



City of Grand Island

Tuesday, May 12, 2009

Council Session

Item G9

**#2009-109 - Approving Wind Generation Agreement between
Douglas Brunk and Grand Island Utilities**

Staff Contact: Gary R. Mader;Dale Shotkoski

Council Agenda Memo

From: Gary R. Mader, Utilities Director
Dale Shotkoski, City Attorney

Meeting: May 12, 2009

Subject: Customer Owned Generation Agreement

Item #'s: G-9

Presenter(s): Gary R. Mader, Utilities Director

Background

The National Energy Act of November, 1978 and the Public Utility Regulatory Policies Act (PURPA) had the effect of placing certain regulatory requirements on electric utilities. The goals of PURPA are to encourage:

1. The conservation of energy supplied by electric utilities
2. The optimization of the efficient use of facilities and resources by electric utilities
3. Equitable rates to electric consumers

PURPA addresses the subject of customer-owned generation. In order to carry out the provisions of the Act, the Federal Energy Regulatory Commission (FERC) issued certain rules and regulations (18 C.F.R. Part 292) regarding electric utility obligations and qualifying status for customer-owned generation.

The purpose of PURPA and the FERC rules is to encourage the use of cogeneration and small production facilities where such devices might utilize alternate and/or renewable fuels and thus might make a significant contribution to the nation's effort to conserve conventional fossil fueled energy resources.

Customer owned generation devices (designated Qualifying Facilities by FERC) are divided into two subsets, cogenerators and small power producers. Cogeneration facilities simultaneously produce two forms of useful energy such as electric power and steam. Cogeneration facilities can use significantly less fuel to produce electricity and steam in a combined process (or other forms of energy) than would be needed to produce the two separately. Qualifying Facilities power generators are those that rely on non-conventional fuels such as biomass, solid or gaseous waste, or renewable resources, including wind

and solar, to produce electric power. Use of alternative sources can reduce the need to consume conventional fossil fuels to produce electricity.

Under the FERC regulations, the Utilities Department is generally obligated to interconnect and operate in parallel with Qualifying Facilities, and to purchase excess electricity from those generators who qualify under FERC's standards.

The regulations allow the host utility to establish interconnection standards to ensure electrical system safety and reliability. The Act and regulations also make it clear that a utility's other customers are not to be detrimentally affected as a result of the interconnection.

The purchase rate for excess power provided from Qualifying Facilities is based (as stated by FERC) upon the costs that can be avoided by the host utility by such purchases. Avoided costs can be classified into two basic components, energy related and capacity related.

Energy related avoided costs are those associated with the cost of not burning conventional fuel to produce electricity or reducing energy purchases. With wind generation the costs that can be avoided are those associated with energy, i.e., not burning coal, natural gas or oil; or not purchasing power from other utilities.

Capacity avoided costs are those associated with the capital cost of adding new generation. If, at some point in the future, Grand Island were able to avoid acquisition of generation resources by relying on Qualifying Facilities to meet peak electric demands, there would be additional value over and above the avoided energy costs.

Discussion

GIUD now has a customer who wishes to connect to the electrical distribution system with a wind generator. A contract was developed to allow the interconnection, protect GIUD facilities and to create a mechanism to pay the customer should the Qualifying Facility produce excess energy to sell back.

The proposed agreement was modeled after a similar agreement form used by the Lincoln Electric System, with review of currently known and pending regulation at the state and federal level.

Alternatives

It appears that the Council has the following alternatives concerning the issue at hand.

The Council may:

1. Move to approve
2. Refer the issue to a Committee

3. Postpone the issue to future date
4. Take no action on the issue

Recommendation

City Administration recommends that the Council approve the Customer Owned Generation Agreement with Douglas Brunk to connect a wind powered electric generator to Grand Island's electrical system.

Sample Motion

Move to approve the Customer Owned Generation Agreement with Douglas Brunk to connect a wind generator to Grand Island's electrical system.

COGENERATION AND SMALL POWER PRODUCTION
(25 kW and less)
PARALLEL OPERATION, POWER SALES AND INTERCONNECTION AGREEMENT
between
THE CITY OF GRAND ISLAND UTILITIES DEPARTMENT
and
Douglas Brunk

The Power Sales and Interconnection Agreement, hereinafter called the "Agreement," is made and entered into as of the 12th day of May, 2009 by and between Douglas Brunk, hereinafter referred to as the "Owner" of the alternate energy generation equipment of "Qualifying Facility" and the City of Grand Island Utilities Department, a municipal corporation of the State of Nebraska, hereinafter referred to a "GIUD".

WITNESSED: The Owner desires to install alternate energy generation equipment or a Qualifying Facility and has requested that it be interconnected to GIUD such that is operates in parallel with GIUD and GIUD may receive energy from such Qualifying Facility. GIUD agrees to allow such interconnection subject to the following terms and conditions, which are accepted and agreed to by the Owner:

ARTICLE I

TERM OF AGREEMENT

This Agreement shall be binding upon execution and shall remain in effect for a term of twelve (12) months from the forenamed execution date. The Agreement may be terminated by either Party by giving 30 days written notice. Upon completion of the term, the Agreement will remain effective on a month to month basis unless terminated by either Party.

ARTICLE II

SALE OF ENERGY

The Owner of the Qualifying Facility elects to sell and deliver energy to GIUD under one of the following two options:

(Check the appropriate option)

- | | |
|-----------------------------------|---|
| <input type="checkbox"/> OPTION A | Deliver the entire electrical output of the Qualifying Facility. |
| <input type="checkbox"/> OPTION B | Deliver the instantaneous surplus or excess electrical output beyond any load requirements associated with the Qualifying Facility. |

ARTICLE III

RATES FOR PURCHASES FROM QUALIFYING FACILITY

GIUD shall pay the Qualifying Facility for energy delivered to the utility according to the current period GIUD price schedule for such purchases. This price schedule shall be reviewed and subject to change by GIUD at its discretion.

ARTICLE V

TERMS AND CONDITIONS

This Agreement includes the following appendix which is attached and incorporated by reference herein:

Appendix A - General Terms and Conditions of Interconnection and Power Purchases and Sales

In addition, the terms and conditions of the GIUD Service Regulations, as modified from time to time, shall also apply except as expressly modified in this Agreement.

In Witness Whereof, the Parties have executed this Agreement by their duly authorized representatives as of the date hereinabove set forth:

Qualifying Facility

City of Grand Island, Utilities Dept.

Title

Mayor

Attest

Attest

City Clerk

APPENDIX A

GENERAL TERMS AND CONDITIONS OF INTERCONNECTION
AND POWER PURCHASES AND SALES

A-1 Electrical Service Conditions

A-1.1 General

- a) Owner: _____
- b) Location: _____

A-1.2 Primer Mover and Generator

- a) Manufacturer: _____
- b) Manufacturer's Reference
Number, Type or Style: _____
- c) Serial Number: _____
- d) Nameplate Data: _____
- e) Fuel Source: _____

A-1.3 Character of Service

- a) Voltage: _____
- b) Phase: _____
- c) Frequency: _____
- d) Service Amp: _____
- e) Other Characteristics: _____

A-1.4 Points of Delivery and Receipt

The point of delivery and/or receipt between GIUD and the Qualifying Facility will be the GIUD metering equipment or that point where the GIUD service wires are joined to the Qualifying Facility's service terminals unless otherwise mutually agreed to by the Parties.

A-2 Rights and Obligations

A-2.1 Ownership and Responsibility

The Owner of the Qualifying Facility shall design, construct, install, own, operate and maintain the Facility and all equipment on the Owner's side of the point of delivery/receipt that is required to generate and deliver energy to GUID except for any special facilities as may be designated. The Facility's protection, control, safety and all associated equipment must meet standards of good engineering and electrical safety

practices as determined solely by GIUD and be capable of parallel operation with GIUD service wires. The protection, control, safety and other associated equipment shall at all reasonable times be accessible to authorized GIUD personnel.

A-2.2 Design

The Owner of the Qualifying Facility shall supply GIUD with three copies of technical specifications and drawings upon request related to the production and interconnection facilities and related equipment. GIUD's review of the Facility's specifications shall not be construed as confirming nor endorsing the design nor as any warranty of safety, durability or reliability of such Facility or equipment. GIUD shall not, by reason of such review or failure to review, be responsible for strength, details of design, adequacy or capacity of the Qualifying Facility or other equipment, nor shall GIUD's acceptance be deemed to be an endorsement of any facility or equipment.

A-2.3 Interconnection Facilities

The Owner of Qualifying Facility shall construct, own and maintain interconnection facilities as required by GIUD to deliver energy from the Qualifying Facility to the point of delivery/receipt. The interconnection facilities shall be of such size to accommodate the delivery of such energy.

A-2.4 Protective Equipment

The Owner of the Qualifying Facility shall be responsible for providing and maintaining all equipment deemed necessary for the protection of its own facilities, property and operations. Such equipment shall be provided for on the Owner's side of the point of delivery/receipt. By virtue of the interconnection with the Qualifying Facility, GIUD assumes no liability for the protection of any property or person associated with the Qualifying Facility's operations.

A-2.5 Changes in Conditions

The Owner of the Qualifying Facility agrees to make and bear all costs, except as otherwise provided, of changes in equipment necessitated by changes in service requirements as may be reasonably required by GIUD.

A-2.6 Governmental Regulations, Codes and Ordinance

The Owner of the Qualifying Facility has the responsibility to comply with all applicable federal, state and local regulations, building codes and ordinances including electrical codes. The Owner shall not begin initial operation of the Qualifying Facility until it has passed applicable code inspection requirements and has received written approval from GIUD. The GIUD review of design specifications and drawing or on-site inspections shall not be construed as approvals as to compliance with any such regulations, codes and/or ordinances.

A-2.7 Land Rights

The Owner of the Qualifying Facility grants to GIUD all necessary right-of-ways and easements on the property of the Owner to install, operate, maintain, replace and remove GIUD metering and interconnection equipment. If any part of GIUD 's facilities are to be located on property owned by other than a Party to this Agreement, the Owner of the Qualifying Facility shall procure all necessary right-of-ways and easements for the construction, operation, maintenance and replacement of GIUD's facilities upon such property in a form satisfactory to GIUD. The standard GIUD easement agreement will be utilized.

Authorized GIUD personnel have the right to enter at any reasonable time to inspect equipment located on the property or within an enclosure and make safety inspections. This right does not relieve the Owner of the Qualifying Facility of the obligation to maintain such facilities.

A-3 Operations and Safety

A3.1 Procedures

The Owner of the Qualifying Facility shall cooperate with GIUD in developing mutually acceptable operating procedures for the delivery of the electrical output from the Qualifying Facility and associated interconnection. The Owner will be responsible for operating the Qualifying Facility and associated equipment in a manner that will not cause undesirable and harmful effects, unusual fluctuations or disturbances to occur on the electrical system of GIUD or GIUD's customers. Any future changes to the interconnection relay settings must receive the approval of GIUD System Protection personnel before implementation.

A-3.2 Disconnect Equipment

The Owner shall provide equipment for manually disconnecting and isolating the Qualifying Facility from the GIUD electrical system. 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 Qualifying Facility from energizing the GIUD service wires and must include a device which, at GIUD's discretion, GIUD employees can operate and lock in place.

The Owner shall also provide equipment to automatically disconnect and isolate the Qualifying Facility from GIUD during a service interruption. The automatic disconnect shall receive its voltage and frequency referenced from the GIUD service wires. The automatic disconnect shall not close without proper voltage and frequency from the GIUD service wires. Such equipment must be capable of preventing the Qualifying Facility from energizing GIUD service wires during a service interruption. Please refer to the latest IEEE standard 1547 section on "Islanding."

A3.3 Fault Protection

Adequate protection facilities shall be provided by the Owner to protect the GIUD service wires from fault currents originating from the Qualifying Facility. The Owner

shall also be responsible to provide adequate protection for the Qualifying Facility from fault currents originating from GIUD.

A-3.4 Over/Under Voltage

It shall be the responsibility of the Owner to provide adequate protection or safeguards to prevent damage to GIUD caused by over/under voltages originating in the Qualifying Facility and to protect the Qualifying Facility from inadvertent over/under voltage conditions originating from the GIUD electrical system. Please refer to the latest IEEE standard 1547 for voltage ranges and clearing times when setting the interconnection relay.

A-3.5 Synchronization

The Owner shall provide adequate facilities for the proper synchronization of the Qualifying Facility with GIUD service wires such that such synchronization is accomplished without causing undesirable currents, surges or voltage dips on the GIUD electrical system. GIUD employs automatic reclosing on its distribution system circuit breakers. A fault and the subsequent breaker trip and reclose can cause an out-of-phase condition to exist between GIUD and the customer generation facility. Following a period of interruption, the proper resynchronization of the Qualifying Facility shall be the responsibility of the Owner.

A-3.6 Grounding

The Owner shall ground the Qualifying Facility and associated equipment in such a manner that coordination is maintained with the relay protection system in use by GIUD and the Qualifying Facility is protected from being subject to deleterious voltage and excessive current conditions.

A-3.7 Harmonics

Adequate design precaution must be taken by the Owner to prevent excessive and deleterious harmonic voltages and/or currents caused by the Qualifying Facility from occurring on the electrical system of GIUD or to GIUD's customers. The Qualifying Facility must be designed to operate with normal harmonic voltage and currents that originate from the GIUD electrical system. Please refer to the latest IEEE standard 1547.

A-3.8 Power Factor

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

A-3.9 Voltage Regulation

The Owner shall provide the necessary voltage regulation equipment to prevent the Qualifying Facility from causing excessive voltage variations on the GIUD

electrical system. The voltage variation caused by the Qualifying Facility must be within the ranges capable of being handled by the voltage regulation facilities used by GIUD.

A-3.10 Voltage Flicker

Voltage surges or flickers caused by the operation, synchronization or isolation of the Qualifying Facility shall be within the standards of frequency of occurrence and magnitude established by GIUD to prevent undue voltage flicker on the GIUD electrical system. The Owner shall provide suitable equipment to reasonably limit voltage fluctuations caused by the Qualifying Facility.

A-3.11 Voltage Balance

The voltage produced by the Qualifying Facility must be balanced if it is a three-phase installation. The Owner shall be responsible for protecting the Qualifying Facility from an inadvertent phase unbalance in GIUD service voltage.

A-3.12 Over/Under Frequency

The Owner shall provide the necessary facilities for safeguards and protection of equipment caused by the occurrence 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.

A-3.13 Emergency Dispatchability

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 Qualifying Facilities may be asked to place control of their facilities under the direction of GIUD until the electric system has returned to normal operation. GIUD will determine when generation should be adjusted, brought on-line or shut down. If the Owner chooses to cooperate during these emergency conditions, they should be able to alter their generation schedules as directed by GIUD system dispatchers.

A-4 Continuity of Service

GIUD shall not be obligated to accept and GIUD may require the Qualifying Facility to curtail, interrupt or reduce deliveries of energy in order to construct, install, maintain, repair, replace, remove, investigate or inspect any of its equipment or any part of its electrical system or if it determines that curtailment, interruption or reduction is necessary because of emergencies, forced outages, operating conditions on its electrical system or as otherwise required by prudent electrical utility practices. Such discontinuance of service or purchases shall be without notice or liability.

The Owner of the Qualifying Facility shall promptly notify GIUD of any extended Qualifying Facility outage along with the estimated duration of such outage or reduction. Any violation of the terms and conditions of the Agreement or GIUD Service Regulations shall result in the immediate termination of the Agreement without notice or liability.

A-5 Metering

A-5.1 Ownership and Maintenance

GIUD, at its expense, shall install, own, maintain and test all billing meters and associated equipment that is necessary in GIUD's sole judgment to determine amounts and/or times of delivery of energy by the Qualifying Facility to GIUD and from GIUD to the Qualifying Facility and any associated load. The Qualifying Facility shall furnish the meter socket(s) and other related equipment plus sufficient space required by GIUD in order to accommodate such equipment.

The Owner of the Qualifying Facility agrees to allow GIUD, at GIUD's expense, to install additional metering to obtain other load and operating data provided such metering does not adversely affect the operations of the Qualifying Facility.

A-5.2 Sealed Meters and Testing

All meters used to determine the billings shall be sealed and the seals shall be broken by GIUD employees only upon those occasions when the meters are to be inspected, tested or adjusted.

If requested to do so by the Qualifying Facility, GIUD shall inspect or test the meter(s) with the expense of such an inspection or test being paid by the Qualifying Facility unless upon being tested or inspected the meter is found to register inaccurately by more than two percent of full scale. If a meter is found to be inaccurate beyond two percent or is otherwise defective, it shall be repaired or replaced, at GIUD's expense, in order to provide accurate metering.

A-5.3 Adjustments

If any test of metering equipment discloses any inaccuracy of more than two percent, the accounts between the Parties shall be adjusted in accordance with this section. Such correction and adjustment shall be made from the date the meter became inaccurate, if known. If such data cannot be determined, then the adjustment shall be made for the previous month or from the date of the latest test (if within the previous month) and for the elapsed period in the month during which the test was made. Should any metering equipment at any time fail to register or should the registration thereof be so erratic as to be meaningless, the amounts of energy transacted shall be determined by the Parties from the best available data.

A-5.4 VAR Metering

At GIUD's option, VAR metering may be installed by GIUD at the Qualifying Facility's expense to measure reactive power.

A-6 Billing and Payment

Once a billing month, GIUD shall read the billing meter(s) installed to measure energy and capacity (real and reactive, if applicable) delivered to GIUD from the Qualifying Facility. GIUD shall then prepare a statement computing the amounts owed by GIUD for such energy. The billing and payment shall be in accordance with state law and adopted GIUD regulations regarding such items.

A-7 Uncontrollable Forces

A Party shall not be considered to be in default in respect to any obligation hereunder if prevented from fulfilling such obligation by reason of uncontrollable forces. The term uncontrollable forces shall be deemed for the purposes hereof to mean storm, flood, lightening, earthquake, fire, explosion, civil disturbance, labor disturbance, sabotage, war, national emergency, restraint by court or public authority or other causes beyond the control of the Party affected which such Party could not reasonably have been expected to avoid by exercise of due diligence and foresight. Either Party unable to fulfill any obligation by reason of uncontrollable forces will exercise due diligence to remove such disability with reasonable dispatch.

A-8 Indemnity and Liability

Each Party shall indemnify the other Party, its officers, agents, and employees against all loss, damage, expense and liability to third persons for injury to or death of person or injury to property, proximately caused by the indemnifying Party's construction, ownership, operation, or maintenance of, or by failure of, any of such Party's works on facilities used in connection with this Agreement. The indemnifying Party shall, on the other Party's request, defend any suit asserting a claim covered by this indemnity. The indemnifying Party shall pay all costs that may be incurred by the other Party in enforcing this indemnity.

Nothing in this Agreement shall be construed to create any duty to any standard of care with reference to or any liability to any person not a Party to this Agreement.

A-9. Waiver

Any waiver at any time by either Party of its rights with respect to default under this Agreement shall not be deemed a waiver with respect to any subsequent default by the other Party under this Agreement.

A-10. Successors, Legal Representative or Assigns

This Agreement shall be binding upon and inure to the benefit of the successors, legal representatives, or assigns of the respective Parties. Neither Party shall assign this Agreement without the express written consent of the other Party, nor shall a Party be relieved of its obligations hereunder or impose additional obligations or burdens on the other Party by any assignment given.

A-11. Governmental Jurisdiction and Authorization

This Agreement is subject to the jurisdiction of those governmental agencies having control over the Parties of the Agreement. This Agreement shall not become effective until all required governmental authorization and permits are first obtained and copies are submitted to GIUD.

This Agreement shall at all times be subject to such changes by such governmental agencies, and the Parties shall be subject to such conditions and obligations, as such governmental agencies may from time to time direct in the exercise of their jurisdiction. Both parties agree to exert their best efforts to comply with all applicable rules and regulations of all governmental agencies having control over either Party or this Agreement. The Parties shall take all reasonable action necessary to secure all required governmental approvals of this Agreement in its entirety and without change.

COGENERATION AND SMALL POWER PRODUCTION PURCHASED ENERGY RATE

AVAILABLE: To cogeneration and small power production facilities with production capacity of 25 KW and less that qualify under the guidelines for implementing PURPA Sections 201 and 210. This rate shall be used in conjunction with the applicable retail rate.

CHARACTER OF SERVICE: Unless otherwise provided by contract, the character of purchased power will be single or three phase alternating electric current at 60 hertz. Voltage shall be determined by the voltage of GIUD's distribution system in the vicinity unless otherwise agreed.

PURCHASE OF OUTPUT FROM QUALIFYING FACILITIES: Owners of Qualifying Facilities will be allowed to use the electrical output of their Qualifying Facilities to instantaneously supply all or a portion of their own load and deliver the instantaneous surplus to GIUD. At the end of the billing period, the energy delivered to GIUD or supplied to the customer will be determined. The net positive energy supplied to the customer will be at the applicable retail rate.

The net positive energy delivery to GIUD will be purchased by GIUD each billing period at this Cogeneration and Small Power Production Energy Rate. Other applicable fees and charges, including the customer charge and demand charge of the retail rate will be billed to the Customer.

PURCHASE PRICE: Energy from qualifying small power production and cogeneration facilities will be paid for on the following basis:

- A. For Qualifying Facilities of 25 kW and less payment on a monthly basis of an amount of \$0.015 per kilowatt hour plus the calculated power cost adder normally applied to purchase kilowatt hours for all net positive energy delivered to the City of Grand Island Utilities Department.

COGENERATION AND SMALL POWER PRODUCTION PURCHASED ENERGY RATE

TERMS AND CONDITIONS:

1. A signed written agreement between the Qualifying Facility and GIUD will be required.
2. Unless modified by contract, the GIUD Service Regulations shall apply to this schedule.
3. For facilities with more than 25 kilowatts of capacity, the purchase rate and other terms and conditions will be determined on a case by case basis.
4. Customer Qualified Facility installation must comply with all applicable City, County, and State Laws and Regulations.

Effective _____

Approved _____ Issued by _____

R E S O L U T I O N 2009-109

WHEREAS, the City of Grand Island Utilities Department (GIUD) and Douglas Brunk (the Parties) desire to enter into a Cogeneration and Small Power Production (25 kW and less) for Parallel Operation, Power Sales and Interconnection Agreement, in order to encourage the conservation of energy supplied by GUID, optimize the efficient use of facilities and resources, and to provide equitable rates to electric consumers; and

WHEREAS, Grand Island Utilities Department encourages the use of cogeneration and small production facilities where such devices might utilize alternate and/or renewable fuels and thus might make a significant contribution to the nation's effort to conserve conventional fossil fueled energy resources; and

WHEREAS, GIUD now has a customer who wishes to connect to the electrical distribution system with a wind generator; and

WHEREAS, the Parties desire to enter into an Agreement to allow interconnection, and to protect GIUD facilities and to create a mechanism to pay the customer should the Qualifying Facility produce excess energy to sell back.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND COUNCIL OF THE CITY OF GRAND ISLAND, NEBRASKA, that the Mayor is hereby authorized to, on behalf of the City, execute the Cogeneration and Small Power Production (25 kW and less) Parallel Operation, Power Sales and Interconnection Agreement between the City of Grand Island Utilities Department and Douglas Brunk in accordance with the terms and conditions generally described above.

- - -

Adopted by the City Council of the City of Grand Island, Nebraska, May 12, 2009.

Margaret Hornady, Mayor

Attest:

RaNae Edwards, City Clerk

Approved as to Form	☐ _____
May 7, 2009	☐ City Attorney