion, enter into other arrangements:
1. with customers desiring to install electric generating equipment; or
 2. to provide net metering to customer-generators having renewable units with a rated capacity above twenty-five kilowatts (25 KW)

IV. Facilities:

A. General Provisions:

1. A customer who wishes to pursue installation of a customer-generator facility shall submit an Application for Review, including any required application fee.
 - a) In order to assess the long run economic feasibility of a qualified facility, potential owners are encouraged to base their economic analysis utilizing the estimated Nebraska City Utilities' avoided costs.
 - i. Metering Arrangement diagram attached as Exhibit A.
2. All facilities that desire to interconnect and operate in parallel with Nebraska City Utilities' electrical system will be required to execute a contractual agreement, based upon the general principles set forth in these guidelines.
3. Owners of facilities will be allowed the option to use the electrical output of their qualified facilities to instantaneously supply all or a portion of their own load and sell the instantaneous surplus, if any to Nebraska City Utilities.
 - a) As per regulations, a facility has the option to either provide energy to Nebraska City Utilities on
 - i. an "as available" basis in which case the rate for purchase shall be based upon the current period's estimated avoided costs or
 - ii. to provide energy over a specified term pursuant to a legally enforceable obligation in which the future purchase rate can be based upon the estimated avoided cost calculation at the time the obligation was incurred.
 - b) The qualified facility must exercise the option prior to the beginning of the specified term.
 - c) Because of current uncertainties involved regarding the operations of qualified facilities, and projected modifications to rates Nebraska City Utilities pays its wholesale supplier or pays for participation power, Nebraska City Utilities will not agree to a

price of power purchased from qualified facilities for more than one year at a time.

4. Depending on the nature and characteristics of the type of facility, Nebraska City Utilities may be required to reserve or dedicate capacity in its system to serve such loads when the facility's output is intermittently reduced either partially or completely.
5. Nebraska City Utilities' rates are designed to recover the cost of supplying customers that do not have generation. In the case of customer-generators, the load characteristics may be such that Nebraska City Utilities' rates do not fully recover the costs of standby and backup service provided by Nebraska City Utilities.
 - a) Rates for the purpose of complying with the Nebraska Revised Statutes will be the same as those rates for all other customers qualifying for that rate or the rate the customer-generator is currently being billed under.
6. A qualified facility's right to sell power to Nebraska City Utilities may be subject to temporary curtailments when, as a result of operational circumstances, the delivery of such power would interfere with the safe and efficient operation of the Nebraska City Utilities electrical system.
7. Nebraska City Utilities is under no obligation to provide wheeling service across its system to any facility.
8. Nebraska City Utilities will not contract or otherwise become obligated to sell power and/or energy to any qualified facility that is not located within the Nebraska City Utilities service area.

B. Net-metering:

1. Credit:
 - a) Customer-generators will be credited at the applicable retail rate for each kilowatt-hour produced by a facility during a billing period up to the total of the customer-generator's electricity requirements during that billing period.
2. Compensation:
 - a) Customer-generators will be compensated for net excess generation during the billing period at a rate equal to the local distribution utility's avoided cost of electric supply over the billing period.
3. Monetary Credits shall be applied to the bills of the customer-generator for the preceding billing period, and shall offset the cost of energy owed by the customer-generator.

- a) If the energy portion of the customer-generator's bill is less than zero in any month, monetary credits shall be carried over to future bills of the customer-generator until the balance is zero.
 - b) At the end of each annualized period, any excess monetary credits shall be paid out to coincide with the final bill of that period.
- 4. Example:
 - a) Produces 10 units of electricity, but consumes 6 units of electricity.
 - b) Customer-generator would be credited for the 6 units of electricity used (as they produced enough to offset that).
 - c) Customer-generator would be compensated for 4 units of electricity (as that was produced above their consumption).
 - i. Compensation would be at Nebraska City Utilities avoided cost rate.
 - d) "Compensated" amount would be carried forward to future bills until either the balance is at zero, or the end of the annualized period is reached.
- 5. Other considerations:
 - a) Customer-generators may be charged a minimum monthly fee that is the same as non-customer-generator in the same rate class.
 - b) Customer-generators may not be charged any additional standby, capacity, demand, interconnection, or other fee or charge.
- 6. Avoided Cost Rate:
 - a) Such rate shall be based upon the Nebraska City Utilities' avoided costs and adjusted for factors considered in regulations affecting rates for purchase.
 - i. These rates are subject to annual or otherwise required adjustments based on rate changes implemented by the Nebraska City Utilities' base load generation, wholesale supplier, participation power supplier, self-generated power, or other power supply.
 - b) The rate will be developed to ensure that other Nebraska City Utilities customers are not adversely affected by the Nebraska City Utilities requirement to purchase excess power and/or energy from qualified facilities.

C. Rate for Sales of Power to Qualified Facilities

- 1. Upon request by a facility, Nebraska City Utilities will provide either appropriate existing rates or, if feasible and practical, develop and offer rates for:
 - a) Supplemental energy, defined as electric energy or capacity supplied by Nebraska City Utilities.

- b) Back-up or emergency power, defined as electric energy or capacity supplied by Nebraska City Utilities to replace energy normally generated by a facility's own generation equipment during an unscheduled outage of the facility.
 - c) Maintenance power, defined as electric energy or capacity supplied by Nebraska City Utilities during scheduled outages of the qualified facility; and
 - d) Interruptible power, defined as electric energy or capacity supplied by Nebraska City Utilities subject to interruption by Nebraska City Utilities under specified conditions.
2. The rates for sale shall meet the general rules and criteria as set forth in the Published City Rate Ordinances of the City of Nebraska City.
 3. When the purchase of supplemental, back-up, maintenance or interruptible power requires Nebraska City Utilities to provide additional interconnection or metering facilities, the producer will pay for the additional costs of such facilities.
 4. Facilities who elect to purchase supplemental, back-up, maintenance, or interruptible power from Nebraska City Utilities will do so under contract or addenda to existing contractual agreements.

D. Interconnection

1. The point of delivery between the Nebraska City Utilities electrical system and the facility will be the meter or meters where Nebraska City Utilities service wires are joined to the customer-generator's service terminals. Nebraska City Utilities will own the meters utilized for billing. Customer-generator will provide the disconnect and protective devices on the customer-generator's side of the meter and the meter socket(s). The physical electrical interconnection of the generating equipment with the facilities shall meet all applicable electric codes.
2. The payment to Nebraska City Utilities of certain interconnection and other costs may take the form of equivalent monthly payments including interest as provided for in contracts with the owners of facilities. Monthly payments for acceptable expenses may be extended for the term of the contract between Nebraska City Utilities. In other cases, an aid to construction payment to Nebraska City Utilities may be required.
3. Nebraska City Utilities will provide that metering which is sufficient in Nebraska City Utilities' judgment in order to determine that amount of power and/or energy sold to Nebraska City Utilities from the facility and the amount of power and/of energy supplied by Nebraska City Utilities to the facility. Nebraska City Utilities may install additional metering at its expense in order to obtain other load and operating data.

V. Compliance with Nebraska City Utilities Safety, Protection, and Operating Guidelines:

- A.** Facilities will be required to provide and maintain suitable apparatus to prevent the operation of their generation facilities from causing unusual fluctuations or disturbances on the Nebraska City Utilities electrical system.
- B.** Owners of facilities will cooperate with Nebraska City Utilities in developing mutually acceptable operating procedures for delivery of the output from the facility.
- C.** Owners of facilities will be responsible for providing and maintaining all equipment they deem necessary for the protection of their own property and operations. By virtue of the interconnections with the facility, Nebraska City Utilities assumes no liability for the protection of any property or person associated with the facility's operation.
- D.** All protection, safety, and interconnection equipment installed by owners of facilities must meet standards of good engineering and electrical safety practices, approved by UL, and be capable of parallel operation with Nebraska City Utilities.
- E.** The owner of the facility is responsible for the installation and operations of the facility and will indemnify and hold Nebraska City Utilities from liability for damage to property or person resulting from or arising out of or in any way connected with the installation, inspection, operation, maintenance, testing and/or use of the facility.
- F.** If the facility is not performing to the established standards of service or is reducing the quality of service to other Nebraska City Utilities customers, the customer-generator must disconnect the facility until such time that the owner takes corrective action. In the event the owner refuses to discontinue parallel operation, Nebraska City Utilities may terminate electric service.

VI. Qualified Facilities Emergency Dispatch:

- A.** An emergency condition exists when the reliability of the electric system is in jeopardy and customer service is threatened. During emergency conditions, the owners of facilities may be asked to place control of their facilities under the direction of Nebraska City Utilities until the electric system has returned to normal operation. Nebraska City Utilities will determine when generation should be adjusted, brought on-line or shut down. The facilities should be able to alter their generation schedule as directed by Nebraska City Utilities personnel.

VII. Supplemental Nebraska City Utilities Safety and Protection Requirements Applicable to Owners of Production Facilities:

- A.** These requirements shall be applicable to assure the safe and reliable operation of parallel interconnections. The adequacy of protection devices used for interconnection with facilities, will be determined by Nebraska City Utilities. The

following requirements shall be generally applicable unless modified in the contract between the facility and Nebraska City Utilities. If applicable, the contract will also identify the specific requirements for compliance.

B. Disconnect Equipment

1. The owner shall provide equipment for manually disconnecting and isolating the facility from the Nebraska City Utilities service wires. An outside-mounted visible disconnect shall be installed on the owner's side of the point of delivery/receipt near the meter or mutually agreed upon location. Such equipment must be capable of preventing the facility from energizing the Nebraska City Utilities service wires and must include a device which, at the discretion of Nebraska City Utilities, Nebraska City Utilities employees can operate and lock in place.
2. The owner shall also provide an interconnection breaker and interconnection relay to automatically disconnect and isolate the facility from Nebraska City Utilities during a service interruption. This automatic disconnect equipment shall receive its voltage and frequency reference from the Nebraska City Utilities service wires. The automatic disconnect shall not close without proper voltage and frequency from the Nebraska City Utilities service wires. Such equipment must be capable of preventing the qualified facility from energizing the Nebraska City Utilities service wires during a service interruption. Please refer to the latest IEEE standard 1547 section on "Islanding"

C. Fault Protection

1. The owner to protect the Nebraska City Utilities service wires from fault currents originating from the facility shall provide adequate protection facilities. The owner shall also be responsible to provide adequate protection for the facility from fault currents originating in the Nebraska City Utilities electrical system.

D. Over/Under Voltage

1. It shall be the responsibility of the owner to provide adequate protection or safeguards to prevent damage to the Nebraska City Utilities electrical system caused by over/under voltages originating in the facility and to protect the facility from inadvertent over/under voltage conditions originating from the Nebraska City Utilities electrical system. Please refer to the latest IEEE standard 1547 for voltage ranges and clearing times when setting interconnection relays.

E. Synchronization

1. The owner shall provide adequate facilities for the proper synchronization of the facility with Nebraska City Utilities service wires such that such synchronization is accomplished without causing

undesirable currents, surges or voltage dips on the Nebraska City Utilities electrical system. Nebraska City Utilities operates automatic reclosing on its system circuit breakers. A fault and the subsequent breaker trip and reclose can cause an out-of-phase condition to exist between Nebraska City Utilities and the customer-generator facility. Following a period of interruption, the proper resynchronization of the facility shall be the responsibility of the owner.

F. Grounding

1. The owner shall ground the facility and associated equipment in such a manner that coordination is maintained with the relay protection system in use by Nebraska City Utilities and the facility is protected from being subject to deleterious voltage and excessive current conditions.

G. Harmonics

1. Adequate design precautions must be taken by the owner to prevent excessive and deleterious harmonic voltages and/or currents caused by the facility from occurring on the electrical system of Nebraska City Utilities or the customers of Nebraska City Utilities. The qualified facility must be designed to operate with normal harmonic voltage and currents that originate from the Nebraska City Utilities electrical system. Please refer to the latest IEEE standard 1547.

H. Power Factor

1. The operation of the facility shall not produce nor consume excessive reactive power. Should the power factor fall outside acceptable limits either lagging or leading, as determined by Nebraska City Utilities, the Owner shall undertake the necessary modifications to meet the required power factor level.

I. Voltage Regulation

1. The owner shall provide the necessary voltage regulation equipment to prevent the facility from causing excessive voltage variations on the Nebraska City Utilities electrical system. The voltage variation caused by the facility must be within the ranges capable of being handled by the voltage regulation facilities used by Nebraska City Utilities.

J. Voltage Flicker

1. Voltage surges or flickers caused by the operation, synchronization or isolation of the facility shall be with the standards of frequency of occurrence and magnitude established by Nebraska City Utilities to prevent the undue voltage flicker on the Nebraska City Utilities electrical system. The owner shall provide suitable equipment to reasonably limit voltage fluctuations caused by the facility.

K. Voltage Balance

1. The voltage produced by the facility must be balanced if it is a three-phase installation. The owner shall be responsible in protecting the facility from an inadvertent phase unbalance in Nebraska City Utilities' service voltage.

L. Over/Under Frequency

1. The Owner shall provide the necessary facilities for safeguards and protection of equipment caused by the incurrence of an over or under frequency event. Please refer to the latest IEEE standard 1547 for frequency ranges and clearing times when setting the interconnection relay.

M. Operational Oversight

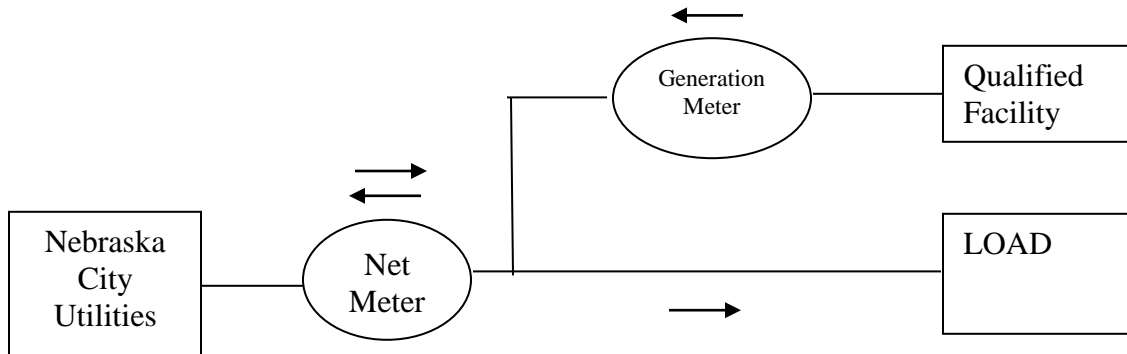
1. The owner will be responsible for operating its production facility in a manner that will not cause undesirable or harmful effects to Nebraska City Utilities or its other customers.
2. The owner will not begin initial operation of the production facility until it has passed applicable code inspection requirements and has received written approval from Nebraska City Utilities. Utility personnel must witness a trip check of the interconnection breaker and must also witness the first parallel or closed transition operation of the facility.
3. The owner must notify Nebraska City Utilities a least 60 days prior to the installation of a facility and supply Nebraska City Utilities with technical specifications and drawings upon request relating to the production facilities and related interconnection, operation, and protective equipment. These must include a system one-line diagram, an interconnection breaker trip schematic and interconnection relay settings. Inspection from the jurisdictional electrical inspector will be made which results of which will be provided to Nebraska City Utilities and which cost will be bourn by the owner. Approval from Nebraska City Utilities of the use of facility equipment shall not be construed as confirming or endorsing the design or effectiveness of the equipment or the facility's plan for use of the equipment for actually reducing demand or energy usage, or as any warranty of the safety, durability, or reliability of equipment.
4. Nebraska City Utilities shall have the right at any time to inspect and test the operation of any control and protective equipment owned and maintained by the owner. Any future changes to the interconnection relay settings must receive the approval of Nebraska City Utilities System Protection personnel before implementation.

N. Governmental Regulations, Codes and Ordinances

1. The owner of the facility has the responsibility to comply with all applicable federal, state, and local regulations, codes and ordinances including electrical codes. The Nebraska City Utilities review of design specifications and drawings or Nebraska City Utilities inspections shall not be construed as approvals as to compliance with any regulations, codes and/or ordinances.

EXHIBIT A

METERING ARRANGEMENT Cogeneration and Small Production Facilities



Assumes Qualified Facility uses output as recorded on Generation Meter and sell excess to Nebraska City Utilities. Nebraska City Utilities supplies or credits the net of customer-generator's load as recorded on Net Meter.