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## Environmental Siting of Distributed Energy Resources

When evaluating potential distributed energy resource (DER) systems and technologies for your facility, you'll want to know the environmental siting and approval requirements for each system. Environmental siting addresses the emissions, noise, and visual impacts created by a DER system and determines which permits are necessary. However, some state and local approval agencies are not yet

will help you understand the steps involved in the process and where to find additional information.

### Does Technology Make a Difference?

Environmental siting requirements vary, depending on the type of technology you choose. For example, solar photovoltaic systems usually have few, if any, siting issues, particularly when they are integrated into the roof of a building. Even then, however, there might be resistance in some communities that have strict rules on the appearance of buildings or in some designated historic areas. Small wind turbines are generally not recommended for urban areas because of visual concerns and potential noise impacts. But they are usually easy to site in rural locations.

Fuel cell systems are generally easier to site because of their inherently low emissions and silent operation. But other generation systems are likely to fall under state, local, and federal restrictions on air emissions. If the system generates noise that can be heard off site, there may be local opposition to the installation. Of course, if a building is needed to house the facility, applicable building codes and permits will also apply.

Most contractors should be able to assist you in meeting siting requirements for your system.

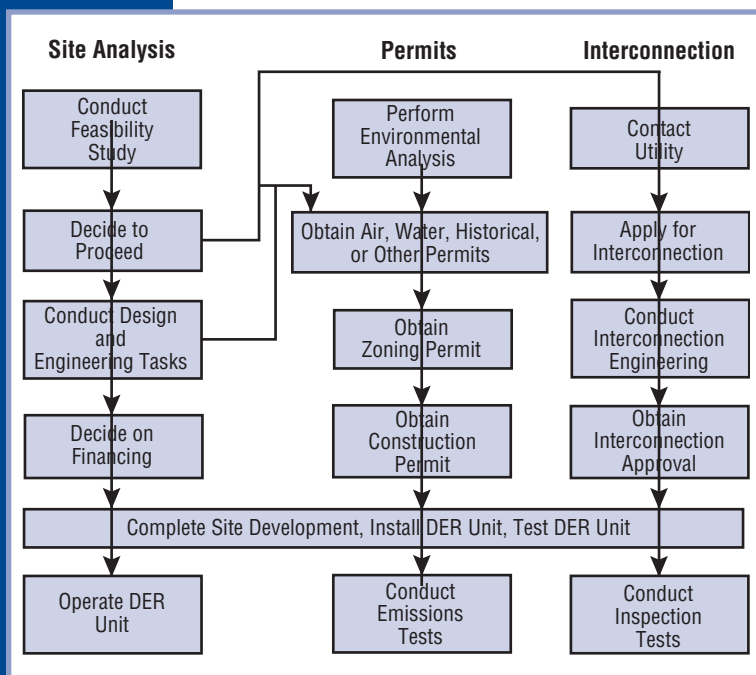
However, if you are installing the system yourself, you will need to work closely with state and local officials to be sure all applicable codes and regulations are met.

### Navigating the Process

Here are some steps you can take to make the process easier and faster:

#### Step 1: Identify other agency projects

Ask your agency energy coordinator if any other facilities in your agency have implemented a DER project. Find the point of contact or contacts at that facility and ask them what lessons they learned. What did they do that helped the project along? What would they have done differently?



The site analysis, permitting, and interconnection processes should be done concurrently to expedite a DER project.

familiar with all DER technologies. For example, regulators may be more comfortable permitting technologies such as reciprocating engines and combustion turbines than renewable energy systems, fuel cells, or microturbines. So, environmental permitting can be a complex and time-consuming step on the path to a finished project.

To ensure a successful project, the environmental siting evaluation and approval process must occur simultaneously with the technical development of the system, financing considerations, and the interconnection process (see the flow chart). This guide



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## Step 2: Identify your state DEP and other regulating agencies

Identify and meet with the local representatives from your state's Department of Environmental Protection (DEP). Let them know what type of project you are considering, and ask them some basic questions, such as the following:

- Have you permitted a similar technology or system before?
- If so, can the information from that project be made available?
- What are the emission standards for different technologies?
- What are the system size and running time constraints?
- Is there a standard approval process or format for DER projects?
- What specific information do you need to review an application?
- Who are the approval authorities for the various siting considerations?
- What approvals are required from the U.S. Environmental Protection Agency (EPA) for a project of this size?

To find your state's DEP, go to the EPA's Web site at [www.epa.gov/epapages/statelocal/envrolst.htm](http://www.epa.gov/epapages/statelocal/envrolst.htm) or see [www.cleanairworld.org/scripts/stappa.asp](http://www.cleanairworld.org/scripts/stappa.asp).

Various local, state, and federal agencies are responsible for the review and approval of different DER technologies and permits required by specific laws and regulations. The required level of approval varies significantly, depending on the technology. For more information on environmental permitting requirements for different DER technologies, see the U.S. Department of Energy's Distributed Energy Resources Web site at [www.eere.energy.gov/der/tech\\_specific\\_regs.html](http://www.eere.energy.gov/der/tech_specific_regs.html).

## Step 3: Compile technical information on your project

Permit reviewers do not encounter DER technologies frequently. So, there may be a delay in the permitting process while reviewers for zoning, codes, and approvals become familiar with the technologies. It is a good idea to develop an informational package or presentation to provide reviewers with background information on the DER technology used in your project and to include

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examples of successful similar applications. Federal Energy Management Program (FEMP) personnel can provide assistance in educating state or local personnel who need additional information.

## Resources For More Information

For a Web-based version of this guide, see FEMP's DER Web site at [www.eere.energy.gov/femp/techassist/env\\_siting.html](http://www.eere.energy.gov/femp/techassist/env_siting.html).

*The Impact of Air Quality Regulations on Distributed Generation* is a recently completed report that investigates 51 case studies of various DER installations and identifies the key obstacles encountered in air quality permitting. It is available on the Web at [www.nrel.gov/docs/fy03osti/31772.pdf](http://www.nrel.gov/docs/fy03osti/31772.pdf).

To obtain advice on regulatory issues, contact FEMP's Technical Assistance program at [www.eere.energy.gov/femp/techassist.html](http://www.eere.energy.gov/femp/techassist.html).

For additional information, see the U.S. Department of Energy's Distributed Energy Resources program Web site at [www.eere.energy.gov/der/](http://www.eere.energy.gov/der/).

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Energy efficiency and clean, renewable energy will mean a stronger economy, cleaner environment, and greater energy independence for America. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy invests in a diverse portfolio of energy technologies.



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