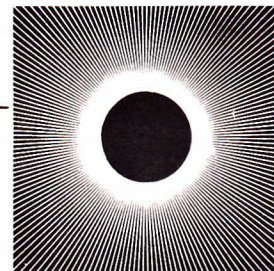


# TX-SES NEWS

A Chapter of the American Section of ISES



MARCH 1979

1007 So. Congress, Suite 348, Austin, Texas 78704

VOL. 3-01

## LEGISLATIVE STATUS OMNIBUS SOLAR ENERGY BILL

The omnibus solar energy bill, introduced first in the House by Rep. Keese (HB 1501) and then in the Senate by Sen. Vale (SB 794), is a package of several important measures. The key sections:

- 1) provide solar rights through the purchase of easements (voluntary),
- 2) mandate consideration of solar use by planning bodies in zoning and subdivisions platting or replatting,
- 3) prohibit utilities from penalizing solar or wind energy users through rate schedules,
- 4) allow the Public Utilities Commission to grant incremented rate of return on investments, by utilities, in renewable resource plants,
- 5) strengthen the authority and expand the responsibility of the Texas Board of Control in considering the use of renewable resources in all state buildings,
- 6) provide that anyone installing active solar systems in Texas after September 1980 be licensed to do so, and provides a mechanism to establish licensing procedures, and
- 7) requires that the Texas Energy Advisory Council immediately develop a plan for maximum feasible use of renewable resources in the state by 1990.

At this writing, the Senate Natural Resources Committee has approved this package and sent it to the floor for a vote--which could come any time. The House Energy Resources Committee will have considered it as well by the time this leaves the press. Capitol watchers generally agree that the House will be less supportive and the energy committee seems to be sitting on a number of major bills, possibly for political leverage later. The only trial balloon before Representative Hanna's energy committee to date was the Texas Energy Advisory Council enabling legislation. Even through Hanna is a member of the Council itself, his committee slashed the TEAC proposed budget, which included the infant Energy Development Fund, to below current levels. If that is any indication of the mood in the House, solar may be in trouble.

## PROPERTY TAX EXEMPTION FOR SOLAR AND WIND ENERGY DEVICES

This legislation, introduced simultaneously in the Senate by Vale (SB 204) and the House by Elizondo (HB 564), provides the statutory wording for proposi-

tion #4 that the voters approved last November. In general it provides that property tax assessor-collectors are prohibited from including solar and wind energy devices when calculating the value of property. It is written very broadly and specifically includes passive systems. It also includes biomass conversion systems. Presently there is no wording in the bill that would limit the exemption to any size or cost range, although it is possible that this could happen before it is finally approved. This bill has been passed by the full Senate and shares the fate of most energy bills currently held up in the House Energy Resources Committee.

## GASOHOL

No doubt the most broadly supported renewable resource in the legislature, gasohol is the subject of several bills introduced by Senators Vale, Price, and Longloria, and Representatives Keese and Kubiak. A measure to remove the motor fuels tax from every gallon of gasohol has been sent to the Senate floor for debate together with two amendments that would phase out the tax exemption over time (Price) or when gasohol captures a specified portion of the gasoline market (Vale). The House Energy Resources has tabled the House version in order to consider similar limitations. The impetus for phasing the exemption out is based on the fact there is real concern that gasohol could well capture the entire market or a significant portion of it and leave no motor fuels tax revenues for the highway contractors (so well represented by the Good Roads Association). The real effect of the bill, together with existing federal exemptions is to provide an immediate subsidy of 90 cents per gallon of alcohol. (This is because gasohol is defined as a mixture of 90% gasoline and 10% alcohol derived from Texas agricultural products, by-products or wastes.)

-Continued Page 2

### Contributors to this issue:

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Two pieces of legislation have also been introduced to legalize the manufacture of alcohol from biomass in Texas. Although distilled spirits may be manufactured and 200 proof alcohol may be "recovered" from petroleum products, anhydrous (200 proof) alcohol manufacturing (say from corn) is currently illegal. The two bills being considered remove this barrier for large corporations, and for cooperatives and small business respectively.

Although both are likely to pass unmolested from the energy committee of each house, the House Liquor Regulation Committee said "Whoa." It turns out that the corporate bill would give a manufacturer the flexibility to sell alcohol products for industrial, fuel or beverage uses. Vested interests in the form of liquor wholesalers and retailers are concerned about new firms getting into the alcoholic beverages business. Heightening the controversy is that the corporate bill (HB 2068, SB 923) would allow corporations such as Midwest Solvents of Kansas to own a plant in Texas. In fact, Midwest has just won a \$15 million loan guarantee for construction of a 21 million gal per year plant in South Texas. The Rio Grande Valley Sugar Growers and sorghum farmers need the market and the valley needs the jobs, but liquor wholesalers and retailers are afraid we may want to drink the stuff if the price of gasoline goes down again. Fat chance.

Lastly, on the gasohol front, Senator Price, reflecting his largely rural Panhandle constituency has introduced 2 bills, each providing \$20 million in grants for actual construction of alcohol plants. Representative Kubiak has introduced bills that would eventually provide for State loans for plant construction.

Over all it looks good for a gasohol tax exemption, which economists generally agree will make gasohol feasible immediately--if not for everyone, at least for a significant share of the market. Production of 100% alcohol will be made legal, but vested interests could win the fight to limit its markets to industrial and fuel use. Because of the relative instability of energy and farm prices and policy this could represent a considerable risk for manufacturers. It is too early to tell if major spending bills like these of Price and Kubiak stand a chance . . .

## APPROPRIATIONS

Here is where the truth will out. If property and gasohol tax exemptions pass--and are signed by the new governor--they will be in full force. An interesting aspect of the property tax bill provides that the Comptroller and the Texas Energy Advisory Council shall develop a manual for property tax assessor-collectors. That manual will hopefully be a useful educational device for builders and developers as well, when deciding how to build initially.

But, vital portions of the omnibus solar energy bill will require actual appropriations of state funds from the General Revenue Fund. Even if the bill sails clear, without money to back it up nothing will happen. Of particular concern in this year of fiscal restraint are the sections on solar energy in state buildings and installer licensing. The fiscal note on the omnibus bill identifies the dollar mark at about \$600,000

for the upcoming bienium, not much for a state with a multibillion dollar budget, but noticable none-the-less. Again, if the House Energy Committee's butchering of the Texas Energy Development Fund is any indication, it could be a slow year for solar.

## SURVEYING THE LEGISLATURE

The TX-SES Legislative Committee, chaired by Frank Hutchinson of Austin's Ausoltex Co., decided to find out where Texas legislators stood on a few key issues. A survey questionnaire was sent to each senator and representative. Of the roughly 180 members only 24% responded at all, which may tell us something in itself. In fact, the majority of the questionnaires returned were positive toward renewable resources generally. And, while our concern should perhaps lie with the other 138 not responding, the results of the mail survey are shown below.

- 1) 35 of 43 were aware of the omnibus solar energy legislation (SB 794, Vale and HB 1501, Keese). 8 were not.
- 2) 39 of 43 agreed that state government should set the example by using solar energy in public facilities where it would save in the long-run. 4 were undecided or unsure.
- 3) 32 of 43 were in favor of providing a legal means of securing access to solar energy through voluntary easements. 10 were undecided or unsure, and 1 said no.
- 4) Only 22 of 43 were willing to support a program of statewide licensing of solar installers comparable to the existing program for plumbers. 11 were undecided and 10 against.
- 5) 42 of 43 were in favor of encouraging the use of agriculturally-derived fuels such as gasohol. Only 1 was undecided and no one could say no.

The vote on number 4 is perhaps the only one that may clearly give cause for concern. Assuming generally pro-solar members responded to the survey, a narrow majority of supporters seem ready to grant solar installation the credibility of a new trade.

It was also clear from notes written in the margins of 3 and 4 in particular, that many members generally in favor of renewable energy use need education. About 25% of those responding seemed not to know what solar access meant or to understand why licensing is needed. In general this survey shows clearly that many pro-solar members lack a thorough understanding of the issues.





## LIBRARIANS TO LEARN ABOUT SOLAR

The Texas State Library and the Texas Governor's Office of Energy Resources are participating in the library phase of the U.S. Department of Energy's Solar Technology Transfer Program. The Southeastern Library Association is conducting this part of the program under contract to the Southern Solar Energy Center.

The aim of the library program is to use the existing public library system in Texas to ensure that solar energy information is readily accessible at the local level for architects, engineers, builders, homeowners, the business community, and the general public. A packet of basic, introductory solar energy information will be distributed to each of the public libraries and branch libraries in Texas during April 1979. These introductory materials will be supplemented by technical collections located at the San Antonio Public Library, Dallas Public Library, Houston Public Library and El Paso Public Library. They will be available to anyone through their local public library using normal interlibrary loan procedures.

To provide librarians with an opportunity to update their knowledge and reference skills in this area, 16 workshops will be held at the following locations:

May 14	San Antonio Public Library
May 15	Pasadena Public Library
May 16	Temple Memorial Library, Diboll
May 17	Greenwood Branch Library, Corpus Christi
May 18	McAllen Memorial Library
May 21	Texas Eastern University, Tyler
May 22	McKinney Memorial Library
May 23	Arlington Public Library
May 24	Kemp Public Library, Wichita Falls
May 25	El Paso Public Library
May 29	Abilene Public Library
May 30	First Baptist Church, Odessa
June 1	Lubbock City-County Library
June 4	Amarillo Public Library
June 5	Austin Public Library
June 6	Waco Public Library

The workshops will provide librarians with an overview of the vocabulary and state of the art of solar energy, a discussion of the packet materials and an introduction to the local, regional and national sources of solar energy information.

The final SELA activity in the library portion of the Solar Technology Transfer Program, will be to host a Planning Conference to provide an opportunity for Texas information specialists to design a mechanism for the continued dissemination of solar energy information. Representatives from the library community, the State Energy Office, the State Planning Office, the extension services, Consumer Protection Agency and other interested organizations will meet June 12-13 in Austin to discuss the possibilities for continuation of the program at the state level.

## TEXAS PUC EVALUATING ELECTRIC RATES FOR SOLAR USERS

A prospective solar customer's decision to buy solar will depend to a great extent on the price of

auxiliary energy. Since solar systems typically supply only a portion of a residence's heating and cooling needs, a solar owner must rely on an auxiliary source of power, usually electricity. Some electric utilities across the nation have expressed the feeling that solar residential customers have significantly different load patterns than conventional residential customers, and therefore, should have a separate tariff for auxiliary power. In Texas, a few electric utilities have initiated special rates for solar and wind customers; these rates have for the most part been to the benefit of these customers. However, some solar advocates fear that Texas utilities will propose solar/wind rates with high standby charges as has been proposed by other utilities across the nation.

The Texas Public Utility Commission has received a grant for \$25,000 from the Governor's Office of Energy Resources to study the effect of widespread solar/wind development on electric utilities in Texas. The PUC is attempting to evaluate how a significant penetration of solar and wind customers would affect the load characteristics and revenues of an electric utility. This will be done by examining actual and simulated data of the load characteristics of solar and wind customers. From this evaluation the Commission hopes to develop a policy regarding solar and wind tariffs which will reflect the costs imposed by these customers while at the same time providing incentives for the use of renewable energy sources. The PUC will be exploring the possible use of time-of-day rates and load management devices for solar and wind customers. Another solar/utility interface issue which will be evaluated is what role, if any, the utilities should play in the commercialization of solar/wind systems. The Commission staff is also examining what institutional barriers exist to the development of solar/wind systems, and what the State can do to provide incentives.

To date, staff, members have been involved in an extensive review of the literature available. They have also surveyed other state commissions to determine what actions have been undertaken in the area of utility/solar interface. Texas utilities have been contacted to determine the extent of their research regarding solar/wind local characteristics, and to identify their attitude towards this renewable energy sources. A survey is planned for the near future that is targeted at a sample of the solar manufacturers/distributors/installers in Texas to determine their perceptions of what barriers need to be overcome in the development of solar/wind systems.

The PUC would be delighted to hear from readers of TX-SES News who would like to provide some input concerning their views on barriers to solar/wind development in Texas, and how they feel rates for auxiliary power should be determined. Any comments should be addressed to:

Jeanne Schillaci  
Economic Research Division  
Texas Public Utility Commission  
7800 Shoal Creek Boulevard  
Suite 450N  
Austin, Texas 78757  
(512) 458-0202



## INSTALLATION WARRANTY PROGRAM BEGUN

A statewide Solar Contractors Bonded Installation Warranty Program, designed to protect consumers and enhance the credibility of solar industries, has been instituted by CAL SEIA. The first bond was issued in January on a solar water heating system.

The bond program guarantees the system is free from defects in material, workmanship or installation. CAL SEIA feels the program will provide an impressive sales incentive and increased leverage in negotiating construction loans for customers and systems.

For further information contact Aggie James, (916) 443-1877.

### IMPROVED METHOD FOR PASSIVE SYSTEM DESIGN

Total Environmental Action, Inc. (TEA), announces an improved version of TEANET, a 7-node thermal network solution for designing passive solar systems using a Texas Instruments TI-59 hand-held calculator with PC-100A printer.

The new TEANET version has both heating and cooling thermostats, making it possible to set both upper and lower limits on building temperature fluctuations during the same run. It also has provisions for simulating internal gains and allows the user to set the stop time.

The TEANET Users' Manual has also been revised and includes technical papers describing selection of weather, simulation of Trombe walls, and simulation of passive houses with rockbeds.

An optional AUTOMATRIX program preprocesses data, simplifying required TEANET input. This program can be used in TEANET problems involving up to five nodes.

Developed at TEA, Inc., for in-house building design, engineering, and research, TEANET is an alternative to expensive computer runs. The program is used to estimate temperature excursions within a building using passive systems such as direct gain, Trombe and water walls, greenhouses, roof ponds, heavy mass buildings, rockbeds, or combinations of these systems.

A special workshop on TEANET is set for August 11, 1979. This workshop will cover setting up thermal network models, selecting design weather conditions, running TEANET, and studying advanced applications not covered in the TEANET Users Manual.

For further information write: TEANET, TEA, Inc., Church Hill, Harrisville, New Hampshire 03450.

## WORLD'S LARGEST WIND POWER GRID BEING INSTALLED IN TEXAS

Nearly four megawatts of wind-generated electricity will be installed within one month in the largest power station of its kind in the world under a private-

company venture at the northwestern Texas Panhandle town of Dalhart, SEIR has learned. The remote site is located about two-thirds of the way from Amarillo, Tex., to Clayton, N.M., where Department of Energy and National Aeronautics and Space Administration erected the first of four 200-kilowatt (electric) Mod-OA windmills.

Unlike the two-bladed, horizontal-axis downwind turbine, Dalhart's network will employ 132 straight-blade, vertical-axis giromills, each rated at 25-30 kWe. Project is being managed by G. W. Gossett Development Corp., Dalhart. Giromills are being built by Alternate Energy Corp., a joint venture of Barnes Engineering, Anaheim, Calif., and Benchmark Corp., Huntington Beach, Calif.

Each giromill will be attached to a chemical cell to produce bleach for the Wind Chemical Corp., created in Dalhart especially for this project, according to Benchmark's Robert Smith. In a telephone interview with SEIR, he said the windmill/bleach operation would cost "a lot" of money. Declining further elaboration on the financial arrangements, Smith said he was confident the giromills could produce electricity at a lower cost than the local utility can provide.

Smith admitted that the project has been underway for several months. Largely unnoticed by even the Texas solar community, the giant windmill power grid got its start last August. Final agreement among the principal partners was signed last November, Smith told SEIR.

--Solar Energy Intelligence Report--

## WILLIAM DAVIS SOLAR HOME

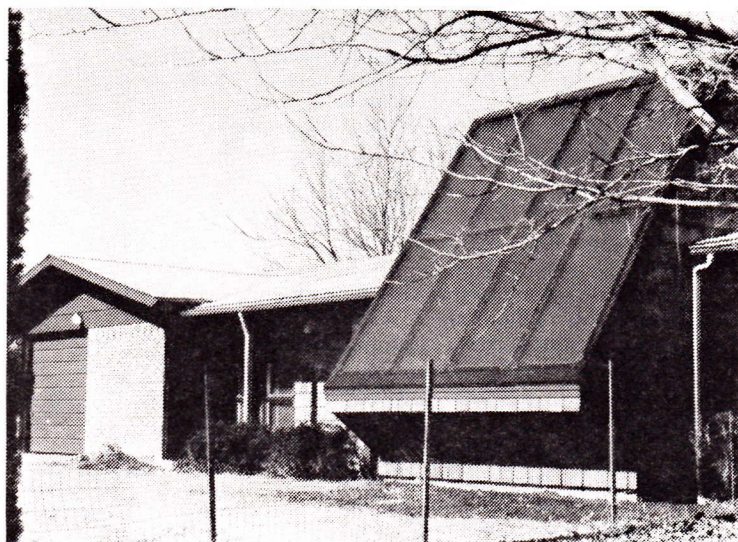
3045 Silverton  
Dallas, Texas

Living with the sun can be interesting and profitable if not trying. The attractive, contemporary home shown in Figure is actually a 20 year old Fox and Jacobs Inc. tract home. The face lift was the result of a combined effort by the owner-solar designer William Davis, A.I.A.; the Solaron Inc. equipment supplier, Enersol Inc.; and the solar installer, Suburban Heating and Air Conditioning.

Solar heated air keeps this home warm during sunny winter days and a rock storage box provides enough heat storage capacity for the nights. The high peak roof covers an addition to the existing structure which provides a mechanical room to house the hot water pre-heat tank, the thermal storage rock box, the pumps, solar air handler, dampers and controls. The roof is oriented due south at a 45 degree tilt and supports eight collector modules providing 156 square feet of net collector area for the 1400 square foot home. An F-chart computer analysis indicated that the system should provide 49% of the winter heating load and 75% of the domestic hot water load.

Since this home has just been sold and the solar system has gone through two families during its first heating season, there is no way to determine the actual energy cost savings. However, the investment for the solar addition was recovered through the resale value of the home. Its interesting that while viewing the





home, perspective buyers were most fascinated by a small box next to the thermostat which displayed six small lights used to determine when various parts of the heating system were operating.

Although the system has had almost no problems, it did suffer a New Years headache last January. With the home unoccupied for almost a week and extremely cold weather, a leaky damper allowed very cold night air to settle around the finned coil located in the return air duct from the collector. This coil which is used to pre-heat the domestic hot water promptly froze. Fortunately the ensuing flood was outside the home living space in the mechanical room and the water caused no damage. The damper was properly adjusted and the coil replaced. However, a prospective buyer who had come to see the house found water running out of the mechanical room door, down the driveway and into the street. He was so impressed with solar energy that he didn't even bother to knock on the door but returned to his car and has never been seen since.

## RERC A TEXAS FIRST

Austin's City Council has just taken what could prove to be "one giant step" toward a safe, sane, and sound energy future for its citizenry. The creation of a totally autonomous Renewable Energy Resources Commission is a first in Texas and establishes Austin as "another potential Davis, California" according to representatives of the Center for Renewable Resources in Washington, D.C.

During the next few weeks the seven member RERC will be selected by the Council and will get right to work fulfilling its 12 paragraph list of duties. Of prime importance on that list is the charge to present the Council with an Alternate Energy Technologies and Renewable Energy Resources Development Plan. All aid, assistance, and expert advice will be appreciated and is strongly solicited. The credibility of renewable energy approaches as an alternative to continued conventional utility plant expansion will be sorely tested and held under the closest scrutiny. A carefully developed, workable, realistic plan, when implemented, can serve as a model to other communities, and be an invaluable tool for positive change.

A hasty, ill conceived, poorly documented, or simply unworkable plan which cannot muster the support of the community, can obviously be terribly destructive.

Since the success or failure of this project has implications for all who wish to see solar succeed in Texas, the TX-SES News will follow its progress and report on it regularly. Names of its members and how to contact the Commission will be included in an upcoming issue.

## BIOMASS BRIEFS

- We just learned that the Texas Forest Products Lab in Lufkin recently held a workshop on pyrolysis (gasification) of wood. Ken Rogers of the Forest Service's lab said he also hopes to install a small pilot demonstration unit at their facility. He knows of six East Texas companies already working to install commercial units, and said the Red River Army Depot should have theirs in this year. Contact: Ken Rogers, Texas Forest Products Lab, TX Forest Service, Box 310, Lufkin, TX 75901.
- Waco and Tarrant County were just awarded grants by the EPA to study the feasibility of using solid waste as a source of fuel.
- The Rio Grande Valley Sugar Growers Association together with Midwest Solvents has finally, and officially, been awarded a \$15 million loan guarantee for construction of an alcohol production facility in Santa Rosa, Texas. The plant will convert both sugar cane and sweet sorghum carbohydrates to ethyl alcohol. Now if the legislature passes pending bills which would allow such manufacture we can get on with the business. It appears liquor sales associations want to make sure Midwest is really going to use the ethanol for industrial and fuel uses. While either beverage or fuel use would benefit the valley's economy this dispute will have to be settled before Bud Cray, Midwest President, gives the green flag.
- Tues. April 18th is Gasohol Day at Austin's Capitol. American Petro Fina Corp. has agreed to hand out 5,000 gallons of gasohol being provided through the work of Dr. John Hutchinson and Ray Pruett of the Tx. Department of Agriculture. Dow Chemical has donated the alcohol required. Meanwhile Union Carbide somehow contaminated almost 2 million gallons of ethyl alcohol with isopropyl alcohol. This shouldn't harm its fuel value (and in fact should help), but UCC can't sell it for pharmaceutical or industrial purposes. At this writing it appears that American Petro Fina Corp. is the only one interested. Both Exxon and Gulf said they did not want to be associated with gasohol. Shamrock and even ARCO (who is supposedly using tetrabutyl alcohol as an additive now) didn't call back. The Hutto Gin & Grain Cooperative, which also runs a gas station near Austin, asked for 8,000 gallons, about one truck-load, since that was all they could hold, and seem interested in getting into the business.



The following article is extracted from: *Present Value: Constructing a Sustainable Future*, Office of Appropriate Technology, Office of Planning and Research, State of California, with the kind permission of Mr. Ken Smith.

## Village Homes

The case studies in this book have focused mainly on cost-effective techniques for reducing energy consumption in residential and commercial structures. Often neglected, however, is the expenditure of energy and resources for the delivery of basic necessities such as food, energy, transportation, and waste disposal to an

entire community.

Newly built, planned communities have many ways to reduce adverse effects on the environment while improving the quality of life of the residents. Energy-conscious land-use planning is the most important way.

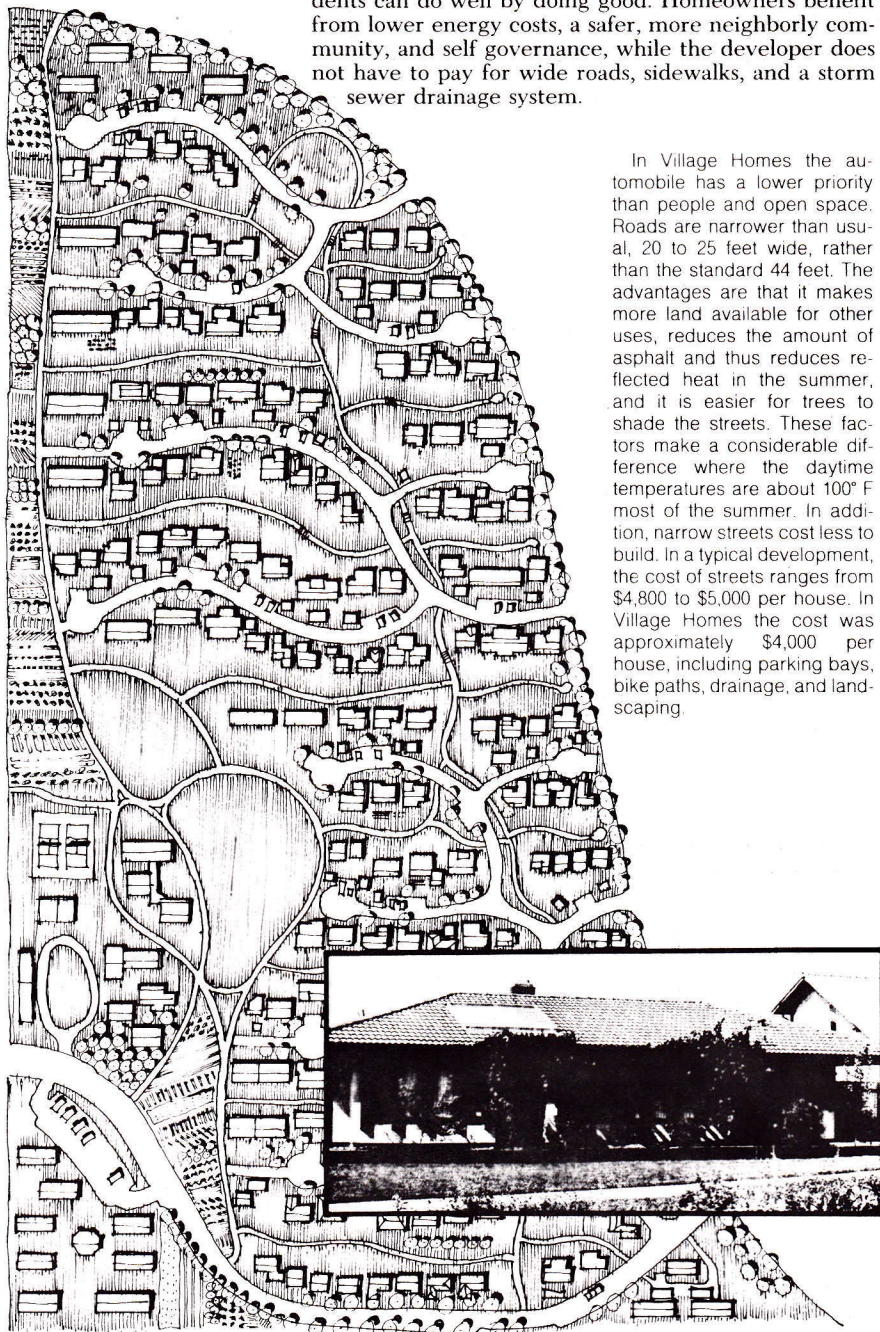
The obvious conclusion is that developers and residents can do well by doing good. Homeowners benefit from lower energy costs, a safer, more neighborly community, and self governance, while the developer does not have to pay for wide roads, sidewalks, and a storm sewer drainage system.

In Davis, several innovative developers have resorted to energy-saving land-use planning to complement the city's conservation-oriented building code. One example is a 70-acre subdivision called Village Homes. The developers, Michael and Judy Corbett, have devised a land-use plan that conserves energy and resources while enhancing the sense of community shared by residents.



Houses in Village Homes are arranged in eight-unit clusters, with lot sizes that average 55 feet by 70 feet, approximately 4,000 to 5,000 sq. ft. apiece. Each lot is large enough for a private yard. Each cluster of eight homes shares one-third of an acre of land that is owned by the Village Homes Homeowners Association.

Owners of the common space mutually determine how it will be used; some have barbecue areas and lawns, while others have devoted the space to growing food. One advantage of shared responsibility for commonly owned land is that it increases the sense of community that characterizes the residents of Village Homes.



In Village Homes the automobile has a lower priority than people and open space. Roads are narrower than usual, 20 to 25 feet wide, rather than the standard 44 feet. The advantages are that it makes more land available for other uses, reduces the amount of asphalt and thus reduces reflected heat in the summer, and it is easier for trees to shade the streets. These factors make a considerable difference where the daytime temperatures are about 100° F most of the summer. In addition, narrow streets cost less to build. In a typical development, the cost of streets ranges from \$4,800 to \$5,000 per house. In Village Homes the cost was approximately \$4,000 per house, including parking bays, bike paths, drainage, and landscaping.



Long, narrow cul-de-sacs weave through the clusters, providing access but not dominating the landscape. Because neither the streets nor the cul-de-sacs are bordered by sidewalks, they appear to be narrow, winding roadways. Cul-de-sacs are long, averaging 400 feet; in a typical development they are approximately 200 feet in length but require more paved area. Minimal speed limits have been imposed throughout Village Homes. Off-the-street parking is available in parking bays owned by the Village Homeowners Association.

In addition to the common areas between the houses, greenbelts separate the clusters. Greenbelts are commonly owned and run north and south through the community, perpendicular to the cul-de-sacs. Foot and bicycle paths go from cluster to cluster so that children can visit neighbors and play without crossing streets.

Throughout the greenbelts and around the clusters are small waterways filled with

Work is beginning on a recreation center that will include meeting rooms, an arts and crafts area, a day-care center, and areas for other activities. Soon a small commercial center will be added that will include a cooperative store, a small restaurant, an inn, and some small offices.

Even though not all the houses in Village Homes use solar energy, they all conform to the city's energy code. To date, nearly 100 homes have been constructed out of the 220 lots that are available. Fifty of them have solar hot water heaters, and all use some type of passive heating technique. All except two of the houses have conventional (mostly gas) back-up heating systems. And only one out of 10 houses has conventional air-conditioning. The Village Homes Architectural Review Board reviews all house designs and requires some uniformity in building materials. Also required is a design that will reduce the

amount of energy used to heat and cool a home. The Architectural Review Board monitors all new construction to be certain that southfacing glass and solar collectors are not shaded by another structure. Mike Corbett has built three-fourths of the houses himself; some he built on speculation and others were custom built for clients. Houses range in size from 900 to 2,500 sq. ft. and in price from \$38,000 to \$135,000. Ten percent of the Village Homes were built by their owners.

All the houses are aligned to take maximum advantage of the sun, and all homes have a south-facing exposure. Solar rights are guaranteed through the Covenants and Restrictions of the Homeowners Association so that no resident can block a neighbor's sun by planting tall trees. Deciduous trees can shade south-facing glass on specific dates during

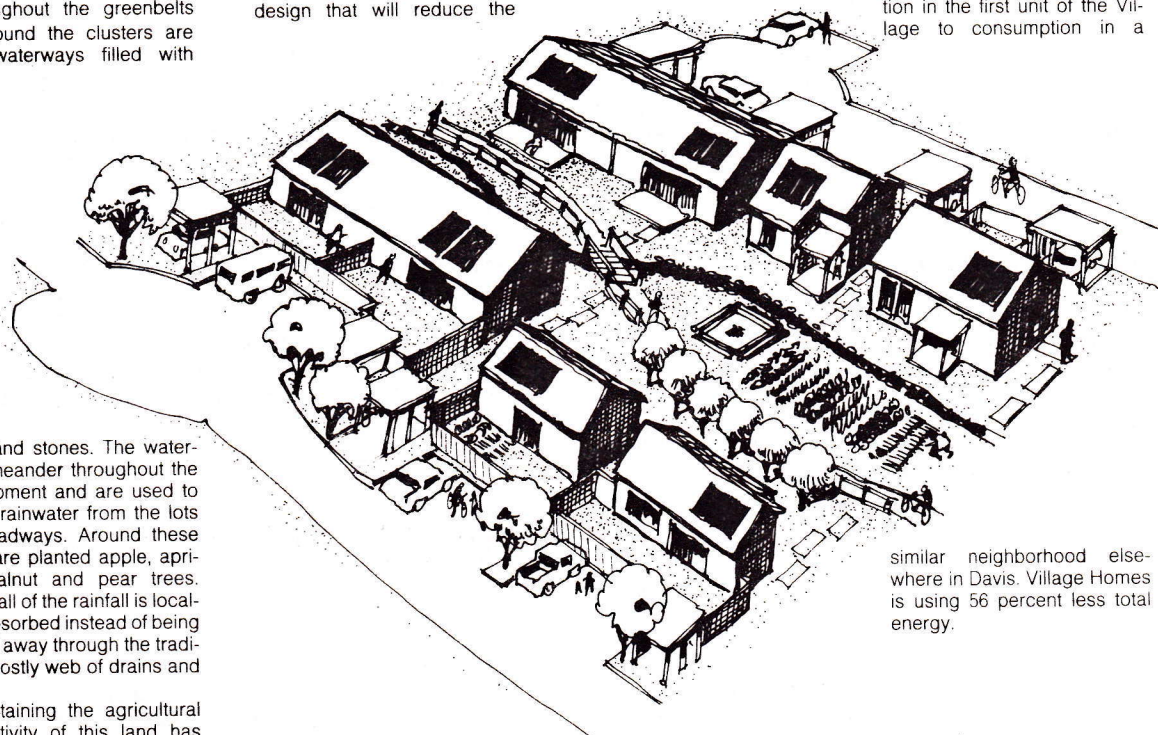
summer and fall. Roof-top solar panels cannot be shaded at any time of the year between 10 a.m. and 2 p.m.

Originally, the Corbetts had all eight houses in a cluster hooked up to a septic tank system with leach lines running through the cluster's common area. These plans were scrapped and all of the Village Homes are now connected to the city's sewer system. Corbett said that one important factor responsible for the development's success has been the Davis branch of Guild Savings and Loan, which financed many of the houses.

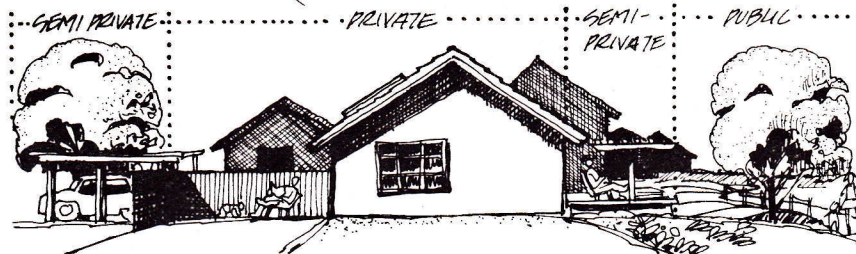
Village Homes proves that resource conservation is feasible and practical in a private development. There has been little turnover of residents in the Village. As of spring 1978, only five houses had changed hands and all were promptly resold. A recent study at the University of California at Davis compared energy consumption in the first unit of the Village to consumption in a

grass and stones. The waterways meander throughout the development and are used to collect rainwater from the lots and roadways. Around these areas are planted apple, apricot, walnut and pear trees. Nearly all of the rainfall is locally re-absorbed instead of being carried away through the traditional costly web of drains and pipes.

Maintaining the agricultural productivity of this land has been one of the Corbetts' goals. Nearly 12 acres of land have been set aside for small-scale, non-commercial use of agricultural land for crops, orchards, pasture, and vineyards. When the development is completed, the Corbetts expect that nearly 50 percent of the land in Village Homes will be under cultivation.



similar neighborhood elsewhere in Davis. Village Homes is using 56 percent less total energy.





# Society Update

## Dallas-Fort Worth Solar Energy Association

New Officers: President--George Walters (817/461-5571)  
V. Pres----Ken Anderson  
Sec/Trea---Suzy Mitchell

Ken Anderson is Newsletter Chairman. Should you have any reason to circulate information to Dallas area solar enthusiasts, he can be reached at 214/821-4431. The March 29 meeting was held at the Brad Popkin residence, a solar-heated home at 1304 Lincoln in Carrollton, TX.

## El Paso Solar Energy Association

Officers: President--Forrest Fox (915/751-0458)  
V. Pres----Donna Vargas  
Sec-----Terry Bourland  
Treas----- Raymond Whetstone

Nancy Friedrich is Editor of the EPSEA Bulletin. To communicate through it, contact Nancy at Rt. 1, Box 40, Anthony, NM 88021. The March 1 meeting featured Russel Smith as well as a film on solar installing problems and solutions from NSHAC. The Energy Extension Service, Las Cruces, NM Program will focus on solar greenhouses and will feature a film on Yanda's greenhouse construction and slides of other installations.

## Red River Solar Energy Society

Officers: President--John Roberts (214/465-6030)  
V. Pres----Larry Robinson  
Sec-----Tony Stephens  
Treas-----Wilbur Powell

The March 6 meeting featured Russel Smith, Executive Director of TX-SES and a film from NSHAC, "Solar Energy Installation: What We've Learned."

## Austin Solar Energy Society

President--Joe Holt (512/327-0454)

The March 14 meeting featured Rober King (TEAC) and Russel Smith (TX-SES). A roundtable discussion on passive solar design concepts, thermal mass, current solar legislative initiatives and other topics was held. ASES is laying the groundwork for an aggressive Austin Solar Speakers Bureau. With the aid of Sandy Blackerby, who helped organize a similar effort for Common Cause, it is hoped that an expanded version can be formalized on a statewide basis.

Highlighting the next Austin Solar Energy Society meeting will be the appearance of Bill Yanda, nationally known solar-greenhouse pioneer from our sister state of New Mexico. Bill is on contract with the Texas Energy Advisory Council as a project monitor of two passive projects in Central Texas. On April 17th he will visit Michael Garrison's passive structure at the Balcones Research Center in Austin and then speak to the ASES that evening. On the 18th Bill will visit with Gary

Beyers, Phillip Pommier and David Bently at the Southside Community Center in San Marcos where they are completing a two-story attached solar greenhouse. On the evening of the 18th Bill will make a presentation at his old alma mater, Trinity University for Gene Clark's solar engineering students in San Antonio.

## Formation of New Chapters

Efforts to form local solar groups are now going on in the following cities. If you can be of assistance, please contact these individuals:

Dr. Ernst Kiesling, Lubbock (806/742-3472)  
Merv Croston, Forth Worth (817/332-8464)  
Gary Weed, Corpus Christi (512/884-4571, X388)

## HOUSTON SOLAR ENERGY SOCIETY

Officers: President---George Way (713) 622-3130  
1st V. Pres--Rick Rogers  
2nd V. Pres--Kevin Conlin  
Sec/Treas----David Sawchak

The HSES has launched a new media blitz timed to follow-up on Pres. Carters early April energy message. Several TV and radio programs have been arranged. At the end of each show a local phone number is given. Callers are sent solar information and a copy of the HSES Newsletter. Because it will be going out to potential users Rick Brand, HSES Public Information Officer, says he has in one days time, secured eleven \$50 ads (business card for 1/2 yr.) for the newsletter. This is more than enough to pay for the answering service and help with newsletter costs. The series got under way on April 3rd with TX-SES member James Nash of Sun Belt Solar Systems, Inc. (Houston) and Russel Smith, TX-SES Exec. Dir. being interviewed by Howard Gunn on his noon show "Access" (ch. 26, KRIV). Also in the program was Dr. Parker from the Texas Tech Chemical Engineering Dept., a specialist in biomass.

## DIRECTOR'S MESSAGE

Over the past quarter it has been my pleasure to visit three chapter meetings as guest speaker. The El Paso group has really gotten things going with attendance ranging as high as 150 people. It was exciting to see the conviction and enthusiasm with which this chapter is pursuing the solar education effort. They seem to be seeking programs which will provide information that can be transformed immediately into action, stressing those applications which make sense right now. I hope they can sustain and expand on their high level of activity. El Paso certainly has the sun.

My visit to Sherman to speak to the Red River Chapter was rewarding as well. Their aggressive seeking of worthwhile programs has allowed them to maintain good attendance and an apparent sustaining of high levels of interest. It appears that the RRSES will continue to be active.

I also had the opportunity to see first hand solar programs and installations in Lubbock, Dallas, Corsi-



cana, Waco and Killeen. There is an effort to get local chapters started in Lubbock, Fort Worth, and Corpus Christi. The D/FWSEA is a strong operation. Austin is rebuilding, and San Antonio and Permian Basin are attempting to do the same.

Some key factors which seem to help a local group stay active and involved seem to include:

- good programs
- officers willing and able to devote sufficient organizational time and effort
- occasional meetings in solar homes or commercial installations
- informal information exchange facilitated through periodic social events
- a community that is beginning to feel the pinch
- the presence of successful, functioning solar installations (active and passive) in the immediate area

Some of these items can be controlled, others cannot. One thing is certain. If no core of convinced, devoted (and maybe a bit masochistic) solar enthusiasts does not exist, it is awfully hard to make things happen. The same is especially true if the need and the reality of solar is not being felt and confirmed in the community.

If it's going to happen, it is going to have to happen in your local community. On the state level we are trying in every way humanly possible, given our current resources, to facilitate a framework and offer assistance to help you make it happen. That framework shows promise of solidifying if pending solar related legislation is passed. After recently testifying before the Senate Natural Resources Committee on the Omnibus Solar Bill, I was encouraged to see the committee reported the bill out with only the most minor alterations and it's recommendation of approval. An ever increasing number of public officials seem to be recognizing the need to develop renewable energy sources. Now is not the time for us to rest, or give up the effort.

Best regards,  
Russel E. Smith  
Executive Director

## TX-SES SIGNS CONTRACT WITH GOVERNOR'S OFFICE OF ENERGY RESOURCES

On January 15, 1979, the TX-SES signed a contract with the GOER to develop and present a series of 22 solar workshops in 1979. The Society's winning proposal calls for 18 design workshops, 1 for passive systems residential and commercial, and 1 for active systems to be held on two consecutive days in each of 9 cities. The remaining four workshops will be of 1/2 day in length and be directed at the lending and financial communities in four cities. As a culmination of the series, a statewide solar conference will be held in Austin early in December.

The project involves seventeen TX-SES members in administration, materials development, and presentation of the workshops, and a dozen more in local coordination efforts. The GOER has shown a great deal of confidence in the capabilities of the TX-SES Board of Directors, membership, and staff in choosing to give us this opportunity. As the workshops draw near we will need the assistance of every TX-SES member if we are to assure their success.

The following is a 99.9% firm schedule and a list of the leaders of local coordination and promotion.

### Governor's Office of Energy Resources/TX-SES -- Workshop Series --

<u>June</u>	20--Passive 21--Active	Test Workshops Austin
<u>Aug</u>	1--Passive 2--Active  8--Passive 9--Active	Brownsville  Corpus Christi
<u>Sep</u>	12--Passive 13--Active  18--Len/Fin (1/2 day) 19--Passive 20--Active	Lubbock  El Paso
<u>Oct</u>	16--Len/Fin (1/2 day) 17--Passive 18--Active  23--Len/Fin (1/2 day) 24--Passive 25--Active	Houston  San Antonio
<u>Nov</u>	6--Len/Fin (1/2 day) 7--Passive 8--Active  14--Passive 15--Active	Dallas  Ft. Worth

Dec. 6, 7, 8--Statewide Conference (tentative)

## LOCAL COORDINATORS

### Brownsville

Nicolas Ramon  
Community Development  
Corp. of Brownsville  
833 W. Price Road  
Brownsville, TX 78520  
512/541-4955

### Corpus Christi

Gary Weed  
Cen-Tex Sunsystems  
3342 Olsen  
Corpus Christi, TX 78411  
512/853-2029 (H)  
884-4571, X588 (W)

Gordon Zahn  
H.E. Butt Grocery Co.  
P.O. Box 9216  
Corpus Christi, TX 78408  
512/881-1100

### San Antonio

Lynn S. Judge (S.A.S.E.C.)  
La Quinta Motor Inns, Inc.  
P.O. Box 32783  
San Antonio, TX 73216  
512/349-1221

David Nawrocki  
IDEA, Inc. (Inst. of  
Design of Environmental  
Alternatives  
1101 Wiltshire  
San Antonio, TX 78209  
512/684-5111, X2690 (W)  
822-9935 (H)

Continued



### Lubbock

Dr. E. W. Kiesling  
Box 4089  
Public Info. Program  
Center for Energy Research  
Texas Tech University  
Lubbock, TX 79409  
806/742-3472

### El Paso

Forrest Fox (E.P.S.E.S.)  
9131 Mt. Shasta Road  
El Paso, TX 79924  
915/751-0458

### Houston

Rick Rogers (H.S.E.S.)  
10206 Sage York  
Houston, TX 77089  
713/488-0809 (W)  
481-9004 (H)

### Dallas

Ken Anderson (D/F.W.S.E.A.)  
6834 Skillman, #256  
Dallas, TX 75231  
214/821-4431 (W)  
349-7631 (H)

Jill Smith (D/F.W.S.E.A.)  
12547 High Meadow Dr.  
Dallas, TX 75234  
214/241-9133 (H)  
821-4431 (W)

### Ft. Worth

Merv Croston, Jr.  
Parker-Croston Associates  
P.O. Box 1927  
Ft. Worth, TX 76101  
817/332-8464

conference including the TX-SES, the New Mexico SEA, and the Arizona SEA, on July 6, 7, and 8. The original plan of the Board was to hold it during May, however major conflicts on the "solar calendar" prevented it. The month of June was booked solid in El Paso, hence the July dates.

Final arrangements will be announced in time for you to make your plans. El Paso is a great town for a conference, with a large and enthusiastic solar group. We have been looking for an opportunity to meet there for quite some time, and are expecting a very interesting program to take shape with an emphasis on passive solar. Please make note of those dates and plan to join us there.

Southwest Border States Solar Conference  
July 6, 7, 8  
El Paso, Texas

Sponsored by: Arizona Solar Energy Association  
New Mexico Solar Energy Association  
Texas Solar Energy Society  
El Paso Solar Energy Association

Joining Russel Smith (Project Administrator) in the TX-SES office for this project are Ave Bonar (1/2 time, Sec./Clerical Assistant) and Daryl Janes Workshop Coordinator). As more details are available we will circulate them through the network, and of course, the announcement brochure will be forwarded at the appropriate time.

## TX-SES ENTERS FREE AD CONTEST

Thanks to the volunteer efforts of Janice Ashford of Janice Ashford Graphinx, the Society has an entry in the Texas Monthly TexAd competition. The contest is for public service oriented messages and offers a full page free ad to the five winners. With Janice's excellent graphics and layout work we should have an excellent chance. Here's hoping!

## TEXAS SOLAR INSTALLATIONS DOCUMENTATION

Documentation forms and an instructional cover letter are being circulated throughout the state by the TX-SES office in an attempt to compile proof of the number and variety of solar installations operating in Texas. If you have access to information on any solar installation of any type, or know someone who does, please help us by recording and reporting the facts. A copy of the form with instructions is included in this issue. Members of local chapters should contact their officers. They will have extra copies. Remember, these items can be reproduced before you fill them out in order to build up a supply. The target date for completing this project is June 1, 1979. Of course, we will certainly want to continue the effort past that date, but we need a substantial number of responses by then so we can start to shop for publication funding.

For assistance and further information, please contact the TX-SES office.

## SPRING CONFERENCE TO BE SUMMER INSTEAD

The El Paso Chapter is scheduled to host a joint

## TENTATIVE AGENDA

### Friday Evening, July 6

6:00-7:30 p.m.

7:30-9:00 (appx.)

9:00--

Registration

State Organizations Presentations

Get Acquainted Session  
(No host bar)

### Saturday, July 7

7:30-8:30 a.m.

8:30-8:45

8:45-9:45

9:45-10:15

10:15-10:30

10:30-11:00

11:00-11:30

11:30-12:00

12:00-1:30 p.m.

1:30-3:00

3:00-3:15

3:15-4:30

4:30-7:30

7:30 until--

### Sunday, July 8

9:15-10:00

10:00-12:00

12:00-1:00 p.m.

1:00-3:00

(Poster Session & Media Rooms  
9:00 a.m.-9:00 p.m.)

Registration Continues

Welcome

Introduction to solar homes in arid/semiarid climates (2/30 min. presentation with question and answer periods.)

Passive/Hybrid and/or Domestic Hot Water--Texas Case Study

Break

Texas Case Study #2

Arizona Case Study #1

Arizona Case Study #2

Luncheon (Guest speaker to be announced)

New Mexico Case Studies

Break

General overview and detailed description by state of the Southwest Border Regional Commission Solar Demonstration Programs

Open Time

Social event centered in Poster Session, Media Room Area (no host bar)

State Boards--Joint Session

Chapter Development Workshop  
(AS-ISES Chapter Coordinator will participate)

Lunch

Solar Legislation/Networking Workshop (CRR will participate)



# CALLS FOR PARTICIPATION

Media Rooms: Solar Films & slide shows will be presented for viewing on a rotating basis throughout the day, July 7. (Loan of recorded narration slide shows, or 35 mm. films, non-commercial, will be gladly accepted--Call 915/592-3425, Dennece Knight.)

Poster Session  
Display Set-up: 3 foot table and wall space behind for posters, photos, models, literature, etc.  
\$10--Commercial  
n/c--Non-profit

Please Note: While personnel will be on hand in the display/media room throughout the day on Saturday to monitor the situation, participants are expected to stock their own displays and when possible have someone available for informal discussions (especially during the evening beginning at 7:30 p.m.).

Parties wishing to purchase or arrange for display space please send a brief description of your display and your check (if required) to:

El Paso Solar Energy Association  
Attn: Dennece Knight  
P.O. Box 12321  
El Paso, Texas 79912  
915/592-3425

Case Studies: If you have a presentation on a currently operating Texas residential or commercial passive heating and cooling system, hybrid system, or a particularly unique and effective domestic hot water system (active or passive) in combination with the preceding system types, which includes slides or other graphics, and are interested in participating, please call the TX-SES office. The presentation should be approximately 20 minutes in length and you should be prepared to answer questions for approximately 10 minutes in both general and technical terms. Two presenters are likely to be selected from Texas. We must hear from you by May 1 as the agenda is to be finalized May 7. Call 512/443-2528 for Russel Smith.

## EDITORIAL

We're all invited to comment on guidelines recently released by the Department of Energy which prescribe the role of utilities in energy conservation and renewable energy resources. I would be glad to enter comments, in fact am expected to do so, but I've got mixed emotions. I'm not sure what those of you most directly involved with solar or wind energy systems think about utility involvement either.

All major regulated utilities and three municipal utilities (Austin, Garland, and San Antonio) are included in the program. Each will apparently be required to provide, free of charge, a residential energy audit. As a result of these audits, conservation mea-

sures or solar water heating may be suggested. In one form or another the utility is also expected to provide financing where necessary evidently.

Another audit or set of audits are described in the guidelines in which passive solar retrofit measures, active solar space heating and/or cooling systems, and wind energy conversion systems are to be considered. In every case utility personnel would provide data to home owners about the performance and economics of these dispersed energy systems. DOE is describing the geographic areas in which alternate energy systems are to be considered.

One concern becomes apparent immediately. Utilities do not have much of a reputation, rightly or wrongly, for promoting alternatives to their own system. Are we expecting Cadillac dealers to sell Honda? Might the utilities offer very expensive, over-designed systems to reconfirm the line they've had all along? The Department of Energy, which is drawing up the guidelines, for example, pegs commercial windmills a near \$2,000 per kw installed last I heard. In order to have wind systems of this sort considered anywhere in the country DOE compensated by artificially raising average windspeeds 40% in some obscure computer model. Jay Carter in Burkburnett says his windmill (25 kw) will cost less than \$500 per kw installed. Coy Harris of Wind Engineering has a similarly sized mill for less than \$1,000 (I know because he built his first one for the TEAC.)

A second and related concern is whether there are enough qualified personnel available to carry out the program as described. The real impact of this program could be to displace private sector engineers (that know what they are doing) with utility servicemen (new to solar and wind energy). This encroachment on the private sector should be of concern to most people, particularly if these "alternative energy" audits are also offered free.

So, on the one hand the utility companies could use audits as an entre directly into the customer's home. Once admitted they can inform us all that solar and wind energy systems are expensive and still far inferior to the gas and electric services they offer. I have nightmares about these "auditors" suggesting I use a micro-wave oven to save precious gas.

On the other hand perhaps the utilities can provide the direct site-specific data required that most solar companies can't afford to provide and government can't provide. If it weren't for concerns about objectivity utilities seem a perfect vehicle. Are there conditions that could be put on utilities to help keep this program in the open? Could a requirement to subcontract 'alternate energy' audits? All audits?

Perhaps after reflecting on the federal programs you too will have mixed emotions. Please, if you have comments or ideas on this topic, write them down and send them to the TX-SES Office or to:

Solar Programs  
Texas Energy Advisory Council  
7703 North Lamar, Suite 501  
Austin, Texas 78752

All comments will be passed on to DOE, the Governor, and used in any formal comments by TX-SES or the TEAC.

Robert J. King  
Chairman of Publications



# HOT TIMES FOR THE OLD TOWNS

by Robert King

That's right, cities, we've recently learned of two separate efforts aimed at solar in the city, one available now and one you can all help make happen. The one available now is out of Housing and Urban Development: a program called Urban Development Action Grants (UDAG). On April 3rd, I met with Gill Bateson, HUD's regional director for two regions, one of which includes Texas. According to Bateson, renewable energy related projects give a UDAG proposal an extra competitive edge right now, and he has literally millions of dollars to prove it. The same afternoon, I met with Les Levine, policy advisor to B. Miller of DOE. Les says DOE was negotiating with John Embry, Bateson's boss, to transfer big money to DOE specifically for solar in the cities. More on this in a moment.

Elsewhere in DOE, Undersecretary for Policy, Al Alm supervises a group called the Conservation and Advanced Technology Systems Policy Division. Ron White of that division has recently visited Austin to assess the potential of the newly created Renewable Resources Commission (see article elsewhere in this issue). He and his boss, Alan Hoffman, plan to go to bat for Austin in DOE's program divisions. In addition, Hoffman's group is very involved in the President's Domestic Policy Review of solar. A key conclusion of the DPR--when released--will be that the federal government will never make solar happen without the help of local and state governments. Hoffman's policy group is committed to this and is trying to impact the traditional DOE operating procedures to include state and local government. In fact, Bill Holt of that division is presently soliciting letters of interest from local governments that would like to perform renewable resource inventories or begin planning for their use. He hopes to be inundated with letters that he can take to the program divisions "in a wheel-barrow" because he is sure there is no dearth of interest. Selling DOE program managers with the money is the trick and the policy division could use your city's support. Write to:

Bill Holt  
U.S.D.O.E.  
Division of Advanced Energy  
Systems Policy  
6E-068 Forrestal Building  
Washington, D.C. 20585

Now, back to UDAG. Apparently 60% of all cities in Texas are already eligible for UDAG, and HUD tells me the cities that are, know it. Many Texas cities already receive UDAG funds for downtown revitalization, industrial plant construction, even suburban tract development. A key to eligibility is qualification as an economically stressed area. The concern of UDAG is to generate private capital investment in these stressed areas. It's a purely "brick and mortar" program according to Bateson, although he is able to consider architectural or engineering design fees. If you are working for a city, or live in a city that might be willing to work with you, here are some more details of interest:

1. UDAG grants are competitively selected and right now solar energy, wind energy, biomass,

geothermal or hydrothermal, even energy conservation projects will give you a competitive advantage--especially before everyone else jumps on the bandwagon, including DOE itself.

2. UDAG applications for big and little cities are solicited regularly every three months.
3. The city itself must be eligible and apply, so if you aren't a city you will have to arrange for the city to sign the proposal and agree to pass through the grants or make other arrangements such as provide a low interest construction loan.
4. HUD is more likely to award a grant to a city passing on funds directly for residential projects than for single commercial or industrial projects. It is just politically difficult to give large sums of public money to a single corporation. Commercial and industrial ventures should use the construction loan or loan guarantee approach. Most cities know how to handle this.
5. Economic development is the key concern so the better the private to UDAG investment ratio is the more competitive is your proposal. Other sources of public funds can be matched as well, and, while other public matching funds do not add to the private money, they can improve the ratio:

## example

Total project cost	=	\$ 12 million
Private capital	=	10 million
UDAG required	=	2 million

Ratio for competitive rating = 5:1  
(acceptable)

## example with other public match

Total project cost	=	\$ 12 million
Private capital	=	10 million
Other public funds	=	1 million
UDAG required	=	1 million

Ratio for competitive rating = 10:1  
(a winner)

6. Another competitive measure is Permanent Employment resulting from this project that would not otherwise be available in a depressed area. Obviously, the best results here will be from industrial plant development where a given number of employees are required to operate it after it's built. But residential, commercial and industrial projects do not compete with each other. For example, HUD is more lenient in defining permanent for residential projects, especially where training will occur--say in construction of a solar sub-division--in which persons will be left with new skills that will make them more employable and/or more highly paid. The average impact of UDAG projects to date (at least on paper) is \$5,700 UDAG per permanent job.



# WHERE TO LOOK

by Joan Wolff

- Passive Bibliography, select listing for anyone taking it seriously. Contact passive activist and designer: Stephen Anderson, 3911 Avenue D, Austin, TX 78751. (\$1 postage & copying cost)
- Solar Information Locator, Contact: Stephen A. Rubin, Solar Energy Research Institute, 1536 Cole Blvd., Golden, CO.
- 1979 Wind Access Catalogue, featuring machine specs, accessories, manufacturers & distributors, etc. Contact the American Wind Energy Association at their NEW ADDRESS: 1621 Connecticut Ave., N.W., Washington, D.C. 20009. (202) 667-9137.
- Solar Advertising Guidelines, have recently been released by the Dept. of Consumer Affairs, Solar/Insulation Unit, 1020 N. Street, Rm. A547-F, Sacramento, CA 95814. (916) 322-5756, (800) 952-5567.
- Request for Proposals, from U.S. Department of Agriculture, Science and Education Admin., Bushland Agricultural Research Service, Bushland, TX 79012. Southern Region, RFD #41-S-SEA-79, Economic Analysis of Wind Energy for Irrigation Pumping.
- Solar Energy Research & Development Report, Assistant Secretary for Conservation & Solar Application, Office of Solar Applications, Washington, D.C. 20545.
- ENERGY PROJECT, National Council of Churches, 475 Riverside Drive, Room 572, New York, NY 10027. (212) 870-2386.
- Center for Renewable Resources, 1028 Connecticut Avenue NW, Washington, D.C. 20036. (202) 466-6880.
- For information regarding guidelines recently released on the Small Business Solar Energy and Conservation Loan Program, contact any local Small Business Admin. office or: Evelyn Cherry, Chief, Special Projects Division, Small Business Admin., 1441 L St. NW, Washington, D.C. 20416. (202) 653-6696.
- Solar Law, The first comprehensive coverage of existing Solar legislation is now available from McGraw Hill.
- Sundries Publications Lists  
Suite 1100  
1028 Connecticut Ave. N.W.  
Washington, D.C. 20036
- National Concrete Masonry Association has recently published bulletins on the use of concrete masonry in solar energy applications. Ask for: NEMA-TEK 90, Concrete Masonry in Passive Solar Buildings; NCMA-TEX 97, Design of Solar Energy Walls with Concrete Masonry. Write to: P.O. Box 135, McLean, Virginia 22101.
- Tips on Avoiding Insulation Fraud and Local Energy Management Guidebook are two publications available from the Mississippi Energy Extension Center, P.O. Box 5406, Mississippi State University, Mississippi State, MS 39762.
- Solar Energy Mechanic  
TSTI-Sweetwater  
Rt. 3  
Sweetwater, Texas 79556
- Solar Energy Research Institute (SERI)  
1536 Cole Boulevard  
Golden, Colorado 80401
- TVA's Personnel Expansion, contact:  
Staff Recruiting, Solar Programs  
Rm. 426, United Bank Building  
Chattanooga, Tennessee 37401
- Recent Solar Patents  
Printed copies of patents are furnished by the Commission of Patents and Trademarks,  
Washington, D.C. 20231  
Include Patent No. 50¢ each.
- Energy Insider (Newsletter)  
U.S. Dept. of Energy  
Washington, D.C. 20585
- D.O.E. Weekly Announcements  
Office of Public Affairs  
Washington, D.C. 20585
- ADOBE Today  
P.O. Box 1178  
Belen, N.M. 87002
- UDAG  
Urban Development Action Grants
- Solar Energy Digest  
P.O. Box 17776  
San Diego, Calif. 92117
- Reports  
Frost & Sullivan, Inc.  
106 Fulton Street  
N.Y., N.Y. 10038  
Announcing: An in-depth report analyzing and forecasting: Solar Energy Heating and Cooling Market.
- The Conference on Alternative State and Local Policies  
1901 Que Street  
NW, Washington, D.C. 20009
- Maine Audubon Society  
Energy Publications  
Gilsland Farm  
118 Old Route One  
Falmouth, Maine 04105

## BARGAIN INFORMATION

Now available from TX-SES at an amazingly low price: SEM '79, Solar Engineering Master Catalog and Solar Industry Index. Thanks to Anna Fay Friedlander we are able to offer a limited number of these extremely useful catalogs for only \$4 (Regularly \$15). The supply is limited and will be distributed on a first come first served basis. Send your check made out to TX-SES to:

TX-SES  
Catalog Offer  
1007 S. Congress, #348  
Austin, TX 78704



- Packet of information on Seattle Trust's Energy Conservation Loan Program including its Solar Supplementary Loans which provide special low interest money for solar related improvements both passive and active.
- A Survey of Passive Solar Buildings, prepared by AIA Research Corp. for the U.S. Department of Housing and Urban Development.
- Toward A Solar California: The SOLARCAL Council Action Program, Jan. 1979.
- Conservation: Energy Management By Design. Proceedings of El Paso conference, March 6-8, 1979, with keynote address by Gov. Jerry Apodaca, sponsored by U.S. Department of Energy, West Texas Council of Governments, the BDM Corporation.
- Regional Guidelines for Building Passive Energy Conserving Homes, U.S. Department of Housing and Urban Development, U.S.D.D.E., by the AIA Research Corp., Supt. of Documents, U.S. Government Printing Office, Washington, D.C. 10402.
- Present Value: Constructing a Sustainable Future, Office of Appropriate Technology, Office of Planning and Research, State of California, 1530 Tenth St., Sacramento, California 95814, (916) 445-1803. (Single copies free.)
- New Inventions in Low Cost Solar Heating: 100 Daring Schemes Tried and Untried, Wm. A. Shufcliff, Brich House Publishing Co., Harrisville, N.H. 03450 (1979).

# SUNDIAL

- April 16-18 MIAMI BEACH: 2nd Multi-phase flow & Heat Transfer Symposium. Contact: Clean Energy Research Inst. School of Engineering & Environmental Design, U. of Miami, P.O. Box 248294, Coral Gables, Florida 33124.
- April 16- June 22 AUSTIN: Continuing Education Courses
- April 16-20 4th United States Gulf Coast Geopressed Geothermal Energy Conference.
- May 23-26 Solar Energy Application & Energy Conservation.
- June 18-22 Energy Conservation & Management in Industrial Operations. Contact: Engineering Institutes, Cockrell Hall 2.102, U.T. at Austin, Austin 78712. (512) 471-3506.
- April 17-18 DENVER: Energy Management in Buildings Contact: Information Services, NYU Conference Center, 360 Lexington Ave., NYC 10017.
- April 21- BERKELEY, CA.: Wind Energy Seminar, UC Extension, 2223 Fulton St., Berkeley 94720. (415) 642-3112.
- April 22-25 HOUSTON: 1979 Conference on Industrial Energy Conservation. Contact: Bob Smith Texas Industrial Commission, P.O. Box 12728, Capitol Station, Austin 78711. (512) 472-5059.
- April 23 WATERTOWN, MA.: 160-hr Solar Heating Installation & Maintenance Course. 4 week course--Mon., Thru., Fri.--\$500. Course begins Apr. 23. Contact: New England Fuel Inst., Solar Energy Education Div., 20 Summer St., P.O. Box 888, Watertown, Mass. 02172.
- \*April 23-24 CHICAGO: Plant Energy Conservation Seminar. Association of Energy Engineers.
- April 27- May 4 FREELAND, MARYLAND: 4th Annual Hands On Alternative Energy Conference. Contact: Baltimore Environmental Center, 333 E. 25th St., Baltimore 21218. (301) 366-2070.
- April 28- May 7 WASHINGTON, D.C.: Appropriate Technology Fair/Conference. Contact: Appropriate Community Technology Fair & Conference, Inc., Box 57078, Washington, D.C. 20037.
- \*April 29- May 2 SEATTLE: 25th Annual Technical Meeting & Equipment Exposition. Institute of Environmental Science.



- May 9-  
July 26      The Texas Industrial Commission is sponsoring a series of seminars & workshops for Texas manufacturers & engineers developing in-plant energy conservation measures.
- May 9      DALLAS: Peak Load Control & Life Cycle Costing,
- May 23      CORPUS CHRISTI: Boiler & Process Heaters.
- June 6      HOUSTON: Distillation Columns.
- June 13      SAN ANTONIO: Heat Recovery.
- June 27      LONGVIEW: HVAC & Industrial Lighting.
- July 11      DALLAS: HVAC & Industrial lighting.
- July 18      EL PASO: Industrial Insulation.
- July 26      AUSTIN: Peak Load Control & Life Cycle Costing. Contact: 1979 Energy Programs, Texas Industrial Commission, P.O. Box 12728, Capitol Station, Austin 78711. (512) 472-5059.
- May 11      LOS ANGELES: Solar Cells--From Basics to Advanced Systems. Contact: Continuing Education in Engineering & Mathematics, P.O. Box 24902, UCLA Extension, L.A. 90024. (213) 825-1295 or 825-3344. \$150 registration fee.
- May 11-15      ANAHEIM, CA.: National Solar Heating & Cooling Workshop & Product Exhibit. Contact: SEIA, Suite 800, 1001 Connecticut Ave. N.W., Washington D.C. 20036. (202) 293-2981.
- May 14      HOUSTON: (same as below)
- May 16      DALLAS: Solar Heating Workshops for the Financial Community. Contact: Charles Hayes (202) 376-9131. (National Solar Heating & Cooling Information Center).
- \*May 14-16      BOSTON: 3-Day Seminar on Solar Energy. New York University.
- May 14-  
June 6      16 Cities: The Texas State Library, Southeastern Library Assoc. & Governor's Office of Energy Resources series. (See detailed article page ).
- May 18-19      NEW ORLEANS: Louisiana Solar Energy Conferences. Contact persons: Pat Lucas, Betty Hunter, Ecology Center of Louisiana, P.O. Box 19344, New Orleans, LA 70179.
- May 28-  
June 1      ATLANTA: 1979 ISES International Congress. Contact: American Section ISES, c/o American Technological Univ., P.O. Box 1416, Killeen, TX 76541. (817) 526-1300.
- May 28      ATLANTA, GA.: In conjunction with ISES Conference. "On the Rise Too" for State Energy Office/Solar planners. Contact: R. J. King, TEAC, 7703 N. Lamar, Austin, TX 78752.
- \*June 4-6      NEW YORK: Developing & Controlling an Energy Management Program. New York University.
- \*June 12-13      WASHINGTON, D.C.: Energy Management in Buildings, New York University.
- \*June 25-27      CHICAGO: 3-day Seminar on Solar Energy, New York University.
- June 19-22      WASHINGTON, D.C.: D.O.E. 6th Ocean Thermal Energy Conversion Conference. "Ocean Thermal Energy for the 80's." Contact: Dr. Gordon L. Dugger, Applied Physics Laboratory, The Johns Hopkins Univ., Johns Hopkins Road, Laurel, Maryland 20810.
- June 20-24      ITALY: 2nd Solar Energy Exhibition Congress. All material to be used for the exhibition must be submitted by 10 June 79. Contact: Giuseppe Giacobelli, Fiera del Levante, Bari, Italy.
- June 20-23      LAS CRUCES, N.M.: American Association of Physics Teachers, Summer Conference.
- \*Contact: Vickie Everhart, (512) 475-5588.

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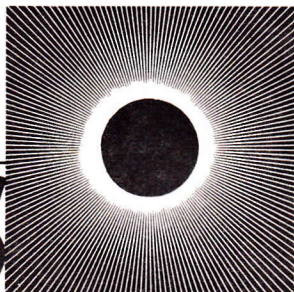
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