

Subject: Lowe's PV, PHEV battery\$, Offshore wind, Architectural policy, jobs
Date: Sunday, January 3, 2010 11:31 PM
From: Gil Masters <gmasters@stanford.edu>
To: energyfolks@lists.stanford.edu
Category: Stanford

Nice Quote for Today:

Daily Kos Dec 13 quote...

"Even though the US has lots of coal, the idea of 'clean coal' is right up there with a little bit pregnant."

ENERGY STUFF

1. Lowe's to Offer PV Modules to Do-it-Yourselfers
2. NREL "In My Backyard" Estimates Homeowner PV and Wind Energy Potential
3. New report: California Offshore Wind Energy Potential
4. CalCars Response to NRC's PHEV Battery Cost Estimates
5. Cantwell-Collins Bill: Cap and Trade Sources not Emissions?

STANFORD STUFF

1. Energy Seminar Weds 4:15: Prof. John Weyant, Global Architectural Policy
2. ME 317 Design for Manufacturability

JOBS JOBS JOBS

1. Sustainability Coordinator, Stanford
2. ACEEE Multiple Openings
3. **New Career Opportunities at Pacific Carbon Trust**
4. Program Officers: Climate Works Foundation
5. Regional Engineer-Building Performance Group, Bentley Systems, Carlsbad, CA or DC
6. Johnson Controls: Strategic Planning for Power Solutions
7. Serious Materials in Boulder: High-performance windows
8. Clean Edge Clean-Tech Jobs Map

ENERGY STUFF

1. Lowe's to Offer PV Modules to Do-it-Yourselfers

Lowe's is First to Offer Solar Panels to Do-it-Yourselfers. Lowe's has begun stocking solar panels at its California stores and plans to roll them out across the country in 2010. Each 175W rectangular panel from Akeena retails at \$893 each. They produce the same AC power that runs in homes and plug directly into a circuit breaker. The home would need a dedicated circuit breaker just as for a washer and dryer. Lowe's is offering software that allows the homeowner to monitor the performance of each panel through the Internet. And Lowe's will staff a kiosk near the panels that provides information on how to apply for utility rebates and tax credits. (Boston.com, December 10, 2009, http://www.boston.com/business/articles/2009/12/10/selling_solar_panels_for_the_handy/?rss_id=Boston+Globe+--+Business <http://www.boston.com/business/articles/2009/12/10/selling_solar_panels_for_the_handy/?rss_id=Boston+Globe+--+Business>)

2. NREL "In My Backyard" Estimates Homeowner PV and Wind Energy Potential

"In My Backyard" Tool Calculates Electricity Possible From Sun and Wind. The National Renewable Energy Laboratory (NREL) has created an online tool called "In my Backyard, " obviously based on the NIMBY acronym. The goal of the tool, based on Google maps, is to estimate how much electricity a homeowner can produce through solar and wind power in your own backyard. Once an address has been entered, either solar or wind potential can be analyzed. If solar is selected, the user can draw the planned solar panels directly on the map and then adjust the technical details (kW capacity, tilt angle, etc.). The system then runs a simulation and indicates how much electricity a solar system could generate at that location. (National Renewable Energy Laboratory, 2009, <http://mercator.nrel.gov/imby/> <<http://mercator.nrel.gov/imby/>>)

(Both of the above are from a friend's blurb called "Sustainable Practices" provided by David Schaller, 520-665-1767, daschaller@mac.com.)

3. New report: California Offshore Wind Energy Potential

The study gives context to the ample California offshore wind energy resource. We found that in the future, all of California's electricity needs could be met with offshore wind turbines. You can find a link to the paper on the following webpage:

<http://www.stanford.edu/~dvorak/papers/dvorak-archer-jacobson-2009-california-offshore-wind-energy-potential.html>

Mike Dvorak, Cristina Archer, and Mark Jacobson

Abstract:

This study combines multi-year mesoscale modeling results, validated using offshore buoys with highresolution bathymetry to create a wind energy resource assessment for offshore California (CA). The siting of an offshore wind farm is limited by water depth, with shallow water being generally preferable economically. Acceptable depths for offshore wind farms are divided into three categories: ≤ 20 m depth for monopile turbine foundations, ≤ 50 m depth for multi-leg turbine foundations, and ≤ 200 m depth for deep water floating turbines. The CA coast was further divided into three logical areas for analysis: Northern, Central, and Southern CA. A mesoscale meteorological model was then used at high horizontal resolution (5 and 1.67 km) to calculate annual 80 m wind speeds (turbine hub height) for each area, based on the average of the seasonal months January, April, July, and October of 2005/2006 and the entirety of 2007 (12 months). A 5MW offshore wind turbine was used to create a preliminary resource assessment for offshore CA. Each geographical region was then characterized by its coastal transmission access, water depth, wind turbine development potential, and average 80 m wind speed. Initial estimates show that 1.4–2.3 GW, 4.4–8.3 GW, and 52.8–64.9 GW of deliverable power could be harnessed from offshore CA using monopile, multi-leg, and floating turbine foundations, respectively. A single proposed wind farm near Cape Mendocino could deliver an average 800 MW of gross renewable power

and reduce

CA's current carbon emitting electricity generation 4% on an energy basis. Unlike most of California's land based wind farms which peak at night, the offshore winds near Cape Mendocino are consistently fast throughout the day and night during all four seasons.

4. CalCars Response to NRC's PHEV Battery Cost Estimates

A controversial U.S. National Research Council projects a 40 mile range plug-in hybrid electric vehicle (PHEV-40) battery pack would cost \$14,000 and raise the price of the vehicle by \$18,000.

<http://www.greencarcongress.com/2009/12/nrc-phev-20091215.html> and a summary at http://www.nap.edu/catalog.php?record_id=12826 .

Felix Kramer's wonderful CalCars blog has a rebuttal

CALCARS' RON GREMBAN EXPLAINS BATTERY PRICING: Plug-in vehicle battery prices are often quoted out of context. Even if accurate, such figures can be a factor of 2-3 off from actual battery pack costs to manufacturers, thereby mis-stating the economic viability of plug-in technology. It's most useful to focus cost of complete battery packs in high volumes, calculated per "useful-pack-kWh kilowatt-hour" (capacity actually used by the vehicle). For example, the cells in the Volt's pack have a nameplate total capacity of 16 kWh, but to ensure long battery life, the Volt actually uses only 8 kWh. Pack costs per nameplate capacity may run 3-4x the cost of individual cells, though over time this should decline to as little as 1.5x. Retail costs for small quantities of cells developed specifically for cars can't be used for calculations -- they will cost far more than the wholesale rates to carmakers.

The NRC report's figure of \$14,000 for a Volt-like 8 useful-kWh pack yields \$1,750 per useful-pack-kWh. GM's costs are closer to \$1,000/useful-kWh for the first-generation Volt, and we've seen industry figures closer to \$600/useful-pack-kWh for production packs for delivery in the next few years. The NRC report also says we can expect minimal cost declines from technology improvements and economies of scale because Li-ion batteries are already produced in great quantities for consumer products. But these are very different cells and packs. Those required for plug-in vehicles are just

beginning production, with significant efficiency improvements already appearing, along with better-than-expected battery life. Consumer cells are currently selling in quantity for \$150-250/kWh. Calculations with best assumptions 1.5x \$150 or conservative 4x \$250 translate into \$225-\$1,000/useful-pack-kWh -- a far cry from the paper's \$1,750/useful-pack-kWh estimates!

Felix Kramer fkramer@calcars.org <<mailto:fkramer%40calcars.org>>
Founder California Cars Initiative
<http://www.calcars.org> <<http://www.calcars.org/>>
<http://www.calcars.org/news-archive.html>

5. Cantwell-Collins Bill: Cap and Trade Sources not Emissions?

The Cantwell and Collins bill would establish a simple, transparent cap-and-dividend system that returns higher carbon prices directly to consumers and allows only minimal carbon trading. It would cap fossil fuel suppliers like Exxon-Mobil and Peabody Coal, rather than emitters like utilities and steel plants, because it's much easier to catch carbon when it enters our economy than when it leaves. It would auction all carbon permits and avoid giveaways, market distortions and offsets. And it would put a 'collar' on the price of carbon permits in order to limit market volatility. Revenue from Cantwell and Collins' auctions would be split two ways: 75 percent would be returned to the American people to compensate for higher energy prices, and 25 percent would be used for transition assistance and public investments, subject to annual appropriations. Grist has a description <<http://www.grist.org/article/why-cantwell-collins-is-best-and-how-it-just-might-win/>> and blog of comments.

STANFORD STUFF

1. Energy Seminar Weds 4:15: Prof. John Weyant, Global Architectural Policy

Energy Seminar Schedule, Weds 4:15-5:15, Bldg 420, Room 40

Public is invited to attend.

January 6, 4:15-5:15, Building 420, Room 40
John Weyant, Stanford University
Global Climate Architectural Policy

January 13, 4:15-5:15, Building 420, Room 40
Erfan Ibrahim, Electric Power Research Institute (EPRI)
Mini-Series on the Smart Grid #1: Demystifying and De-Jargoning the Smart

Grid: What's Hype, What's Real, and Where's the Value?

January 20, 4:15-5:15, Building 420, Room 40

John Curtis, Colorado School of Mines

U.S. Shale Gas: From Resources and Reserves to Carbon Isotope Anomalies

January 27, 4:15-5:15, Building 420, Room 40

Suede Kelly, Commissioner of Federal Energy Regulatory Commission (FERC)

Mini-Series on the Smart Grid #2: Extending the Grid: Transmission Siting Issues and How to Resolve Them

2. ME 317 Design for Manufacturability

Hello Energy Folks:

ME 317 has an interesting project that Simbol Mining is sponsoring this year in lithium extraction and we're looking for energy-savvy students to be on the team.

So, would you like to:

- Learn and practice critical analysis tools that address cradle-to-grave product development issues?
 - Analyze realistic industry-provided problems and deliver valuable solutions to partner companies?
 - Get exposure to a wide variety of industries (from pedestrian safety to medical devices to industrial pump manufacturing)?
 - Travel Domestic/International to support the project and gain valuable global team experience?
- Become more attractive to prospective product development companies?
 - Satisfy an ME Depth Sequence?

Then, ME317 is the course for you! ME317 Design for Manufacturability is a 2-quarter long product development course that teaches structured methods in product development, using real projects sponsored by industry partners.

Tentative Industry Sponsored Projects:

- Ebara: Developing new Service-as-a-Business opportunities in the industrial custom pump market
 - LightGuard: Revitalize the product portfolio and feature-set for Pedestrian Safety systems
 - Simbol Mining: Improving the geothermal brine lithium extraction process while satisfying environmental constraints
 - Sadra Medical: Cost reduction for a heart valve replacement procedure
 - Genentech: Next Generation growth hormone self-injection device
-
- Meets Monday/Wednesday, 4:15PM - 5:30PM, Thornton 102
 - Project Offering Meeting: 5:30PM, Weds. Jan 6th, Thornton 102
 - 4 Unit Course (8 Units total)
 - Teams of 2-4 students per project
 - No Final Exam--Project Presentation and Report submitted by the team at the end of the quarter
 - Need to take both ME317 A (Winter) AND B (Spring) for credit in both quarters
 - Course Website: me317.stanford.edu

If you are interested, please contact either Kurt Beiter or Edith Wilson.

Kurt A. Beiter, PhD

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Dept. of Mechanical Engineering, Design Group

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Edith Wilson

Consulting Professor

Stanford University

Department of Mechanical Engineering - Design Group

Manufacturing Modeling Laboratory

Thornton Engineering Center

Stanford, California 94305

T 707-953-0342

E edithwil@stanford.edu

JOBS JOBS JOBS

1. Sustainability Coordinator, Stanford

The Office of Sustainability seeks an experienced and committed Sustainability Coordinator <http://jobs.stanford.edu/find_a_job.html> (job ID 36738) to support development of sustainability programs in the operation, communication and education for the campus-wide Sustainable Stanford initiative (<http://sustainable.stanford.edu> <<http://sustainable.stanford.edu/>>). This is an exciting opportunity for a sustainability professional to be part of one of the top institutions consistently recognized for its overall leadership in campus sustainability. This position will work with the Associate Director of Sustainability and Energy Management (leading the Office of Sustainability) to advance all aspects of program management in campus operations, communications and academic integration. The key components of the Sustainable Stanford program include department/building level conservation programs, sustainability topic/area analysis and planning, communications and outreach, training and education, and program evaluation. The ideal candidate will come from an interdisciplinary educational background with proven work experience that is directly relevant to sustainability program design and accomplishment.

Requirements:

- * Bachelors degree in Environmental Science, Policy and/or Engineering, plus a minimum of five to seven years work experience in the fields of sustainability and education. Graduate degree preferred.
- * Familiarity with higher education organizational and operational structures, ability to objectively think through impact of initiatives in an institutional setting.
- * Knowledge and clear understanding of green building practices, sustainability opportunities and the technical expertise for addressing such concerns. LEED AP certification preferred.

Salary Range: \$68,030-\$108,850

2. ACEEE Multiple Openings

The American Council for an Energy Efficient Economy (ACEEE) is seeking to fill a number of positions, including:

Chief Operating Officer: Partner to the Executive Director to manage ACEEE's key infrastructure and administrative systems and practices while also contributing strategically to ACEEE's research and advocacy priorities.

Behavior and Human Dimensions Program Director/Coordinator (aceee.org/job/human-dimensions.pdf) to help ACEEE establish a new behavior and human

dimensions program and lead research and project management on the social, cultural, and behavioral aspects of energy use and energy efficiency practices.

Web Manager: to manage web content, including writing, editing, basic designing, and managing the content management system for ACEEE's site.

Appliance Standards Awareness Project is recruiting a Technical Advocacy Coordinator to coordinate and help lead ASAP's technical advocacy efforts.

More openings are about to be announced. See ACEEE's jobs web page aceee.org/job/job.htm.

3. New Career Opportunities at Pacific Carbon Trust

Pacific Carbon Trust is currently looking to hire new associates to join our strategic acquisitions team in the new year. Pacific Carbon Trust is a Crown Corporation, based in Victoria, BC that is making investments in low carbon projects / technologies to build a portfolio greenhouse gas emissions reductions (carbon credits) that will position us to play in regional, national, and international carbon trading (cap and trade) programs.

Our new associates will work directly with the CEO and Managing Director of the Strategic Acquisitions team to build Pacific Carbon Trust's investment perspective on carbon markets and low carbon technologies. Our goal is to directly invest PCT's capital in projects that catalyze the growth of BC's green economy, and position the province and its institutions for success in a low carbon economy.

This is an exciting opportunity to be a part of a well financed, government sponsored start-up carbon fund; and to help shape the direction of BC's economic growth in a carbon constrained world. Pacific Carbon Trust is a relatively new organization, so we are looking for strong problem solvers who are analytically oriented, able to engage with senior leaders in industry and government, and willing to play a number of roles across the organization as we grow. This is a great opportunity to be a part of something new, leave your mark on our culture, and build a new set of insights on how to drive changes in public and private sector institutions as they react and adapt to a carbon constrained world.

Candidates can submit their resume's directly to careers@pacificcarbontrust.ca <<mailto:careers@pacificcarbontrust.ca>> . Contact person is D. Scott MacDonald (d.scott.macdonald@gov.bc.ca <<mailto:d.scott.macdonald@gov.bc.ca>>).

4. Program Officers: Climate Works Foundation

The ClimateWorks Foundation is seeking three Program Officers to provide support to the sector-based Best Practice Networks for Power, Transportation, and Climate Policy. We thought this position might be of interest to you or people in your network.

As you may know, ClimateWorks is a worldwide network of philanthropic and non-governmental organizations whose goal is to prevent climate change. The organization's objective is to reduce greenhouse gas emissions by 30 billion metric tons per year by the year 2030, and ensure that global average temperatures do not increase by more than 2° C. For more information, visit www.climateworks.org <<http://www.climateworks.org/>> .

The Program Officers will support the ClimateWorks Network, helping to develop and refine sector-based strategies and research, facilitate exchange between internal and external groups to uncover and address new issues within these sectors, convene key decision-makers to increase the understanding of and commitment to implementing sound policies, and help build internal Best Practices Network capacities to deliver on our collective goals. The three positions (with their respective links) are:

Program Officer - Climate Policy. This position will focus on the design and implementation of domestic climate policy commitments, in conjunction with international climate commitments, and domestic and international policies to reduce emissions from deforestation and forest degradation (REDD).
http://www.ceaconsulting.com/what/position_details.aspx?client=CEA&jobId=61 <http://www.ceaconsulting.com/what/position_details.aspx?client=CEA&jobId=61>

Program Officer - Power Sector. This position will focus on design and implementation of policies that lead to energy suppliers maximizing opportunities for energy efficiency, maximizing the use of renewable energy, and limiting the use of unabated coal-derived energy.
http://www.ceaconsulting.com/what/position_details.aspx?client=CEA&jobId=62 <http://www.ceaconsulting.com/what/position_details.aspx?client=CEA&jobId=62>

Program Officer – Transportation. This position will focus on design and implementation of vehicle efficiency standards and low carbon fuel standards, and the design of transportation and urban systems that aid mobility while reducing car use.
http://www.ceaconsulting.com/what/position_details.aspx?client=CEA&jobId=63 <http://www.ceaconsulting.com/what/position_details.aspx?client=CEA&jobId=63>

California Environmental Associates is assisting ClimateWorks with this search; if you have questions regarding this position, please contact Jamaica Maxwell at jamaica@cearecruiting.com <<mailto:jamaica@cearecruiting.com>> . To apply directly, please follow the directions on the position description, or visit: www.cearecruiting.com

<<http://www.cearecruiting.com/>> .

5. Regional Engineer-Building Performance Group, Bentley Systems, Carlsbad, CA or DC

Bentley Systems currently seeks an energetic mechanical, electrical, HVAC or environmental engineer; architect, LEED AP or other sustainability professional with a minimum of two years experience to serve as a Regional Engineer. This technical sales job works in support of Bentley's Building Performance Group product line. The successful candidate will be based in either Washington, D.C. or Carlsbad, CA. The selected individual will participate in all phases of the sales cycle by working closely with the sales team to demonstrate how Bentley Building Performance solutions help users address issues and achieve business goals, conduct training and deliver coaching and services.

Please apply directly to <http://jobs-bentley.icims.com/jobs/1594/job> <<http://jobs-bentley.icims.com/jobs/1594/job>> .

Bentley is the global leader dedicated to providing architects, engineers, constructors, and owner-operators with comprehensive software solutions for sustaining infrastructure. Each solution is designed to ensure that information flows between processes and project team members to fully leverage interoperability and collaboration. These solutions provide users with the capabilities they need to increase cost efficiencies and maximize the return on their investments in innovation, empowering them to design, build, and operate better-performing infrastructure, which has been Bentley's mission for the past 25 years. Bentley sustains the infrastructure professions by helping to leverage information technology, learning, best practices, and global collaboration – and by promoting careers devoted to this crucial work.

Founded in 1984, Bentley has more than 2,700 colleagues and offices in more than 45 countries, had 2008 revenues surpassing \$500 million, and, since 1995, has invested more than \$1 billion in research, development, and acquisitions.

Pete Liotino, LEED AP
Sales Director, Building Performance Group
685 Stockton Drive
Exton, PA 19341
610-235-7237

Find out more about our newly released Energy Performance Series at www.bentley.com/eps <<http://www.bentley.com/eps>>

6. Johnson Controls: Strategic Planning for Power Solutions

Responsible for conducting, managing and communicating essential research, analysis, and presentation of technology, competitive, market and other strategic trends to support market development decision making and strategic planning at a global level for Power Solutions

1. Conduct research to develop analyses and insights about market, competitor, regulatory, environmental and technology drivers that represent significant growth opportunities and/or risks for PS globally
2. Interface with subject matter experts and thought leaders both internally and externally to PS to obtain insights and opinions about market trends
3. Work individually and within cross-functional teams to research, analyze, and develop recommendations around issues & questions of strategic importance to the PS senior leadership team
4. Prepare and deliver presentations, reports, newsletters and/or other communications to provide actionable information and insights in a timely and effective manner
5. Maintain and expand existing Global Sales & Marketing Research Library
6. Lead design and development of a global system to host and share market intelligence
7. Build alignment and coordination with PS regional market intelligence resources
8. Manage select market intelligence relationships with partners and vendors
9. Support in business case development around initiatives, mergers and acquisitions
10. Support in the development of the PS Strategic Plan
11. Drive continuous improvement in market intelligence through innovative resources, relationships, technology and techniques
12. Perform other related projects as assigned

Requirements

- Bachelors degree in Marketing, Business Administration or related discipline; strong science and/or engineering background and MBA preferred
- Minimum 3 to 5 years experience in analysis and strategy development
- High degree of comfort and skill in using analytical tools and systems
- Experience in management/business consulting and/or marketing roles
- Demonstrated communication and presentation skills
- Ability to work effectively in a highly energetic and multiple-engagement environment, dedication to teamwork, a strong work initiative, and the ability to adapt to new challenges and ideas

Marc D. Andraca

Executive Director, Strategic Planning

Power Solutions Business

Johnson Controls

marc.d.andraca@jci.com <<mailto:marc.d.andraca@jci.com>>

office: 414.524.3824

cell: 414.520.3269

7. Serious Materials in Boulder: High-performance windows

Serious Materials in Boulder draws on 28 years of industry leadership in manufacturing the world's highest performance insulating glass and windows based on: 1) suspended vacuum coatings, 2) optimally dimensioned/super-insulated frames, 3) low-e glass, 4) argon/krypton gas filling and 5) thermally broken spacers. Since incorporation in 1981, Serious-Boulder has produced residential and commercial glass with R-values ranging from 5.0 to 20.0, "tuned" solar transmission enabling morning passive-solar warmth and up to 75% afternoon heat rejection, 99.5% UV blockage, dramatic noise reduction, low-reflectivity/clear-glass design freedom, condensation elimination, enhanced plant growth, compliance with the Nation's toughest energy-related building codes, LEED assistance, and dramatically enhanced summer/winter occupant comfort. A full line of Serious Windows has emerged at the forefront of North American window technology, including the lowest U-Value (highest insulating R-Value), among all competitors listed by the NFRC (National Fenestration Rating Council).

Seeking computer-based assistance to the nationwide marketing of very high-performance architectural glass and windows. Working directly with founder Robert Clarke. Emphasis on quantifying comfort, radically impacting HVAC design, and integrating daylighting economics into directionally "tuned" lighting design.

Robert S. Clarke, Marketing Director
Serious Materials - Boulder
6268 Monarch Park Place
Longmont, CO 80503
Direct: 303-834-3517 (800-882-4466 #3517) Cell: 303-641-6476
RClarke@SeriousMaterials.com

8. Clean Edge Clean-Tech Jobs Map

Clean Edge jobs map <<http://jobs.cleantech.com/jobsmap/>> ...click Clean Edge's new clean-tech jobs map highlights the regional and sector diversity of the transition to a clean-tech economy. The map is the latest addition to Clean Edge Jobs (<http://click.icptrack.com/icp/relay.php?r=83724212&msgid=550083&act=1P5F&c=538410&admin=0&destination=http%3A%2F%2Fjobs.cleantech.com>) – a leading online jobs board for clean-tech job seekers, employers, and recruiters.

Clean-tech job seekers now have the ability to search a map for current openings

<[http://click.icptrack.com/icp/relay.php?
r=83724212&msgid=550083&act=1P5F&c=538410&admin=0&destination=http%3A%2F%2Fjobs.cleantech.com%2Fjobsmap%2F](http://click.icptrack.com/icp/relay.php?r=83724212&msgid=550083&act=1P5F&c=538410&admin=0&destination=http%3A%2F%2Fjobs.cleantech.com%2Fjobsmap%2F)> at leading
clean-tech companies like SolarCity, OPOWER, Calera, Conergy, Ecos, and Nexant.
Users can search the map manually or by using geographic terms in addition to
filtering by industry, position type, and position level. In addition, registered
employers and recruiters can search through and view thousands of clean-tech
candidates <[http://click.icptrack.com/icp/relay.php?
r=83724212&msgid=550083&act=1P5F&c=538410&admin=0&destination=http%3A%2F%2Fjobs.cleantech.com%2Femployers
%2Fjobseekersmap%2F](http://click.icptrack.com/icp/relay.php?r=83724212&msgid=550083&act=1P5F&c=538410&admin=0&destination=http%3A%2F%2Fjobs.cleantech.com%2Femployers%2Fjobseekersmap%2F)> from around the world.

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energyfolks mailing list
energyfolks@lists.stanford.edu
<https://mailman.stanford.edu/mailman/listinfo/energyfolks>