Solar Energy Industries Association

Solar Thermal Media Compilation

January 2010 – January 2011

Mentions

Mentions

The Boston Globe/The Green Blog- Solar thermal rebates coming soon (1/30/11)

http://www.boston.com/lifestyle/green/greenblog/2011/01/solar_thermal_rebates_coming_s.html

Dara Olmsted

A pilot program that will award rebates for the installation of residential solar thermal hot water panels in Massachusetts is due to begin in early February. Rebates will vary, but are estimated to be about $1,000 for an average two panel system plus additional rebates for in-state manufactured parts.

The Massachusetts Clean Energy Center (MassCEC) states that a two panel system for a 4-5 person family would cost about $8,000-$10,000. Residents can save more money on their system (the MassCEC estimates up to half the cost) with other state and federal incentives, such as the 30% federal renewable energy tax credit and Massachusetts' renewable energy tax credit and property tax exemption.

Las Vegas Review-Journal- Good fortune shines on solar water heating options (1/27/11)

http://www.lvrj.com/home_and_garden/good-fortune-shines-on-solar-water-heating-options-114707479.html?ref=479

STEVE RYPKA

Timing is everything, as the saying goes, and that certainly applies to act of purchasing a renewable energy system. There seems to be a constantly changing landscape of costs, rebates, incentives and supply that influence the final price of these systems. It would be great if we could gaze into a crystal ball to determine the precise moment of maximum benefit. The next best thing is to stay informed and that's where this column can help.

The trick is to act like any self-respecting business, taking advantage of market forces, tax credits and other incentives to maximize shareholder return on investment. In this case, you and your family are the shareholders. Companies plan for the long term and that's a strategy that certainly applies when it comes to investing in renewable energy.

The Healthy Moms Magazine- Families and Solar Energy : Why it Should be Important to You (1/21/11)

http://www.thehealthymoms.net/2011/01/families-and-solar-energy-why-it-should.html

Cascia

As the world's leading energy consumers, the United States gets their energy from several different sources. Fossil fuels such as coal, natural gas and petroleum produce the most energy consumed in the US. But these resources may not be around forever.

Recently I was approached to write an article on Solar energy. We hear about renewable energy sources on the news every day. Our government is divided on the issue. Should we continue to drill for oil in other areas of the country or offshore or should we invest more money into renewable energy sources such as solar? I am sure you have your own opinion on energy consumption.

I did not realize how important using renewable energy really is until I had a few questions answered by mom and energy expert, Monique Hanis. She is spokesperson for the Solar Energy Industries Association in Washington D.C.

Monique lives with her family in their solar-powered home in Arlington, VA. Our teenage children appreciate their hot solar showers since they do sports year-round. We like the savings on our utility bills.

Below are the questions I was honored to ask Monique.

-How can families benefit from solar energy?

"Families benefit from solar by saving money, often starting the first day their system is operational. Families that go solar find that they can cut their energy bills dramatically. In most cases, utilities give you credit for extra electricity you generate and feed back to the grid. Cost effective solar water heating systems save money, too. Once their system is installed, the cost of the fuel, sunlight, is free so they are protected from fluctuating fossil fuel costs. Going solar is a smart investment for families to save money. Many families are proud to invest in solar to protect the environment, since solar is a clean, abundant and reliable renewable energy source. Families that invest in solar usually become more conscious of their energy consumption and reduce their energy use as well as improve other efficiency measures."

-Are solar energy systems for homes affordable?

"Today, solar energy systems for homes are more affordable than ever as prices have come down significantly over the last 5 years and continue to drop as the industry has scaled up – similar to the cell phone and computer sectors. In fact, families across the country in all 50 states are making the smart investment to go solar. My family went solar in 2006 and we've received a better return on our investment than my 401(k) fund. More installer companies offer financing options as well. Typically the additional financing cost is more than offset by the savings on their utility bills."

"There are many ways to go solar, all of which can save customers money. Most commonly, when people think of solar, they think of photovoltaic (PV) solar panels on rooftops. These panels convert sunlight to create electricity that can often offset half or more of the electricity needs for a house, depending on the size of the system, location and typical home energy use. Homeowners can harness the power of the sun with a solar water heating system that serves as a cost-effective replacement to conventional electric, natural gas or heating oil water heaters. The growing pipeline of utility-scale solar power plants allows more Americans to benefit from clean, reliable solar energy generated by their local utility – even if they can't put it on their own property. You can contact your utility to indicate your support for their investment in solar power and to find out what incentives they offer local customers that want to go solar.

Besides cost, most people don't realize that the various solar technologies are available now, are proven and reliable. Most come with 20+ year guarantees and there are more qualified installers across the nation than ever. Last year, solar was the fastest growing energy source of new installed capacity in the United States. Solar energy equipment is off-the-shelf, ready-to-install and is manufactured by many well-recognized name brand companies."

-If so, where can families get an affordable solar energy system for their home?

"You can check out the Solar Energy Industries Association (SEIA) website to learn more about going solar. Like any home improvement project, it's a good idea to get at least three solid proposals from experienced contractors. Check references on past projects and ask about credentials, licenses and membership in trade and business groups. SEIA requires members to sign a code of ethics, pledging to deliver high-quality service and fair and honest rates."

-Why should we invest in a solar energy system?

"You can see for yourself how solar is benefiting Americans across the country by following the Solar Generation Road Trip (http://www.solargenerationusa.org/). Check out what customers are saying from our road trip to homes, businesses and communities across the country.

There are a number of reasons. The first, as I mentioned is saving money. Going solar is the best way to protect your family from constantly fluctuating fossil fuel prices. "

"Solar systems are also an investment in your children's future. Unlike energy from fossil fuels sources like coal and natural gas, solar doesn't require burning anything to produce energy, keeping harmful pollutants out of our air."

"In some regions of the country, solar provides a reliable backup system if power lines or other supplies are cut. For my family, the solar water heating system (backed up by our old natural gas water heater) keeps us supplied with a plentiful 160 gallons of hot water year-round.

Solar is also a domestically produced energy source that creates jobs here in the United States. The industry employs nearly 100,000 Americans in good-paying jobs, and that figure is expected to grow 26 percent in 2011. "

-Why do you believe that solar energy is important to moms and families?

"Like so many families, my family has to live on a budget. Installing solar made sense as it was a good investment for my family's budget. As a mom, I feel better knowing that we invested in a clean energy source that reduces pollution that is harmful to our children and our planet. An added benefit has been that my kids have become interested in solar energy and sustainability in general. In fact, my son is completing his environmental science advanced placement class in high school. It is a great way to learn about issues of sustainability and environmental stewardship, major issues facing this generation for years to come – and ones with growing career opportunities as well. My husband and feel like we set an example for our kids: instead of buying a modest new car in 2006, we instead invested in solar PV and solar water heating. "

Her answers certainly opened my eyes to the possibilities of solar energy. Would you invest in a solar energy system for your home? Do you believe that

the United States should invest more in renewable energy research? Please leave your answers in the comments.

Florida Today- 'Extreme' build gets a green touch (1/12/11)

http://www.floridatoday.com/article/20110112/NEWS01/101120336/1006/+Extreme++build+gets+a++green+touch

CANAVERAL GROVES

With "Extreme Makeover: Home Edition" comes an extreme demand for energy, and the Hurstons' new house will be able to meet it with solar panels and other green measures…

Those include double furring strips and foil on the first-floor block walls; a thicker wood-frame wall on the second floor with batted insulation; open-cell foam sprayed in the attic; nonvented soffits so the ducts stay in an enclosed (thus cooler) space; energy-rated tiles on the roof; a high-efficiency heat and air-conditioning unit; double-paned, low-emittance windows; ducts certified for low leakage by the Florida Solar Energy Center; LED lights; and an 80-gallon solar hot water heater.

The builders are advertising a net-zero home, but "we're actually shooting for a negative four," Luhn said. In other words, the house should produce more energy than it burns, and the extra will return to the grid for a credit.

Honolulu Star-Advertiser- Homebuilders skirt solar law (1/9/11)

http://www.staradvertiser.com/business/businessnews/20110109_Home_builders_skirt_solar_law.html

Alan Yonan Jr.

Representatives from the solar power industry and other clean-energy proponents say legislators need to close a loophole that has allowed more than 20 percent of homebuilders to circumvent a state law requiring all new single-family homes in the state to be equipped with solar water heaters.

The law went into effect on Jan. 1, 2010, making Hawaii the first state in the nation to approve a solar water heating mandate. Through the first 11 months of 2010, the state granted 390 variances, or exceptions, to the law, representing 22.5 percent of the 1,733 building permits issued for single-family homes during the same period.

The Energy Collective- Gabby Giffords: 'The Time for Solar is Now' (1/9/11)

http://theenergycollective.com/oshadavidson/49580/gabby-giffords-time-solar-now

Osha Davidson

Congresswoman Gabrielle "Gabby" Giffords likes to call solar power "the bridge to our future." Since taking office in January, 2006, Gabby has been both a chief engineer and a tireless construction worker on that solar bridge.

Solar is very serious. Between solar hot water, concentrating solar power, and photovoltaics, solar technologies have the potential to make a dramatic contribution to our energy challenges right now. But as they say in politics, perception is reality. That, in my view, is the number one challenge facing the solar industry in the United States. -- Gabrielle Giffords, address to the Solar Economic Forum, 10 September 2009

A former Fulbright scholar with a Master's degree in Regional Planning from Cornell University, Gabby brings a keen intellect and a solid understanding of our physical infrastructure to the debate on the nation's energy future. She has often said that her commitment to developing renewable energy sources — solar in particular — is based on three inseparable issues: Economic prosperity (in the form green-tech jobs), national security (energy independence), and environmental protection — especially fighting climate change.

Solar Thermal Magazine- Pairing the Solar Thermal Collector and the Organic Rankine Cycle Turbine (12/20/10)

http://www.solarthermalmagazine.com/2010/12/20/pairing-the-solar-thermal-collector-and-the-organic-rankine-cycle-turbine/

Kalahari Greentech, Inc. released a statement this week detailing the study conducted on the gas turbine Kalahari has found that was designed to operate in the temperature range of its solar collector. The turbine design focuses on waste heat around the range of 100 degrees Centigrade or 212 degrees Fahrenheit. The efficiency of the turbines improves with an increase in the temperature difference.

The ORC (Organic Rankine Cycle) turbine under study was designed to use waste heat from various thermal related processes. Since the solar collector operates in the same temperature range, the two systems are well-suited for working together.

The Tri-brid system competes successfully with photo-voltaic generation and is cost-effective. Kalahari's Solar Collector System also presents opportunities for other sources of waste heat to be integrated into the basic power generation system.

According to a U.S. Department of Energy news release dated March 25, 2009, entitled, "Solar Energy Grew at a Record Pace in 2008," solar energy deployment increased at a record pace in the United States and throughout the world in 2008. On March 19, 2009 the Solar Energy Industries Association (SEIA) released its "2008 U.S. Solar Industry Year in Review," which found that U.S.

solar energy capacity increased by 17% the past year, reaching the equivalent of 8,775 megawatts (MW). The SEIA report also notes that the United States installed 342 MW of solar photovoltaic (PV) electric power, 139 thermal megawatts (MWTh) of solar water heating, 762 MWTh of pool heating, and 21 MWTh of solar space heating and cooling in 2008. (Source: www.energy.gov).

SolarServer- NYSERDA announces New York State 25 million dollar solar thermal incentive program (12/14/10)

http://www.solarserver.com/solar-magazine/solar-news/current/kw50/nyserda-announces-new-york-state-25-million-dollar-solar-thermal-incentive-program.html

The New York State Research and Development Authority (NYSERDA) and the State of New York have just announced the PON 2149, the first solar thermal incentive program in New York State. The program is a 5 year, 25 million dollar solar thermal program with system incentives from 4,000 up to 25,000 dollars. The New York Solar Energy Industries Association (NYSEIA) and NYSERDA have been working extensively recently to discuss the incentives necessary to jump start the solar thermal market, NYSERDA emphasizes in a press release. The two organizations have also discussed several other important topics to increase solar thermal awareness in New York such as streamlining the paperwork process, alternative certifications to NABCEP and alternative methods for measuring the displacement of electrical usage.

Solar Home & Business Journal- New York's New Solar Thermal Incentive Draws Praise From Industry (12/14/10)

http://solarhbj.com/news/new-yorks-new-solar-thermal-incentive-draws-praise-from-trade-group-01211

The New York Solar Energy Industries Association has praised officials for creating the state's first solar thermal incentive program, a five-year, $25 million effort to encourage the installation of systems to heat water using solar energy.

Under the program, the state will provide incentives of up to $4,000 for residential systems and as much as $25,000 for non-residential applications to promote the replacement of electrically heated hot-water systems with solar thermal systems.

The New York State Public Service Commission allocated the funding to theNew York State Energy Research and Development Authority through the Renewable Portfolio Standard program. The solar industries association, a trade group, has advocated for the inclusion of solar thermal in the Renewable Portfolio Standard for the past two years.

Reve- Study Identifies Mexico as Huge Solar Resource (12/10/10)

http://www.evwind.es/noticias.php?id_not=8861

Mexico is seriously underdeveloped in terms of solar energy technologies like solar photovoltaic (PV), concentrated solar energy (CSP) and passive solar thermal (i.e., hot water heating).

The report, Solar Energy Sector, was prepared by Mexico's energy department, SENER, formally known as the Mexican Secretaría de Energía. Resch, in case you didn't know, is president and CEO of the Solar Energy Industries Association, or SEIA, a powerful solar interest trade group. So the report is bound to be good.

More than good, it's extensive, with a wealth of valuable charts and graphics – far too many to attempt to reproduce here. In essence, though, it notes that Mexico has been ranked at the top, globally, in terms of its solar photovoltaic (PV) and solar thermal resources.

This is not all that surprising to those of us who have visited Mazatlan in the summer. For the rest, consider these facts:

* Mexico's solar insolation values are about 5 kilowatt-hours per meter squared per day (kWh/mW/day), which compares favorably with southern California.

* Using just 0.06 percent of Mexico's landmass (or 25 square kilometers in Chihuahua or the Sonoran Desert) would be enough to provide the entire country with electricity (at 2005 rates of usage).

Not only is Mexico's average solar insolation 60 percent greater than in Germany, where solar is currently king, but – according to the International Energy Agency's (IEA's) EA Photovoltaic Power Systems Program 2008 Annual Report – Mexico is seriously underdeveloped in terms of solar energy technologies like solar photovoltaic (PV), concentrating solar power (CSP) and passive solar thermal (i.e., hot water heating).

For example, as of a 2007-08 report – Mexico Solar Installations by Type – there are no concentrating solar power plants in Mexico, and 80 percent of the solar PV installations are not grid-connected. Moreover, 78 percent of the solar thermal installations are for heating swimming pools rather than residential wash water.

Given that Baja is one of Mexico's best solar insolation resources, and that the Aubanel Wind Project being installed there is exporting some (perhaps most) of its energy output to the U.S., it makes sense to consider solar projects "across the border" that benefit Mexico (in terms of power sales) and the U.S., in terms of clean, renewable energy.

Solar Thermal Magazine- Accelerated Solar Deployment will Create Jobs, Stimulate the Economy and Combat Global Climate Change (12/9/10)

http://www.solarthermalmagazine.com/2010/12/09/accelerated-solar-deployment-will-create-jobs-stimulate-the-economy-and-combat-global-climate-change/

New Report: Solar Deployment Would Combat Climate Change

The global solar sector has a new report, titled "Seizing the Solar Solution: Combating Climate Change Through Accelerated Deployment," as part of the industry's efforts at the United Nations Climate Change Conference (COP16), which is currently taking place in Cancun.

This solar coalition, comprising more than 40 international solar and renewable energy organizations, is demonstrating the immediate potential of the accelerated deployment of solar energy in reducing harmful pollution, combating climate change, and creating jobs and economic impact. The group is urging political and business leaders to take action now to accelerate solar deployment.

The report shows that combined world targets for solar electric capacity will reach 700 GW and solar thermal capacity will reach 280 GW (GWth, thermal equivalent) by 2020. This level would reduce carbon pollution by 570 megatons, equivalent to shutting down more than 100 coal plants, according to the companies.

The report also identifies key policies the global solar industry supports in combating climate change. They include the following:

* Establishing a price on carbon to ensure a level playing field and factor externalities into the costs of fossil fuels;

* Setting internationally agreed midterm and long-term emission reduction targets for all developed countries;

* Ending the massive subsidies given to fossil-fuel industries;

* Ensuring that renewable energy targets set by developing countries qualify as Nationally Appropriate Mitigation Actions; and

* Developing an international financing framework to encourage technology transfer and investment in solar projects worldwide.

The full report is available here.

SOURCE: Solar Energy Industries Association

Ecopolitology- Study Says 980 GW of Solar Energy Installations by 2020: Too Good to be True? (12/6/10)

http://ecopolitology.org/2010/12/06/study-says-980-gw-of-solar-energy-installations-by-2020-too-good-to-be-true/

Mridul Chadha

A report released by the Solar Energy Industries Association (SEIA) predicts that the total solar energy installations would reach 980 GW by 2020.

The report released during the Cancun climate change summit states that the rapid development of solar thermal and solar photovoltaic technologies would cut about 570 million tons of carbon dioxide emissions over the next decade.

The SEIA is lobbying the world leaders and climate negotiators attending the Cancun climate summit to include solar energy incentives in the perspective climate change agreement as specific measures to reduce carbon emissions.

Too Good to be True?

While the projections of this report seem extremely promising but we must also evaluate these projections in realistic terms.

New PV additions in 2010 are estimated to reach 16 GW, the highest ever. While Germany continues to be the leader in solar PV generation, the centre of growth is likely to shift to Asia. China has now become the most attractive renewable energy market and has invested more dollars in clean energy technologies than any other country. India's National Solar Mission is also likely to result to result in massive capacity addition in solar PV as well as solar thermal.

The demand for solar PV is likely to decline in the European Union due to scaling back of subsidies in many countries including Italy, Spain and Germany.

The solar thermal industry is slightly more mature than the solar PV industry but its practical footprint is far less. The solar thermal technology for producing power and heat energy is quite well-established, however, there are only handful of large-scale solar thermal power plants. The growth of solar thermal has traditionally been slower than solar PV. It was only after 2004 that large-scale solar thermal power plants started attracting investments, mostly in Spain, California and Arizona.

According to the Renewables Global Status Report 2010, the global solar PV installed capacity had reached 21 GW by 2009-end while the solar thermal capacity reached 662 MW by March 2010. The solar hot water capacity installation by 2009 were 180 GWth.

The solar PV production has been increasing steadily, reaching 10.7 GW by 2009 and about 18 GW by end of 2010 (projection). But in the absence of significant demand this capacity addition could go waste. The United States has no comprehensive or central solar energy policy. And while India does have dedicated solar energy policies, their targets are based on several assumptions about technology advancements and financial parity. These goals may not be achieved if these assumptions fail to transform into realities.

That leaves only China as the major growth center. Its seems that the Chinese have recognized the strategic and economic importance 0f investing in clean energy technologies. The Communist leadership in China can easily impose its policies on the industrial and commercial sectors. China is also rapidly adding infrastructure to suppor the expansion of these new energy technologies, something no other country is doing at a comparable scale.

So, in conclusion, firstly, it seems highly unlikely that an international agreement on climate change mitigation would be reached in the near future. Secondly, addition of a specific technology in the climate deal is even more unrealistic prospect as it would be seen as favoritism for a particular industry. And lastly, with the lack of comprehensive policies to push capacity addition across the globe the spectacular rise of solar energy in the next decade, as projected in this report, is highly unlikely.

Foster's Daily Democrat- Solar energy jobs growing quickly (11/28/10)

http://www.fosters.com/apps/pbcs.dll/article?AID=/20101128/GJNEWS_01/711289917/-1/FOSNEWS

Victoria Guay

New Hampshire's unemployment rate continues to decrease, a situation that can, in part, be attributed to the sun.

In October, the Solar Foundation, a nonprofit solar energy research organization, released an analysis of the solar energy workforce in the U.S. entitled "National Solar Jobs Census 2010: A Review of the U.S. Solar Workforce."

According to the Solar Census, as of August, there were more than 16,700 solar employment sites and 93,000 solar energy-related jobs in the U.S.

And while other industries are cutting jobs or remaining stagnant, the report reveals that hiring for solar energy-related jobs is on the rise.

Over the next 12 months, more than 50 percent of solar firms expect to add jobs, while only two percent expect to cut workers. Meanwhile, the anticipated overall 12-month growth rate for the U.S. economy is only about two percent.

The Solar Census states that more than half the solar industry employers they questioned said they plan to increase their workforce in the next year, by an estimated 26 percent, which translates into about 24,000 net new jobs by August 2011.

Jessica O'Hare, programs associate for Environment New Hampshire, said the estimated solar job growth rate is significantly higher than an anticipated three percent net job loss in fossil fuel power generation and the economywide expectation of two percent growth over the same period.

"There is really a lot of job potential here in New Hampshire," she said Tuesday.

She noted that the organization Solar Works For America lists that 55 solar industry-based companies in New Hampshire have recently been hiring. According to the organization's Web site, www.solarworksforamerica.com, the solar industry currently employs about 100,000 Americans, and the group predict that by 2016, that number will increase to 500,000.

Solar Works for America is part of the Solar Energy Industries Association, a national trade group established in 1974.

State Rep. David Borden, D-New Castle, a member of the state's Energy Efficiency and Sustainable Energy Board recently said if all homes with south-facing roofs in the state — which represents 30 percent of all homes — were to install solar hot water or photovoltaic systems, it would put more than $2 billion dollars into the economy and create some 28,000 full-time jobs.

O'Hare said many solar industry employers in the state are mirroring the national trend by continuing to hire more workers.

Malik Haig, owner of Sustain Ability NH, a Laconia-based company that specializes in the sale and installation of photovoltaic solar energy systems, said sales are slightly up over last year.

"Sales have been going along," he said Tuesday. "I wouldn't say business is up hugely, but it's building."

He said he thinks the economy is starting, slowly, to rebound.

"People had put major projects on hold over the last two years because they were uncertain about their jobs, about the economy," Haig said. "But now, people are going forward with them."

Dan Clapp, manager of ReVision Energy in Dover and Exeter, said they recently hired six new employees in Maine and New Hampshire, bringing their number of employees up to more than 35.

Clapp added that they are looking to hire a several more employees for their newly opened Exeter office.

ReVision Energy opened in 2003 with only a couple of employees.

The company designs, sells, installs and provides customers assistance for solar energy and hot water systems in residential and commercial settings.

Clapp said since they opened, they have designed and installed some 2,600 systems and are now well established in New Hampshire and Maine.

"We positioned ourselves early," Clapp said.

He added that their recent growth is evidence of an increased demand for solar energy systems.

"That's due to a combination of a few things," Clapp said. "First there is federal tax credits and state incentives such as rebates. Second, the price of solar energy systems is coming down, and third, the economy is starting to recover."

There is currently a 30 percent federal tax credit on solar energy systems purchased through the end of the year.

Until September, there had been a state rebate program of up to $6,000 for homeowners, but that rebate has run out of funds. There is still a $2,900 rebate available through the state for solar hot water systems.

In terms of price, ReVision estimates that panels prices have dropped roughly 40 percent over the last two years.

Frederick Greenhalgh, online marketing manager and sales associate with ReVision, estimates that, by the end of this year, the company will have installed twice as many systems as it installed last year.

"So it's a significant increase," Greenhalgh said.

He said despite the economy, they hired six new people last year and expect to hire up to 10 in the coming year.

But not everyone who does at least some work in solar energy-related fields has seen an increase in demand.

Paul D'Allesandro, owner of BDT Mechanical Contracting and Engineering, LLC, based in Campton, said about 10 percent of his business is installing solar hot water systems.

"I think demand is a little down now," he said. "There was a big rush when fuel prices spiked and then when the tax credits and rebates were offered, but now some of those programs are going away."

He added that while many homeowners have taken advantage of tax credits and rebates, he thinks the up-front cost of solar hot water and solar panel systems is too high for the average, middle-class family.

"The families that need and could benefit from solar energy the most don't have the money to buy the systems," he said. "It's cost-prohibitive."

O'Hare notes that much of the job growth in the solar industry was made possible through the federal Treasury Grant Program, federal tax credits and state rebates.

The Treasury Grant Program provides a choice of cash grants or federal tax credits to solar industry companies. The grant program was created as part of the American Recovery and Reinvestment Act. Unless it is renewed, the grants will end at the start of 2011.

O'Hare said federal legislatures should extend the Treasury Grant Program as well as the tax credit program for homeowners.

O'Hare said state and federal law and policymakers should realize that encouraging growth in renewable energy industries such as solar power is not only good for the environment, but for the economy.

She added that when the new state and U.S. legislatures begin their first sessions, "We're going to be there to remind them that it's important to have such policies in place.

"These jobs are good for New Hampshire and if politicians don't support these initiatives, we're going to have to hold them accountable," O'Hare said.

Solar industry workers are defined as people who spend at least half of their work time supporting solar-related activities.

The Solar Census was conducted by the Solar Foundation and Green LMI Consulting with technical assistance from Cornell University. Researchers used U.S. Department of Labor Statistics and the Census Bureau, along with a survey of 2,181 solar industry employers. In all, the Census includes growth rates and job numbers for 31 separate occupations.

The overall margin of error for the solar employer survey is between plus or minus 1.06 percent and plus or minus 1.76 percent.

According to the Solar Census, solar companies can be found in every state, and solar companies of all kinds expect to experience employment growth over the coming year. California is home to about 30 percent of all solar companies in the U.S., but other states, such as Colorado, Pennsylvania, Texas, Michigan, and Arizona, report either large numbers of solar companies or large numbers of workers at solar-related firms.

On a regional basis, most solar jobs are in the West, followed by the Northeast, but jobs are growing quickly in all regions.

Energy Matters- Solar Energy Industry To Have A Voice At COP16 (11/26/10)

http://www.energymatters.com.au/index.php?main_page=news_article&article_id=1198

The global solar industry will come together at the United Nations Climate Change Conference (COP16) to be held in Cancun from November 29 to December 10.

The coalition of over 40 solar and renewable energy organisations will be represented by both the European Photovoltaic Industry Association (EPIA) and the US based Solar Energy Industries Association (SEIA). The group intends to remind UN decision-makers that solar energy generation can make a significant impact carbon emissions around the world along with creating jobs and economic opportunity.

"The sun offers us today a unique way of generating electricity on a global scale, making it possible to contribute to the reduction of greenhouse gas

emissions with the added benefit of being socially responsible, generating jobs and supporting sustainable development," said Adel El Gammal, Secretary General of the EPIA.

Mr El Gammal said he believes solar energy would bridge the gap between developing nations and the first world by removing the need for traditional, dirty sources of energy.

"This will allow developing nations to leapfrog past conventional energy dependency to a clean and unlimited source that can also easily reach under-served populations in rural areas," he said.

At the conference, the group will release the 2010 edition of its report, "Seizing the Solar Solution: Combating Climate Change through accelerated deployment," which shows that combined word targets for electric capacity will reach 700 gigawatts (GW) by 2020 and solar thermal capacity will hit 280 gigawatts (GWth, thermal equivalent) by 2020.

According to Rhone Resch, president and CEO of the SEIA, global uptake of solar energy systems has never been more important. "Deploying solar energy is a concrete measure for our nations' leaders to reduce harmful pollution now," he said. "With the right policies, our government leaders can accelerate the adoption of solar, reducing CO2 emissions equivalent to taking 110 million cars off the road."

Reuters- Affordable Solar Thermal: Investing in Someone Else's Roof (11/11/10)

http://www.reuters.com/article/idUS112114585720101111

If your business doesn't use enough hot water - for manufacturing, cleaning or other uses - the option is to become an investor in a local project. Either way, the starting point is finding the right partners: installers and developers who know their way around the often complex financing that makes solar thermal a win for investors, tenants, owners, developers and utilities. Based on a recent project in North Carolina, Solar thermal looks like a great bet with lots of upsides.

Advantages of Solar Thermal

Unlike solar panels (photovoltaics), commercial and residential solar thermal uses the sun to heat water instead of generating electricity. The sun heats a fluid, akin to anti-freeze, threaded through a system of tubes on large panels on a rooftop. The heated fluid is then piped through boilers filled with water and back up to the roof where it is re-heated. Heated fluid and water never touch, so that the water is not contaminated by the circulating fluid. It is a simple technology with many advantages.

Solar Nation- Solar Trade Association Report Projects Doubling of U.S. Solar since 2009 (10/25/10)

http://www.solar-nation.org/2010/10/25/solar-trade-association-report-projects-doubling-of-us-solar-since-2009/

The Solar Energy Industries Association (SEIA) and GTM Research have released a report that shows significant growth in the U.S. solar industry for the first half of 2010 and projects a total for the year that could, for the first time, reach 1 gigawatt installed - enough to power 200,000 homes.

The report, the inaugural U.S. Solar Market Insight report, shows that 341 megawatts of solar electric capacity were installed from January to June, with over one-third of the total being built in California, distantly followed by New Jersey, Arizona and Florida.

The report's forecast range for 2010 runs from a baseline figure of 944 megawatts of solar electric capacity, of which 866 megawatts are PV, to a high of 1.13 gigawatts. This represents an increase of between 114% and 156% of the 2009 figure of 441 megawatts.

The solar hot water market also grew, with 2010 showing the sixth consecutive year of growth (16%). Market leaders in this segment are Hawaii, followed by Puerto Rico and California.

At the top end of the report's longer-term outlook, market demand is projected to continue through 2015, and may even approach SEIA's goal of 10 gigawatts per year of solar electric installations by that year - enough for 2 million homes per year.

"First half solar installations grew beyond expectations as a result of declining prices, continued government support and improving financial conditions," said Shayle Kann, Managing Director, Solar at GTM Research. "In spite of continued macroeconomic woes, the U.S. solar industry is on track to have a record year in 2010 for both installations and manufacturing."

Solar Jobs Report

In parallel, SEIA has drawn attention to the census report of the Solar Foundation, showing that the number of solar jobs in the U.S. has risen by 45,000 since 2009.

In the Solar Foundation's "National Solar Jobs Census 2010: A Review of the U.S. Solar Workforce", a first-ever review of national solar employment, more than 16,700 solar employment sites and 93,000 solar jobs in all 50 states were identified. Additionally, the report found that solar employers expect to increase the number of solar workers by 26 percent, representing nearly 24,000 net new jobs by August 2011.

And now, the report on Congress…

What neither of these reports tries to project is the effect of unfinished Congressional business on renewable installations and jobs. The U.S. Senate has let more than a year dribble past without building on the emissions caps/clean energy legislation passed by the House in June 2009. And in two

months' time two programs that have been responsible for much of the good news of the last year will expire, absent positive action by a lame duck Congress to extend and strengthen them.

One of these programs is the Department of Energy Loan Guarantee Program. It was created with this Administration's stimulus act money to provide underwriting for private investment in clean energy technologies. Of the original $6 billion allocated, $2 billion was excised last year for the 'cash for clunkers' program, and another $1.5 billion this year for the FAA modernization act. As a result, the program is over-subscribed, and while it's currently responsible for $31 billion of private investment, there's between $8 billion and $24 billion of projects 'in the pipeline' that won't get funded if the program isn't refilled and extended.

The other at-risk program is the Treasury Grant Program, also funded with stimulus act money. This was initiated because businesses found themselves, in early 2009, unable to enjoy the benefits of the hard-won 30% federal investment tax credit for renewable energy expenditures. When the recession hit, few businesses had the 'tax appetite' that would enable them to benefit from a credit, so the Obama Administration made available a cash grant of like value. Between July 2009 and August 2010 this was responsible for some 200 megawatts of new solar, representing some sixteen thousand jobs. This, too, will expire at year's end without an extension.

Continuing with the upbeat note of their two reports, SEIA projects some 67,000 new solar jobs by 2015, and 5100 megawatts of new solar electric installations by 2016 if the Treasury Grant Program gets extended beyond this year. But given the record of the 111th Congress, no-one is betting the Christmas turkey on this happening.

And if it doesn't, the industry expects that the drop in available financing in 2011 will be in the order of 56%. That's more than half the solar business that could continue into the new year that simply won't happen.

It sounds less like Christmas, more like a cross between Halloween and April Fools' Day.

commission's news release said.

Eco Factory- Solar Power, Game-Changing Key to the Energy Future (10/21/10)

http://www.ecofactory.com/news/solar-power-game-changing-key-energy-future-102110

Suzanne Maxx

Solar Power International 2010 realized its name and reached critical mass last week, due to the booming global solar industry and the efforts of presenting organizations Solar Electric Power Association and the Solar Energy Industries Association.

Stirling solar dishes at Sandia National Lab set a new solar-to-grid conversion efficiency of 31.25 percent in 2008. (Photo by Randy Montoya courtesy Stirling Energy Systems)

The annual solar conference and expo took place for the first time in Los Angeles with over 1,000 exhibitors and about 30,000 attendees at the Convention Center, including strong contingents from China; India, South Korea, Japan, Spain and Germany.

In a spectrum of languages, the buzz at the show was that solar is poised to become the fastest growing energy market in the world.

Motivational speeches, a panel of solar CEOs, the rainbow flash and glitter of solar technologies on the exhibition floor, the Hollywood-style Solar Block Party, and SolarWorld's fashion show all kept the crowds excited about solar energy.

A few game changers were launched here. The first-ever utility-scale solar project on federal land in Nevada was approved by Interior Secretary Ken Salazar, and the first National Solar Jobs Census from the Solar Foundation was launched with a new website at: www.SolarWorksforAmerica.com.

The conference opened with game-changing "state of the industry" speeches from Julia Hamm, president and CEO of the Solar Electric Power Association and Rhone Resch, president and CEO of the Solar Energy Industries Association.

Resch rallied the audience, declaring, "Solar energy is now the fastest growing energy source in the United States, during a recession with 10 percent unemployment. Solar is rocking!"

Resch foresees a bright solar future. "A vision where we increase the amount of solar we install in the U.S. by more than 20 times over last year's record levels. A vision where all solar technologies come together and we install 10 gigawatts - that's 10 billion watts - of clean solar power each and every year."

That's enough solar energy to power two million homes or shut down 10 polluting coal plants every year by 2015.

His vision includes a scenario, "Where solar becomes America's number one source of new installed energy each year - bigger than coal, bigger than natural gas, bigger than nuclear. We create 220,000 new solar jobs for our families and neighbors while supporting half a million more jobs in other industries."

"We add over $30 billion in direct economic growth and hundreds of billions of dollars in other sectors of the economy each year," Resch enthused. "This vision drives economic recovery, creates energy security, and of course, substantially cuts the pollution causing climate change."

All CEO's concurred that to actualize Resch's vision, costs have to be driven down. To motivate the industry, some CEOs said, utilities need a "decoupling" of sales and profitability now tied to earnings incentives to sell less energy.

Many CEOs said the industry will thrive when a National Renewable Energy Portfolio Standard is in place, combined with an extension of the federal tax credit program, and federal loan guarantees for the solar industry.

Resch explained that the petroleum industry has spent more than $500 million in lobbying and campaign contributions to defeat clean energy and climate legislation in Congress. Using their resources, they were able to delay and ultimately kill any hope of a national Renewable Portfolio Standard or cap and trade program, or energy bill.

"After 150 years of subsidies it's time to level the playing field - it's time to cut their subsidies and shift support to solar and other renewable energy technologies," Resch declared. "Every year, the toxic fossil fuel industries receive $550 billion in subsidies worldwide, a trillion dollars every 22 months."

"From tax credits to price supports, to access to millions of acres of lands given away to drilling," he said, "the fossil fuel industry is grotesquely over subsidized at the expense of the renewable energy industries."

There is some hope on the horizon, however. It helps when President Barack Obama decides to install solar panels on the White House roof just before the opening of the Solar Expo.

"It does take a team," said Hamm, who emphasized that the most successful companies will be those that collaborate and improvise.

Hamm said U.S. solar power capacity is predicted to at least double next year. In the 10 utilities with the most solar in their service territories, solar power capacity is up by 66 percent, she said.

Collaborative projects push the envelope, Hamm said, such as the one between Public Service Electric and Gas in New Jersey and Petra Solar that will result in smart-grid enabled 200 watt panels with micro inverters on 200,000 utility poles, totaling 40 megawatts of generating capacity. Petra provides the equipment, which is owned and installed by the utility.

More positive news for the solar industry came in the form of the U.S. Solar Market Insight, a report released at the conference opening by Solar Energy Industries Association working with Green Tech Media Research.

The U.S. solar electric market grew by over 100 percent this year, exceeding one gigawatt of generating capacity, the report shows. In the solar photovoltaic industry, all segments are having record years.

Back in June, utility-scale installations already surpassed 2009 totals, while residential and commercial installations continue to grow at a 40-50 percent rate.

America is also quickly becoming the largest concentrating solar power market in the world. Roughly 80 megawatts are expected to come online in 2010 - 10 times more than last year. In addition, the U.S. has over 23 gigawatts under development - enough to power 4.6 million homes.

Solar water heating jumped from 2.6 million square feet installed in 2009 to more than three million square feet in 2010 - a 16 percent growth rate. In the first half of 2010, U.S. manufacturers produced more than a third of the world's polysilicon supply, over 500 megawatts of cells and over 500 megawatts of modules.

Three of the five energy businesses on the Fortune 100 list of Fastest Growing Companies are solar manufacturers: First Solar, an American company that is the world's largest manufacturer of thin film solar modules; Trina Solar, a Chinese manufacturer of photovoltaic modules; and SunPower, an American company that designs and manufactures high-efficiency crystalline silicon photovoltaic cells, roof tiles and solar panels.

China's Solar Development Dominates

Resch was in Phoenix for the opening of Suntech's new manufacturing facility. "Who would have thought," he marveled, "a Chinese company opening up a manufacturing facility here in America."

The Chinese allocation of US$34 billion towards solar power development was at the core of the discussions during the CEO panel, as it is an international game changer, especially because funds are available to companies from the United States.

The U.S. solar industry is reliant on government policies and subsidies, and China's policies and subsidies are making it easier for the United States to begin to get close to grid parity - the point at which generating electricity with solar power is equal in cost, or cheaper than grid power.

So far this year, the state-controlled China Development Bank has extended $24 billion in loans to solar companies, including Yingli, Trina Solar, Suntech, and Solarfun Power Holdings Co., according to Bloomberg's New Energy Finance research division.

China spent $34.6 billion on clean-fuel projects in 2009, almost double the $18.6 billion investment by the United States. China installed 160 megawatts of solar capacity last year, a fourfold increase from a year earlier, and may almost double it again this year to 311 megawatts, according to New Energy Finance.

China's manufacturers grabbed 43 percent of the global market in photovoltaic panels over the last six years, pricing products as much as 20 percent cheaper than European offerings. Chinese firms shipped 3,300 megawatts of panels worth $6.6 billion last year, enough to power about 2.6 million U.S. homes, says New Energy Finance.

At Rutgers University in New Jersey, 7,600 panels convert sunlight into electricity, saving some $200,000 in energy costs this year in the biggest solar-power experiment at a U.S. college. Yingli Green Energy Holding Company, China's second-largest solar-panel maker, supplied the $10 million project.

Yingli is one of several Chinese manufacturers that have slashed costs to reduce global prices for solar modules by about 50 percent in two years. The drive made the modules more affordable for buyers from Rutgers to Wal-Mart Stores, the biggest U.S. retailer.

Solar power may reach grid parity in certain markets as early as 2013, according to a June 29 report by Pike Research, a Boulder, Colorado clean-energy consulting firm.

The European Photovoltaic Industry Association, a trade group, forecasts grid parity by 2010 in some southern parts of Italy, by 2012 in several regions of Spain, and in Germany by 2015.

Where Hamm and Resch shared common viewpoints in the opening keynotes, feeding off one another, the closing keynotes worked off of the alchemy of opposition between the famous politically polarized married couple Mary Matalin, a Republican, and James Carville, a Democrat.

The polarity of their politics, like a magnet, attracted attention to the importance of solar power. Carville and Matalin each stood behind solar energy in various ways and this transcended their bi-partisan difference.

But the political forecasting about parties in general which both indulged in here, was not popular among the solar industry attendees. However, most agreed government policy is a critical game changer for the industry.

Fun With the Sun

When the policy discussions, workshops, meets and technology were too much to absorb, there were great parties that educated as well as entertained.

SolarWorld held two transformative events. SolarWorld group headquarters are located in Bonn, Germany and production sites for the company's crystalline silicon solar products are in Germany, the United States and South Korea.

"Fantastic!" exclaimed Catia, from San Paulo, Brazil, during the packed runway fashion show called "Solar is the New Black" designed by Project Runway season seven award-winner Seth Aaron.

"What could be cooler?" said Aaron. "Solar's time is here, and in a way it's like a lifestyle choice for a whole society ... much like fashion is for the individual. I hope my fashion interpretation of the technology can serve as something of a two-industry celebration."

Models posed atop all-black SolarWorld Sunmodule® solar panels to show off Aaron's designs. The clothes are the designer's visual interpretation of solar technology, inspired by a tour of SolarWorld's factory, not actual high-tech wearables.

Still, said Becky Campbell of SEPA, "Great way to get technology out there."

SolarWorld was the main sponsor of the SolarWorld No. 1 solar car developed by the FH Bochum SolarCar Team, and in Los Angeles, the car was featured at an exhibit of solar cars at the Petersen Automotive Museum.

With electric vehicles, solar chargers and parking the hot topics of the moment, there was a lot of eye candy on the museum exhibition floor. And for historical perspective, the first electric vehicle from the 1800s was on display.

In the heart of downtown Los Angeles, Solar Power International held two events - a lovely opening cocktail party, and a huge outdoor Block Party at L.A. Live, replete with a Hollywood-style red carpet, making each guest feel special with the illusion of celebrity, media flashing cameras as they entered and celebrity impersonators on hand for photos.

The variety of global food from Wolfgang Puck and Katsuya had something for everybody, and the DJ was so good, I had to go grab my roller-skates from the car to take advantage of the wide space with no one dancing until they caught the energy and enthusiasm of solar power!

GreenPacks- American Solar Industry Shows Incredible Growth (10/15/10)

http://www.greenpacks.org/2010/10/15/american-solar-industry-shows-incredible-growth/

The American solar industry has recorded substantial growth, generating more job opportunities in the sector. This is noticeable in the backdrop of the dismal performance of the US economy. The Solar Energy Industries Association (SEIA) along with GTM Research released a report indicates that the solar installations in 2010 are more as compared to its previous year.

The U.S. Solar Market Insight report compiled data for the first half of 2010 which shows significant growth in the industry. In total, 341 megawatts were installed in the first half of the year. On the basis of solar energy capacity installation, California comes first in the category with 12 megawatts, followed by New Jersey, Arizona and Florida.

Estimates indicate the chances of the industry to surpass the 1 GW mark for annual installations in 2010 while accounting for both solar electric and solar thermal installations. The report rightly forecast the installation of projects with 944 megawatts of solar electric capacity which may lead to a growth of 114 percent in 2010. It also predicts installation of projects as much as 1.13 gigawatts to be installed by the end of the year leading to a growth rate of 156 percent.

All of those installations have led to job growth in the market as well. Rhone Resch, president of SEIA announced yesterday that the industry's goal is to install ten times that number annually in 5 years and he also said installing 10GW annually by 2015 would create as many as 220,000 jobs.

The report released by the National Solar Jobs Census 2010 (PDF), identified more than 16,700 solar employment sites and 93,000 solar jobs in all 50 states of America. The number of solar workers is likely to witness increment by 26 percent, which implies nearly 24,000 net new jobs by August 2011.

The solar industry is a true area of growth, creating jobs across the country while helping in the transition of the nation to renewable sources of energy.

Earth2Tech- 5 Hot Topics To Watch For At Solar Power International (10/11/10)

http://gigaom.com/cleantech/5-hot-topics-to-watch-for-at-solar-power-international/

Ucilia Wang

The solar industry will take over the Los Angeles Convention Center this week to showcase the latest technologies and discuss regulatory and project development and financing trends. Organizers of Solar Power International (SPI) expect to see roughly 25,000 attendees over three days. Here are five hot topics that you will no doubt hear about throughout the show:

1). Can't Escape Politics: The honeymoon period with the President is over and there will be no domestic bliss without strong evidence that the country is better off now than two years ago. A lot of public money has been spent to boost solar energy generation and manufacturing. We will hear from Interior Secretary Ken Salazar on federal efforts to boost the construction of large-scale solar energy projects, and he'll likely cite the three California projects he signed off on only last week. Also taking the stage will be Republican political strategist Mary Matalin and her husband and counterpart, Democrat James Carville, who will give their take on the upcoming election and its impact on the solar industry.

2). U.S. Market Now and Later: The business of selling solar electric equipment and developing photovoltaic projects has been a fabulous one so far this year . . . in Europe. But what about the U.S.? The largest utility project, at 25 megawatts, was completed by SunPower in Florida a year ago., and state incentives continue to play a big role in promoting solar energy generation for homes and businesses. But solar manufacturers and installers know the financial aid won't last forever and they need to think about adjusting their business practices for the days when lucrative rebates dry up. The Solar Energy Industries Association and GTM Research will provide a review of the U.S. market during SPI and discuss not only the markets for solar-panel systems but also solar water heaters and concentrating photovoltaic technologies.

3). Emergence of CPV: Concentrating solar photovoltaic technology, which uses mirrors to concentrate sunlight onto solar cells in order to reduce solar cell material costs, has garnered no small amount of attention from venture capitalists. But whether it can capture a substantial market has always been a subject of intense debate.

We saw the completion of the largest CPV plant (1 megawatt by SolFocus) in the U.S. this year. Amonix is due to build two projects of 14 megawatts total in Arizona. These deals are small in size but important for demonstrating the CPV's benefits and disadvantages. And, like Amonix, Solaria, too, got a new CEO and lined up more private equity. Utilities and commercial customers now have a wider selection of technologies and vendors. You can learn about these competing technologies in one setting at the SPI – there will be several sessions that compare CPV with photovoltaic and concentrating solar thermal technologies.

4). Going Beyond Solar Electric: A lot of the industry's efforts have gone into developing more efficient solar cells and selling them inside panels for electricity generation. But the use of solar thermal energy for water heating and space heating/cooling has actually made up the majority of the solar market in the U.S. With a lot of public incentives focused on energy efficiency, including the new rebate program from California for solar water heaters, more companies are rolling out new designs for solar thermal energy generation.

Some systems can generate electricity and heat water, such as the ones by PVT Solar and Cogenra. There will be a panel discussion at SPI on Thursday that focuses on the solar thermal market, as well as a second session, also on Thursday, on energy efficiency technologies that will feature speakers from Meritage Homes and General Motors.

5). Energy Boosters and Sleeker System Designs: Many developers of microinverters and other power electronics – components that track the power output of solar panels and optimize their production – have been making a lot of noise lately. SolarEdge Technologies just raised $25 million. Other players, such as Azuray Technologies, eIQ Energy and Solar Bridge all announced new products and customers over the past week. You can check out some of these power electronics on the show floor and see how they can integrate into solar panels, an approach that the manufacturers say can streamline wiring and other installation costs.

Fox News- Days of 'Malaise' and Jimmy Carter's Solar Panels (10/8/10)

http://www.foxnews.com/opinion/2010/10/08/craig-shirley-jimmy-carter-white-house-energy-crisis-solar-panels-ronald-reagan/

"A new solar hot water heating system being installed at the White House costs thousands of dollars more that the original estimate and it probably won't pay for itself in energy savings, officials said."

So went the lede of a story in the Associated Press and reprinted in the Washington Post on April 6th, 1979 about President Jimmy Carter's newest public relations stunt in the midst of the energy crisis. This was on the heels of lowering the thermostats in the White House, and later in the year, turning off the White House Christmas lights to show his concern over energy usage while

also claiming he did so to show support for the hostages being held in Tehran by the Ayatollah Khomeini. In Carterland, this was seen as a public relations "twofer."

Voltaire once said, "History is a pack of lies, agreed upon." Truer words were never spoken, especially over the current handwringing by environmentalists and liberal revisionists as to why Ronald Reagan had the useless solar panels and endless pipes removed when he became president.

Business Wire/Forbes/ Daily Finance/ eSolar Energy News: Press Release- Largest U.S. Solar Energy Event Invites the Public to Learn More About How to Go Solar: Free...(10/4/10)

http://www.forbes.com/feeds/businesswire/2010/10/04/businesswire146425464.html

Solar Power International 2010, the largest business-to-business solar conference and expo in North America, opens its doors to the public on Oct. 13, from 5:30 -- 8:30 p.m. During this free event at the Los Angeles Convention Center, those attending Public Night can browse solar products from more than 1,100 exhibitors, learn about the latest solar energy technology for their home or business, and attend free educational workshops about everything from home installation to climate change. Attendees can also find out about solar jobs at the Job Centers located in both South and West Halls of the Los Angeles Convention Center.

In previous years, SPI's Public Night has been a popular event, drawing more than 5,000 people interested in learning about the latest solar technology. This is a unique opportunity for southern Californians to learn about the many different ways of capturing and using solar energy, all under one roof. The expo floor is segmented by product category, making the show easy to navigate for individuals or business owners looking to go solar.

"Our annual Public Night is an important part of our show program, since it's one of our biggest opportunities to educate the public about the benefits of solar energy," said Brian Tully, executive director of Solar Energy Trade Shows. "We hope people leave Public Night with ideas about how to get involved, whether it's using solar energy for their home or business, or getting a job in the growing solar industry."

Session topics for SPI's free educational workshops include:

Solar Water Heating 101 for Homeowners: Solar water heating is a well-established option to reduce a home's energy bills and carbon footprint. There are great incentives for solar water heating equipment and a growing number of vendors ready to install home systems. This session presents how solar water heaters work, what options are available, and how to proceed with a residential solar water heating energy project. Presented by: Los Angeles

Renewable Energy Society California Solar Initiative Public Forum: California has set a goal to create 3,000 megawatts of new, solar-produced electricity by 2017. The CPUC's California Solar Initiative program provides incentives to existing residential and business customers when installing solar systems. This forum provides an overview of the progress of the program, upcoming changes and a panel discussion. Presented by: California Solar Initiative Solar Electricity 101 for Homeowners: Solar PV is quickly becoming a mainstream option for homeowners. Yet the technology options are many and it is challenging to assess the economic proposition presented by solar installers. Which technology is right for which home? What should homeowners expect once the system is installed? This session presents what the technology is, how it works, what options are available, and how to proceed with a residential-retrofit energy project. Presented by: California Solar Energy Industries Association Climate Presentation, Problems and Solutions Based on "An Inconvenient Truth" and "Our Choice" by Al Gore: The Climate Project's (TCP) mission is to educate the public about the harmful effects of climate change and to work toward solutions at a grassroots level worldwide. Each TCP presenter delivers a version of Gore's slideshow based on his best-selling books and the Academy Award-winning documentary film "An Inconvenient Truth." As part of this select group of 1,200 individuals in the U.S. chosen to become TCP presenters, Jeff completed the TCP training program in 2007. Less time is spent on defending the climate science and more solutions are now presented in the slideshow, since climate change is now more widely understood and accepted. Presented by: Jeff Wolfe, PV division chair of SEIA, The Climate Project- trained presenter

Solar Power International 2010 is the largest and most comprehensive business-to-business solar industry event in North America and the premiere destination for global and local solar companies conducting business in the U.S. On Thursday, Sept. 23, Trade Show Executive named Solar Power International the fastest growing show that exhibitors are flocking to, as well as Show to Watch in the coming years. For the 27,000+ attendees from 90 countries expected to attend, the event features 200 industry speakers, more than 35 break-out sessions, and dozens of half- and full-day educational training workshops. The conference is a must-attend event for solar industry professionals, utility executives, investors, engineers and policymakers.

The event is presented by the Solar Electric Power Association and the Solar Energy Industries Association, nonprofit groups based in Washington, D.C.

Additional information about Public Night, registration, sponsorship, exhibitors and programs can be found at www.solarpowerinternational.com.

Journal Sentinel- Manufacturing opportunities may exist in hot water (9/30/10)

http://www.jsonline.com/business/104123574.html

Thomas Content

A study released Thursday pinpoints growth opportunities for southeastern Wisconsin manufacturers looking to make parts for solar water heating systems.

The solar hot water market is fragmented but growing, particularly in Hawaii, California, Florida and Arizona. The number of systems installed in the U.S. nearly tripled to 25,000 in 2009 from 8,500 in 2006, according to the study prepared by Chicago-based Navigant Consulting.

Solar Feeds- SPI 2010 Conference Gears Up (9/29/10)

http://www.solarfeeds.com/cleanenergyauthoritycom/14477-spi-2010-conference-gears-up

In its 10th year, the Solar Power International conference in Los Angeles, on Oct. 14-15, is on course to be the largest commercial solar event in the world.

The conference, sponsored by the Solar Electric Power Association and the Solar Energy Industries Association, has grown every year since it started, and this year, sponsors expect more than 27,000 visitors and almost 1,100 vendor booths, said Monique Hanis, a spokesperson for the event.

With 15 percent more booths and 7 to 10 percent more visitors, Hanis said, event organizers are pleased.

“We’ve actually been having issues finding hotel rooms for everyone,” Hanis said.

There’s no wonder the event is expected to be a blowout this year—the solar industry has experienced monumental growth.

Hundreds of thousands of kilowatts of solar panels went up in public and residential spaces this year.

“This is the show that encompasses every element of solar technology,” Hanis said.

Vendors from the public and residential sectors will be exhibiting new technologies in solar thermal, photovoltaic, and other methods of solar energy collection and distribution at the event.

The event will be free and open to the public Wednesday, Oct. 13 from 5:30 to 8:30 p.m.

People from the public will be able to learn about the new technologies, talk with vendors and find out about installing solar at their homes and businesses. They will also be able to learn about how to get a job in the solar industry, Hanis said.

“Solar is a growing industry, and there’s been a lot of job growth already,” Hanis said. “Job growth in solar this year was 7 percent higher than we estimated it would be.”

One big sector for this year's conference, Hanis said, is the utility-scale work. She said utility companies have broken ground on hundreds of major solar projects this year with many more in the pipeline for approval. She noted some of the huge public lands solar projects approved this year.

"We've had 74,000 public land leases for gas and oil extraction," Hanis said. "But this is the first year the government has granted public land leases for solar development. That's huge." She said the western states richest in solar resources have a lot of public lands.

Hanis hopes the growth of the event will highlight the industry's growth.

Earth2Tech- Using IT to Monitor Solar Water Heaters (9/15/10)

http://gigaom.com/cleantech/new-hot-market-using-it-to-monitor-solar-water-heaters/

Ucilia Wang

It should come as no surprise that the recently launched California incentive program to promote solar water heaters has been leading to a boom for manufacturers, service providers, and startups. SunReports, for one, on Wednesday unveiled a package of monitoring devices and services for solar hot water systems designed for business customers.

Huffington Post- Congress, Don't Send the U.S. Solar Industry on an Extended Vacation (9/1/10)

http://www.huffingtonpost.com/rhone-resch/congress-dont-send-the-us_b_701731.html

Rhone Resch

It's that time of year when many Americans are just returning from a summer vacation.

During their travels, most of those vacationers probably passed by some of the many solar projects, large and small, being installed across the country. However, they probably didn't know that while they were on holiday, smart policies were at work speeding up deployment of solar projects. From PV farms to solar water heating systems, solar is having a record growth year and is creating stable, well-paying American jobs.

One of the main drivers of solar's robust growth has been the Treasury Grant Program (TGP), an initiative created in the Recovery Act which provides a cash grant in lieu of the 30 percent solar investment tax credit for companies that lack access to private tax equity financing due to the poor economy. Research by Lawrence Berkeley National Laboratory found the TGP "has provided significant economic value" and more than 40 states have solar projects that were stimulated by the TGP.

Vacationers who hit the beaches of Southeast Florida were sunbathing near the DeSoto Next Generation Solar Energy Center, a 25-megawatt solar power plant that is the largest photovoltaic plant in the country. It provides clean, safe, reliable electricity to about 3,000 homes and created around 400 construction jobs. Almost 900 other solar projects nationwide have been built because of the TGP.

Tourists sending postcards from the National Cherry Festival in Michigan may have noticed a revival in America's manufacturing sector. The Upper Midwest is one of the regions hardest hit by the recession. In Michigan, where unemployment hovers around 10 percent, the TGP has supported thousands of jobs in the manufacturing plants producing solar products. American-made solar components from these plants will be sold across the U.S. and exported around the world.

Elvis fans making the pilgrimage to Graceland may have been all shook up to see how the TGP is creating jobs for local solar installers, contractors and distributors. Memphis, Tennessee-based Unistar-Sparco was able to cut their energy costs by one-third by going solar with the help of the TGP.

While we were on vacation, the TGP was hard at work and there's more that it can do. According to independent research, extending the TGP by two years would help the solar industry create more than 65,000 American jobs over the next five years. Many of these jobs are in the trades hardest hit by the recession, like manufacturing, construction, plumbing, and electrical contracting. The study also found the TGP would add 5,100 megawatts of clean energy, enough to power more than 1 million homes.

Unfortunately, this successful stimulus program is headed for a permanent vacation at the end of the year if Congress and the President don't extend it.

Inaction on the TGP is bad enough, but Congress also raided $3.5 billion from another promising stimulus programs for creating clean energy jobs: the Department of Energy's (DOE) renewable energy loan guarantee program. The Loan Guarantee Program offers a federally guaranteed loan to solar developers and manufacturers.

This troubling decision will harm our economy and our climate by taking away a potential $35 billion in financing authority for renewable energy investments.

It is imperative that this mistake be fixed.

There are currently more than 23 gigawatts of utility-scale solar power projects in the development pipeline. That's enough to power more than 4.6 million homes and create tens of thousands of jobs. These projects, and the jobs they will create around the country, will remain in a state of uncertainty - and in some cases risk being scrapped - with the TGP and Loan Guarantee Program in limbo.

Additionally, Congress can resurrect our nation's manufacturing sector by extending the current investment tax credit it provides to solar projects to

cover solar manufacturing as well. This will help keep solar manufacturing in the U.S.

The TGP, Loan Guarantee Program and strong incentives for solar manufacturing are a critical trifecta for enabling solar to compete with heavily subsidized fossil fuels. These programs provide the specific guarantees investors look for when deciding to finance energy projects.

Like the rest of us returning to the office, Members of Congress are finishing vacations and visits back to their hometowns to return to Washington. We hope they'll consider the many Americans who weren't able to travel this year because of the economy or couldn't vacation at all because they don't have a job. We're sure many of them would love a good job in the solar industry. But if Congress and the President don't act quickly to extend the TGP, replenish the Loan Guarantee Program and expand solar manufacturing incentives, the U.S. solar industry may go on an extended vacation and we will lose more ground to nations like China and Germany who are pouring investment and policy support into the new cleantech economy.

New York Times- Doing More While Using Less Power (9/1/10)

http://www.nytimes.com/2010/09/02/business/global/02iht-rensave.html?scp=2&sq=solar&st=nyt

ERICA GIES

Energy efficiency is a way to meet the world's growing energy needs, just like building more power plants — except that it costs less, emits no carbon dioxide or radiation, and does not rely on scarce resources in potentially hostile places.

Efficiency is often confused, detrimentally, with conservation. Conservation connotes making do with less — turning down the heat or driving a smaller car. Efficiency means getting more bang per buck. For example, California's 35 years of efficiency standards for appliances have created refrigerators that use 75 percent less electricity than models from the 1970s. Yet today's refrigerators are larger, have more features and cost less in inflation-adjusted dollars…

He said buildings could use nearly 60 percent less electricity by 2030 by installing existing technologies, like compact fluorescents or LEDs, insulation, double- or triple-paned windows, and on-demand or solar hot water heaters. Tuning up and optimizing settings on climate controls would also contribute.

Reve- Solar energy is a major economic driver for the United States (8/23/10)

http://www.evwind.es/noticias.php?id_not=7044

The renewable energy (RE) and energy efficiency (EE) industries generated more than 9 million jobs, more than $1 trillion in revenue, and nearly $160 billion in federal, state, and local tax revenue in 2007.

Solar energy is a major economic driver for the United States, creating green jobs and vigorous revenue growth for participating companies. Despite a downturn in the U.S. economy, the American solar industry posted spectacular growth numbers in solar deployment during 2009. Photovoltaic (PV) installations increased 40 percent from 2008 to 2009. ASES predicts a 50 to 100 percent increase in solar deployment in 2010.

According to ASES's pioneering report: Green Collar Jobs in the U.S. and Colorado – Economic Drivers for the 21st Century, the renewable energy (RE) and energy efficiency (EE) industries generated more than 9 million jobs, more than $1 trillion in revenue, and nearly $160 billion in federal, state, and local tax revenue in 2007. Our report determined:

"If U.S. policymakers aggressively commit to programs that support the sustained orderly development of RE & EE," these RE & EE industries could "generate up to $4.3 trillion in revenue in the United States and create more than 37 million jobs by the year 2030" – that's 17 percent of the U.S. work force. To follow are solar electric and solar thermal installation figures.

PHOTOVOLTAICS

Photovoltaic cells are semiconductor devices that generate electricity when exposed to the sun. Manufacturers assemble the cells into solar modules which can be installed on roofs or walls, or on ground-mounted arrays. PV was invented in the United States in the 1950s, and was first used to power satellites.

U.S. Deployment – Grid-connected PV installations in 2009 grew by 40 percent to 435 megawatts (MW) DC, bringing total installed grid-connected capacity to 1.25 gigawatts (GW) DC. In 2009, solar PV was installed at more than 33,000 sites, a 76 percent increase over solar electric systems installed in 2008, and four times more than the amount of solar electric installed during 2006.

Residential – Installations in homes accounted for 36 percent of solar PV growth in 2009. The residential sector's market share was significantly higher than the 27 percent market share in 2008.

Non-Residential –This sector, which includes government buildings, military installations, and retail stores, accounted for 49 percent of solar installations in 2009. Unlike 2008, where non- residential installations were the largest solar sector, the non-residential sector had flat growth in 2009.

Utility-Scale –This area includes installations for bulk utility-scale power production. Utility installations tripled in 2009, comprising 15 percent of grid-connected PV systems installed in 2009. Two noteworthy PV projects installed in 2009: a 25 MW facility in Florida and a 21 MW project in California.

State View – Grid-tied PV systems installed in 2009 were concentrated in five U.S. states in order of rank: California, New Jersey, Florida, Colorado, and Arizona. The solar electric market more than doubled in New Jersey, Florida, Arizona, Massachusetts, and Texas, with Florida moving up from 16th place to 3rd place for installed PV installations due to the 25 MW utility-scale project mentioned above. California has the highest total PV capacity per capita of 20.8 watts -dc/person – almost five times the national average of 4.2 watts per capita.

SOLAR THERMAL

Low-temperature solar thermal collectors produce heat for hot water for domestic or commercial use, for space heating to heat and cool buildings, and to heat swimming pools and spas. A variety of flat plate, evacuated tube, and concentrating collector technologies produce the heat needed for these applications.

U.S. Installations – According to the Solar Energy Industries Association (SEIA), the solar water-heating market grew 10 percent in 2009, compared to a 40 percent increase in 2008 and a 26 percent increase in 2007.

Solar Hot Water & Space Heating – Hawaii is the dominant state in the solar hot water market, accounting for 27 percent of solar hot water installations in 2009 . Based on data from the Energy Information Administration (EIA), prior to 2006, about half of annual solar water heaters sold in the U.S. were in Hawaii. By 2008, installations outside Hawaii increased by seven times. After Hawaii, the leading states for solar water-heating installations are California, Puerto Rico, Florida, and Arizona.

Solar pool heating – Annual installed capacity for solar pool heating systems fell by 1 percent from 2007 to 2008. This is an upswing as compared to a decline of 15 percent in solar pool heating capacity from 2006 to 2007. Florida and California are the largest markets for solar pool heating and solar pool sales have declined for three straight years due to the weakened real estate market in these two states.

CONCENTRATING SOLAR POWER

A recognized growth area for solar energy is high-temperature solar thermal electric-generating systems, more commonly known as concentrating solar power (CSP) plants. These plants are based on mature technology, using mirrors and collecting receivers to heat a fluid to a high temperature (300°F to more than 1,000°F) and then run the heat extracted from the fluid through a traditional steam turbine or a Stirling engine to spin an electric generator. CSP can be paired with existing or new steam-turbine or gas-turbine power plants, providing high-temperature heat into the thermal cycle. These generating stations produce base load power on the utility side of the meter.

The Southwestern United States has several CSP plants in deployment. The 354 MW SEGS (Solar Energy Generating Stations) in California's Mojave Desert have been producing power for the grid reliably and profitably since 1991. Nevada

Solar One, generating 75 MW, came on line in 2007. Xcel Energy commissioned a 45 MW array in Grand Junction, Colo. this summer.

A number of CSP plants are scheduled to go on line beginning in 2011 in the Southwest and Florida. A few of these plants incorporate molten-salt thermal storage systems to enable electric power generation late into the evening hours.

"We see CSP plant technology, with built-in storage capacity, as one of the major renewable energy solutions to sustainably replace fossil fuels and provide proven large-scale solar powered electricity to the electrical grid 24 hours a day," said Brad Collins, Executive Director of ASES.

2010 PROJECTIONS

"Based on early predictors, we estimate a grid-connected PV growth of 50 to 100 percent in 2010," said Collins. "However the continued growth of the U.S. solar industry is directly tied to Congress passing supportive RE & EE government policies. Every day when the sun comes up, people know that the sun is a sustainable solution to our energy situation. American scientists started the solar energy industry. It's time for U.S. businesses and the American people to make our voices known to move solar to a mainstream energy solution in the U.S."

Examiner.com- Maryland decreases solar incentives on Monday, August 23, 2010 (8/21/10)

http://www.examiner.com/green-living-in-washington-dc/maryland-decreases-solar-incentives-on-monday-august-23-2010

Jamie Hardin

The Maryland Solar Energy Grant Program has been so successful in the fiscal year 2010 that Maryland is seeing it's budget fly out the window. In response to this success and budgetary constraints, on August 20th, they announced that they will be decreasing the incentive amount from $2,500 to $500 per kilowatt. The maximum is up to $10,000 for a 20 kilowatt system. These are in addition to the 30% tax credit on the federal level.

On solar hot water, the incentive will be 20% of the total cost of the system up to $1,500, which used to be $3,000.

Renewable Energy World- Group Buy Solar Program Lowers the Cost of Solar Energy (8/20/10)

http://www.renewableenergyworld.com/rea/news/article/2010/08/group-buy-solar-program-lowers-the-cost-of-solar-energy

The San Jose Credit Union has partnered with the San Jose Solar America City program to offer a program to city employees in which they can join together

to negotiate betters costs for solar electric and solar thermal installations on their homes no matter where they live.

The San Jose Employee Solar Group Buy program allows city employees and retirees to purchase systems with a group discount. So far 130 people are participating. The group has reportedly achieved one of the lowest group buy pricing schedules for the value of the product to date for both photovoltaic and solar thermal systems.

Minnesota Public Radio NewsQ- Interest in solar thermal energy heating up (8/18/10)

http://minnesota.publicradio.org/display/web/2010/08/18/solar-thermal-energy/

Stephanie Hemphill

Interest in renewable energy continues to grow in Minnesota. In fact, state money for one form of solar rebate is already used up, but there's still money available for a different system, one that's considered more efficient at converting the sun's rays into energy we can use.

People have used the sun to warm themselves forever -- we can all appreciate a south-facing window in the winter -- but new technologies use solar energy far more efficiently.

Poughkeepsie Journal- Solar thermal systems gain popularity (8/8/10)

http://www.poughkeepsiejournal.com/article/20100808/BUSINESS/8080350/Solar-thermal-systems-gain-popularity

CRAIG WOLF

Solar hot water is getting a new day in the sun.

While most of the recent publicity has focused on its higher-tech sister, photovoltaic production of electricity, the solar thermal business is also growing.

"Solar thermal" means liquid is heated by the sun's rays and then used in homes, businesses or institutions. Most commonly, it produces what engineers call "domestic hot water," or what comes out of the hot water faucet.

The Republican Journal- Unity gives White House solar panel to China (8/5/10)

http://waldo.villagesoup.com/news/story/unity-gives-white-house-solar-panel-to-china/343011

Ethan Andrews

Unity College is giving one of the solar panels that once sat atop the White House to the people of China. The gift, to Himin Solar Energy Group, the largest manufacturer of solar hot water heaters in the world, will be displayed at the Solar Science and Technology Museum in Dezhou, within Himin's 800-acre "China Solar Valley" manufacturing complex.

A second panel is to be donated to the Solar Energy Industry Association of America.

Huang Ming, chairman of Himin Solar Energy Group, is expected to be present to accept the gift at a ceremony Thursday, Aug. 5, at the Unity Centre for the Performing Arts, as will a representative of SEIA. But to the dismay of some at Unity College, state and federal politicians may be in short supply.

Mark Tardiff of Unity College rattled off a list of politicians invited by the school, most of whom had either declined to attend or had yet to respond. Congresswoman Chellie Pingree had passed, Tardiff said; Rep. Michael Michaud hadn't answered yet, ditto U.S. Sens. Susan Collins and Olympia Snowe. Gubernatorial candidate Paul LePage declined immediately, and Libby Mitchell had yet to respond. Gov. John E. Baldacci said no.

"Here is the largest solar energy company in Asia and maybe the world; their CEO is visiting Unity, Maine, and we're not getting responses from the politicians who are charged with bringing businesses to Maine," Tardiff said. "You would think the people involved with economic development would be flocking to this, but they're not."

In 1979, President Jimmy Carter had 32 solar panels installed on the West Wing of the White House as a symbolic introduction of the administration's goal of getting 20 percent of the nation's energy from renewable sources by the year 2000.

The panels were not the photovoltaic variety used to create electricity, but flat plate solar collectors, which heat water by circulating it though a series of fins, painted black to absorb the heat of the sun's rays. Though the vintage panels are no longer state of the art, flat plate collectors are still commonly used, including a two-panel array atop Unity House, the residence of the college president, built in 2008 as a prototype for energy-efficient mass produced housing.

The panels on Unity House were fabricated by Heliodyne Solar Hot Water of Richmond, Calif.

The White House panels were removed in 1986 during routine roof repairs and President Ronald Reagan reportedly deemed them too expensive to reinstall. Skeptics have viewed the decision as reflective of a policy shift in the U.S. government in the 1980s. President George W. Bush in 2002 had three solar

systems, one photovoltaic and two solar hot water heaters, installed on the White House grounds.

Unity College got the Carter solar panels in 1991 after then-Development Director Peter Marbach read an article about the panels languishing in a warehouse in Virginia and saw the symbolic value for a small school aspiring to be known as "America's Environmental College."

Sixteen of the panels were refurbished and installed on the roof of the school cafeteria, where, according to Unity Sustainability Coordinator Jesse Pyles, they were used to preheat water for washing dishes. In 2005, they were decommissioned but remained in place. Sources at the college say they will be removed in the near future.

At least one of the remaining panels may have been dismantled for educational purposes. Three have been donated — to the Jimmy Carter Library and Museum, the Smithsonian Institution and NRG Systems, a wind-energy company headquartered in Vermont.

One panel was reportedly loaned to Google and recently returned; another is on loan to a museum in Canada. A third panel has been restored and is currently on display at the Unity Centre for the Performing Arts. Constantine said it remains to be determined which panel will go to China, though he said it is likely the one on loan in Canada would be shipped directly to China.

The rest of the panels are in storage at Unity College in the old Unity Town House, a building described by a college maintenance worker as "a big white building. You can't miss it. It's the only one of its kind."

In recent years, projections of Maine's economic future hinging on alternative energy production have become a common refrain, generally focusing on wind energy. And while the symbolic gift to China could be seen as sending the dream overseas, Constantine said the gift to Himin could bring benefits to the state in the form of future partnerships between Chinese solar manufacturers and Maine-based distributors and installers.

"Realistically, to address climate change, the economic cost and the damage to the world, it has to be seen as a global issue," he said, "And if China is doing some work and is willing to recognize the history of the industry, I think that's an

Clean Skies- CS Sunday: Spill Bills & Sunrise Transmission (8/1/10)

http://www.cleanskies.com/videos/clean-skies-sunday-08-01-10

Congress is working on two versions of spill bills in the wake of the Gulf oil spill. But those bills may end up costing the renewable energy industry. Neither

has a Renewable Electricity Standard and without that wind, solar and geothermal experts say those industries can't flourish. Tyler Suiters delves into the bills, and speaks with a woman whose family invested in solar, and sees a bright future for the energy source…

[SUITERS] Hello, and welcome to "Clean Skies Sunday," a weekly half-hour look at energy issues facing Washington and America. I'm Tyler Suiters. This week, Congress reacts to the Gulf spill with a pair of energy bills targeting the oil industry, but this legislation could end up costing the clean energy sector as well -- we'll explain.

Plus, where are all the green jobs going? Maryland is now touting a clean economy, but it can't seem to hold on to the companies that make green products. What does this mean for the future of a clean energy economy?

And finally, power lines just for renewable energy? It sounds like an environmentalist's dream, so why are environmental groups opposed to these lines? We'll take a closer look.

But we begin this week with the legislative reaction to the Gulf oil spill. Both houses of Congress now have so-called "spill bills," energy bills that would change the way the offshore drilling industry does business. Both of the bills have provisions to overhaul what was the Minerals Management Service. That's the agency that regulates offshore drilling. Also, they both would lift liability caps for any future oil spills.

But as energy policy strategist Mike McKenna explains to me, the House bill has what he calls more medicine to it. He says it provides for more expansive regulation. According to McKenna, the Senate version, though, is less painful for the offshore oil and gas production industry.

But the biggest complaint about these spill bills involves the Senate version and what is not included there -- language addressing this -- carbon emissions. Last year, the House passed a plan to cap our CO2 emissions and force companies to pay for the carbon they could emit. But in the Senate energy bill, Majority Leader Harry Reid excluded any provisions to limit CO2 emissions or to put a price on carbon. Last week, President Obama applauded the House and Senate energy bills, but he was also very clear that he wants more from Congress.

[OBAMA] That legislation is an important step in the right direction, but I want to emphasize it's only the first step, and I intend to keep pushing for broader reform, including climate legislation. Because if we've learned anything from the tragedy in the Gulf, it's that our current energy policy is unsustainable.

[SUITERS] And that is especially important because the vast majority of scientists say carbon emissions are contributing to climate change, but without any U.S. legislation in place, even though we are the world's second biggest carbon emitter, this country will have less influence in international climate negotiations going forward.

And another element that is missing from the Senate energy bill, what is known as a renewable electricity standard. This is a law that would require that more of your electricity come from renewable resources -- geothermal, solar, wind, for example.

Generally speaking, everyone wants more clean energy and everyone wants to become more energy independent, but not everyone is willing to pay higher prices to reach those goals. And that's part of the reason the renewables sector says it now needs more federal help.

[MONIQUE HANIS, ARLINGTON, VIRGINIA] We're thinking of adding another kilowatt.

[SUITERS] Four years ago, Arlington resident Monique Hanis decided it was time to change.

[HANIS] This was one thing that we could do as a family to make a difference.

[SUITERS] $25,000 later, the Hanis family had a solar photovoltaic panel system, converting the sun's light into electricity, and a solar thermal system, heating the home's water, a clean energy conversion that she says could pay for itself within 15 years, fueled in part by federal tax incentives.

[HANIS] These days, it's a better time. This system is four years old, and it's a better time to go solar now because of the federal tax incentives. There's a 30% tax credit, which we were able to take advantage of, but at the time, it was capped at $2,000. Now there's no cap, so that's much more helpful to consumers.

[SUITERS] And federal policy is crucial for renewable energy on a larger scale as well. Electricity generated by what are called conventional sources -- that is coal, natural gas, nuclear -- that power is still less expensive than electricity generated by solar and wind. These renewable resources are clean, but both require backup capacity, something to generate power when the wind doesn't blow or the sun doesn't shine.

Mike Garland heads up Pattern Energy, a leading wind and transmission company.

[GARLAND] I agree that, on the surface, that it appears that some renewables -- particularly solar right now, but those costs are coming down. I would disagree, I'd say, with reasonable tax benefits associated with wind that were cost-competitive against most of the other resources. And if you add to that any kind of consideration of carbon tax or carbon cost to the environment, to the people and their cars or whatever, you're actually very competitive.

[SUITERS] Not competitive enough without government help. As diverse as the renewable sector is, generating power from the sun's light, the wind's strength, and the earth's heat, all of these want essentially the same policies -- a renewable electricity standard, forcing utilities to draw more heavily on renewable generation; a carbon cap, making it more expensive for companies to supply power derived from coal, and, to a lesser extent, from natural gas;

also, tax breaks and flat-out cash grants, the government subsidizing a portion of clean energy projects.

[KARL GAWELL, GEOTHERMAL ENERGY ASSOCIATION] Six geothermal companies received a tax grant last year. Every single one of those companies is building more projects than they received a grant for. So what the cash grant allowed them to do is immediately buy down their debt. They just built a $100 million power plant. They've got two more right behind it. Well, their balance sheet with $100 million of debt on it is not going to look very good, and today, people are being pretty critical of how much debt any company carries.

[SUITERS] Just recently, tax breaks and cash handouts in the stimulus package helped build brand-new solar fields, wind farms, and geothermal plants, but those incentives are about to expire.

[GAWELL] I'm sure you've seen the graph of the wind industry's growth, where it shows the up-and-down roller coaster every time a tax credit expired. Well, what we've seen is five years where the credits have been extended before expiring, and every year, the growth has gone up faster. That's what we want to achieve. Now we need to see those credits and the tax credits extended before this year is out to continue that kind of progress. Otherwise, I'm afraid we're right back into the slump.

[SUITERS] Already, the effects are apparent. The wind industry says the number of new wind turbines installed in the U.S. dropped 71% during the second quarter of this year, from 2009. And the American Wind Energy Association points out that during the first half of this year, new coal plants -- the main reason environmental groups want more wind power -- those new coal plants exceeded new wind plants for the first time in five years.

[GARLAND] It's just too unknown as to whether the market can support the projects. There will be some, we'll do some work, and we're very clever at how to work around some of these problems, but the reality is, when you have your core tax structures falling apart, it's hard to, in a short period of time, recover from that, so the majority of the industry is going to have a very hard time moving forward on new projects next year.

[SUITERS] Monique Hanis is in that majority, not only as a solar energy customer but also as a solar energy employee. You see, Monique works for the industry's trade association and she, too, is asking for federal help.

[HANIS] The biggest impact is going to be on the financing side, so having policies that support domestic manufacturing and that support the financing. Loan guarantee is another program that's been very helpful. It allows large projects to also access competitive financing options.

[SUITERS] Now, I do want to point out that Monique joined the solar association only after she and her family installed those solar panels on their home. Monique tells me she was just so enthusiastic about her turn to clean energy, she actually sought out a position within the solar industry to advance the cause she sees as so important.

When we come back on this Sunday morning, GM is bringing green jobs to Maryland, but are these jobs sustainable? We'll bring you the tale of two plants: one closed, one now evolving. Can employers learn from past mistakes?

And later, a transmission line designed solely for renewable energy, so why is one environmental group trying to stop these lines from going up? We head to California to explain.

[EVAN WOLF, GULF COAST CLEAN UP, LOUISIANA NATIONAL GUARD] When I signed on with the National Guard, I did it to help protect America from our enemies, like in the Persian Gulf -- not to clean up an oil company's mess here in the Gulf of Mexico.

We'll do whatever mission we're given, and do it well, but America needs a new mission, because whether it's deep-drilling oil out here or spending a billion dollars a day on oil from our enemies overseas, our dependence on oil is threatening our national security.

The thing is, a clean American energy plan would cut our dependence on oil in half. It's more power for America, made here in America, putting our people to work using all the resources we have. Some folks in Washington say now's not the time for clean American power. I got to ask, if not now...when?

Renewable Energy World- New York's Solar Thermal Plans (7/28/10)

http://www.renewableenergyworld.com/rea/news/article/2010/07/new-yorks-solar-thermal-plans

David Appleyard

By unveiling a solar heating and cooling programme that could create 25,000 new green jobs, generate US$2.6 billion in revenue and see 2 GW of new solar thermal capacity installed in the state over the next decade, New York has revealed its ambition to become America's national leader in solar heating and cooling.

Setting out its solar thermal roadmap, which was published at the NYSEIA conference in May 2010, the Solar Thermal Consortium (STC) plan focuses on improving uptake of solar thermal technologies through consumer education and incentives, installer training, promotions to attract manufacturers, investments in R&D, and permitting improvements.

Renewable Energy World- Here Comes the Sun: Ten Million Solar Rooftops (7/21/10)

http://www.renewableenergyworld.com/rea/news/article/2010/07/here-comes-the-sun-ten-million-solar-rooftops

Greg Chafee

During the Constitutional Convention in 1787, Benjamin Franklin was waiting to sign a document that would hold the fate and destiny of the United States of America. As he stood, his eyes fell on a carving on the back of George Washington's chair, a carving of half a sun. He stared thoughtfully, questioning whether it was a rising sun that would continue to shine brightly over the nation or a setting sun that would bring darkness.

Our Founding Father could not have imagined the symbolic power that that image now holds as our nation looks to the sun as a source of clean renewable energy to brighten our future. Today 92% of Americans want our country to develop solar energy resources, and 77% believe the federal government should make solar power development a national priority.

Despite the recession, new U.S. solar installations are rising, as are new jobs and new economic growth. Data from the Solar Energy Industries Association show that total U.S. solar electric capacity from photovoltaic and concentrating solar power technologies climbed past 2,000 megawatts (MW) in 2009. Solar industry revenues also surged despite the economy, climbing 36%. Another sign of optimism is that venture capitalists invested more in solar than any other clean technology in 2009 – over $1.4 billion. For an industry with a total U.S. volume of $4 billion, that signals huge optimism about near-term growth.

The solar industry accounts for about 46,000 jobs in the U.S., and is expected to rise to 60,000 by the end of 2010. North Carolina, a state that has embraced renewable energy development, projects that as many as 28,000 new jobs and a 10 million ton reduction in greenhouse gas emissions will be achieved by 2030 if the state can draw 14% of its electricity from solar sources.

These figures are impressive, but the development of solar energy in the U.S. remains heavily aligned with federal and state incentive programs and policy. Between 2002 and 2008 over $70 billion of federal tax dollars went towards fossil fuels and just $1.2 billion towards solar power. New nuclear plants get more than triple the government subsidy that new solar plants get.

Still, there are some bright signs. The federal ARRA stimulus legislation has deployed more than 46 MW of solar power with the help of Section 1603 Treasury grants in lieu of investment tax credits. Solar equipment manufacturers have been awarded $600 million in manufacturing tax credits under ARRA, representing investments in new and upgraded facilities of more than $2 billion.

Property assessed clean energy financing, or PACE, legislation has been enacted in a growing number of states. PACE provisions will allow homeowners and businesses to finance solar energy systems through municipal or government-backed bonds via an assessment on their property taxes. This ensures the availability of credit, reduces up-front costs and facilitates transfer

of the solar system to new property owners. [For a recent RenewableEnergyWorld.com article on PACE, click here.]

There is some innovative legislation in Congress too. Senator Bernie Sanders (I-VT) recently introduced a bill aimed at getting 10 million new solar rooftop systems and 200,000 new solar hot water heating systems installed in the U.S. in the next 10 years. The cleverly titled "10 Million Solar Roofs & 10 Million Gallons of Solar Hot Water Act" will provide rebates that cover up to half the cost of new solar systems, along the lines of incentive programs in California and New Jersey, the #1 and #2 states for installed solar in the country.

The bill also includes measures to insure that those who receive assistance get information on how to make their buildings more energy efficient. The passage of this bill would dramatically re-orient our energy priorities. When fully implemented, this legislation would lead to 30,000 MW of new PV, tripling our total current U.S. solar energy capacity. It would increase by almost 20 times our current energy output from PV panels. The legislation would rapidly increase production of solar panels, driving down the price of PV systems and it would mean the creation of over a million new jobs.

Here's how the Ten Million Solar Roofs Act works: take the example of a homeowner who decides to install a 5-kilowatt solar system which, depending on location, would produce enough electricity to cover most, if not all, of an average electric bill (the solar panels would produce excess power during the day that can be sold back to the utility, covering some or all of the cost of electricity when the sun is not shining). That system today costs roughly $35,000 to purchase and install. The federal tax credit of 30% reduces the system cost to $24,500. Most states offer additional tax incentives. For example, if a homeowner could get an additional rebate of $1.75 per watt, the system cost is now reduced to $15,750.

The Ten Million Solar Roofs Act would provide an additional rebate of as much as $1.75 per watt, covering up to 50% of the remaining cost. The result: the consumer now pays $7,875 for the solar system. That's pretty attractive for a family that plans to stay in its home or wants to increase its home value or a small business looking to stabilize its energy costs. Plus, our nation would benefit by reducing expensive construction of new power plants and lowering health care and other costs associated with air and water pollution from fossil fuels.

When Ben Franklin stared at the half sun on the back of George Washington's chair, he proclaimed "I have the happiness to know that it is indeed a rising, not a setting, sun." The power of the sun is here to harness. If we do so wisely, our nation will have the energy capacity to continue to rise as well, just as our Founding Father intended.

Greentech Media- Intersolar: Update on Solar Thermal (07/21/10)

http://www.greentechmedia.com/articles/read/intersolar-update-on-solar-thermal/

Brett Prior

At least that was the distinct impression one would get from attending Intersolar in San Francisco last week.

Slower growing, smaller market, less innovation. Basically, solar thermal isn't sexy. PV is.

KGO-TV- PG&E hands out first solar water heater rebate (6/30/10)

http://abclocal.go.com/kgo/story?section=news/local/east_bay&id=7530267

The first PG&E rebate check for a residential solar water heating system was given out this morning in Walnut Creek as part of the new California Solar Initiative-Thermal program, officials said.

The event was held at a home at 2061 Magnolia Way in Walnut Creek, where residents received a rebate check for $1,140, said John Reed, spokesman for Berkeley's Sun Light & Power company.

Kansas City Star- Solar power heats up as costs drop, electric rates rise (4/25/10)

http://www.kansascity.com/2010/04/25/1902928/solar-power-heats-up-as-costs.html

Steve Everly

The prospects for solar energy in the Midwest are brightening.

Surprised?

You shouldn't be.

The Midwest gets plenty of sunshine — more than Germany, which uses more solar power than any other country. Kansas City has the same percentage of annual sunshine as San Antonio, for example, and Dodge City, Kan., has as much as Miami.

And the big cost considerations that for years have held back solar power in the region have changed. The price of solar panels has dropped substantially, and the Midwest's traditionally low electricity prices are on the rise.

Those factors came together recently for Tom Lawler, a Commerce Bank vice president. As coordinator of the bank's sustainability efforts, he has crunched

the numbers on solar power for years. But this time he got a big surprise. They made economic sense.

The payback time for a solar panel project had plummeted from 25 years to just 10 years. As a result, Commerce this month is installing photovoltaic panels at its branch at 135th Street and State Line Road in Kansas City.

Area interest

Solar power still isn't a bargain, but many other Midwest businesses and homeowners are agreeing with Commerce: It has become a viable investment.

New solar customers range from a couple in Lee's Summit to Posty Cards, a Kansas City greeting card company that later this year will install the largest solar installation in Missouri. Kansas City Power & Light plans to have its first solar power installation up and running next year.

Ray Baisch of Lee's Summit is a retired custodian who worked at the Federal Reserve Bank in Kansas City. He believed President Jimmy Carter when he gave a speech in the late 1970s warning that the U.S. was wasting energy and relying too much on imported oil.

Baisch looked for ways to conserve and became a believer in solar energy, but he was put off by the cost. As recently as three years ago, a system for his home cost $38,000, but that price has come down to $30,000. Various government and utility incentives now cut that price in half for him. Baisch was the first KCP&L customer this year to take advantage of the utility's solar-installation rebates.

"If I had my way, every new house would come with solar already installed," he said.

Gaining traction

To be sure, solar energy remains in its infancy in the U.S., providing only 1/1000th of the country's electricity generation. But the amount of solar-generated electricity in U.S. homes doubled last year, and a growing number of businesses are jumping in. FedEx recently installed the largest rooftop solar installation in the country in Woodbridge, N.J., and Wal-Mart has solar installations supplying power to about 20 of its stores.

Overall, solar capacity for the first time moved above 2,000 megawatts, enough to power 350,000 homes, convincing many in the industry that solar is at a turning point.

Last year was the best ever for the U.S. solar industry, and 2010 is expected to be even better.

"We expect a breakout year," said Rhone Resch, chief executive officer of the Solar Energy Industries Association.

Solar has always been a tough sell in the Midwest, but several trends are helping make it more competitive:

•The cost of photovoltaic panels, which account for just over half of a solar installation, have plummeted 40 percent in the last year, thanks to cheaper prices for silicon and ample manufacturing capacity.

•Available incentives have never been more generous. Federal tax credits or grants are cutting the cost of commercial and residential solar installations by 30 percent. Businesses also can accelerate depreciation of their investment, helping recover their costs faster. Other incentives include the KCP&L rebate for its Missouri customers, which can lower a system's cost an additional 25 percent or so.

•The Midwest's low prices for conventionally generated electricity are going up. KCP&L, for example, will have raised rates about 40 percent in just a few years if its most recent rate request is granted.

•Several states, including Kansas and Missouri, are encouraging use of renewable energy, including requiring utilities to use more. Missouri's law specifically requires some solar use, and both states require utilities to buy excess renewable energy produced by households and businesses.

Evolving business

Solar power has had some success in the past, but mainly with solar thermal products such as water heaters and devices that provide warm air to heat homes. Those applications account for most of the solar energy used in the U.S., with paybacks of six to eight years.

But the idea of using nonpolluting sunshine to generate electricity has gripped the imagination of environmentalists and others for decades. The enthusiasm is easy to understand, given that all the energy stored in Earth's reserves of coal, oil and natural gas is matched by the energy from just 20 days of sunshine.

"I'd put my money on the sun and solar energy," Thomas Edison said in 1931.

A big step toward making that happen occurred in the early 1950s when a Bell Laboratories scientist found that a wafer of silicon exposed to sunshine produced electrons. That was the start of the photovoltaic panels used today to produce power.

Through the years, the technology improved, the price dropped, and the government and utilities have increased their incentives to adopt solar power.

The federal government has had a 30 percent tax credit for solar, but it was capped at $2,000. When that limit came off more than a year ago, inquiries increased, said Susan Brown, vice president of business development for the Energy Savings Store in Lenexa.

Her company has offered photovoltaic systems since it opened seven years ago. The first two years, it sold none. Since then it has sold 100, with the majority installed in the last two years.

Commercial property owners also are showing interest — a big change from the past, when some who bought solar-equipped buildings had the panels removed

because they didn't want to mess with them, said Phil Thomas, president of A.L. Huber.

His company constructs commercial buildings and recently installed photovoltaic panels at its Overland Park headquarters

"Everyone now is interested in sustainability," Thomas said.

Commercial projects now are eligible for grants in place of tax credits, so they can get their 30 percent break on costs much sooner.

Taking the plunge

Erick Jessee, president of Posty Cards, was considering a solar project to meet 7 percent of his business's electric needs. He said the grant helped him decide to go for an even bigger installation, able to supply 11 percent of his electricity.

He considered other energy alternatives but settled on solar because his property didn't have the right soil for a geothermal heat pump, and wind turbines don't perform as well in urban areas.

His company's solar project, to be finished later this year, is part of a $6 million, 25,000-square-foot expansion of the company's plant. It will consist of 198 photovoltaic panels and is expected to be the largest solar installation in Missouri.

"We just want to do the right thing," Jessee said.

Still, Posty and others have to look at the economics. A 10-year payback was a bit longer than Commerce Bank would typically accept, but it was close enough to get the project serious consideration. The branch that is getting the solar panels will be a test to see how it works in "real world conditions," but Lawler doesn't think there will be many surprises.

"I don't think there are a lot of unknowns," he said.

Some of the toughest converts to solar could be the utilities themselves, in part because a generating-station-size project takes a lot of land.

Westar Energy, Kansas' biggest electric utility, hasn't rejected solar energy outright but says its preferred alternative is wind energy. The state ranks No. 2 in the country for wind-energy potential, and costs are lower.

"Right now, solar is still five or six times higher than with wind," said Don Ford, a project manager for Westar.

KCP&L doesn't disagree about the cost, but it's still going ahead with 4 megawatts of solar power next year. That will go toward meeting Missouri's renewable standard, and it will give the utility a chance to work with solar, which could become more important in the future.

The federal Energy Information Administration projects wind will be a tough competitor for solar for utility-scale installations. But it sees more growth for smaller solar installations in residences and commercial buildings.

KCP&L is pursuing that angle as well. The utility is installing 180 kilowatts of solar power in Kansas City's Green Impact Zone on schools, businesses and residences as a pilot project.

"In the future, this is going to be significant," said Kevin Bryant, vice president of energy solutions for KCP&L.

Renewable Energy World- US Solar Sees 38% Growth in PV Capacity in 2009 (4/16/10)

http://www.renewableenergyworld.com/rea/news/article/2010/04/us-solar-sees-38-growth-in-pv-capacity-in-2009

Graham Jesmer

The Solar Energy Industries Association (SEIA) this week released the 2009 U.S. Solar Industry Year in Review, finding another year of strong growth despite the economic recession. Overall U.S. solar electric capacity increased by 37 percent (photovoltaic and concentrating solar power combined). This was driven primarily by strong demand in the residential and utility-scale markets, resulting in a 36 percent increase over 2008 in overall revenue.

Grid-tied photovoltaic installations grew by 38 percent. Residential grid-tied PV solar installations doubled from 78 megawatts (MW) to 156 MW while non-residential grid-tied PV solar installations grew 2 percent less than in 2008. The utility market tripled their cumulative grid-tied PV capacity from 22 MW to 66 MW.

Over that same time period, solar water heating shipments grew by 10 percent over 2008 while solar pool heating growth was 10 percent less than 2008 growth, reflecting construction and housing declines.

On a call to discuss the results, Freeman Ford, founder of FAFCO said that while the U.S. solar thermal is seeing much larger growth than in recent years, the market lags behind the rest of the world. He said that while the market was valued at US $30 million last year, he expects the market to grow at 50% per year every year for the foreseeable future, led in large part by California, which could support a $1 billion market on its own.

Three new concentrating solar power plants came online and cumulative U.S. CSP capacity reached 432 MW with a development pipeline totaling more than 10,000 MW.

Marc Ulrich, vice president of Renewable & Alternative Power at Southern California Edison (SCE) said that his utility alone purchased 13.6 billion kilowatt-hours from renewables in 2009, or close to 17% of its overall mix. Of that, only 6% was solar, but solar is also the fastest growing segment is growing most quickly. He said that SCE plans to add more than 1 gigawatt (GW) of solar to its mix in the next five years.

Industry growth resulted in a 36 percent increase in overall revenue, totaling nearly $4 billion. The solar industry added 17,000 new jobs from coast to coast and today employs 46,000 total U.S. workers and supports another 33,000 jobs in other sectors.

Jonathan Bass, director of communications at SolarCity said the company added 285 new employees in last 12 months, half of which were installer positions, he also said SolarCity expects to add 150 more jobs later this year to bring the company's payroll to 800 in total. Also on the jobs front, VP of Sharp's solar energy solutions group Ron Kenedi said that 160 jobs were added in its manufacturing plant in Memphis, Tennessee, which now boasts 480 union jobs. That plant runs 24 hours a day and has a yearly capacity of 140 MW.

"The story behind the increase in factory growth is the demand for solar products in the United States," Kenedi said. "For every new job in our factory many more are being created in the field including designers and installers."

California (220 MW) led in new solar electric capacity, followed by New Jersey (57 MW), Florida (36 MW), Arizona (23 MW), Colorado (23 MW), Hawaii (14 MW), New York (12 MW), Massachusetts (10 MW), Connecticut (9 MW), and North Carolina (8 MW).

Julie Blunden, VP of public policy and corporate communications at SunPower said that the California Public Utilities Commission has just released figures showing that last month saw more the 50 MW of applications to the California Solar Initiative, the highest on record. She also said that SunPower has experienced the massive growth in the solar market first hand, going from $11 million in revenue in 2004 to $1.5 billion in 2009.

SunPower also announced that it has signed a new three-year letter of credit facility. The new facility, which initially provides for a maximum issuance of $350 million and may be increased to a maximum of $400 million, will replace the company's existing $250 million letter of credit facility and will be underwritten by a syndicate of banks that include Deutsche Bank, Bank of America Merrill Lynch, Citi, Credit Suisse, and Barclays Capital.

Solar manufacturing showed a 7 percent increase in PV module production from 2008. SEIA's president and CEO Rhone Resch said that while one of the bright spots in 2009 was manufacturing, only 7% of worldwide manufacturing is in U.S. and Resch called on Congress to extend the manufacturing tax credit that was passed in the stimulus package in 2009 and to make solar a bigger part of the U.S. energy mix through the energy bill that is expected to come to the floor this summer.

Bryan Ashley, chief marketing officer at Suniva said that federal support has helped to create jobs and bring in huge amounts of revenue for the Georgia-based solar cell manufacturer. He said that Suniva expanded from 32-MW of production capacity to 100 MW at end of 2009, which added 80 new jobs, using the Advanced Manufacturing Tax Credit Resch talked about. Ashley also said

that the company is currently expanding by another 70 MW, which will bring its facility to 175 MW of capacity by mid-year, and will add 25 more jobs.

Resch and everyone else on the call was also excited about the prospects for 2010 as the total utility-scale pipeline (across all solar technologies) reached 17 gigawatts by the end of 2009. Much of that capacity is expected to come online this year which would lead to a record year for U.S. solar growth.

Grist- Creative financing fuels California solar boom (4/16/10)

http://www.grist.org/article/2010-04-16-creative-financing-fuels-california-solar-boom/

Todd Woody

Dropping my son off at school on Wednesday, I ran into Danny Kennedy, a fellow parent and veteran Australian Greenpeace activist turned solar entrepreneur. How's business? I asked. Pretty bloody good, as it turns out. Kennedy's startup, Sungevity, took in more orders for rooftop solar systems in March than in all of 2009.

That solar flare is being fueled in large part, according to Kennedy, by a new lease option Sungevity recently began offering its customers. The option is financed through a $24 million deal with U.S. Bank. Rather than purchasing a solar array, customers can lease the system through Sungevity for a monthly fee, thus avoiding the considerable capital costs of buying the system outright. The popularity of lease options, which are also offered by bigger installers such as SolarCity, is another indication that creative financing is as key to getting people to go solar as the performance of the hardware.

As it happened, the Solar Energy Industries Association annual report landed in my inbox later that same day. It showed that Sungevity isn't the only solar company looking at a very good 2010.

Although the United States solar industry's overall growth for all types of solar energy slowed somewhat as the Great Recession reached its nadir in 2009, residential rooftop installers had a record year. Companies like Sungevity installed 156 megawatts of residential solar panels in 2009, up 101 percent from the previous year.

That's an amazing number, considering one could reasonably expect that putting a $25,000 solar array on one's roof would fall to the bottom of the home improvement list during the greatest economic downturn since the Great Depression.

But there were other incentives. The Obama stimulus package's lifting of the $2,000 tax credit cap on home solar systems certainly helped. As did solar panel makers' price slashing due to the oversupply that resulted from a ramp up in production. Solar module prices fell more than 40 percent in 2009, according to the SEIA report. That led to a 10 percent decline in the cost of an

installed solar array. (Installation costs typically account for half the price of a solar array.)

As photovoltaic power has gotten cheaper, solar panels have come off the roof and are being planted in the ground in huge solar farms. The dramatic price declines in solar modules got the attention of California utilities in 2009. The utilities signed power purchase agreements for hundreds of millions of megawatts' worth of solar power plants.

Utilities have also initiated huge solar distributed generation programs. California's two biggest utilities, PG&E and Southern California Edison, last year announced that, over the next five years, they would install a total of 1,000 megawatts on rooftops and in ground arrays near substations and cities. (SunPower, the San Jose, Calif.-based solar module maker, recently won a 200-megawatt contract with Southern California Edison). When the Sacramento Municipal Utility District put 100 megawatts of distributed solar up for bid, the program sold out within a week.

All the activity attracted the attention of Chinese solar module makers, whose California market share more than doubled (to 46 percent) in 2009. One company, Yingli, arrived in California at the beginning of 2009 and ended the year with nearly a third of the market share.

No surprise then that California remains the solar capital of the country. In 2009, the state installed 200 megawatts of solar capacity, nearly four times the amount of New Jersey, the No. 2 solar state. (It's no coincidence that both states offer the nation's most generous solar incentives.) Altogether, California now boasts a total solar capacity of 1,102 megawatts -- 10 times that of New Jersey. (That's impressive, but still less than about half of California's wind energy capacity.)

Once you get past California and New Jersey, however, the numbers drop dramatically. The third biggest solar state, Nevada, had just 100 megawatts of solar capacity installed in 2009; No. 10, Massachusetts, had 18 megawatts.

Still, the growth in the solar industry meant more green jobs. Solar added 10,000 jobs plus 7,000 indirect jobs in 2009, even as the overall unemployment rate soared. According to the SEIA, total solar employment in the U.S. stood at more than 45,000 last year, about evenly divided between direct and indirect jobs.

The need to ramp up solar power is thrown into sharp relief when you compare how much capacity the U.S. added in 2009 compared to other countries. Germany, the world's biggest solar power thanks to years of generous subsidies, installed 3,800 megawatts last year, according to the SEIA. That's nearly twice the total U.S. capacity and eight times what the U.S. installed in 2009. Germany now generates 9,677 megawatts of solar electricity. (Even the Czech Republic installed nearly as much as the U.S. in 2009, putting 411 megawatts online.) Solar currently supplies less than 1 percent of America's electricity.

However, if you consider the huge numbers of massive megawatt solar thermal power plants planned for the desert Southwest, the U.S. is poised to become a solar superpower. (Solar thermal plants use arrays of mirrors to focus sunlight on liquid-filled boilers that create steam to drive electricity-generating turbines.)

The SEIA says there are 10,583 megawatts of solar thermal power plants in the pipeline. Licensing those big solar farms -- and securing the billions of dollars needed to build each one -- has proven to be a laborious process. Only 81 megawatts in the pipeline are currently under construction.

But to put things in perspective, the solar thermal project closest to being licensed -- BrightSource Energy's Ivanpah plan in Southern California -- will generate nearly as much electricity as all the photovoltaic panels installed in 2009.

Given the trends in the solar industry, the SEIA says prospects in 2010 are looking bright, with growth continuing. Expect a big bump in rooftop solar thermal systems, which collect sunlight to heat water, as a new California subsidy program kicks into gear.

All of which is good news for Sungevity's Danny Kennedy. The boom in demand has him scrambling to secure supplies of solar panels. That's a nice problem to have in the Great Recession.

Triple Pundit- Solar Electric Capacity Grew 37% Last Year — Residential PV Doubles (4/15/10)

http://www.triplepundit.com/2010/04/solar-electric-capacity-grew-37-last-year-residential-pv-doubles/

BC Upham

Electricity generated by sunlight grew 37 percent in 2009 to a total of 2,108 megawatts of capacity nationwide, according to an advance copy of the US Solar Industry Year in Review, to be released today by the Solar Energy Industries Association (SEIA).

Overall solar energy capacity — which includes solar hot water heaters — grew 5 percent to 25,952 megawatts. But that modest figure hid the real action, which was in the photovoltaic panel market.

Residential roof-top PV installations grew by 156 MW in 2009, an astonishing 101 percent increase over 2008. That growth was helped in part by the removal of a $2,000 Investment Tax Credit cap.

PV has seen dramatic declines in the price of panels, declines mirrored in the cost of installing the panels on homes and businesses. Anecdotal evidence, in the form of increased news coverage and advertising campaigns targeting homeowners and small businesses suggested growth that was confirmed in SEIA's numbers this week.

Overall grid-tied PV grew 38 percent in 2009, less than the 84 percent growth in 2008, due mainly to sluggish demand in the non-residential sector (commercial, industrial and government installations). Nonetheless, grid-tied PV passed the 1 Gigawatt (1,000 MW) level for the first time in 2009.

State by state, California had the most new solar power capacity, with 220 MW of new solar electric installations (including solar thermal electric), followed by New Jersey with 57 MW.

The solar industry also added an additional 10,000 jobs in 2009, according to the report, to a total of 46,000 workers directly or indirectly employed by the industry, as well as an additional 7,000 "induced" new jobs. The large uptick may reflect the dramatic growth in residential installations, which are more labor-intensive per kilowatt installed.

Module prices fall, along with installation costs

Panel prices dropped 40 percent year-over-year in 2009, in large part due to Chinese manufacturing, but also increased manufacturing efficiency world-wide. Average cost of installation of a PV system in the 5 kilowatt range (what most single family homes need) is now about $8.15 a watt, before incentives are figured in.

Outlook for 2010: sunny

The SEIA expects the industry to grow 40 percent in 2010 as the economy shakes off the effects of the Great Recession and as prices continue to fall. There's also about 17 GW of projects in the pipeline in the US, the report notes, and world-wide demand is growing, including from global leader Germany (3 GW new capacity in 2009).

And in a sign of steady optimism in the sector, venture capitalists invested more in solar power than any other industry in 2009, about $1.4 billion. "For an industry that had a total U.S. volume of roughly $4 billion, this signals huge optimism about near-term growth," the report's authors wrote.

Reuters (Updated)- US solar capacity surges in '09 on incentives-SEIA (4/15/10)

http://www.reuters.com/article/idUSN159853820100415?type=marketsNews

Installed solar capacity in the United States jumped 37 percent in 2009 as state and federal incentive programs helped prop up demand during a downturn, solar advocates said in a report on Thursday.

It was the fourth straight year of record growth for the U.S. solar industry, which most analysts say will emerge as a global leader in the next few years as traditional European powerhouses scale back on their solar incentive programs.

U.S. growth was also encouraged by the falling price of solar modules, which dropped some 40 percent last year, the Solar Energy Industries Association said in a report.

"Despite the Great Recession of 2009, the U.S. solar industry had a winning year and posted strong growth numbers," said Rhone Resch, president and chief executive at SEIA.

"Consumers took notice that now is the best time to go solar," he added.

Government subsidies, cash grants and tax credits boosted activity in the sector, pushing total industry revenue to $4 billion -- a 36 percent increase over 2008, SEIA said.

New U.S. solar electric capacity hit 481 megawatts last year, up from 351 MW in 2008. The group said one megawatt is enough to power some 200 U.S. homes.

Solar water heating installation rose 10 percent on the year, while the solar pool heating market dropped 10 percent, in line with the slowdown in the construction market.

SOLAR UTILITY GROWTH

Several public solar companies play in the U.S. solar market, including First Solar (FSLR.O), SunPower (SPWRA.O) and and Suntech (STP.N).

They, like others in the sector, are competing to win business from U.S. electric utilities because the size of those projects tends to be much larger than projects to install panels on rooftops.

The sector is also expected to expand sharply in the next few years, as dozens of states have set goals or mandates requiring utilities to get a certain part of their energy from renewable sources like solar and wind.

California led the United States in new solar capacity last year, followed by New Jersey, Florida and Arizona.

In 2009, six utility-scale power projects came on line, between photovoltaic and concentrating solar power plants, SEIA said. Still, solar accounts for less than 1 percent of the U.S. energy mix.

Looking ahead, SEIA said it was optimistic and sees 17 gigawatts of solar power in the U.S. utility-scale pipeline, enough to power some 3.4 million homes.

"Now we're talking gigawatts of solar, not megawatts," said Resch.

New York Times/Green Inc.- Solar Growth Dims, With Homes a Glaring Exception (4/15/10)

http://greeninc.blogs.nytimes.com/2010/04/15/solar-growth-dims-with-homes-a-glaring-exception/?src=busln

Kate Galbraith

A new report from a solar industry group found that the pace of solar installations slowed last year amid the economic downturn.

Total capacity installed for all types of solar energy grew by 5.2 percent in 2009, compared with 9.6 percent the previous year. But Rhone Resch, the chief executive of the Solar Energy Industries Association, which released the report Thursday, said that the overall number hid tremendous variation within the industry.

For example, he said, the residential market for photovoltaic panels (the type used on rooftops) grew at its fastest pace ever in 2009, and utilities' demand for these panels also stayed strong. On the other hand, the large commercial market — companies putting solar panels on their rooftops — lagged. As a result, overall growth in capacity for photovoltaic panels stood at 38 percent last year, down significantly from 84 percent growth a year earlier.

Demand for solar pool heating equipment fell last year, with new installations down by 10 percent compared with 2008. "It's pretty clear that the solar pool heating was hit hardest by the recession," Mr. Resch said, noting that unlike other types of solar energy, pool heating does not benefit from federal tax incentives.

On a worldwide scale, the United States ranked fourth in solar-electric installations last year, the report said, after Germany, Italy and Japan. In overall capacity, the United States is also fourth, behind Germany, Spain and Japan. Solar power accounts for less than 1 percent of the electricity supply in the United States.

The solar industry has undergone significant changes in the past few years. The price of photovoltaic panels has fallen by over 40 percent since mid-2008, due to a combination of factors such as reduced demand in Spain and increased supply of the polysilicon material used to make the panels. However, homeowners have not reaped the full rewards of that price drop: The cost of panels and installation together fell by only 10 percent, the report said, reflecting that labor still accounts for a hefty proportion of the overall bill.

The industry has also benefited from substantial new federal incentives, designed to help homeowners, businesses and utilities afford solar (which is more expensive than most other sources of electric generation).

Beginning in January 2009, the federal government lifted a $2,000 cap on the 30 percent tax credit homeowners receive for solar-electric installations. Larger solar projects also received assistance from a provision in last year's stimulus bill that turned a tax credit into direct grants. As of February this year, the industry had gotten Treasury grants worth $81 million, the report said. That grant program is due to end Dec. 31.

States have also helped. California is by far the leading state for solar-electric installations, followed by New Jersey. That is because of the state's aggressive solar-rebate program and other environmental requirements. According to the report, this year California will also begin "the most ambitious" program of any state to encourage installation of solar water heaters — with the aim of adding 200,000 such systems across the state.

(Mr. Resch also noted that Florida "really leapfrogged" in the state rankings last year; the Sunshine State came in third in solar-electric capacity additions.)

The industry is still hoping that Congress will approve further policies to aid solar. On its wish list: a national renewable electricity requirement, with special requirements for solar power (18 states already have a solar electricity requirement).

Mr. Resch said he was optimistic that Congress would pass an energy bill this year, but he noted that the requirements must be structured correctly to make a difference. The current proposal in Congress, he said, "needs a lot of work."

Center for Responsive Politics- Solar, Wind Power Groups Becoming Prominent Washington Lobbying Forces After Years of Relative Obscurity (3/30/10)

http://www.opensecrets.org/news/2010/03/solar-wind-power-becoming-prominent.html

Cassandra LaRussa

In 1998, the entire alternative energy industry barely even registered as a political player in Washington, spending a mere $2.4 million on lobbying the federal government. Meanwhile, in the same year, the oil and gas, electric utilities and mining industries spent a combined $142 million advancing their own legislative interests.

That landscape, however, has changed considerably.

By 2007, the alternative energy industry had begun to drastically increase its lobbying spending, almost doubling its expenditures from the previous year. In 2009, alternative energy organizations shelled out an unprecedented $30 million to protect and promote their interests on Capitol Hill.

The alternative energy industry's lobbying expenditures have grown to 12 times from its 1998 level. In comparison, oil and gas spending and mining spending have grown less than three times their 1998 amount, and electric utility spending has grown to just twice its 1998 amount.

The growing involvement of the alternative energy industry in legislative affairs is reflected not just in increased spending, but also in the number of companies and organizations that employ federally registered lobbyists.

In the late 1990s, only about 20 alternative energy industry organizations used federal lobbyists.

By 2009, there were about 200 alternative energy companies and organizations employing lobbyists to help advance the industry's interests.

The American Wind Energy Association is one of those organizations that recently and significantly increased lobbying efforts.

Until 2008, AWEA failed to crack the $1 million mark in annual lobbying expenditures -- and most years, it spent less than $500,000. In 2009, its expenditures experienced a drastic increase, and the group spent almost $5 million on lobbying for issues related to the wind power industry.

But why did AWEA, and scores of other alternative energy corporations, trade organizations and non-profits, get involved in legislative affairs so suddenly and with such gusto?

The involvement stems from the growth in number of alternative energy companies, which was made possible by the growth in popularity of wind power in the national consciousness, said Christine Real de Azua, an AWEA spokeswoman.

Real de Azua states that this, in turn, increased AWEA's ranks by more than 1,000 new business members in 2009 alone, many of them "companies entering or seeking to enter the wind turbine supply chain."

americanwindgraphic.jpgLast year "was a record year for wind power in the U.S.," Real de Azua said. "The industry installed 10,000 megawatts last year, enough to generate as much new electricity as three new nuclear plants."

The recent involvement of AWEA in federal affairs, she said, "reflects the urgency of the industry's number one priority -- passing a national renewable electricity standard with aggressive, binding near- and long-term targets, as part of comprehensive energy and climate legislation."

Azua de Real cites "market certainty" as a concern of AWEA's members, who need legislative support of their industry "in order to expand their operations and invest in new manufacturing as well as new wind farm facilities." She added that it is imperative to the members of AWEA that the U.S. government "steps up and clearly commits to developing renewable energy."

AWEA cites the sheer potential of wind energy and the opportunity for job creation as two key points that their lobbyists emphasize in the fight for favorable legislation.

Not as drastic but certainly notable is the increased lobbying by the Solar Energy Industries Association. Until 2007, the organization had never spent more than half a million dollars on federal lobbying efforts. In 2009, it spent more than $1.6 million.

Monique Hanis, an SEIA spokeswoman, attributes the increase in lobbying presence to a growth in membership that enabled the organization to expand legislative activities.

She explains how in late 2008, SEIA's increased lobbying pressure paid off when Congress "passed the eight-year extension of the solar investment tax credit," which allowed the organization to move on to lobbying regarding climate, renewable energy standards, green jobs and appropriations.

The goal of spending more money than ever before on federal legislation, Hanis says, is "to remove market barriers so that solar can compete fairly with other energy sources and we can expand the amount of solar used in this country."

SEIA has already seen positive gains from their increased expenditures, Hanis said.

The group's lobbyists were successful in promoting several provisions of the stimulus bill, such as the "lifted cap on solar investment tax credit for residential solar water heating systems." In addition, the industry's increased presence on Capitol Hill has "built bipartisan support of and knowledge about solar."

But while alternative energy interests are just getting acquainted with K Street, the oil and gas industry has been a permanent resident for years.

Since 1998, the oil and gas industry has never spent less than $50 million on lobbying in any given year, and in 2009, it reported $168 million in lobbying expenditures.

Does a rise in alternative energy lobbying threaten to erode the oil and gas industry's political power?

Probably not, said American Petroleum Institute spokesman Bill Bush, adding that he is "not concerned" about the alternative energy industry's efforts and "not aware of any impact" they're having on the petroleum industry's fortunes.

Bush also emphasized that the oil and gas industry "understands that there is a role for alternative energy" and has "invested billions in it."

He added, however, that "on various issues, we may be on different sides."

In 2009, API focused on energy legislation and "issues related to access to oil and natural gas development," Bush said. The institute spent more than $7.3 million in 2009 on federal lobbying efforts after spending between $2.8 million and $4.8 million each year on lobbying between 2002 and 2008.

As this decade moves forward, climate and energy policy remains a key issue in Congress.

Barack Obama labeled such legislation a high priority long before he became president, and people and political action committees associated with the alternative energy industry responded with campaign contributions of $173,500. The oil and gas industry poured more than five times that amount into Obama's campaign coffer, but gave most of its presidential campaign contributions to Sen. John McCain (R-Ariz.).

Sens. John Kerry (D-Mass.), Joe Lieberman (I-Conn.) and Lindsey Graham (R-S.C.) are currently drafting a bill to address the nation's energy needs. The bill, if passed, could certainly become a major political victory for Obama.

Although most of the conversation regarding the drafting of legislation has revolved around the question of greenhouse gases and the proposed "cap-and-

trade" policy, the bipartisan bill also makes a point of emphasizing job creation and the use of renewable energy.

In a statement in February, Kerry promoted his energy bill by stating, "Americans want us to be energy independent. Moreover, every job created in the course of energy independence is a job that stays here at home."

And with political focus on alternative energy constantly expanding, the lobbying power of the alternative energy industry may soon become as plentiful as Great Plains breezes and desert sunshine.

Solve Climate- Solar Water Heaters Sprouting on Rooftops Worldwide (3/14/10)

http://solveclimate.com/blog/20100314/solar-water-heaters-sprouting-rooftops-worldwide

Renee Cho

On a recent visit to Yunnan Province in southwest China, I was pleasantly surprised to see solar water heaters on countless home and building rooftops, even in remote rural villages. These installations, featuring an array of tubes and a storage tank, use the sun's rays to produce hot water.

Today, China is the world leader in solar water heater (SWH) production and installation, but SWH is now catching on in the U.S., too.

The California Public Utilities Commission in January launched the California Solar Initiative Thermal (CSI-Thermal), a $350 million incentive program for solar water heaters. The goal of CSI-Thermal, which begins in May and runs through 2017, is to install 300,000 additional solar water heater systems by 2018. It is expected to eliminate 100,000 tons of greenhouse gas emissions each year.

U.S. Sen. Bernie Sanders (I-Vt.) followed California's lead in February by introducing the 10 Million Solar Roofs and 10 Million Gallons of Solar Hot Water Act. Modeled after CSI-Thermal, the bill would provide rebates to cover up to half the cost of 10 million new solar power systems and 200,000 solar water heater systems.

With water heating the third largest energy expense in most homes, solar water heating is a green and cost effective way to produce hot water and can cut annual hot water bills in half.

How SWH Systems Work

Solar water heater systems have solar collectors and a storage system; active systems have circulating pumps and controls, while passive systems depend on convection to move the water from the collectors to the storage tank as it heats up.

For residences, there are three types: Flat-plate collectors, which are insulated boxes with a dark absorber plate made of metal or polymer under glass; integral collector-storage systems (ICS) or batch systems, which consist of one or more black tanks or tubes in an insulated, glazed box; and evacuated-tube solar collectors (the type I saw in China) feature rows of glass tubes with metal absorber tubes attached to a fin whose coating absorbs solar energy.

Active solar water systems can be either direct circulation systems, which use a pump to push water through the collectors then into the home, or indirect circulation systems, which use pumps to circulate a nonfreezing heat transfer fluid through the collectors and heat exchangers, which heats the water. The latter is better for areas where freezing temperatures occur.

Passive systems are simpler, less expensive and may last longer, but are not as efficient. There are two types: ICS and thermosyphon systems that position the solar collectors below the storage tank, allowing warmed water to rise into the tank. Solar water heaters are used with a conventional storage water heater, usually natural gas or electric powered, as a backup for cloudy days or in case of increased demand.

SWH Incentives

The U.S. Department of Energy estimates that installing a solar water heater can reduce a home's water heating bills between 50 and 80 percent, while reducing CO2 emissions by 4,000 pounds each year.

The payoff can be significant.

Monique Hanis, a spokesperson for the Solar Energy Industries Association (SEIA), estimates that the SWH system she installed at her Arlington, Va., home handles 25 percent of her water use and saves her $400 a year. "And even though my kids are now teenagers and are taking more and longer showers, my bills have gone down," Hanis said.

With the variety of federal, state, city and utility incentives now available, and the savings on water heating bills, solar water heater systems can pay back their investment fairly quickly.

The American Recovery and Reinvestment Act (ARRA) offers a 30 percent tax credit for residences on the cost and installation of solar water heaters. The credit, available through 2016, does not apply to swimming pools or hot tubs, and requires that the system be certified by the Solar Rating and Certification Corporation.

Through the Department of Energy, ARRA is also funneling $3.1 billion to State Energy Programs. Some states, like Tennessee, are using that money to finance projects like a solar array and research center, while others are funding grants or incentives.

California's Rebate Program

CSI-Thermal takes a different approach — it is funded by utility ratepayers.

The program covers customers from San Diego Gas and Electric, Pacific Gas and Electric, Southern California Gas and Southern California Edison, about 90 percent of Californians in all. Of the $350 million being set aside for CSI-Thermal, $250 million is being allocated to replace natural gas water heaters, and $100.8 million to replace electric water heaters. Natural gas users get a rebate of up to $1,875 for residences, and up to $500,000 for commercial buildings and multifamily dwellings. Electricity users will get up to $1,250 for homes and $250,000 for commercial and multifamily buildings. The incentives will decrease as the years wind down.

CSI-Thermal was based on the experiences of the Solar Water Heating Pilot Program begun in 2007 by the California Center for Sustainable Energy (CCSE), which tested solar water heaters' cost effectiveness, and identified barriers to the public's acceptance of them.

Katrina Phruksukarn, manager of the Solar Water Heating Pilot Program for CCSE, and now manager of the Solar Water Heating Program, explained that the pilot program identified four barriers to market penetration of solar water heaters that CSI-Thermal has addressed. First, consumer education was insufficient, so CSI-Thermal has a large marketing and PR budget to educate the public. Second, there are very few highly skilled solar water heater installers, so marketing outreach funds will also go for training; CCSE is partnering with community colleges to develop solar thermal curricula, as well. Third, since all solar water heater projects must be up to code, CCSE is developing educational opportunities for building inspectors so they understand solar water heater permitting requirements. And fourth, up-front solar water heater costs were a deterrent, so the rebate program was instituted.

The average solar water heater system costs $6,000-$7,000, but with the federal tax credit and the rebate, the cost can be cut almost in half. To determine payback time, CCSE made rough calculations based on the average pilot program solar water heater price, average pilot program incentive (the average pilot rebate was $1,250 with a maximum of $1,500), average energy savings per solar water heater system installed in the pilot program, the federal tax credit and the cost of energy.

"Based on these estimates, we found that the payback would be about seven to eight years when installing a SWH system with an electric backup water heater and about 13 to 14 years when installing a SWH system with a natural gas backup water heater," Phruksukarn said.

"Our goals are to offset 585 million therms by 2018 — which would mean installing SWH in 200,000 single-family residences that use natural gas, which is 90 percent of Californians; and to offset 275 million kWh which would require installing SWH in 100,000 homes that use electricity."

If CSI-Thermal meets its targets, the implications for the California job market are significant, with many new jobs created for specialized solar water heater installers and contractors.

"We've had interest from manufacturing companies in Germany and Australia that want to enter the California market and set up shop here," Phruksukarn noted.

Other States and SWH

Currently, 42 states, Puerto Rico and the U.S. Virgin Islands offer incentives for solar water heaters, including direct cash incentives, tax credits, tax deductions, utility direct cash incentives, and sales and property tax incentives, according to the Database of State Incentives for Renewables & Efficiency.

Based on 2007 data, Hawaii leads the states in installations, accounting for one quarter of U.S. installations. Between 2005 and 2008, Hawaii's installed capacity tripled, and it is primed to grow even more quickly with the 2008 passing of a law requiring all new homes to use solar water heaters starting this year.

Florida, the second largest solar water heater market in the U.S., has a $500 state rebate program and a number of utility rebate programs. Lakeland Electric in central Florida is the first utility in the country to offer SWH heated water on a "pay for energy basis." The utility installs the solar water heater systems on customers' homes at no cost. Residents are then billed for their hot water use and can lock in lower electric rates since a portion of their bill is exempt from fuel charge increases.

Connecticut's Clean Energy Fund has a solar water heater incentive program funded by ARRA with maximum incentives pegged to the size of homes starting at $2,400 for one- to two-person households. New York offers a 100 percent sales tax exemption on residential solar water heater systems and a 25 percent tax credit up to $5,000. And Louisiana boasts one of the most generous incentive programs, with its 50 percent tax credit on residential solar water heater systems up to a maximum of $12,500.

Between 2005 and 2008, solar water heater installations outside of Hawaii increased five and a half times, according to the Interstate Renewable Energy Council's 2009 annual report. And the SEIA Year in Review reports that 20,500 SWH systems were installed in 2008, a 50 percent increase. SEIA's 2009 SWH figures will be out at the end of March, but Hanis predicts they will remain flat due to the economy.

While the public's awareness of solar water heaters is growing, more education and outreach is still needed. A 2009 poll found that 92 percent of Americans think the U.S. should develop and use solar energy, and although 49 percent say they are currently considering solar power options for their home or

business, a whopping 74 percent wish they knew more about solar power options.

SWH Around the World

Because of a fuel shortage, Israel began using solar water heater systems in the 1950s and became the first country to pass a law requiring all new homes to install SWH in 1980.

Today, with 90 percent of homes using solar water heaters, Israel saves 1.6 billion kWh each year, 21 percent of its domestic electricity use.

Spain became the second country to require the installation of solar water heating systems in new buildings in 2006. A number of other countries, such as Australia, Austria, France, and Italy offer SWH financial incentives, and Germany recently instituted a new minimum requirement for hot water and space heating from renewables.

By the end of 2008, China was the world leader in SWH existing capacity, due to financial incentives and mandates to promote solar and other renewable energy sources, according to the Renewables Global Status Report of 2009. The China Greentech Report 2009 found that 95 percent of core solar water heater technology is held by China and that 600,000 related jobs were generated in 2006 alone. Numerous cities have mandated solar water heater systems on new or rebuilt buildings including Shenzhen, eastern Nanjing, Zhengzhou, Xiamen and Shijiazhuang, and the government has ambitious installation goals for the future.

With a total installed capacity of 90 million square meters, equal to 60 percent of the world's total capacity, China's annual solar water heater production is twice that of Europe and four times that of the U.S.

As a result of federal tax credits and state and local solar water heater incentives, the U.S. is making progress in the sector, but it trails China, Turkey, Germany, Japan and Israel in installed capacity. The country still has a lot of catching up to do.

Contractormag.com- West Coast Solar (3/3/10)

http://contractormag.com/features/SPI-hot-1234/

Dave Yates

Last month I talked about my adventures on the East Coast at the Solar Decathlon in Washington. This month let's venture out to Southern California for the Solar Power International Conference, put on by the Solar Energy Industries Association.

Still on East Coast time, rising before the sunrise was a daily event and each morning's sunrise was spectacular. By the time we saw the sun's first golden rays peeking over the mountains to the east of Anaheim, enough energy had

fallen on the surface of the U.S. to provide all the daily power needs for several years! In fact, the amount of solar energy striking the earth's surface over three day's time is equal to all the energy stored in all fossil fuel reserves. It was time to absorb some solar energy information at Solar Power International.

SPI is the single largest business-to-business solar showcase and featured more than 930 exhibitors of PV, thermal, commercial concentrating solar, heating/cooling applications and a variety of pool heating styles. In spite of the huge trade show floor space, the more than 24,000 registered attendees resulted in crowded aisles abuzz with conversations. The number of speakers (more than 200) created a need to carefully manage time and drill down through the topics of most interest for the overlapping presentations. Even then, it was impossible to take in as many as I wanted, but not to fear — registered attendees are given online access to all of them shortly after the event.

Call it a comfort issue, but we wanted to visit with the thermal solar folks first to see old friends and gauge the growth, or lack thereof, in the number of booths showcasing solar hot water technologies. While the size of SPI had doubled from last year's show in San Diego, the number of solar hot water booths had mushroomed! Still, it was a relief to run into old friends — both inside booths and as visitors, like Dave Woycio, president of Metro Solar Inc., from Denver, who remains active on SEIA boards and works diligently to help shape the future of solar on a regional and national level.

A vested interest in PV

My home state of Pennsylvania passed an alternative energy bill last year with incentives of up to $2.25 per installed Watt of PV. In order to obtain the incentive, the end-user must use an approved installer from the list on the PA-DEP Web site, and you can't get listed without proof of approved training. I was shocked to find that all PV certification classes (on DEP's approved trainer list) were sold out well into 2010. With several PV systems in our pipeline, that was a dilemma. One, and only one, SunPirate.com, had an opening, and classes had already begun — I was late for class before getting started!

Training is an ongoing issue the solar industry must ramp up in order to keep up with demand. During my time interviewing Rhone Resch, CEO and president of SEIA, we spoke about training and the explosive growth solar has experienced this past year. Photovoltaics alone saw an 82% increase in 2009. Training, as I'd discovered, was lagging far behind demand and, given the many cross-trade safety issues PV installers face, the industry needs to have installer-certification courses that don't create unnecessary barriers to successfully graduating. Memorization of complicated formulas for closed-book exams, as an example, create an unrealistic barrier for the roughly 40% of tradesfolk (like me) who have dyslexia. A more practical approach is an open-book test that tests students' memories regarding where to go for design or installation answers.

PV panels everywhere! It seemed like there were enough PV panels on display to power a nation.

"It's been a dynamic year with a fundamental shift in pricing that's likely to shake out a few of the weaker players," said Gaelan Brun with http://www.grosolar.com/. "Several manufacturers locked-in material prices anticipating a run-up in costs, only to witness the sales-side dip by more than 30%. This is definitely a buyers' market for PV solar systems."

An unexpected and pleasant chance encounter with East Coast to West Coast transplant Andrew Barton, now CEO of http://www.ussolardistributing.com/, led to further discussions about training.

"We have ramped up training and are striving to meet demand," Barton told me. Andrew was, at one time, our salesperson for T. Somerville and knows my feelings about wholesalers and manufacturers who undercut contractors' business by selling direct — often at wholesale cost.

"One thing I know you'll appreciate: we sell only to installing contractors and that's been our policy for more than 30 years," he said. Training plus contractor loyalty? "And, we'll gladly ship product to the East Coast." Well, sign me up.

Installer accountability

All this great solar stuff and who is to say it was installed properly or will live up to the end users' expectations? A few states have monitoring requirements tied directly to the solar system's performance. If you sell a consumer a 4 kW PV system or promise the solar thermal system will deliver X gallons of hot water each year, there are monitoring systems available to provide proof you did what you said you'd do; if you overpromised and under-delivered, you're the one headed for hot water! Fat Spaniel and Sunny Beam wireless seemed to represent the spectrum from independent monitoring agency to manufacturer-based on-site consumer monitoring.

As the industry evolves, let's hope incentives and tax credits require system monitoring to validate our work. We're on the verge of a Wild West solar gold rush that will eclipse the '70s and '80s solar surge. Without training, licensing, and verification of performance, the industry and consumers risk an influx of underperforming Rube Goldberg solar installations that will give us all a black eye.

New this year is the influx of PV panels with mini-inverters attached to each panel. Many are touting a simplified installation with tightly spaced panels for a much more aesthetically pleasing appearance. They are better looking, but beware those that incorporate panel-to-panel inter-connecting parts — like grounding rods — that would create a nightmare for a single-panel replacement or service unless it happens to be the end-panel.

"You can walk on the panels, but we recommend you walk on the panel's frame instead of the center of the glass," I was told!

Nonetheless, the emphasis this year is on making solar systems with a streamlined appeal sure to please discriminating consumers who have been reluctant to see too much of the underlying framework with wide gaps between panels. In addition, manufacturers of rack systems are simplifying the installation to help reduce the time required for assembly. Less time equals lower cost and that leads to increased sales. Work smarter, not harder! Personally, given that falls from roofs are a leading cause of injuries and deaths (one death per day on average in the U.S. and Canada), I'm happy they're working hard to get us off the roof faster with improved odds for a safe return.

Thin film solar growth continues to eat into traditional solar panel technology and is anticipated to comprise as much as 31% of the market by 2013 from its 14% market share in 2008. The single largest limiting factor has been, and will continue to be, the additional 15% to 40% of solar real estate needed to match traditional panel outputs. However, thin film's sleek thin look combined with its deep blue-black hue sure does captivate the eyes of passersby and met with lots of onlookers' compliments.

One of my SunPirate PV classmates, Paul Holden, lives in California and was planning on attending SPI mid-week, during the open-to-the-public event. I wanted to meet Paul and get his perspective on the show. Paul was one of more than 3,000 visitors storming the exhibition hall Wednesday evening. À la Gilligan's Island, Paul referred to this as the "Three Hour Tour!"

What was Paul's first impression of SPI? Approaching the Anaheim Convention Center around 4:45 p.m. Wednesday in anticipation of the free public entry from 5:30 p.m. until 8:30 p.m., street signs guide you to an overflow lot about half a mile's walk from the convention center. This is your first indication that the show is pretty popular. The SPI Web site says they sold out all 925 exhibitor spots, and last year the conference had 425.

In a small re-creation of Ellis Island, we of the "great free public" are shown to our lineup area to wait for 5:30 p.m. This is so we can pass through some counting turnstiles into the exhibit and the promoters can get a headcount. We don't register and we don't need no stinking badges.

Once inside, I felt as much as a middle-aged man can feel like a new kid at high school. All the vendors seem to know each other and their regular contractors, and there's all the cool stuff we've been seeing in our online SunPirate training course — but more of it and in infinite variety. There was such an "up" feeling among the vendors that Paul said it reminded him of his first Wescon trade shows as an electronic engineer in the late '70s, when it felt like the industry had a future "so bright you had to wear shades." It was intimidating for someone halfway through his first online PV solar course.

What will you take away regarding solar PV displays? Crystal silicon PV Panels were a commodity shown by big and small companies, so many that you got tired of seeing them after a while. Seems like every country (U.S., China, Japan, Korea, Mexico, Portugal, lots of other European names) has

manufacturers and distributors. They are mostly the same shape and capacity, some blue (with and without diamond patterns or lines), some black. One thing they all seemed to have in common — every vendor's was the most efficient!

How do you decide?

How you pick a winner out of all these will be a challenge — it makes you consider sticking with a package distributor, like SunWize. Their main business is still to deliver a system package to contractors with a shrink-wrapped set of documents that cover everything you need from pulling the permit to the required customer wiring diagrams and docs. They now have an installation division too, so they're putting systems on roofs themselves and they're hiring.

What did you learn about solar panels? They are tough. They are supposed to be able to take a hit from hailstones as big as golf balls at whatever speed it is you reach falling from a cloud. Several people told me they had walked across arrays for service or whatever, but being careful to keep their weight on the frames if possible. I had seen so many pictures of arrays with no access spaces between rows, I was wondering how technicians got in to pull a bad panel.

As someone new to solar, I asked Paul if he noticed any differences in the racking systems? Using array racking and installation to differentiate PV panels was a big deal. Since the panels are functionally pretty similar, there are many companies trying to out-clever each other with no-rack installations and simplified interconnection. Putting slots in the panel frame extrusions to accept mechanical brackets means that no separate "rack" hardware is needed, only brackets for legs. The Akeena company has a product called Andalay (to remind you, perhaps, of Speedy Gonzales saying "ándale!") that not only mechanically connects panel to panel, but has in and out connectors on each side that fit together to make a voltage bus from end to end automatically. You end up with no spaces between panels and they claim it goes together really fast with far fewer parts. I hope they're using a darn good connector, since the weakest link in many harsh environment electronic products I designed was … the connectors.

It seemed, to me as well, that the advent of mini-inverters has the potential to impact the solar industry. I asked Paul, as someone with a background in electrical engineering, what's his take on this practice? Mini AC inverters are available to stick on the backs of each PV panel to give you an array with a 240V AC output that goes into an electronic black box that can combine multiple AC lines for connection to a regular AC line power panel. The guy telling us about this said that most PV arrays have a 600V DC bus coming off the roof, so 240VAC was actually less dangerous. Paul was once shocked nearly unconscious by 120 VAC, and he didn't really think he'd like to try either choice. Whatever the advantage to this is, it puts a lot of separate electronic modules (with microprocessors I would bet) in a pretty harsh environment — right on the back of something pretty hot. While there are industrial grade parts to serve such applications, it seems to violate KISS engineering, so the benefits must be pretty good.

More “putting stuff on the backs of panels” comes from National Semiconductor with their Solar Magic product. Our training course hasn’t mentioned this so far, but apparently mismatches between panel outputs in an array can degrade the overall power by 10%-40%, according to a National Semiconductor video. The variation can be from different types of manufacturers panels, panels facing different directions on the roof, different amounts of dirt or shading. Sticking one of their modules on the back of each panel cures all ills. My guess, and it is strictly guessing, is that it’s a DC-DC converter with power tracking regulation (like some of the power maximizing charge controllers we learned about) and it matches all panel output voltages to some standard value.

When I asked Paul if there was anything missing that he expected to see at SPI, he noted he didn’t see much panel tracking hardware or roof mount angle brackets — only one example of each. Perhaps there were others, but the only tracking system was very large — utility sized. Apparently having the array flat a few inches off the roof is the residential favorite for aesthetics and simplicity. We learned in the first few chapters of our training class how simply matching the angle to latitude had a significant effect on power output. Perhaps, though, it’s just faster, easier, and better looking to add more panels to make up for the inefficiency. In an isolated area or with a ground mount, I imagine you can get racks to mount any angle you want.

So what about the issue of local codes and permitting issues? One thing I wanted to find out at the show was how much opposition different cities and homeowners groups had to adding big black or blue arrays on rooftops in expensive neighborhoods. The consensus from the few installers I talked to is that there are few problems getting the permits — although permit fees are all over the place. In Paul’s city, it’s $2,000 to do solar based on cost, since it’s treated like any home improvement.

Other nearby cities have low or no fees for solar as an incentive. Apropos of this, I met the inimitable Bradley Bartz from ABC Solar at the Shuco booth. A solar designer for many years, he’s kind of like the Penn Gillette (Penn and Teller) of solar. Wearing a T-shirt with “The Squeaky Wheel” in very large print, he has fought some cities in court on behalf of all solar installers, and probably secretly enjoyed it. To learn more about Bartz, click here.

Most of the daily attendees had long since departed the convention center and it was time for us to move on, so that Paul could get the most out of his visit.

All work and no play? No way! SPI knows how to throw a party and this year’s was held at the neighboring Disneyland Park, which was closed to the public during the after-hours event. Imagine this scene: a networking and social event of epic proportions where food, drink and rides without lines are available and toss in a Disney-style fireworks display to punctuate the evening’s gala event.

SPI will be held in next year in Los Angeles, Oct. 12-14. Four and a half billion years without a single power outage; solar panel prices slashed by more than

30% over the past year; incentives and tax credits are up; consumer interest is at an all-time high; solar is the single-largest and best growth-industry in the down-economy.

Isn't it time to consider becoming a participant in the bright solar future, casting its ever-widening glow across the globe? A great place to begin is by joining SEIA to help support those who are supporting us.

As Rhone Resch told me, "Think of SEIA as the doorway to the solar industry for resources, education, legislation, and training opportunities."

Contract Magazine- New Act Proposes Tax Rebates for Solar Roof Installations (2/19/10)

http://www.contractmagazine.com/contract/content_display/design/news/e3ie935cc06a40350225436d51e2f1aa405

Stacy Straczynski

A new bill filed last week by Vermont Senator Bernie Sanders aims to incent U.S. organizations and residents to invest in solar power via a government tax rebate as a means to addressing rising energy costs and global warming concerns, as well as reduce U.S. reliance on foreign sources of fuel. Driven by a goal of "10 Million Solar Roofs and 10 Million Gallons of Solar Hot Water," the act would produce 30,000 megawatts of power over the next 10 years.

According to the bill, U.S. organizations and consumers would be eligible to receive direct rebates for purchasing photovoltaic and solar water heating technology, with a maximum rebate of $1.75 per watt for solar and $1 per watt for solar thermal, up to 50 percent of the net cost of the system after any other rebates and credits. Homeowners, businesses, non-profits, and state or local government would be eligible for the rebate, and properties on which the systems are installed must be within the U.S. and meet the energy efficiency criteria as set by the Secretary of Energy.

"At a time when we spend $350 billion importing oil from Saudi Arabia and other countries every year, the United States must move away from foreign oil to energy independence," Sanders tells Renewable Energy World.com. "A dramatic expansion of solar power is a clean and economical way to help break our dependence on foreign oil, reduce greenhouse gas emissions that cause global warming, improve our geopolitical position, and create good-paying green jobs."

According to the Solar Energies Industry Association (SEIA), the proposed incentives are expected to spur activity in the solar power market, creating billions in investment opportunities and thousands of new green-collar jobs. Currently, the solar industry provides over 60,000 U.S. jobs.

E The Environmental Magazine- Solar by the Millions (2/15/10)

http://www.emagazine.com/view/?5048

Erin Schneider

On February 4, Senator Bernie Sanders (I-VT) and Representative Steve Cohen (D-TN) announced to the Solar Energy Industries Association (SEIA) their 10 Million Solar Roofs and 10 Million Gallons of Solar Water Heating Act of 2010, modeled on California's Million Solar Roofs initiative. This bill would encourage adding 10 million gallons of solar hot water and to install solar panels on 10 million rooftops nationwide over the next 10 years.

Since 1974 SEIA has worked with companies to make solar energy more mainstream, in part by helping to alleviate market barriers and by educating the public on the benefits of clean solar energy. SEIA President and CEO Rhone Resch said in a release: "Senator Sanders and Congressman Cohen have shown true leadership by setting a bold vision for solar installations…passing this bill would create the world's largest market for solar energy here in the U.S. and bring with it tens of thousands of manufacturing and installation jobs in all 50 states."

The rebates provided to residential and commercial property owners that install these photovoltaic and solar hot water heating systems would help to offset substantial initial costs, the biggest barrier to widespread adaptation of solar power nationwide.

BIOFUELS WATCH- Clean jobs in Wisconsin (2/13/10)

http://www.biofuelswatch.com/clean-jobs-in-wisconsin/

State officials from Wisconsin have made trips to three of the businesses in the La Crosse area on Monday with the objective of pushing the bill for clean energy jobs that has been made by Governor Jim Doyle.

According to this proposal the state is being requested to acquire 25% of its electricity from various renewable sources of energy latest by the year 2025. The Chairman of the Public Service Commission, Eric Callisto, Mark Meyer, the PSC Commissioner & Dick Leinenkugel, the Commerce Secretary had together visited Honda Motorwerks, Gundersen Lutheran and City Brewery. Leinenkugel had said, while at the dealership, "We spend around $16 billion in Wisconsin because we don't have resources such as oil, natural gas or coal. This means that each and every dollar which leaves this state does not come back and get re-invested into a local business."

Callisto too has emphasized on a few parts of the bil, namely, renewable energy, energy efficiency & lifting the delays with regard to the construction of brand new nuclear plants. He said that Wisconsin is now getting around 5 % of its electricity from renewable sources of energy.

According to the La Crosse Tribune, the Green industry is looking for a lot more support from the federal government. The business of alternative energy is on the verge of bringing thousands and thousands of fresh jobs into the country if only the policy makers in Washington manage to broaded the support that the

government gives to these programs, said the Lobbyists for the industry on Tuesday. The President of CEO of Solar Energy Industries Association, Rhone Resch said that a federal standard with regard to renewable energy was needed which would need for the various generators of power to start using cleaner substitutes for traditional energy. Close to half of the states in the U.S. already have these regulations but when we talk of the federal level, there are no such standards at all. “We are just starting to see the initial few snowflakes from what could beocme a blizzard of jobs in the near future,” he said while at a joint press conference which was set up by the lobbyists themselves.

The year 2010 could see the solar industry double itself as long as the fourteen above mentioned projects get the required permissions to continue as planned and this is also going to see the creation of 20,000 new jobs for the community. Even though the American Reinvestment & Recovery Act of 2009 helped the industry to grow with the help of stimulus money, it was now time for the government to stand up and care for the environment.

Fort Worth Business Press- Bill, funding could heat up solar power use in Texas (2/15/10)

http://www.fwbusinesspress.com/display.php?id=11975

John-Laurent Tronche

Two congressmen unveiled proposed legislation that encourages the installation of 10 million solar systems on the roofs of homes and businesses during the next decade, which could help Texas launch an energy industry that to date has lagged behind others.

Sen. Bernie Sanders, I-Vt., and Rep. Steve Cohen, D-Tenn., proposed a bill that would mimic rebate programs in California and New Jersey, the No. 1 and No. 2 states, respectively, in installed solar photovoltaic systems, that could cover up to half the cost of a solar photovoltaic system or solar water heating system.

“A dramatic expansion of solar power is a clean and economical way to help break our dependence on foreign oil, reduce greenhouse gas emissions that cause global warming, improve our geopolitical position, and create good-paying green jobs,” Sanders said in a statement.

The bills call for the installation of 10 million solar photovoltaic systems and 200,000 solar water heating systems by providing assistance for interested businesses, homeowners and government bodies. The idea is by providing incentives to reduce costs, the United States, which ranks fourth in installed solar capacity, behind Germany, Spain and Japan, can increase its solar power use.

Untapped potential

In addition to its strengths in oil, gas and nuclear energy, Texas consistently has been ranked No. 1 in nationwide installed wind power, according to the American Wind Energy Association; however, the state, despite boasting a

plethora of sunny days, doesn't rank in the top 10 states generating the most power from the sun, according to the Interstate Renewable Energy Council. Part of that reason stems from inability to pass solar-friendly legislation. For example, efforts in the 81st Legislature last year failed, preventing $500 million from being allocated for solar rebates.

The most-concentrated parts of the country for solar energy potential are southern California, southern Nevada, Arizona, New Mexico and far west Texas. Texas ranges between about 2 kilowatt-hours per meter squared per day in December and 8 kWh/m2 /day in July – ample energy potential – while No. 2 New Jersey, for example, is slightly less at an average of about 4.5 kWh/m2 /day, according to the U.S. Department of Energy's National Renewable Energy Laboratory.

Environment Texas, based in Austin, is an environmental advocacy organization that recently urged Gov. Rick Perry and the Public Utility Commission to support policies that would encourage increased solar energy use. The group's director, Luke Metzger, said the Sanders-Cohen solar bill would benefit the state.

"It would do a lot to spur a solar industry in Texas," Metzger said. "We clearly have some of the best solar-radiation potential in the nation and some of the best manufacturers in Texas."

Of note: In Pasadena, Texas, MEMC Pasadena Inc. is one of the largest producers of solar-grade silicon. Entech Solar Inc. and Exeltech are two Fort Worth-based manufacturers of solar panel components. Barr Fabrication, of Brownwood, produces structural support steel for utility-scale projects. And last year, Oncor launched a solar-rebate program to help some consumers with solar panel installations.

Government assistance on the upswing

Last month, Department of Energy Secretary Steven Chu announced the NREL would invest $12 million to support the development of early-stage solar-energy technologies, with three projects in California and a fourth in North Carolina.

"Only recently now has government invested in solar and given it the support that other energy technologies get," Metzger said.

Brad Collins is executive director of the American Solar Energy Society, comprised of industry professionals, and publisher of SOLARTODAY magazine.

"Like any initiative at the federal or state level, if you can produce markets through legislation you're going to help industry and lower costs for future consumers," Collins said. He added of the Sanders-Cohen proposal, "It isn't the only thing that can be done, but every incremental step in creating a more positive and economically feasible market is a plus for the U.S."

According to ASES research, every $1 invested in renewable energy initiatives will yield two and a half times more jobs than the same dollar invested in oil and gas – "A bigger bang for your buck," Collins said.

The Solar Energy Industries Association also supports the Sanders-Cohen proposal, saying its passage "would create the world's largest market" and "bring with it tens of thousands of manufacturing and installation jobs in all 50 states," said Rhone Resch, the organization's president and CEO, in a statement. As a result of the American Recovery and Reinvestment Act, solar installations grew by 40 percent and created almost 20,000 jobs in 2009. Separately, Resch also commended the Obama Administration's 22 percent increase in solar spending for the 2011 budget.

As for whether solar power's use will expand in Texas, which has been slow to act on the energy resource, Metzger said one just has to look at the progress wind energy has made in Texas.

"Ten years ago we had hardly any wind installed and now we lead the nation. If we were a country we'd be fourth in terms of wind installed," he said.

Others agree.

In the November-December 2009 issue of Collins' magazine, the feature article, "Texas: The Next Solar Superpower?," written by a University of Texas at Austin engineering professor and his student, outlines the powerful future solar energy could play in the state due to ample solar radiation, plenty of businesses and the fact that Texas has its own power grid.

Another positive sign: Next week, the city of Austin hosts the Renewable Energy World Conference & Expo 2010.

Minneapolis Star-Tribune- The current: Wisconsin's clean jobs (2/11/10)

http://www.startribune.com/business/84157867.html?elr=KArks:DCiU1OiP:DiiUiD3aPc:_Yyc:aUU

Wisconsin state officials visited three La Crosse-area businesses Monday pushing Gov. Jim Doyle's "clean energy jobs" bill.

The proposal calls upon the state to get 25 percent of its energy from renewable sources by 2025.

Public Service Commission Chairman Eric Callisto, PSC Commissioner Mark Meyer and Commerce Secretary Dick Leinenkugel visited City Brewery, Gundersen Lutheran and Honda Motorwerks.

"We spend $16 billion here in Wisconsin that leaves the state because we do not have oil, we don't have natural gas, we don't have coal," Leinenkugel said at the dealership. "So every dollar that leaves this state doesn't get reinvested back in businesses."

Callisto emphasized parts of the bill: energy efficiency, renewable energy and lifting the moratorium on constructing new nuclear power plants. He said Wisconsin now gets about 5 percent of its energy from renewable sources.

La Crosse Tribune

Green industry wants more federal support

The alternative-energy business is poised to add thousands of new jobs if Washington policy-makers broaden government support programs, lobbyists for the industry said Tuesday.

Rhone Resch, president and chief executive of the Solar Energy Industries Association, called for a federal renewable-energy standard that would require power generators to use cleaner forms of electricity.

About half of U.S. states already have such regulations, but no standard yet exists on the federal level. "We're in the first few snowflakes of a blizzard of jobs that could be created," Resch said in a joint press conference set up by lobbyists.

The solar industry could double in 2010 if the 14 utility-scale projects that have been permitted move ahead as planned and create 20,000 jobs, he added.

The lobbyists said the American Reinvestment and Recovery Act helped the industry grow in 2009 with stimulus money.

Reuters- Wind, solar groups push US renewable energy standard (2/9/10)

http://in.reuters.com/article/oilRpt/idINN0910704020100209?pageNumber=2&virtualBrandChannel=0

Deborah Zabarenko

U.S. industry executives from the wind, solar, hydropower, geothermal and biomass sectors pushed on Tuesday for a federal renewable energy standard, which they said would foster economic growth and create jobs.

A federal standard could spur these industries at a time when China is moving swiftly into alternative energy production, said Denise Bode, CEO of the American Wind Energy Association.

If Congress establishes a federal renewable energy standard, a percentage of the energy generated in the United States would have to come from renewable sources.

Some 30 countries -- including China and the European Union countries -- and 29 U.S. states already have renewable energy standards, Bode said in a telephone news briefing. President Barack Obama has urged Congress to set a national standard that would require 25 percent renewable power by 2025. But lawmakers have yet to act.

While 2009 was generally a year of expansion for renewable U.S. energy firms, Bode said, Chinese companies outpaced their competitors. China surpassed

Germany to become the world's biggest builder of wind turbines and it added the largest amount of new generating capacity.

"The Chinese activity really lends an urgency to helping Congress and the administration to act on a renewable energy standard," she said.

Obama also supports legislation to curb greenhouse gas emissions -- such as those from fossil-fueled power plants -- that contribute to climate change, but such a measure stalled in the Senate last year.

Executives from the National Hydropower Association, the Biomass Power Association, the Geothermal Energy Association and the Solar Energy Industries Association called for strong short- and long-term targets for a renewable energy standard.

They also called for an extension of tax incentives and praised continuing support for renewable energy in the administration's economic stimulus package.

Robert Cleaves, CEO of the biomass group, said thousands of jobs could be lost if Congress fails to extend a production tax credit that expired late last year.

For companies in the solar power sector, association president Rhone Resch said 2009 was a banner year. Resch said the outlook for 2010 was even sunnier, with most analysts seeing growth of 100 percent or more for the industry.

All of the executives stressed the ability of their industries to create U.S. jobs in manufacturing and installation, which cannot be outsourced.

Arizona Republic- Comment (2/11/10)

http://www.azcentral.com/arizonarepublic/opinions/articles/2010/02/08/20100208garrett09.html#comments

Lane Garrett raised some excellent points about using solar photovoltaic (PV) technology to harness Arizona's world-class sunshine to generate clean electricity on Feb. 9. Indeed, solar PV will play an important role in America's clean energy future, but it's not the only way to go solar.
The beauty of solar energy is that we have a flexible range of technology solutions to harness the sun to meet a variety of conditions. By using solar water heating, building owners lower their utility bills and save money by using the sun to heat water and for heating and cooling systems. And Southwestern states like Arizona can use their solar resources to generate enough clean electricity with utility-scale concentrating solar power (CSP) plants to serve large population centers and become net exporters of clean energy. In fact, there are several CSP technical options to choose from. These plants also bring with them thousands of jobs in construction, operations and maintenance that can't be shipped overseas.
Solar is so important to diversifying America's energy portfolio because the industry's various technologies are scalable: we can deploy solar on small bungalows and on commercial buildings and as large power plants. It works

under the brightest Arizona sun to cold New England winters. That's why we should not limit our solar options and we should work to deploy all solar technologies.
In fact, leaders like Congresswoman Gabrielle Giffords (AZ-8) are working to ensure that clean, reliable solar technologies of all types are deployed across the country. It's vital to America's clean energy future and our economic growth.
Monique Hanis
Solar Energy Industries Association (SEIA)

Wall Street Journal- Cheap Hot Water? Just Add Sunshine (1/28/10)

http://online.wsj.com/article/SB10001424052748703906204575027012258855730.html

Gwendolyn Bounds

Bill Banack doesn't fancy himself an environmental "fanatic," but his showers, dishwasher and washing machine all use renewable energy these days. The source: three slim solar panels perched atop his 2,200-square foot Hadley, Mass., home. They don't provide electricity—they send him heat for hot water.

"I'm not belittling the green movement, but mostly we wanted to save money," says Mr. Banack, who now shuts off his gas boiler in the summer except during stretches of cloudy days. Mr. Banack estimates his heating-fuel bills have dropped at least 25% since adding the system, which was made by Germany's Stiebel Eltron GmbH and cost about $6,000 after tax credits. "This is a form of independence," he says.

WSJ's Gwendolyn Bounds installs a solar hot-water system in her house and walks through the process and the incentives. She says a simple system like the one she installed can pay up to two-thirds of a typical homeowner's hot-water bill.

As more homeowners are discovering, you don't need a super hot climate and tens of thousands of dollars to go solar. In many cases, all it takes to offset two-thirds of your hot water bill is a couple of panels resembling skylights, an 80-gallon water storage tank and some shade-free southern rooftop exposure. Costs range from about $2,000 to $10,000, sums that can be halved thanks to hefty new federal and state incentives. Just last week, California launched a cash-rebate program that will average $1,500 for residents to install solar water heaters at home.

When most people think of solar energy, they imagine using it to generate electricity—and that's where a lot of buzz and venture capital investment dollars currently go. But in the average home, harnessing the sun's free energy for daily hot-water needs can be a more practical and affordable bet. Water-heating is the third-largest energy expense in most households, after space heating and air-conditioning, according to the U.S. Department of Energy. This

year, Hawaii began mandating solar water heaters in most new homes, and cold-weather locales such as New York and Colorado are among the state leaders in installations.

Hot water "is the most efficient way to use solar, short of passive solar where you're using sunlight to warm up tile or stone," says Monique Hanis of the Solar Energy Industries Association trade group, which represents manufacturers and installers of solar products for electricity, water and other uses.

"You are locking in your cost rate for the next 25 to 30 years. It's basic, but it works."

Solar Hot Water, Boiled Down

Will it work at my house?
As a rule of thumb, you need a portion of southern-facing roof or other spot on the property with minimal shading from 11 a.m. to 3 p.m. Two to three collectors (i.e. panels) typically suffice for most single-family homes. Your installer should use a tool, such as the Solar Pathfinder, to measure the amount of daily energy your collectors will get from the sun year-round.

Where can I learn about different types of systems?
Depending on your climate and home, there are multiple designs of solar hot water systems ranging in cost from about $2,000 to $10,000. A basic description of each can be found at the U.S. Department of Energy's Web site.

Are there financial incentives to help cover costs?
Most systems can qualify for a 30% federal tax credit, so long as the collectors are certified for performance and durability by the not-for-profit Solar Rating and Certification Corp. There also are state tax and rebate incentives, which may have additional requirements. Check the Database of State Incentives for Renewables & Efficiency at dsireusa.org.

What about warranties?
While it varies, most well-established manufacturers warranty panels and other components from defects for a minimum of five years to 10 years, and water tanks for at least six, with some caveats. Your installers should warranty their work too. As a rule of thumb, a solar hot water system is designed to last for around 25 to 30 years.

Does it matter what kind of hot water storage tank I use?
Ideally, your tank(s) will be as well-insulated as possible to retain heat. Look for "standby-loss" figures from manufacturers to compare. A stainless steel tank lasts longer but is pricier than the more commonly-used glass or enamel-coated steel tanks. Homepower.com offers good comparisons of tanks and other information. In most climates, you'll need a backup heat source connected to your tank – such as your existing furnace, a second tank or a separate on-demand water heater.

What about aesthetics?
There are a few types of collector designs, such as panels or tubes. Each have

their pros and cons. Cosmetically, some people prefer panels for rooftop applications because if well-installed they can resemble skylights. Make sure installers have a plan to inconspicuously route piping from collectors to your hot water tank. An attic can keep them hidden, but attic-less vaulted-ceiling architecture may make it trickier. I've seen gruesome layouts where fat tubes snake across roofs and down exterior walls. My team drilled lines through a roof overhang, tucked them alongside the house and then boxed them in with wood to match the home's exterior.

How do I find a qualified installer?
At minimum, seek licensed, insured contractors who warranty their work and have training certification from the manufacturers they rep. Ask how many systems they've installed and for references. It can help to hire locally for future maintenance needs. A directory of installers can be found at seia.org and at findsolar.com run by the American Solar Energy Society. The North American Board of Certified Energy Practitioners also provides list of installers certified by its standards. --*G.B.*

Systems vary, but one common all-climate configuration–which I recently installed—consists of a well-insulated water tank inside the house and a small array of solar collectors, such as panels or tubes on the roof. A nontoxic, antifreeze fluid gets pumped through the collectors and is warmed by the sun. The fluid then shoots down through insulated piping into a heat exchanger in the tank. Heat is transferred to the potable water; then the antifreeze fluid circulates back to the roof to repeat the cycle.

In most regions, a backup heat source is needed for overcast days. For instance, the gas boiler providing my home's baseboard heat also is hooked to the solar tank and will goose the water temperature inside to 110 degrees (that's the setting I've programmed) if the solar-powered system isn't able to reach that temperature on its own. Other possibilities: an electric or gas heating element integrated directly into the solar tank or a separate on-demand water heater. Some homes with ample space and greater hot water needs use two tanks—one as a solar preheat tank that feeds water into a second tank warmed by gas, oil or electricity.

A couple of caveats: You'll need a space on the roof or wherever you place panels with minimal shading from 11 a.m. to 3 p.m. to make a system work most efficiently. I took down several ailing trees on my property that cast shadows, which added to upfront costs. And depending on your roof's pitch and where you live, installers might recommend propping panels at an angle for maximum solar gain—which look unsightly.

Whatever the route, financial incentives are heating up. For starters, a federal renewable energy tax credit in place through 2016 can now pay for 30% of your system, with no cap. Water heaters for swimming pools or hot tubs don't qualify, and equipment must be certified for performance and durability by the not-for-profit Solar Rating and Certification Corp.

Many states offer perks, too. In Arizona and New York, a 25% tax credit of up to $1,000 and $5,000 respectively knocks off another chunk. Along with California, utilities in Florida, Texas and elsewhere provide upfront rebates. (For a list of state and federal incentives, go to dsireusa.org.)

"Solar hot water has been like the redheaded stepchild and not seen as sexy as electricity—but it should be," says Bernadette Del Chiaro, clean-energy program director for the not-for-profit advocacy group, Environment California, which helped sponsor the rebate program.

Interest in solar hot water last peaked amid rising fuel prices in the 1970s and early 1980s until federal tax credits expired and an easing of energy prices made consumers lose interest. In recent years, reinstated incentives, sleeker equipment and rising fuel prices pumped life back into the industry. Between 2005 and 2008, the annual installed capacity of the solar hot water systems in the continental U.S. quintupled, according the Interstate Renewable Energy Council, a not-for-profit information and policy group.

While the recession triggered a sales slowdown in 2009, manufacturers nevertheless are pushing forward with expansion. Skylight-maker Velux Group, a unit of Copenhagen-based VKR Holding A/S, began selling its solar hot water systems in the U.S. in 2008 and says residential sales have quadrupled. There are nearly 100 companies listed online whose solar water equipment is now rated by the SRCC certification group, and systems are widely sold on the Internet.

Stiebel Eltron plans to begin manufacturing its solar hot water panels in Hatfield, Mass., later this year, while Kingston, N.Y., upstart EarthKind Solar Inc. is gearing up to produce panels made by Phoenix SonnenWaerme AG, also German. They join a host of established players such as California-based Fafco Inc. and Heliodyne Inc. that already produce equipment in the U.S.

Consumer appetite may swell as solar hot water technology broadens to applications such as air-conditioning and space heating.

At Alchemy Construction Inc. in Arcata, Calif., residential sales of solar hot water systems climbed 50% over the past two years and most included a radiant heat component, says owner Stephen Bohner. He bristles a bit when customers focus too much on payback time of panels. "What's the payback time of your granite countertop?" Mr. Bohner asks.

Jim and Patti Jeffries of Hampton, Ga., replaced their 1986 water heater last March with a two-panel Velux solar system with electric backup. The Jeffries' natural-gas usage plummeted 79% between 2008 and 2009, while electric usage climbed only 11%.

"The only problem we had is when there was an ice storm two weeks ago and the sun never came out," Ms. Jeffries says.

Exploring a Solar System

As more contractors stung by the recession add solar to bolster their offerings, consumers will see increased competition for their dollars.

It's best to seek licensed, insured contractors who warranty their work; a directory of installers can be found at seia.org, findsolar.com run by the American Solar Energy Society and at nabcep.org, the site of the North American Board of Certified Energy Practitioners.

The company designing my system, Fishkill, N.Y.-based Smart Systems USA Inc., is a local electrical and plumbing outfit that recently segued into renewable energy. I was only their second hot-water job, but took the gamble because of their reputation and proximity to my home for future maintenance. Installation lasted about three days in November with few hiccups.

On cold days, if the sky is clear, the sun heats water to nearly 100 degrees. Come summer, those temps should rise to 140 and higher. Federal and state tax credits will knock the system's $10,000 cost down to $4,500.

These systems, I found, can make you a little nutty. To use as little backup fuel as possible, I initially tried to time showers to coincide with maximum sunshine, tricky when there's an 8 a.m. meeting on the calendar. A long stretch of snow even drove me up on the roof to clear panels with a broom—um, don't try that at home. Eventually though, I relaxed and early tabulations show my monthly fuel usage dropping from last year, which makes this particular project hot in more ways than one.

The Daily Green- Five of the Fastest Growing Green Jobs (1/26/10)

http://www.thedailygreen.com/environmental-news/latest/green-jobs-460110-2

Ezra Drissman

If you thought 2009 was a year that green took over, then think again. Over the next 10 years, the green industry is predicted to experience growth in the neighborhood of 1.5 trillion dollars. Green will continue to shape the foods we eat, the products we buy and the way we get around -- and increasingly the green jobs we have.

According to the Pew Charitable Trusts, by 2007, more than 68,200 businesses across the country accounted for more than 770,000 jobs in clean energy, "despite a lack of sustained government support in the past decade." This is expected to increase with fresh help from the Obama administration. In 2008 alone, private investors directed $5.9 billion into American businesses in this sector, a 48% increase over 2007. This rate should continue to accelerate.

Here are five green careers that are not entirely new, but are now being completely reinvented. If you want to keep a competitive advantage in the workforce, one must learn how these top-growing jobs are "going green." These

fields, according the Bureau of Labor Statistics (BLS), are expected to see a growth from six to nearly 30%.

Environmental Educator

-- $47,000 to $50,000 median salary range, according to the BLS.

The teaching field is expected to expand by almost 20% in the coming years. What's exciting is that weaving green practices into the classroom is becoming much more commonplace. Many schools are on the forefront of using clean energy. And science teachers are in the most demand.

Beyond the basics like environmental science, many community colleges have expanded offerings in courses like solar panel installation and energy efficient building; universities have expanded environmental policy and politics offerings, often developing entirely new departments and curricula; and graduate programs are routinely offering advanced courses in a range of subjects, like corporate sustainability. There are even green MBA programs. All of these new positions need teachers to fill them.

Becoming a teacher at the high school level involves a college diploma and generally a teaching certificate; teaching at the college level typically requires at least a master's degree. If you are an out-of-work professional you may want to consider getting a teaching certificate. While the full degree may cost you around $8 to $20 thousand a year, a teaching certificate may cost around half.

In order to really save money, you might want to consider community college first. This will allow you to take general education classes at a much more affordable price. Don't forget that there are plenty of student loans available through the federal government. A guidance counselor will be able to point you in the right direction.

Environmental Engineer

-- $56,000 to $94,000 median salary range (BLS).

One of the hardest hit fields in the recent recession has been engineering, due to contractions in the auto industry and infrastructure spending. Fortunately, this profession has numerous applications in the green field. Environmental engineers are expected to see a 30% increase in jobs over the next ten years. They will be vital in the wind and solar fields. In addition, environmental engineer technicians and civil engineers should see a 25% growth.

If you are looking for a job in this field, a great place to start is the American Academy of Environmental Engineers. You may also want to plug yourself into the Association of Energy Engineers, which offers training for engineers to become energy auditors.

Heating and Cooling Installer

-- $15 to $25/hr (BLS).

If you are looking for a great green job and are not interested in the college route, then heating and cooling could be the field for you. It is expected to see more than 28% growth in the coming years. Being able to install an extremely efficient solar water heater can not only put more money in your pocket, it will save the customer money in the long term and help them go green. Installers are able to put some of the most cutting edge energy-saving products to use right away. Another reason for the strong growth is the increasing emphasis on green building, supported by the United States Green Building Council and the federal and state and local governments. Heating and cooling play a big role in energy saving.

For a more specialized training, look into geothermal. One particular training provider in this area is the GeoExchange, which can help you find the programs to get started today!

Arborist

-- $9 to $14/hr (BLS).

If you want to get a green job outdoors then this may be the career for you. There are many variations of this job. Tree trimmers, pruners and landscapers are expected to see more than 26% growth. Green arborists help protect plants from disease and pests with less-toxic, environmentally friendly techniques. They can also work to minimize harmful runoff, protect watersheds and shade property, which leads to less energy demands for cooling.

A good place to start learning about the career is the Arbor Day Foundation.

green earth with commerce and jobs

Mechanical Engineer

-- $59,000 to $94,000 median (BLS).

Mechanical engineering will have many opportunities in the future. However, you don't have to wait to start in green areas of this field. Nearly all energy areas, including wind and solar, need these engineers.

You will need a four-year engineering degree to start. If you have your degree, there are three great websites that can help you work green: the American Wind Energy Association, the Solar Energy Industries Association and the American Solar Energy Society.

Finding a green job is getting easier every day. If these don't work for you, make sure to check out nearly 100 more at Green Careers Guide.

ZDNet- Solar industry wants to do its part (1/6/10)

http://blogs.zdnet.com/green/?p=9619

Heather Clancy

I'm guessing that in the post-Copenhagen days, many of the various renewable energy sector proponents — for solar, wind, ocean energy, biofuels and so on —

will release data with guess-timates of how much their technology could contribute toward the world's energy needs in the coming decade.

The Solar Energy Industries Association released a report in mid-December 2009 estimating solar technology's potential to meet 15 percent of the energy demand in the United States by 2020. The report, which is called "Expanding Solar Energy in the UnIted States," offers development scenarios that would produce this result. Roughly 12 percent of the power would come from photovoltaic solar panels and concentrating solar power plants while the remaining 3 percent would be attributed to solar thermal heating systems.

If solar power contributions can ramp up to the 15 percent mark, it could mean the creation of 880,000 jobs and a reduction in total carbon dioxide emissions of roughly 10 percent, according to the report.