

Are you a homeowner or small business owner considering a renewable energy installation?

There are questions you need to be able to answer and questions you should address with professionals (installers/contractors, insurance agents, and your utility) *before* committing to a solar, wind, or geothermal system.



A renewable energy system is an investment that should be carefully considered and assessed. Classes may be available through nonprofit organizations, local colleges, and universities that can provide residential and small business owners with foundational knowledge to help in making informed decisions.



Renewable Energy Installation Questions



Questions to research and answer **PRIOR** to contacting an installer/contractor

These questions can help clarify exactly what you are looking for by installing a renewable energy system and help you gather information that the installer you pick will need to know before any work begins.

GENERAL QUESTIONS

- What are my goals for pursuing a renewable project?** Are you looking to use renewables to generate electricity and/or reduce natural gas use, or do you want to completely disconnect from the grid?
- Have I educated myself about the installation and maintenance of a renewable energy system? Where can I learn more?** Learn more at these websites:
 - Geothermal – www.geo-energy.org
 - Solar – www.nrel.gov/solar
 - Wind – www.awea.org

FINANCIAL AND INCENTIVE QUESTIONS

- How much can I afford?** Depending on your location, what system will work for you, local regulations, and incentives, the price can vary widely for different types of renewable systems.
- Will there be a return of investment?** For some, a renewable system can eventually pay for itself. However, if you don't do your research or choose the renewable system that best fits your needs, you may end up losing money.
- Are there state, federal, local or utility incentives for renewable energy installations at a residence or small business?** Many incentives are listed at www.dsireusa.org.
- What is the application process for these incentives? Do I apply before the installation or after?** Be sure to find out the details of the application process before installation so you follow all of the necessary requirements to receive any available incentives.
- Will my utility charge a fee?** Some utilities do charge fees for the installation of a renewable system. Make sure to check with your power provider.

ENERGY USE QUESTIONS

- What is my annual electricity usage in kWh? Annual gas usage in therms?**
- What is my summer and winter electric use in kWh? Gas use in therms?**
You can answer the above questions by looking at your utility bills or by consulting with your utility.

Renewable Energy Installation Questions

MORE ENERGY USE QUESTIONS

- What are the benefits of having an energy audit before investing in a renewable energy system?** A home energy audit is a great tool to assess how much energy your home consumes and to evaluate what measures you can take to make your home more energy efficient. An audit will show you problems that may, when corrected, save you significant amounts of money over time. Check with your utility to see if they offer free or low cost energy audits. For more information, go to www.energysavers.gov.
- What time do I use the most energy?** You will want to conduct an energy audit in your home to find the answer. Discovering when you typically consume the most energy will help to figure out which renewable system will help fit your needs.
- What percentage of my energy needs would I like to supply with renewable sources?** Defining your expectations will help identify the equipment needed to reach your goal.
- Is my main electrical service panel adequate?** Consultation with a qualified electrician can help make this assessment.

SITE ASSESSMENT QUESTIONS

- How large is my yard/acreage?** Knowing this allows for the option of a ground-mount solar panel. You will also need this information to assess the viability of a wind turbine tower. The type of geothermal unit used depends on yard/acreage as well as the loop systems used as they are usually buried underground or in a pond/lake.
- How old is my roof?** If a roof is near the end of its service, 15+ years, then it is prudent to re-roof before mounting a solar panel so it does not have to be removed later for a new roof.
- Is my roof structurally sound?** Consultation with a contractor can help make this assessment.
- Is my roof positioned well for solar? If not, what are other options?** Generally speaking, you want your panels to face south. If they face a different direction you will see loss in efficiency.
- Is there another building (garage, shed, barn) that can be utilized?** This could be an important consideration if the roof on your home is not facing south.
- Does my site have potential issues like shading or obstructions?** Such issues may rule out a particular renewable energy system. If there is a lot of shading, a solar system will be ruled out. Trees and buildings can cause wind turbulence, which can affect placement of a wind turbine.
- Do I need approval from my homeowners association?** Homeowner association requirements vary greatly. Check with your local clerk of courts for your association's covenants and restrictions.

Renewable Energy Installation Questions

HIRING/CONTRACTING QUESTIONS

- What, if any, certifications or licenses are required by contractors?** Licensing requirements are put into place to protect consumers as well as the reputation of the industry. Contractor licensing is required by and specified by states. Certifications are optional for installers/contractors. It reflects additional training, experience, or testing voluntarily undertaken by the installer/contractor. For more information, visit www.dsireusa.org/solar/solarpolicyguide/?id=23.
- How do I find a qualified contractor?** There are websites that can help you find a qualified contractor. For solar, go to www.findsolar.com or www.nabcep.org. For geothermal, go to www.igshpa.okstate.edu. Currently, there are no national databases for wind energy contractors. You may want to contact wind turbine manufacturers to find possible distributors in your area. For information on wind energy, go to www.awea.org.

PERMITTING QUESTIONS

- Do I need to get a permit from my municipality and/or county?**
- What are the fees for a permit?**
- How long does the permit process usually take?**
Regulations, costs, and processing time vary by location. A good place to start in answering the above questions is your municipality's/county's zoning office.
- Are inspectors in my municipality trained in renewable energy systems?** If not, this could add time and cost to a project.

INSURANCE QUESTIONS

- Is additional homeowners insurance required for a renewable energy system?** Not necessarily. Most insurance companies cover home solar panels. In fact, many carriers may offer a slightly lower rate because environmentally friendly people are less likely to make an insurance claim. Some insurance companies have even been known to offer a 2 to 3 percent discount for home solar panels. However, some insurance companies will charge a fee for home solar panels, arguing that it adds an increased value to the home. Check with your insurance agent to make sure your carrier will insure your renewable system and see if you can get a discount or lower rate. Also check with your power provider for any insurance requirements they might have. You can go to www.insuranceagents.com to find an agent.
- Does my utility require addition insurance on my renewable system?** Many utilities do require insurance. Make sure to ask your electricity provider.

Renewable Energy Installation Questions

SOLAR-SPECIFIC QUESTION

- Do I want to use solar for electricity, hot water, and/or space heating?** This will determine the size of the system needed and how much energy will be used to provide sufficient power. Your installer can provide more information.
- Can a solar renewable system store energy when it is not needed?** The sun is not always shining when you need electricity. Find out your options when your renewable system is not running.

WIND-SPECIFIC QUESTIONS

- What are the local regulations for wind turbines?** Local regulations will determine set back and spacing requirements from property lines and occupied dwellings. The authority having jurisdiction will have more information on this.
- Would wind be possible/logical for my site and application?** In some areas, with tall buildings or trees, wind might not be a feasible option. You will want to have a wind audit performed on your property to be sure wind is the right renewable resource for you. More information can be found at www.awea.org.
- Can a wind renewable system store energy when it is not needed?** The wind does not always blow when you need electricity. Find out your options when your renewable system is not running.

GEOHERMAL-SPECIFIC QUESTIONS

- What different types of geothermal systems are there, and which system would be best for my application?**
- Will the site support a geothermal system?**
- Is there enough room for a closed loop system?**
- Is a pond available on the site?**
The website www.energysavers.gov/renewable_energy/geothermal can help you find the information you need for answering these questions.

NET METERING/INTERCONNECTION QUESTIONS

- What is net metering?** Net metering allows for the flow of electricity both to and from the customer—typically through a single, bi-directional meter. When a customer's generation exceeds the customer's use, electricity from the customer flows back to the grid, offsetting electricity consumed by the customer at a different time during the same billing cycle. In effect, the customer uses excess generation to offset electricity that the customer otherwise would have to purchase at the utility's full retail rate. Net metering is required by law in most U.S. states, but these policies vary widely. For more information, go to www.dsireusa.org.

Renewable Energy Installation Questions

MORE NET METERING/INTERCONNECTION QUESTIONS

- What are interconnections standards?** Interconnection standards specify the technical and procedural process by which a customer connects an electricity-generating system to the grid. Such standards include the technical and contractual terms by which system owners and utilities must abide. State public utility commissions typically establish standards for interconnection to the distribution grid, while the Federal Energy Regulatory Commission (FERC) has adopted standards for interconnection to the transmission level. Many states have adopted interconnection standards, but some states' standards apply only to investor-owned utilities—not to municipal utilities or electric cooperatives. (Several states have adopted interconnection guidelines, which are weaker than standards and generally apply only to net-metered systems.) Find out your state's policies on net metering at <http://bit.ly/1sYKkNo>.
- Is net metering/interconnection an option from my electric utility or electricity provider?**
Contact your utility for this information.
- Is there an application and fee associated with net metering and/or interconnection?**
Some power providers charge fees. This will vary with each entity and can run from a few dollars to several hundred. Check with your provider for applicable fees.

Renewable Energy Installation Questions



Questions to ask **DURING** meetings with professionals

These questions can help guide discussions with installers/contractors, your insurance agent, and your utility to help you make decisions and guide project work. Some of these may repeat questions you have previously answered in your own research, but it is a good idea to get the input of the installers/contractors and other professionals on these matters as well.

GENERAL QUESTIONS

- What types of renewable energy systems are currently available?
- Which technology offers the best investment of my resources?
- Which technology fits my needs the best?

FINANCIAL AND INCENTIVE QUESTIONS

- Is financing available through my installer, city (PACE), or local bank?
- When do I apply for incentives?
- Are any incentives guaranteed, or is there an approval process?
- Will the quote I receive from my contractor include the incentives?
- Will my contractor submit the paperwork for the incentives or will I need to do that?
- Are there additional fees to consider besides the system components and installation—like permitting, interconnection, structural engineer, etc.?
- Will there be a return of investment?

ENERGY USE QUESTIONS

- Is my main electrical service panel adequate?
- Should I have an energy audit before investing in a renewable energy system?
- How do energy efficiency improvements affect a renewable energy system?

SITE ASSESSMENT QUESTIONS

- Is my roof structurally sound?
- Is my roof positioned for solar? If not, what are other options?
- How much space is required for the various renewable energy projects that I am interested in?
- Does my site have issues (shading, obstructions, etc.) that rule out a particular renewable energy system?
- What are the zoning and permit requirements in my municipality and/or county?
- Do I need approval from my homeowners association?

Renewable Energy Installation Questions

HIRING/CONTRACTING QUESTIONS

- What kind of experience and training does the contractor have?
- What licenses, certifications, and/or accreditations does the contractor have?

PERMITTING QUESTION

- Do I have to apply for the permit or will the installer/contractor do that?

INSURANCE QUESTIONS

- Is additional homeowners insurance required for a renewable energy system?
- Do I need to independently insure the renewable energy system?
- Are there any related discounts available?

SOLAR-SPECIFIC QUESTIONS

- Would solar photovoltaic or solar thermal be possible/logical for my site and application?
- What size system (electric or thermal) do I need?
- How much does a system (electric or thermal) cost?
- What are the local regulations for solar systems?
- How much will my electric bill be reduced annually by installing a solar photovoltaic system?
- How much will my gas bill be reduced annually by installing a solar thermal system?
- Are there any maintenance costs? If so, what are they? Can I do them myself, or do I have to hire someone?
- How do I deal with weather and storm-related effects, such as snow and hail?

WIND-SPECIFIC QUESTIONS

- Would wind be possible/logical for my site and application?
- What size system would I need?
- How much does a system cost?
- How much will my electric bill be reduced annually by installing a wind turbine?
- What are the maintenance costs? Can I do them myself, or do I have to hire someone?

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GEOHERMAL-SPECIFIC QUESTIONS

- Is geothermal possible/logical for my site and application?**
- How much does a system cost?**
- How much energy will a geothermal system save me annually?**
- What is the net energy impact of a geothermal system? It saves gas usage, but does it increase electric usage?**

NET METERING/INTERCONNECTION QUESTIONS

- What is required by my electric utility? How much lead time is required?**
- Will my contractor submit interconnection and net metering applications, or will I be responsible for that?**



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