

# Appropriate Technology

M.W.

## Small Grants Program

Appropriate  
Technology

"Appropriate technology" is a term that has come to represent a variety of projects, concepts, and innovative ideas to a broad spectrum of individuals and communities over the past few years. To a small business in Hawaii, appropriate technology may mean a solar-assisted coffee-drying platform; to a fishing cooperative, it may mean a set of solar dryers that convert fish by-products into poultry feed; to a California man, it may mean a process that converts forest brush and waste into burnable, usable fuel. Regardless of the specific project or concept it represents, appropriate technology meets specific, local needs through minimal expenditure of energy or financial resources.

The recent interest in appropriate technology at the federal, state, and local levels is largely the result of environmentalists, consumer groups, and public-interest groups raising important questions about the United States' dependence on large-scale, expensive, energy-intensive technology. They have asserted that "bigger" does not necessarily mean "better" and that novel applications of existing small-scale technology can foster local self-reliance without any sacrifice in economic productivity. These groups have called for a reassessment of energy-

related technologies and serious consideration of alternatives to large-scale energy development.

In response, Congress authorized the Department of Energy to undertake a program to provide grants for the development of small-scale, energy-related technologies that are "appropriate" to local needs and skills. The Appropriate Technology Small Grants Program enables inventors, innovators, small businesses and local non profit groups to apply their skills to developing small-scale energy technologies that supplement, complement, or provide alternatives to large-scale technologies.

## What is Appropriate Technology?

Within the Small Grants Program, DOE has defined appropriate technology as follows:

In terms of *resources*, appropriate technology:

- makes best use of available, renewable energy sources
- conserves nonrenewable resources
- depends largely on human labor
- maximizes use of local materials and labor skills.



Department of Energy

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Washington, D.C. 20585

U.S. DEPARTMENT OF ENERGY  
Assistant Secretary for Conservation  
and Solar Applications  
Division of Buildings and Community  
Systems

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In *scale and efficiency*; appropriate technology:

- uses energy and other resources efficiently
- is simple to install, operate, and maintain
- is compatible with community regulations
- may employ scaled-down industrial technology
- emphasizes decentralized technologies.

In *relation to the end-user*, appropriate technology:

- satisfies local needs
- increases community energy understanding and self-reliance
- is environmentally sound
- results in durable recyclable systems and/or products.

## What are the Goals of the Small Grants Program?

The goals of the Small Grants Program are to:

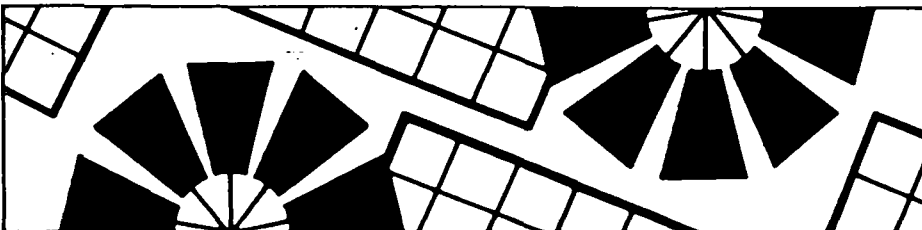
- Make more energy-related technology options available in the United States
- Provide access to DOE for individuals and groups who would not otherwise have contact
- Make available technology not otherwise accessible to DOE
- Further national efforts in promoting the use of renewable resources and the conservation of non-renewable resources.

## What Types of Projects are Eligible for Funding?

The Small Grants Program will provide funds for a wide range of projects that fall into one of three categories:

**Concept Development.** Awards of up to \$10,000 will be made for the development of an idea, concept, or investigative finding in areas ranging from new concepts of energy sources to the new application of existing procedures or systems. A few examples of projects funded under this category are:

- A California man is working on a preliminary design study of an economical multi-fuel farm engine. His goal is to eliminate the need for high-grade gasoline to operate farm machinery.
- A small business is studying the feasibility of using microcomputers to control energy systems in individual homes. Because microcomputers are electronically controlled, they should be less expensive, yet more reliable, than conventional thermostats.
- A nonprofit group is investigating new designs for owner-built dry-composting toilets that operate on heat from a solar oven. The group hopes to save both electricity and water.



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**Development.** Awards of up to \$50,000 will be made for the systematic and practical development of a concept into a useful technology. This category includes design, assembly, and laboratory-scale testing to determine the technical feasibility and application of a concept. Some of the projects being funded under this category are:

- An Indian tribe in Nevada is installing and testing a solar energy system for a fish hatchery, where the fish must be raised in such an even temperature that both heating and cooling are necessary but expensive when electricity is used.
- A Hawaii man is building a water wheel that will generate electricity for a small community of farmers who are otherwise without lights and power.
- A Guamanian is building lighted navigation buoys powered by wind generators. The buoys, which will help guide fishing and recreational boats, will enable fishermen to work into the evening.

**Demonstration.** Awards of up to \$50,000 will be made to test a technology under operating conditions to show that its commercial application is technically, economically and environmentally feasible. Demonstration projects currently under way include:

- A California city is building and demonstrating a mini-solar utility that will provide space heating and hot water from one location to as many as 14 surrounding homes on a city block. City houses often have neither the space nor the orientation toward the sun to be installed with individual solar collectors.
- A private group of citizens in Arizona has devised an integrated, renewable-energy farm system, which includes a new type of solar box oven, a greenhouse, and a food dryer; eventually, it will also include refrigeration.
- A small business is demonstrating a lagoon used for primary anaerobic treatment of wastewater to produce methane for supplementary heating.

## Who is Eligible to Apply for Grants?

Individuals, local nonprofit organizations and institutions, state and local agencies, Indian tribes, and small businesses are eligible to apply for grants. Straightforward procedures for grant application have been established to ensure that all applicants receive equal consideration. Applications will be evaluated by people familiar with state, local, and regional requirements and resources to ensure that the

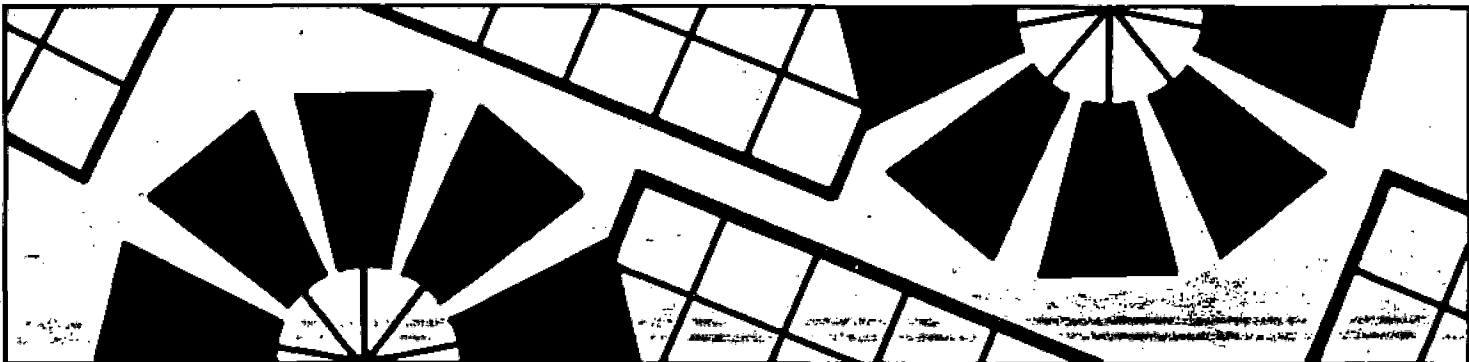
projects selected for funding are responsive to local needs and concerns.

Every effort will be made to notify all interested persons of implementation of the program in their regions. Proposals will be solicited through program announcements in the *Commerce Business Daily*, newspapers, and trade and technical publications. Announcements will also be sent to state and local governments and to a variety of associations and groups that have expressed interest in the program to DOE.

## When and Where Will the Program be Implemented?

To lay the groundwork for the program, DOE has conducted a pilot program in federal region nine, which comprises Arizona, California, Hawaii, Nevada, American Samoa, Guam, and the Pacific Trust Territories. The response to this pilot program was overwhelming: more than 1,100 proposals for grants were received, and 108 proposals totaling \$1.3 million were funded.

Implementation of the program in the Northeast and Midwest is under way, and phased implementation in the remaining regions of the country will begin in winter 1978.



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For more information about the  
Small Grants Program, write to:

**National Program Director  
Appropriate Technology Small  
Grants Program  
Department of Energy  
Washington, D.C. 20585**

or

**The DOE Office in your region**