

The TREIA Newsletter

Texas Renewable Energy Industries Association · 3rd Quarter 1989

FIRST ROUND OF ALTERNATIVE ENERGY DEMONSTRATION PROJECTS GET UNDERWAY

The Governor's Energy Management Center reports that work will begin immediately on seventeen alternative energy demonstration projects selected for funding in the first round of Alternative Energy Demonstration Program. A brief summary of each of the projects follows.

- 1 **The Austin Youth Hostel PV Project** will demonstrate the feasibility of small-scale decentralized photovoltaic electricity generation for residential and commercial utility customers. A 2.3 KW grid-connected amorphous silicon photovoltaic system will be installed on the new youth hostel on Town Lake in Austin.
- 2 **The Wind-Powered Pond Aeration Project** will demonstrate the use of wind power to destratify and aerate aquaculture ponds. Five wind-driven air pumps will be used to supply supplemental dissolved oxygen to the growing pond and purging tank at a crawfish farm near Winnie, Texas in Chambers County.
- 3 **The Robert Shaw ECHO Village PV Project** will demonstrate the use of residential photovoltaic systems to reduce peak demand and provide on-site electricity generation. Six low-income housing units for the elderly will be equipped with grid-connected 2 KW single crystal silicon photovoltaic systems metered on a net billing basis by the City of Austin Electric Utility..

JANUARY 15-16 WORKSHOPS PLANNED IN AUSTIN

A second request for proposals for alternative energy demonstration projects will be issued in January 1990 with proposals due in mid-April. A workshop focusing on cost-effective applications of renewable energy technologies is planned for January 15. On January 16, a half day session will be held for potential proposers to discuss the proposal requirements. Both workshops will be held in Austin at the Joe C. Thompson Conference Center. Admission is free. For additional information, call Judith Carroll at 512/463-1871.

- 4 **Three PV Traffic Control Signs** will demonstrate the feasibility and current cost-effectiveness of using photovoltaic technology to replace diesel generators in traffic control arrow boards used by construction personnel.
- 5 **The Dallas Zoo Project** will demonstrate four stand-alone solar technologies installed in areas of the zoo where grid electricity is unavailable. (1) Fourteen PV-powered ceiling fans will be installed in the roof covering the children's zoo. The fans will significantly increase the comfort level in this high traffic area. (2) PV-controlled evaporative cooling roof spray systems will be installed on the cat cages, the large mammal house and the primate house and nursery. Each system includes a 47-watt PV panel with battery storage which will power the roof spray controller and electric valve. (3) Two 36-watt photovoltaic lights will be installed to provide security lighting at the hay barn and the adjacent supply storage building. (4) A 40-gallon passive solar water heating system will be installed to provide hot water in the restroom facility located at the main entrance.

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- 6 **Solar-Powered Irrigation Systems** will demonstrate the reasonable and economical use of photovoltaic technology to power electronic irrigation controllers at 22 sites representing the diverse regions of the state.
- 7 **The Wind-Powered Irrigation Project** will demonstrate the viability of using a wind electric water pumping system in concert with advanced arid lands agricultural technologies and techniques. Four 10 KW wind electric systems will pump water from the Rio Grande and feed a 20-acre drip irrigation system at the demonstration farm outside Laredo.
- 8 **The Solar-Electric Navigational Aids Project** will demonstrate the practical use of pv warning lights for navigational hazards on inland lakes. One 22-watt PV module and one 80-amp hour rechargeable battery will provide power for 12 electroluminescent safety lights to be installed on the 500-foot steel breakwater in front of Don's Port Marina on Cedar Creek Lake in Henderson County.
- 9 **El Paso/Trans Pecos Passive Solar Residence Retrofit** will demonstrate passive solar techniques and technologies for use in typical residences in arid regions of the state. An existing, conventional structure located adjacent to the U.T.-El Paso campus will be retrofitted with seven passive solar applications for space heating, space cooling and domestic water heating. The structure will be open to the public and will house the El Paso Energy Extension Service Field Office. EES staff will be available to explain the operation of each application.
- 10 **The Gasification of Mesquite Waste Project** will demonstrate the conversion of biomass energy to "producer gas" -- a fuel which can be used in wood industry processes and electricity generation. Two gasifiers will be installed at WW Wood, Inc. in Pleasanton, Texas to produce gas from mesquite wood waste to replace LPG as a fuel for both the wood dryers and the reciprocating engines that generate plant electricity on-site.
- 11 **The 3M Center PV Project** is a cooperative effort to demonstrate the feasibility of large scale electricity generation using a linear Fresnel lens photovoltaic system. This educational project will demonstrate a modular concentrating collector system that can provide substantial amounts of power for industries and utilities. The 300 KW garage-mounted system will contain 12 rows of linear Fresnel lens photovoltaic collectors that have a concentration of 22 suns and use a two-axis tracking structure.
- 12 **The PV Farm Applications Project** will demonstrate the feasibility of using photovoltaics for several remote power needs on a farm in Brazos County. Six stand-alone systems will provide power for water pumping, water circulation and aeration, lighting, farm security and system protection.
- 13 **The Collier Municipal Swimming Pool Project** in Corpus Christi will demonstrate the practicality of using a flexible mat solar pool heating system and a solar pool blanket to achieve cost-effective year-round operation of a large, outdoor, municipal pool facility.
- 14 **PV Telephone Call Boxes** will be installed at four isolated highway locations in the Panhandle that have high accident histories to demonstrate the reliability and practicality of powering emergency telephones with photovoltaics in remote locations.
- 15 **The Solar Water Pump Project** will demonstrate the convenience and practicality of photovoltaic water pumping for filling livestock water tanks on a ranch 25 miles south of Houston in Fort Bend County.
- 16 **The Solar Hot Water Project at St. Rose Hospital** in San Antonio will demonstrate the use of a solar preheating system for a hospital boiler application. An array of 120 4-by-12 foot flat-plate collectors will be installed on the roof of St. Rose Hospital to heat water for the high-rise medical facility.

- 17 **The Alternative Energy Institute Demonstration Project** will demonstrate the effectiveness of several passive design techniques and technologies incorporated into the design of a 30-by-75 foot steel building. In addition, both stand-alone and grid-connected renewable energy systems will be demonstrated to familiarize students, visitors, and project team participants with the reliability and feasibility of various cost-effective applications of renewable energy technologies.

NEWS FROM THE MEMBERS

Wayne Best and Gary Conway of Apollo Energy Systems, Inc. have some interesting activity to report. As part of a project designed to help fight malnutrition, hunger, drought, and disease in Africa, two solar-powered water pumps have been installed at a pond about a mile from Kishapu in Shinyanga, Tanzania. They transport 12 gallons of water a minute down a pipeline to the village where a two-acre demonstration farm has been established. The effort is sponsored by a group called AHEAD (Adventures in Health, Education and Agricultural Development). Apollo is scheduled to install seven new water pumping systems in Mexico in November, and is currently working with Penn State University developing a solar system for watering livestock during the severe Pennsylvania winters.

It's a "new old idea" in air conditioning, residential and commercial scale cooling tower technology just introduced by Allied Energy. Called the "Aqua-Therm" system, the new product includes an improved cooling tower with a freon condensing coil directly in the tower. With a design aimed at reliable efficient operation with mineral laden water and a generally harsh environment, Mac Word says his system will operate at an energy efficient ratio of 13 or greater.



NEW MEMBERS

S. David Freeman, General Manager of the **Lower Colorado River Authority**, is now a Category "A" member. By virtue of LCRA's hydroelectric power capacity, it is the largest renewable energy producer in Texas. To contact David, write to P.O. Box 220, Austin, TX 78767, or call 512/473-3588.

AgriPower, Inc., represented by John C. King, President, is a diversified renewable energy company serving primarily the agricultural market in the Texas Panhandle. They provide engineering, sales and service of solar and wind energy systems. Their address is 103 Avondale, Amarillo, TX 79106, phone 806/359-1657.

Mac Word has joined as a Category "D" member. His company, Allied Energy, has been involved in solar water heating off and on for years. While he is not doing much solar today, he maintains a sincere interest and expects to do more in the future. Reach Mac at 1903-B Westridge, Austin, TX 78704, or call 512/443-4466.

Another new Category "D" member is **Rob Rugeley**. Rob is manager of a company with a long solar history in Austin, Cole Solar Systems. Installation and service of solar water/spa/pool heating equipment continues to be their focus. Rob can be reached at P.O. Box 18595, Austin, TX 78760-8595, or by calling 512/444-2565.

Joining as an Associate Member is **Edgar H. Perry**, P.O. Box 14887, Austin, TX 78761, phone 512/251-1144. Edgar's company affiliation is, appropriately, The Perry Company.

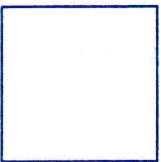
ANNUAL BUSINESS MEETING SCHEDULED

The 1989 Annual Business Meeting for TREIA will be held in Austin on November 18. It will start at 10:00 a.m. at the Hyatt Regency Hotel. All TREIA members are encouraged to attend and participate in some important discussions and decisions. Among the issues to be covered are TREIA's involvement in SOLAR 90 / SOLTECH 90, and the possibility of Chapter affiliation with the Solar Energy Industries Association. TREIA members are invited to have lunch with the restaurant with Texas Solar Energy Society members who will be having their Annual Member Meeting in the afternoon.

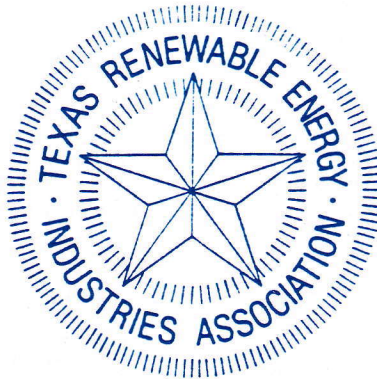
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