



Grand Canyon State Electric
Cooperative Association, Inc.



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April 13, 2005

Docket Control
Utilities Division
Arizona Corporation Commission
1200 W. Washington
Phoenix, AZ 85007

Re: AEPCO's Environmental Portfolio Standard ("EPS") Report for 2005 in
Compliance with Decision No. 67176 and the Requirements of A.A.C. R14-2-
1618.D.

Docket No. RE-00000C-00-0377

Docket Control:

Pursuant to Finding of Fact 12 and the second ordering paragraph of Decision No. 67176
and the requirements of A.A.C. R14-2-1618.D, enclosed are the original and 13 copies of
AEPCO's EPS Report for 2005.

Please contact me if you have any questions.

Sincerely,

John Wallace
Grand Canyon State Electric Cooperative Association

Enclosures

Cc: Brian K. Bozzo, ACC

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ARIZONA ELECTRIC POWER COOPERATIVE, INC.

AND ITS ARIZONA MEMBER COOPERATIVES

ENVIRONMENTAL PORTFOLIO STANDARD PROGRAMS

REPORT THROUGH 12/31/05

EXECUTIVE SUMMARY

In October 2001, Arizona Electric Power Cooperative, Inc. ("AEPCO"), on behalf of its five Arizona member cooperatives, Duncan Valley Electric Cooperative, Inc. ("DVEC"), Graham County Electric Cooperative, Inc. ("GCEC"), Mohave Electric Cooperative, Inc. ("Mohave"), Sulphur Springs Valley Electric Cooperative, Inc. ("SSVEC") and Trico Electric Cooperative, Inc. ("Trico") (collectively, the "Cooperatives"), submitted to the Arizona Corporation Commission ("ACC") its SunWatts Environmental Portfolio Standard Plan ("SunWatts"). In August 2004, the ACC, in Decision No. 67176, authorized AEPCO to administer the SunWatts program on behalf of its member Cooperatives and approved it as consistent with the requirements of the EPS Rules.

The decision also instructed AEPCO to file a revised plan by December 31, 2005, taking into account revisions approved by the Commission to its EPS Rules as well as other issues discussed in the order. Because final Rules amendments are still pending, AEPCO requested that filing of the revised EPS Plan be delayed to allow Rules changes to be considered. The ACC granted this request in Decision No. 68328. A revised EPS Plan is

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now due December 31, 2006, or 120 days after the new EPS Rules are adopted, whichever comes first. The Commission also ordered that the approved SunWatts program is consistent with the requirements of the current EPS Rules and, as they may be revised, until it acts on the amended EPS Plan filing.

In the meantime, the Cooperatives have worked diligently on their renewables programs. Although they did not meet the 2005 output percentage requirement stated in the Rules, they made great strides. The past year-and-a-half has given the Cooperatives the opportunity to see what programs work well and are best received by our members as well as those programs that haven't met our expectations.

We have learned that SunWatts, with its solar-only make-up, may not be the best option for our members. We think that the SunWatts program needs to be expanded to include other renewable technologies. Also, SunWatts, with its very strong emphasis on customer distributed facilities, needs to be broadened. For example, more larger-scale, utility-owned or partnered projects should be pursued together with, among other things, credit purchases and RFPs.

In 2005, the Cooperatives also explored a number of options including biomass, solar water heating and wind. Some of these programs appear to be viable; others do not. The Cooperatives will apply this knowledge as they move forward with the development of their new EPS Plan.

This report covers SunWatts and the Cooperatives' progress from January 1, 2005 through December 31, 2005.

AEPCO'S FILED EPS PLAN/ON-GOING PROJECTS

The SunWatts program consists primarily of three parts: the Contribution Program, the Incentive Program and the Large-Scale Renewable Program.

- Contribution Program: allows customers voluntarily to contribute to a 'green' fund to install photovoltaic systems throughout our state.
- Incentive/Rebate Program: gives customers a rebate of \$4 a watt (or up to half the total cost, whichever is less) to install qualifying photovoltaic (solar) systems on homes and small businesses.
- Renewable Generation Program: allows the Cooperatives to take part in large-scale renewable energy projects.

Habitat Amendment

Since receiving approval for the SunWatts program, the Commission has approved the Habitat for Humanity program. Under this program, AEPCO contributes dollars toward the purchase of photovoltaic and other renewable energy equipment to be installed on Habitat homes in cooperative service territories. The type and amount of such equipment varies from project to project. AEPCO and the member Cooperatives also assist Habitat by finding local renewable energy equipment dealers who are willing to donate products

and services to the projects. Habitat renewable installations also serve as a community educational opportunity.

Because the Cooperatives are contributing funds to the Habitat organization specifically for the purchase of renewable energy equipment for Habitat homes, the Cooperatives bear no liability with regard to equipment maintenance. This liability is borne by the equipment manufacturer. Furthermore, licensed contractors, not the Cooperatives, install the renewable energy equipment. The Cooperatives received approval to undertake up to five of these projects each year, not to exceed \$30,000. The amount paid per kW of installed solar capacity is similar to that paid to residential customers participating in the SunWatts program. To date, the member Cooperatives have undertaken one Habitat home in the Sierra Vista (SSVEC) area.

Parking-Shade Mounted PV Amendment

In January 2006, AEPCO filed an amendment to the SunWatts program. This amendment requests approval from the ACC to support installation of parking-shade mounted photovoltaic equipment at schools and other municipalities throughout their service territories. Priority will be given to installations at schools. The Cooperatives propose to fund each of these projects 100% through the EPS Surcharge. This benefits all taxpayers who, through their tax dollars, support schools and other municipal buildings. SSVEC has already investigated several of these projects.

Green Tags

As approved by the EPS Rules, AEPCO also will purchase, for a fixed incentive payment, energy credits from member-customers that have installed certain renewable energy systems. In order to be eligible for the green tag program, the installation cannot have received EPS rebates. The renewable energy system must be a qualifying renewable technology located in the State of Arizona, within the service territory of the participating cooperative and on land owned or leased by the member-customer.

2005 SURCHARGE COLLECTIONS AND EXPENSES

Surcharge

In 2005, the Arizona Cooperatives collected approximately \$2.18 million in surcharges from their member-customers. Two of the Arizona Cooperatives, GCEC and SSVEC, decided mid-year to no longer remit their surcharges to AEPCO. Instead, each is tracking its surcharge dollars collected and reporting amounts collected to AEPCO.

After expenses, incentives paid and work-in-progress amounts, 2005 surcharge dollars remaining are \$1,785,132.29. Some \$188,764 of 2004 surcharge dollars also remain in these accounts, for a balance of \$1,973,896.46 available for EPS-related projects.

Expenses

In 2005, the Cooperatives incurred \$48,670.17 in advertising expenses, \$11,040.43 in research and development expenses and \$75,404.05 in administrative expenses. In addition, AEPCO allocated \$29,979.40 in administrative expenses to the total surcharge. All expenses were less than the 5% maximum allowed under the SunWatts program.

Incentives/Rebates Paid

The Cooperatives paid \$225,538.27 in rebates/incentives to 291 member-customers. This resulted in 228,577 kWh of renewable energy generation, both on and off-grid.

SSVEC spent an additional \$86,380.55 on photovoltaic projects that are still in progress. These projects in the SSVEC territory should eventually yield approximately 100 kW in renewable generation.

After September, incentive/rebate installations fell off dramatically. We believe this is due to the passage of the Energy Policy Act of 2005, which includes a tax credit provision for systems purchased and installed after January 1, 2006.

2005 PROJECTS – LARGE SCALE

City of Tucson/Thornycastle Phase I

In 2004, the City of Tucson, in conjunction with AEPCO and Trico, agreed to install a large photovoltaic system at its Thornycastle Reclaimed Water Reservoir Site, with AEPCO contributing \$50,000 of EPS funds to this project.

The project began generating power on January 19, 2005. The 72 panels that comprise the system are mounted directly on the reservoir's concrete roof. The electricity generated by the solar panels is fed directly into the site and helps supply electricity to booster pumps, which are used to supply reclaimed water to golf courses north of the reservoir. The system is rated at 22,000 watts DC with an estimated annual electric output of 37,000 kWh. AEPCO retains the rights to all green credits from this project.

WAATS Phase I

The member Cooperatives have partnered with the Arizona Department of Emergency and Military Affairs, Western ARNG Aviation Training (WAATS) site. WAATS has a number of photovoltaic panels that it installed previously at the site and WAATS has assigned the associated green tags to the Cooperatives. This represents 31.1 kW in renewable generation.

2006 PROJECTS – LARGE SCALE

AEPCO HQ Photovoltaic Installation

AEPCO sent out a formal request for proposal in December 2005 for the installation of a 15 kW system to be sited at the AEPCO Benson headquarters facility. While two companies expressed an interest in the project, AEPCO received no bids. In order to make complete the project, AEPCO's internal engineering staff is acting as project manager. Completion is expected by summer 2006.

City of Tucson/Thornsdale Phase II

In May 2006, a second City of Tucson photovoltaic project will go online at the City of Tucson Thornsdale Reclaimed Water Reservoir Site. This project is identical to the first phase and will include the installation of approximately 72 panels mounted directly on the reservoir's concrete roof. The system, rated at 22,000 watts DC, will generate about 37,000 kWh each year. AEPCO and the Arizona Cooperatives will contribute \$50,000 to the project and will have sole rights to the green tags associated with the project.

WAATS Phase II

AEPCO and the member Cooperatives will proceed with Phase II of the WAATS project. This includes the installation of an additional 75 kW of photovoltaic equipment at the WAATS site, to be undertaken in 25 kW increments, on a schedule established by WAATS. AEPCO has agreed to pay WAATS \$2 per installed watt of solar generating capacity, up to a maximum of \$150,000.

Renewable RFP

AEPCO will send out a Request for Proposal (“RFP”) for renewable energy resources in May 2006. This RFP will be sent in conjunction with AEPCO’s RFP for regular energy. Proposals will be due in June and offers for regular purchased power. Renewable energy proposals will be reviewed, evaluated and modeled at the same time. This will allow for a final evaluation to be complete by the fall.

Solar Cooling Project

AEPCO, on behalf of its Arizona member Cooperatives, has partnered with the Cooperative Research Network (“CRN”) on a research project to identify and evaluate renewable options for increasing peak generation capacity. The first phase of the project is a research project to evaluate the feasibility and cost effectiveness of the solar cooling of inlet air for combustion turbines.

Should this technology prove feasible and cost effective, solar cooling equipment would be installed on Gas Turbine #4 at the Apache Generating Station in Cochise, Arizona. This technology would create a green output of 5 to 12 MW. Financing for this project could come from the EPS surcharge funds, the RUS renewable loan program or possibly Clean Renewable Energy Bonds, part of the Energy Policy Act of 2005.

The Cooperatives will make a decision on this project in late spring.

PROJECTS EXPLORED

The Cooperatives investigated several possible large-scale renewable projects in 2004 and 2005. Some, such as the GT4 large-scale solar cooling project, are still being researched. Others were eliminated for a variety of reasons. Below is a brief summary of some projects the Cooperatives have spent considerable time researching.

Ft. Grant Solar Water Heating

AEPCO, in conjunction with GCEC and a third-party consultant, investigated the possibility of installing solar water heating at the Ft. Grant prison. The Cooperatives were willing to contribute dollars to the project provided the prison would provide ongoing maintenance and labor. The prison was unwilling to maintain the system so the project was abandoned.

Biomass

The Cooperatives looked into several biomass projects in the Trico and SSVEC territories. These projects would have involved converting animal waste at dairy farms to energy. Several problems arose during the beginning phases of these projects. First, one of the dairies relocated out of the cooperative service territory. Second, the manure proved to be too dry for effective biomass to energy production.

AGGREGATE RETAIL SALES/EPS OUTPUT

In 2005, the cooperatives had annual aggregate retail energy sales of 1,857,145,644 kWh. The cooperatives generated 228,577 kWh of renewable energy during that time. Under the current rules, which state that 1 percent of all energy sold at retail must be renewable in nature, the cooperatives had a renewable energy requirement of 18,571,456 kWh. This means the cooperatives had a shortfall of 18,342,880 kWh.