

What's New in Federal Energy Management

Program Overview



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FEMP Renewable Energy Program

Using solar and other renewable technologies in the Federal sector reduces the cost of government and conserves our natural resources

As the owner or manager of more than 500,000 facilities, the U.S. government has a superb opportunity to reduce fuel imports and improve environmental quality by using renewable sources of energy. In many Federal applications—such as irrigation, water heating, indoor and outdoor lighting, or communications—commercially available renewable technologies are often the most cost-effective option for supplying the needed energy, and they are environmentally friendly.

The U.S. Department of Energy, Federal Energy Management Program (FEMP) helps Federal agencies take advantage of the benefits offered by renewable technologies and apply the renewable provisions of the Energy

Policy Act (EPAct) and Executive Order 12902. FEMP's Renewable Energy Program educates Federal agencies

about renewable opportunities and helps agencies implement successful renewable projects.

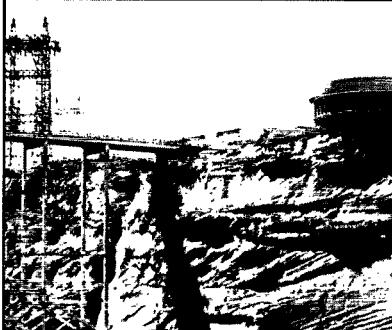
And the opportunities are abundant! In new construction projects, for example, planners can optimize facility energy performance by incorporating renewable energy and energy efficiency measures early in the design process. Renewables are cost-effective in many retrofit projects. They are the clear choice for many remote sites that utility-supplied power does not reach. Their environmental advantages include either zero or reduced air emissions compared with conventional energy sources and no risk of fuel spills.

What are renewable technologies?

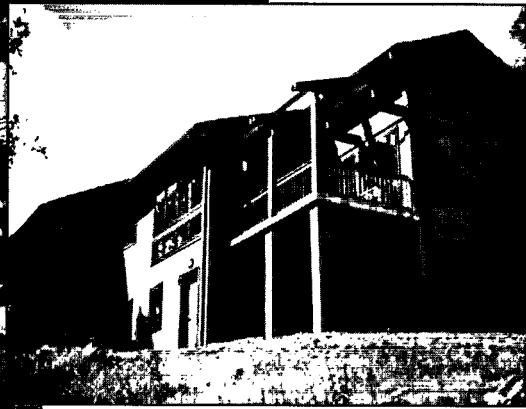
Renewable technologies include:

- Passive solar design strategies, which combine basic energy efficiency practices with building designs that maximize natural heating, cooling, and daylighting
- Solar thermal systems for hot-water heating and ventilation air preheating
- Solar cells (photovoltaics or PV) for electricity generation
- Wind systems for water pumping and electricity generation
- Geothermal technologies for water and space heating
- Biofuels (ethanol and methanol).

By assisting Federal agencies with renewable projects, FEMP's Renewable Energy Program exemplifies the Federal government's commitment to improving energy efficiency using alternative sources of energy. The Renewable Energy Program helps our economy by generating opportunities for new renewable energy businesses. It also benefits American consumers and taxpayers by lowering the prices of



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Renewable energy in the Federal sector. Left: Photovoltaic system at the National Park Service's Channel Islands site. Top: Energy-efficient, low-emissivity windows at the Bureau of Reclamation's Glen Canyon visitor's center. Right: Passive solar employee housing at the El Portal in Yosemite National Park.



these technologies, expediting market entry, reducing Federal operating costs, and reducing greenhouse gas emissions.

How is DOE increasing the use of renewable energy in Federal agencies?

FEMP helps agencies identify and implement the best, most cost-effective projects for their facilities by providing the following services:

Information and Outreach

Renewables Working Group

The Renewables Working Group comprises more than 100 representatives from Federal agencies, DOE programs, and the renewables industry. Led by FEMP, the group has developed an Implementation Plan that will help agencies gain experience with renewables by encouraging them to implement at least one renewable "showcase" project to serve as a model for their agency. Through the Renewables Working Group, agencies gain an understanding of the renewables industry and learn about opportunities offered by various DOE programs to demonstrate renewable technologies.

Training courses

FEMP offers two training courses on renewables:

- "Implementing Renewable Energy Projects" uses lectures and group problem-solving to introduce renewable technologies. It is team-taught by FEMP staff and representatives of the renewables industry.
- "Designing Low Energy Buildings" focuses on whole building design integrating daylighting, energy-efficient equipment, and passive solar strategies. It is taught by practicing architects and engineers.

Fact sheets

Fact sheets that describe how specific renewable technologies work, criteria for their use, and contacts for more information are available to all agencies. They are designed to give targeted agency employees, such as facility managers, familiarity with a specific technology and alert them to the renewable opportunities that may exist at their facilities.

Direct Technical Assistance

Project Screening

FEMP developed a software tool—called the Federal Energy Screening Assistant (FREScA)—that assesses the opportunities for renewable energy at a facility or building. The tool is typically used during a site energy audit. Covering 15 renewable energy technologies, FREScA prioritizes renewable opportunities for further study. FEMP can supply Federal agencies with the software and help in its application. Renewable opportunity assessments, using FREScA, can also be done as part of a FEMP SAVEnergy audit.

Design Assistance

For many renewables projects, especially those designated as agency "showcase" projects, FEMP provides design assistance. Assistance can include plan and specification review, consultation, system sizing, and project costing guidelines. Additional services are available on a for-fee basis.

Project Financing Assistance

FEMP also supports Federal agencies with Energy Savings Performance Contracting (ESPC) as well as assisting agencies to take advantage of utility incentives for energy conservation projects. Through an ESPC, an agency can pay for energy efficiency projects over a term (up to 25 years) using the money saved by the energy-efficient measures installed. FEMP is currently working with several Federal agencies to develop ESPCs for renewable energy projects. EPAct specifically allows agencies to enter into ESPC contracts.

What agencies are currently using renewable energy?

The Department of Defense (DOD), the single-largest energy user in the world, has developed an aggressive renewables program. Through 1994, more than 2 megawatts (MW) of PV were installed for various small applications throughout DOD. Another 1.6 MW of PV are currently being procured or are in the construction stage.

The National Park Service (NPS) has also developed a very active renewables program. To date, they have installed more than 455 PV systems, 36 solar water heaters, and many other energy conservation measures. NPS has designed and built employee

housing using the principles of passive solar design, which uses approximately 75% less energy than standard housing.

FEMP is working with almost every agency of the Federal government to develop at least one showcase project with a renewable energy feature.

FEMP believes the increased use of renewable technology within the Federal government will grow not from the knowledge of renewable energy experts but from the ongoing education of facility managers and energy planners in the field. The assistance FEMP provides—in information, design support, and financing options—is a crucial resource for helping the Federal government move toward an environmentally clean, economically stable energy future.



For More Information

FEMP Help Desk:
(800) DOE-EREC (363-3732)
Internet: <http://www.eren.doe.gov/femp>

Nancy Carlisle
(303) 384-7509

Patricia Plympton
(202) 651-7540

National Renewable Energy Laboratory

Anne Sprunt Crawley
Technical Assistance Team Leader
(202) 586-1505
Fax: (202) 586-3000

Mark Ginsberg, Director
Federal Energy Management Program
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585



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