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Lee Vining Home to be First Solar -electric Grid - intertie in Mono County

A Lee Vining resident is harnessing nuclear energy to offset his utility power. The energy comes from fusion nuclear reactions taking place 93 million miles away. From there the most harm it can cause is sunburn and the occasional skin cancer.

"I'd rather use nuclear energy from the sun, where it isn't going to hurt anyone, instead of supporting the reactors at San Onofre and Diablo Canyon," said Greg Reis, a resident of the small town near the east entrance to Yosemite National Park.

The potential danger from the Diablo Canyon Nuclear Power Plant, on the central California Coast, requires emergency sirens in nearby communities to be tested once per year, evacuation plans to be in place, radiation testing to occur, and thousands of acres of coastline to be closed to the public. Reis graduated from Cal Poly San Luis Obispo's Natural Resources Management Program, and experienced living in the shadow of this nuclear reactor firsthand.

"No one is going to have to have an evacuation plan or live in fear of a radiation release because of my solar panels," said Reis. "As long as we have an ozone layer, we aren't in danger from the nuclear reactions that I'm harnessing."

He won't be buying power from natural gas-fired power plants either. Even though most people think of natural gas as an environmentally friendly energy source, it has its impacts. Emissions from the plants are greenhouse gases that are likely contributing to global warming, and the drilling process can be terribly disruptive.

"Next time you fly across the country, look down at southwestern Colorado and northern New Mexico, and you'll see how devastating natural gas drilling can be to an area. The whole region is totally fragmented by roads and drill pads. If only we used everybody's rooftops to generate solar electricity, we wouldn't need to use such disruptive energy extraction methods."



Before installing the solar photovoltaic system, he took a good look at his electricity use. By installing compact fluorescent light bulbs and replacing his old refrigerator, he almost cut his electricity use in half. Conservation is much more cost-effective than new energy sources, and the refrigerator should “generate” (through conservation) three times as much power per dollar of investment than the solar photovoltaic system. The refrigerator should pay for itself in about 15 years, while the solar should pay for itself in about 30 years. The state of California’s buydown program is paying for about 1/3 of the cost of the solar.

“If the true cost of electricity was being passed on to consumers, my system would pay for itself in about 12 years. And in Germany, utilities are required to buy back the electricity from small solar systems at 50 cents/kWh—in this situation it would pay for itself in only 6 years. They can do this because the utilities charge their customers more for green power.

By sheltering consumers from the true cost of electricity, the state of California is not only sending itself into debt and bankrupting the utilities, but also discouraging alternative energy production. Instead of worrying about rolling blackouts and building all these peaker plants, simply passing on the cost of electricity would encourage conservation and the construction of alternative distributed generation facilities. Power plant owners would be willing to sell power to the state and we wouldn’t have a problem.”

Reis is also considering installing a solar water heater in a couple of years. Right now he will be producing just about what he is consuming, and a solar water heater would make him a net generator, since his water heater currently consumes most of his electricity. The payback period on solar water heating is much faster as well, according to Jim Harper of Sierra Solar (www.ssolar.com), the contractor installing his system.

With the cost of such a system around \$7,500, not everyone will be scrambling to install one. Reis admits the timing was right for him. His car stopped working in November, and he is investing in something that will pay him back and cut down on pollution, instead of a car, which would end up costing him and creating pollution. He donated his car to the Lee Vining Volunteer Fire Department in December, and they will use it for extrication training.

“I’ve always felt a tinge of guilt about my unsustainable fossil fuel use, and my car breaking down was the best thing that ever happened to me. It allowed me to do what I’ve always wanted—get rid of my car—without any effort. Now



that I won't be using nukes and fossil fuels for electricity anymore, my lifestyle is much more sustainable and in keeping with worldwide average fossil fuel use. It is very refreshing."

He figures that he is still using fossil fuels indirectly, through delivery and manufacture of products he buys, and the growing and transportation of the food he eats. But this doesn't bother him too much—he figures if everyone only used that much nonrenewable energy, those energy sources would last a lot longer and we wouldn't be polluting nearly as much. It is all a question of scale and balance. We each have to do our best to conserve resources, and the methods will differ for each person's situation.

"The automobile is the most destructive thing on this planet. The fuel is toxic and nonrenewable, it pollutes, it is noisy and dangerous, and people can't handle all that power—it causes road rage. It allows people to be lazy and fat and the lack of exercise causes premature deaths from heart disease. The amount of asphalt dedicated to roadways is huge. I'd rather not contribute to all those problems if I can help it, and not having a car hasn't really been that inconvenient. I'd like to think it discourages sprawl too, since I can't easily patronize restaurants or go to people's houses that aren't clustered in or near Lee Vining."

Installing the solar power system was easy too. Jim Harper of Sierra Solar was very helpful in leading Reis through the process. After getting an estimate and faxing the application for the California State buydown, it took a couple of weeks to get the state's confirmation. Harper took care of getting the building permit, and the biggest delay was that the solar panels were on backorder due to the high demand. Once they arrived, it only took three days for the installation and the wiring. After faxing an application to SCE and signing an agreement, all that is left is getting a building inspection and the written approval from SCE this week. At that point, they flip the switch and start running the electric meter backwards.

The accounting system for the power use is called "Net Metering." Once a year, the utility bills the customer for the net amount of electricity consumed, or if the customer is a net producer, there are no electricity charges. Non-electricity portions of the bill still must be paid. For customers still using more electricity than they produce, monthly billing is also an option.

"I've always been interested in where things come from, and that is why I studied natural resources management. The only resources I have complete control over are my own, so I'm inclined to manage them creatively. And what



better way to encourage others to live sustainably than to set a good example?"

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Photos to be posted soon on <http://www.ecomafia.com>