

# Customer Generation

Your guide to  
interconnecting  
to the We Energies  
distribution system



we energies 

We appreciate the opportunity to serve you.



This booklet provides some basic information about connecting customer generation systems, such as wind turbines, solar photovoltaic systems, microturbines or fuel cells, to the We Energies distribution system. This process is called “interconnection” and must be conducted in a manner that protects our customers and employees from risks that could result from improper installation of customer generation.

It also is our intent to conduct such interconnections in a way that is cost-effective and timely for our customers. This brochure provides a broad overview of the necessary steps and requirements to interconnect customer generation. In all cases, the customer and installer are responsible for following the interconnection rules of the Public Service Commission of Wisconsin (PSCW) and for meeting all We Energies tariff requirements. For more information about interconnecting customer generation to the We Energies distribution system, call us at (800) 714-7777 ext. 7700 or visit our Web site at [www.we-energies.com/CG/](http://www.we-energies.com/CG/).

## Customer Generation

A number of options exist for customers to purchase their own on-site electricity generating systems. Customers who wish to install their own small-scale sources of generation that connect to the We Energies distribution system need to comply with Wisconsin Administrative Code Rules, Chapter PSC 119 (PSC 119), for interconnecting distributed generation (DG) facilities. These rules apply when owners of DG facilities with a capacity of 15 megawatts (MW) or less seek to interconnect to a public utility's electric distribution system – like We Energies.

**This document will guide you through the steps and procedures necessary to interconnect a DG facility to the We Energies electric distribution system. We Energies is committed to making the interconnection as simple for customers as possible. At the same time, we must protect the reliability of our distribution system and the safety of our customers and field personnel who potentially could be injured by customer generating equipment.**

## Your responsibilities

You and your contractor or installer are responsible for coordination of the design, installation, operation and maintenance of any customer generation system you install and for conforming with the requirements of We Energies' tariffs and rules, and applicable governmental laws and regulations (local, state and federal). These requirements are designed to protect distribution system facilities; avoid electrical interference problems; ensure the safety of customers, electric provider employees and the general public; and maintain overall system reliability.

You are required by law to maintain liability insurance (equal to or greater than the amounts indicated in PSC 119) or to prove financial responsibility by another means agreeable to We Energies.

You are required to notify us if a material modification is made to your generation equipment at any time during or after the installation process. A "material modification" is any modification that changes the maximum electrical output of a customer generation facility or changes the interconnection equipment, including:

- (a) Changing from certified to non-certified devices.
- (b) Replacing a component with a component of different functionality or UL listing.

You also are responsible for the proper installation, operation and maintenance of the specified protective devices. Finally, you shall obtain, at your expense, any and all authorizations, permits and licenses required for the construction and operation of your generating facilities.

## Our responsibilities

We Energies is responsible for promptly carrying out the steps listed in this brochure and for meeting all required steps and timelines in order to process your interconnection application.

We Energies has designated a primary contact to assist you with any questions or information you need to complete your interconnection.

Primary contact information can be found on the PSCW Web site at: <http://psc.wi.gov/electric/cases/electgen/dgprocedure.htm> as well as on our Web site at: [www.we-energies.com/CG/](http://www.we-energies.com/CG/). You also can call us at (800) 714-7777 ext. 7700.

# General interconnection process

The steps summarized below are required by state law to interconnect to the We Energies distribution system. Please consult references one and two on page six of this booklet or actual state law and associated guidelines.

## STEP 1

### ***Starting the interconnection process***

**Your role:** Contact us by calling (800) 714-7777 ext. 7700 to inform us that you wish to interconnect an electric generating system to the We Energies distribution system.

**Our role:** We will respond to your request within five working days and furnish you with all materials necessary to complete your interconnection application. All documents, forms and applications also can be found on our Web site at [www.we-energies.com/CG/](http://www.we-energies.com/CG/).

## STEP 2

### ***Completing the interconnection application***

**Your role:** Complete and submit the Standard Application Form to We Energies by mailing it to the name and address indicated on the form.

## STEP 3

### ***Application review***

**Our role:** Within 10 working days of receiving a new or revised application, we will notify you whether the application is complete. If the application is incomplete, you will be asked to resubmit it with the needed corrections.

## STEP 4

### ***Determine if engineering review is necessary***

**Our role:** When it is concluded that your application is complete, we will determine whether an engineering review is needed. If an engineering review is necessary, we will notify you within 10 working days and state the cost of that review.

*Note: If we deem that an engineering review is not needed, go directly to step 10 - you will not need to complete steps five through nine.*

## STEP 5

### ***Engineering review is needed***

**Our role:** Upon receiving written notification from the applicant to proceed and upon receipt of applicable payment, we will complete an engineering review and notify you of the results.

## STEP 6

### ***Need for a distribution system study***

**Our role:** If the engineering review determines that a distribution system study is necessary, we will include a written cost estimate in the review summary.

## STEP 7

### ***Completion of distribution system study***

**Our role:** Upon receiving written notification to proceed and payment of the applicable fee, we will conduct the distribution system study. This study is to assess the level of impact your DG system will have once connected to our grid. We will provide you with the study results.

## STEP 8

### ***Notification of construction or modification costs***

**Our role:** We will notify you of the results of the distribution system study and of the costs associated with any construction or modifications to our grid.

**Your role:** You will provide a written agreement to pay for work related to the interconnection modifications.

## STEP 9

### ***Installation of customer generation***

**Your role:** You will submit payment for the required upgrade of our distribution system. You will install your generating equipment within a timeframe that is mutually agreed upon by you and We Energies. You will notify us when project construction is complete.

**Our role:** Upon receipt of payment from you, We Energies will perform all work needed to upgrade our distribution system to accommodate your generating equipment.

## STEP 10

### ***System testing***

**Your role:** You are required to notify us of the completed installation and give us the opportunity to witness or verify the system testing. You also are required to provide us with the results of any tests.

**Our role:** Upon receiving notification that an installation is complete, we will do one (or more) of the following:

- > Witness commissioning tests.
- > Perform an anti-islanding test or verify the protective equipment settings at our expense.

*Or*

- > Waive our right, in writing, to witness or verify the commissioning tests.

## STEP 11

### ***Testing approval/rejection***

**Our role:** We will notify you of our approval or rejection of the interconnection.

If approved, we will provide a written statement of final acceptance and cost reconciliation.

If we do not approve the interconnection, you may take corrective action and ask that we reexamine your interconnection request.

## STEP 12

### ***Interconnection agreement***

**Your role:** Upon receipt of interconnection approval notice, a standard interconnection agreement shall be signed by the applicant and We Energies before parallel operation commences.

If you intend to sell energy to us, you also must execute a Surplus Energy Agreement with us.

When these forms are completed and signed by both parties, you may begin operation of your generating equipment.

### ***Detailed guide on distributed generation interconnection***

The Wisconsin Distributed Generation Interconnection Guidelines will help explain the PSC 119 rules and how these rules are expected to be implemented by both the utility and the customer. We Energies highly recommends that any customer interested in pursuing interconnection read these rules and guidelines before beginning the interconnection process.

### **References**

A list of documents and other references you'll need is provided below. You can receive copies of the latest versions of these documents from We Energies by calling (800) 714-7777 ext. 7700, or by visiting our Web site at [www.we-energies.com/CG/](http://www.we-energies.com/CG/).

1. Wisconsin Administrative Code Chapter PSC 119 – Rules for Interconnecting Distributed Generation Facilities  
<http://psc.wi.gov/electric/cases/electgen/dgprocedure.htm>
2. Wisconsin Distributed Generation Interconnection Guidelines (guide to the rules and diagrams of interconnections)  
[http://www.wisconsin-dr.org/WI\\_InterconnectionGuidelines.pdf](http://www.wisconsin-dr.org/WI_InterconnectionGuidelines.pdf)
3. Standard Application Form for DG facilities  
PSC Form 6027 and 6028  
<http://psc.wi.gov/electric/cases/electgen/electgenForms.htm>
4. Standard Interconnection Agreement for DG facilities  
PSC Form 6029 and 6030  
<http://psc.wi.gov/electric/cases/electgen/electgenForms.htm>

5. We Energies CG – Wisconsin Electric Power Company  
Tariff pages  
[http://we-energies.com/pdfs/etariffs/wisconsin/elecrateswi131\\_144.pdf](http://we-energies.com/pdfs/etariffs/wisconsin/elecrateswi131_144.pdf)

### **Summary**

Properly designed and applied customer generating systems provide an alternative means of generation to help meet the nation's future electricity needs. We Energies encourages and supports customers who wish to explore their own generating projects.

If you are considering installing a generating facility, please contact We Energies at (800) 714-7777 ext. 7700, Monday through Friday, between 8 a.m. and 5 p.m. Central time. You will be referred to a service manager or an energy services consultant who can answer your questions and help you plan your project.

### Distributed generation definitions

Customer generation also is referred to as distributed generation and represents an evolving and promising set of power technologies that typically has the following attributes:

- > Sited close to customer or located at a substation to support the electric distribution system.
- > Output is tailored to customer needs.
- > Generating capacity is between one kilowatt (kW) and 15 MW.
- > May be customer-, utility- or third-party owned.

### Distributed generation can be used to meet a variety of customers' electricity needs:

**Primary power** – Supplies the majority of a customer's electricity needs and uses the local utility electrical grid to provide backup and supplemental power.

**Peak shaving** – Allows customers to reduce their electric demand charges. Peak shaving may provide a win-win for both the utility and the customer by relieving electrical system

stress during periods of peak demand, and by allowing the customer to avoid on-peak demand charges and higher priced on-peak energy.

**Stand-alone power** – Provides primary electrical service for a customer without utility backup. In this case, the customer is completely isolated from the utility.

**Combined heat and power** – Involves the production of electricity and usable heat energy by an electric generating device. This can be advantageous for customers with consistent daily electricity needs that coincide with heat or steam process requirements. Larger systems are typically referred to as cogeneration.

**Backup power** – Provides electricity in case of loss of electric supply from the utility's system and may include a means of supplemental power during a momentary outage. Also called emergency or standby power.

### **Distributed generation includes a variety of technology options:**

**Wind** – Wind turbine generators, harnessing the energy contained in wind to turn wind turbine blades connected to a generator for the production of electricity.

**Solar/photovoltaic** – Photovoltaic materials contained in an array of solar cells convert energy from sunlight directly into electricity, typically connecting to the utility distribution system via an inverter.

**Biomass/agricultural digesters** – A anaerobic digester can be used to process farm manure through a process which converts the waste products over time into methane, which then can be combusted in one of the devices listed below.

**Internal combustion engines** – Devices much like an automotive engine, fueled with either diesel or natural gas, connected to and driving an electrical generator.

**Microturbines** – Small combustion turbines that burn natural gas to produce less than 500 kW of electric power. Simpler than internal combustion engines, they have only one moving part on

a central rotating shaft that generates electricity. They are characterized by simple design, modularity and fuel flexibility.

**Industrial gas turbines** – Combustion turbines in the one to 15 MW range.

**Fuel cells** – Produce electric and thermal energy through an electrochemical process rather than by burning a fuel. Hydrogen is the basic fuel. Hydrogen can be produced from natural gas or by renewable energy resources.

**Stirling engines** – A sealed external combustion heat engine that, in theory, can provide quiet and efficient power.

**Energy storage devices** – Batteries, flywheels, compressed air, super magnetic energy or other devices that store energy for later use. They also can be the components in an uninterruptible power supply.

### **Selling power to others**

It is possible for a customer that generates electricity within our service area to sell power to another utility. In that case, we may transmit or “wheel” the power from your facility for a fee. You will need to make separate arrangements with We Energies and the American Transmission Company to transmit power to others. We Energies would continue to supply supplementary, standby and maintenance power as required. Transmission of power over electric utility facilities from a customer generating system directly to a retail customer or to another facility owned by the generating customer is a form of retail wheeling. Retail wheeling (transmitting electricity generated by one customer to another retail customer) is not allowed in Wisconsin at this time.

Notes:



For additional questions call us at (800) 714-7777 ext. 7700 • Visit us at [www.we-energies.com/CG/](http://www.we-energies.com/CG/)