April 2017

RE-Powering America's Land Initiative: Project Tracking Matrix

The U.S. Environmental Protection Agency (EPA) recognizes the overall environmental benefit of siting renewable energy projects on contaminated properties. Through the <u>RE-Powering America's Land Initiative</u>, EPA is encouraging the reuse of formerly contaminated lands, landfills, and mine sites for renewable energy development when such development is aligned with the community's vision for the site.

Using publicly available information, RE-Powering maintains a list of completed renewable energy installations on contaminated sites and landfills. To date, the RE-Powering Initiative has identified 213 renewable energy installations on 207 contaminated lands, landfills, and mine sites, with a cumulative installed capacity of just over 1,235 megawatts (MW) and consistent growth in total installations since the inception of the RE-Powering Initiative. Approximately 66% of these installations are large-scale systems with a project capacity of 1 MW or more, either exporting energy onto the utility grid, offsetting onsite energy demands, or powering cleanup. This document provides summary statistics of known installations and discusses emerging trends.

RE-Powering America's Land Initiative

To provide information on renewable energy on contaminated land projects not currently appearing in this document, email <u>cleanenergy@epa.gov</u>. To receive updates, newsletters, and other information about the RE-Powering program, click the banner below.



In addition to the completed sites listed here, EPA is tracking more than 130 renewable energy projects on contaminated or disturbed properties in various stages of planning, approval, or construction. These include a 3.3-MW solar project under construction on a Bedford, VA landfill; a 16.5-MW solar project under construction on a Superfund site located on the Fort Dix Army post in Pemberton Township, NJ; and an 8.16-MW solar array under construction on a former landfill in Worcester, MA, a project for which the solar developer and city partnered to provide special grassland habitat on the site for the endangered grasshopper sparrow. In addition, EPA is aware of more than 60 other potential renewable energy projects on contaminated sites, primarily landfills, which have been suggested at town council or public meetings.





¹ In this document, *installation* and *project* refer to a single renewable energy technology installation, while *site* and *location* refer to a single contaminated property. A *site* or *location* may have more than one *installation* or *project*. For example, the former Dave Johnston Mine (one *site*) has three separate wind *installations*. Multiple installation details can be seen in the tracking spreadsheet at the end of this document.



National Deployment

RE-Powering has identified installations of renewable energy on contaminated lands, landfills, and mine sites in 40 states and territories. The locations of these installations reflect evolving trends generally linked to available renewable energy resource as well as incentives or policies such as Renewable Portfolio Standards (RPSs), tax exemptions, net metering laws, and others. Policy data in this section are from the Database for State Incentives for Renewables and Efficiency (DSIRE), a comprehensive database managed by the North Carolina Clean Energy Technology Center and funded by the U.S. Department of Energy. DSIRE compiles renewable energy and energy efficiency incentives and policies enacted by the federal government, state governments, U.S. territories, local governments, and large utilities. The DSIRE website allows users to search policies by state and provides quarterly summary maps.

	INSTALLATIONS BY STATE OR TERRITORY ²													
State	# Installations	Installed Capacity (MW)	State Renewable Portfolio Standard ³	Solar Set-Aside Policy⁴	Solar Multiplier Policy⁵	Distributed Generation Requirement ⁶								
MA	75	168.7	\checkmark	\checkmark										
NJ	18	100.4	\checkmark	\checkmark										
NY	16	81.4	\checkmark											
CA	14	105.0	\checkmark											
CO	8	7.1	\checkmark			\checkmark								
PA	б	178.5	\checkmark	\checkmark										
OH	6	11.7	\checkmark	\checkmark										
WY	5	295.8												
AZ	4	30.0	\checkmark		\checkmark	\checkmark								
MD	4	23.1	\checkmark	\checkmark										
ТХ	4	14.6	√7		√ ⁸									
TN	4	10.1												
VT	4	5.3	\checkmark			\checkmark								
СТ	4	4.9	\checkmark											
WI	3	2.9	\checkmark											
NV	2	28.2	\checkmark	\checkmark	\checkmark									
IN	2	17.8	√9											
IL	2	10.9	\checkmark	\checkmark		\checkmark								
NM	2	3.0	\checkmark	\checkmark		\checkmark								
FL	2	2.3												
VA	2	1.6	√10											
DE	2	0.7	✓	\checkmark	\checkmark									
NC	2	0.6	\checkmark	\checkmark										
MN	2	0.5	\checkmark	√11		\checkmark								
ОК	2	0.0	√12											
OR	1	100.0	\checkmark	\checkmark	\checkmark	√12								
RoUS ¹⁴	17	30.3												
TOTAL	213	1,235.4												

Table includes states with multiple installations plus the state with the largest single installation. Policy information from DSIRE (www.dsireusa.org). Accessed April 14, 2017.

A renewable portfolio standard (RPS) requires utilities to use or procure a certain percentage of total generation from renewable sources.

A solar set-aside requires a certain percentage of the state's electricity be generated from solar resources. Some states call them "solar carve-outs."

A solar multiplier gives additional credit for solar projects that contribute toward meeting RPS requirements.

A distributed generation requirement obliges a utility to procure a certain percentage of electricity from renewable, customer-sited sources.

Texas has already achieved its 2025 RPS goal. The state also had a voluntary non-wind generation goal that expired in 2015 and has been exceeded.

Texas has a non-wind multiplier policy, which includes solar, but is not specific to solar. The non-wind multiplier is active through 2019, when the state's REC trading program is currently set to expire.

Indiana's clean energy porfolio standard is a voluntary goal, not a mandate.

Virginia has a voluntary renewable portfolio goal that provides an enhanced rate of return for renewable generation from approved projects. Minnesota's solar carve-out is divided by utility. The overall carve-out is 1.5% for solar for public utilities by the end of 2020, 10% of which must come from solar PV systems with capacity if 20 kW or more. Xcel Energy, however, is required to have at least 25% of retail electricity sales generated by wind energy or solar energy systems by 2020, with solar limited to no more than 1% of this additional requirement Oklahoma's RPS is a goal, not a requirement.

Oregon's RPS includes a goal that, by 2025, at least 8% of the state's electrical load comes from small-scale, community renewable energy installations with capacities of 20 MW or less. The RPS also includes a multiplier fir PV systems with a capacity of 500 kW to 5 MW installed prior to January 1, 2016.

For purposes of this report, RoUS (Rest of US) indicates other states or territories with renewable energy on contaminated lands: Florida, Georgia, Hawai'i, Indiana, Kentucky, Maine, Michigan, Missouri, Montana, Nebraska, Rhode Island, South Carolina, Utah, and the U.S. Virgin Islands.



RE-Powering America's Land Initiative:

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Project Tracking Matrix

Solar Tools Screen and Map Renewable Energy Potential on Contaminated Lands

RE-Powering offers a range of tools for mapping and screening renewable energy potential on a variety of sites nationwide. For example, the RE-Powering Mapper has pre-screened more than 80,000 sites for their renewable energy potential. As part of this effort, the Initiative has identified thousands of sites that screened favorably for utility-scale or large-scale renewable energy installations, as well as landfill sites that screened favorably for solar. RE-Powering also offers a mapping tool for sites identified in the Tracking Matrix and sites that received a feasibility study from the U.S. Department of Energy's National Renewable Energy Laboratory.

Tools like these are also being developed at the state and community levels. In Michigan, non-profit organization Michigan Energy Options has released an online tool specifically for screening solar energy potential on brownfield sites in the Marguette and Houghton regions of the state. The tool, which was supported by a State of Michigan Energy Office grant, uses the mapping engine and layer function of Google Maps to provide visualization of brownfields and retired industrial sites. Users can view the solar energy potential and related attributes of each site, such as acreage, proximity to transmission and substations, and site ownership. Data for the map were gathered from public sources, local officials, and federal and state agencies.

A number of other cities and counties have developed solar maps, including Los Angeles County, New York City, Berkeley (CA), Boston (MA), and Tallahassee (FL). Although these maps do not yet include brownfield-specific features, they could still be used to support RE on CL by providing information for developers about solar potential. Brownfield capabilities could also be readily added to those tools using various GIS and Google Earth options.

MICHICA energy options

Potential Solar Development on Brownfields

ABOUT US



Screenshot of Michigan Energy Options Mapping Tool



40 States and Territories have Renewable Energy Projects on Contaminated Lands

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

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RE on CL Offers a Range of Economic Benefits

RE on CL provides a number of <u>benefits</u> to the communities within which the sites are built, from making productive use of degraded land to offering economic benefits to municipalities. Such economic benefits include lease payments, taxes or Payments in Lieu of Taxes (PILOT), jobs, and lower energy costs. Some examples include:

Schaus-Vorhies (IA) – This 0.5-MW solar installation on a former iron foundry site will power operations in the Schaus-Vorhies Manufacturing facility. The system is expected to pay for itself within 5-6 years, and to cover 100% of the company's electrical needs on a net-annual basis. Total energy production (over 25 years) will prevent 10,587 metric tons of CO_2 from entering the atmosphere, equivalent to about 11 million pounds of coal or 25 million miles driven in a typical passenger car.

Bridgeport Landfill (CT) – This <u>2.2-MW solar installation</u> on a former landfill is part of a combined 5 MW in power (with a 2.8-MW fuel cell) that is expected to provide \$7M to the city in lease revenue over the course of the 20-year lease. It also provides power for the equivalent of 5,000 homes annually and created as many as 92 jobs in an economically depressed area.

Kokomo Solar Park (IN) – This former steel manufacturing site in Indiana was once contaminated with solvents, polychlorinated biphenyls (PCBs), and lead. Today, it <u>provides</u> 7 MW of clean solar power capacity to the community and represents repurposing of a remediated Superfund site. Federal, state, and local officials helped celebrate the solar installation at a <u>ribbon-cutting ceremony</u> in April 2017.

Olean Gateway Solar (NY) – Once a state brownfield site that used to be used for oil refining and fertilizer manufacturing, this location in Olean, NY, now hosts a 4-MW solar installation. Through arrangement with National Grid and Olean Gateway LLC, St. Bonaventure University <u>will save</u> an estimated \$100,000 or more a year on its electric bill based on credits from the solar installation. The solar will also reduce the university's carbon footprint.

Students Help Install Solar on Landfill to Power Landfill Gas Site

A 0.09-MW solar

installation on a landfill site in Lincoln, CA, is providing triple benefits: making reuse of landfill property, providing students the opportunity to learn solar installation, and powering landfill gas (LFG) equipment. Approximately 25 students from Sierra College designed and



Sierra College students working at the Western Regional Sanitary Landfill

installed the solar project at the Western Regional Sanitary Landfill as part of a partnership with Energy 2001, which operates the LFG system and provided funding for the solar installation. The solar powers the site's 5-MW Energy 2001 Landfill Gas Power Plant, which collects methane gas from and turns it into enough renewable energy to power about 3,000 homes.

In addition, the Western Placer Waste Management Authority <u>expects to save</u> \$0.04 per kilowatt-hour vs. normal rates to the utility (PG&E). Those savings are expected to be passed on to landfill ratepayers.

EPA Resource Highlights Community Solar on CL

The RE-Powering publication <u>Community Solar: An Opportunity to</u> <u>Enhance Sustainable Development on</u> <u>Landfills and Other Contaminated Sites</u> is a resource for stakeholders to learn more about community solar, including owners or developers of a contaminated land site, and community or government groups. Community solar programs (also called "shared solar") offer the economic and environmental benefits of solar to the 49% of Americans who lack traditional solar access because of physical, ownership, or financial limitations.

Contaminated lands, landfills, and mine sites represent a large and varied collection of locations that do not always have on-site electricity demands to serve after cleanup is completed. Increased interest in community solar may pave the way for greater consideration of contaminated land sites to host such facilities. Community solar can have a particularly positive impact in low- and moderate-income communities, where barriers and access to solar often exist and where contaminated sites are frequently located. These opportunities are increasingly recognized at the state and local level. For instance, the state of Maryland enacted a community solar pilot program with an emphasis on providing renewable energy benefits for low- and moderate-income customers. The legislation includes separate program capacity for small systems and systems built on brownfields, parking lots, or industrial areas.

RE-Powering's Community Solar <u>publication</u> connects the opportunities for renewable energy development on formerly contaminated lands, landfills, and mine sites with the national growth of community solar projects and highlights the benefits and barriers of such projects.



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RE on CL Sites Powering Wastewater Treatment

Renewable energy installations on contaminated land sites can offer serve a variety of uses, including serving as community solar sites and providing power to remediation activities. Another use EPA has noted for these sites is to provide power to wastewater treatment facilities. A number of locations have already installed renewable energy systems on contaminated properties for this purpose, including:

- Hutchinson Landfill (Hutchinson, MI)—This 0.4-MW solar installation is connected directly to the adjacent wastewater treatment plant and provides about 15% of the facility's total electricity needs. The city offers a <u>web link</u> to view energy production from the solar plant.
- Williamson Landfill (*Williamson, NY*)—This 1.5-MW solar installation on a former municipal solid waste landfill powers town operations, including its water and wastewater treatment plants, town hall, and highway garage.
- West County Wastewater District (*Richmond, CA*)— West County Wastewater District (WCWD) installed a 1-MW solar project on its wastewater basin sludgedrying pond. The 11,000 solar panels cover 10 acres of the site and power the WCWD wastewater treatment plant.



Hutchinson Landfill Solar. Photo credit: City of Hutchinson

Several RE on CL installations intended to support wastewater treatment are also planned or under way, including three located in Connecticut:

- Fairfield Landfill (Fairfield, CT)—This 1.3-MW solar installation on a municipal solid waste landfill site will be used to power an adjacent wastewater treatment facility.
- **Evansville Avenue Landfill** (*Meriden, CT*)—The city of Meriden, CT, is installing a 1.1-MW solar project on a landfill site. Energy from the system will be used to power the city's on-site wastewater treatment facility.
- North Haven Landfill (North Haven, CT)—This solar on landfill installation will also power on-site wastewater treatment. The site will open as a 0.384-MW installation, with panels to be added in the future to result in a 1-MW project.

Portland and South Portland Partner on Unique Solar on Landfill Agreement

The cities of Portland and South Portland in Maine recently <u>approved a unique agreement</u> with a solar developer for two separate installations on landfills within the respective cities: 0.66 MW in Portland and 0.4 MW in South Portland. Under the agreement, each community will purchase the electricity from the installations at rates higher than traditional pricing for the first six years, before being able to buy the equipment outright in Year 7 for about \$1.6 million. South Portland will pay an additional \$31,000 annually in electrical costs over that initial six-year period and Portland an additional \$25,000 annually. The installations will provide about 12% of South Portland's electricity needs and about 3% of Portland's.

The cities have agreed to the slightly higher upfront cost to finance a portion of purchasing the solar installation, so that they can take advantage of the potential long-term savings from generating their own power instead of purchasing it from the grid. Under the current assumptions of the agreement, the city of South Portland <u>expects the project</u> to be revenue positive for them in Year 7, with a full return on investment in Year 11. Over the life of the project, South Portland expects to save more than \$3 million. The city of Portland used a <u>40-year energy price projection</u> to help determine whether to participate in the agreement. Under this analysis, Portland predicted the solar installations with the Year 7 buyout will provide a \$0.0629/kilowatt-hour (kWh) average cost, vs. an anticipated \$0.1711/kWh cost under the utility (with a 4.5% annual escalation rate).

As a result of combining the two installations, ReVision Energy was able to <u>reduce its installation costs</u> by \$325,700 (12.5%) for each system. As a private, for-profit company, ReVision was able to utilize tax credits for the system that the cities could not receive, furthering reducing the system costs and allowing ReVision to reduce the per-kWh charge to both cities.



Inside the Numbers

Based on current trends, 70% of the renewable energy systems identified in the tracking matrix sell power back to the grid as wholesale electricity, while a subset provides energy for onsite use. Systems range from utility-scale systems, like the 7-MW solar installation at the Superfund site and former steel facility in Kokomo, IN, to smaller projects like the 0.74-MW solar installation on Derby Landfill in Connecticut.

RE-Powering capitalizes on the opportunity to address contamination and support renewable energy implementation to achieve the associated economic and environmental benefits. Installations to date demonstrate the viability of projects across all EPA and state remediation programs, from powering industrial facilities at sites subject to <u>RCRA corrective action</u> to offsetting the energy demands at <u>federal facilities</u> with ongoing cleanup activities to repurposing <u>brownfield</u> and <u>Superfund</u> sites.

Overview	
Total # of sites	207
Total # of installations	213
Total installed capacity (MW)	1,235
Total # of states represented	4016
Max individual installation size (MW)	118.5
Min individual installation size (MW)	<.001

Installations	and Capacity by S	Site Ownership Type
	# Installations	Installed Capacity (MW)
Private	70	730.0
Municipal	97	197.8
Federal	18	128.7
Unknown	11	85.1
Public/Private ¹⁷	1	75.0
Other	11	17.2
State	2	0.9
Public	1	0.5
Federal/Municipal	1	0.2
Foundation	1	0.0
Total	213	1.235.4

Instal	lations by Renew	able Technology
	# Installations	Installed Capacity (MW)
Wind	24	636.2
Solar PV	185	579.3
Biomass	1	20.0
Hydro	1	<0.1
Geothermal ¹⁹	2	<0.1
Total	213	1,235.4

Number of Installations by Site Type ¹⁵	
Solar and wind projects on landfills/landfill buffer	122
Renewable energy projects on brownfield sites	42
Renewable energy projects on Superfund sites ¹⁷	30
Renewable energy projects on current/former federal facilities	20
and contaminated properties	
Renewable energy projects on RCRA corrective action sites	15
Renewable energy projects on mine sites	10

Installations by	y Energy Use	
	# Installations	Installed Capacity (MW)
Wholesale Electricity	150	1,109.2
Onsite Use - General	28	106.2
Onsite Use - Green Remediation ²⁰	24	7.8
Rooftop	4	4.7
Local Use	1	3.2
Unknown	3	2.7
Community Owned/Subscription	2	1.0
Onsite Use – Training	1	0.5
Total	213	1,235.4

¹⁷ Includes sites subject to the National Priorities List (NPL), non-NPL sites, and sites subject to removal action under Superfund.

²⁰ Green remediation is the practice of considering all environmental effects of remedy implementation and incorporating options to minimize the environmental footprints of cleanup actions. One such practice is using renewable energy systems to power remediation activities or off-set the energy needs associated with cleanup efforts. Projects identified as <u>On-site Green Remediation</u> include all known projects which currently use or have previously used renewable energy for remediation purposes. This figure may include projects that have ceased operations since being added to the tracking matrix. Capacity includes a 4.5-MW system used to offset groundwater remediation systems at Massachusetts Military Reservation.



¹⁵ Includes U.S. Virgin Islands.

¹⁶ Some installations can be considered multiple "site types." For example, a Superfund site on a federal facility would be counted both as a Superfund site and as a federal facility for the purposes of this table; however, sites considered to be multiple site types are counted only once when calculating the total number of sites.

¹⁸ This is the Highland North Wind Project in the townships of Adams and Summerhill, PA. The turbines are located on mixed use land, which Everpower notes is held by both <u>public and</u> <u>private landowners</u>.

¹⁹ One geothermal project, the Guthrie Green project in Tulsa, OK, uses a small solar array to power the geothermal heat pump.

RE-Powering America's Land Initiative:

Project Tracking Matrix



Continuing Growth

RE-Powering has seen a marked upward trend in terms of the number of new renewable energy projects developed on contaminated lands, the amount of installed capacity produced by these projects, and the number connected to the wholesale electricity grid. These trends demonstrate that communities, developers, and site owners are embracing this sustainable land development strategy.

The range in project sizes reflects market conditions and trends, available acreage, electricity demands, and other variables. Medium- to large-scale installations (1-10 MW) make up just over half of the total number of installed projects to date, while larger systems (10+ MW) comprise about 71% of total installed capacity on contaminated lands.

Of identified projects, 87% are solar PV projects developed on contaminated lands, landfills, and mine sites, while 51% of installed capacity is provided by wind systems. The dominance in wind capacity is explained in part by a few very large wind projects, notably the Casselman Wind Power Project in Somerset County, Pennsylvania (35 MW); Steel Winds in Bethlehem, New York, (35 MW); the wind farm at Columbia Ridge Landfill, Oregon (100 MW); Highland Wind (62.5 MW) and Highland North Wind (75 MW) in Cambria County, Pennsylvania; and the three wind farms at the former Dave Johnston Mine in Glenrock, Wyoming (276 MW). Wind tends to be used more often on vast tracts of contaminated land, such as mine sites, while solar PV is the dominant technology at smaller tracts such as municipal solid waste (MSW) landfills.

The RE-Powering strategy bolsters new markets for potentially contaminated lands, while supporting a sustainable land development strategy for renewable energy. One continuing trend is the reuse of former landfills as large solar PV developments. To date, EPA is aware of 118 former landfills that have been returned to productive use as solar projects. Of these, at least 98 (83%) were completed between 2012 and 2017. Many more are currently being planned or permitted, or are under construction. For more information regarding considerations specific to solar projects on landfills, see RE-Powering's Best Practices for Siting Solar Photovoltaics on Municipal Solid Waste Landfills.



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Annual Growth of Completed Installations and Installed Capacity^{21, 22, 23}



Range of System Sizes of Completed Installations²⁴



²¹ Note that the growth curve for both the number of sites and cumulative installed capacity differs from previous versions of the Project Tracking Matrix, as the RE-Powering team learns about additional renewable energy projects installed on contaminated lands in previous years.

²⁴ There are ten (10) 1-MW installations in the 501 kW–1 MW capacity range that are included in the percentage of installations at 1 MW or greater (66%) noted on page 1 of this document.



²² The "Unknown" installation is 1.5 MW of solar installed by Honeywell Corporation as part of the Onondaga Lake cleanup project in Onondaga, NY. The bulk of the cleanup took place in 2010, but the exact completion date of the solar installation is unknown.

²³ With the exception of one 100-MW wind installation on landfill buffer in Oregon (Columbia Ridge), only 19 projects with a total capacity of 43 MW were installed on contaminated sites through 2007. Of these, many were onsite or green remediation projects, and only four were individually larger than 1 MW.

RE-Powering America's Land Initiative: Project Tracking Matrix

Annual Growth in Solar Installations on Landfill/Landfill Buffer





Annual Growth in Installations on Landfill/Landfill Buffer Compared to All RE on CL Projects²⁵

²⁵ Counts represent total number of projects, not number of sites (locations). Includes projects that may also be designated in the Tracking Matrix as Superfund, Superfund Removal, RCRA, and Brownfields.



1. Site Description 2. P								2. Renewable Energy Information				3. Project Implementation		
Site/Project Name	EPA Region	State	City	Type of Site	Site Owner	Site Ownership Type	Property Acreage	Former Use Description	RE Type	Project Capacity (MW)	Project Acreage	Primary RE Developer Name	Completion Date	Project Type
Ajo Solar Project	9	AZ	Ajo	Mine Lands	Freeport-McMoRan Copper & Gold Inc.	Private	38	Adjacent to mining	Solar PV	5.00	38.0	Recurrent Energy	2011	Wholesale Electricity
Apache Powder	9	AZ	Benson	Superfund	Apache Nitrogen Products, Inc.	Private	1,100	Dynamite manufacturing facility	Solar PV	0.00	-	Unknown	1997	Onsite Use - Green Remediation
Bagdad Mine Solar	9	AZ	Bagdad (census- designated)	Mine Lands	Freeport-McMoRan	Private	21,750	Open-pit copper and molybdenum mine	Solar PV	15.00	24.0	Recurrent Energy	2011	Wholesale Electricity
Desert Star Solar Plant	9	AZ	Buckeye	Landfill	City of Phoenix	Municipal	2,560	MSW Landfill	Solar PV	10.00	118.0	Arizona Public Service	2015	Wholesale Electricity
Aerojet General Corporation Superfund Site	9	CA	Sacramento	Superfund	Aerojet	Private	5,900	Rocket propulsion development and testing facility	Solar PV	6.00	40.0	Solar Power, Inc.	2010	Wholesale Electricity
Camp Pendleton Landfill	9	CA	Camp Pendleton	Superfund	U.S. Marine Corps	Federal	28	MSW and Light Industrial Waste Landfill	Solar PV	1.50	5.0	Kyocera Solar	2011	Onsite Use - General
Cloverdale Solar	9	CA	Cloverdale	Landfill	Unknown	Unknown	-	Wood Landfill	Solar PV	1.80	-	Greenleaf-TNX	2014	Wholesale Electricity
Fischer Properties: Depot Park	9	CA	Sacramento	Brownfield	Fischer Properties	Private	-	Former U.S. Army Depot	Solar PV	3.00	15.0	SPG Solar	2010	Onsite Use - General
Frontier Fertilizer	9	CA	Davis	Superfund	Frontier Fertilizer	Private	18	Fertilizer and pesticide storage, sales and application	Solar PV	0.07	0.5	Unknown	2011	Onsite Use - Green Remediation
Lawrence Livermore National Laboratory	9	CA	Livermore	Superfund	U.S. DOE	Federal	7,000	Ranchland, weapons testing range	Solar PV	0.00	-	Unknown	2009	Onsite Use - Green Remediation
NASA Jet Propulsion Laboratory (JPL)	9	CA	Pasadena	Superfund	NASA	Federal	-		Solar PV	0.56	-	Unknown	2011	Rooftop
Pemaco Superfund Site	9	CA	Maywood	Superfund	City of Maywood	Municipal	1	Custom Chemical Blender	Solar PV	0.01	1.4	Unknown	2007	Onsite Use - Green Remediation

1. Site Description 2. Re									2. Renewable Energy Information				3. Project Implementation	
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Regulus Solar Power Plant	9	CA	Bakersfield	Brownfield	Unknown	Unknown	-	Former gas and oil field	Solar PV	82.00	737.0	SunEdison	2015	Wholesale Electricity
Sutter's Landing Landfill Solar	9	CA	Sacramento	Landfill	City of Sacramento	Municipal	-		Solar PV	1.50	-	SMUD/Conergy	2014	Wholesale Electricity
Tequesquite Landfill	9	CA	Riverside	Landfill	City of Riverside	Municipal	120		Solar PV	7.50	20.0	Sunpower/RBI Solar	2015	Wholesale Electricity
Travis AFB	9	CA	Near Fairfield	Federal Facility	U.S. Air Force	Federal	6,368		Solar PV	-	-	CH2M	2008	Onsite Use - Green Remediation
West County Wastewater District	9	CA	Richmond	Brownfield	West County Wastewater District	Municipal	-	Sludge-drying pond	Solar PV	1.00	10.0	Solar Power Partners, Inc.	2008	Onsite Use - General
Western Regional Sanitary Landfill	9	CA	Lincoln	Landfill	Western Placer Waste Management Authority	Private	-	MSW Landfill	Solar PV	0.09	-	Energy 2011	2017	On-Site Use - General
Aurora/Arapahoe Solar Array	8	СО	Aurora	Brownfield	City of Aurora	Public	5	Adjacent to Buckley AFB	Solar PV	0.50	4.5	Clean Energy Collective	2013	Community Owned / Subscription
Belmar Mixed-Use Development	8	СО	Lakewood	Brownfield	Mixed Private/ Public	Other	48	Shopping mall	Solar PV	1.70	47.5	SunPower Corporation	2008	Rooftop
Boulder Cowdery Meadows Solar Array	8	CO	Boulder	Superfund	Cowdery Company	Private	4	Landfill buffer to Marshall Landfill Superfund Site	Solar PV	0.50	3.5	Clean Energy Collective	2013	Community Owned / Subscription
Dreher Pickle Plant	8	СО	Fort Collins	Brownfield	City of Fort Collins	Municipal	-	Pickling plant	Solar PV	0.60	-	Clean Energy Collective	2015	Wholesale Electricity
Fort Carson	8	СО	Fort Carson	RCRA	U.S. Army	Federal	15	Construction Landfill	Solar PV	2.00	12.0	Colorado Springs Utilities	2008	Wholesale Electricity
New Rifle Mill	8	СО	Rifle	Other	City of Rifle	Municipal	130	Former DOE uranium processing mill	Solar PV	1.70	12.0	SunEdison	2009	Onsite Use - General
Place Bridge Academy	8	СО	Denver	Landfill	Denver Public Schools	Municipal	10	Landfill	Solar PV	0.10	1.5	Namaste Solar	2013	Onsite Use - General

1. Site Description 2. R										2. Renewable Energy Information				3. Project Implementation	
Site/Project Name	EPA Region	State	City	Type of Site	Site Owner	Site Ownership Type	Property Acreage	Former Use Description	RE Type	Project Capacity (MW)	Project Acreage	Primary RE Developer Name	Completion Date	Project Type	
Summitville Mine Superfund Site	8	СО	Del Norte	Superfund	U.S. Forest Service	Federal	1,400	Heap leach gold and silver mining	Hydro	0.03	-	Unknown	2011	Onsite Use - Green Remediation	
Bridgeport Landfill	1	СТ	Bridgeport	Landfill	City of Bridgeport	Municipal	46	MSW Landfill (1938-91); Construction Landfill (1996-2000)	Solar PV	2.20	22.0	American Capital Energy	2016	Wholesale Electricity	
Derby Landfill Solar	1	СТ	Derby	Landfill	City of Derby	Municipal	23	MSW Landfill	Solar PV	0.74	6.0	Jordan Energy and BQ Energy	2015	Wholesale Electricity	
Hartford CT Landfill (solar)	1	СТ	Hartford	Landfill	City of Hartford	Municipal	96	MSW Landfill	Solar PV	1.00	6.0	Tecta Solar	2014	Wholesale Electricity	
Wintergreen Ave. Landfill	1	СТ	Hamden	Landfill	City of Hamden	Municipal	-	MSW Landfill	Solar PV	1.00	5.0	True Green Capital Solar Generation IV	2016	Wholesale Electricity	
Dupont Newport	3	DE	Newport	Superfund	DuPont	Private	-	Landfill	Solar PV	0.50	5.0	Greenwood Energy	2013	Wholesale Electricity	
McKees Solar Park	3	DE	Newark	Landfill	City of Newark	Municipal	-	MSW Landfill	Solar PV	0.23	3.9	Unknown	2014	Wholesale Electricity	
Bee Ridge Landfill / Rothenbach Park	4	FL	Sarasota	Landfill	Sarasota County	Other	450	MSW Landfill	Solar PV	0.25	0.6	Florida Power & Light	2008	Wholesale Electricity	
Lake Worth Landfill	4	FL	Lake Worth	Landfill	City of Lake Worth	Municipal	63		Solar PV	2.00	5.0	Siemens	2017	Wholesale Electricity	
Hickory Ridge Landfill	4	GA	Atlanta	Landfill	Republic Services, Inc	Private	48	MSW Landfill	Solar PV	1.00	10.0	Republic Services	2011	Wholesale Electricity	
Kapolei Sustainable Energy Park	9	HI	Kapolei	RCRA	James Campbell Company LLC	Private	12	Former Industrial Waste Site	Solar PV	1.20	4.0	Forest City Hawaii	2011	Wholesale Electricity	
Schaus-Vorhies Solar	7	IA	Fairfield	Brownfield	Schaus-Vorhies Manufacturing	Private	11		Solar PV	0.50	-	Ideal Energy	2016	Wholesale Electricity	
Exelon City Solar	5	IL	Chicago	Brownfield	City of Chicago	Municipal	21	Foundry and casting operation/fastener, hydraulic system components, and ball bearing manufacturer	Solar PV	10.00	41.0	Exelon and SunPower Corporation	2010	Wholesale Electricity	

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Gobnob Wind Turbine Project	5	IL	Farmersville	Brownfield	Illinois DNR	State	14	Freeman United Crown 1 Mine	Wind	0.90	-	Rural Electric Convenience Cooperative of Central IL	2009	Wholesale Electricity
Kokomo Solar Park	5	IN	Kokomo	Superfund	Continental Steel	Private	183		Solar PV	7.00	26.0	Inovateus Solar LLC	2016	Wholesale Electricity
Reilly Tar & Chemical (Indianapolis)	5	IN	Indianapolis	Superfund	Vertellus Specialities Inc.	Private	120	Chemical manufacturing facility	Solar PV	10.80	45.0	Hanhwa Q Cells	2014	Wholesale Electricity
Fort Campbell Solar Phase One	4	KY	Fort Campbell	Landfill	U.S. Army	Federal	105,000	Landfill	Solar PV	1.90	5.0	BITHENERGY	2015	Onsite Use - General
Acton Landfill	1	MA	Acton	Landfill	Town of Acton	Municipal	35		Solar PV	1.60	17.5	Ameresco	2013	Wholesale Electricity
Adams Landfill	1	MA	Adams	Landfill	Town of Adams	Municipal	20	MSW Landfill	Solar PV	1.10	5.0	Apis Energy Group	2013	Wholesale Electricity
Aquinnah Landfill	1	MA	Aquinnah	Landfill	Town of Aquinnah	Municipal	6	MSW Landfill	Solar PV	0.05	1.3	Vineyard Power Solar, LLC	2012	Onsite Use - General
Barnstable Landfill	1	MA	Barnstable	Landfill	Town of Barnstable	Municipal	86	Landfill	Solar PV	4.20	17.0	American Capital Energy	2014	Wholesale Electricity
Beech St. Landfill	1	MA	Rockland	Landfill	Town of Rockland	Municipal	98	MSW Landfill	Solar PV	3.20	7.5	NextSun Energy	2014	Wholesale Electricity
Bent Mill Solar	1	MA	Gardner	State Brownfields	City of Gardner	Municipal	27		Solar PV	1.00	5.0	BCC Solar Energy Advantage/Borrego	2014	Wholesale Electricity
Bolton Orchards	1	MA	Bolton	Brownfield	Davis Farms Trust	Private	105	Gravel pit	Solar PV	6.00	50.0	Syncarpha Solar	2013	Wholesale Electricity
Braintree Landfill	1	MA	Braintree	Landfill	Braintree Electric Light Department	Municipal	-	MSW Landfill	Solar PV	1.26	-	Ameresco/lvory Street Solar, LLC	2014	Wholesale Electricity
Brewster Landfill	1	MA	Brewster	Landfill	Town of Brewster	Municipal	16	MSW Landfill and Recycling Center	Solar PV	1.23	16.0	American Capital Energy	2014	Wholesale Electricity
Bridge Street Landfill	1	MA	Fairhaven	Landfill	Town of Fairhaven	Municipal	-	MSW Landfill	Solar PV	0.58	3.0	Dynamic Power/ Blue Sky/Heliosage	2013	Onsite Use - General

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Brockton Brightfield	1	MA	Brockton	Brownfield	City of Brockton and Bay State Gas Company	Municipal	27	Former Gas Works Site	Solar PV	0.46	3.7	Global Solar	2006	Wholesale Electricity
Chatham Landfill	1	MA	Chatham	Landfill	Town of Chatham	Municipal	30		Solar PV	1.80	16.5	American Capital Energy	2014	Wholesale Electricity
Chicopee Elks Landfill	1	MA	Chicopee	Landfill	Chicopee Lodge of Elks #1849	Private	-		Solar PV	2.10	9.6	Citizens Enterprises Corp	2015	Wholesale Electricity
Chilmark Landfill	1	MA	Chilmark	Landfill	Town of Chilmark	Municipal	11	MSW landfill	Solar PV	0.10	6.0	Vineyard Power	2014	Wholesale Electricity
Concord Landfill Phase I	1	MA	Concord	Landfill	Town of Concord	Municipal	-	MSW Landfill	Solar PV	1.70	-	Kearsarge Energy	2014	Wholesale Electricity
Cottage Street Landfill	1	MA	Springfield	Landfill	Cottage Developers, LLP.	Municipal	62	MSW Landfill	Solar PV	3.90	40.0	Western MA Electric Co. (WMECO)	2014	Wholesale Electricity
Cowles Gravel Solar	1	MA	Westfield	Brownfield	Private trust	Private	35		Solar PV	2.60	10.0	Westfield Solar, Inc. (subsidiary of ConEdison Development)	2016	Wholesale Electricity
Delta Hills Landfill	1	MA	Chicopee	Landfill	WestMass Area Development Corp.	Private	-		Solar PV	2.69	8.0	CR Solar	2015	Wholesale Electricity
Dorchester Solar Power Project	1	MA	Dorchester	Brownfield	National Grid	Private	-	Former Manufactured Gas Plant	Solar PV	1.30	6.0	Unknown	2012	Wholesale Electricity
Duxbury Landfill	1	MA	Duxbury	Landfill	Town of Duxbury	Municipal	19	MSW Landfill	Solar PV	0.59	3.0	American Capital Energy (as Duxbury Solar LLC) and Renewable Energy Development Partners, LLC	2014	Wholesale Electricity
Eastham Landfill	1	MA	Eastham	Landfill	Town of Eastham	Municipal	38	MSW Landfill	Solar PV	0.59	10.4	American Capital Energy	2014	Wholesale Electricity
Everett Solar Power Project	1	MA	Everett	Brownfield	National Grid	Private	-	Former Manufactured Gas Plant	Solar PV	0.61	2.5	Unknown	2010	Wholesale Electricity

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Fairhaven Sanitary Landfill (Canton)	1	MA	Canton	Landfill	Town of Canton	Municipal	15	MSW Landfill	Solar PV	5.60	12.5	Southern Sky Renewable Energy / GZA	2012	Wholesale Electricity
Former Grasso Landfill	1	MA	Agawam	Landfill	Town of Agawam	Municipal	10	MSW Landfill	Solar PV	1.98	9.5	Rivermoor-Citizens Agawam, LLC	2013	Wholesale Electricity
Genrad Solar	1	MA	Stow	RCRA	Teradyne Corp.	Private	85	Manufacturing/ Electroplating	Solar PV	2.50	12.0	REM LLC/Syncarpha Capitol/Gehrlicher	2013	Wholesale Electricity
Greenfield Solar Farm	1	MA	Greenfield	Landfill	Town of Greenfield	Municipal	23	MSW Landfill	Solar PV	2.00	23.0	Axio Power	2012	Wholesale Electricity
Groton Landfill	1	MA	Groton	Landfill	Town of Groton	Municipal	-	MSW Landfill	Solar PV	2.93	8.0	Groton Landfill Solar, LLC	2016	Wholesale Electricity
Groveland Wells Solar	1	MA	Groveland	Superfund	Groveland Municipal Light	Municipal	35		Solar PV	3.60	19.0	Consolidated Edison Development, Inc.	2013	Wholesale Electricity
Harwich Municipal Landfill	1	MA	Harwich	Landfill	Town of Harwich	Municipal	120	MSW Landfill	Solar PV	4.50	28.0	American Capital Energy	2014	Wholesale Electricity
Haverhill Solar Power Project	1	MA	Haverhill	Brownfield	National Grid	Private	-	Former Manufactured Gas Plant	Solar PV	1.00	5.0	Rivermoor Energy	2010	Wholesale Electricity
Hull Wind II	1	MA	Hull	Landfill	Town of Hull	Municipal	13	MSW Landfill	Wind	1.80	10.0	Hull Municipal Light	2006	Wholesale Electricity
Huntington Avenue Landfill	1	MA	Metheun	Landfill	Town of Methuen	Municipal	30	MSW Landfill	Solar PV	1.30	4.7	Borrego Solar	2013	Wholesale Electricity
Indian Orchard Solar Facility	1	MA	Springfield	Brownfield	Springfield Redevelopment Authority	Other	-	Former foundry	Solar PV	2.30	12.0	Western Massachusetts Electric Company	2011	Wholesale Electricity
Kingston Landfill (wind)	1	MA	Kingston	Landfill	Town of Kingston	Municipal	20	MSW Landfill	Wind	2.00	20.0	Kingston Wind Independence LLC	2012	Wholesale Electricity
Lancaster Landfill	1	MA	Lancaster	Landfill	Town of Lancaster	Municipal	7	Gravel Pit Adjacent to Landfill	Solar PV	0.50	2.8	Unknown	2013	Wholesale Electricity
Lee Landfill	1	MA	Lee	Landfill	Schweitzer-Mauduit International	Private	-		Solar PV	2.60	17.5	East Light Solar	2017	Wholesale Electricity



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Ludlow Landfill	1	MA	Ludlow	Landfill	Town of Ludlow	Municipal	22	MSW Landfill	Solar PV	2.70	17.0	Borrego Solar	2013	Wholesale Electricity
Mashpee Landfill Solar	1	MA	Mashpee	Landfill	Town of Mashpee	Municipal	-	MSW Landfill	Solar PV	2.10	8.0	American Capital Energy/ Renewable Energy Development Partners, LLC	2014	Wholesale Electricity
Massachusetts Military Reservation (Otis)	1	MA	Sagamore	Superfund	U.S. Air Force	Federal	22,000	Military training and aircraft operation and maintenance	Wind	4.50	-	Unknown	2011	Onsite Use - Green Remediation
Needham Landfill	1	MA	Needham	Landfill	City of Needham	Municipal	75	MSW Landfill	Solar PV	3.70	13.0	Brightfields	2016	Wholesale Electricity
New Bedford High School Solar	1	MA	New Bedford	Brownfield	City of New Bedford	Private	-		Solar PV	0.50	2.5	Beaumont Solar	2012	Wholesale Electricity
Norfolk Landfill Phase I	1	MA	Norfolk	Landfill	Town of Norfolk	Municipal	51	MSW Landfill and Adjacent Land	Solar PV	0.55	1.6	Constellation Solar Massachusetts, LLC	2012	Wholesale Electricity
Norfolk Landfill Phase II	1	MA	Norfolk	Landfill	Town of Norfolk	Municipal	51	MSW Landfill and Adjacent Land	Solar PV	1.05	3.5	Constellation Solar Massachusetts, LLC	2012	Wholesale Electricity
North Adams Landfill	1	MA	North Adams	Landfill	Town of North Adams	Municipal	-	MSW Landfill	Solar PV	3.50	15.0	Borrego Solar	2015	Wholesale Electricity
Oliver Street Landfill	1	MA	Easthampton	Landfill	City of Easthampton	Municipal	40	MSW Landfill	Solar PV	2.30	12.0	Borrego Solar	2012	Wholesale Electricity
Orleans Landfill	1	MA	Orleans	Landfill	Town of Orleans	Municipal	21		Solar PV	0.57	1.7	Broadway Renewable Strategies, LLC	2015	Wholesale Electricity
Palmer Metropolitan Airfield Solar	1	MA	Palmer	Brownfield	JenJill LLC	Private	105	Airfield	Solar PV	6.00	30.0	Borrego Solar	2016	Wholesale Electricity
Philips Lightolier Wind	1	MA	Fall River	Brownfield	Philips	Private	32		Wind	2.00	-	Philips	2012	Wholesale Electricity
Prospect Street Landfill	1	MA	Easton	Landfill	Town of Easton	Municipal	8	MSW Landfill	Solar PV	1.90	8.0	Borrego Solar	2014	Wholesale Electricity

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Quaboag Landfill Solar	1	MA	Brookfield	Landfill	Town of Brookfield	Municipal	16	MSW Landfill	Solar PV	0.43	3.0	Washington Gas Energy Systems, Inc.	2013	Wholesale Electricity
Raffaele Road Solar Project	1	MA	Plymouth	Brownfield	Plymouth Sand and Gravel LLC	Private	30		Solar PV	5.67	26.0	BlueWave Capital	2014	Wholesale Electricity
Ravenbrook Farms Landfill	1	MA	North Carver	Landfill	Ravenbrook Farms, Inc. (Willard Rhodes)	Private	31	MSW, CD&D Landfill	Solar PV	6.00	14.0	Southern Sky Renewable Energy	2014	Wholesale Electricity
Rehoboth Landfill (MA)	1	MA	Rehoboth	Landfill	Town of Rehobeth	Municipal	21	MSW Landfill	Solar PV	2.49	18.3	NRG Renew LLC	2015	Wholesale Electricity
Re-Solve Superfund Solar	1	MA	Dartmouth	Superfund	Unknown	Unknown	6	Waste Chemical Reclamation	Solar PV	0.15	-	Unknown	2012	Onsite Use - Green Remediation
Revere Solar Power Project	1	MA	Revere	Brownfield	National Grid	Private	-	Former Manufactured Gas Plant	Solar PV	0.75	3.0	Unknown	2010	Wholesale Electricity
Rising Paper Solar	1	MA	Great Barrington	Landfill	Rising Paper, LLC	Private	67	Paper Landfill	Solar PV	3.20	12.0	Altus Power America Management, LLC	2016	Wholesale Electricity
Russells Mills Road Landfill	1	MA	Dartmouth	Landfill	Town of Dartmouth	Municipal	115	MSW Landfill	Solar PV	1.45	6.3	Borrego Solar	2013	Wholesale Electricity
Scituate Landfill	1	MA	Scituate	Landfill	Town of Scituate	Municipal	29	Landfill: MSW, construction debris, and wastewater treatment residuals	Solar PV	3.00	12.5	Scituate Solar - JV between Brightfields Development LLC and Syncarpha Capital	2013	Wholesale Electricity
Shaffer Landfill (Iron Horse Park)	1	MA	Billerica	Superfund	Town of Billerica	Municipal	40	MSW Landfill	Solar PV	6.00	40.0	Urban Green Technologies	2014	Wholesale Electricity
Silver Lake Solar Photovoltaic Facility	1	MA	Pittsfield	Brownfield	Western Massachusetts Electric Company	Other	8	Former GE site and former steam generating site	Solar PV	1.80	8.0	Western Massachusetts Electric Company (WMECO)	2010	Wholesale Electricity

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South Hadley Landfill	1	MA	South Hadley	Landfill	Town of South Hadley	Municipal	-	MSW Landfill	Solar PV	0.08	-	Tensar/ARM Group	2012	Onsite Use - General
Stow Brownfield Solar	1	MA	Stow	Brownfield	Unknown	Private	12	Unknown	Solar PV	2.50	12.0	Syncarpha Solar and Renewable Energy Massachusetts	2013	Wholesale Electricity
Sudbury Landfill	1	MA	Sudbury	Landfill	Town of Sudbury	Municipal	18	MSW Landfill	Solar PV	1.50	5.3	Ameresco/Solar Sudbury One, LLC	2013	Wholesale Electricity
Sullivan's Ledge	1	MA	New Bedford	Superfund	City of New Bedford	Municipal	27	Quarry / hazardous waste disposal	Solar PV	1.80	10.0	SunEdison	2014	Wholesale Electricity
Sylvester Ray Construction & Demolition Debris Landfill	1	MA	Marshfield	Landfill	Sylvester Ray, Inc.	Private	27	Demolition Landfill	Solar PV	3.87	13.0	No Fossil Fuel, LLC	2013	Wholesale Electricity
Theophilus Smith Road Landfill	1	MA	Dennis	Landfill	Town of Dennis	Municipal	148	MSW Landfill	Solar PV	6.00	34.0	American Capital Energy	2014	Wholesale Electricity
Tisbury Landfill	1	MA	Tisbury	Landfill	Town of Tisbury	Municipal	22	MSW Landfill	Solar PV	1.20	4.0	American Capital Energy	2014	Wholesale Electricity
W.R. Grace Solar	1	MA	Acton/Concord	Superfund	Town of Concord	Municipal	240	Manufacturing (sealants, concrete)	Solar PV	5.60	30.0	Kearsarge	2016	Wholesale Electricity
Waltham Street Landfill	1	MA	Maynard	Landfill	Town of Maynard	Municipal	14	MSW Landfill	Solar PV	1.20	5.0	EPG Solar	2013	Wholesale Electricity
West Boylston Landfill	1	MA	West Boylston	Landfill	West Boylston Municipal Lighting Plant	Municipal	-	MSW Landfill	Solar PV	1.50	5.0	Greenskies Renewable Energy	2017	Wholesale Electricity
West Tisbury Landfill	1	MA	West Tisbury	Landfill	Town of West Tisbury	Municipal	9	MSW Landfill	Solar PV	0.88	6.0	Broadway Renewable Strategies, LLC	2015	Wholesale Electricity
Westfield Landfill	1	MA	Westfield	Landfill	City of Westfield	Municipal	10	MSW landfill	Solar PV	2.50	7.5	Citizens Energy	2015	Wholesale Electricity



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Westford St. Landfill	1	MA	Lowell	Landfill	City of Lowell	Municipal	42	Landfill - MSW, ash, oxide box waste	Solar PV	1.50	6.0	Ameresco	2014	Wholesale Electricity
Weston Landfill	1	MA	Weston	Landfill	Town of Weston	Municipal	-	MSW Landfill	Solar PV	2.27	9.0	Ameresco (d/b/a/ Church Street Solar)	2016	Wholesale Electricity
Wilbraham Landfill	1	MA	Wilbraham	Landfill	Town of Wilbraham	Municipal	-	MSW Landfill	Solar PV	0.75	3.0	Renewable Energy Development Partners	2016	Wholesale Electricity
Former Ellicott City Landfill	3	MD	Ellicott City	Landfill	Howard County	Municipal	83	MSW Landfill	Solar PV	-	2.0	Unknown	2011	Onsite Use - General
Fort Detrick	3	MD	Frederick	Superfund	U.S. Army	Federal	1,200	Army Medical Command installation	Solar PV	18.60	67.0	Ameresco Inc.	2016	Onsite Use - General
Forty West Landfill	3	MD	Hagerstown	Landfill	Washington County	Municipal	-	MSW Landfill	Solar PV	2.00	10.0	EPG Solar	2015	Wholesale Electricity
Washington County Rubble Landfill	3	MD	Williamsport	Landfill	Washington County	Municipal	-	Building materials and construction debris landfill	Solar PV	2.50	-	EPG Solar	2015	Wholesale Electricity
Belfast Landfill	1	ME	Belfast	Landfill	City of Belfast	Municipal	-	MSW Landfill	Solar PV	0.12	-	ReVision Energy	2015	Wholesale Electricity
Eaton Rapids Landfill	5	MI	Hamlin Township	Landfill	Town of Eaton Rapids	Municipal	30	MSW Landfill	Solar PV	0.54	-	Helios Solar LLC	2014	Wholesale Electricity
Fridley Plant Solar	5	MN	N/A	Superfund	FMC Corp. (PRP)	Private	18	Industrial Landfill	Solar PV	0.15	-	Unknown	2009	Onsite Use - Green Remediation
Hutchinson Landfill	5	MN	Hutchinson	Landfill	City of Hutchinson	Municipal	-	MSW Landfill	Solar PV	0.40	1.0	Ameresco	2015	Onsite Use - General
Busy Bee's Laundry	7	MO	Rolla	Brownfield	Unknown	Private	-	Dry Cleaner	Solar PV	0.56	-	Unknown	2011	Onsite Use - Green Remediation



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Zortman-Landusky Mine	8	MT	N/A	Mine Lands	BLM and MT DEQ	Federal/ Municipal	1,200	Ore mining and gold mining	Wind	0.23	-	Montana DEQ and U.S. BLM	2012	Onsite Use - Green Remediation
Evergreen Packaging Landfill	4	NC	Haywood County	Landfill	Evergreen Packaging	Private	-	Industrial Landfill	Solar PV	0.55	3.0	FLS Energy	2010	Wholesale Electricity
NC State University - Agricultural Pesticide Landfill	4	NC	Raleigh	Brownfield	NC State University	Private	-	Agricultural Pesticide Landfill	Solar PV	0.08	-	Carolina Solar Energy	2007	Wholesale Electricity
Former Nebraska Ordnance Plant	7	NE	Mead	Superfund	University of Nebraska, et al	Other	-	Former Army Ordnance Plant	Wind	0.01	-	Unknown	2004	Onsite Use - Green Remediation
Milton Landfill Solar Garden	1	NH	Milton	Landfill	Town of Milton	Municipal	5	MSW Landfill	Solar PV	1.00	4.5	NH Solar Gardens	2016	Wholesale Electricity
Bernards Township Landfill	2	NJ	Bernards Twp	Unknown	Bernards Twp	Municipal	-	MSW Landfill	Solar PV	3.68	-	Syncarpha/The Conti Group	2016	Wholesale Electricity
Brick Township Landfill	2	NJ	Brick Township	Superfund	Brick Township	Municipal	42	MSW landfill	Solar PV	7.00	20.0	Brick Standard	2014	Wholesale Electricity
Clean Harbors	2	IJ	Bridgeport	Landfill	Clean Harbors Development	Private	200	Hazardous waste treatment, storage, and disposal facility	Solar PV	1.50	82.0	Clean Harbors	2011	Onsite Use - Green Remediation
Edgeboro Landfill	2	NJ	East Brunswick	Landfill	Middlesex County	Municipal	-	MSW Landfill	Solar PV	4.30	27.0	NERC Solar	2011	Wholesale Electricity
FedEx Ground Distribution Hub	2	NJ	Woodbridge	Brownfield	FedEx	Private	200	Former chemical facility	Solar PV	2.42	3.3	BP Solar	2009	Rooftop
Hackensack Solar Farm	2	NJ	Hackensack	Brownfield	PSE&G	Other	40	Former manufactured gas plant/storage	Solar PV	1.06	6.0	PSE&G	2012	Wholesale Electricity
Industrial Land Reclaiming Landfill	2	IJ	Edison	Landfill	Industrial Land Reclaiming Inc.	Private	-	MSW Landfill	Solar PV	7.75	21.0	PSE&G/Vanguard Energy Partners, LLC	2017	Wholesale Electricity



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Kearny Landfill	2	ΓN	Kearny	Landfill	New Jersey Meadowlands Commission	Other	35	MSW Landfill	Solar PV	3.00	13.0	SunDurance Energy LLC	2012	Wholesale Electricity
Kinsley Landfill	2	IJ	Deptford Township	Landfill	Kinsley's Landfill, Inc. (subsidiary of TransTech)	Private	140	MSW Landfill	Solar PV	11.18	35.0	PSE&G	2014	Wholesale Electricity
L&D Landfill	2	NJ	Eastampton, Lumberton, and Mount Holly	Superfund	Waste Management	Private	200	Industrial/MSW landfill	Solar PV	12.93	53.0	PSE&G	2016	Wholesale Electricity
Linden Solar Farm	2	NJ	Linden	Brownfield	Public Service Electric and Gas Company	Other	-	Synthetic natural gas facility	Solar PV	3.20	10.0	Advanced Solar Products	2011	Wholesale Electricity
Parklands Solar Farm	2	NJ	Bordentown Township	Landfill	Waste Management	Private	95	MSW Landfill	Solar PV	10.14	40.0	PSE&G	2015	Wholesale Electricity
Paulsboro Terminal Landfill	2	NJ	Paulsboro	Brownfield	BP	Private	17	Former refined petroleum and specialty chemical bulk storage and distribution facility	Solar PV	0.28	5.0	BP	2002	Onsite Use - Green Remediation
Pennsauken Landfill Renewable Energy Park- Solar	2	NJ	Pennsauken	Landfill	Pollution Control Financing Authority of Camden County	Other	39	MSW, commercial, and non-hazardous industrial landfill	Solar PV	2.60	10.0	PPL Renewable Energy	2008	Onsite Use - General
Silver Lake Solar Farm	2	ΓN	Edison	Brownfield	Public Service Electric and Gas Company	Private	6	Gas manufacturing	Solar PV	2.02	5.7	J. Fletcher Creamer & Sons	2010	Wholesale Electricity
Stafford Park Solar Farm	2	NJ	Stafford Twp	Other	Walters Group	Private	370	Landfill	Solar PV	6.00	30.0	Walters Group	2011	Onsite Use - General
Tinton Falls Solar	2	IJ	Tinton Falls	Mine Lands	Tinton Falls Solar Farm, LLC / Zongyi Solar America Co.	Private	97	Sand and gravel mining	Solar PV	20.00	97.0	Zongyi Solar America	2013	Wholesale Electricity
Trenton Solar Farm	2	NJ	Trenton	Brownfield	PSE&G	Other	-	Gas manufacturing	Solar PV	1.30	5.5	PSE&G	2010	Wholesale Electricity

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Chevron Questa Project	6	NM	Questa	Superfund	Chevron Mining	Private	-	Mining Site	Solar PV	1.00	20.0	Chevron Technology Venture	2011	Wholesale Electricity
Emcore Eubank Landfill	6	NM	Albuquerque	Brownfield	New Mexico State Land Office	Municipal	40	MSW Landfill	Solar PV	2.00	17.0	Emcore/Suncore	2013	Onsite Use - General
Nellis AFB Solar Array II Generating Station	9	NV	Las Vegas	RCRA	U.S. Department of Defense	Federal	14,000	Landfill	Solar PV	15.00	102.0	SunPower	2016	Onsite Use - General
Nellis AFB Solar Facility Site I	9	NV	Las Vegas	RCRA	U.S. Air Force	Federal	14,000	Landfill/landfill buffer	Solar PV	13.20	140.0	MMA Renewable Ventures LLC	2007	Onsite Use - General
Bethlehem Steel Winds I	2	NY	Hamburg / Lackawanna	RCRA	Tecumseh Redevelopment Inc	Private	1,600	Steel Mill	Wind	20.00	30.0	BQ Energy and First Wind	2007	Wholesale Electricity
Bethlehem Steel Winds II	2	NY	Hamburg / Lackawanna	RCRA	Tecumseh Redevelopment Inc	Private	1,600	Steel Mill	Wind	15.00	30.0	BQ Energy and First Wind	2012	Wholesale Electricity
Former Ferdula Landfill	2	NY	Frankfurt	Landfill	Unknown	Unknown	2	MSW Landfill	Wind	-	-	Unknown	1998	Onsite Use - Green Remediation
Honeywell Water Treatment Plant	2	NY	Camillus	Unknown	Honeywell Corporation	Private	-		Solar PV	1.50	-	O'Connell Electric	-	Unknown
Hoosick Falls Solar Garden	2	NY	Village of Hoosick Falls	Landfill	Village of Hoosick Falls	Municipal	27	MSW Landfill	Solar PV	0.59	-	Monolith Solar	2015	Wholesale Electricity
Islip Municipal Town Landfill	2	NY	Hauppauge	Landfill	Town of Islip	Municipal	55	MSW Landfill	Solar PV	0.05	-	Town of Islip	2011	Wholesale Electricity
Long Island Solar Farm at Brookhaven National Laboratory	2	NY	Upton	Superfund	U.S. DOE	Federal	-	Previously disturbed land at DOE Nat'l Lab Facility	Solar PV	32.00	200.0	Long Island Solar Farm, LLC (BP Solar and MetLife)	2011	Wholesale Electricity
Madison County Agriculture and Renewable Energy Park	2	NY	Lincoln	Landfill	Madison County	Municipal	600	MSW Landfill	Solar PV	0.05	1.0	Carlisle Energy Services, Inc.	2011	Onsite Use - General
Madison County Landfill (Canastota)	2	NY	Canastota	Landfill	Madison County	Municipal	-	MSW landfill	Solar PV	0.05	-	Solar Liberty Electric	2014	Onsite Use - General

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Olean Gateway "Solean"	2	NY	Olean	State Brownfields	Krog Corp.	Private	60	Oil refining, fertilizer manufacturing	Solar PV	4.00	24.0	BQ Energy	2017	Wholesale Electricity
PatterSun NY #1	2	NY	Patterson	Landfill	Town of Patterson	Municipal	10	MSW Landfill	Solar PV	0.94	-	BQ Energy	2015	Wholesale Electricity
PatterSun NY #2	1	NY	Patterson	Landfill	Town of Patterson	Municipal	25	MSW Landfill	Solar PV	1.30		BQ Energy	2016	Wholesale Electricity
Tech City	2	NY	Ulster	RCRA	Tech City	Private	256	Computer mainframe development and testing facility	Solar PV	0.05	-	Solartech Renewables Inc.	2011	Rooftop
Wallkill Landfill	1	NY	Wallkill	Landfill	Town of Wallkill	Municipal	68	MSW Landfill	Solar PV	2.00	8.0	GE Renewable Energy	2016	Wholesale Electricity
West Nyack Landfill	2	NY	Clarkstown	Landfill	Town of Clarkstown	Municipal	-	MSW landfill	Solar PV	2.36	13.0	OnForce Solar	2014	Wholesale Electricity
Williamson Landfill	2	NY	Williamson	Landfill	Town of Williamson	Municipal	-	MSW Landfill	Solar PV	1.50	-	Sustainable Energy Developments	2014	Wholesale Electricity
Cuyahoga Metropolitan Housing Authority	5	ОН	Cleveland	Brownfield	Cuyahoga Metropolitan Housing Authority	Municipal	12	Industrial Use	Solar PV	1.10	6.0	Carbon Vision	2013	Wholesale Electricity
Dayton Tech Town	5	ОН	Dayton	Brownfield	Unknown	Unknown	-	Former Automotive Site	Geothermal	-	-	Heapy Engineering	2010	Onsite Use - General
Medical Center Company Solar	5	ОН	Cleveland	Brownfield	Unknown	Unknown	6	Unknown	Solar PV	1.00	-	Medical Center Company	2014	Wholesale Electricity
Pilkington North America	5	ОН	Northwood	Brownfield	Pilkington North America, Inc.	Private	11	Glass Manufacturing Facility	Solar PV	0.25	1.0	Hull & Associates	2011	Onsite Use - General
Toledo Zoo Solar	5	ОН	Toledo	Brownfield	Anthony Wayne Solar Number 1	Private	22	Elevator factory	Solar PV	2.10	-	Rudolph/Libbe and GEM Energy	2014	Onsite Use - General
Wood County Landfill	5	ОН	Bowling Green	Landfill	Wood County	Municipal	60	MSW Landfill	Wind	7.20	4.0	American Municipal Power	2004	Wholesale Electricity
Altus Air Force Base	6	OK	Altus	RCRA	U.S. Air Force	Federal	-	Federal Facility, Flight Training Center	Solar PV	0.00	-	Unknown	2007	Onsite Use - Green Remediation

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Guthrie Green	6	ОК	Tulsa	Brownfield	George Kaiser Family Foundation	Foundation	-	Industrial	Geothermal w/ solar PV	-	-	Unknown	2012	Onsite Use - General
Columbia Ridge Landfill	10	OR	Arlington	Landfill Buffer	Waste Management	Private	12,000	MSW and Industrial Landfill - active	Wind	100.00	-	PacifiCorp	2004	Wholesale Electricity
Casselman Wind Power Project	3	PA	Traverses Summit, Black, and Addison	Mine Lands	Iberdrola Renewables, LLC	Private	2,000	Surface Coal Mine and adjacent land	Wind	34.50	165.0	Iberdrola Renewables LLC	2008	Wholesale Electricity
Exelon-Conergy Solar Energy Center	3	PA	Falls Township	Landfill Buffer	Waste Management of Pennsylvania	Private	17	Buffer to Geological Reclamation Operations and Waste Systems landfill	Solar PV	3.00	16.5	Conergy Company	2008	Wholesale Electricity
Frey Farm Landfill	3	PA	Conestoga	Landfill	Lancaster Cnty Solid Waste Mgmt Authority	Municipal	-	MSW Landfill - active	Wind	3.20	10.3	Energy Power Partners, LLC	2011	Local Use
Highland North Wind	3	PA	Cambria County	Mine Lands	Everpower, others	Public/ Private	3,500	Strip mine	Wind	75.00	3,500.0	Everpower	2012	Wholesale Electricity
Highland Wind	3	PA	Cambria County	Mine Lands	Everpower	Private	4,000	Strip mine	Wind	62.50	4,000.0	Everpower	2009	Wholesale Electricity
York County Landfill Solar	3	PA	Hopewell Township	Landfill	York County Solid Waste Authority	Municipal	-	MSW Landfill	Solar PV	0.30	2.0	Solar Renewable Energy, LLC	2014	Onsite Use - Green Remediation
East Providence Landfill Solar Farm	1	RI	East Providence	Landfill	City of East Providence	Municipal	229	MSW landfill	Solar PV	2.25	14.0	CME OCI Solar Power LLC / CME Energy	2014	Wholesale Electricity
Savannah River's Biomass Steam Plant	4	SC	Aiken	Superfund	U.S. DOE	Federal	34	1950s vintage coal-fired steam plant	Biomass	20.00	34.0	Ameresco Inc	2008	Onsite Use - General
Binkley Solar Farm	4	TN	Hermitage	Landfill	Binkley family	Private	-	Construction and Demolition Landfill	Solar PV	0.20	-	Stansell Electric	2012	Wholesale Electricity
Bristol Demolition Landfill	4	TN	Bristol	Landfill	City of Bristol	Municipal	-	Demolition landfill	Solar PV	0.20	-	EcoLogical Energy Systems	2012	Wholesale Electricity

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RSI Brightfields One	4	TN	Oak Ridge	Brownfield	Restoration Services, Inc. (RSI)	Private	1	Former DOE Gaseous Diffusion Plant	Solar PV	0.20	1.0	RSI	2012	Wholesale Electricity
Volkswagen Chattanooga	4	TN	Chattanooga	RCRA	Volkswagon	Private	33	Former Army Ammunition Plant	Solar PV	9.50	33.0	Silicon Ranch	2013	Wholesale Electricity
Central Texas Veterans Landfill Solar	6	ТХ	Temple	Landfill	Department of Veterans Affairs	Federal	-	Landfill	Solar PV	2.94	-	REC Solar	2012	On-site Use - General
Grove Landfill	6	тх	Austin	Landfill	Rhizome Collective, Inc	Other	10	Landfill (Illegal dumping)	Solar PV	-	-	Unknown	2006	Onsite Use - Green Remediation
Pantex Renewable Energy Project (PREP)	6	ТХ	Amarillo	Superfund	U.S. Department of Energy NNSA and Texas Tech University	Federal	16,000	Nuclear weapon assembly and disassembly	Wind	11.50	1,500.0	Siemens USA	2014	Onsite Use - General
Tessman Road Municipal Solid Waste Landfill	6	ТХ	San Antonio	Landfill	Republic Services, Inc	Private	680	MSW Landfill	Solar PV	0.13	5.6	CSP Energy	2009	Wholesale Electricity
Salt Lake City Landfill	8	UT	Salt Lake City	Landfill	Salt Lake City	Municipal	4	MSW Landfill	Solar PV	1.00	4.0	Taylor Electric	2014	Unknown
Crozet Orchard	3	VA	Crozet	Superfund Removal	Unknown	Private	-	Apple Orchard	Solar PV	-	-	Unknown	2007	Onsite Use - Green Remediation
Salem VA Medical Center Solar	3	VA	Salem	Landfill	U.S. Department of Veterans Affairs	Federal	6	Landfill	Solar PV	1.60	6.0	REC Solar	2013	Onsite Use - General
Former St. Croix Alumina Plant Solar I	2	VI	St Croix	RCRA	Unknown	Unknown	-	Alumina Plant	Solar PV	0.00	-	Unknown	2003	Onsite Use - Green Remediation
Former St. Croix Alumina Plant Solar II	2	VI	St Croix	RCRA	Unknown	Unknown	-	Alumina Plant	Solar PV	0.00	-	Unknown	2006	Onsite Use - Green Remediation
Former St. Croix Alumina Plant Wind I	2	VI	St Croix	RCRA	Unknown	Unknown	-	Alumina Plant	Wind	-	-	Unknown	2002	Onsite Use - Green Remediation

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Former St. Croix Alumina Plant Wind II	2	VI	St Croix	RCRA	Unknown	Unknown	-	Alumina Plant	Wind	-	-	Unknown	2006	Onsite Use - Green Remediation
Basketville Site	1	VT	Putney	Brownfield	Unknown	Unknown	6	Manufacturing	Solar PV	0.16	-	Integrated Solar	2013	Unknown
Coventry Landfill	1	VT	Coventry	Landfill Buffer	Casella Waste Systems	Private	-	MSW Landfill Buffer	Solar PV	2.70	12.0	Coventry PV (subsidiary of Borrego Solar)	2015	Wholesale Electricity
Rutland Landfill (Stafford Hill)	1	VT	Rutland	Landfill	City of Rutland	Municipal	15	MSW Landfill	Solar PV	2.30	9.0	Green Mountain Power	2015	Wholesale Electricity
Townshend Landfill	1	VT	Townshend	Landfill	Town of Townshend	Municipal	-	MSW Landfill	Solar PV	0.15	-	Soveren Solar	2014	Wholesale Electricity
Beloit Coal Ash Landfill	5	WI	Beloit	Landfill	Alliant Energy	Private	20	Coal Ash Landfill	Solar PV	2.30	17.0	Hanwha Q CELLS USA	2016	Wholesale Electricity
MATC PV Evaluation Lab	5	WI	Milwaukee	Landfill	Milwaukee Area Technical College (MATC)	Private	32	MSW Landfill	Solar PV	0.54	32.0	MATC and Johnson Controls	2010	Onsite Use - Training
Refuse Hideaway Landfill	5	WI	Middleton	Superfund	State of Wisconsin	State	23	Municipal, commercial, and industrial landfill	Solar PV	0.01	0.1	Full Spectrum Solar Company	2010	Onsite Use - Green Remediation
Chevron Casper Wind Farm	8	WY	Casper	RCRA	Chevron	Private	880	Refinery	Wind	16.50	880.0	Chevron Global Power Company	2009	Wholesale Electricity
Dave Johnston Mine / Glenrock Wind I	8	WY	Glenrock	Mine Lands	PacificCorp	Private	14,000	Surface Coal Mine	Wind	118.50	300.0	PacificCorp	2008	Wholesale Electricity
Dave Johnston Mine / Glenrock Wind III	8	WY	Glenrock	Mine Lands	PacificCorp	Private	14,000	Surface Coal Mine	Wind	39.00	300.0	PacificCorp	2009	Wholesale Electricity
Dave Johnston Mine / Rolling Hills	8	WY	Glenrock	Mine Lands	PacificCorp	Private	14,000	Surface Coal Mine	Wind	118.50	300.0	PacificCorp	2009	Wholesale Electricity
Warren AFB Wind	8	WY	Cheyenne	Superfund Non-NPL	U.S. Air Force	Federal	-	Former gunnery range	Wind	3.32	-	Unknown	2009	Wholesale Electricity