

# EQUAL RIGHTS

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“ ALL PEOPLE HAVE EQUAL RIGHTS TO THE USE OF THE EARTH ”

NOT EVERYONE IS ASLEEP AT THE ENERGY WHEEL, THANKFULLY!

by ED DODSON

The news from scientists regarding the continued availability of fossil fuels is not encouraging. Yet, few places around the globe deem conservation a priority.

U.S. foreign policy seems to be driven by the national security concern that SUV and Hummer sales will fall off if gas prices rise much above \$2 a gallon. Economists warn that the stability of the U.S. economy is at risk if energy costs begin to rapidly escalate and our behavior doesn't change. For self-preservation, we ought to be seriously developing a personal strategy for dealing with

scarcer and more costly natural gas and oil.

Like many *Equal Rights* readers, I have seen the recent documentary, *End of Suburbia*. While I live twelve miles from Philadelphia, for many years I used the train to travel to work and home each day, retirement is causing me to rethink my life choices and having to depend on my car. The looming energy crisis and my well-being have me planning to move – relatively soon – to a “walking community.” Now, all I need to do is find one where the housing is affordable without having to relocate to a place more people are

moving from than to.

While politicians have been slow to prepare for a future in which burning fossil fuels is no longer economically viable, independent scientists and entrepreneurs have persevered. Wind, ocean tides, geothermal and solar energy are each experiencing limited success. Many scientists believe that solar power will eventually become a major source of energy. Yet currently, the cost of building a plant capable of generating enough electricity from the sun is uneconomical. Moreover, dependence on

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the photovoltaic cell requires a large amount of land while converting less than 20 percent of the sun's energy into electricity.

A recent news story in the *Cleveland Plain Dealer*, by Winn Rosch highlights a new development that could change everything.

"Stirling Energy Systems in Phoenix and Sandia National Laboratories in Albuquerque, N.M., are preparing an alternative technology that promises to make solar power competitive with conventional power generation," writes Rosch. "Their trick is to use mirrors."

"Solar furnaces focus a vast field of mirrors on a tiny point to create temperatures of thousands of degrees, concentrating sunshine like a magnifying glass igniting paper. The Stirling/Sandia concept is similar. They concentrate power with big, dish-shaped mirrors, but they do it on a smaller scale, producing lower temperatures to drive a heat engine [which] ... uses expanding gas to drive a piston, but rather than burning gasoline, it uses

heat from the outside to power the process.

"Although using an engine with moving parts sounds like a disadvantage, it sidesteps one of the inefficiencies of solar cells. Solar cells produce only direct current, and they need an inverter to convert that into the alternating current used in homes and businesses.

"Overall, the conversion efficiency of the dish-and-engine system is about 30 percent, about double that of current commercial-scale photovoltaic systems. That means that the dish needs only half the area required by solar cells to produce the same amount of power.

"The multiple-dish approach has another advantage. Unlike more conventional power plants that don't begin to produce power (and pay their expenses) until the entire project gets completed, the dish array begins producing power once the first dish is installed.

"Although you could make many small power plants scattered across the country with all those dishes, Stirling envisions a single, massive installation

somewhere in southern California or Arizona. They hope that by concentrating all the dishes in one place, they can reduce operating and maintenance costs.

"If the plan works as envisioned, the 20,000-dish system would produce power competitively at about six cents per kilowatt-hour. Although that's more expensive than coal-fired plants, it's about the same as natural gas-fired generators."

An unnoted advantage is that with solar energy there is no down-the-chain environmental or health costs. Burning fossil fuels means air pollution with associated costs passed on. The other alternative – nuclear energy – generates waste that remains deadly to life virtually forever. Clearly, this new solar technology ought to be nurtured and encouraged. In fact, purchasing a few shares of stock in Sterling Energy Systems might not be a bad idea. So, sell that SUV now.

See: Winn L. Rosch. "No Smoke, Just Mirrors Make Solar Engine Twice as Efficient," *The Plain Dealer* of Cleveland. November 22, 2004