

RE-Powering News

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



SPOTLIGHT

2014 Highlights from the RE-Powering Initiative!

2014 Re-Powering Highlights

As 2014 draws to an end, here is a look back at a few of the highlights of 2014 and a sneak peak of some of the things ahead for the RE-Powering Initiative.

EPA Releases Final Action Plan 2.0

In October 2014, RE-Powering released the final version of its [Action Plan 2.0](#), which articulates the goals and objectives of the Initiative and the activities it expects to pursue over the next two years. This action plan articulates the continuation of activities that have been impactful and suggests areas of new emphasis.

Tracking Matrix Highlights Renewable Energy on Contaminated Sites

Using publically available information, RE-Powering maintains and publishes a [Tracking Matrix](#) of completed renewable energy installations on contaminated sites, landfills, and mine sites. In 2014, RE-Powering identified more than 20 new renewable energy installations that came online--an increase of over 20% for total projects over all previous years combined. As of October 2014, the RE-Powering Initiative has identified 135 renewable energy installations on 128 contaminated lands, landfills, and mine sites, with a cumulative installed capacity over 773 MW.

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.

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In 2014, RE-Powering also published a RE-Powering Mapper Google Earth File of [Completed Installations](#), which identifies completed renewable energy installations on contaminated lands, landfills, and mine sites included in the Tracking Matrix.

Case Study - Scituate Reuses its Landfill for Solar

The RE-Powering case study [An Old New England Town Lights the Way with Solar](#) was published in 2014 and unveiled at the Solar Development on Landfills and Brownfields conference in Philadelphia, Pennsylvania, in April. The study discusses how representatives in the town of Scituate, Massachusetts, decided on a solar installation when trying to find a productive use for the defunct town landfill. The Scituate Landfill is now home to a 3-MW PV installation that, in combination with a nearby wind turbine, provides Scituate with 100% of its municipal power needs from renewable sources.



Scituate Landfill solar under construction, photo courtesy Brightfields Development LLC

EPA Publishes Liability Reference Guide for Siting Renewable Energy on Contaminated Property

EPA's [Office of Enforcement and Compliance Assurance's](#) Office of Site Remediation Enforcement (OSRE) and [Office of Solid Waste and Emergency Response's](#) Center for Program Analysis (CPA) in July 2014 published the [Liability Reference Guide for Siting Renewable Energy on Contaminated Properties](#). The guide is designed for use by developers, financiers, and other interested parties involved in renewable energy development.

GreenGov Renewable Energy Workshop

On May 14, the White House Council on Environmental Quality's Office of the Federal Environmental Executive (OFEE) hosted a GreenGov Workshop on Renewable Energy Purchasing and Deployment, which included private sector and Federal leaders in renewable energy. Participants discussed the challenges and opportunities in renewable energy deployment for Federal agencies as those agencies plan how they are going to meet their 2020 renewable energy targets. Nitin Natarajan, Deputy Assistant Administrator of EPA's Office of Solid Waste and Emergency Response, encouraged federal agencies to consider siting future renewable energy development on contaminated lands, landfills, and mine sites, consistent with the December 2013 [Presidential Memorandum on Federal Leadership on Energy Management](#), and urged interested federal partners to work with the Agency's RE-Powering America's Land Initiative to explore potential opportunities and areas of collaboration. RE-Powering and OFEE continue to work together to align EPA's efforts and resources to develop renewables on contaminated lands with Federal renewable energy consumption goals.



Theophilus Smith Road Landfill, photo courtesy Town of Dennis, MA

A capped landfill on Theophilus Smith Road in South Dennis, Massachusetts, is now home to the largest community-hosted solar project in the state. The 6-MW system covers 35 acres of the former municipal solid waste site, which now also hosts the town's transfer station, composting operation, and public works garage. The solar array was installed under a power purchase agreement, through which American Capital Energy built the solar field and the town agreed to purchase the energy at a reduced rate. The town sells excess energy to the Dennis-Yarmouth Regional School District and the Dennis Water District at a reduced rate, saving the two entities a combined \$700,000 annually.

The solar installation uses a ballasted system, designed to protect the integrity of the cap by sitting on top of it rather than penetrating it. In addition, completion of the solar installation upgraded many elements of the site's existing infrastructure, including new utility poles and switchgear, and a new landfill access road. The project was originally scheduled for development in two phases, but was completed in one phase this summer.

A Look Ahead to What's Coming Up in 2015:

- Create electronic versions of solar and wind decision trees - Winter 2015
- Facilitation of solicitations and Requests for Proposal on contaminated lands - Spring 2015
- Enhance RE-Powering Mapper - Summer 2015
- Revise RE-Powering America's Land website - Fall 2015

EPA Region 1: Highlighting Successes and Opportunities in Massachusetts

On November 19, 2014, EPA Region 1 hosted a series of panels and roundtable discussions focusing on how renewable energy developers and local communities in the Commonwealth of Massachusetts have worked together to successfully install renewable energy projects on landfills and brownfield sites—making the Bay State the national leader in number of installed, completed RE on CL projects. Participants and panelists included state and federal regulators, local government officials, renewable energy developers, and financiers. Mathy Stanislaus, Assistant Administrator for EPA's Office of Solid Waste and Emergency Response, also participated in the discussion, giving him the opportunity to hear firsthand about some of the successful installations completed recently in Massachusetts, and to gather stakeholder feedback about areas in which the RE-Powering Initiative can help move projects forward.

As part of the event, EPA Region 1 also awarded its first ever "Superfund Excellence in Site Reuse" awards to two teams with recently completed solar projects on Superfund sites. One recognized the project team involved with the 1.8-MW solar installation at the Sullivan's Ledge site in New Bedford. Sullivan's Ledge is a former quarry where hazardous wastes were disposed. Cleanup activities included installation of an impermeable cap over the quarry pits; 5,000 solar panels now sit atop that cap. New Bedford adopted aggressive and innovative solar policies to promote renewable energy use as part of Massachusetts' Clean Energy Results Program. These policies include promoting solar farms on environmentally contaminated land, turning otherwise unusable areas into community assets. The solar installation at Sullivan's Ledge is expected to save the city \$2.7 million over its 20-year life.

The other award recognized the team behind the 6-MW solar installation that sits atop the Shaffer Landfill, a 60-acre former municipal solid waste landfill in Billerica. The Shaffer Landfill is part of the 533-acre Iron Horse Park Superfund site, an industrial complex with a long history of activities, including manufacturing and rail yard maintenance facilities, open storage areas, landfills, and wastewater lagoons. The landfill is back into productive use as a source of clean, renewable energy.



Shaffer Landfill

"Generating renewable energy on formerly toxic sites is an innovative way to use space, and it's an important part of EPA's energy initiative, RE-Powering America's Land. The new solar field at Sullivan's Ledge is a great example of the benefits of redevelopment. In one city after another, we're heeding our moral obligation to act on climate change in addition to saving cities and states money by increasing renewable energy production and encouraging job creation. We need this kind of leadership in cities and towns across the country."

—Gina McCarthy, EPA Administrator

Focus On – Solar in the Nutmeg State

Connecticut celebrated the opening of its first landfill solar installation with a 6-acre, 1-MW system in the state's capital of Hartford. The installation is located on the 96-acre former North Meadows Landfill, which operated as an open burning dump from 1953 to 1977 and was leased to the Connecticut Resource Recovery Authority (CRRA) in 1982. CRRA stopped accepting garbage at the site in 1988 and used it solely for ash from a trash-to-energy plant through 2008. Capping was completed in July 2014 under a permit from Connecticut's Department of Energy and Environmental Protection. The cap covers 61 acres of the landfill and comprises synthetic geomembrane, a layer of sand, and a layer of impermeable synthetic grass called ClosureTurf. The cap and solar installation preserve existing environmental protection systems at the site, and CRRA funded the approximately \$12M solar development using reserved clean-up funds.



Hartford Landfill, photo courtesy of MIRA

The 4,000-panel solar installation takes advantage of the state's Zero Emissions Renewable Energy Credit program, which is run by Connecticut Light & Power (CL&P) and United Illuminating and funded by ratepayers. Under this program, the Materials Innovation and Recycling Authority (MIRA), which succeeded CRRA as the waste management authority, receives 11 cents per kilowatt produced by the system. Power from the array is currently sold wholesale to the electrical grid. City officials are working with MIRA and CL&P to use the solar array to offset electricity needs at Hartford's public works and police complex, which is adjacent to the landfill, likely through a direct connection. This would save the complex about \$290,000 per year by eliminating its annual electric bill. MIRA is also considering additional solar panels on the landfill in the future. According to the *New Haven Register*, the Hartford landfill project [is being viewed as a model for other landfill solar installations](#) being considered in the state.

RE on CL – Toledo Zoo Solar Array

A 22-acre brownfield site north of the [Toledo Zoo's](#) main parking lot in South Toledo, Ohio, is now home to a [2.1-MW solar array](#) that provides [up to 30% of the zoo's electricity](#). This project returns the former elevator factory site to productive use, generating clean energy while reducing blight. The solar was designed, developed and built by [GEM Energy](#) of Walbridge, Ohio, which has a long-term contract in place to sell electricity generated at the



Toledo Solar Array, photo courtesy of GEM Energy

site exclusively to the zoo. The solar installation supports the zoo's overall commitment to [sustainable practices](#). Related initiatives include a wind turbine to power the parking lot booths, a solar walkway at the main parking lot entrance, and geothermal wells near the aquarium.

GEM Energy worked with city and county organizations in a strong example of public/private partnership to repurpose the property. "Before the solar development, the brownfield site was considered undevelopable," said as Jason Slattery, Director of Solar, GEM Energy. "Because it was in receivership, the site was considered a tax and utility liability. GEM Energy worked with the Lucas County Land Bank to reset the negative tax liabilities. GEM Energy then worked with the city and Ohio EPA on the contamination issues, establishing a base line status and allowing the property to be repurposed."

Upcoming Events

16th National [Brownfields Training Conference](#). September 2-4, 2015, Chicago, Illinois. This event is the premier conference and trade show focused on environmental revitalization and economic redevelopment. The 2015 Brownfields Conference includes three days of training, networking, and business development.



Recent Webinars

[Small and Distributed Wind Turbine Update](#). December 17, 2014.

This free webinar presented an overview of recent news and updates pertaining to small and distributed wind turbines. An overview of the SMART Wind Consortium, funded by the U.S. Department of Commerce, was presented. Speakers and topics included:

- Bret Barker, U.S. Department of Energy - DOE program overview, including a certification update and discussion of the implementation of certification standards into ITC/1603.
- Robert Preus, National Renewable Energy Laboratory - presentation of the soon-to-be-published Small Wind Turbine Site Assessor's Guide.

[Clean Energy States Alliance Webinar: Tracking Systems and Section 111\(d\) State Plans.](#)

December 10, 2014.

EPA's proposed rule 111(d) would require close tracking of energy and emission attributes from power generation. APX Environmental Markets summarized and discussed the main points from a recent report discussing the key elements of tracking systems, differences among them, various ways in which they could be used in 111(d) compliance, and which compliance options may be most appropriate in which situations.

New Resources

[Bioenergy Knowledge Discovery Framework \(KDF\)](#). This tool supports the development of a sustainable bioenergy industry by providing access to a variety of data sets, publications, and collaboration and mapping tools that support bioenergy research, analysis, and decision-making. In the KDF, users can search for information, contribute data, and use the tools and map interface to synthesize, analyze, and visualize information in a spatially integrated manner.

[Biomass Scenario Model](#). This tool allows users to explore scenarios showing how public policy actions can influence future biomass feedstock and bioenergy production.

[Community Shared Solar: Policy and Regulatory Considerations](#). This National Renewable Energy Laboratory (NREL) brochure explores how the shared solar business model interacts with existing policy and regulations, including net metering, tax credits, and securities regulation.

[Trends Shaping our Clean Energy Future](#). This annual report from the Interstate Renewable Energy Council presents information and an independent perspective on the year's renewable energy and energy efficiency progress and challenges across the United States.

[U.S. Solar Market Insight Q2 2014 Report](#). The U.S. Solar Market Insight™, a quarterly publication from the Solar Energy Industries Association/GTM Research, shows the major trends in the U.S. solar industry. According to the report, the U.S. installed 1,133 MW of solar photovoltaics (PV) in the second quarter of 2014, increasing installed capacity to 15.9 gigawatts—enough to power 3.2 million homes.

[Utility-Scale Solar 2013: An Empirical Analysis of Project Cost, Performance, and Pricing Trends in the United States](#). This report from Lawrence Berkeley National Laboratory (Berkeley Lab) focuses on ground-mounted solar photovoltaic (PV) and concentrating solar power projects larger than 5 MW in size. According to the report, these larger utility-scale solar projects in the United States have made great strides in delivering competitively priced renewable electricity in recent years.

[Tracking the Sun VII: An Historical Summary of the Installed Price of Photovoltaics in the United States from 1998-2013](#). The most recent version of this annual PV cost tracking report from Berkeley Lab finds that installed prices for residential and commercial PV systems completed in 2013 fell by roughly \$0.70 per watt, or 12 to 15 percent from the prior year.

[How Much Do Local Regulations Matter? Exploring the Impact of Permitting and Local Regulatory Processes on PV Prices in the United States.](#)

This Berkeley Lab paper assesses the impacts of city-level permitting and other local regulatory processes on residential PV prices in the United States. The analysis confirms that variations among and improvements in local regulatory processes affect residential PV installation prices.

Contact Us

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