Alternative Energy Projects at Superfund Sites

Status Update and Highlights from across the Country

September 2019

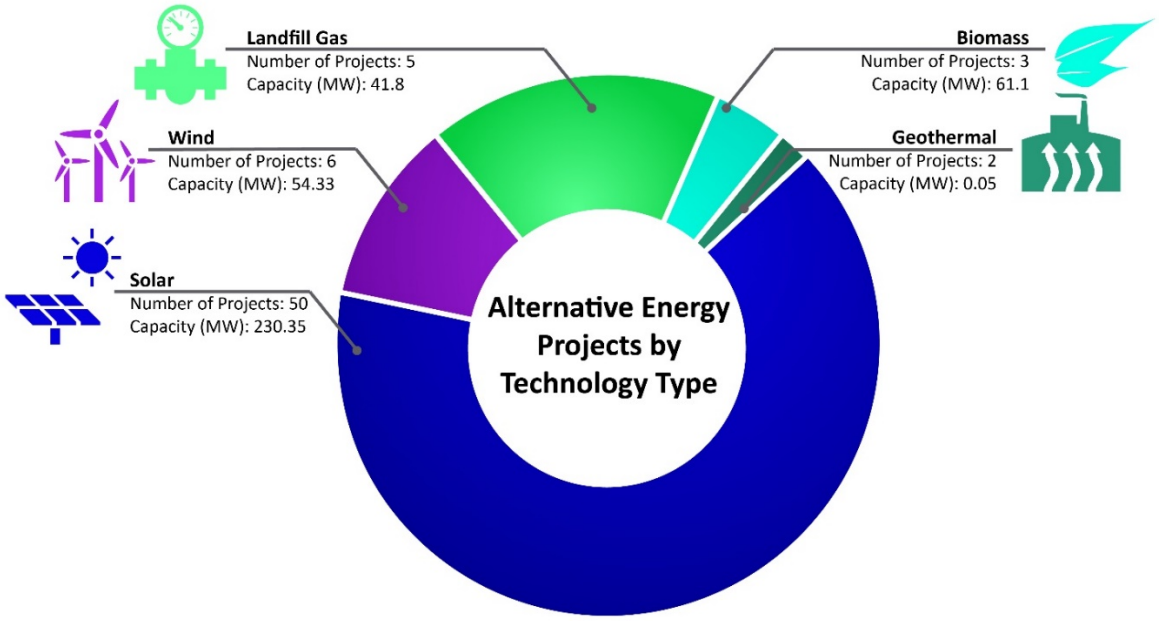
EPA's Superfund Redevelopment program helps communities reclaim and return contaminated lands to productive use. Many Superfund sites can be well-suited to support alternative energy production, including solar, wind, landfill-gas-to-energy, geothermal and biomass projects.

Alternative Energy at Superfund Sites

Number of Superfund Sites:	**64**
Number of Projects:	**66**
Installed Capacity (MW):	**388**
Estimated Annual Output (MW hours):	**1,034,114***

*** Output information available for 50 of the 66 projects.**

As of September 2019, alternative energy facilities are located at 64 Superfund sites.[1] They support 66 alternative energy projects with an installed capacity of about 388 megawatts (MW), enough to power more than 94,000 homes per year.[2,3] Over 75% of these are solar projects. Wind, solar and landfill gas facilities make up about 93% of the projects. In total, 64% of these efforts have an installed capacity of 1 MW or more. The largest alternative energy facility is a 37.5-MW biomass energy plant at the Gallup's Quarry site in Connecticut. About 26% of these projects offset on-site energy demands of cleanup efforts or directly power site-related cleanup activities.



Planning for additional alternative energy projects is underway. A 3-MW solar project is under development at the Pacific Coast Pipe Lines site in California. A full-scale landfill-gas-to-liquid fuel technology facility is under development at the Mosley Road Sanitary Landfill site in Oklahoma.

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[1] Alternative energy is defined here as non-fossil-fuel-based and non-nuclear-based sources of energy.

[2] Output information available for 50 of the 66 projects. These figures are estimates, based on publicly available information, direct communication with EPA staff and feedback from project stakeholders.

[3] Based on average annual electricity consumption of 10,972 kilowatt-hours (kWh) per month: https://www.eia.gov/tools/faqs/faq.php?id=97&t=3.

Active Alternative Energy Installations, by Superfund Site

Site	Site ID	Technology Type
AEROJET GENERAL CORP.	CAD980358832	solar
AMERICAN CYANAMID	NJD002173276	solar
APACHE POWDER CO.	AZD008399263	solar
ARSENIC TRIOXIDE SITE	NDD980716963	geothermal
BARKHAMSTED-NEW HARTFORD LANDFILL	CTD980732333	solar
BETHLEHEM STEEL CORP/LACKAWANNA PLANT[a]	NYD002134880	solar
		wind
BRICK TOWNSHIP LANDFILL	NJD980505176	solar
BROOKHAVEN NATIONAL LABORATORY (USDOE)	NY7890008975	solar
CAMP PENDLETON MARINE CORPS BASE	CA2170023533	solar
CENTRAL LANDFILL	RID980520183	landfill gas
CHARLES GEORGE RECLAMATION TRUST LANDFILL	MAD003809266	solar
CHEVRON QUESTA MINE	NMD002899094	solar
CINNAMINSON TOWNSHIP (BLOCK 702) GROUND WATER CONTAMINATION	NJD980785638	solar
CONTINENTAL STEEL CORP.	IND001213503	solar
		wind
DAVISVILLE NAVAL CONSTRUCTION BATATALION CENTER	RI6170022036	solar
DELILAH ROAD	NJD980529002	solar
E.I. DU PONT DE NEMOURS & CO., INC. (NEWPORT PIGMENT PLANT LANDFILL)	DED980555122	solar
ELIZABETH MINE	VTD988366621	solar
ELLSWORTH AIR FORCE BASE	SD2571924644	solar
F.E. WARREN AIR FORCE BASE	WY5571924179	wind
FMC CORP. (FRIDLEY PLANT)	MND006481543	solar
FORT DETRICK AREA B GROUND WATER	MDD985397249	solar
FORT DIX (LANDFILL SITE)	NJ2210020275	solar
FRONTIER FERTILIZER	CAD071530380	solar
GALLUP'S QUARRY	CTD108960972	biomass
GE - HOUSATONIC RIVER	MAD002084093	solar
GROVELAND WELLS	MAD980732317	solar
IRON HORSE PARK	MAD051787323	solar
JET PROPULSION LABORATORY (NASA)	CA9800013030	solar
LANDFILL & DEVELOPMENT CO.	NJD048044325	solar
LAWRENCE AVIATION INDUSTRIES, INC.	NYD002041531	geothermal
LAWRENCE LIVERMORE NATIONAL LABORATORY	CA2890012584	solar
LOWRY LANDFILL	COD980499248	landfill gas
MARTIN-MARIETTA, SODYECO, INC.	NCD001810365	biomass
NATIONAL SEMICONDUCTOR CORP.	CAD041472986	solar
NEBRASKA ORDNANCE PLANT (FORMER)	NE6211890011	wind
NEWMARK GROUND WATER CONTAMINATION	CAD981434517	solar

Site	Site ID	Technology Type
NORTH CAROLINA STATE UNIVERSITY (LOT 86, FARM UNIT #1)	NCD980557656	solar
OAK RIDGE RESERVATION (USDOE)	TN1890090003	solar
OMEGA HILLS NORTH LANDFILL	WID000808568	landfill gas
OTIS AIR NATIONAL GUARD BASE/CAMP EDWARDS	MA2570024487	wind
PALMERTON ZINC PILE	PAD002395887	solar
PANTEX PLANT (USDOE)	TX4890110527	wind
PEMACO MAYWOOD	CAD980737092	solar
PETERSON/PURITAN, INC.	RID055176283	solar
PICATINNY ARSENAL (USARMY)	NJ3210020704	solar
PINE BEND SANITARY LANDFILL	MND000245795	landfill gas
REFUSE HIDEAWAY	WID980610604	solar
REILLY TAR & CHEMICAL CORP. (INDIANAPOLIS PLANT)	IND000807107	solar
RE-SOLVE, INC.	MAD980520621	solar
ROSE HILL REGIONAL LANDFILL	RID980521025	solar
SAVANNAH RIVER SITE (USDOE)	SC1890008989	biomass
SOLVENTS RECOVERY SERVICE OF NEW ENGLAND	CTD009717604	solar
SOUTH BRUNSWICK LANDFILL	NJD980530679	solar
SOUTHSIDE SANITARY LANDFILL	IND980607360	landfill gas
STROTHER FIELD INDUSTRIAL PARK	KSD980862726	solar
SULLIVAN'S LEDGE	MAD980731343	solar
TUCSON INTERNATIONAL AIRPORT AREA	AZD980737530	solar
UNITED CHROME PRODUCTS, INC.	ORD009043001	solar
WASHINGTON COUNTY LANDFILL	MND980704738	solar
WELSBACH & GENERAL GAS MANTLE (CAMDEN RADIATION)	NJD986620995	solar
WEST KINGSTON TOWN DUMP/URI DISPOSAL AREA	RID981063993	solar
W.R. GRACE & CO., INC. (ACTON PLANT)	MAD001002252	solar
YORK COUNTY SOLID WASTE AND REFUSE AUTHORITY LANDFILL	PAD980830715	solar

Notes:
[a] Not on the Superfund program's National Priorities List (NPL).
USDOE = U.S. Department of Energy

Alternative Energy Spotlight: West Kingston Town Dump/URI Disposal Area Site

The 18-acre West Kingston Town Dump/University of Rhode Island (URI) Disposal Area Superfund site in South Kingstown, Rhode Island, includes two former dumping areas. The West Kingston Town Dump accepted industrial, residential and commercial wastes beginning in 1951. URI operated a nearby unregulated dump beginning in 1945. In 1992, EPA placed the site on the NPL due to contaminated subsurface soil and groundwater.

Cleanup activities at the site included groundwater treatment and capping of the former landfills. Soon after cleanup, EPA discussed potential reuse of the site with site stakeholders. Local officials considered the large, open capped area to be a suitable location for solar energy production. In 2015, the town of South Kingstown, the town of Narragansett and URI formed the South Kingstown Solar Consortium. The group worked with EPA and Kearsarge Energy to come up with a plan to develop three solar projects on and adjacent to the site, while ensuring the protectiveness of the site's remedy and not disturbing the cap.

In 2018, the three projects were completed – an 8-acre, 1.2-MW facility on the West Kingston Town Dump, a 14-acre, 2.7-MW facility on the URI dump and an adjacent field, and a 20-acre, 4.7-MW facility at a nearby Superfund site (Rose Hill Regional Landfill). The solar arrays were installed on concrete ballast blocks designed to maximize the number of solar panels while maintaining minimal ground pressure to protect the landfill cap. Kearsarge Energy owns and operates the solar facilities, supplying net-metering credits for the generated energy to consortium members at a discount. The project has returned the site to productive use and is creating energy cost-savings for the localities and the university. In addition, area residents and URI students enjoy a walking trail along the southern end of the site.

Aerial view of the West Kingston Town Dump/URI Disposal Area site. Image used with permission of Kearsarge Energy.

For more information about EPA's Superfund Redevelopment program, visit: http://www.epa.gov/superfund-redevelopment-initiative.