

2015

# CLEAN ENERGY WORKS FOR US: Q2 2015 JOBS REPORT

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ENVIRONMENTAL ENTREPRENEURS®

In the second quarter of 2015, clean energy and clean transportation continued to create American jobs and drive economic growth. By tracking job announcements from companies; federal, state and local programs and initiatives; the media; and other sources, Environmental Entrepreneurs' (E2's) jobs reports show how and where clean energy and clean transportation work in the United States.

For more details, including state-by-state breakdowns and more clean energy jobs stories, visit [www.cleanenergyworksforus.org](http://www.cleanenergyworksforus.org) or contact Jeff Benzak at [jeff@e2.org](mailto:jeff@e2.org).

## SECOND QUARTER IN REVIEW

In the second quarter of 2015, nearly 40 clean energy and clean transportation projects were announced across 22 states. Combined, these projects are expected to create nearly 10,500 jobs.

Texas, Nevada, and California led the nation in announced jobs, followed by Utah, North Carolina, Kansas, Arkansas, Colorado, Virginia, and Nebraska.

In Texas, solar and wind installation projects drove the state's top performance. Two new wind farms will cumulatively produce 402 MW of power from wind turbines in the Lone Star State, while Spanish wind manufacturer GRI Renewable Industries will create 300 jobs with a new wind turbine manufacturing plant in Amarillo.

Three solar farms will add another 320 MW of Texas power and could create up to 1,364 jobs in Windthorst, Floyd, Andrews, and Pecos counties.

Q2 TOP 10 STATES		
	STATE	JOBS ANNOUNCED
1	Texas	2,164
2	Nevada	1,900
3	California	1,200
4	Utah	800
5	North Carolina	700
6	Kansas	462
7	Arkansas	420
8 (tie)	Colorado	400
8 (tie)	Virginia	400
10	Nebraska	365

Q2 SECTOR BREAKDOWN		
SECTOR	NUMBER OF JOBS ANNOUNCED	NUMBER OF ANNOUNCEMENTS
<b>Renewable Energy</b>	<b>8,826</b>	<b>31</b>
Biofuel	193	2
Generation (Solar)	6,450	20
Generation (Wind)	2,183	9
<b>Manufacturing</b>	<b>1,075</b>	<b>5</b>
Advanced Vehicles	450	2
Solar	25	1
Wind	600	2
<b>Other</b>	<b>570</b>	<b>2</b>
Smart Grid/Transmission	70	1
Recycling	500	1
<b>TOTAL</b>	<b>10,471</b>	<b>38</b>

Notably absent from the Top 10 was Michigan, which has cracked into the upper echelon eight times since E2 began tracking job announcements in 2011, including a No. 5 ranking in Q1. But as state lawmakers continue to stoke policy uncertainty by threatening to roll back clean energy standards, Michigan appeared to sputter in the second quarter, failing to maintain its Top 10 standing.

Solar was the leading sector driving job growth in the quarter. At 21 solar projects across the country, about 6,500 jobs were announced either in the solar power generation or solar manufacturing industries. Declining materials costs and favorable policies have spurred recent growth; however, if Congress does not quickly move to extend the federal Investment Tax Credit before its 2016 sunset, the industry could face mounting headwinds.

## CASE STUDY: IN GEORGIA, BIZ LEADERS, FARMERS, CONSERVATIVE POLS HAVE SOLAR ON THEIR MINDS



Birdsong Peanuts recently invested in this 1 Megawatt solar array at its shelling and drying facility in Colquitt, Georgia.

Peter Marte founded Atlanta-based Hannah Solar in 2007. Within two years, he had five employees.

Meanwhile, the solar power industry barely registered on Georgia's business landscape. In the entire state, only 500 kilowatts of solar capacity was installed.

"The market did not exist," Marte said.

But over the next six years, Hannah Solar became one of the fastest-growing renewable energy companies in the nation.

The company now has 77 employees, and in 2014 it was the 13th-fastest growing company in the metro Atlanta area. In 2014, the White House recognized Marte and nine other solar entrepreneurs as "Champions of Change." In August 2015, Hannah Solar was named the 18th-largest commercial solar contractor in the nation.

Since its beginnings, Hannah has installed 75 megawatts of solar capacity, and is set to install another 20 megawatts, primarily in Georgia, North Carolina and Mississippi.

And Georgia has become one of the fastest-growing solar states in the nation, overseen by an all-Republican Public Service Commission.

### Georgia farmers, lawmakers eye solar opportunities

Six years ago, nearly 60 percent of the electricity provided by Georgia Power, the state's primary energy supplier, came from coal. That number is now closer to 30 percent. While much of the decline is due to the low price and ubiquity of natural gas, there has also been a shift toward renewables.

Also in 2009, Georgia Power was statutorily obliged to purchase only a half-megawatt of renewable energy. The company is now committed to purchasing 1,000 megawatts — one gigawatt — of renewably sourced energy over the next three years. At approximately \$2 a watt, that's a \$2 billion investment. This is due in large part to the decrease in cost for renewable sources.

Marte credits state and federal policies for the role they have played in getting the industry up on its feet. They "spawned an industry," he said.

When Hannah started, solar installation cost approximately \$10 a watt. Now, it's between \$1.75 and \$3.50 per watt depending on the type of project — commercial, residential, or farm.

The 30-percent federal tax credit for solar remains a big part of the equation. While the industry is now "a wobbly toddler," Marte said that the tax incentives will be needed for a few more years in order for the industry to "walk on its own."

Marte points out that all forms of energy production in the U.S. enjoy some form of government incentive.

Currently, the sun is scheduled to set on the solar Investment Tax Credit in 2016 — going from 30 percent down to 10 percent — and the solar industry is working to convince Congress to extend the credit.

Marte said Sen. Johnny Isakson (R-Ga.) will be a key part of that effort.

Not knowing the future tax landscape is debilitating when attempting to move an industry forward. "So difficult to conduct business like that," Marte said.

A marked drop in the cost of solar panels has been a welcome but only recent phenomenon, Marte explained, and having the tax credits in place for a few more years would help companies take advantage of that drop in costs.

In Georgia, peanut and cotton farmers have discovered and taken advantage of the tax credits — \$300,000 on a \$1 million investment — that come with installing renewable energy capacity.

Two years ago, Hannah Solar installed a 1-megawatt solar array for Birdsong Peanut Co. in Colquitt, Georgia. Not only does Birdsong get the tax credit to offset income from its larger enterprise, but it will sell 100 percent of the electricity to Georgia Power for the next two decades.

Marte said he knows of two 1,000-acre farms in Georgia that are planning to install 100-megawatt and 130-megawatt solar farms respectively.

### Military solar projects

Hannah is also expanding its reach, installing solar arrays at military facilities through its sister company, Hannah Solar Government Services. There are three projects underway in Puerto Rico — at the San Juan VA hospital, Fort Allen and Fort Buchanan. Another project is set for Pearl Harbor in Hawaii.

One project Marte is particularly excited about is the new stadium for the Atlanta Falcons football team, which will be the first LEED Platinum-certified stadium in the country, and will include more than a megawatt of on-site solar.

Marte applauds the Environmental Protection Agency's recently finalized Clean Power Plan, saying it is "long overdue" and "very important to our industry."

When it comes to generating the energy we need to go about our daily lives, Marte said burning fossil fuels like coal and natural gas don't stack up when compared to solar.

"There are better ways to do it," he said.

— *Environmental Entrepreneurs*

## COLORADO WIND INDUSTRY KEEPS GROWING

Wind generation once again lifted Colorado to a spot in the Top 10.

NextEra Energy Resources, one of North America's largest renewable energy companies, announced in April a \$640 million investment in two new wind farms in eastern Colorado.

These wind farms — the Carousel Wind Power Project in Kit Carson County and the Golden West Wind Energy Project in El Paso County — will cumulatively generate enough power to meet the electricity demand from 99,000 homes while creating 400 jobs.

This announcement builds on the \$2 billion NextEra has already invested in seven wind projects in the state. As outlined in E2's June 2015 report, "Winds of Change," the wind industry in Colorado has to date created between 6,000 to 7,000 jobs, 22 manufacturing plants, and 29 operating wind farms.

Smart policies like Colorado's renewable portfolio standard have been behind this growth. And as Gov. John Hickenlooper has previously noted, implementation of the federal Clean Power Plan in Colorado will drive further investment in renewables and expand clean energy job opportunities across the state.

## TECH GIANT, SOLAR BIZ TEAM UP IN VIRGINIA

Big tech companies like Amazon, Apple, Facebook and others have long-term corporate goals of supplying 100-percent of their infrastructure (data servers, for example) with clean, renewable energy.

As these companies work toward achieving these goals, more capital is expected to be invested in large wind and solar projects.

For example, Amazon Web Services announced in June that in order to power its many data centers in Northern Virginia, the company will purchase electricity from a new 80 MW solar farm in Accomack County on Virginia's Eastern Shore.

While under construction in 2016, the project will create 300–400 jobs. Once the solar farm is complete, about five full-time jobs will be added.

This is Virginia's largest-ever solar project. It alone was enough to propel the Commonwealth into the top 10 for the second consecutive quarter.



PHOTO FROM COLORADO WIND FOR SCHOOLS

The Cherry Valley Elementary School in Colorado.

The solar farm is being developed by Community Energy Inc. For a profile of Community Energy, please see Page 5.

## CLEAN POWER PLAN FINALIZED

As E2 has seen elsewhere in the economy — in the automotive and home appliance industries, for example — commonsense federal policies send a strong, clear market signal to the private sector. With the Clean Power Plan, this market signal is expected to result in increased investment in clean energy technologies. In fact, spurred by implementation of the Clean Power Plan, which will reduce carbon pollution by about 32 percent nationwide in part by increasing renewable energy and energy efficiency, new clean energy projects over the next 15 years are projected to potentially add more than 100,000 clean energy jobs to the U.S. economy.

The Clean Power Plan's strength stems in part from the fact that in the year between the release of the proposed and finalized plans, the EPA solicited comments from millions of stakeholders as it sought to make adjustments and improvements.

This process resulted in the EPA changing its renewable energy cost assumptions. Compared to the EPA's original cost assumptions, wind and solar costs have declined by more than 40 percent, leading the EPA to project in its final rule faster renewable electricity growth than originally anticipated.

This means adding renewable power generating capacity will be one of the most cost-effective ways for states to comply with the Clean Power Plan, leading to more robust clean energy job growth.

## CASE STUDY: SOLAR BIZ HAS LONG LIST OF PROJECTS IN MID-ATLANTIC

PHOTO COURTESY OF COMMUNITY ENERGY



Panels at the Keystone Solar Project in Lancaster County, Pennsylvania, were installed on driven posts without concrete to avoid soil disturbance. This allows the site to be maintained with selected cover vegetation to preserve and improve organic soil content.

More than 15 years ago, two Pennsylvanians who recognized a business opportunity in the falling price of renewables and a deregulated state energy market founded a company called Community Energy.

At first, Eric Blank and Brent Alderfer sold renewable energy certificates, which are tradable commodities proving that renewable energy has been generated. But as their business grew, they expanded into new markets.

Blank and Alderfer ran green energy programs for utilities, and also developed their own renewable energy projects, building several successful large-scale wind projects including New Jersey's first wind farm.

In 2006, the largest renewable energy company in the world, Iberdrola Renewables, acquired Community Energy. Under this new ownership, Community Energy was part of the build-out of 700MW of wind power.

(To put that in perspective, when Blank and Alderfer founded their company in 1999, there were only 10MW of wind power east of the Mississippi.)

Three years after the Iberdrola deal, Community Energy returned to its independent ownership roots to focus on utility-scale solar development.

Since 2009, Community Energy has developed more than 200MW of solar energy projects.

For example, the company built Keystone Solar in Lancaster County, which at 6 MW is Pennsylvania's largest solar power project. Community Energy is also building what will become Virginia's largest solar farm on the Eastern Shore when it's completed in October 2016. (See Page 4.)

The latest opportunity the independent company has been pursuing is in the "community solar" space. Community solar programs are groups of households that pool resources to buy power from a larger solar facility. On average, power acquired through this purchase model is cheaper than if individual households install solar on their own roofs.

Jay Carlis is the company's vice president. He explained community solar's benefits.

"It's opening up the fixed-price benefits of solar to everyone," he said.

Carlis added that in Virginia, Pennsylvania and beyond, the future of solar energy is bright.

"Solar is here to stay, there's no doubt about that," he said.

— *Environmental Entrepreneurs*

## BREAKTHROUGH FOR SOLAR ON PUBLIC LANDS

E2 tracked a groundbreaking announcement in June encompassing three separate projects spread out over 5,700 acres northeast of Las Vegas.

Combined, these three solar farms – which include 134 MW, 150 MW, and 200 MW facilities – are expected to add 1,900 construction jobs to the state's clean energy economy.

Beyond hundreds of new jobs for Nevadans, this announcement represents a major breakthrough for smart siting of large-scale solar on public lands. As part of the Obama administration's push for renewable energy on public lands, Department of Interior Secretary Sally Jewell approved these three projects to be built within what's called the Dry Lake Solar Energy Zone.



President Barack Obama waits backstage as Sen. Harry Reid introduces him at the National Clean Energy Summit in Las Vegas Aug. 24. President Obama used the occasion to tout the economic benefits of the Clean Power Plan.

OFFICIAL WHITE HOUSE PHOTO BY PETE SOUZA

This area is one of 19 solar energy zones in six Western states designated in 2013. The zones were picked as lands that have high renewable energy development potential but minimal harmful impacts. The solar energy zones help private sector companies expedite specific plans through the permitting process.

Approval time for the project permits in the Dry Lake Energy Zone was cut from 18 to 10 months. The project will be built by three different companies, and provide enough power for 132,000 homes.

For more on another clean energy sector in Nevada — energy efficiency — please see E2's brand-new new issue brief at [www.cleanenergyworksforus.org/nevada](http://www.cleanenergyworksforus.org/nevada).

## CONCLUSION

In order to continue clean energy's impressive growth — and to keep creating the good jobs that accompany that growth — federal and state policymakers must provide businesses with the regulatory certainty and strong market signals they need in order to make new investments and expand their operations.

Implementing the federal Clean Power Plan is one of the most important steps policymakers can take, right now, to ensure the industry achieves its growth potential.

Additionally, longer-term extension of the Production Tax Credit for wind and the Investment Tax Credit for solar would continue to expand the growth of clean, renewable energy businesses and create good jobs across the nation.

## E2 JOB TRACKING METHODOLOGY

**OVERVIEW:** E2 primarily draws job announcement figures from articles that run in local and national news outlets. The media stories E2 tracks mention specific projects and specific job-hiring data in the renewable energy, energy efficiency, and public transportation sectors. Since E2 began tracking job announcements in 2011, this method of job announcement tracking has been used about 95 percent of the time. For the roughly 5 percent of occasions when an article mentions a project — but no other job numbers are found — E2 at our own discretion may use job estimates cited on developer Web sites or in publicly available permits.

**JOB TYPE:** Only direct jobs are counted; E2 does not count indirect or induced jobs. If an article includes indirect or induced job numbers, E2 determines direct job creation estimates.

**ESTIMATES:** Some announcements are rough estimates, as developers are inclined to make statements like "few hundred," "couple hundred," or "thousands." In each of these instances we count the minimum — such as 200 or 2,000. If more specific numbers, either higher or lower, are released, E2 updates databases accordingly.

**SECTORS INCLUDED:** Wind, solar, advanced biofuels, geothermal, energy-efficient appliance manufacturing, building retrofits, rail systems, public transportation

infrastructure, smart meters, transmission improvements, combined heat and power, clean-tech education centers, recycling facilities, etc.

**TIMEFRAME:** Job numbers are assigned to quarters based on publication dates of news articles. Also pegged to publication dates is a four-year total timeframe that determines whether announced jobs can be counted. This timeframe includes jobs created one year prior to the announcement, and it also includes jobs expected to be created at any point within the three years immediately following the announcement.

**STATUS:** E2 qualifies jobs within three categories:

- **Announced:** Project received permits/approval, but construction not yet commenced.
- **Under Construction:** Project in physical development. Construction workers employed, permanent jobs not yet created.
- **Operational:** This category contains two types of announcements:
  - Project built, permanent jobs being created, construction workers no longer on site.
  - All jobs created. Project developer retroactively examining employment numbers.

For more details, including a state-by-state breakdown and stories that show what's happening in the clean economy near you, check out

[www.cleanenergyworksforus.org](http://www.cleanenergyworksforus.org)



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