

# RE-Powering News

News Digest from EPA's RE-Powering America's Land Initiative



## SPOTLIGHT

New Resource: RE-Powering Publishes Economic and Environmental Benefits Associated with RE on CL

### Spotlight—Benefits Matrix

Using publically available information, RE-Powering maintains a list of the economic and environmental benefits associated with completed sites, as identified and reported by parties directly involved with their respective projects, and published this information in the recently released [RE-Powering Benefits Matrix](#).

Besides providing a pollution-free source of energy, siting renewable energy projects on contaminated properties can have a number of environmental and economic benefits. Through reuse of these sites, communities see a property that had been vacant or underutilized for many years turned into a facility that may help improve the local tax base, create jobs, and turn blight into an economic opportunity.

This approach not only reuses the land, but turns a potential liability into an asset that will serve the community for decades to come. Publicly available, stakeholder-reported information indicates that communities, private site owners, and consumers have saved millions of dollars in energy costs, created construction jobs, and received new property tax revenue as a result of reusing these sites for renewable energy. The economic benefits most commonly touted for renewable energy on contaminated land (RE on CL) are electricity cost savings, additional land lease revenue to the town or city site owner, and increased tax payments for the land and/or renewable energy systems to the local municipality and/or state.

### Our Mission

EPA launched *RE-Powering America's Land: Siting Renewable Energy on Potentially Contaminated Lands, Landfills and Mine Sites* to encourage the siting of renewable energy on thousands of currently and formerly contaminated properties across the nation.

### Get Updates from RE-Powering

Click to subscribe to EPA's RE-Powering Listserv

EPA recently launched [@EPALand](#) on Twitter to help you learn about what is being done to protect and clean up our land. Stay up to date on topics including [site cleanups](#), learn about [renewable energy technologies](#) on contaminated sites, [sustainable materials management](#), and understand how EPA responds to [hazardous material emergencies](#). Follow [@EPALand](#) and join the conversation: <https://twitter.com/@EPALand>



Because cost savings are determined by tax and renewable energy incentives, renewable energy policies such as Renewable Portfolio Standards, local electricity rates, and power purchase agreement terms, these savings can vary across installations. In some cases, the site owner agrees to lease the land to the renewable energy developer at a low rate in exchange for substantially reduced electricity charges or for other terms, creating win-win situations that benefit all parties. Other benefits associated with developing renewable energy on contaminated lands include job creation and the use of local businesses to construct these projects.

## Case Study: Rutland

RE-Powering has developed a new [case study](#) highlighting the challenges and successes at Stafford Hill Solar Farm, located on a former city landfill in Rutland, VT. Utility Green Mountain Power (GMP) owns the 2.3-MW solar installation, which features the unique addition of 4 MW of lithium ion and lead acid battery storage that allows the system to function as a microgrid. The Stafford Hill Solar Farm is configured to operate as part of the main power grid, but can also be separated to operate autonomously in emergencies such as power outages.



*Stafford Hill Solar Farm, with the battery station visible in the left corner.  
Photo courtesy Green Mountain Power.*

The microgrid aspect of Stafford Hill Solar Farm reflects GMP's expectations for the future electrical grid—using energy storage and distributed generation—and provides additional grid benefits such as grid resiliency and the ability to smooth out fluctuations related to solar intermittency. The city of Rutland also realizes benefits, since the storage system can power the city emergency shelter at the high school in the event of wide-scale power outages and weather events. The city receives lease payments of \$30,600 annually and the state of Vermont will receive tax payments on the site for at least 25 years. The project was also designed and built by primarily local companies.

Rutland's city landfill collected municipal solid waste for about 40 years before the city ceased use at the location in the late 1980s. Except for the operation of a recycling and transfer station and a metal storage facility on the non-landfilled area, the site has gone unused since its closure. The \$10 million solar and storage project was funded in part by the U.S. Department of Energy's Office of Electricity Delivery and Energy Reliability.

## Building Benefits with Solar in Brick, NJ

The 42-acre [Brick Township Landfill Superfund site](#) lies between the Garden State Parkway and Sally Ike Road in New Jersey. The Township and a solar developer entered into a redevelopment agreement in 2011. The following year, the solar developer made a \$2.5 million lease payment in advance to the Township for the 15-year lease of the site—a vital source of revenue for the Township for the overall project's success.

In October 2014, the 7-megawatt (MW) solar facility was completed. By May 2015, the solar facility had generated 3 million kilowatt-hours of power, offsetting as much carbon dioxide as 60,000 trees. The solar project provides all the electricity needed by the Township government, with excess electricity sold onto the grid.

When the 15-year lease ends, the Township will assume ownership of the solar field. The solar field will provide free electricity to the Township, resulting in a cost savings of \$500,000 to \$600,000 per year and supplying all of the electricity needed by the municipal government. More details are available in an [EPA case study](#).



*Brick Township Landfill. Photo courtesy: Arie Kremen,  
Cornerstone Environmental Group.*

## The Pine Tree State Gets First Solar-on- Landfill Installation

The easternmost U.S. state welcomed its first solar on landfill installation with a 396-panel, 122 kW array on a capped site in Belfast, Maine. The site, developed by ReVision Energy, went live in December 2015. It provides nearly 20% of the electricity load for the city's 11 municipal buildings. Under the Power Purchase Agreement, [ReVision](#) sells the energy generated by the panels to the city at a competitive rate and offers the option for the city to purchase the system after six years.



*Photo courtesy of ReVision Energy*

“This project [*Belfast Landfill solar*] represents what we hope will be the first of many collaborations between the Maine Department of Environmental Protection, the solar industry and a local municipality working to lower energy costs while also having a positive impact on the environment. This project demonstrates that we have the capacity, the talent and the drive to move the solar needle here in Maine, with leadership coming from multiple parties now and in the future.”

-Hans Albee, P.E., ReVision Energy

## Focus on Community Solar

Sometimes known as a “solar garden,” community solar is a model under which a group of subscribers buy or lease a portion of a shared solar installation and the appropriate share of energy is credited to their electric bill. According to the [U.S. Department of Energy](#), there are 108 community solar projects around the country, with total capacity of 110 MW. RE-Powering is tracking an increasing number of RE on CL installations using the community solar model.



At the Grafton St. Landfill solar project in Townshend, VT, a 600-panel, 150 kW [community solar project](#) developed by Soveren Solar provides power to 15 business and residential subscribers, as well as to some town buildings (the Town Hall and the Library). The project was financed by private investors, and the town will have the option to purchase the installation in seven years but is not required to do so.

The former Dreher Pickle Plant in Fort Collins, CO, ceased operations in 1988, leaving the land contaminated with salt, polychlorinated biphenyls, and a leaking underground storage tank. Today, the site is home to the 0.6-MW [Riverside Community Solar](#) garden. Any residential customer of Fort Collins Utilities was able to purchase panels in the shared solar array at \$2.91 per watt upfront (\$1.59 per watt after federal incentives). The original planned capacity of 333 kilowatts sold out in record time, so developer Clean Energy Collective doubled the installation to accommodate more users. Energy from the array is controlled by the municipal utility and offsets community purchasers' electricity use.

McKees Solar Park in Newark, DE, is a 0.23-MW, 900-panel community solar project. The system was [funded in part](#) through community contributions, with more than 20 Newarkers donating \$4,000 towards the project. An additional 77 people made a \$50 “micro-investment” and, in exchange, will receive a \$1 rebate each month on their electric bill for the next 10 years. The city’s goal is 200 micro-investors.

## National Community Solar Partnership Workshops

The U.S. Department of Energy has partnered with EPA, the Department of Housing and Urban Development, the Department of Agriculture, and a range of stakeholders to form the [National Community Solar Partnership \(NCSP\)](#). The goal of the Partnership is to advance community and shared solar throughout the United States, ultimately increasing access for low- and moderate-income households as well as those that cannot install solar (e.g., renters). Partnership members include federal, state, and tribal government organizations; academia; utilities; non-profits; and industry. The initiative features working groups who research and discuss related topics, including finance and business models, community building, best practices at the state level, and relevant federal resources. The White House [formally launched](#) the Partnership in November 2015.

Community solar represents an opportunity for RE-Powering type projects. According to the National Renewable Energy Laboratory, almost half of households and businesses cannot site solar on their buildings or properties for a variety of reasons (e.g., rental properties, shading, etc.). Many formerly contaminated properties may also have the ability to host a renewable energy facility, but such sites may not have any on-site demand for such energy. Therefore, matching up contaminated lands with nearby households and businesses has the opportunity to provide clean energy to those constrained to host such capacity. Since there are numerous contaminated lands in and among the country’s neighborhoods, community solar is an attractive procurement arrangement worth pursuing.

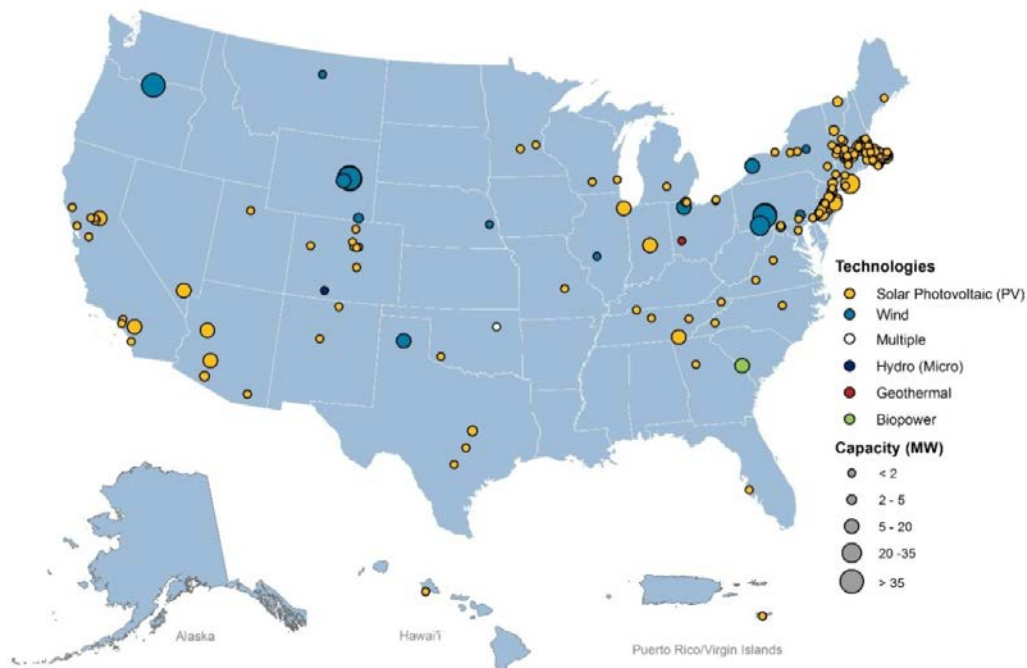
## RE on CL Continues to Grow

RE-Powering continues to [track](#) and highlight RE on CL throughout the United States, with a current inventory of 179 renewable energy installations on 171 contaminated lands, landfills, and mine sites, and cumulative installed capacity of just over 1,124 MW. Some installations added to the [RE-Powering tracking matrix](#) recently include:

- **Needham Landfill in Needham, MA.** This 3.7-MW solar installation comprises 12,000 solar panels on 13 acres of former landfill space. The town has a 20-year land lease with developer Brightfields Development, LLC, for the site and purchases discounted electricity from the solar, while Brightfields is eligible for credits under the Massachusetts Solar Renewable Energy Credits (SRECs) program. The project is [expected to provide](#) first-year revenues of more than \$600,000 from net metering (~\$487,000), payments in lieu of taxes (PILOT) (~\$93,600), and land lease (~\$50,000).

- **L&D Landfill in Mount Holly, NJ.** New Jersey utility Public Service Enterprise Group owns this 12.93-MW solar installation on a former industrial and municipal solid waste landfill site. The [installation](#) created 190 construction jobs and now provides enough electricity to power 2,000 average-sized homes annually.
- **Palmer Metropolitan Airfield Solar, Palmer, MA.** The towns of Leicester and Spencer and Worcester State University will together purchase the net metering credits from the energy generated by [the Palmer Metropolitan Airfield Solar project](#), which will result in energy savings for these entities over the 20-year terms of the energy agreements. The town of Palmer will receive real and personal property tax revenue of approximately \$2 million over the 20-year project term. The project is the first and largest qualified as a brownfield project under the MA Department of Energy Resources SREC II solar energy incentive program, and the remediation was funded in part by an EPA Brownfields grant.

**179 Renewable Energy Projects, Over 1.1 Gigawatt Installed Capacity**



This map is for informational purposes only. The information was gathered from public announcements of renewable energy projects in the form of company press releases, news releases, and, in some cases, conversations with the parties involved. This map may not be a comprehensive representation of all completed renewable energy projects on contaminated lands. To provide information on additional projects, please email [cleanenergy@epa.gov](mailto:cleanenergy@epa.gov).

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More on EPA's Brownfields Program: <https://www.epa.gov/brownfields>

More on successful Brownfields Program stories: <https://www.epa.gov/brownfields/brownfields-success-stories>

## **Featured Resource: Energy Efficiency and Renewable Energy in Low Income Communities: A Guide to EPA Programs**

Investing in energy efficiency, renewable energy, and climate protection programs is an important way for state and local governments to provide a variety of benefits to low-income communities, including energy cost savings, job creation, improved air quality, and healthier homes.

The [Energy Efficiency and Renewable Energy in Low Income Communities guide, produced by EPA](#), helps state and local staff connect with EPA initiatives and programs that can assist in expanding or developing energy efficiency, renewable energy, and climate initiatives in ways that benefit low-income communities and protect the environment. The guide includes a chapter about RE-Powering, highlighting the initiative's goals and tools, and explaining its relevance and potential value to low-income communities.

### **Assessing and Cleaning Up Brownfields Nationwide**

In May, EPA's Brownfields Program awarded [\\$55.2 million in Assessment, Revolving Loan Fund and Cleanup \(ARC\) Grants](#) to 218 new grant investments in 131 communities across the United States. These grants help communities assess, remediate, and redevelop land that might otherwise remain underutilized or idle. Recipients will receive approximately \$200,000—\$820,000 in funding.

EPA's Brownfields Program strives to expand the ability of communities to recycle vacant and abandoned properties for new, productive reuses. The investments will provide communities with the funding necessary to assess, clean up, and redevelop contaminated properties, boosting local economies and leveraging jobs while protecting public health and the environment.

This latest funding advances EPA's broader commitment to making a visible difference in communities by focusing on coordinating federal investments to help environmentally overburdened, underserved, and economically distressed communities address local priorities.

For more details see the following:

List of the FY 2016 Applicants Selected for Funding: <https://www.epa.gov/brownfields/brownfields-fy16-arc-grants-selected-funding>

More on ARC grants: <https://www.epa.gov/brownfields/types-brownfields-grant-funding>

*"These grants will empower communities to transform idle, languishing lands into vibrant hubs for business, jobs, and recreation," said EPA Administrator Gina McCarthy. "It's all about providing that initial funding, and sparking that first conversation to set stalled sites on a path toward smart, safe redevelopment that directly benefits communities."*

## Other Resources

### [The 50 States of Solar: Q1 2016 Quarterly Report](#)

The North Carolina Clean Energy Technology Center has released its quarterly report, which provides insights on state regulatory and legislative discussions and actions on distributed solar policy, with focus on net metering, community solar, residential fixed charges, residential solar charges, third-party ownership, and utility-led rooftop solar programs.

### [U.S. Renewables Portfolio Standards: 2016 Annual Status Report](#)

Researchers at Lawrence Berkeley National Laboratory announced the release of *U.S. Renewables Portfolio Standards: 2016 Annual Status Report*, a review of key trends in state renewable portfolio standards (RPS). This annual report describes recent legislative revisions, key policy design features, past and projected impacts on renewables development, compliance trends, and costs. According to the report, nearly 150 RPS-related bills have been introduced since the beginning of 2015, divided almost evenly between those that would strengthen, weaken, or have a neutral impact on RPS requirements. Relative to currently available renewable energy supply, increasing RPS demand could require an additional 60 gigawatts (GW) of primarily non-hydroelectric renewables capacity by 2030, beyond the 114 GW of capacity installed as of year-end 2015. Current build rates are on pace to meet those requirements, with roughly 6 GW of non-hydroelectric renewable generation capacity added for RPS requirements in 2015.

### [Community Solar and Virtual Net Metering](#)

This new report from Navigant Research explores the community solar market in the United States, with a focus on technology and policy trends, customer adoption, utility rollouts, and the vendor landscape, through 2025.

### [Rooftop Solar Photovoltaic Technical Potential in the United States: A Detailed Assessment](#)

A new study from the National Renewable Energy Laboratory increases U.S. rooftop solar photovoltaic (PV) potential to 1,118 GW. The report uses detailed data for 128 U.S. cities, along with improved analysis, to make more accurate estimates of technical potential of PV on rooftops.

## Save the Date

### [Bioenergy 2016: Mobilizing the Bioeconomy through Innovation](#)

July 7–14, 2016 | Washington, DC

Hosted by the U.S. Department of Energy's (DOE's) Bioenergy Technologies Office and in partnership with Clean Energy Research and Education Foundation, this ninth annual DOE Bioenergy conference will focus on opportunities to grow future feedstock supplies and breakthrough technology barriers to achieve a stronger bioeconomy.



### [Solar Power International](#)

September 12–15, 2016 | Las Vegas, NV

Solar Power International, hosted by Solar Energy Industries Association and the Solar Electric Power Association, is the largest solar trade show in North America. The event is designed to serve and advance the solar energy industry by bringing together the people, products, and professional development opportunities that drive the solar industry and are forging its bright future. It focuses on creating an environment that fosters the exchange of ideas, knowledge, and expertise for furthering solar energy development in the United States.

### [The Fundamentals of Community Solar Design and Implementation](#)

August 22–23, 2016 | Chicago, IL

This symposium will spell out the elements of how groups and community organizations can design, develop, and implement effective community solar programs. It will examine relevant components in detail and explore how the structures must adapt and operate under different state legislative and regulatory constructs.

### [Underwriting Community Solar Projects](#)

August 23–24, 2016 | Chicago, IL

At this symposium, project developers, utilities, financial advisors, lenders, and investors who have had success with community solar projects will provide insights, lessons learned, and best practices recommendations for further expansion of community solar development around North America.

## Contact Us

For more information, contact Marc Thomas via email at [thomas.marc@epa.gov](mailto:thomas.marc@epa.gov) or visit <http://epa.gov/renewableenergyland/>.

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