



SunPaper

Solar Fiesta!

Now Scheduled for Spring, 2013.

You may have noticed a lack of advertising for the Solar Fiesta this year. That's because the NMSEA Board of Directors decided to move the Fiesta from its usual fall season to the spring. So, plans are being made to hold our next great event sometime around Earth Day in 2013.

One difficulty this caused is that we have not sold the usual booth packages that include advertising in six issues of the SunPaper. That means that unless you step up and purchase an ad, our newsletter will have to be cut to only 8 pages until the Fiesta. So, please consider purchasing a SunPaper ad for your business - regardless of what it is - at the following rates:

Full Page:	9½" H X 7" W	\$122.00
Half Page:	4¼" H X 7" W	\$66.00
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Or, you can purchase an ad in any category to run in the next four issues for the special one-time price of three. This offer is good only through August 17. All advertising is in black and white, and photos and graphics must have a resolution of at least 250 dpi in JPEG, TIF, or PDF format. Text-only ads may be provided in MS Word format. Circulation is typically 700 copies. Send your ad to the editor at rhermansolar@aol.com by August 17 for the Sept/Oct issue.



Driving Among Giants

By Athena Christodoulou,
NMSEA Board Member.

Written while in Scloss Dyck, Germany.

Autobahn; I was driving the Autobahn. Now, I wasn't supposed to be driving. I wasn't on the rental agreement, but the two who were had become ill or were just plain exhausted from driving and all the activities we had done. Activities related to building sustainability in a two-week study-abroad class called "Where is Housing Now," which I was taking through the University of New Mexico.

After arriving in Germany it only took a few days to realize that the Germans love their cars almost as much as we Americans. BMW, Mercedes Benz, Porsche, and Volkswagen all bespoke German engineering and high quality. And the Autobahn was

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The NMSEA SunPaper

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The NMSEA SunPaper

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Albuquerque, NM 87106

(505) 246-0400 (888) 886-6765 info@nmsea.org

Preference is given to articles on solar energy topics (PV, passive, technology, performance histories, incentives, cost benefits, etc.), but we will also consider other renewable energy subjects as space allows.

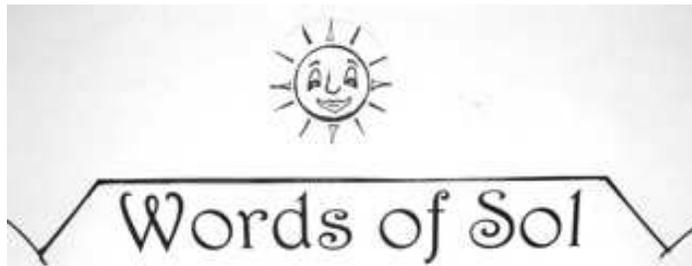
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Renewable Energy: History and Future

Some of the best original archeological history of utilizing passive solar energy in New Mexico and the southwest is preserved in the ruins of the Anasazi civilization, most explicitly at the Chaco Canyon site. Anthropologists and others who have studied the Anasazi and Chaco Canyon have suggested that the original ancestral mankind that evolved to the Anasazi civilization were on this continent over 25 thousand years ago. The Anasazi were made up of smaller clans that came together for common needs and interests. It is suggested that the Chaco Canyon site was the "Rome" of the Anasazi Empire, where the leaders determined edicts and rituals in their impressive structures.

What is clear from the ruins of the Chaco time is their careful location and orientation of the structures. The habitable buildings, some of them eight stories high with several hundred rooms, were located against the north canyon wall for shelter from the winter cold and cooling shade from the summer sun. The walls of the south side had the large T-doors and small light openings in a thermal mass wall of stone and clay mortar.

The structures used for celestial observation (for their calendar) were also aligned. The kivas are round structures, mostly underground with a sipapu, a small opening in the top with a ladder down to the floor. The kivas were an important part of their ritual connection to the mother earth origin. One of the exceptions to the typical kiva was the "big D" kiva at Chaco with the curved east, north, west part and the flat side facing south partially above ground level. Could this have been a new experimental kiva for a ritual connecting mother earth to father sun? (Just a thought.) As the Anasazi Empire began to break up, one of the early factions continued in the famous Mesa Verde cliff dwelling in a "back-to-nature site" and others independently developed their own pueblos, most of which are still inhabited today.

An early version of an active wind application was built by the king of Babylon in the 17th century BC for pumping water. In the first century AD the Greek engineer Heron developed the earliest known "wind-wheel" driving another wheel for use as a mechanical machine. This early wind wheel evolved into the very useful large windmills used for centuries for industry and the smaller wind pumps for water more commonly referred to as

windmills. In 1875 Professor James Blyth of Scotland connected a generator to the blade of a small windmill to charge a battery to light up his electric Christmas tree lights, and the “electric windmill” was born. Calling a wind generator, wind machine, or wind turbine a windmill was originally an honest mislabeling, but anyone today using windmill to describe the large wind turbines is falling into the trap of buzz words for “anti-wind power.”

By the early 1900s most of the large cities in the US had electric power plants that served the wealthy and well developed areas. Of the 98 million population in the US in 1910 about 54% were rural (off the power grid). The 1920s new technology was the radio. After the market for city people was rolling well, country people needed an economical way to recharge their radio set batteries. Wind was the solution. The new wind generator technology was a good match for the rural families, and the industry bloomed with names like Delco, Wind Power, and Wind Charger (a name that became generic when referring to any wind generator of the time). Charles Kettering’s company, Delco, was a well established manufacturer of electrical systems for the auto companies of the time. Delco rapidly began with a 6 volt truck generator with an airplane-like propeller and a backup fossil fuel generator. Later when GM bought Delco, Kettering developed a more sophisticated wind generator coupled with an engine-generator backup with an automatic starter, and he increased the system voltage to 32 volts.

The 32 volt “standard” sold well, and many of the other companies adopted it, including the two young Jacobs brothers from rural northeastern Montana. In the process of building robust radio receivers and transmitters and selling them to their neighbors, the brothers also set up a community radio station, and wind was the obvious source to keep them on the air. Of course once the Jacobs had built some good wind generators, the neighbors wanted one of those, too. Montana was a good place for ranching and farming but not for a new tech business. So the brothers moved to Minneapolis, Minnesota, and developed a large production facility. With the brothers desire to always build the best quality, most dependable product, they sold thousands of the Jacobs Wind Electric systems around the world and are still revered today.

After the financial crash of ‘29 and the depression that followed, one of the programs President Roosevelt put in place in the “New Deal” was the Rural Electrification Association (REA). The federal money through the REA was used by electric coops like the ones in New Mexico to set up and build power lines to sparsely populated areas. Roosevelt was called un-American, destroyer of free enterprise, a socialist, and

(Continued on page 5)

NMSEA Chapter Leaders and Contact Information

Alamogordo Chapter

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Open

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Official Name:

NM Solar - Taos Chapter

Chapter President:

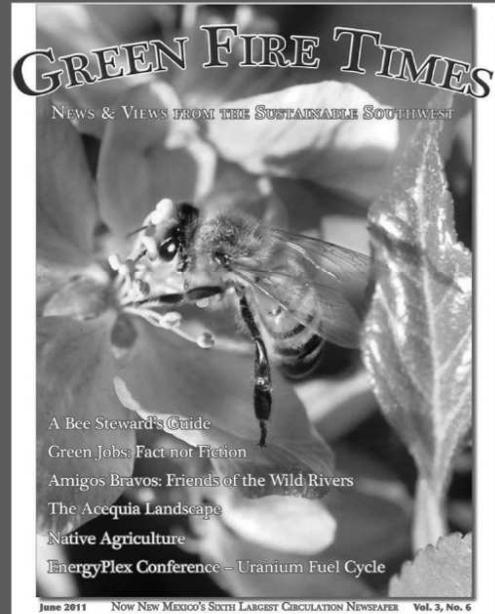
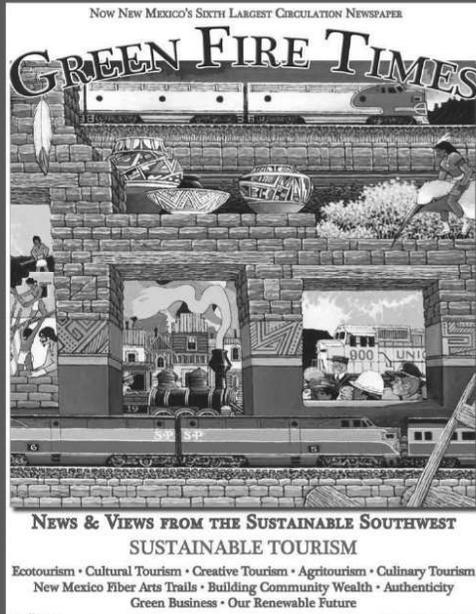
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Larry Mapes

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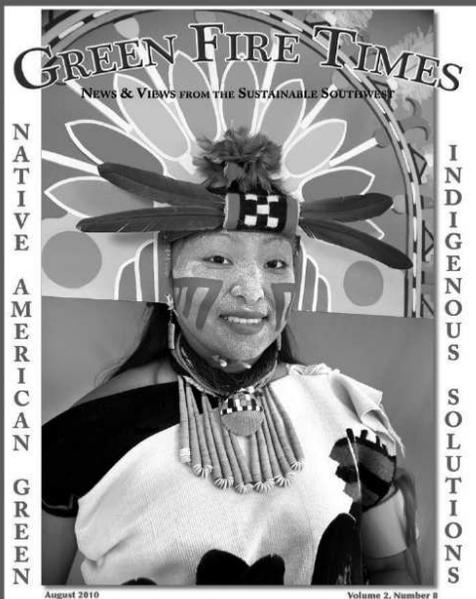
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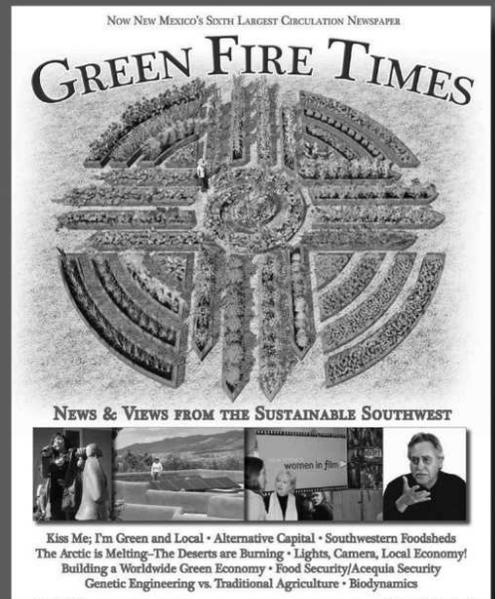
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(Words of Sol, Continued from page 3)

worse for the REA and his other programs for the people. Even though it was the right thing to do for the times, the REA program certainly did stifle the small wind and power plant business.

After the Second World War Jacobs Wind built their next great wind system, which included a 110 volt DC 3 kWh wind generator that could withstand tornados. It had a 80 kWh 20-year-life battery and a large backup generator with automatic starter. Long after many of the other wind generator companies closed down, the Jacobs brothers closed the plant in Minneapolis in 1955 and moved to Florida.

When the back-to-the-land movement started with Earth Day in 1970, one of the Jacobs' sons restarted Jacobs Wind Systems and produced 10 and 20 kWh wind machines. New Mexico, especially the northern part, was one of those places a lot of young people came to with dreams of starting a new lifestyle, and in 1972 NMSEA was formed. There was a good movement towards sustainability and a real boost from President Carter's programs, starting in 1977 with a goal to make the US energy independent by 2000.

Unfortunately, that goal and the dream of a new lifestyle was strangled to within a breath of death starting in 1981. We have bounced back in the direction of

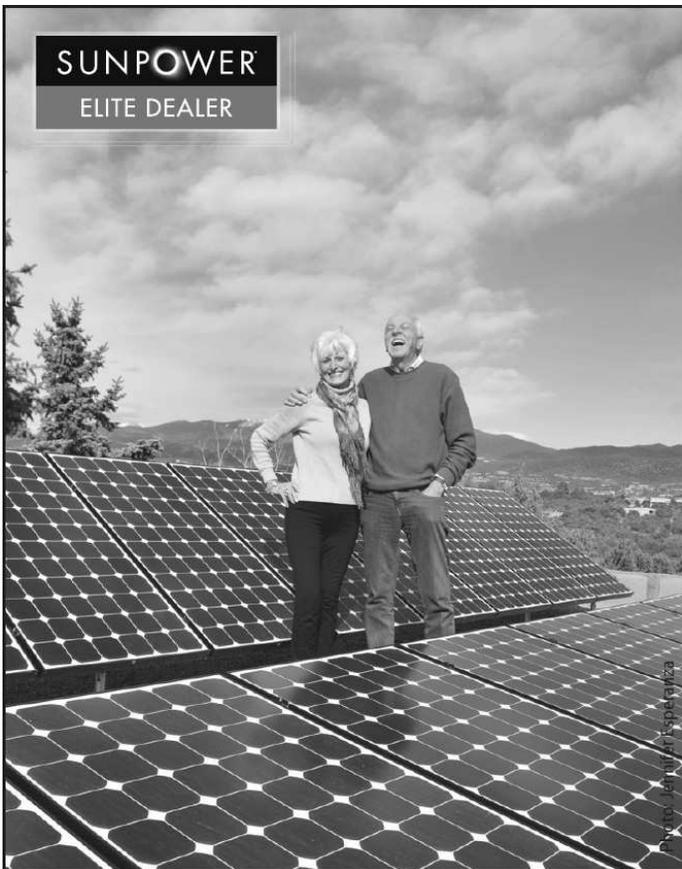
sustainability relatively well, but it appears that we are nearing another critical point in the cycle with a tipping point that could determine either a future of relative sustainability and freedom or back to a future death spiral of the ultimate collapsing world civilization. The question is, have we learned enough in the last 25,000 years or so to put the right pieces of the energy puzzle in place to avoid a disastrous "final hour"?

Sincerely,
Monte Ogdahl
NMSEA President



ABQ Chapter Meetings

Be a part of the charge toward a more sustainable future and join us in our monthly chapter meetings in July and August. Both meetings will be held on the fourth Tuesday of the month (July 24 and August 28) from 6-8 PM at REI, 1550 Mercantile Ave NE, 87107. Athena Christodoulou is our chapter leader. More reasons to be there - networking, door prizes and finger foods.



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As the World Turns...

By Janet Bridgers, NMSEA Board Member

It's late June and it's hot.

I watch the sky, anxiously awaiting the sight of the towering thunderheads that precede the summer rains. I watch the weather reports, with the prediction of a week of near-100 degree days. I earnestly pray for the monsoons to arrive soon, to bless us with the moisture that could finally extinguish the fires that have been burning in southern New Mexico for weeks. I crank up the swamp cooler and sip a tall cool one on the porch, a temporary relief to the horror of watching what is happening to our state, to the West, to the planet.

With the official start of summer on June 20, the national news outlets report that this spring has been the hottest on record. While an amazingly high percentage of those polled nationally still question the cause of the increase in global temperatures, there is no doubt in *my* mind that climate change is happening. And I personally believe it heralds an unprecedented crisis - one of proportions never known in recorded history.

For more than 30 years, I've chosen to work on a wide range of environmental issues. In that span of time, I've seen public awareness advance. There's the shopping bag ethic. One now sees most of the shoppers at Trader Joe's, Whole Foods and Sunflower bringing their own bags. There's a greater consciousness about recycling. A lot of people are voluntarily taking their glass to a dumpster that may, or may not, be convenient. Major corporations eagerly now tout their "green" initiatives. New "green" products appear daily. (Hey, how 'bout that new Tesla?)

So the progress is there. But the fact that we cannot agree as a nation on a path to energy independence and reduced CO2 emissions has dimensions related to power (a double entendre there) that are far more sinister. There are corporate fossil fuel interests that are looking only at the short-term bottom line. I do not doubt that for every person they hire, there are hundreds who would be willing to accept a job executing their policies. These corporations have the money, the connections, the communications "machinery" to control much of the dialogue in the media. And because they do, they are able to capture the opinion of those who cannot easily adjust to the arrival, full-blown, of the crisis we face.

It takes me back to the parable of the seed.

"Behold, a sower went out to sow. And as he sowed, some seed fell by the wayside... Some fell on stony places... And some fell among thorns... But others fell on good ground and yielded a crop, some a hundredfold, some sixty, some thirty. He who has ears to hear, let him hear."

Climate change deniers will eventually be persuaded by what they observe around them.

A person's age, cultural and religious values, education and informational sources create widely different receptivity to the scientific information about rising global temperatures. Assuming an individual has personally decided there is a problem in terms of CO2 emissions, which presupposes a certain level of education, the transition to renewable energy can take years, even decades. Financial incentives to save money via investments in energy efficiency and renewable energy are the easiest way for the greatest number of people to rationalize and commit to a path of greater sustainability. The stewardship ethos - just doing things for the good of the planet and its current and unborn inhabitants - will require a longer arc for widespread acceptance and implementation.

The good news for those of us involved in NMSEA and the renewable energy sector as a whole is that we're doing exactly what we need to do. As an organization, it's clear. We need to be ever more creative in our efforts to reach more and more people with as positive a message as possible. (Hence our upcoming TV series; see article p. 11.)

Will NMSEA's involvement fix our global warming problem? Not in the near term, not in our lifetimes. But age gives perspective. This too shall pass. In the meantime, we have a community of bright, enthusiastic and energetic people working for the greater good. To be able to work with so many wonderful people is a great blessing. So personally, I will focus on the process, on the journey... and continue to pray for rain. ☀



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First Solar (FSLR):	\$15.06	\$18.35	\$129.42
Market Vectors, Solar Energy ETF (KWT):	\$2.61	\$3.26	\$10.45
Dow Jones Industrial Average (\$INDU)	12,880	13,228	12,261
Crude Oil//barrel (NYMEX Dec futures)	\$84.96	\$104.93	\$92.89
Natural Gas/mmBtu	\$2.82	\$2.19	\$4.36
Gasoline/gal	\$2.73	\$3.21	\$2.89

NG and gasoline are national averages.
Selected prices provided for relative information,
only; NMSEA does not recommend specific invest-
ments. All investments involve risk; invest cautiously.

(Driving Among Giants, Continued from page 1)

where you went to experience this quality at high speeds. Smooth and free from the clutter of billboards, the road begs for speed. In addition the Germans have strictly enforced rules to facilitate the experience, like no trucks on Sunday until 10pm and everyone staying to the right unless passing. In fact, it is illegal to drive in the left lane unless you are passing. Speed limits are posted and enforced, but at certain times they turn off the speed limit signs.

There were eight of us, and we had somewhere to go - home. Okay, not home, home, but our home-base. A majestic monastery tucked into the northern part of the country. We had left five days ago to traipse through Stuttgart and Munich, staying in hostels and visiting architectural and engineering firms that focus on sustainable buildings. These are ginormous buildings without refrigerated air that use natural or enhanced thermal currents and passive solar principles to heat and maintain comfort. Interesting that the most comfortable working situations involved sunshine and the ability to open a window and control one's own comfort.

The Germans are very conscious of sustainability and the need to take care of the land, water, and air we each use in our brief time on Earth. Recycling happens everywhere. Instead of canned drinks they opt for glass. And every bottle is kept and returned. Plastic bottles receive the same care. Most cafes use china and silver. Forestry is controlled and wood is considered a renewable product. I have even squirreled away some wooden throwaway eating utensils as mementos.

Sustainability extends to their farms and transportation. Farmland was interspersed among the little towns, and even cities maintained some urban farms, and many citizens grew a few vegetables in their backyard or on a balcony. Stores carried mostly local produce, and growers' markets took over the downtown on Saturday mornings. A quick bike trip downtown was sure to reward one with enough fruit to last the week. Bike trip... what happened to the cars?

Biking is ubiquitous in northern Europe. There is more parking for bikes than cars, and traversing the tiny winding roads within the city is just fantastic. I know, because we rented bikes for a weekend and went everywhere. There is a road for the car, one for bikes, and one for pedestrians. And they are all used in equal measure. However, there are certain sections exclusive to people-powered modes of transportation. I won't even begin to address the public transportation available to the 40% of Germans without a car. When I get home, I'm getting a basket for my bike for some shopping. Albuquerque has some nice biking trails, and the more they are used, the more we will get. Just like solar.

Did I mention that it was cloudy and rainy most of the time? At least every other day I'd feel like a grouchy bear, because I am addicted to sunshine. Okay, one of those days was because of Montezuma's revenge, but the rest was the lack of sunshine. Yet, the Germans chose to have photovoltaic (PV) panels along the highways, on the farmhouses, and other public places every mile or so. With all the beautiful sunshine in New Mexico untapped, I was embarrassed. Energy storage an issue? Why not use a Concentrated Solar Power (CSP) plant? There is one in Spain which operates 24/7. I visited the one in our Albuquerque backyard a few months ago. Sandia Laboratory research scientist Cliff Ho gave me the grand tour of the CSP research facility built in south Albuquerque, shown here. (Apologies for the poor focus.)



Athena atop Concentrating Solar Power tower at Sandia Labs, Albuquerque

Wonderful, but what are we doing with it here in New Mexico? Such a plant was scheduled, but it was scrapped last year or so. I haven't investigated the why, but if you know the facts, let me know, as I am interested in getting the decision reversed. The German engineers spoke about the wonderful sunshine in Northern Africa and tapping into that resource, and I could only think ... why not New Mexico? We have sunshine to spare. With plenty of wind, as well, to turn the beautiful, stately windmills - the giants.

As I drove along the Autobahn, I was awed by the steady turning of the wind turbine blades of these giants interspersed in the countryside. They operated next to factories, a few hundred feet from the highway or behind a PV field. Some of them even artfully painted. Swish, ... swish, ...swish, ...swish, I wished I had been able to photograph them, but I was driving. And then I smiled as I remembered capturing some in photographs taken on my first walk outside the monastery before starting my classroom adventure. Oh darn, I hadn't taken a picture because my phone had been charging. Give me ten, and I'll have one for you. (See photo next page; again, sorry for the quality.) ☀



Giant among the trees.
(See article at left.)

Albuquerque Business Has First EV Charging Station

By Monte Ogdahl, NMSEA President

Southwest Green Building Center now has a charging station for electric vehicles (EV) and electric hybrids, and 90% of the electricity comes from the PNM Blue Sky Wind program. See photo below. The Center is the first Albuquerque charging station on this program. Owner Cathy Kumar says the added benefit of a charging station made sense for her business because of the location and the clientele it draws. SGBC offers a wide array of green building and sustainable living items appealing to folks who are conscious of energy, ecological, and health issues.

The Level 1 charging station has two standard three-prong NEMA 5-20 dedicated outlets. Customer rates for the service are \$.50 for the first hour and \$.25 for each additional hour. The station provides a total of 4 kWh between the two outlets, allowing for two vehicles at a time to be 'topped off' while their owners are shopping at the store or visiting other businesses in the area.

The Southwest Green Building Center is located at 5620-L Venice Avenue NE. It is open 10:00-6:00 Monday thru Friday and Saturdays from 10:00-2:00. Contact SGBC at 505-821-6259 or info@swgbc.com for more information. ☀



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New 2012 PNM Customer Solar Program

By Ron Herman, Editor

PNM held a presentation on their proposed new Customer Solar Program on April 30, 2012, and I was among about 25 representatives from the solar industry who attended. According to their press release on that date, “PNM Plans More Renewable Energy From Geothermal, Solar and Wind” in 2013 and 2014. The plan “nearly doubles PNM’s ownership of solar facilities and includes a proposal to continue the company’s popular customer-installed solar electric (PV) program.” Under this plan PNM would add 20 megawatts (MW) of solar capacity to its current 22 MW. It would purchase geothermal energy from a 10 MW facility near Lordsburg to be built and operated by Lightning Dock Geothermal. PNM would plan for 9 MW of customer-installed solar through 2016.

These plans were developed in cooperation with some members of the solar industry, including the Renewable Energy Industry Association, and they were submitted to the Public Regulation Commission on April 30. The PNM large solar program for 100 to 1,000 kilowatt (kW) systems will continue as presently

constructed, but with some reserved capacity. They want to eliminate the program for systems larger than 1 MW in favor of using those funds for smaller systems.

PNM is also asking regulators to approve customer billing starting this August for renewable energy (RE) purchased since 2010, so that higher prices don’t get imposed later and PNM does not have to borrow any more money to meet those costs. They want to show those costs, averaging about \$1.40 per customer, specifically on their bills as part of a new RE transparency initiative.

PNM has a mandate from regulators to purchase 15% of its energy sources from RE by 2015. It is allowed to do that by purchasing either RE resources, RE systems, or Renewable Energy Credits (RECs). They pay small grid-tied solar energy system owners for their electricity “net” of what they use on site, which is called net metering. They also pay them for the RECs associated with all electricity the system produces.

In the new solar REC payment plan for 2013 through 2016, PNM proposes to start payments at 4 cents/kWh for small PV systems rated under 10kW and 5 cents for larger systems under 100 kW. These starting rates are expected to be about where the current tiered program will be paying when it expires. Then the REC payments
(Continued on page 14)

Renewable New Mexico: NMSEA TV Series

By Janet Bridgers, NMSEA Board Member

Renewable New Mexico, NMSEA's upcoming 13-episode TV series, moves into production in August. The series will capture the incredible breadth and many of the remarkable personalities of New Mexico's history in renewable energy. It will feature interviews with 26 of the state's leading solar pioneers, entrepreneurs and educators videotaped in a professional studio, with video introductions captured at the home or place-of-business for each. The interviews are now being scheduled.

Sean Wells was selected to be host after "screen testing" several possible hosts. She is young, intelligent, and vivacious with a very relaxed, but energetic, on-camera presence. Her experience derives from her own TV series *New Mexican Santera*, demonstrating her artistic work to create *retablos* of Catholic saints, a traditional Spanish colonial art genre. She is the daughter of Toby Younis, the *Renewable New Mexico* series' director and editor, who has directed and edited her series for the past several years.

The *Renewable New Mexico* series will be completed in October and premiered at an NMSEA 40th anniversary

party to be held this fall (date to be announced). It will be cablecast on several New Mexico public access channels and made available to public access channels throughout the nation. It will also be webcast via the NMSEA website.

Toby Younis has over 30 years of video experience. His work can be seen at his website www.videotero.com. I am serving as assistant producer for the series, having been involved with video production for eight years. The project marks NMSEA's adaptation of high quality, high definition, 21st Century digital media as a tool in its ongoing educational mission. For more information, email me at janetbridgers@msn.com.



NMSEA Board Meeting August 4

The next meeting of the NMSEA Board of Directors will be on Saturday, August 4, in the conference room at the office at 1009 Bradbury Dr. SE, Albuquerque, 87106, from noon to 3:00 with a potluck before at 11:30AM. Members welcome. Call 505-246-0400 by July 31, if you have an item for the agenda.

Advancing the Nation's Energy Security with Renewable Energy Innovation



Sandia National Laboratories conducts research and development (R&D) in solar power, including photovoltaics and concentrating solar power, to strengthen the U.S. solar industry and improve the manufacturability, reliability, and cost competitiveness of solar energy technologies and systems. Researchers at Sandia partner with the U.S. Department of Energy (DOE) and other government agencies, industry, academia, and other laboratories to accelerate development and acceptance of current and emerging solar power technologies.

To learn more please visit us online at: energy.sandia.gov.

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A Modest Proposal

By Gary Vaughn and Ron Herman

In light of “How Bad Is It?” in the previous issue of the SunPaper, it seems obvious that “coal should go.” A federal appeals court decision in late June supported the EPA regulation of greenhouse gas emissions, a serious blow to the coal industry. Gary Vaughn, NMSEA Vice-President, recently suggested that perhaps we could convince PNM to phase out the coal-fired San Juan Generating Station and construct several state-of-the-art combined-cycle natural gas plants to replace it. He outlined the benefits to NM, which are pretty obvious: all air, water and land environmental pollution standards would be met; CO2 emissions per megawatt-hour (MWh) would be reduced by at least 30%; the increasing costs and problems associated with maintaining a 40-year-old coal plant would be avoided; the replacement generating facilities could be located closer to their demand centers, reducing transmission line losses and maintenance, as well as improving reliability; and the new plants would be inherently more efficient than the old San Juan dinosaur.

We love PV and wind power as much as anyone, but let’s get rid of the dirtiest stuff first. Modern natural gas plants are much more compatible with renewable energy (RE) than San Juan will ever be, and that just might be a critical way of justifying the shift, while still supporting the future of RE in NM.

What could such a shift mean for PNM? Few if any environmental related lawsuits and legal/management expenses; a huge public relations coup in significantly reducing green house gas emissions and slashing air and water pollution; system efficiency improvements that would dwarf PNM’s current efforts; significant long term cost savings; and far fewer hearings before the Public Regulation Commission (PRC).

What horse trading would be possible or necessary in order to facilitate this major shift for the better? These are some possibilities that Gary has identified:

1) the EPA would agree to encourage the San Juan plant phase-out by dropping the latest contentious visibility enforcement mandate in return for an extra year or three for PNM to implement the phase-out. If we accept PNM’s own cost figures, that

would “save” them \$850 million, and the resulting air quality would be significantly better than what the EPA could achieve otherwise.

2) The PRC would accept the latest proposed Renewable Energy Credit (REC) payment proposals for distributed residential and business/government PV systems (see article p. 10), but allow PNM to avoid adding any additional PNM-owned PV for 10 years. This arrangement would keep NM PV businesses in business. PNM’s own PV system purchases have been out-of-state transactions, with the exception of the small Mesa del Sol system, so our state probably wouldn’t lose much from this concession.

3) The PRC would allow PNM to apply its own estimated costs for meeting the 20% Renewable Energy Portfolio (REP) mandate to the San Juan phase-out. PNM has publicly claimed that its 22MW of PV cost it \$100 million. PNM could apply its own cost estimates for additional wind resources as well. That total number should be at least \$200 million, probably higher. Added to the EPA mandate “savings,” that amounts to more than a billion bucks right off the bat.

4) Since PNM’s cost allocations for RE would be accepted at face value for the purposes of this deal, the PRC hearings and rulings on PNM’s RE related accounting practices would be dropped.

5) PNM would forego any future “special” RE service fees like the 8 cent/kWh grid-tie rate rider it pushed in 2010.

6) The PRC would allow PNM to avoid penalties or financial losses due to natural gas price volatility. In the past, natural gas prices have been extremely erratic, so PNM is using that as a convenient excuse to keep using coal. Price volatility may continue, particularly if the pollution of water and air from fracking is exposed as a serious problem.

7) The PRC would give PNM full credit for meeting the energy efficiency mandates for the next 10 years. In fact, the actual systems efficiency improvements to be expected from this shift from coal to natural gas would probably exceed those set by the mandate, and would certainly exceed anything that we can reasonably expect from PNM otherwise.

PNM’s 2011 Integrated Resource Plan made it perfectly clear that PNM management strongly opposes all additional RE “investments.” Fine. Let

them phase out coal and shift to natural gas in return for a 10 year fudge on additional PNM-owned RE mandates, based on the fact that the new gas plants will be far more compatible with future RE sources. We've pretty much come to the conclusion that PNM is for the most part simply incapable of meeting those anyway, even if they want to. So let's give them something to do that they're actually good at, and that we can all benefit from.

The devil is in the details of course, and there would be no lack of challenges to deal with, not the least of which is that PNM isn't the only owner of San Juan. But it's possible that the advantages to all sides might help grease the path. We can actually envision both the Sierra Club and PNM stockholders applauding! Such a plan would also require some level of cooperation and teamwork between the PRC, the Attorney General, the legislature, and the EPA. It's not impossible.

One of the things that was clear from the ASES Conference held in Denver in May is that there are a handful of utilities that have decided to actually give RE a chance. Xcel in Colorado is a good example. RE penetration levels of 10% are now considered a

"no-brainer" - and 15-20% are considered quite doable, even without utility-scale energy storage. It would be enlightening to do a "matrix" of surrounding states and compare their approach with PNM's. Just the facts. Turns out that Oklahoma is now a leader in energy efficiency programs - who would have thought?

After the November general election, the PRC will have a new composition. Jason Marks, a very competent and strong PRC leader for RE, will vacate his position because of term limits. In the June 5 primary Democrats selected Bernalillo County Assessor Karen Montoya over Cynthia Hall and Al Park to oppose Republican Christopher Ocksrider. Douglas J. Howe, a temporary appointment by Governor Martinez, will be replaced by Santa Fe County Clerk Valerie Espinoza, a Democrat, who will be unopposed in November. The other members remaining on the Commission are Theresa Becenti-Aguilar, Ben L. Hall, and Patrick H. Lyons. We and other NMSEA members will be asking this new PRC to consider our modest proposal for new natural gas power plants.



The New Mexico Solar Energy Association

2012 is our 40th Anniversary!

Help us plan a November celebration.

NMSEA actively supports Solar Energy and RE
- education, policy, and implementation.

Join now, or REnew your membership early.

Our Membership Form is on p. 15.

We collaborate with other New Mexico groups like the
Renewable Energy Industry Association,
New Energy Economy, and the Sierra Club.



NMSEA, 505-266-0400
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Santa Fe PV+EV

by Monte Ogdahl, NMSEA President

A great summer solstice celebration was held at Positive Energy's new PV+EV (photovoltaic plus electric vehicle) charging station and sales office grand opening party at 801 Cerrillos Rd in Santa Fe. Several owner-built EVs were there, and another half dozen EVs stopped by for a free charge throughout the day, including Prius plug-ins and a new Nissan Leaf. See photos below. A Tesla Roadster owner stopped by, not for a charge, but to inquire about having a PV charging point set up at his home. What an idea! ☀



(New PNM Solar Program, Continued from page 10)

will be lowered by a half cent per kilowatt-hour (kWh) every six months on the calendar, down to 2.5 cents/kWh in the last period. PNM will limit the capacity for each 6-month period to 1,000 kW for small systems and 500 kW for larger systems in each period through 2014. Then in 2015 and 2016 those capacity limits will drop to 500 kW and 250 kW, respectively, for each period. The term for each owner's contract rate will be eight years. Any unsubscribed capacity for any 6-month period will roll over into the next period at the same price. Once the capacity for a period is full, the new allotment and pricing will begin. For more information, see the website www.PNM.com.

Still to be addressed by the PRC and the Legislature is the PNM authorization in 2010 to tack on an 8 cent PV service fee, which PNM is still threatening to impose. That would certainly stop the growth of PV. Some members of the solar industry think these lower REC payments and that fee would result in system owners just disconnecting from the grid to supply electricity only for their own needs, leaving PNM out of the picture. That would resemble the movement from telephone land lines to cell phones. Of course the transmission of solar energy comes free directly from the sun, not over someone's wireless system that they can charge you to use.

Watch closely for more news on PNM proposals. ☀





Join the New Mexico Solar Energy Association!

Be a part of a creative, innovative organization dedicated to bringing renewable energy and sustainable building to New Mexico!

Keep informed of what's happening through our bi-monthly newsletter, the SunPaper! Actively support education for kids and adults and learn of workshops and classes where you can learn about photovoltaics, hot water, green building, solar rights and all the wide range of sustainable living and building practices.

Name: _____

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Affiliation: _____

Address: _____

City, State,
ZIP Code: _____

Phones: _____ (W)

Email: _____

Any special solar interests? _____

How did you hear about us? _____

Yes, I would like to volunteer on occasion!

NMSEA Membership Dues

- | | |
|--|-------|
| <input type="checkbox"/> Individual and Family, 1 year | \$30 |
| <input type="checkbox"/> Business, 1 year | \$75 |
| <input type="checkbox"/> Individual Lifetime | \$250 |
| <input type="checkbox"/> Business Lifetime | \$400 |
| <input type="checkbox"/> Teacher/Student/Senior (62 & up)
w/copy of ID (circle one) | \$10 |

NMSEA Chapter Options

All NMSEA members are invited to participate in our local chapters around the state. When you register, you will be placed in the chapter nearest to you geographically, or you may contact the office to change your chapter, if you desire. (Note: members are not limited to the chapter in their area and are welcome to visit other chapter events.)

Check if you would like to be affiliated with and/or donate an additional amount to any of the following chapters or to the main office general fund:

<u>Affiliation</u>	<u>Donation</u>
<input type="checkbox"/> Alamogordo Chapter	\$ _____
<input type="checkbox"/> Albuquerque Chapter	\$ _____
<input type="checkbox"/> Las Cruces Chapter	\$ _____
<input type="checkbox"/> Las Vegas, Sustainable Las Vegas	\$ _____
<input type="checkbox"/> Los Alamos Chapter (LASE)	\$ _____
<input type="checkbox"/> Santa Fe Chapter	\$ _____
<input type="checkbox"/> Taos Chapter	\$ _____
<input type="checkbox"/> Silver City Chapter	\$ _____
<input type="checkbox"/> Main Office / General Fund	\$ _____

ASES Membership

NMSEA is a chapter of the American Solar Energy Society, and we encourage our members to join ASES as well. ASES members receive SOLAR TODAY magazine, Solar Action Network (SAN) alerts, the Sunbeam e-newsletter, discounts on publications, and more! Five percent of your ASES dues are dedicated to special outreach programs including ASES Legacy Schools, library gift subscriptions and the purchase of Green Tags.

For more information and for ASES business membership categories, please visit www.ases.org.

Check category if you want to renew/subscribe to ASES with your NMSEA membership. Fill in total below:

- | | | | |
|---|------|--|--------|
| <input type="checkbox"/> Professional | \$89 | <input type="checkbox"/> Supporting | \$125 |
| <input type="checkbox"/> Senior Professional (proof required) | \$45 | <input type="checkbox"/> Contributing | \$250 |
| <input type="checkbox"/> Basic | \$39 | <input type="checkbox"/> Lifetime | \$1200 |
| <input type="checkbox"/> Student (proof required) | \$35 | <input type="checkbox"/> SOLAR TODAY Subscriber only | \$29 |

ASES Options

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|---|---|
| <input type="checkbox"/> Do not rent my name | <input type="checkbox"/> I do not wish to receive the Sunbeam on-line newsletter |
| <input type="checkbox"/> I do not wish to receive Solar Action Network Alerts | <input type="checkbox"/> I do not wish to be listed in the on-line Membership Directory |

NMSEA Dues \$ _____ + ASES dues \$ _____ + Donation \$ _____ = Total \$ _____

Payment options: Check or money order enclosed Visa MasterCard

Credit Card # _____ Exp. Date: _____ Signature _____

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Mail this form with payment to: NMSEA, 1009 Bradbury Dr. SE #35, Albuquerque, NM 87106.
For more information, please call 505-246-0400 or 888-886-6765 or visit www.nmsea.org.

The SunPaper

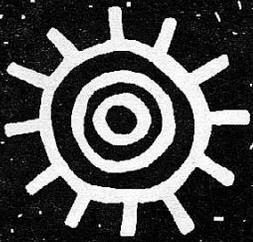
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Mission Statement

We promote clean, renewable energy and sustainability in New Mexico through education, empowerment, collaboration and advocacy.

Please consider investing your time and/or money toward solar energy education through NMSEA.

Vision Statement

We envision a thriving, bio-diverse earth, with civilization powered by clean, renewable and sustainable energy from the sun.

Coming Events

Santa Fe Community College Biofuels Center of Excellence is offering a range of training classes on biofuels throughout the summer in Santa Fe and Albuquerque - FREE to qualified applicants. Look over the curricula and sign up online. Initial dates for classes are listed. See greentraining.sfcc.edu.

July 24, August 28 Albuquerque Chapter Meetings at REI, 1550 Mercantile NE, 6:00 to 8:00 p.m.

August 4 Board of Directors Meeting, Saturday, NMSEA office, 1009 Bradbury Dr. SE, Albuquerque, 87106. Members welcome. Meeting Noon 3:00PM, potluck lunch starting at 11:30AM.

Watch for new plans for our next NMSEA **Solar Fiesta!** now scheduled for the spring of 2013.