

# Consumer Guide for On-Site Generation (Distributed Generation)

The information in this guide is provided by the Iowa Utilities Board (IUB) and is intended for residential and small business customers who are considering the installation of electric generation (wind, solar, biomass, etc.) on their property. This document is for informational purposes only; use of the guide is not required. The guide has five sections:

1. Before You Begin
2. Distributed Generation Checklist
3. Choosing a Dealer and Equipment
4. Finance Options
5. Online Resources

## 1. Before You Begin

**Assess your goals.** Are you exploring on-site generation to reduce your energy usage or to increase your use of renewable energy?

If your primary interest is to **reduce your energy usage**, consider conducting an energy efficiency audit and implementing the recommendations. An energy audit may show energy efficiency improvements that could help you reduce your electric usage and could allow you to install a smaller distributed generation system. Contact your utility to get more information about its energy efficiency programs. If you are served by an electric cooperative or municipal utility, review your electric bill for contact information.

*Find contact information for utilities and utility associations in the Resources section.*

If you are interested in **increasing the amount of renewable energy on the utility grid**, you can voluntarily contribute to the development of renewable energy through your utility's Alternative Energy Purchase Program, also known as a green pricing program. Contact your utility to get more information. For more information, also see Iowa Code § 476.47.

If you are interested in **producing your own electricity and having a distributed generation system on your property**, the rest of this guide will help you with that process. Please keep in mind that Iowa law requires that the distributed generation system owner notify the interconnected utility before installing a distributed generation system.

**Review legal requirements.** To ensure there are no legal barriers to your proposed distributed generation system, ask your local planning and zoning commission or city officials to identify applicable zoning ordinances and building permit requirements. You should also consult an attorney regarding any legal issues and to determine whether your property is subject to restrictive covenants or easements that affect the installation.

**Review insurance issues.** Discuss liability coverage and insurance needs with your insurance agent and review the applicable insurance requirements with your utility.

The next section will help you gather information needed to begin your project.

## 2. Distributed Generation Checklist

**Gather information.** Gather your utility bills or contact your utility to request copies. The bills will provide historical electric usage for your property, including the utility rates charged and paid.

Review information to become familiar with the technology and terminology.

*The U.S. Department of Energy and the Database of State Incentives for Renewables and Energy Efficiency (DSIRE) in the Resources section can provide more information.*

**Solicit and compare quotes from dealers/installers.** See the *Choosing a Dealer and Equipment* section for additional guidance.

**Select your dealer/installer.** Your qualified dealer/installer should be able to help you with the remaining areas of the checklist. You will have legal obligations with regard to your facility, so you should make sure you are fully aware of your obligations.

**Consider costs.** Check with your accountant, tax advisor, attorney, or finance professional to ensure that any incentives and financing options are right for you.

*Refer to the Database of State Incentives for Renewables and Efficiency in the Resources section for additional incentives.*

Identify federal, state, and utility incentives and review these factors:

- Finance/ownership options
- Purchase/own vs. lease
- Third-Party Power Purchase Agreement
- Estimated simple payback period\*

*\*Your total initial cost (including interconnection costs) divided by the remainder of the annual energy cost savings minus annual operating costs equals your payback in years.*

**Total Initial Cost (including interconnection)**

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**= Payback (in years)**

**(Annual Energy Cost Savings – Annual Operating Costs)**

- Review assumptions used for the following:
  - Cost of the system Include equipment, installation, interconnection, and incentive assumptions
  - Energy cost-savings assumptions: Electric rate, utility assumptions (e.g., net metering).
  - Annual operating costs: Insurance, maintenance, etc.

*Understand that electric rates are dynamic and that some fixed aspects of rates may not be offset by a distributed generation system. Future utility rates are difficult to predict and have significant impact when evaluating a quoted price and any projected savings.*

**Review and understand requirements for utility interconnection.** Contact your utility to discuss distributed generation systems, project plans, utility policies, and interconnection.

**Review interconnection requirements, safety, and special permits that may be required.** Iowa law requires that the distributed generation system owner notify your electric utility at least 30 days before installing a distributed generation system.

**Review IUB interconnection rules.** Iowa Administrative Code 199—45. Please note that not all utilities are subject to these rules.

**Review IUB Cogeneration and Small Power Production Rules.** Iowa Administrative Code 199—15.

*Plan that the State of Iowa or the applicable local authority will require a construction permit and an inspection upon completion. Your electric utility may also require verification that the system meets applicable standards prior to authorizing your system to operate.*

### **3. Choosing a Dealer and Equipment**

There are many how-to guides for purchasing solar, wind, or other distributed generation systems. To ensure you get the system that best meets your needs, be diligent in your research and ask questions. Remember that dealers operate independently from your utility.

**Get a written project proposal from multiple dealers and compare.** Make sure the estimates are for the same type and size of system. The proposal should include:

- detailed costs (including hardware, installation, connection to the grid, permitting, sales tax, equipment warranty expense, and ongoing maintenance requirements and costs)
- other information, such as expected life of the system
- estimates of general time periods the system will produce electricity and how much of your electric needs will be provided

**Get a dealer's qualifications related to a specific product/system.** Make sure the dealer provides all information in writing. Ask these questions:

- Can the dealer comply with all the technical requirements included in the utility's Standard Distributed Generation Interconnection Agreement?
- Can the dealer comply with applicable state and local building codes and arrange for any necessary code inspections with respect to this installation?
- Does the dealer have references? Check them, and look at other facilities installed by the dealer.
- Does the dealer have insurance and what does it cover?
- Are there any pending complaints or active judgments or liens against the dealer?
- Does the dealer guarantee the work?
- What are the terms of any guarantee?
- Is the dealer familiar with your utility's policies on interconnection, net metering, or utility buy-back (avoided cost) rates?
- Is the dealer aware of any incentives that may be available for the system?

- What is the maintenance of the system, training to operate the system, and how you will be able to monitor the system's performance?

For solar projects, also ask these questions:

- What type of roof preparation is needed?
- What condition does the roof need to be in for a roof mount?
- Who is responsible for repairs if there are structural damages from the installation?
- Who is responsible for removal and reinstallation of the system when your roof needs to be replaced or repaired?

**Beware of scams.** Be wary of door-to-door solicitations, requests for verbal agreements, high-pressure sales tactics, demands for cash or large down payments, or scare tactics.

*Find information in the Resources section for the Better Business Bureau and the Attorney General Consumer Protection Division.*

**Review and compare options.** Make notes and keep records of any representations made by the dealer.

**Consider the warranty associated with the specific equipment manufacturer.** Ask these questions:

- Who is responsible for equipment replacement while the hardware is under warranty?
- If there is a hardware warranty issue, who is responsible for the costs of removing the old equipment and installing the replacement equipment?
- Who provides notice, when must it be given, and what other provisions apply if the installer or inspector needs access to your home?

## 4. Finance Options

Compare the costs to own a distributed generation system versus the costs of a lease or a third-party power purchase agreement.

**Purchase/Own.** A distributed generation system is a long-term investment. When you own the system, you assume the responsibility of operating and maintaining the system.

Consider whether to purchase the distributed generation system by:

- paying for the system up front or
- financing the system through a bank or other financial institution.

**Lease.** Leases typically require less capital investment up front. The customer simply rents the system from a company for a fixed monthly payment for a period of time, no matter how much electricity the system generates each month. The monthly lease payment may escalate with time. You may or may not be responsible for operation and maintenance costs.

There may also be lease-to-own options. You should review the terms of any lease agreement carefully to make sure you understand your rights and obligations, as well as the services provided by the Lessor.

Third-party power purchase agreement. In a third-party power purchase agreement, a third-party developer owns and operates the system on a customer's property. That customer purchases the system's electric output for a period of time and at a price (typically per kWh) specified in the agreement.

**Considerations for a lease or a third-party power purchase agreement.** Ask these questions:

- Who owns any renewable energy credits (RECs) or certificates associated with the system? (RECs represent the environmental, social, and other non-power attributes of renewable electricity generation. The RECs may be traded or sold separately from the electricity associated with the renewable generation. RECs also may decrease your costs if you own them and can use them or sell them.)
- Who receives any tax credits or other incentives?
- Will the installation affect my property taxes?
- Who pays the taxes on it, including any increase in property taxes?
- What happens to the lease and the installation if the property is sold?
- Can a system be bought before the end of the agreement/lease?
- Who owns a leased system at the end of the agreement/lease?
- Is the product and performance of the product specified in the agreement/lease?
- Does the agreement specify who is responsible for system maintenance?
- Does the monthly fee or price per kWh increase over time?
- If I do not own my distributed generation system, will I be compensated for any excess power generated?

For solar projects, also ask who pays to remove the system and repair the roof (if repairs are necessary) at the end of the agreement/lease.

## **5. Resources**

More information is available through utility companies and associations, state and federal agencies, and nonprofit groups.

Visit the websites listed on Page 6 to search for utility tariffs, programs and incentives, and key terms such as net metering, payment for excess generation, energy efficiency, interconnection or distributed (or customer-owned) generation.

<b>Company/Agency</b>	<b>Webpage</b>	<b>Search for</b>
Iowa Attorney General	<a href="http://iowaattorneygeneral.gov">iowaattorneygeneral.gov</a>	How to file a customer complaint
Iowa Department of Safety – State Fire Marshal Division	<a href="http://dps.iowa.gov">dps.iowa.gov</a>	Electrical Examining Board Licensing, Permits and Inspections
Iowa Department of Revenue	<a href="http://tax.iowa.gov">tax.iowa.gov</a>	Solar energy system tax credits
Iowa Economic Development Authority	<a href="http://iowaeda.com">iowaeda.com</a>	Iowa Energy Center Grant Program Energy Infrastructure Revolving Loan Program
Iowa Utilities Board	<a href="http://iub.iowa.gov">iub.iowa.gov</a>	On-Site (Distributed) Generation <ul style="list-style-type: none"> <li>• Interconnection rules (199 IAC chapter 45)</li> <li>• Cogeneration and Small Power Production rules (199 IAC chapter 15)</li> </ul> Renewable Energy Tax Credits
Alliant Energy (Interstate Power and Light Company)	<a href="http://alliantenergy.com">alliantenergy.com</a>	Ways to save <ul style="list-style-type: none"> <li>• energy efficiency programs and rebates</li> </ul> Clean Energy <ul style="list-style-type: none"> <li>• Second Nature Program</li> <li>• generating your own solar</li> <li>• customer interconnection</li> </ul>
Iowa Association of Electric Cooperatives	<a href="http://iowarec.org">iowarec.org</a>	Iowa member co-ops
Iowa Association of Municipal Utilities	<a href="http://members.iamu.org">members.iamu.org</a>	Distributed Generation Toolkit page
MidAmerican Energy Company	<a href="http://midamericanenergy.com">midamericanenergy.com</a>	Residential <ul style="list-style-type: none"> <li>• energy efficiency programs and rebates</li> </ul> Delivering Energy <ul style="list-style-type: none"> <li>• customer energy generation and rooftop solar</li> </ul>
U.S. Department of Energy	<a href="http://energy.gov">energy.gov</a>	Save energy, save money Clean energy
North American Board of Certified Energy Practitioners	<a href="http://nabcep.org">nabcep.org</a>	Installer certification
Better Business Bureau	<a href="http://bbb.org">bbb.org</a>	File a complaint
Database of State Incentives for Renewable energy	<a href="http://dsireusa.org">dsireusa.org</a>	Policies and incentives by state