

# ENETI

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Territorial Energy Office  
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## TEACHERS GET HAND-ON EXPERIENCE WITH PHOTOVOLTAICS

"Electricity From The Sun" was the topic of a workshop conducted for Elementary and High School teachers at Samoana High School July 17th. Twelve teachers participated in this photovoltaics workshop sponsored by the Department of Education's Division of Instructional Development and the Territorial Energy Office.

Photovoltaics (photo=light and voltaics=electricity), or PVs as they are popularly called, are devices that convert sunlight directly to electricity without any moving parts. These devices are made in factories in Japan and the U.S., and many Islands in the Pacific are turning to this technology to produce electricity.

PVs produce electricity more reliably and cheaper in many remote sites where diesel generators break down or are difficult to supply with costly, imported diesel fuel. In American Samoa they are used in many applications. For instance, PV's are used to power the NOAA weather station at Cape Matatula, navigation bouys in Pago Pago Harbor, navigation lights at Lepua,



exhaust fans in the cafeterias of Leone High School and Poloa Elementary School, and lights, fans and typewriters at the Territorial Energy Office in Tafuna.

The teachers who attended were Maria-rosa Fanene, Akenese So'ona'olo and Sister Petera of Saint Francis, Lepua; Joseph Stainslans and Mohau Sivasaukavau of Samoana High School; Fanoia Pagofie and Tucky E., Pava'ia'i School; Maselino Pese, Aua School; Usoali'i Tavai Jr., Pago Pago School; Rederick Mackenzie, Fagaitua High School; and Moli Apelu, Lupelele School.

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## WHATEVER BECAME OF THE 1982 TERRITORIAL ENERGY ASSESSMENT?

The Territorial Energy Assessment (TEA) was completed in 1982 and listed a number of renewables with possibilities on American Samoa. The Department of Interior had promised funding for certain projects but this funding has never come about. After almost three (3) years, there is still talk of funding for renewables but the sum has dwindled considerably. At present, \$1.5 million is being tossed around in House and Senate Committees for select projects in the Territories. How the funding will get to the territories is the big concern at present.

It was learned some months ago that a new agency was being formed in Hawaii to monitor these grants for the territories. This new consortium was to be called PAC-TRANS and cost approximately one half million a year to operate. The agencies said to be involved with this new group were the East West Center, Pacific Basin Development Council (PBDC), PICHTR and the Hawaii Natural Energy Institute (HNEI). Each of these institutions was to play a separate role from reviewing to controlling and monitoring of federal funds.

The TEO management itself is opposed to such an organization and has asked American Samoa Congressman Fofō Sunia for assistance. In a letter to TEO Director, Drury Samia on July 1, 1985, Sunia said he had written to DOI Under Secretary, Rick Montoya expressing his strong opposition to the recognition of another organization to deal with federal programs in the Pacific territories. The Congressman told Montoya that federal programs for the territories can be handled without resorting to third parties. "This third party involvement in my view, has always caused delay, sometimes confusion, and always additional expenses, thereby reducing the amount available for the projects," said Sunia.

The projects submitted by American Samoa for funding under the Territorial Energy Assessment, included Conversion of Tuna Sludge to Methane Gas, photovoltaics for

Swains Island and photovoltaics and electric vehicles on Tutuila. What the status of funding and how it will be administered is still speculation. What is not speculation is that American Samoa has some good projects that are ready for implementation and we continue to wait for action from Congress.

## Teachers get hand-on experience (cont'd)

The Workshop was conducted by Jim Masker, Coordinator of Educational Services, of the National Center for Appropriate Technology (NCAT). NCAT has offices in Montana and Washington, D.C. Masker was visiting American Samoa after participating in the Territorial Energy Offices' meeting on Saipan earlier in July. This meeting was also attended by TEO's Director Drury Samia and Mechanical Engineer John Kirby.

The teachers received a copy of Photovoltaics in the Pacific Islands which was produced by NCAT for the U.S. Department of Energy. This publication was designed to be used by teachers in their science classes in the Pacific. The twelve teachers also received direct, hands-on experience with PVs at the workshop. Masker had the teachers break into two groups and conduct experiments with PVs. One group experimented with the impact of temperature on PV electrical output. The other group experimented with the impact of light orientation on PV electrical output. The teachers found that PV electrical output decreases as temperature increases. They also found that PV electrical output increases as light shines more directly on the solar cells.

This workshop was part of the Territorial Energy Office's efforts to educate the people of American Samoa about energy alternatives. If you are interested in native energy technologies, contact John Kirby or Jerome Laupapa.

## TERRITORIAL ENERGY MEETING IN SAIPAN BRINGS RENEWED COOPERATION BETWEEN THE TERRITORIES

Drury Samia, Director and John Kirby, Mechanical Engineer were both in attendance at the 2nd Annual Territorial Energy Offices Meeting held in Saipan from July 9-12. All the Pacific Territories were on hand along with representatives from Region IX, DOE and the Pacific Site Office. Some of the topics discussed were: Better information exchange between the Territorial Energy Offices, DOE/DOI relations and the Territorial Energy Assessment completed in 1982. Martha Dixon and Ron Pearman both speculated as to where DOE was heading with its proposed budget cuts. It seems that DOE plans to reduce many of its programs yearly until doing away with them in 1990. John Shupe, Pacific Site Office, was also on hand to discuss the areas of concern between the Territorial Energy Offices and DOE.

Two proposals generated at this meeting that are being prepared for DOE funding are: 1) IBM Computers for all the Territorial Energy Offices; and 2) Photovoltaic training kits for all the Energy Offices to be used with their education departments.

The meeting was a resounding success with all the territories renewing their desire to work closely together. The next meeting has been planned for March 1986 in Guam.

## ENERGY EDUCATION WORKSHOP FOR NINTH GRADE TEACHERS

The Energy Education Program for elementary students has been expanded this year to ninth grade science classes. Ninth grade science teachers were in attendance at Samoana Science building on August 26, 1985 to discuss the materials that will be used in their classes this year. The ninth grade booklet was prepared by Dr. Al Carr who prepared all the previous 1-8 elementary class booklets. Al was on island for

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## MORE ECMS COMPLETED AT ASCC

As we keep saying in energy conservation, you don't have to sacrifice comfort to save energy." And that is exactly what's happening at the American Samoa Community College Library, thanks to the energy saving fixtures and retrofits put there by the Territorial Energy Office.

Just last month Professional Engineering and Mechanical Services, a local company contracted by TEO retrofitted all the lighting fixtures at the ASCC Library, changing 78 ballasts and putting in energy-saving lamps. The changes will save about 15 percent of the cost to operate the lights.

The lighting fixtures are in addition to the other retrofits already done. The study area is now being cooled by eleven ceiling fans instead of air conditioning. To add natural ventilation and natural lighting the solid wall which had enclosed the study area has been knocked down and replaced with louvre windows.

The rest of the library, consisting of a book storage, magazine and document storage area, a special study area and some offices are air conditioned. The 7½ ton unit which had been on the roof was replaced with an energy-efficient 7½ ton split system with an air cooled condensing unit outside and an air-handling unit inside.

The retrofits should save the library 55% of the operating cost of air conditioning and lighting.

## TIP

Do you realize that 30 - 50% of your electric bill is on water heating? Consider using the sun's energy. Sign in on the loan Subsidy Program for solar water heating. Call TEO for more information.

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Energy workshop for 9th grade teachers cont'd.

the workshop to present the booklets and to get feedback from the teachers. Fifteen (15) science teachers were on hand to evaluate materials and discuss how they would use the teaching aids in the classrooms.

This discussion proved quite useful with a number of ideas being generated. It was also decided that a post school year survey be done to improve the booklets for other ninth graders. This program is part of the Consolidated Grant which is funded by the Department of Energy. Energy education is receiving renewed interest this year with high expectations for a successful program.

For more information on Energy Education, contact Jerome Laupapa or John Kirby at 699-1101/1102/1103.

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Territorial Energy Office  
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American Samoa Government  
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