What Clean Energy Jobs? *These Clean Energy Jobs!*

Second Quarter 2012 Clean Energy Jobs Roundup

Clean energy continues to contribute to the U.S. economy, breathing new life into domestic manufacturing and providing high quality jobs for workers around the country. Since September 2011, Environmental Entrepreneurs (E2), whose members represent a broad cross-section of business leaders, has been documenting our nation's growth in this sector in our bi-weekly newsletter *Clean Energy Jobs News*.[1] Since our first newsletter, E2 has compiled nearly 450 separate announcements of new hiring opportunities by companies, cities, and organizations, showing that America leads the way in energy innovation and creating new jobs. You can find each newsletter at www.e2.org/cleanjobs.

Announcements from the second quarter of 2012 show that clean energy is continuing to help rebuild America's economy. From April 2012 to June 2012, more than 70 companies, cities, and organizations from around the United States announced clean energy job projects. These projects will create new jobs in public transportation, manufacturing, power generation, and energy efficiency. If all these announcements from the last three months come to fruition, as many as 37,409 jobs could be created.[2]

Yet at the same time, the wind energy sector has seen a nationwide slowdown in recent months. This appears largely attributable to uncertainty regarding extension of the critical federal production tax credit (PTC) as it approaches its sunset date of December 31, 2012; the current slowdown mirrors what has happened historically when the PTC was set to expire. According to a recent study, an estimated 37,000 wind jobs are at stake should Congress allow the policy to end.[3]

ENVIRONMENTAL ENTREPRENEURS®
The *Independent* Business Voice for the Environment

For more information, please contact Bob Keefe, *communications director, Environmental Entrepreneurs (E2)* at bkeefe@e2.org or 202.289.2373

Authored by: Lauren Kubiak and Pierre Bull

Despite the threats to the wind industry, we continue to see growth in many sectors of the clean energy economy. During the second quarter of 2012, we observed that:

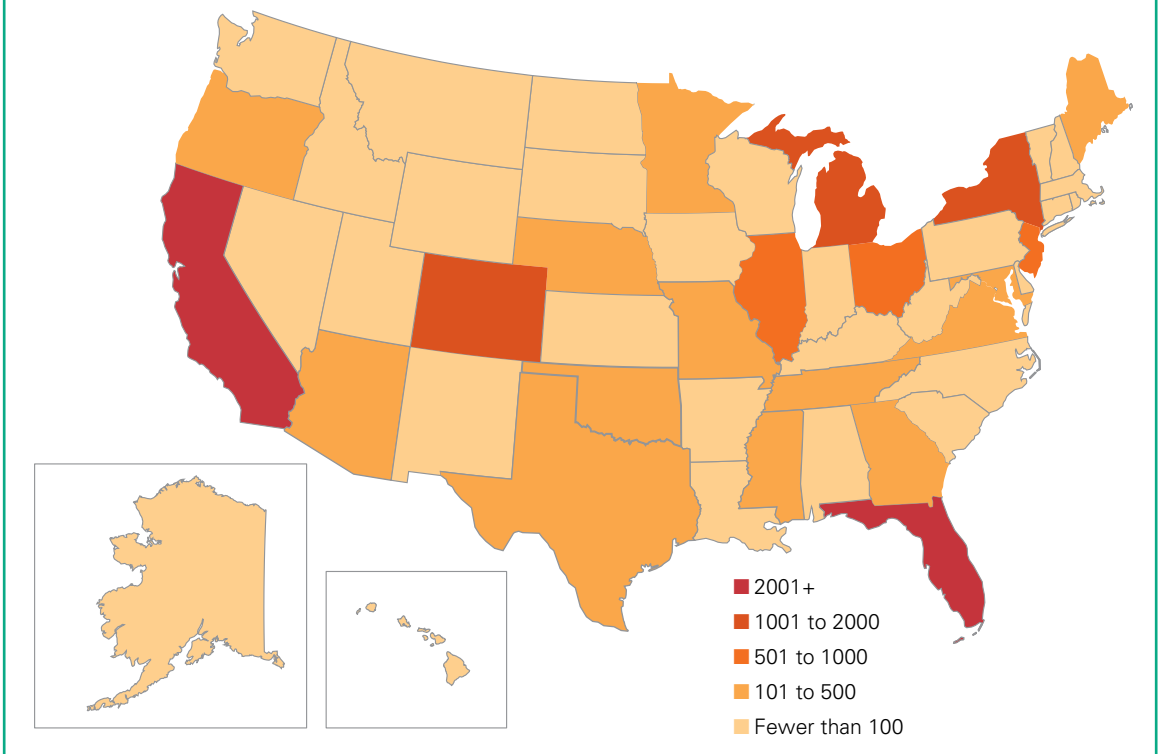
JOBS CREATION CONTINUES IN ALL REGIONS OF THE UNITED STATES

Clean energy projects were announced in 30 states, many of which had at least two clean energy announcements. Nearly one-third of the announcements come from states in the Midwest, including Michigan, Ohio, and Illinois, reflecting growth in investments in clean energy projects in that region.

RANK*	STATE	*FIRST QUARTER RANK*	PROJECTS ANNOUNCED	JOB ANNOUNCEMENTS IN SECOND QUARTER 2012			
				PROJECTS IN OPERATION**	PROJECTS IN PROGRESS**	PROJECTS ANNOUNCED**	TOTAL
1	California	*3*	16	121	18,487	2,271	20,879
2	Florida	*19*	3	-	250	7,125	7,375
3	New York	*24*	3	-	-	1,408	1,408
4	Michigan	*13*	9	-	172	1,147	1,319
5	Colorado	*n/a*	2	100	-	1,000	1,100
6	Ohio	*17*	4	25	-	737	712
7	New Jersey	*18*	2	200	-	400	600
8	Illinois	*2*	4	200	26	516	542
9	Nebraska	*15*	1	500	-	-	500
10	Mississippi	*37*	1	-	-	426	426

* States have been ranked by the total number of jobs announced in media reports over the past 3 months.
** "In Operation" denotes that an energy project has gone live or a manufacturing facility is on line; "In Progress" is used for any project in construction or any program that has been initiated; and "Announced" captures those projects in earlier stages of development.

TOTAL JOBS ANNOUNCED BY STATE IN SECOND QUARTER 2012



MICHIGAN BUILDS ON HISTORY AS AUTO MANUFACTURING HUB

Michigan ranked number four in clean energy job announcements in the second quarter, with nine projects that could add up to more than 1,300 jobs. Taking advantage of the state's strong manufacturing base, and the facilities and skills upon which Michigan's auto industry was built, the state's electric vehicle manufacturing sector is leading the way, along with its wind and solar industries.

Michigan is becoming an electric vehicles hub, with companies like GE, A123 Systems, and others bringing battery and other electric vehicle component manufacturing to the state. This quarter, electric vehicle manufacturing comprised nearly half of Michigan's clean energy jobs announcements. Panasonic Automotive Systems plans to invest $8.16 million in a research and development center in Farmington Hills to research electrical components, sound systems, and human-machine interaction in electric vehicles. In Van Buren Township, GE announced plans to add 300 jobs to its advanced manufacturing center.

Michigan's wind energy manufacturing industry—despite the threats to the PTC—also saw substantial growth in the quarter, with companies manufacturing turbine towers, hubs, and blades throughout the state. In the second quarter, Grand Rapids-based Altronics Energy announced a $2.5 million expansion of its manufacturing facility, and plans to hire 90 more workers. Benefitting from in-state manufacturing of key turbine components, and its strong wind resource, electricity generated by wind in Michigan in 2012 was found to be cheaper than that from new coal-fired power plants.[4]

JOB ANNOUNCEMENTS SHOW CLEAN ENERGY SHOULD RECEIVE BIPARTISAN SUPPORT

As noted in prior *What Clean Energy Jobs?* reports, clean energy projects cross over party lines. Clean energy jobs announcements this quarter spanned 57 congressional districts, Democratic and Republican alike. A total of 35 clean energy projects were announced in Democratic districts and 31 in Republican districts. Nine projects spanned more than one congressional district, overlapping districts represented by both Democratic and Republican lawmakers.

Since we began tracking announcements, there have been several districts with significant project concentration. More than 3,200 solar jobs have been announced in the congressional districts of Representatives Trent Franks and Raul Grijalva in Arizona, for instance. Other districts, like Representative Diane Black's in Tennessee, are emerging as hubs for new, clean technology manufacturing. Taking advantage of its strong regional workforce and proximity to major auto manufacturer Nissan, Tennessee's sixth district has seen significant electric vehicle manufacturing growth since E2 began tracking clean energy job growth.

Spotlight on Applied Energy Technologies

© Applied Energy Technologies

Applied Energy Technologies (AET), headquartered outside of Detroit in Clinton Township, Michigan, is leveraging American ingenuity from the auto industry into a different sector: solar manufacturing. Founded several years go by current president and CEO, Craig Winn, and his team of three engineers from the automotive industry, AET has grown rapidly, increasing from two employees to nearly 50 in only three years.

The secret to their success is in their manufacturing process, employing precision techniques used in automotive manufacturing to make high-quality solar racking systems—the metal frames used to hold up solar panels on the ground or rooftops. AET's workforce includes many who were formerly employed in the auto industry, but lost their jobs during the recession. This year AET has doubled its production capacity opening a new plant in Ohio.

For more information on AET, please visit **http://aetenergy.com/**

Spotlight on Ventower Industries

Ventower Industries is a manufacturer and supplier of utility-scale wind turbine towers. Located in Monroe, Michigan on a revitalized brownfield site, the company, which began production late last year, is adding a strong economic boost to the region: in addition to the 60 full-time workers it currently employs, with plans to hire approximately 100 more as it approaches full production capacity, it sources its steel from domestic suppliers, keeping money within U.S. borders. Ventower's location on the shores of Lake Erie gives it access to local and international export markets, and the company recently completed a contract with Aeronautica Windpower supplying its towers for a wind project at Ohio schools.

For more information on Ventower Industries, please visit **http://www.ventower.com/**

REPRESENTATIVE	PROJECTS ANNOUNCED	JOB ANNOUNCEMENTS SEPTEMBER 2011 TO JUNE 2012			
		PROJECTS IN OPERATION	PROJECTS IN PROGRESS	PROJECTS ANNOUNCED	TOTAL
Rep. Danny Davis (D-7, IL)	7	-	2,843	2,586	5,429
Rep. Michael Michaud (D-2, ME)	7	-	600	835	1,435
Rep. Trent Franks (R-2, AZ)	6	-	940	1,156	2,096
Rep. Diane Black (R-6, TN)	5	-	-	1,643	1,643
Rep. Bob Filner (D-51, CA)	5	225	93	1,167	1,485
Rep. Kevin McCarthy (R-22, CA)	5	-	-	1,430	1,430
Rep. Raul Grijalva (D-7, AZ)	5	820	-	300	1,120
Rep. Mary Bono Mack (R-45, CA)	4	-	820	550	1,370
Rep. Robert Latta (R-5, OH)	4	720	300	275	1,295
Rep. Steven Pearce (R-2, NM)	4	357	560	-	917
Rep. Roscoe Bartlett (R-6, MD)	4	-	275	185	460

* Representatives have been ranked by the total number of projects announced in media reports over the past ten months.

BIG JOB CREATORS THIS QUARTER: PUBLIC TRANSPORTATION, ELECTRIC VEHICLE MANUFACTURING, AND SOLAR GENERATION

No single sector is responsible for these jobs announcements, but the second quarter saw a large number of job announcements in the public transportation and electric vehicle sectors. On the generation side, solar power projects harnessing America's strong solar resource led the way in job announcements this cycle.

Public transportation is a major contributor to the clean energy economy, by reducing the number of cars on the road and thereby reducing emissions from pollutants such as carbon dioxide, carbon monoxide, and particulates. Reducing these emissions means less smog, global warming, acid rain, and negative health effects.[5]

Spotlight on Public Transit: Los Angeles Metro Expansion

In June 2012, the City of Los Angeles announced that construction crews began work on the 8.5 mile Metro Crenshaw/LAX (Los Angeles Airport) light rail transit corridor, promising to accelerate the benefits of new jobs, mobility, and economic revitalization. This new transit corridor will eventually link the newly opened Expo Light Rail Line with the Green Line and connect local communities in between to activity centers such as the West Angeles Cathedral, the revived Crenshaw Plaza Shopping Center, downtown Inglewood, and LAX.[a] It will provide more than 18,000 new jobs in construction over the course of the five-year construction period, as well as in operations when the new line is running in 2018. At least 40 percent of the jobs will go to those in economically disadvantaged neighborhoods, and 10 percent to low-income, chronically unemployed individuals.

[a] Move LA Executive Director's Report, via http://jcurrydesign.com/movela/about-us-2/accomplishments/

UNITED STATES SOLAR SECTOR MAKES SOLID GAINS DESPITE DECLINING GLOBAL COSTS

Thanks in part to a supportive state and national policy environment that in recent years has provided more certainty to solar companies and investors, the U.S. solar photovoltaic (PV) market continues its upward growth trend despite the overall sluggish economic recovery. In 2011, the U.S. solar photovoltaic market doubling of installed solar capacity. The value of these new systems in 2011 alone was more than $8.5 billion.[6]

The robust pace of U.S. solar installations continued into the second quarter of 2012 with new installations up more than 85 percent from the same period in 2011.[7]

That level of market growth has created tremendous economies of scale to help drive down manufacturing and installation costs. Additionally, global oversupply of panels, which began in 2010 and continued into 2011, helped drive down the price of solar panels an average of 47 percent during a 12-month period. The cumulative result is a one-third average cost reduction for a fully installed PV system since 2010.[8] Market analysts expect continued double-digit market growth and installed cost reduction to continue through the remainder of 2012 in the United States.

SECTOR	PROJECTS ANNOUNCED	JOBS ANNOUNCED IN SECOND QUARTER 2012			
		PROJECTS IN OPERATION	PROJECTS IN PROGRESS	PROJECTS ANNOUNCED	TOTAL
Power Generation	35	820	1,834	3,987	5,091
Solar Power	19	820	413	1,250	2,483
Wind Power	12	-	390	1,947	2,337
Biogas Power	2	-	34	-	34
Geothermal Power	1	-	162	-	162
Other	1	-	-	75	75
Manufacturing	22	75	30	3,576	3,681
Advanced Vehicles*	15	25	30	2,622	2,677
Solar	4	25	-	114	139
Wind	2	25	-	90	115
Other	1	-	-	700	700
Energy Efficiency	5	-	18	610	628
Public Transportation	5	-	18,350	7,285	25,635
Biofuels	5	500	-	206	706
Other	3	-	18	1,700	1,718

*This category includes electric and hybrid-electric vehicles as well as manufacturing of fuel-efficiency components.

This past quarter, 19 solar generation projects were announced, adding up to 2,483 jobs in 13 states, including Utah, Arizona, California, and Ohio.

WIND INDUSTRY SEES NATIONAL SLOWDOWN WITH POLICY UNCERTAINTY

In the past five years, the wind industry has scaled up manufacturing in the United States. Local manufacturing enables more wind projects to be constructed with lower component transportation costs. However, many domestic wind industry jobs are at stake with uncertainty over extending the PTC, and major industry leaders like Vestas, Gamesa, and NRG have already announced layoffs or delayed project plans.[9]

Wind developers rely on this critical tax credit, only paid when actual electricity is produced, to level the playing field for wind energy and get projects off of the ground. The debate over extending this incentive is leading to market uncertainty, in turn, forcing developers to delay or abandon future projects. This downturn reflects historical trends: the PTC has been set to expire seven times since 1999, and each time the market shrank 81 percent in the following years. If the PTC expires at the end of this year, 37,000 jobs could be lost.[10]

PUBLIC/PRIVATE CLEAN ENERGY AND INFRASTRUCTURE PARTNERSHIPS CREATE JOBS AND LOCAL ECONOMIC DEVELOPMENT

The jobs announcements over the past quarter feature a number of public-private partnerships. For example, in Blair, Nebraska, Novozymes inaugurated its enzyme—a key component in the existing and advanced biofuels industry—production facility. The $200 million project received a $28.4 million tax credit from the U.S. government, helping the company create 400 construction and 100 full-time jobs. Other partnerships are driving workforce development through worker training and targeted job placement such as the partnership between the business-led Silicon Valley Leadership Group and Sunnyvale, California-based workforce development group, NOVA.

PUBLIC-PRIVATE PARTNERSHIPS

Montclair State University and Energenic-US, LLC	**Montclair, NJ**

Montclair State University and Energenic-US, LLC announced plans to develop a new 5.4MW combined heating, cooling, and power (CHP) system to produce more environmentally responsible energy services for the institution. The $90 million public-private partnership is expected to create 400 construction jobs over an 18 month period.

Silicon Valley Leadership Group & NOVA	**San Jose, CA**

Awarded a $4 million grant to create the SolarTech WorkForce Innovations Collaborative, the Silicon Valley Leadership Group and NOVA is training people for jobs in the region's fast-growing solar and energy efficiency industries. So far the program has trained 255 professionals at participating local community colleges and successfully placed at least 121 participants into clean energy jobs with local companies.

Civic Works	**Baltimore, MD**

Through a $1.4 million contract with Baltimore, Civic Works' EnergyReady will weatherize 300 homes in low-income communities in the next two years. The program plans to train at least 50 new workers to meet their ambitious goals.

Moapa Band of Paiute Indians Tribe	**Clark County, NV**

Moapa Band of Paiute Indians Tribe announced that the federal government approved the construction of a 350MW solar array in Clark County, NV, generating enough electricity to power 100,000 homes. The project will create at least 400 construction jobs and up to 20 permanent jobs.

Smart Energy Capital	**Washington County, GA**

Smart Energy Capital and Jacoby Development announced plans to build the largest solar energy facility in the State of Georgia, a 10 MW solar project in Washington County, GA. The power generated by the Azalea Solar Facility will be sold to Cobb Electric Membership Corporation and generate 75 jobs for construction and ongoing operations.

Green Energy Partners	**Maribel, WI**

Green Energy Partners, in partnership with the town of Maribel, WI, announced plans to build a food waste digester, turning food scraps into fuel, while bringing 20 new jobs to the town.

Novozymes	**Blair, NE**

Novozymes inaugurated its $200 million enzyme production facility in Blair, NE. The project received $28.4 million tax credit from the U.S. government, while creating 400 construction jobs and 100 full-time jobs.

For a full listing of job announcements from past weeks and to see new reports in the weeks ahead, please visit **www.e2.org/cleanjobs.**

CONCLUSION

Despite a challenging economic and political environment, a broad array of clean energy technologies continue to grow and create valuable employment opportunities across the country. Large and small companies are innovating and building clean energy solutions, often in partnership with public institutions. We encourage these efforts to move the clean energy economy forward, without undue partisanship that threatens to stifle growth.

Jaco Environmental

© Jeff Wilson

Jaco Environmental, headquartered near Seattle, Washington, is an appliance recycler that helps households cut energy costs and utilities meet efficiency goals by removing inefficient refrigerators from the grid and demanufacturing them into raw materials—95 percent of which is recycled to make new products. Partnering with utilities to help phase out energy-wasting appliances, Jaco has recycling facilities in 34 states and employs more than 520 people, with significant growth planned in the coming years.

In Stow, Ohio, Jaco's facility disassembles between 100 and 150 refrigerators a day, says facility manager Tom Steinheiser. Employing cutting-edge shredding technology, Jaco is able to reduce the refrigerators down to material parts in a matter of hours, ending up with iron, copper, aluminum, plastic—all valuable commodities—in addition to foam, chlorofluorocarbons (CFCs)—a potent ozone-depleting greenhouse gas—oil, and refrigerant at the end of the process. And beyond processing whole refrigerators, Jaco's Stow location has a shredder that is capable of recycling an additional 150 to 200 refrigerators that have gone through the first stage of dismantling at one of its other U.S. facilities.

For more information on Jaco Environmental, please visit **http://www.jacoinc.net**

Mechanical Energy Systems

© Mechanical Energy Systems

Based in southeast Michigan, The Solar Specialist in Canton, a division of Mechanical Energy Systems (MES), is a nationally certified female-owned business with nearly 30 years of industry experience designing, installing, and servicing solar and other renewable energy technologies on residential and commercial buildings. MES offers a full range of proven solar technologies including water, pool, space heating, and electricity (PV). Says company CEO Donna Napolitano, "MES recognizes that its strong customer relationships and high referral rates are critical to our business success. The company's mission is to offer its customers a choice of energy consumption through renewables. Many customers are on the path to net zero billing." The company has between 15 and 25 local employees and contractors performing green jobs.

For more information on Mechanical Energy Systems, The Solar Specialist, please visit **http://www.mes1.com**

Endnotes

1 This data only covers job announcements from the second quarter 2012 of media reports and is not an exhaustive tally of job creation in the clean economy. Our job announcement database and analyses for this report were based on all announcements spanning the bi-weekly newsletters published between April 1 and June 30. Thus some project announcements in this report may have been publicly announced before April 1, 2012 (and included in our April 2nd, Vol 20 bi-weekly newsletter), but were not counted in our Q1 report.

2 These job announcements are from projects and programs in various stages of development. We have broken the projects and programs out into three categories—in operation, in progress, and announced—to accurately reflect their current stage of development. Note that not all of these announced projects and programs may be put into operation, and so the exact number of jobs from these past 16 weeks of coverage could vary.

3 Navigant Energy, "Impact of the Production Tax Credit on the U.S. Wind Market," December 12, 2011, via http://awea.org/learnabout/publications/reports/upload/AWEA-PTC-study-121211-2pm.pdf

4 Michigan Public Service Commission, "Report on the Implementation of the P.A. 295 Renewable Energy Standard and the Cost-Effectiveness of the Energy Standards," February 15, 2012, via http://www.michigan.gov/documents/mpsc/implementation_PA295_renewable_energy2-15-2012_376924_7.pdf

5 NRDC Smarter Business: Greening Advisor, "Public Transportation," via http://www.nrdc.org/enterprise/greeningadvisor/ta-public_transportation.asp

6 Solar Energy Industries Association, Solar Industry Data 2012, via http://www.seia.org/research-resources/solar-industry-data

7 U.S. Solar Market Insight 2011 Year-In-Review I Executive Summary, via http://slidesha.re/AuCU8p

8 U.S. Solar Market Insight Q1 2012 I Executive Summary, via http://www.slideshare.net/SEIA/us-solar-market-insight-report-q1-2012

9 Reuters, "Vestas CEO Sees US Turbine Market Down," June 11, 2012, via 80%http://www.governorswindenergycoalition.org/?p=2530; "USW Disappointed by Gamesa Layoffs; Urges Congress to Extend Critical Clean Energy Tax," July 6, 2012, via Creditshttp://www.marketwatch.com/story/usw-disappointed-by-gamesa-layoffs-urges-congress-to-extend-critical-clean-energy-tax-credits-2012-07-06; Dan D'Ambrosio, Burlington Free Press, "NRG Systems lays off 18 workers," May 16, 2012, via http://www.burlingtonfreepress.com/article/20120516/NEWS01/120516027/NRG-lays-off-18-workers?odyssey=tabltopnewsltextlFRONTPAGE&nclick_check=1.

10 Op. cit. note 3.

ENVIRONMENTAL ENTREPRENEURS®
The *Independent* Business Voice for the Environment

Environmental Entrepreneurs (E2) is a national community of business leaders who promote sound environmental policy that builds economic prosperity. E2 is the independent business voice for the environment. We provide a non-partisan resource for understanding the business perspective on environmental issues. Working with our public and private partners, E2 shapes state and national policy that's good for the economy and good the environment. **www.E2.org.**

Printed on recycled paper

August 2012