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Energy and Telecommunications Interim Committee

61st Montana Legislature

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TODD EVERTS, Staff Attorney
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April 29, 2010

TO: ETIC members

FR: ETIC staff

RE: Correspondence since January meeting

ETIC members,

Since your last meeting in January, staff received a few additional public comments on energy policy issues, as well as other issues of interest to the ETIC. Those who sent the letters asked that they be shared with the committee at the May meeting.

Five letters are included discussing: energy efficiency and conservation policies, MSTI concerns, and concerns about cell-phone and EM radiation standards.

Sonja

Sonja Nowakowski

Research Analyst

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CI0429 0117slxf.

February 28, 2010

PO Box 109, Dillon, MT 59725

Ms. Sonia Nowakowski
Legislative Services Division
PO Box 201704
Helena, MT 59620-1704

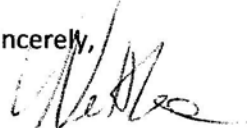
Dear Ms. Nowakowski;

We understand that Northwestern Energy is been under the impression that MOVE MSTI is now representing only a handful of people and has basically "faded away." This letter is to serve to correct that misunderstanding.

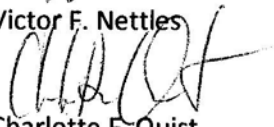
To re-state our position: If the project is to serve the public good, as stated in NWE's literature, then it should be sited on public land, not private land. Specifically, we would support selection of the Northern Route, roughly paralleling the current BPA line, and the East Pioneer route. There remain some small areas along those routes that are problematic, and we would continue to try to work for improvements, but in general, those routes are preferable. We would consider supporting a Jefferson Valley route if that routing is kept on public land (as much as possible) and has input from the landowners in that area. We vehemently oppose the other routes in the application.

As the time for release of the Draft Environmental Impact Statement approaches, we are preparing ourselves to continue our efforts to influence this process. If the public route options are chosen, we will assist in efforts to fine-tune those routes to make them the best possible choices. If any of the other routes majorly impacting private land are chosen, we are prepared to work long and hard to see the project removed from those routes and sited on public land.

Sincerely,



Victor F. Nettles



Charlotte F. Quist

Residence: 4417 Schoolhouse Road
Glen, MT 59732

Nowakowski, Sonja

From: Roger Wicke [rw2247@rmhiherbal.org]
Sent: Tuesday, February 09, 2010 11:18 AM
To: Nowakowski, Sonja
Subject: concerns re cell-phone and EM radiation standards

ATTN: Sonja Nowakowski
Committee Chairperson Robyn Driscoll, Committee for Energy and Telecommunications
Legislative Services Division P.O. Box 201706 Helena, Montana 59620
E-mail: snowakowski@mt.gov
Phone: 406-444-3078

Dear Ms. Driscoll,

In 2007, a landmark scientific report was released that extensively documented the health hazards of electromagnetic (EM) radiation, including from cell phones, microwaves, and power lines:

BioInitiative Report: A Rationale for a Biologically-based Public Exposure Standard for Electromagnetic Fields (ELF and RF)

<http://www.bioinitiative.org/>

[complete report is available on the website as a series of PDF files]

I have been quite concerned about this issue for decades, suspecting that the official safety standards were inadequate, based on my observation of clients in my health practice and my own health. (I completed a PhD program in Biomedical Engineering at MIT in 1980 and worked for several years as a biomedical research scientist; since the late 1980's I have practiced as an herbalist-health consultant and have familiarity with various environmental health issues, including EM sensitivity disorders.)

In Appendix A to this letter, I've excerpted key quotes from the Summary for the Public - section 1 of the Bioinitiative Report. These selected quotes should give you a good overview of the substance of the entire report. In a nutshell, the report provides evidence for why our current official safety standards for ELF (extra-low frequencies, 60-Hz power-line frequency) and RF (radio and cell-phone frequencies) are grossly inadequate by orders of magnitude:

* Existing safety limits for magnetic fields generated from ELF are 904 mG (milliGauss) in the US, yet increased risk for childhood leukemia starts at levels almost one thousand times below this safety standard at only 1.4 mG and above.

* Negative health effects from RF radiation from cell towers have been documented at between 0.01 and 0.5 $\mu\text{W}/\text{cm}^2$ (microwatts per square centimeter), yet power levels emitted by large transmitter towers can be in the 10's and several 100's of $\mu\text{W}/\text{cm}^2$ in residential areas within half a mile of some broadcast sites.

In Appendix B, I've listed several articles that explain the importance of this issue from a layman's perspective and several additional reports that confirm details in the Bioinitiative Report.

A friend of mine, Christy Dodson, has already contacted you regarding this issue, and she encouraged me to write you with details. I originally moved to Hot Springs, Montana to escape from the pollution (both chemical and electrosmog) of Denver, Colorado. Hot Springs is located on the Salish-Kootenai Indian Reservation and is relatively undeveloped, some would say "impoverished", but this has its advantages -- like an absence of cell phone towers. Cell phones do not work here. But this threatens to change, as there have been several proposals discussed for grant applications to place a cell-phone tower near town. It is for this reason that I have a special urgency in contacting you, as well as the convergence of media attention on this issue within the past year. The timing of the release of the Bioinitiative Report is especially fortuitous, because I believe it is a

thoroughly documented report that will provide governments worldwide with the reasons for drastically lowering limits for acceptable EM radiation emissions.

Though I would like high-speed Internet access for personal and business reasons, there is a better way to achieve this -- fiber-optic cables. In the 1990's the nation's telecommunications companies promised us this technology, but it did not happen to the extent promised, because cell-phones were perceived as a cheaper solution. However, in light of the Bioinitiative Report, it should be evident that if you include the costs in human suffering, disease, and medical costs over the next decades, cell-phone technology is no bargain and may ultimately be extremely expensive. A fiber-optic cable, instead of carrying information via RF radiation, transmits information via visible light waves down a thin fiberglass filament. In other words, a clean, healthy way to have high-speed Internet and data communications at much higher transmission rates than cell-phones can provide (24,000,000 Megabits per second for a ****single**** hair-width fiber in a fiberoptic cable vs. 14 Megabits per second for Bluetooth 3.0, a type of advanced cell-phone protocol). If fiberoptic ports become as common as gas stations and telephone booths used to be, people should be able to stop on the roadside, plug in their phone or computer, and connect. Compared with fiberoptics, cell-phones and Wi-Fi networks are sluggishly slow in addition to being serious health hazards.

Though I have not yet seen it, "Full Signal", a highly acclaimed documentary on cell-phone radiation hazards, will be showing at a film festival in Missoula on Friday, February 19 at 4 pm, at the Wilma Theatre. KUFM will be interviewing the director, Talal Jabari, at 5:30 pm on that same day.

Please feel free to contact me to discuss anything in the report or this letter. I encourage you to study the Bioinitiative Report carefully. Because of the dedication of the scientists who compiled this report, we have an opportunity to protect the health and wellbeing of future generations of Montanans. In Appendix B, the article by B. Blake Levitt, "A Clear Call America Unplugged -- A Guide to the Wireless Issue", includes a section at the end where she outlines suggested legislative actions by local and state governments.

---Roger Wicke, PhD, Director
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----- Appendix A: Selected quotes from Bioinititave Report

http://www.bioinitiative.org/press_release/index.htm
BioInitiative Report:

A Rationale for a Biologically-based Public Exposure Standard for Electromagnetic Fields (ELF and RF) [See link 'Bioinitiative Report' at bottom of page to the entire text of report.]

From press release for the preceding document:
http://www.bioinitiative.org/press_release/docs/august31_2007.pdf

University of Albany, New York- August 31 / Serious Public Health Concerns Raised Over Exposure to Electromagnetic Fields (EMF) from Power Lines and Cell Phones "The report provides detailed scientific information on health impacts when people are exposed to electromagnetic radiation hundreds or even thousands of times below limits currently established by the Federal Communications Commission (US FCC) and International Commission for Non-Ionizing Radiation Protection in Europe (ICNIRP). The authors reviewed more than 2000 scientific studies and reviews, and concluded that the existing public safety limits are inadequate to protect public health. From a public health policy standpoint, new

public safety limits, and limits on further deployment of risky technologies are warranted based on the total weigh of evidence.

The report documents scientific evidence raising worries about childhood leukemia (from power lines and other electrical exposures), brain tumors and acoustic neuromas (from cell and cordless phones) and Alzheimer's disease. There is evidence that EMF is a risk factor for both childhood and adult cancers.

...
Dr. Hardell's work has been confirmed in other studies on long-term users. A summary estimate of all studies on brain tumors shows overall a 20% increased risk of brain tumor (malignant glioma) with ten years of use. But the risk increases to 200% (a doubling of risk) for tumors on the same side of the brain as mainly used during cell phone calls. "Recent studies that do not report increased risk of brain tumors and acoustic neuromas have not looked at heavy users, use over ten years or longer, and do not look at the part of the brain which would reasonably have exposure to produce a tumor."

Selected quotes from section 1 of the Bioinitiative Report:

p.3: "what is clear is that the existing public safety standards limiting these radiation levels in nearly every country of the world look to be thousands of times too lenient. Changes are needed."

p.5: "The clear consensus of the BioInitiative Working Group members is that the existing public safety limits are inadequate for both ELF [power-line, or extra-low frequencies] and RF [radiofrequencies]."

p.6: "In the last few decades, it has been established beyond any reasonable doubt that bioeffects and some adverse health effects occur at far lower levels of RF and ELF exposure where no heating (or induced currents) occurs at all; some effects are shown to occur at several hundred thousand times below the existing public safety limits where heating is an impossibility. It appears it is the INFORMATION conveyed by electromagnetic radiation (rather than heat) that causes biological changes - some of these biological changes may lead to loss of wellbeing, disease and even death."

p.7: "There may be no lower limit at which exposures do not affect us. Until we know if there is a lower limit below which bioeffects and adverse health impacts do not occur, it is unwise from a public health perspective to continue "business-as-usual" deploying new technologies that increase ELF and RF exposures, particularly involuntary exposures."

p.8: "There is little doubt that exposure to ELF causes childhood leukemia. The exposure levels for increased risk are quite low - just above background or ambient levels and much lower than current exposure limits. The existing ICNIRP limit is 1000 mG (904 mG in the US) for ELF. Increased risk for childhood leukemia starts at levels almost one thousand times below the safety standard. Leukemia risks for young boys are reported in one study to double at only 1.4 mG and above."

p.9: "Children who have leukemia and are in recovery have poorer survival rates if their ELF exposure at home (or where they are recovering) is between 1mG and 2 mG in one study; over 3 mG in another study."

p.9: "Radiofrequency radiation from cell phone and cordless phone exposure has been linked in more than one dozen studies to increased risk for brain tumors and/or acoustic neuromas (a tumor in the brain on a nerve related to our hearing). People who have used a cell phone for ten years or more have higher rates of malignant brain tumor and acoustic neuromas. It is worse if the cell phone has been used primarily on one side of the head. For brain tumors, people who have used a cell phone for 10 years or longer have a 20%

increase in risk (when the cell phone is used on both sides of the head). For people who have used a cell phone for 10 years or longer predominantly on one side of the head, there is a 200% increased risk of a brain tumor.... The risk of brain tumor (high- grade malignant glioma) from cordless phone use is 220% higher (both sides of the head). The risk from use of a cordless phone is 470% higher when used mostly on only one side of the head.

"

p.10: "The current standard for exposure to the emissions of cell phones and cordless phones is not safe considering studies reporting long-term brain tumor and acoustic neuroma risks.

"

p.11: "In total the scientific evidence for adult disease associated with EMF exposure is sufficiently strong for adult cancers that preventive steps are appropriate, even if not all reports have shown exactly the same positive relationship. This is especially true since many factors reduce our ability to see disease patterns that might be related to EMF exposure: there is no unexposed population for comparison, for example, and other difficulties in exposure assessment, The evidence for a relationship between EMF exposure and adult cancers and neurodegenerative diseases is sufficiently strong at present to merit preventive actions to reduce EMF exposure.

"

p.11: "The evidence from studies on women in the workplace rather strongly suggests that ELF is a risk factor for breast cancer for women with long-term exposures of 10 mG and higher.

"

p.13: "Laboratory studies show that the nervous system of both humans and animals is sensitive to ELF and RF. Measurable changes in brain function and behavior occur at levels associated with new technologies including cell phone use. Exposing humans to cell phone radiation can change brainwave activity at levels as low as 0.1 watt per kilogram SAR (W/Kg)*** in comparison to the US allowable level of 1.6 W/Kg and the International Commission for Non-ionizing Radiation Protection (ICNIRP) allowable level of 2.0 W/Kg. It can affect memory and learning. It can affect normal brainwave activity. ELF and RF exposbehavior in animals.

"

p.14: "The consequence of prolonged exposures to children, whose nervous systems continue to develop until late adolescence, is unknown at this time. This could have serious implications to adult health and functioning in society if years of exposure of the young to both ELF and RF result in diminished capacity for thinking, judgment, memory, learning, and control over behavior.

"

p.15: "The effects of long-term exposure to wireless technologies including emissions from cell phones and other personal devices, and from whole-body exposure to RF transmissions from cell towers and antennas is simply not known yet with certainty. However, the body of evidence at hand suggests that bioeffects and health impacts can and do occur at exquisitely low exposure levels: levels that can be thousands of times below public safety limits.

"

p.17: "Both ELF and RF exposures can be considered genotoxic (will damage DNA) under certain conditions of exposure, including exposure levels that are lower than existing safety limits.

"

p.17: "Very low-level ELF and RF exposures can cause cells to produce stress proteins, meaning that the cell recognizes ELF and RF exposures as harmful. This is another important way in which scientists have documented that ELF and RF exposures can be harmful, and it happens at levels far below the existing public safety standards.

"

p.19: "Oxidative stress through the action of free radical damage to DNA is a plausible biological mechanism for cancer and diseases that involve damage from ELF to the central

nervous system.
"

p.22: "While new ELF limits are being developed and implemented, a reasonable approach would be a 1 mG planning limit for habitable space adjacent to all new or upgraded power lines and a 2 mG limit for all other new construction. It is also recommended for that a 1 mG limit be established for existing habitable space for children and/or women who are pregnant (because of the possible link between childhood leukemia and in utero exposure to ELF).
"

p.23: "There is suggestive to strongly suggestive evidence that RF exposures may cause changes in cell membrane function, cell communication, cell metabolism, activation of proto-oncogenes and can trigger the production of stress proteins at exposure levels below current regulatory limits. Resulting effects can include DNA breaks and chromosome aberrations, cell death including death of brain neurons, increased free radical production, activation of the endogenous opioid system, cell stress and premature aging, changes in brain function including memory loss, retarded learning, slower motor function and other performance impairment in children, headaches and fatigue, sleep disorders, neurodegenerative conditions, reduction in melatonin secretion and cancers.
"

p.23: "There are some credible articles from researchers reporting that cell tower -level RF exposures (estimated to be between 0.01 and 0.5 µW/cm2) produce ill-effects in populations living up to several hundred meters from wireless antenna sites. This information now argues for thresholds or guidelines that are substantially below current FCC and ICNIPR standards for whole body exposure....RF levels can be in the 10s to several 100's of µW/cm2 in residential areas within half a mile of some broadcast sites...
"

----- end of Appendix A -----

----- Appendix B: MISC. REFERENCES -----

<http://www.radiationresearch.org/pdfs/15reasons.asp>
August 25, 2009 - Cellphones Cause Brain Tumors A new report was released today by the International EMF Collaborative entitled "Cellphones and Brain Tumors: 15 Reasons for Concern, Science, Spin and the Truth Behind Interphone".

To download the full report:

http://www.radiationresearch.org/pdfs/reasons_us.pdf
Cellphones and Brain Tumors: 15 Reasons for Concern, Science, Spin and the Truth Behind Interphone EM Radiation Research Trust "Major Points:
* Studies, independent of industry, consistently show there is a "significant" 1 risk of brain tumors from cellphone use.
* The electromagnetic field (EMF) exposure limits advocated by industry and used by governments are based on a false premise that a cellphone's electromagnetic radiation has no biological effects except for heating.
...

We wholeheartedly echo the European Parliament's recent call for actions. In brief they are:
* Review the scientific basis and adequacy of existing exposure limits
* Keep certain establishments free of wireless device radiation, including schools, child day care centers, retirement homes and health care institutions.
* Fund a wide-ranging awareness campaign aimed at young people and children
* Increase communications to the public about the potential health hazards of wireless devices
* Create yearly reports on electromagnetic radiation exposures, describing the sources and actions taken to protect public health.
"

<http://www.msnbc.msn.com/id/34509513/ns/health-cancer/>

Is 'electrosmog' harming our health?

Electrical pollution from cell phones and WiFi may be hazardous by Michael Segell

"In 2007, the Bioinitiative Working Group, an international collaboration of prestigious scientists and public health policy experts from the United States, Sweden, Denmark, Austria, and China, released a 650-page report citing more than 2,000 studies (many very recent) that detail the toxic effects of EMFs from all sources. Chronic exposure to even low-level radiation (like that from cell phones), the scientists concluded, can cause a variety of cancers, impair immunity, and contribute to Alzheimer's disease and dementia, heart disease, and many other ailments. "We now have a critical mass of evidence, and it gets stronger every day," says David Carpenter, MD, director of the Institute for Health and the Environment at the University at Albany and coauthor of the public-health chapters of the Bioinitiative report.

...
"Every single study of brain tumors that looks at 10 or more years of use shows an increased risk of brain cancer," says Cindy Sage, MA, coeditor of the report. A recent study from Sweden is particularly frightening, suggesting that if you started using a cell phone as a teen, you have a 5 times greater risk of brain cancer than those who started as an adult.

...
In the past 2 years alone, France, Germany, and England have dismantled wireless networks in schools and public libraries, and other countries are pressing to follow suit. Israel has banned the placement of cellular antennae on residences, and Russian officials have advised against cell phone use for children under 18.

...
Two of the worst creators of transient radiation: light dimmer switches and compact fluorescent lightbulbs (CFLs).

...
Does that mean as evidence of their harm accumulates, officials will raise a red flag? Not likely, if past EMF debates are any indication. Power companies have successfully beaten back attempts to modify exposure standards, and the cell phone industry, which has funded at least 87% of the research on the subject, has effectively resisted regulation. One good reason has had to do with latency — how long it takes to develop a particular cancer, often 25 years or more. Cell phones have been around only about that long.

"

<http://www.wave-guide.org/library/clearcall.html>

A Clear Call

America Unplugged -- A Guide to the Wireless Issue by B. Blake Levitt "Frey's recent comments are in response to thousands of complaints about headaches in cellular phone users that are now surfacing around the world, much to the amazement of mainstream medicine. But anyone who knows anything about this subject is not surprised by these so-called "new" reports. Humans truly are "electrical" beings. The heartbeat is electrical. Brain waves are electrical. Most hormonal and neuronal activity is electrically regulated.

...
Then there's the on-going work of Dr. Stanislaw Szmigielski and his co-researchers at the Center for Radiobiology and Radioprotection in Warsaw, Poland. In microwave and radar personnel, they have noted sharp increases in cancer - including lymphomas, melanomas, leukemias, and brain tumors - high blood pressure, headaches, memory loss, and brain damage. They also noted immune system abnormalities; first an over-stimulation, then later immune suppression after continued exposure to low levels of the microwave bands.

...
In 1994, Drs. Henry Lai and N.P. Singh, at the University of Washington, Seattle, found both single and double-strand DNA breaks in test animals exposed to cellular and PCS-frequency pulsed microwaves.

Double-strand DNA breaks are thought not to repair themselves and can lead to mutations.

...
Although it has been known for years that bees, butterflies, birds and fish manufacture magnetite - often in thick clusters, or in long crystal chains, and use it as a navigational tool, it was thought that humans did not manufacture their own magnetic material. Any regulations for these technologies which surround us are based on a

presumption that humans do not manufacture magnetite. This body of work has profound implications for the safety of MRI scans for instance, as well as wireless technologies.

...
Another study that I find haunting was conducted by Dr. William Bise in 1975, using ten human test subjects. Bise found severe alterations in human electroencephalograms at microwave and radio-frequency power levels that have now become common in many urban areas. The year-long study documented a kind of entrainment of test subjects brain waves with the external exposures, and radical changes in mood and behavior.

...
*****There is no statute of limitations for EMF suits for health damage. There is also a move by industry at the FCC to shift all liability onto the site owners. Most people who are approached, or who offer their own land, are not told any of this, and they rarely know about the health effects other than what industry literature tells them.*****
"

[rw comments: *****at the end of the preceding article is a detailed list of suggested actions for local and state legislators to take, to regain local control over the siting of cell phone towers.*****
]

<http://www.gq.com/cars-gear/gear-and-gadgets/201002/warning-cell-phone-radiation>

Warning: Your Cell Phone May Be Hazardous to Your Health "The concern about Wi-Fi is being taken seriously in Europe. In April 2008, the national library of France, citing possible "genotoxic effects," announced it would shut down its Wi-Fi system, and the staff of the storied Library of Sainte-Geneviève in Paris followed up with a petition demanding the disconnection of Wi-Fi antennas and their replacement by wired connections. Several European governments are already moving to prohibit Wi-Fi in government buildings and on campuses, and the Austrian Medical Association is lobbying for a ban of all Wi-Fi systems in schools, citing the danger to children's thinner skulls and developing nervous systems.
"

<http://www.whale.to/b/cherry6.html>

Evidence that Electromagnetic Radiation is Genotoxic: The implications for the epidemiology of cancer and cardiac, neurological and reproductive effects by Dr Neil Cherry June 2000 For presentations in May to NZ Parliament and June 2000 in Italy, Austria, Ireland and at the European Parliament in Brussels.

----- end of Appendix B -----

---Roger Wicke, PhD, Director
Rocky Mountain Herbal Institute
(www.rmhiherbal.org)
c/o PO Box 579
Hot Springs, Montana 59845
phone: 406-741-3811

Nowakowski, Sonja

From: Mark Okonski [mokonski@sprynet.com]
Sent: Friday, February 05, 2010 9:09 AM
To: Nowakowski, Sonja
Subject: Efficiency Policy
Attachments: America's Untapped Energy Resource- Boosting Efficiency - Time Magazine 12-31-08.doc;
Example projects by EASI Affiliates.docx

Sonja Nowakowski
Legislative Services Division
Helena, MT 59620

Dear Ms. Nowakowski;

In the news last week, it was reported that the State of Montana was exploring ways to cut costs and become more efficient. This is a noble and timely goal, and we would like to help you achieve it. I have read your Jan 2010 paper for the ETIC, which sets an excellent course for discussion and action. I hope you will also consider our viewpoint and services.

A recent article in TIME magazine explains how important it is to be more energy efficient (attached). Maybe you've already read this article – it is full of eye-opening facts and statements. One noteworthy statement is that the utilities realize that “the cheapest new plant is the one they don't have to build.” Efficient use of electricity provides positive effects on the environment and economy as well. “Electrical efficiency” is very achievable, and is an idea that must be promoted.

I represent a company that designs and manufactures **energy efficiency equipment**. This company is called Energy Automation Systems, Inc. (EASI) of Nashville TN. We have been successfully producing and installing this equipment in thousands of locations around the world since 1978. (The web site is www.energyautomation.com)

Our technology intended for commercial/industrial/government buildings, and can reduce their electrical consumption **by 10 to 20%**. This technology exists and is in wide use.

This is done passively and without cutting back on usage. Conservation measures are not required. It doesn't require programmable devices, new power sources (like wind turbines or rooftop solar collectors), switching power companies, or employee monitoring. The secret to how it works is that it captures and re-uses wasted electricity in the building's wiring. Although this technical fact may be difficult to comprehend, the effect on your electric bill is obvious. Attached is a list of example projects that we've done. We would like similar success stories coming from Montana. We have installations in all types of buildings – over 60,000 throughout the world.

Our equipment could provide most, if not all, of the electrical savings that is desired by Gov. Schweitzer. (refer to statement on page 6 of your paper: “ In late 2007, Governor Brian Schweitzer announced an initiative to reduce energy use at each executive agency by 20 percent by 2010. Capital projects, including energy conservation projects in state-owned facilities, such as those under the "State Building Energy Conservation" are being used to help meet the goal.”)

Our installation process is relatively quick and painless. The equipment is installed in parallel to the lights, A/C,

motors, blowers, and refrigeration equipment. The lifespan of our equipment is typically 20+ years. We offer a 3 year product warrantee, and a guarantee on the electrical savings.

Our installations have a great Return on Investment. After the 2 -3 year payback period, the savings in electricity is pure profit that permanently reduces a building's operating costs.

There are other benefits as well, such as improved power quality (less harmonics, & more capacity), and environmental benefits.

I realize that due to the tough economy, there is little left in most budgets for capital improvements. For that reason we work with finance companies that offer excellent financing options. There are plans for the purchase, lease, or rental of the equipment. *Furthermore, the finance payment on our installations is often offset by the savings in electricity. It's a real Win-Win situation.* Businesses also realize federal tax benefits.

I have a tabletop demonstration that shows how the equipment works and reduces electrical usage. I'd be happy to show it to you, and explain more about it. Hopefully, we can also discuss ways to partner with Montana to increase efficiency and reduce costs.

Sincerely,

Mark Okonski
President
Arc Energy Services, Inc.
708-704-5475



Wednesday, Dec. 31, 2008

America's Untapped Energy Resource: Boosting Efficiency

By Michael Grunwald

This may sound too good to be true, but the U.S. has a renewable-energy resource that is perfectly clean, remarkably cheap, surprisingly abundant and immediately available. It has astounding potential to reduce the carbon emissions that threaten our planet, the dependence on foreign oil that threatens our security and the energy costs that threaten our wallets. Unlike coal and petroleum, it doesn't pollute; unlike solar and wind, it doesn't depend on the weather; unlike ethanol, it doesn't accelerate deforestation or inflate food prices; unlike nuclear plants, it doesn't raise uncomfortable questions about meltdowns or terrorist attacks or radioactive-waste storage, and it doesn't take a decade to build. It isn't what-if like hydrogen, clean coal and tidal power; it's already proven to be workable, scalable and cost-effective. And we don't need to import it.

This miracle juice goes by the distinctly boring name of energy efficiency, and it's often ignored in the hubbub over alternative fuels, the nuclear renaissance, T. Boone Pickens and the green-tech economy. Clearly, it needs an agent. But it's a simple concept: wasting less energy. Or more precisely, consuming less energy to get the same amount of heat for your shower, light for your office and power for your factory. It turns out to be much less expensive, destructive and time-intensive to reduce demand through efficiency than to increase supply through new drilling or new power plants. A nationwide push to save "megawatts" instead of building more megawatts could help reverse our unsustainable increases in energy-hogging and carbon-spewing while creating a slew of jobs and saving a load of cash.

Now this may sound like Jimmy Carter's 30-year-old plea for us to turn down the heat and put on sweaters or like an eco-lecture nagging us to turn off lights, drive less and otherwise change our behavior to save energy. It would be nice if we did, but that's conservation, not efficiency. We don't have to sacrifice comfort or change routines to get efficient. Doing less with less may be admirable, but efficiency is about doing the same or more with less. And studies by groups as diverse as the Natural Resources Defense Council (NRDC), the U.S. Chamber of Commerce and even the National Petroleum Council have identified efficiency as the way to start addressing our energy and climate crises. In fact, we've already started; the Alliance to Save Energy calculates that without the efficiency gains we've made since the last energy crisis, in 1973, our economy would use nearly 50% more energy today. That's more

than we get from oil, twice what we get from coal or natural gas and six times what we get from nuclear plants.

But we could save much more. A McKinsey study found that a global effort to boost efficiency with existing technologies could have "spectacular results," eliminating more than 20% of world energy demand by 2020. Efficiency guru Amory Lovins argues that today's best techniques could save the U.S. half our oil and gas and three-fourths of our electricity. That would mean no more imports from the Middle East, lower utility bills for everyone and a big step off our path toward a hotter planet. Honeywell CEO Dave Cote brags that widespread adoption of just his own company's efficiency products could slash U.S. energy use 20%. "There's a huge amount of low-hanging fruit," he says.

There are two basic ways to save energy without deprivation or daily effort. We can use more efficient machinery, like fuel-efficient cars that guzzle less gas, or those pigtailed compact fluorescent lightbulbs that use 75% less power than traditional bulbs, or state-of-the-art refrigerators that are three times as efficient as 1973 models. We can also use machinery more productively. That can be as simple as insulating pipes and ducts, caulking doors and windows and otherwise weatherizing our homes to avoid heating our attics and the outdoors. Or installing motion sensors and programmable thermostats that turn out lights and air conditioners when no one's in the room. President-elect Barack Obama noted on the campaign trail that if we all just properly inflated our tires and maintained our engines, we could save as much oil now as new offshore drilling would produce by 2030. And since buildings devour two-thirds of our power, commercial and industrial operations can weed out even more waste through green construction and automated systems that practically import power as needed. "We've hit rock bottom in our addiction to fossil fuels," says Ian Bowles, Massachusetts energy and environmental affairs secretary. "We need an intervention, and energy efficiency is it."

Change does seem to be coming. Obama was widely mocked for his tire-inflation comments, but he's still a true believer, calling efficiency "the cheapest, cleanest, fastest energy source." He is also surrounding himself with true believers, including primary rivals Joe Biden, Hillary Clinton and Bill Richardson, as well as his National Security Adviser, James Jones, whose last job was running the Chamber of Commerce's energy institute. Carol Browner, who will be Obama's White House climate czar, promoted aggressive efficiency standards for appliances when she ran the Environmental Protection Agency; Steven Chu, his nominee for energy secretary, hailed them in a recent speech, declaring that "I cannot impress upon you how important energy efficiency is." And Obama has pledged to cut 15% of all energy use by the Federal Government, the world's largest consumer; in December, he specifically promised to make public buildings more efficient and modernize the energy grid. "The stars are really aligned for efficiency," says Kateri Callahan, president of the Alliance to Save Energy. "I want to tamp down expectations, but I can't."

Something clearly is changing when companies like IBM, GM, Wal-Mart and Chevron run ads touting their energy-saving commitments, when cities, universities, supermarkets and hospitals race to reduce their carbon footprints. But the national debate has still focused on "drill, baby, drill," a fledgling renewables industry and a much ballyhooed resurrection of nuclear power. So the near magical potential of efficiency raises an obvious question: If the experts consider it such a win-win no-brainer, why don't we already do more of it?

Part of the answer involves marketing; even superefficient motors, boilers, routers and compressors lack a wow factor, and politicians don't get to cut ribbons for efficiency tweaks. But most of the answer involves money. Efficiency's growth has been stunted by perverse financial disincentives that we need to understand and untangle if we want to avoid a future of unaffordable new plants, catastrophic new emissions and dangerous dependence on dictatorial oil merchants. The recent collapse in oil prices has eroded the sense of emergency, but our economy, our security and our planet still need the ambulance. "A lot of simple answers are just sitting around waiting for us to execute," says Tom Reddoch, an efficiency expert at the Electric Power Research Institute (EPRI). "But the execution part isn't so simple."

Wasting Our Energy

We complain about the cost of our energy, but we still throw away most of it. Our power plants, for example, waste enough energy to power Japan. Only 4% of the energy used to run a typical incandescent bulb produces light; the rest is frittered away as heat at the plant, over transmission lines or in the bulb itself, which is why you burn your fingers when you touch it. Our cars, water heaters and industrial motors are still embarrassingly inefficient compared with Japanese and European models.

Our new fridges, dryers and air conditioners are quite efficient, but most of us still use old ones, and even our new consumer electronics — the fastest-growing segment of power demand — slurp alarming quantities of juice. On a tour of EPRI's energy-efficiency lab in Knoxville, Tenn., Reddoch showed me how those inconspicuous set-top boxes on our televisions use half as much energy as refrigerators whether they're on or off. And video-game consoles devour two fridges' worth of electricity when your kids leave them on, which they probably do, because manufacturers ship them with the auto power-down disabled. "We're throwing money down the toilet," Reddoch says.

Experts have identified dozens of attractive targets for eliminating waste, from streetlights to servers. And with the Department of Energy predicting a 30% increase in power demand in America by 2030, the utilities that will supply the extra wattage are keenly aware that the cheapest new plant is the one they don't have to build. Duke Energy has proclaimed efficiency its "fifth fuel," unveiling ambitious plans to help its customers retrofit their homes and buildings and buy more efficient appliances and equipment. "We're really excited to get into this market," says Ted Schultz, Duke's vice president for energy efficiency. "We're ready to roll."

But Duke isn't rolling yet — because it would shaft its shareholders if it really helped customers save energy. In most states, utilities reap more profits if they sell more power; also, they are guaranteed generous returns on their investments in new generating plants. But not on their investments in efficiency, which is why Duke is mostly limiting its efforts to demonstration projects until state regulators agree to change the rules. "If there's no return on investment, it's not much of an investment," Schultz says.

The best evidence that these disincentives matter is the record of California and the Pacific Northwest, where they don't exist. In that part of the country, utilities have been aggressive promoters of efficiency, and per-capita electricity use has been stable for three decades — while soaring 50% in the rest of the country. Now utilities expect to make another \$2 trillion

in capital investments over the next two decades to meet rising demand, and most of them have no incentive to invest in efficiency.

There are also disincentives on the demand side. Most efficiency investments pay for themselves within three years, but all require at least some up-front costs. So developers are less likely to install smart heating and cooling systems controlled by cutting-edge optimization software when they're not going to get stuck with a building's energy bills, just as landlords are less motivated to splurge on Energy Star washer-dryers when their tenants enjoy the savings. Even home and business owners who do reap the benefits of efficiency are often reluctant to shell out for top-of-the-line furnaces, thicker windows, reflective roofs or front-loading washers in a brutal economy. "People want cheap," says Honeywell's Cote. Those \$3 twisty bulbs are a classic example: they last eight times as long as regular bulbs, and their payback period is a few months, but after several years of impressive growth, their sales dropped 28% last quarter. "I'm afraid cash is king," says Kaj den Daas of Philips Lighting. "If you live paycheck to paycheck, a few cents up front makes a difference."

But it's becoming clear that when incentives are properly aligned, efficiency happens, and innovation does too. Companies like DuPont, Dow, Cisco and Wal-Mart have all saved big bucks by greening buildings, vehicles and operations, and a burgeoning industry of high-tech energy-services companies is helping businesses reduce their energy bills in exchange for a slice of the verifiable savings. At Honeywell, a \$36.6 billion company, half its portfolio is now related to efficiency. And even utilities that lack incentives to reduce overall demand are trying to reduce peak demand so that they don't have to turn on costly plants or buy expensive power on the open market. That search for demand response has inspired smart meters and other gadgets that help customers monitor and control their energy consumption, as well as automated systems that use wireless sensors and smarter optimization software to maximize efficiency through a kind of energy-use cruise control. In one case, Duke helped a beer distributor precool his refrigerators overnight, saving him \$150,000 a year while reducing Duke's peak loads. Utilities also outsource demand response to firms like Boston-based EnerNOC, which pays supermarkets, hotels and other large consumers to let it dim lights or adjust heat or shut down elevator banks at peak hours. EnerNOC can now reduce 1,800 megawatts' worth of consumption on command — the equivalent of two medium-size power plants. "Saving energy can be lucrative," says CEO Tim Healy. "We just need to get the incentives right."

The Silver Bullet

Unfortunately, money has also created a political disincentive. Thanks to furious lobbying by the Detroit Three, fuel-efficiency standards have stagnated, while Big Oil, King Coal and utilities have wired Washington and state capitals for policies promoting more electricity supply. There hasn't been a big-business counterweight pushing for less demand for fuel and power. So while everyone pays lip service to efficiency, the political world has focused on expanding drilling for oil and gas, relaxing pollution rules for coal and showering subsidies on nuclear and biofuels as well as less controversial renewables like wind and solar. The Washington consensus has been that we need to do all of the above to solve all our problems — and increase efficiency too — because there's no silver bullet.

But as we enter a new age of economic and environmental limits, not all solutions are created equal. Coal and oil are too dirty. Nuclear and solar are too costly. Wind is our fastest-growing

source of new energy, but it's still only some 1% of our supply. Efficiency is the only cost-effective energy source that addresses global warming, energy dependence and volatile prices. It may not be a silver bullet, but it's the best bullet we've got; we shouldn't spend billions on evidently inferior bullets until we've really given this one a shot. Here's how:

Set tough standards. History has shown that when the government mandates efficiency, the market figures out how to achieve it. Fuel-efficiency standards were a hit in the 1970s, but the Big Three have fought off upgrades ever since by claiming that federal meddling would ruin their businesses, which they apparently preferred to do themselves. Obama has proposed annual 4% increases, a clearly achievable goal with lighter cars, more hybrids and gradual adoption of plug-ins. Similarly, California's strict building codes have promoted airtight shells, orientation that exploits natural heat and light, and efficient windows and appliances.

Appliance standards have been another success story; manufacturers always squeal when they're proposed but end up designing products that are not only more efficient but cheaper. But new proposals have languished in the Bush Administration, which routinely missed deadlines until it lost a lawsuit to environmentalists and is now finally adopting a few wimpy standards. Google.org energy director Dan Reicher, a member of Obama's transition team, says most furnaces on the market already meet the Bush team's latest proposal — and that its standards for boilers and transformers would be even weaker than proposals publicly endorsed by the industry. "In the Obama Administration, you're going to see a much, much stronger commitment," Reicher says.

Let utilities make money saving energy. Six states have already decoupled electricity profits from sales volume to give utilities incentives to eliminate energy waste, and nine more may follow. Regulated utilities should also be assured a reasonable rate of return on their investments in efficiency improvements for their customers, just as they are for other capital investments. And nine states already require utilities to meet a percentage of future load growth through efficiency; the American Council for an Energy-Efficient Economy says a tough national standard could eliminate the need for 450 power plants by 2020. At a meeting of the nation's utility commissioners in November, NRDC and the Edison Electric Institute issued a joint call for states to overhaul energy incentives in order to promote "the increasingly urgent mutual goal" of efficiency. "That's a real milestone," says Ralph Cavanagh, a co-director of NRDC's energy programs. "The utilities want in on this."

Of course, cap-and-trade or any other national effort to price carbon would adjust incentives as well, which is one reason utilities are already showing so much interest in efficiency. "For a long time, the industry lost interest in the demand side," says Reddoch, whose institute is funded by utilities. "But now the enthusiasm is sky-high."

Stimulate the market. Mandates provide a big stick, but money is still the best carrot, and Obama has suggested that he wants to spend lots of it to promote efficiency. He has promised that his gargantuan economic-stimulus plan will include smart meters and other elements of a smart grid that could someday keep your air conditioner off until your BlackBerry lets it know you're almost home. He also plans a dramatic expansion of a low-income weatherization program to retrofit 1 million homes a year and is considering incentives for retrofitting inefficient buildings, buying highly efficient appliances and building co-generation plants that

help turn waste heat into energy. The idea is that spending money now and saving money later should both help the economy.

The most common knock on efficiency is that it can't possibly reduce our consumption enough to reverse our energy growth or stop global warming, not when the average U.S. household has 26 plug-in devices and China is building the equivalent of two new coal plants every week. Most studies suggest that efficiency can dramatically slow but not erase projected growth in energy demand and emissions. But those studies were conducted before the economy tanked. And most measured U.S. efficiency potential with status-quo assumptions, which is like trying to measure our industrial potential before World War II: it's hard to guess how a major crisis and a committed leader can mobilize the country and rearrange notions of what's possible. "The limits of efficiency have never been tested," says NRDC's David Goldstein. "We've run out of political will long before we've run out of opportunity." Even if we refuse to put on sweaters, a national efficiency crusade combined with a prolonged recession could throttle energy demand enough to delay the need for new power, while the rapid growth of wind power could replace the dirtiest coal plants. "Maybe we could buy enough time until solar matures," Goldstein says.

Still, it's true that efficiency alone probably won't save the world. But real efficiency combined with a real shift toward conservation — carpooling, telecommuting, recycling, running dishwashers full, downsizing McMansions and, yes, adjusting thermostats — well, that might do the trick. We need to squeeze more energy out of every electron. But pardon the eco-lecture: if we really want to save the world, we might have to put on a sweater too.

- Find this article at:
- <http://www.time.com/time/magazine/article/0,9171,1869224,00.html>



Example projects by EASI Affiliates

EASI Affiliates are highly qualified, independent business owners who are carefully selected, trained, and supported thereby consistently providing the same dramatic results and service for their customers using EASI's unique methods and system. EASI's ability to meet demand and provide support services to its Affiliates is the reason behind its longevity and success.

The staff at EASI has over five decades of collective experience in the field of energy efficiency dating back to the infancy of the industry. Since 1978 they have directly overseen thousands of systems, all with positive results. With billions of dollars backing our guarantee and insurance, they have never experienced a single claim.

EASI Technology Leadership

The EASI staff has been on the cutting edge of the electrical energy efficiency industry since its beginnings in the late 1970s. Since then they have pioneered many important concepts in this field. And, where the technology to fulfill these concepts was not available, they developed it. EASI is able to computer-model your electrical system and engineer and design a complete solution that is insured to reduce the soaring cost of electricity.

All Affiliates have instant access to EASI's proven, proprietary engineering and design system as well as to the immediate credibility of representing a verifiably success program that has been in operation since 1978.

Hotels and Motels

Industry: Hotel-Motel

" Our company owns and operates a full service Holiday Inn that has been treated with your energy reduction system. I recommend your system without reservation based upon their system's performance with our own facility."

"... Our monthly bill for the chillers had reduced by 15% to 20 %... the wires going to MCB (main circuit breaker) are comparatively cooler than before, this may be the reason of the less amperage passing through the circuit. Personally, I am very satisfied, and I have endorsed to the owning company the installation of Easiliners to our Air Handling Unit which hope to materialize by next year."

Office and Retail Buildings

Industry: Office Buildings

"... Our calculations show that our savings are averaging 19% per month across our lighting, motors and air conditioning. May we take this opportunity of thanking you for your professional and efficient completion of this project as well as for the advice and help you have given us on other problems we were experiencing in our store."

" (Our) energy demand has been reduced substantially. They guaranteed a savings of 13% per year, and it has been averaging around 14.5%."

Industry: Furniture Sales

" I would like to thank you for the reduction in my electrical utility bill since your company installed the electricity saving devices you recommended to us.

" We are certainly reaping the benefits of a reduced electrical expense...a reduction of 20 - 25% in our expenses."

Rubber and Plastics Processing

Industry: Rubber Molding

" Your system has been operating flawlessly for nearly a year. While you originally projected a twenty-one month pay back period for the project, I'm very pleased to report that we have already experienced only an eight-month pay back because of higher than estimated energy savings. We're nearing the completion of our plant addition and looking forward to expanding your system."

Industry: Materials Process

"... We have experienced a 28% decrease in kilowatt hours per kg of product compared to operations prior to your installation. We take this opportunity to commend your technical staff in their appraisal and willingness to adapt productivity measurement standards to those that are relevant to our operations."

Industry: Manufacturing

" Unbelievable! When you bonded a savings of 11.68% per month, we felt that it was extremely aggressive. Well, after several months of tracking, the actual results are 27.6%. This will lower our payback and increase our R.O.I. by over 50%."

Supermarkets

Industry: Supermarket

" My records indicate that in the last seven months we have avoided about \$5,200.00 in maintenance costs on our refrigeration. Our compressors are 15 years old, plus. I would normally expect to replace one to two each year. Not only haven't we replaced any - we have had no repairs to make. Also, in spite of the record-breaking heat and drought that we have been experiencing, my food cases and walk-ins have no trouble keeping up. They're colder than ever."

" I just wanted to let you know how happy I am with the system I had you install in my store... I'm very pleased with the results. I appreciate your electrician repairing other existing problems in and around the store, and the fact that there was absolutely no interruption in the normal operation of my business during the installation of the system."

Theme and Amusement Parks

Industry: Theme Parks

" I have installed six of your Easiliner devices on my filter pump motors. The motors range from 15 hp to 40 hp. I am pleased to report that the average energy savings is about 18 percent."

Fresh Water and Waste Water Facilities

Industry: Water Utility

" Last night at the Board meeting I presented your analysis to the Board and was able to show how your equipment did in fact save the District the cost of the equipment in the first 36 months of operation and that we are now reaping the benefits."

College and Universities

Industry: Junior College

" Your unique approach to electrical energy conservation... and the results are excellent. For example, the work performed for our Colleges has caused our electric bills to immediately plummet by more than half!"

Industry: University

" Overall, your techniques implemented for energy conservation and products used to achieve that are based on sound and well-known theories and phenomena in the operation of a closed electrical distribution system."

High Technology Industry

Industry: Hospital

" Since the system was installed in January, we have continued to be pleased at the savings we are getting. Our average saving is still around \$4,000.00 or better each month. It continues to be a pleasure to have your courteous and professional service, especially your follow-up."

" In our third floor equipment room we averaged a 13% savings with the Easiliners. On the first floor equipment room with all the initial electrical boxes, etc. we averaged 17% savings."

" My research of this device also indicates that it will assist in prolonging the life of our electric motors and light bulbs. I am pleased that this type of device is available to help us in our cost containment efforts."

Nowakowski, Sonja

From: wwranch@3rivers.net
Sent: Friday, April 16, 2010 7:31 PM
To: Gessaman
Cc: kwiens@meic.org; Nowakowski, Sonja; neiltaylor@bresnan.net; jeffmonheim@bresnan.net
Subject: Re: Solar on Flat CA. Warehouse Roofs

fyi Kyla....

Sonja, please pass along to ETIC, we've got to decouple, and what's status of Net Metering where we can make some profit beyond turning back the meter?

THAT would encourage many to invest and capitalize that big cost to get a return and REDUCE demand on the grid.....

Iowa does it and we've got FAR more wind than they, but they've got WILLPOWER!

>
> Wow! 1.5 square miles of solar panels to be installed on 100 to 125
> large, flat warehouse roofs in California by Southern Cal Edison; So
> Cal is leasing the rooftops.
>
> Some other utilities following suit in a few other states, but not
> Montana. Ron
>
> Raising the roof on solar
> Posted 3d 20h ago
> By Julie Schmit, USA TODAY
> <http://www.usatoday.com/marketplace/realestate/front.htm?POE=HDNVRE>
>
> FONTANA, Calif. — The view from a warehouse roof here is consistent.
> In every direction, there are blocks and blocks of warehouse roofs
> baking in the Southern California sun.
>
> Rather than letting them sit bare, a California utility hopes to
> blanket roofs like these with solar panels to produce enough
> electricity to power 162,000 homes.
>
> Southern California Edison has installed solar on two warehouse roofs
> and is working on another in the Los Angeles region. The utility
> expects to do 100 to 125 more, totaling about 1.5 square miles of roof
> space in the next five years.
>
> The program, in which the utility owns the solar, is the largest of
> its kind in the nation, not surprising since California is the No. 1
> solar market. But utilities in other states, including North Carolina,
> New Mexico, Arizona and New Jersey, have smaller plans to rent roofs
> for their own mini-solar-power plants, too.
>
> The phenomenon, while in its infancy, presents another way for solar
> to spread in a bigger way than it has historically done when home and
> business owners put solar on roofs. The deep-pocketed utilities are
> planning bigger installations. Yet the systems don't consume green
> land or require new power-transmission links, as do some massive solar
> farms planned for deserts in California, Arizona and Nevada. As such,
> rooftop solar is likely to face fewer environmental hurdles than the
> farms and can get permits and be built much faster.
>
> "Everybody is looking to see how this works," says solar analyst
> Alfonso Velosa at research firm Gartner. "Southern California Edison

> is the experiment."
>
> Like other utilities in much of the country, Edison is under pressure
> to increase use of renewable energy, such as solar and wind.
>
> Gov. Arnold Schwarzenegger has set the goal for California's utilities
> to get 33% of their energy from renewable sources by 2020.
>
> Traditionally, utilities have looked to other companies to build solar
> power plants and sell the power to them. But with Edison's rooftop
> project, it'll own the solar and pay the warehouse owners to rent the
> space. The power will flow to Edison's grid and serve all kinds of
> customers, maybe even the building from which it came.
>
> The panels are like the photovoltaic panels that go on household roofs.
> But the roofs are massive, and the panels number in the tens of
> thousands.
>
> 33,700 solar panels on 1 roof
>
> The first roof Edison installed is here, in Fontana, just east of Los
> Angeles amid a major warehouse distribution hub. From the Fontana
> roof,
> 9 million square feet of warehouse roof is visible, Edison says.
>
> The Fontana roof holds 33,700 solar panels over almost 600,000 square
> feet. It kicks out 2 megawatts of electricity, enough to serve 1,300
> California homes. The electricity travels under a parking lot to an
> existing power line on the street.
>
> It took Edison two months to get the project permitted and two to get
> it built. Solar farms in California's desert can take years to get
> permits and to be built. Edison told state regulators that it
> anticipated paying building owners \$20,000 per megawatt per year for
> rent, or about \$20,000 per year for about 250,000 square feet of roof
> space.
>
> "I don't have to use green land, and it's a lot faster," says Mark
> Nelson, who heads the project for Edison.
>
> The Fontana warehouse is owned by ProLogis, a leading global warehouse
> owner with more than 475 million square feet of industrial space.
>
> The Denver-based company, which refused to comment on its rent for the
> Fontana warehouse, has been approached for years by cellphone
> companies wanting to put towers on roofs and other companies wanting
> to turn them into billboards. Solar is looking more promising, not
> only in Southern California but across ProLogis' markets, says
> ProLogis Vice President Drew Torbin. "We see a big demand," he adds.
>
> ProLogis started experimenting with rooftop solar in Europe in 2005.
> In addition to the Fontana warehouse rented to Edison, ProLogis has
> solar panels on 10 other warehouse rooftops in the U.S. On those, a
> third party owns the panels and sells the power to utilities. In the
> next four years, ProLogis expects to allow panels on up to 25 million
> square feet of its warehouse space.
>
> "It's a way we can create new value for an existing asset," Torbin
> says. "It's good for our business and it's good for the environment."
>
> In addition to the 250 megawatts of solar that Edison expects to own,
> it expects at least another 240 megawatts to be put on commercial
> rooftops by other companies that will sell the electricity to Edison.
>
> That'll mean more competition for roofs. Edison needs roofs that are
> less than 5 years old so they'll last while panels run their 20-year

> lifespans.
>
> Real estate firm AMB Property, which owns 22.4 million square feet of
> warehouse space in the Los Angeles region, has also rented Edison a
> warehouse roof. It expects rents to rise as Edison and others compete
> for space, especially given the recession-driven dearth of new
> construction. "Time is on the side of the building owners," says
> Steven Campbell, AMB senior vice president.
>
> The rooftop photovoltaic model also presents new management challenges
> for utilities. They've long managed power that flows from a big plant
> onto the grid. What they don't have is experience managing smaller
> flows from hundreds of diversely located sites.
>
> Earlier this year, Hawaiian Electric said it found that electricity
> supplies from small photovoltaic installations were prone to going
> off-line when there were disturbances on the power grid —a situation
> it's addressing with the solar industry. The utility said it also
> experienced outages that would not have happened or would have
> affected fewer customers without so much photovoltaic on the grid.
>
> Edison says it's confident it can manage the flow, and it spent months
> developing the technology to connect the roof panels to its
> distribution system.
>
> Some consumer advocates disapproved of Edison's plan, saying it would
> be too expensive for ratepayers. Solar photovoltaic power remains the
> most expensive renewable source, and Edison's plan would result in
> power that costs more than twice the average of other electricity
> sources, including coal and natural gas, says Dave Ashuckian of the
> Division of Ratepayer Advocates at the California Public Utilities
> Commission. What's more, other California-subsidized photovoltaic
> programs provide solar for less than what Edison's will cost,
> Ashuckian says.
>
> Photovoltaic vs. solar thermal
>
> While photovoltaic is the type of solar used on homes and businesses,
> another technology has traditionally been viewed as better for
> large-scale solar.
>
> That technology is solar thermal, in which thousands of mirrors over
> hundreds or thousands of acres of land concentrate the sun's heat on a
> liquid, which creates steam that runs a generator to make electricity.
> Photovoltaic technology generates electricity directly from sunlight
> via an electronic process.
>
> In the past, solar thermal has been considered lower-cost and better
> suited to big solar farms. But more larger-scale photovoltaic farms
> are taking shape in California that rival or best the size of some of
> the proposed solar thermal farms. Several factors have aligned to make
> larger-scale photovoltaic projects, whether on the ground or the roof,
> more attractive, including:
>
> •Panel pricing. Pricing for solar panels last year dropped 40% from
> 2008, researcher Navigant Consulting says. That makes solar more
> affordable and helps utilities persuade state regulators to OK the
> systems and pass the costs onto ratepayers, says Julia Hamm, executive
> director of the Solar Electric Power Association.
>
> •Incentives. In the fall of 2008, utilities became eligible to receive
> federal tax credits for up to 30% of a project's cost. The tax credit
> was also extended to 2016, giving utilities certainty that they could
> begin longer-term projects and still get tax credits for years.
>

> •Better technology. Panels no longer need as many, or any, punctures
> in roofs to be held in place. Instead, they use weights or design.
> That means there's less risk of leaks and less weight.
>
> "It's taken a decade to get the technology ready," says Julie Blunden,
> vice president of solar panel maker SunPower, which will supply Edison
> with panels. That, and lower panel costs, "starts to make it a
> reasonable proposition," Blunden says.

Nowakowski, Sonja

From: wwranch@3rivers.net
Sent: Friday, April 16, 2010 7:35 PM
To: Nowakowski, Sonja
Subject: [Fwd: Conservation Pays Big Time for Military]

Attachments: untitled-[2]



untitled-[2] (3
KB)

Please share with ETIC and others, it's great news and show what Gov't CAN DO!

Sincerely,

Lt. Colonel (retired, Army) Richard D. Liebert

ps - this should be receive BIpartisan support, and if the Army CAN do it, then all should pitch in.....

----- Original Message -----
Subject: Conservation Pays Big Time for Military
From: "Gessaman" <rkkgessaman@gmail.com>
Date: Thu, April 15, 2010 4:18 pm
To: "Richard Liebert" <wwranch@3rivers.net>

Military embraces green efforts:

Conservation projects will save Pentagon \$1.6 Billion By BRIAN WINTER • April 12, 2010
<http://www.dailyrecord.com/article/20100412/UPDATES01/100411020/>
Military-embraces-green-efforts

It's not just the troops' uniforms that are green: The U.S. military says its investments to conserve energy and water are beginning to pay off, with benefits for cost, national security and troop safety.

The Army has cut water usage at its permanent bases and other facilities around the world by 31 percent since 2004, according to Pentagon data. The amount of energy used per square foot at Army facilities declined 10.4 percent during that same period.

The data do not include the wars in Iraq and Afghanistan, where increased troop levels caused energy usage to rise, but the military currently has several green measures in place there. For example, the military has spent more than \$100 million on "spray foam" insulation for tents in Iraq and Afghanistan, cutting leakage of air conditioning by at least 50 percent, says Tad Davis, the Army's deputy assistant secretary for environmental issues. The energy savings usually recovers the investment within 90 days, he says.

The military's green efforts will result in at least \$1.6 billion in savings through the projects' lifetime, says Joe Sikes, director of facilities energy at the Defense Department.

President Obama says the armed forces are investing \$2.7 billion this year to improve energy efficiency. Improvements include: more energy-efficient lighting, low-flow toilets, heating and air-conditioning upgrades, and solar panels.

The military, which pioneered the gas-guzzling Humvee, was not always as concerned with

conservation, says Kevin Geiss, the Army's program director for energy security. However, the Pentagon stated in its strategy review, published this year, that consuming less foreign oil and contributing less to climate change are critical to long-term safety.

"The Army's mission is not to be green. Our mission is to defend the nation. In that context, we've found it's in our interest to develop sustainable projects," Geiss says.

Greater energy efficiency also helps keep troops in war zones safer, because it reduces the number of trucks on the road carrying fuel to outlying bases, Davis says. Truck convoys are susceptible to roadside bombs, the biggest killer of U.S. troops in Iraq and Afghanistan.

Other branches of the armed forces have also made progress, Sikes says. The Navy has set a goal of using 50 percent alternative fuels in vehicles, planes and ships within 10 years.

Scott Slesinger of the National Resources Defense Council says the environmental group "applauds" the conservation measures, especially since the Defense Department is the USA's biggest energy consumer. But he says the Pentagon still needs to address its "questionable environmental legacy," which includes toxic waste sites.