

# BRAINERD PUBLIC UTILITIES

Interconnection Process and Requirements  
For Qualifying Facilities  
(0 – 40 kW)



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# INDEX

<b>Document Review and History</b>	3
<b>Definitions</b>	4
<b>Overview</b>	4
<b>Application Process</b>	
Step 1: The inquiry is reviewed by BPU to determine the nature of the project	5
Step 2: Potential customer files an application	5
Step 3: BPU performs a review of customer's proposed interconnection design package	5
Step 4: Customer commits to BPU's metering requirements and possible construction of distribution system modifications	5
Step 5: Project construction	5
Step 6: BPU's cost reconciliation	6
Step 7: Final acceptance and interconnection	6
<b>Requirements for Interconnection</b>	
Metering	6
Generator Service Disconnect	6
Permits	6
System Inspection	7
Insurance	7
Billing	7
Rates	7
Operation and Safety	8
<b>Appendix A (Application)</b>	9
<b>Appendix B (Contract)</b>	11
<b>Appendix C (Notifications to Customers)</b>	14
<b>Exhibit 1</b>	15



## Definitions

**Qualifying Facility (QF)** – A qualifying facility is a cogeneration or small power production facility which satisfies the conditions in 18 Code of Federal Regulations, Section 292.101(b)(1) (1981), as applied when interpreted in accordance with the amendments to 18 Code of Federal Regulations, Sections 292.201-292.207 adopted through 46 Federal Register 33025-33027 (1981). The QF system must produce less than 120 percent of the customer's annual energy use, based on the past 12 months of energy use.

**Net Metering** - Customers electing Net Metering shall be billed under the appropriate retail rate only for that amount of energy used by customer which exceeds the energy delivered by the QF to Brainerd Public Utilities (BPU) at the same site during the same billing period. Any energy delivered by the QF to BPU in excess of that received by QF from BPU during the same billing period at the same site shall be compensated according to the appropriate rate schedule.

## Overview

The “Interconnection Process and Requirements for Qualifying Facilities (0-40kW)” document describes the requirements for connecting QF generation of 40 kW or less to Brainerd Public Utilities’ (BPU) distribution system. The primary purpose of this document is to ensure that any generation system installed on BPU’s distribution system functions reliably and does not adversely affect the safety and reliability of the electrical distribution system and those working on the system.

This document will provide applicants (customers) with an understanding of the process and information required allowing BPU to review and accept the applicant’s equipment for interconnection in a reasonable and expeditious manner. This document will ensure that customers are aware of the technical interconnection requirements and BPU’s interconnection policies and practices. Generation not operating in parallel is not subject to these requirements.

The time required to complete the process will reflect the complexity of the proposed project. Projects using previously submitted designs that have been satisfactorily tested will move through the process more quickly. Several steps may be satisfied with an initial application depending on the detail and the completeness of the application and supporting documentation submitted by the customer. Customers submitting previously tested systems, however, are not exempt from providing BPU with complete design packages necessary for BPU to verify the electrical characteristics of the generator systems, the interconnecting facilities, and the impacts of the customer’s equipment on BPU’s system.

## **Application Process**

### **Step 1: The inquiry is reviewed by BPU to determine the nature of the project.**

BPU staff will discuss the scope of the project with the potential customer to determine what specific information and documents (i.e. application, technical requirements, specifications, applicable rate schedules and metering requirements) will be provided to the potential applicant. The preliminary technical feasibility of the project at the proposed location may also be discussed at this time.

### **Step 2: Potential customer files an application.**

The filing must include the completed standard application form (Appendix A), including generator information, and a one-line drawing of the proposed QF and interconnecting system. BPU's application does not include the City's Building requirements e.g. permit(s). The customer, or their installer, is required to contact the City's Building Department for this information.

### **Step 3: BPU performs a review of customer's proposed interconnection design package.**

BPU will review the design package to ensure that the plans and design satisfy the goal of attaining a safe, reliable, and efficient interconnection and satisfy the technical requirements for interconnection. Upon completion of the review, BPU will notify the customer of its final acceptance of the customer's design or an explanation of the technical requirements the design fails to meet.

### **Step 4: Customer commits to BPU's metering requirements and possible construction of distribution system modifications.**

Metering for QF interconnection usually requires a non-standard metering installation. The customer will be responsible for the incremental costs of the metering over standard metering installation for the facility. If any construction on the BPU distribution system is determined to be required for the interconnection, the customer will be required to pay an advance payment for the estimated costs associated with the system modification. The customer and BPU then sign two original copies of the contract in Appendix B.

### **Step 5: Project construction.**

The customer can now install their facility in accordance with the previously submitted design, with comments incorporated into the installation design. BPU will commence construction and installation of any system modifications and metering requirements as identified in Step 4, after receipt of estimated system upgrade costs. BPU system modifications will vary in construction time depending on the extent of work and equipment required. The schedule for this work will be discussed with the customer.

**Step 6: BPU's cost reconciliation.**

BPU will reconcile its actual costs related to the customer's project against any advance payments for BPU distribution system construction made by the customer. The customer will receive either a bill for any balance due or a reimbursement for overpayment as determined by BPU. The customer must have all bills associated with the interconnection paid in full prior to BPU authorizing the operation of the interconnection.

**Step 7: Final acceptance and interconnection.**

BPU will review the results of its on-site verification and issue to the customer a formal letter of acceptance for interconnection. The customer's QF will be allowed to commence parallel operation upon electrical inspection by agencies having jurisdiction at the location, and have satisfactorily demonstrated to BPU the safe operation of the customer-owned QF system to BPU. In addition, the customer must have complied with and must continue to comply with any applicable code, safety, operating, maintenance, and or technical requirements. The customer is strongly urged to follow the manufacturer's maintenance, testing, and operation instructions for the life of the installed generation and associated controls.

## **Requirements for Interconnection**

**Metering**

Metering for generation interconnection usually requires a non-standard metering installation. The customer will be responsible for the cost associated with a non-standard facility metering installation. Depending on the nature of the customer's installation, a new meter socket(s) likely will need to be installed. This installation will be the customer's responsibility. See Exhibit 1 for metering details.

**Generator Service Disconnect**

The customer shall provide a visible, lockable manual disconnect switch within ten (10) feet of the meter location which is readily accessible to BPU at all times of the year. This disconnect switch shall be clearly marked, "Generator Disconnect Switch", with permanent half inch or larger letters. The disconnect switch will open all of the phases, but not the neutral.

**Permits**

The customer will provide BPU with copies of all electrical permits and inspections from agencies having jurisdiction over the location of the installation before interconnection of the generation will be allowed.

**System Inspection**

The QF will not be allowed to operate in parallel with BPU until the customer provides a satisfactory demonstration to BPU showing the safe operation of the generation system. The customer will also allow BPU to inspect and test the isolation and protective equipment when necessary.

## **Insurance**

The customer shall keep in force a policy of liability insurance, of at least \$300,000, against personal or property damage to BPU's system, equipment, and personnel arising from the installation, interconnection, and operation of customer's generating facility and shall provide annual proof of the insurance to BPU with said policy specifically naming BPU as an insured. The customer agrees to indemnify and hold harmless BPU from all claims whatsoever arising from customer's generating system.

## **Billing**

Billing for the energy usage and delivery will be based on a net metering calculation for generation less than 40 kW. Reimbursement for kilo-watt hours (kWh) produced and delivered to BPU above and beyond the customer's own use will be according to the BPU Average Retail Energy Rates (ARER) calculation.

Customers with a QF over 40kW will be reviewed on a case by case basis and either fall under standard rates or a negotiated contract as per Minnesota Rules: 7835.2000, 7835.3200, and 7835.3300,.

## **Rates**

BPU will calculate the customer's bill for the billing period using a Net Metering calculation and with the following conditions:

1. The customer will be billed for service in accordance with the rate structure and monthly charges that the customer would be assigned if the customer had not interconnected a QF.
2. If electricity supplied by BPU exceeds electricity generated by the customer during a billing period, the customer shall be billed for the net energy supplied by BPU in accordance with the appropriate rate schedule.
3. If the kWh generated by the customer's QF exceeds the kWh supplied by the grid during the billing period, BPU shall credit the customer's account by the dollar value of the excess kWh generated. This dollar value will be determined by multiplying the excess kWh generated for the month by BPU's current Average Retail BPU Rates for the previous year.
  - a. An outstanding credit balance on the account will be applied against the customer's total monthly charges from BPU in each subsequent month until the credit balance is completely offset. The phrase "total monthly charges from BPU" refers to all charges BPU may bill for. Currently that includes, among others, excess kWh generated, electric energy sold by BPU, electric monthly customer charge, water use, water monthly customer charge, sewer charges, sales taxes, storm water charges, etc.

- b. If the customer leaves the system, any outstanding credit balance on the account, due to excess kWh generated, will be paid to the customer after the final reading is processed through the billing system. The credit will be returned to the customer in a form of a check. Refunds are mailed on the 15<sup>th</sup> of each month.
4. The rates for sales and purchases of electricity may change over the time of this agreement. Also, at times the rates may need to be adjusted retroactively. Therefore, the customer and BPU agree that sales and purchases will be made under the rates in effect each month during the time this agreement is in force.
5. When an applicable tariff is developed and approved by the BPU Commission, established agreements will come to an end. The customer will abide by the terms and conditions laid out within the new tariff.

### **Operation & Safety**

The QF system shall not affect the safety, reliability, or operation of BPU's distribution system or adversely affect the quality of service of any adjacent customers. The QF shall not supply power to BPU during any outages of the distribution system or be used to energize any portion of a de-energized BPU circuit for any reason. Islanding is not permitted. BPU may require that the QF discontinue parallel operation due to safety, reliability, operational, and power quality issues. The QF is responsible for providing protection for the installed equipment and must adhere to all applicable national, state, and local codes.





## APPENDIX A

### Application for Installation of Customer-owned Grid-connected Electric Generating System of 40kW or less

#### **Customer:**

Name \_\_\_\_\_ Account No \_\_\_\_\_

Mailing Address \_\_\_\_\_

Installation Address \_\_\_\_\_

Phone No. \_\_\_\_\_ Alternate Phone \_\_\_\_\_

#### **System Designer & Installation Contractor Information:**

Design Consultant \_\_\_\_\_

Address \_\_\_\_\_

Contact Person \_\_\_\_\_ Phone Number \_\_\_\_\_

Installation Contractor (if different) \_\_\_\_\_

Address \_\_\_\_\_

Contact Person \_\_\_\_\_ Phone Number \_\_\_\_\_

#### **Specifications**

Estimated In-Service Date \_\_\_\_\_

Existing Electric Service: Amperes \_\_\_\_\_ Volts \_\_\_\_\_

Identify Type of Service: ( ) Solar PV array ( ) Fuel Cell ( ) Wind ( ) Other

If Other Describe \_\_\_\_\_

Specific Location of Service Disconnect Equipment on Property \_\_\_\_\_

\_\_\_\_\_

Generation Equipment Information: (Include copy of product literature)

Manufacturer\_\_\_\_\_Model No\_\_\_\_\_Version\_\_\_\_\_

( ) Synchronous ( ) Induction ( ) Inverter ( ) Other\_\_\_\_\_

Rating: \_\_\_\_\_ kW Rating:\_\_\_\_\_Rated Current (Amps)\_\_\_\_\_

( ) Single Phase ( ) Three Phase

Generator Connection: ( ) Wye ( ) Wye Grounded

Interconnection Voltage: \_\_\_\_\_ Volts\_\_\_\_\_

**Interconnection Compliance & Owner Acknowledgement**

The electrical system referenced above shall meet BPU’s “Interconnection Process and Requirements For Qualifying Facilities (0 – 40kW)”.

Customer shall be solely responsible for obtaining and complying with any and all necessary easements, licenses and permits, or exemptions, as may be required by federal, state, local statutes, regulations, ordinances or other legal mandates.

The customer shall submit documentation to BPU that the system has been inspected and approved by the local permitting agency regarding electrical code requirements.

Customer shall not commence parallel operation of the generating system until written approval of the interconnection has been given by BPU.

I, the undersigned, have completed this Appendix A for interconnection, which accurately describes the QF equipment to be interconnected and operated in parallel with BPU’s distribution system. I have read and understand the “Interconnection Process and Requirements For Qualifying Facilities (0–40kW)” and understand that approval of Appendix A is dependent on compliance with these requirements and the accuracy of the information as included in this Appendix A.

\_\_\_\_\_  
Customer Signature

\_\_\_\_\_  
Date



## APPENDIX B

### Contract For Cogeneration and Small Production Facilities Minnesota Rules 7835.9910 Uniform Statewide Contract

THIS CONTRACT is entered into on \_\_\_\_\_, \_\_\_\_\_, by BRAINERD PUBLIC UTILITIES, A MUNICIPAL CORPORATION (hereafter called BPU), and \_\_\_\_\_ (hereafter called "QF").

#### RECITALS

The QF has installed electric generating facilities, consisting of \_\_\_\_\_

\_\_\_\_\_  
(Description of facilities), rated at less than 40 kW of electricity, on property located at \_\_\_\_\_

The QF is prepared to generate electricity in parallel with BPU.

The QF's electric generating facilities meet the requirements of the Minnesota Public Utilities Commission (hereafter called "Commission") rules on Cogeneration and Small Power Production and any technical standards for interconnection BPU has established that are authorized by those rules.

BPU is obligated under federal and Minnesota law to interconnect with the QF and to purchase electricity offered for sale by the QF.

A contract between the QF and BPU is required by the Commission's rules.

#### AGREEMENTS

The QF and BPU agree:

1. BPU will sell electricity to the QF under the rate schedule in force for the class of customer to which the QF belongs.
2. BPU will buy electricity from the QF using the Average Retail Utility Energy Rate under Minnesota Rule 7835.3000.

A copy of the rate schedule is available at the BPU office.

3. The rates for sales and purchases of electricity may change over the time this contract is in force, due to actions of BPU or of the Commission, and the QF and BPU agree that sales and purchases will be made under the rates in effect each month during the time this contract is in force.
4. BPU will compute the charges and payments for purchases and sales for each billing period. Any net credit to the QF will be made to the QF's account with BPU during the calendar year within 15 days of the billing date following December 31. Any net credit to the QF will be paid by check..
5. The QF must operate its electric generating facilities within any rules, regulations, and policies adopted by BPU not prohibited by the Commission's rules on Cogeneration and Small Power Production which provide reasonable technical connection and operating specifications for the QF. This agreement does not waive the QF's right to bring a dispute before the Commission as authorized by Minnesota Rules, part 7835.4500, and any other provision of the Commission's rules on Cogeneration and Small Power Production authorizing Commission resolution of a dispute.
6. BPU's rules, regulations, and policies must conform to the Commission's rules on Cogeneration and Small Power Production.
7. The QF will operate its electric generating facilities so that they conform to the national, state, and local electric and safety codes, and will be responsible for the costs of conformance.
8. The QF is responsible for the actual, reasonable costs of interconnection which are estimated to be \$\_\_\_\_\_. The QF will pay BPU in this way\_\_\_\_\_.
9. The QF will give BPU reasonable access to its property and electric generating facilities if the configuration of those facilities does not permit disconnection or testing from BPU's side of the interconnection. If BPU enters the QF's property, BPU will remain responsible for its personnel.
10. BPU may stop providing electricity to the QF during a system emergency. BPU will not discriminate against the QF when it stops providing electricity or when it resumes providing electricity.

11. BPU may stop purchasing electricity from the QF when necessary for BPU to construct, install, maintain, repair, replace, remove, investigate, or inspect any equipment or facilities within its electric system. BPU will notify the QF before it stops purchasing electricity with a written notice and/or a telephone call.
12. The QF shall keep in force a policy of liability insurance for \$300,000, against personal or property damage to BPU's system, equipment, and personnel arising from the installation, interconnection, and operation of QF's generating facility, and shall provide annual proof of the insurance to BPU with said policy specifically naming BPU as an additional insured. The QF agrees to indemnify and hold harmless BPU from all claims whatsoever arising from the QF's generating system.
13. This contract becomes effective as soon as it is signed by the QF and BPU. This contract will remain in force until either the QF or BPU gives written notice to the other that the contract is canceled. This contract will be canceled 30 days after notice is given.
14. This contract contains all the agreements made between the QF and BPU except that this contract shall at all times be subject to all rules and orders issued by the Public Utilities Commission or other government agency having jurisdiction over the subject matter of this contract. The QF and BPU are not responsible for any agreements other than those stated in this contract.

\_\_\_\_\_  
QUALIFYING FACILITY

By \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_

BRAINERD PUBLIC UTILITIES

By \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_



## **APPENDIX C**

### **Notification to Customers Minnesota Rules 7835.4600 & 7835.4700**

1. Brainerd Public Utilities is obligated to interconnect with and purchase electricity from qualifying co-generators and small power producers. Qualifying facilities are defined under Subpart. 19 of Minnesota Rules 7835.0100.
2. Brainerd Public Utilities is obligated to provide information concerning its rates and interconnection policies relative to qualifying facilities to all interested persons, free of charge.
3. Any disputes over interconnection, sales, and purchases relative to qualifying facilities, are subject to Minnesota Public Utilities Commission upon complaint.
4. Inquiries should be directed to:

Brainerd Public Utilities  
P O Box 373  
Brainerd MN 56401  
218-825-3211

## Exhibit 1

The following diagram represents "Net Metering":

