2015 Q1

CLEAN ENERGY WORKS FOR US:
Q1 2015 JOBS REPORT

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ENVIRONMENTAL ENTREPRENEURS®

Clean energy and clean transportation continue 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 works in the United States.

For more details, including state-by-state breakdowns and more clean energy jobs stories, visit **www.cleanenergyworksforus.org** or contact Jeff Benzak at jeff@e2.org.

QUARTER IN REVIEW

In the first quarter of 2015, nearly 40 clean energy or clean transportation projects were announced in 19 states. Together, these projects are expected to create more than 9,800 jobs, according to jobs tracking analysis by E2.

Largely due to a big spike in solar projects, this number is almost double the number of jobs tracked during the corresponding quarter in 2014, and roughly equivalent to the fourth quarter 2014.

Georgia, California, and Texas led the nation in job announcements, followed by New Mexico, Michigan, Colorado, Virginia, Utah, Maryland and Indiana.

The solar industry was the top sector for job growth. It announced more than 6,600 jobs in generation and manufacturing at 19 projects across the country. Declining materials costs and favorable policies have spurred tremendous growth in solar; however, the sunset of the federal Investment Tax Credit in 2016 could be a challenge to the industry.

In Georgia, solar installation projects helped make it the No. 1 state for clean energy job announcements in Q1. Five projects, which will cumulatively produce 382 MW of power from solar cells across 3,500 acres in Taylor County, could create approximately 2,000 jobs. Major electric utility Southern Company will purchase power from at least one of the projects, and others are lining up for the rest.

Q1 TOP 10 STATES	
STATE	**JOBS ANNOUNCED**
Georgia	2,870
California	1,885
Texas	1,612
New Mexico	700
Michigan	616
Colorado	400
Virginia	325
Utah	300
Maryland	240
Indiana	224

STOCK PHOTO

Solar was the top sector in Q1. But concerns over the pending expiration of the Investment Tax Credit could slow future job growth.

CASE STUDY: EAST COAST COMPANY GOES DIRECT ON COMMUNITY SOLAR

PHOTO: MERCURY SOLAR SOLUTIONS/NREL

According to www.CleanJobsPA.com, projects like this rooftop solar array in Philadelphia help create some of the 57,000-plus clean energy jobs in the Keystone State.

Direct Energy Solar is one of the largest full-service, residential solar providers in the Eastern United States. The company has 500 employees — a number that's expected to double in the next year.

Headquartered in Maryland, Direct Energy Solar's employees sell and install solar arrays on rooftops in all six Mid-Atlantic states. The company also works in New England and Washington, D.C. And last year, Direct Energy Solar also became the first East Coast-based solar installer to open offices in California.

In Q1 2015, the company announced it would expand its operations in Howard County, Md., a move expected to create 240 jobs.

David Carpenter is Senior Manager of Inside Sales for Direct Energy Solar. Based in Norristown, Pa., Carpenter was one of the first employees at Astrum Solar, which Direct Energy, parent company of Direct Energy Solar, acquired in 2014.

Carpenter said while most of his company's work happens outside Pennsylvania, he's optimistic about the future of solar in the Keystone State — which has lots of room to improve on policies like its current 8-percent Renewable Portfolio Standard.

"Our new governor is committed to the renewable energy industry and to creating more jobs for Pennsylvania's economy," Carpenter said. "A healthy solar industry would create between 8,000–10,000 jobs for the state, and the necessary changes wouldn't require a tax increase on Pennsylvania residents."

According to a comprehensive jobs census by E2 (see www.CleanJobsPA.com), about 57,000 people already work in the state's clean energy sector, with about one quarter of those in renewables.

Community solar

A business concept that's been successful for Direct Energy Solar in states like Connecticut and Massachusetts is something called a "community" solar program.

These programs allow businesses like Direct Energy Solar to partner with a municipality and its citizens. By directly selling electricity to a group of local residents at prices below the market rate, this model expands solar energy's potential customer base and boosts the overall percentage of clean, renewable, low-cost electricity a community can generate.

Already, Direct Energy Solar has installed more than 20 community solar programs on the East Coast — a number that's expected to double in 2015. Taken together, community solar projects account for about a quarter of the company's 5,000 installations.

Carpenter said his company is committed to continuing to expand in this space. And that means more jobs. Recently, Direct Energy Solar hired a director of community programs as well as additional community program managers.

Solar 101

Carpenter said that when it comes to developing many of its solar initiatives, local support is critical to moving projects forward. That's why educating local residents and holding workshops is an early priority when planning how to provide solar to a community.

"We teach them Solar 101," Carpenter said. "We answer all their questions and explain that the bulk purchase power of these programs is what allows us to sell the systems at such a low price."

Carpenter said that as electric rates rise, community solar programs will become increasingly effective at helping more homeowners gain access to lower-cost renewable energy sources.

Bright future for solar in Pennsylvania?

Although Direct Energy Solar maintains an office in Pennsylvania, Carpenter said the local market pales in comparison to the company's work in nearby states with more effective policies.

"There isn't a market here," he said of Pennsylvania. "When the incentives for solar fell away [in 2013], it meant solar wasn't a viable investment for most homeowners in Pennsylvania."

Carpenter said the challenges in Pennsylvania stem from a lack of state incentives, a broken SREC system, and competitively low electricity rates.

Nevertheless, every month Direct Energy Solar fields dozens of inquiries from Pennsylvania residents, and Carpenter said that given the pent-up and growing demand, he's optimistic about solar energy's future in Pennsylvania.

— Environmental Entrepreneurs

MANUFACTURING BOOM DRIVES VIRGINIA JOB GROWTH

Growth in Virginia's clean energy space is being driven by solar and wind manufacturers who are setting up shop in the state.

In Greensville County, in the southernmost part of Virginia, 510nano Inc., a firm specializing in commercial and utility-scale renewable energy, plans to relocate its headquarters and invest $11 million in a solar manufacturing plant. The manufacturing operation, supported by a $200,000 grant from the Governor's Opportunity Fund, could create up to 113 jobs.

The Virginia Tobacco Indemnification and Community Revitalization Commission plan to contribute $635,000 in funding for the project as well.

In the Shenandoah Valley town of Waynesboro, wind industry company Pleasants Industries announced wind manufacturing jobs. Pleasants Industries expects to start with 25 positions and expand up to 200 jobs within five years. Average salary of of the positions would be $45,000.

STOCK PHOTO

The federal Clean Power Plan is expected to send a strong market signal to the private sector that could create thousands of new clean energy jobs across the country.

PHOTO BY JONATHAN KELLER/NREL

A wind manufacturing worker assembles a next-generation turbine drivetrain.

Q1 SECTOR BREAKDOWN

SECTOR	NUMBER OF JOBS ANNOUNCED	NUMBER OF ANNOUNCEMENTS
Renewable Energy	**7,034**	**28**
Biofuel	60	1
Generation (Biogas)	60	1
Generation (Biomass)	619	3
Generation (Solar)	5,492	14
Generation (Wind)	803	9
Manufacturing	**2,613**	**9**
Advanced Vehicles	300	1
Energy Storage/Fuel Cells	550	1
Solar	1,163	5
Wind	600	2
Other	**200**	**1**
Lighting Efficiency	200	1
TOTAL	**9,847**	**38**

CASE STUDY: VIRGINIA DISTILLERY'S SOLAR ARRAY SOAKS UP THE SUN

Founded in 2009 by Becky and Scott Harris, the Catoctin Creek Distillery is a small, rural business based in Virginia's Loudoun County that's found success by pushing traditional boundaries and embracing clean, renewable energy.

Catoctin produces small-batch, handcrafted whisky, gin, and brandy. The first legal distillery in the county since before prohibition, Catoctin prioritizes high-quality, organic, and kosher spirits.

Since he was a child, Scott dreamed of having solar power in his life. So when he and Becky began renovating the distillery in 2013, they applied for and received a USDA Rural Energy Assistance Program (REAP) grant to partially finance a 41kWh solar array from Prospect Solar, a solar energy installer based in Sterling, Virginia.

PHOTO COURTESY OF CATOCTIN CREEK

The solar array offsets about 85 percent of the distillery's electrical usage.

PHOTO: VIRGINIA TOURISM CORPORATION/SARAH HAUSER

Scott Harris, owner of Catoctin Creek Distillery in Loudoun County, Va., has installed a rooftop solar array at his business.

The solar array offsets about 85 percent of the distillery's electrical usage. On sunny days, energy generated by the array is equivalent to five households' worth of electricity — and the distillery even returns energy into the grid for others to use.

Nothing at the distillery goes to waste. In fact, the distillery gives its spent rye mash to local farmers to use as nutrient-rich livestock feed.

The Harris's explained that one local farmer sells his meat to a restaurant across the street from the distillery. Becky joked that if visitors are interested, they can go to the distillery and the restaurant for a "cradle-to-grave tour."

— Environmental Entrepreneurs

CONCLUSION

To continue clean energy job growth, federal and state policymakers must provide more regulatory certainty. This would send a strong market signal to the private sector allowing businesses to invest in their own operations, create jobs and expand local economies all across the country, from Virginia to Michigan to the Pacific Northwest.

Almost immediately, states will have an opportunity to provide this regulatory certainty that's so critical to the business community. By strongly implementing the federal Clean Power Plan – which is expected to be finalized later this summer and will set the first-ever carbon pollution limits on our nation's power plants — states can stimulate job growth in clean energy sectors like wind, solar and energy efficiency.

One of the most effective ways states can meet the standards in the Clean Power Plan is to strengthen or enact Renewable Portfolio Standards, which have already proven successful in nearly 30 states including North Carolina and Colorado. States can also enact energy efficiency standards which in addition to saving consumers money and making living environments more comfortable can create middle-class jobs making our homes, schools and offices use energy smarter.

In Washington, D.C., Congress can contribute to clean energy job growth by enacting long-term extension of clean energy and energy efficiency tax incentives.

CASE STUDY: IN MICHIGAN, EFFICIENCY COMPANY BRINGS SMALL BUSINESSES BIG BENEFITS

STOCK PHOTO

Grand Rapids, Mich.-based Vantaura Energy helps reduce energy use in businesses like grocery stores and multifamily housing units.

To engage customers, building trust is key. It's a guiding principle of Vantaura Energy Services, a Grand Rapids-based firm that works to reduce energy use in multifamily residences, convenience stores, supermarkets, gas stations and other independently-owned vendors. When it comes to energy management services and solutions, these small business owners don't have the resources of large corporations. Instead, they rely on firms like Vantaura, which has been providing on-site energy assessments, retrofits, refrigeration upgrades, utility incentive application assistance, and other services to multifamily housing units and food and retail business in Michigan since 2010.

Since vendors rely on the advice and recommendations of fellow small-business owners, it's the positive client referrals have maintained Vantaura's success, said Bryan Houck, the company's president. Vantaura reported 180 installations in 2013, and its growth has continued. Michigan's Energy Efficiency Resource Standard and utility incentives have also helped Vantaura expand. For example, in 2013, Consumer's Energy reported that the company was its third-most utilized trade ally.

— Environmental Entrepreneurs

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

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Environmental Entrepreneurs (E2) is a national non-partisan group of business leaders, investors and others who promote smart environmental policies that drive economic growth. Our members, active in nearly every state in the country, have built or financed more than 1,700 companies that have created more than 570,000 jobs, and manage more than $100 billion in venture and private equity capital. For more information, see **www.e2.org.**