

"Countries are not doing enough to expand the use of solar energy. Governments and business have been warned." -- Mikhail Gorbachev, July 22, 2006. Earth Dialogues Brisbane 2006 world forum.

<http://www.greencrossinternational.net/docs/brisbaneedpr22.7.6.pdf>

Hello All!

This is the August edition of the Arizona Solar Energy Association's monthly e-newsletter. This issue marks the 1-year anniversary since I started writing this e-newsletter. Thank you for reading, and enjoy!

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1. Local Events

Phoenix Metro Area:
Environment and Energy Lecture Series!

Put on by the Arizona Solar Energy Association and the Arizona Solar Center under the auspices of the City of Scottsdale Green Building Program, this month's topic is:

THE OASIS MYTH - PART 3 - Desert Design Fundamentals continued -
Equipment Strategies for the Desert - Cooling, Heating, Power (PV), Water Heating, Cooking, etc..
Speakers to be announced.

Thursday Evening August 17, 7 to 9 p.m. Free. City of Scottsdale Urban Design Studio located at the northeast corner of Indian School Road and 75th St.

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For your convenience, I have posted the topics of the remaining lectures for this series for this year below.

- * Sept. - Costs, Incentives and Rewards - Environmental, Energy, Economic, and Educational.
Speaker to be Announced -
- * Oct. - Putting Together a Solar and Sustainable Future - Part 1 - The Oasis Realized
Issues and Conditions Reinterpreted in a new paradigm.
- * Nov. - Putting Together a Solar and Sustainable Future - part 2 - Oasis Visions

Various interpretations toward the common goal.

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Currently, the movie Who Killed the Electric Car?, is playing at Camelview in Phoenix, and Century 20 El Con Mall in Tucson. I think it's only scheduled to show for a short time, so make sure to see it soon before it goes away! I saw it recently, and was blown away. I give it my highest possible recommendation: three thumbs up. It had a lot of awesome information that I was not privy to, especially in regards to the nature of the rise of fuel cells. Blurb here: "It was among the fastest, most efficient production cars ever built. It ran on electricity, produced no emissions and catapulted American technology to the forefront of the automotive industry. The lucky few who drove it never wanted to give it up. So why did General Motors crush its fleet of EV-1 electric vehicles in the Arizona desert? 'Who Killed the Electric Car?' chronicles the life and mysterious death of the EV-1; examining the cultural and economic ripple effects caused by its conception and how they reverberated through the halls of government and big business."

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2. What's up for the rest of the year with ASEA?

Home Tours

In October, we are having the annual open house and tour of solar homes, showcasing energy efficient and environmentally friendly buildings, appliances, equipment, designs, and other innovations. Each region of the state will have its own tour on a different weekend. Stay tuned for details.

If you would like your home to be on a tour, please contact me by responding to this email. If you would like to volunteer your time to help planning and executing the tour, email me as well. Planning meeting details will be available in coming weeks. All meetings are open to the public.

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Solar Politics

Elections for state officials are taking place in November. Currently the ASEA Legislative Committee is preparing questionnaires for the legislature and corporation commissioners on specific issues that will be worked on this coming term. Results will be posted before elections, so you will be able to see where all the candidates stand on specific laws and regulations that have to do with energy and environmental issues. Stay tuned for results in October.

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3. New information about nuclear power.

There is dispute within the environmental movement about the role of nuclear energy in saving us from global warming. Some are against it, while many think that it is a viable solution, even if only as a lesser of two evils, because the challenge of ramping up electric production from renewable sources alone is so difficult, that we are going to need all the help we can get. In order to supply expected world energy consumption with non-CO2 emitting sources alone, we'll need to install 1.7 gigawatts of new production EVERY DAY for the next 40 years (Dr. A. J. Nozik, Senior Research Fellow at the U.S. National Renewable Energy Laboratory, 2005). Keep in mind that by being more energy efficient, we could go without the 104 nuclear reactors that are currently running in the US ("The True Cost Of Nuclear Power," by Greg Bourget 2001.

<http://www.mecgrassroots.org/NEWSL/ISS38/38.07CostNuclear.html>). The issue is complex, but obviously, we would like to do without nuclear energy if possible.

"Nuclear power is neither the answer to modern energy problems nor a panacea for climate change challenges," President Gorbachev said recently. "You don't actually solve problems by finding solutions that create more problems down the track. It doesn't add up economically, environmentally or socially. Of all the energy options, nuclear is the most capital intensive to establish, decommissioning is prohibitively expensive and the financial burden continues long after the plant is closed. In the U.S., for example, direct subsidies to nuclear energy amounted to \$115 billion between 1947 and 1999 with a further \$145 billion in indirect subsidies. In contrast, subsidies to wind and solar combined during the same period totaled only \$5.5 billion." - President Mikhail Gorbachev, April 26th, 2006. http://www.gci.ch/docs/pr_on_chernobyl.doc

This quote led me to ask the question, "what is the real price of nuclear energy per kilowatt hour (kWh)?" It's an answer that varied so dramatically, I could not find an answer that seemed realistic enough to publish. There are so many direct and indirect subsidies, as well as safety, health, social, and political risks and costs. Some to consider are as follows:

Currently, the US government insures much of the risk, and the National Guard protects plants from terrorists. What would be the cost if Palo Verde exploded, or if fuel for a nuclear weapon got into the wrong hands? Plus there is the political issue of: we have nuclear weapons, yet we won't let other countries have nuclear energy. Currently, all the grey water in Phoenix goes to Palo Verde just to cool it, and I have been led to believe they get it for free. Below is some information I have collected that speaks to some of these costs specifically. Enjoy.

"Sandia National Laboratory, working for the NRC, estimated that a meltdown would cost \$56-314 billion, not including the cost of losing the facility. The NRC estimated a 45% chance of having a meltdown by 2013." "The True Cost Of Nuclear Power," by Greg Bourget 2001. <http://www.mecgrassroots.org/NEWSL/ISS38/38.07CostNuclear.html>

"Nuclear is NOT CO2 neutral, even though it produces less than 5% of the emissions than coal, it still produces 4-5 times as many as from renewable sources, when taking into account the whole fuel cycle.

"In total, a nuclear power station of standard size (1,250MW operating at 6,500 hours/annum) indirectly emits between 376,000 million tonnes (Germany) and 1,300,000 million tonnes (other countries) of CO2 per year." Nuclear Information and Resource Service, 1998. <http://www.nirs.org/factsheets/kyotonuc.htm>

"The UN Intergovernmental Panel on Climate Change (IPCC) view is that if nuclear power were to be used extensively to tackle climate change, 'The security threat ... would be colossal'". Nuclear Information and Resource Service, 1998. <http://www.nirs.org/factsheets/kyotonuc.htm>

"The nickel containers designed to store the radioactive waste (besides being very costly) will not last longer than 500 years. The true cost of nuclear energy." --Pierpaolo Mittica April 26th, 2006 http://www.opendemocracy.net/author/Pierpaolo_Mittica.jsp

"Indian Point kills over a billion Hudson River fish, eggs and larvae annually; local taxpayers cover most of the emergency planning costs." The New York Times, May 23, 2005. <http://query.nytimes.com/gst/fullpage.html?res=9806EED61539F930A15756C0A9639C8>

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"Nuclear power survives today only in countries like Russia, China and France, where state-controlled electricity systems can ignore market forces." [Marketplace](#), July 13, 2006. <http://marketplace.publicradio.org/shows/2006/07/13/PM200607137.html>

Investors in new nuke plants are concerned about: "public opposition, siting and licensing, quick construction at predictable cost, safety, security, liability, nonproliferation, waste, decommissioning, and smooth operation". "Mighty Mice," by Amory Lovins, [Nuclear Engineering International](#), Dec. 2005. http://www.localpower.org/documents_pub/reporto_nei_mightymice.pdf

I'd like to give special thanks to Jim Stack for help with some of the research for this piece.

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4. New information about the heat island effect in Phoenix.

Below is from an article published in the Arizona Republic on July 25, 2006.

"Nighttime temperatures [in Phoenix] set a new record [as of July 25, 2006], with 11 nights never dropping below 90 degrees. All have occurred in July, with 10 of the 11 taking place since July 12.

On average, Phoenix gets only three days a year when the temperature stays [above 90].

The Valley has reached or exceeded 110 on 19 days so far this year, exceeding the annual average of 10." --AZCentral July 25, 2006.

<http://www.azcentral.com/arizonarepublic/news/articles/0725hotnights0725.html>

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The following is from a study published July 26, 2006.

"Shepherd found a 12-14 percent increase in rainfall in the northeast suburbs of Phoenix from the pre-urban (1895-1949) to post-urban (1950-2003) periods. This increase in rainfall is likely related to changes in the city and the lands within the city, such as more roadways and buildings in place of open natural area. The increase may also be related to changes in irrigation. However, the role of irrigation in changing the weather of cities in arid areas requires more study, Shepherd said.

'We think that human activities, such as changing the landscape, can affect the flow of the winds associated with the U.S. southwest's monsoon and rising air and building storms on the east side of mountains,' said Shepherd. 'The weather in Phoenix, in fact, is affected by both, and that can change where the rains fall.'" --J. Marshall Shepherd is a climatologist at the University of Georgia, Athens, and used a unique 108-year-old data record and data from NASA's Tropical Rainfall Measuring Mission (TRMM) satellite, to examine arid cities' rainfall patterns. Source: NASA/Goddard Space Flight Center.

<http://www.physorg.com/news73138019.html>

This study is interesting, because it claims the opposite of what our local channel 12 news says, (KPNX), which is that the heat island effect reduces the amount of rain in the Phoenix metro area.

http://www.azcentral.com/phpAPP/multimedia/player.php?path=mms://wms.azcentral.com/kpnx/weather/0509urbanheatiland.wmv&type=Video&HTTP_REFERER=http://www.azcentral.com

azcentral.com/weather/monsoon/

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5. Other Arizona Energy News Briefs.

Jim Arwood is the new head of the AZ Energy Office at DoC. Congratulations, and good luck!

Of all building permits issued in Scottsdale in 2005, 41% were for green building. For 2004, the number was around 33%. The average size for new homes built in Scottsdale in 2005 is 3,500 square feet. Credit: Dan Aiello.

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That should do it for this month!

Here's to a bright future!

Ben Marcus
Chairman - Arizona Solar Energy Association