State: Arizona

Assign Program Category: Natural Resources

Program Name: Conversion to Renewable Incentive Program for Agriculture Grant
Administering Agency: Arizona Governor's Office of Energy Policy
Contact (Name and Title): Jim Westberg
Address: 1700 W. Washington Street, Suite 250, Phoenix, AZ 85007
Telephone Number: 602-771-1145
E-mail Address: jwestberg@az.gov
Web Address: http://azenergy.gov/

How long has this program operated (month and year)? September, 2009

Describe the program:

Over the past two years, the Governor’s Office of Energy Policy (formerly the Arizona Department of Commerce Energy Office) has administered a matching grant program for agricultural customers. The grant program replaced gasoline and diesel powered generators with solar and wind powered water pumps, primarily used for livestock watering and a few crop watering projects. This innovative program demonstrated the cost-effectiveness of solar power in rural farm and ranch applications. Funding was provided through the U.S. Department of Energy by the American Recovery and Reinvestment Act.

Why was it created?

The intent of the program was to provide funding to agricultural producers for the replacement of inefficient, fossil fuel powered energy systems. The use of solar for water pumping is very cost effective and without this program, these systems would not have been replaced. Even with relatively quick return on their investments, farms and ranches often do not have the “up-front” capital to afford these energy-saving conversions.

Why is it a new and creative approach or method?

Gasoline and diesel-powered generators are used to pump water for livestock watering, crop irrigation or direct production of electricity for farm/ranch operations. Powering these generators is a huge cost for this industry. This program uses renewable energy to reduce costs by eliminating the need for gasoline or diesel fuel used to run generators. In addition, because grazing pastures tend to be located at very remote sites, solar-powered pumps eliminated the need for fuel to be delivered to these areas, in some cases three times per week. This reduced “wear and tear” on trucks and labor hours and fuel needed to provide fuel delivery services. Some projects can have payback periods of less than two years, while others typically have payback periods of five years or less.

What are the specific activities and operations of the program in chronological order?
April 1, 2009 – Project approved by US DOE as part of Arizona’s State Energy Program Plan

September 29, 2009 – Funding announced for the First Grant Cycle

January 8, 2010 – Proposals Due to Governor’s Office of Energy Policy

April 8, 2010 – Awards made to 20 farms and ranches for the installation of renewable energy systems. The awards totaled $514,393 with applicants providing $374,567 in matching funds for a total of $888,961. Estimated annual energy dollar savings for these projects is $184,614.

April 22, 2010 – Funding announced for the Second Grant Cycle

May 20, 2010 – Proposals Due to Governor’s Office of Energy Policy

June 30, 2010 - Awards made to 21 farms and ranches for the installation of renewable energy systems. The awards totaled $370,948 with applicants providing $144,764 in matching funds for a total of $515,712. Estimated annual energy dollar savings for these projects is $131,881.

October 6, 2011 – Last project installed and completed.

Is it effective?

Forty-one farms and ranches received matching funds for 51 renewable energy projects. Grant funding of $885,374 was matched by $519,299 of leveraged funds from farmers and ranchers for a total project cost of $1,404,673. Based on the estimates in the proposals of fuel to be saved, annual energy dollar savings from the reduction in usage of gasoline, diesel, propane and electricity is estimated to be $312,585. The annual energy quantities saved are: 30,644 gallons of gasoline, 38,162 gallons of diesel fuel and 9,820 gallons of propane. There were 271,350 kWh of electricity produced. These projects typically have payback periods under five years, with some payback periods as low as two years.

The benefits from installing these solar systems are:

- Eliminates the need to haul gasoline or diesel fuel to these remote grazing pastures to run the generators.
- Eliminates the fuel consumption by the trucks driving back and forth, sometimes three times a week to these remote grazing pastures.
- Eliminates extra trips needed for maintenance of the generators.
- Reduces wear and tear on the trucks from driving back roads to the sites.
- Reduces the labor hours required for these trips.
- Decreases dependence upon foreign fuel sources.

The use of solar for water pumping is also very cost effective. One rancher commented that if it were not for the energy dollar savings, they would have gone out of business.

Did this program originate in your state? Yes.

Jim Westberg, CEM, LEED AP
Energy Program Administrator
Governor’s Office of Energy Policy
1700 W. Washington St., Ste. 250
Phoenix, AZ 85007
602-771-1145
jwestberg@az.gov
Are you aware of similar programs in other states? No.

What limitations or obstacles might other states expect to encounter when attempting to adopt this program?

The most common issue encountered with this program was the outreach and marketing to the rural areas. Getting the word out to small farming/ranching communities proved to be somewhat difficult, however we contracted a small amount of funding to the Arizona Natural Resource Conservation District State Office to reach out to the farmers and ranchers in Arizona.

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Nancy J. Vickers, National Program Administrator
Phone: 859.244.8105
Fax: 859.244.8001 – Attn: Innovations Awards Program
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E-mail: nvickers@csg.org
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