

# RE-Powering News

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



## SPOTLIGHT



RE-Powering releases Action Plan 2.0, the Initiative's road map for the next two years. See below for more detail.

### Action Plan 2.0 Update

In October, the RE-Powering America's Land Initiative will release its [Action Plan 2.0](#), detailing specific activities for the program over the next two years. To guide and focus its goals and activities, RE-Powering worked with the public and other stakeholders to revisit its previous plan and ensure its current and future activities support the achievement of RE-Powering's mission.

In May 2014, RE-Powering requested public comment on its Draft Action Plan 2.0 and received nearly 60 comments from private citizens, companies, consultants, states, city governments, environmental organizations, and others. EPA considered and is incorporating these comments into the final version.

Activities in the final plan are aimed at three primary goals: providing technical and programmatic assistance; promoting policies and best practices that encourage renewable energy on contaminated lands; and partnering with stakeholders and leverage agency efforts.

While the Action Plan will provide a framework for the Initiative's activities, the RE-Powering Team will adjust its activities and priorities as new opportunities present themselves. The RE-Powering Team therefore welcomes additional stakeholder feedback at any time, as well as interest in collaboration that can help the program assist these markets in the understanding and implementation of renewable energy on contaminated lands. If you have any questions or comments regarding Action Plan 2.0, contact [cleanenergy@epa.gov](mailto:cleanenergy@epa.gov).

### 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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### Brownfield Site to Clean Energy Manufacturer

A [brownfield site](#) in Port of Monroe, Michigan, is now home to a green energy manufacturer, [Ventower Industries](#). The site was an industrial waste landfill that operated until the mid-1970s. It has been transformed into a full-service fabricator and supplier of utility-scale wind turbine towers, coming full circle from a potential liability into an asset that directly contributes to new wind energy development. In an added boost to the local economy, the facility employs 125 workers in high-wage jobs and generates new taxes.

## Liability Reference Guide Published

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) recently 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.

The guide provides answers to common questions renewable energy developers have regarding liability and potentially contaminated property. It also addresses possible liability issues, and summarizes available resources and policy tools in order to facilitate these types of projects. An appendix is also included that lists EPA programs and reference documents that may be relevant to developers considering renewable energy projects on contaminated properties. In addition, this guide reflects the policy changes made in 2012 regarding the treatment of [tenants of bona fide prospective purchasers](#).

If you have any questions about this guide, please contact Hollis Luzecky in OSRE ([luzecky.hollis@epa.gov](mailto:luzecky.hollis@epa.gov); 202-564-4217) or Marc Thomas in CPA ([thomas.marc@epa.gov](mailto:thomas.marc@epa.gov); 202-566-0791).

A related resource, "[The Revitalization Handbook](#)," also examines reuse in general and was recently updated by OSRE.

## Focus On – Wind Energy

### Wind Turbines on Contaminated Lands

Wind turbines are popping up on contaminated sites across the United States, from Joint Base Cape Cod in Massachusetts to Columbia Ridge Landfill in northern Oregon. In total, more than 486 megawatts (MW) of electricity are currently being generated by wind on contaminated land. The use of wind turbines on contaminated sites confirms that the large concrete foundations required for wind turbines can be placed on capped sites with minimal disruption and without compromising the protectiveness of the cap or selected remedy.

One successful installation demonstrating this feasibility is "[GobNob](#)," a 60-foot pile of coal tailings covering 14 acres on the former Freeman United Crown Number 1 Coal Mine in central Illinois. The mine closed in 1971 and left the barren gob pile, which produced acid mine drainage (i.e., acidic water contaminated with metals from leaching minerals in the pile). When Illinois' Rural Electric Convenience Cooperative (RECC) proposed the site for a wind installation, one of the main considerations was how to install the turbine foundations without disrupting the engineered cap and thereby inadvertently creating pathways for hazardous substances to migrate off-site. RECC consulted with the Illinois Department of Natural Resources throughout the construction process to mitigate any such issues.



Venttower Industries employee welding on a wind turbine tower

The solution to this potential problem was to excavate on a small area of the clay cap (an area less than 20 feet in diameter) and create a specialized cap to cover over this area once the wind tower's foundation was complete. During construction of the turbine foundation, RECC helped remediate a nearby area of water accumulation by removing the top soil, leveling the area with the dirt removed for the foundation, re-covering it with a clay cap, and reseeding the area.

### **Largest Federally-Owned Wind Farm Goes Live on Superfund / RCRA Site**

In June, officials from the U.S. Department of Energy's (DOE's) National Nuclear Security Administration (NNSA) celebrated the dedication of the [largest federally-owned wind farm](#) in the United States at the Pantex Plant near Amarillo, Texas. The 11.5-MW installation is located on 1,500 acres of federal land overlying a portion of the site's contaminated groundwater. The turbines provide more than 60% of the plant's annual electricity needs. The wind farm helps Pantex meet nearly all of its renewable energy goals while making use of a contaminated property currently under the authority of Superfund and the Resource Conservation and Recovery Act.

Pantex opened as a weapons facility during World War II. It was used for cattle for a few years after the War, but returned to a weapons facility in 1951. Current operations include nuclear weapons assembly and disassembly; interim storage of plutonium and weapon components; and development and testing of explosives. Principal soil pollutants at the site include explosives and depleted uranium, while the groundwater is subject to contamination from volatile organic compounds as well as explosives and metals. Ongoing remedial actions target restoration of the perched aquifer to protect the underlying Ogallala Aquifer.

Dubbed the Pantex Renewable Energy Project, or PREP, the wind installation is funded by an energy savings guarantee from the developer, Siemens USA, under an [Energy Savings Performance Contract](#) (ESPC). ESPCs facilitate federal energy savings projects without upfront capital costs or Congressional appropriations by funding projects through anticipated cost savings. The expected annual cost savings for the Pantex wind farm are \$2.8 million.

EPA Region 6 presented DOE with a Greenovations Award for PREP. The award recognizes the Pantex Plant for optimizing site reuse, and for the innovative use of clean, renewable wind energy to support operations including the extraction, treatment, and reduction of contaminants in the perched aquifer.

In May 2014, Texas Tech University and NNSA signed a memorandum of understanding to examine the feasibility of also using the site to create a collaborative wind energy research center.



**Officials celebrating PREP's ribbon-cutting are dwarfed by one of its turbines.**  
Photo Credit: B&W Pantex

## Community Wind

Community wind is gaining traction in the wind energy market. It differs from utility-scale wind in both size and local participation, with community involvement and collaboration among stakeholders from the start. Community wind projects are locally owned by farmers, businesses, utilities, or other public or private entities and range in size from less than [1 MW to 20 MW or larger](#). Community wind projects provide economic benefits not just to landowners who have a turbine on their property, but to its [community owners as well](#).

Wind projects owned by public power entities (cooperatives and municipalities) are also considered community wind, as they are owned by the local electricity customers. One example is the GobNob wind turbine in Illinois (discussed in more detail above).

## RE on CL in the News— Shaffer Landfill, Iron Horse Park becomes a 25-acre solar energy farm

Shaffer Landfill, part of the [Iron Horse Park Superfund](#) site in North Billerica, Massachusetts, is now home to a [6-MW solar facility](#). Iron Horse is a 553-acre industrial complex with a long history of activities, including manufacturing and rail yard maintenance facilities, open storage areas, landfills, and wastewater lagoons. Under the agreement for development of solar on the former landfill, the town will receive payment in lieu of taxes for the next 25 years. EPA highlighted the success of this site in a recent webinar, [Capped Superfund Site Reuse: In-Depth Case Studies](#).



Installing solar panels

## Upcoming Events

[AWEA Wind Energy Finance and Investment Seminar](#). October 20 – 21, 2014, New York, New York. This seminar is for banking and financial leaders interested in investing in and learning more about wind energy. The event offers the opportunity to meet face-to-face and forge relationships, learn what investors are looking for in wind energy investments, and speak directly with representatives who are designing and inking innovative wind energy deals.

[Solar Power International](#). October 20 – 23, 2014, Las Vegas, Nevada. The largest solar trade show in the nation. This business-to-business event allows solar industry professionals, utility executives, investors, technical experts, and policymakers to gather and share ideas and information. The event is jointly produced by the Solar Energy Industries Association and the Solar Electric Power Association and all proceeds are used to further the associations' work to support and advance U.S. solar markets through market-building and educational initiatives.

*“Solar panels on Superfund sites are a national plan endorsed all the way to the White House, and here in New England we’re blazing the path for this industry. Massachusetts exceeds every other state.”*

- Region 1 Administrator Curt Spalding at ribbon-cutting for solar farm at Shaffer Landfill

[BioCycle East Coast Conference 2014](#). October 27 – 30, 2014, Baltimore, Maryland. The BioCycle East Coast 2014 conference will cover all facets of organics recycling for the municipal, commercial, institutional, agricultural and industry sectors. Topics include organics separation and collection; composting and anaerobic digestion; compost and biogas utilization; and markets, technologies and systems.

[Renewable Energy Markets 2014 Conference](#). December 2 – 4, 2014, Sacramento, California. Organized by the nonprofit Center for Resource Solutions and co-sponsored by the EPA's Green Power Partnership, this annual meeting of clean energy stakeholders includes generators, marketers, utility representatives, purchasers, policymakers, and regional stakeholders, and sets the agenda for the year to come.



## New Resources

[PVMapper](#) is an open-source Web application designed for utility-scale solar mapping. The application is a geographical information system, or GIS, with an interface that provides end users with specific information and capabilities relevant to siting solar energy projects. In addition to mapping functions, PVMapper includes an independent site comparison capability, which allows users to compare multiple sites. PV Mapper will also produce detailed reports from multiple sources selected by the user. The application is based upon work supported by the DOE's Office of Energy Efficiency and Renewable Energy (EERE). Users can import additional layers into the application, including, for example, the KMZ files associated with EPA's [RE-Powering Mapper Tool](#).



PVmapper screen shot

[State and Local Energy Data](#) (SLED) was developed by DOE's Office of Energy Efficiency & Renewable Energy (EERE), with help from DOE's National Renewable Energy Laboratory (NREL). SLED is a website that provides state and local decision makers easy access to energy data specific to their location. By entering a city and state or zip code into the [SLED online tool](#), users can see how their current electricity prices compare to state and national averages, learn about applicable policies and incentives that could affect clean energy projects in their state, find available renewable energy resources, and get details on alternative transportation fuel costs.

[Acoustic Impacts of Wind Turbines in Rhode Island](#) has been released by The University of Rhode Island, in partnership with the Rhode Island Office of Energy Resources and Statewide Planning Program. The report is intended to supplement efforts under the state's Renewable Energy Siting Partnership and Interim Final Standards for Terrestrial Wind Energy Systems, and will inform future guidance from Rhode Island state agencies regarding land-based wind turbine siting.

[Economic Impacts from Indiana's First 1,000 Megawatts of Wind Power](#) details the magnitude of Indiana's available wind resource. The NREL report indicates that the development of wind power infrastructure has the potential to support millions of dollars of economic activity in the state. Various tools were used to estimate the economic impacts of wind energy projects in Indiana, including NREL's Jobs and Economic Development Impact, or JEDI models. This report could serve as a model for other states interested in doing a similar evaluation of wind potential.

The [2013 Wind Technologies Market Report](#), released by DOE and its Lawrence Berkeley National Laboratory (LBNL), indicates total installed wind power capacity in the United States now stands at 61 gigawatts, nearly 4.5 percent of total U.S. electricity demand in an average year. Utility-scale turbines are installed in more than 39 states and territories. According to the report, wind energy prices – particularly in the Interior region of the United States—are at an all-time low, with utilities selecting wind as a cost-saving option.

The [2013 Distributed Wind Market Report](#), released by DOE and its Pacific Northwest National Laboratory (PNNL), analyzes the current state of distributed wind, which accounted for more than 80 percent of all wind turbines installed in the United States in 2013. Distributed wind applications reached a cumulative installed capacity of more than 842 MW—enough to power 120,000 average American homes. This capacity is supplied by roughly 72,000 turbines across all 50 states, Puerto Rico, and the U.S. Virgin Islands.

## Recent Webinars

[DOE Wind Technology Market Reports Overview](#). August 20, 2014. Ryan Wiser of LBNL provided an overview of the DOE's 2013 Wind Technologies Market Report, and Alice Orrell of PNNL discussed the DOE's 2013 Distributed Wind Technologies Market Report.

[Distributed PV Interconnection Screening Procedures and Online Tools](#). August 27, 2014. DOE's NREL, the Solar Electric Power Association, and the Western Area Power Administration hosted this [webinar](#) focusing on processes and protocols for distributed PV interconnection. It featured case studies from Salt River Project and NV Energy.

[Bats and Wind Energy](#). September 3, 2014. This was the first in a quarterly webinar series developed as part of WREN (Working Together to Resolve Environmental Effects of Wind Energy), a cooperative research initiative of the International Energy Agency's wind group. Cris Hein from the United States presented strategies to reduce bat fatalities at wind energy facilities, and Oliver Behr from Germany presented measuring and reducing the number of bat fatalities at wind turbines in Europe.

## 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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