

Customer-Owned Generation

Connecting to the grid



taking responsibility

As an individual, your efficient use of energy brings benefits such as lower bills, improved comfort levels in your home and a reduced personal impact on the environment.

Acting together, our individual choices add up – for the benefit of our community, our environment and our energy future. That's the power of working together.

As your community energy company, we are committed to sharing our experience and energy expertise. You can always contact us for:

- Answers to your energy questions.
- Energy efficiency information and advice.
- Help in evaluating energy-saving options.
- Assistance in finding energy-efficient products.

ATTENTION

This guide is for interconnection of customer-owned generation that meets one or more of the following criteria:

1. The generation is NOT for residential use.
2. The generation is NOT entirely solar photovoltaic.
There is another form of electricity generation (including batteries).
3. The generation is greater than 20 kW-AC.

If your generation does not meet any of the above criteria, please use the “Residential Solar: Connecting to the grid” guide instead.

Guide for interconnecting customer-owned generation systems

This guide walks you through the process and explains the requirements for connecting your generation system to MGE's electric distribution system. Statewide standards – Wisconsin Administrative Code Chapter PSC 119 – help ensure the interconnection process is safe, reliable and consistent. All public utilities, customers and installers are responsible for following these standards.



Step 1 - Complete the Distributed Generation Application Form

You can find an application form at mge.com/customer-service/customer-owned-generation.

- For projects 20 kilowatts (kW) and under, use Form 6027.
- For projects greater than 20 kW and up to 15,000 kW, use Form 6028.
- For projects greater than 15,000 kW, call MGE at 608-252-4783.

The completed application should be signed by both the applicant and the installer.

Step 2 - Gather the necessary application materials to include with the completed Distributed Generation Application Form

Along with the Distributed Generation Application Form,

You will need to submit the following materials:

- Spec sheets for each model of inverter
- Spec sheets for each model of generator
- The Distributed Generation Interconnection Agreement signed by the applicant (explained in step 13)
- Application review fee (for sizes > 20 kW)

It is helpful if you also submit the following materials:

- Spec sheets for each model of inverter
- Spec sheets for each model of generator
- The Distributed Generation Interconnection Agreement signed by the applicant (explained in step 13)

What are the insurance requirements?

Insurance requirements are outlined in PSC 119. The chart below shows the minimum liability insurance coverage based on generation system size. Coverage is negotiable for systems greater than 1,000 kW and up to 15,000 kW (Category 4). MGE will work with the applicant and insurance company to determine the appropriate coverage for Category 4 systems.

The proof of insurance should be an official document from the applicant's insurance company and, at a minimum, should contain the following items:

- Name and address that match application
- Policy expiration date (must be at least one month out)
- Total amount of liability coverage
- Name and contact information for insurance provider

MGE must be named as an additional insured party in the customer's liability insurance policy for all Category 2, 3, and 4 installations. You can find more information at mge.com/customer-service/customer-owned-generation or call 608-252-4783.

PV System Size	Minimum Liability Insurance Coverage
Category 1 (≤ 20 kW)	\$300,000
Category 2 (> 20 kW and ≤ 200 kW)	\$1,000,000*
Category 3 (> 200 kW and ≤ 1 MW)	\$2,000,000*
Category 4 (> 1 MW and ≤ 15 MW)	\$Negotiated*

What should be included in the one-line schematic diagram?

- MGE Meter
- Generator or inverter
- Point of distributed generation connection to customer's electrical system
- Point of common coupling
- Lockable interconnection disconnect switch with a visual open – must be located outside as close to the transformer or service entrance as possible
- Method of grounding (generator and transformer ground connections)
- Protection functions and systems, including inverter model number
- Size of installation (kW-AC)

What should be included on the site plan?

- Location of exterior interconnection disconnect switch
- Adjoining street name
- Street address for the exact location of the distributed generation facility
- Location of major equipment
- Electric service entrance
- MGE electric meter
- Interface equipment
- MGE transformer or utility pole

What is the application review fee?

The application review fee is shown in the table below. There is no fee for Category 1 installations.

PV System Size	Application Review	
	Time Limit*	Fee
Category 1 (≤ 20 kW)	10 days	none
Category 2 (> 20 kW and ≤ 200 kW)	10 days	\$250
Category 3 (> 200 kW and ≤ 1 MW)	10 days	\$500
Category 4 (> 1 MW and ≤ 15 MW)	10 days	\$1,000

Step 3 - Submit the Distributed Generation Application Form and necessary application materials to MGE

Applications can be submitted electronically, by mail, or in-person.

- Electronic submittals should be sent to mgeDGAdmin@mge.com. It is preferred if all materials are submitted at the same time in separate PDFs. At a minimum this should be 4 separate PDFs.
- Mail in submittals should be mailed to:
Administrative Support
Madison Gas and Electric Company
PO Box 1231
Madison, WI 53701-1231
- In-person submittals can be dropped off during normal business hours in the lobby at 623 Railroad St, Madison, WI 53703.

Step 4 - MGE reviews the Distributed Generation Application materials

Once all of the application materials have been received, MGE will review those materials. MGE will notify the applicant within 10 working days if all the application materials are approved and if an engineering review is necessary. If an engineering review is not necessary then the application process will proceed to step 9.

Step 5 - MGE performs engineering review

If an engineering review is necessary, MGE will communicate the engineering review costs. The application fee will be applied to the engineering review costs. Information on review times and fees are in the chart below.

PV System Size	Engineering Review	
	Time Limit*	Fee
Category 1 (≤ 20 kW)	10 days	none
Category 2 (> 20 kW and ≤ 200 kW)	15 days	$\leq \$500$
Category 3 (> 200 kW and ≤ 1 MW)	20 days	Cost based**
Category 4 (> 1 MW and ≤ 15 MW)	40 days	Cost based**

Applicant must provide written permission and send payment before MGE will start the engineering review. MGE will then perform the engineering review within 10 to 40 working days, depending on generation system size.

The engineering review will determine if interconnecting a generation system could affect the electric distribution system. For example, the interconnection may cause equipment loading concerns or system protection issues. The engineering review may uncover potential issues that warrant a distribution study. If needed, MGE will notify the applicant that a distribution system study is required.

Step 6 - MGE conducts a distribution system study

If a distribution system study is required, MGE will provide a written cost estimate. Information on study times and fees are in the chart below.

PV System Size	Distribution System Study	
	Time Limit*	Fee
Category 1 (≤ 20 kW)	10 days	none
Category 2 (> 20 kW and ≤ 200 kW)	15 days	$\leq \$500$
Category 3 (> 200 kW and ≤ 1 MW)	20 days	Cost based**
Category 4 (> 1 MW and ≤ 15 MW)	60 days	Cost based**

Applicant must provide written permission and send payment before MGE will start the distribution system study. MGE will then perform the distribution system study within 10 to 60 working days, depending on generation system size.

The purpose of the distribution system study is to further analyze potential issues identified during the engineering review. The study will determine whether distribution system modifications are needed to accommodate the proposed generation system.

Step 7 - MGE notifies applicant of distribution system study results

MGE will notify applicant of the distribution system study results. Modifications to the electric distribution system may be needed. Modifications may include, but are not limited to, replacing smaller MGE high-voltage wires with larger wires; replacing distribution transformers at the point of interconnection with the customer; modifying MGE's system protection schemes; or installing telemetry equipment to monitor the status of the generation system.

Step 8 - MGE completes electric distribution system modifications

If modifications to the electric distribution system are needed, MGE will provide a written cost estimate. Applicant must agree in writing to pay for the modifications and send payment before MGE will perform the modifications.

MGE will then complete the electric distribution system modifications and notify the applicant in writing when the work is done.

Step 9 - The Distribution Generation Application is approved

Once the application is approved, MGE will send an official approval email to the applicant. This email will contain the Distributed Generation Interconnection Agreement if one was not submitted with the application materials.

Step 10 - The generation system is installed

You may now complete the generation system installation.

Step 11 - Electrical inspection

After the installation is complete, call the electrical inspector to schedule an inspection.

After your generation system passes the electrical inspection the inspector should send the completed electrical permits to MGE. It is recommended that this be done within 2 days of the inspection.

Step 12 - MGE witnesses system testing

Within 2 days of receiving the completed electrical permits, MGE will reach out to schedule system testing. MGE will witness the system testing (commissioning). During commissioning, MGE may:

- Perform an anti-islanding test.
- Verify protective equipment.
- Review metering requirements and make changes if necessary.

Customer will not be charged for MGE's employee time.

After system testing is complete, MGE will review the results and notify the applicant if the system meets specifications within 5 to 10 working days, depending on generation system size. For approved interconnections, MGE will inform the applicant in writing and provide cost reconciliation. If interconnection is not approved, the applicant may take corrective action and ask MGE to review again.

Step 13 - Sign interconnection agreement

MGE and the applicant sign the Distributed Generation Interconnection Agreement. This Agreement is preferably submitted with the rest of the application materials in step 3. This Agreement should be signed and dated by the applicant at the bottom. None of the other fields should be filled in by the applicant, especially the date at the top of the Agreement.

You can find an agreement form at mge.com/customer-service/customer-owned-generation.

- For projects 20 kW and under, use Form 6029.
- For projects greater than 20 kW and up to 15,000 kW, use Form 6030.

MGE then interconnects the generation system to the electric distribution system. If the applicant is not available to sign the Agreement at this time and they have not submitted a signed Agreement already then MGE will not sign the Agreement and will not interconnect the generation system.

After MGE has interconnected the generation system to the electric distribution system, MGE will send a copy of the fully executed Interconnection Agreement to the applicant and a copy to the installer.

MGE Parallel Generation rates

If customers want to interconnect a generation system to the electric distribution system and sell electricity back to MGE, customer have two rate options.

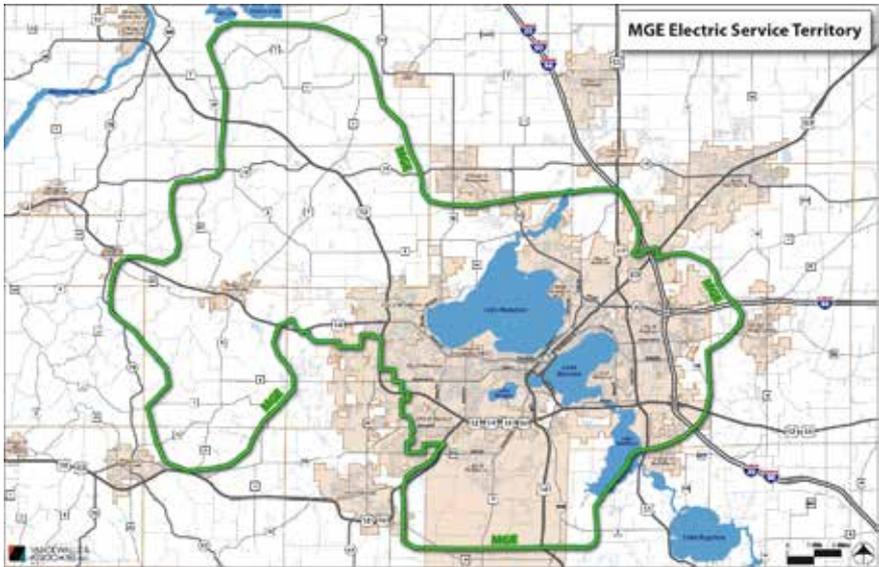
- PG-1 - Parallel Generation
 - o For interconnected generation systems of any size
- PG-2 - Parallel Generation: Net Metering
 - o For interconnected generation systems up to 100 kW (default rate)
 - o Net metering is a rate option that credits the customer's MGE bill at the appropriate retail rate for any electricity generated from the generation system that flows back onto the electric distribution system. If over the previous 12-month period the amount of electricity from a generation system sent to the electric distribution system exceeded the amount of electricity used, the customer is a net seller to the electric distribution system. Net sellers are credited at a different rate for a portion of electricity generated.

For more information, call 608-252-4873.

The area we serve

MGE's Electric Service Territory

MGE serves 146,000 electric customers in Dane County, including the communities of Cross Plains, Fitchburg, Madison, Maple Bluff, McFarland, Middleton, Monona, and Shorewood Hills.



Listening. Learning.

MGE takes responsibility to provide information and education to serve our customers and stakeholders. We educate customers today to help inform their decision making. We educate tomorrow's stakeholders so they can help plan our energy future.

Bring MGE into the planning process early on to keep your projects running smoothly. *Working together we can make a difference.*

Call MGE and ask for a business account manager or visit our website for information about energy and more. We provide the technical, financial, and education services you need to stay competitive.

- mge.com/business
- 608-252-7222
- 1-800-245-1125

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