Alternative Energy Projects at Superfund Sites

Status Update and Highlights from Across the Country

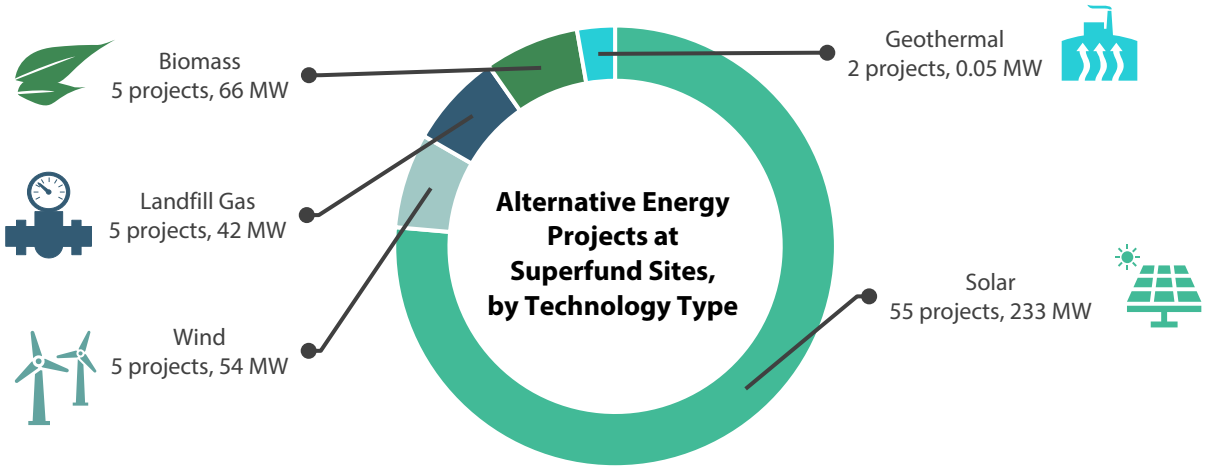
September 2020

EPA's Superfund Redevelopment Program helps communities reclaim and return contaminated lands to productive use. Many Superfund sites are 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	69
Number of Projects	72
Installed Capacity (MW)	395
Estimated Annual Output (MW hours)	1,044,293

As of September 2020, alternative energy facilities are located at 69 Superfund sites.[1] They support 72 alternative energy projects with an installed capacity of about 395 megawatts (MW), enough to power more than 98,000 homes per year.[2,3] Of these projects, 76% are solar projects and 7% are wind projects. Biomass, landfill gas and geothermal facilities make up the remaining 17% of the projects. In total, 63% 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. An 8.75-MW solar project is under development at the Yeoman Creek Landfill site in Illinois. A 3-MW solar and 2-MW battery storage system project received state approval to begin construction at the Sutton Brook Disposal Area site in Massachusetts in June 2020.

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

[2] Installed capacity information available for 66 out of 72 projects. Estimated annual output information available for 56 of the 72 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 10,649 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	EPA 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	Wind
BETHLEHEM STEEL CORP /LACKAWANNA PLANT[a]	NYD002134880	Solar
BRICK TOWNSHIP LANDFILL	NJD980505176	Solar
BROOKHAVEN NATIONAL LABORATORY (USDOE)	NY7890008975	Solar
BRUNSWICK NAVAL AIR STATION	ME8170022018	Solar
BRUNSWICK NAVAL AIR STATION	ME8170022018	Biomass
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
CONTINENTAL STEEL CORP.	IND001213503	Wind
DAVISVILLE NAVAL CONSTRUCTION BATTALION 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
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	Biomass
IRON HORSE PARK	MAD051787323	Solar
JET PROPULSION LABORATORY (NASA)	CA9800013030	Solar
LANDFILL & DEVELOPMENT CO.	NJD048044325	Solar
LAWRENCE AVIATION INDUSTRIES, INC.	NYD002041531	Geothermal
LAWRENCE LIVERMORE NATL LAB, (MAIN SITE) (USDOE)	CA2890012584	Solar
LEVIATHAN MINE	CAD980673685	Solar
LOWRY LANDFILL	COD980499248	Landfill gas
MARTIN-MARIETTA, SODYECO, INC.	NCD001810365	Biomass
NATIONAL SEMICONDUCTOR CORP.	CAD041472986	Solar
NEBRASKA ORDNANCE PLANT (FORMER)	NE6211890011	Solar
NEWMARK GROUND WATER CONTAMINATION	CAD981434517	Solar

Site	EPA ID	Technology Type
NORTH CAROLINA STATE UNIVERSITY (LOT 86, FARM UNIT #1)	NCD980557656	Solar
NYANZA CHEMICAL WASTE DUMP	MAD990685422	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
PRICE LANDFILL	NJD070281175	Solar
REFUSE HIDEAWAY LANDFILL	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
TRAVIS AIR FORCE BASE	CA5570024575	Solar
TUCSON INTERNATIONAL AIRPORT AREA	AZD980737530	Solar
UNITED CHROME PRODUCTS, INC	ORD009043001	Solar
VENTRON/ VELSICOL	NJD980529879	Solar
W.R. GRACE & CO., INC. (ACTON PLANT)	MAD001002252	Solar
WASHINGTON COUNTY LANDFILL	MND980704738	Solar
WELSBACH & GENERAL GAS MANTLE (CAMDEN RADIATION)	NJD986620995	Solar
WEST KINGSTON TOWN DUMP/URI DISPOSAL AREA	RID981063993	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: Tucson International Airport Area

The 10-square-mile Tucson International Airport Area Superfund site is located in Tucson, Arizona. The site includes TIA, parts of the Tohono O'odham Indian Reservation, residential areas in Tucson and South Tucson, and the Air Force Plant #44 Raytheon Missile Systems Company (AFP44) manufacturing facility. Several facilities have operated on site since 1942. Their activities have included parts degreasing, electroplating, metal plating and circuit board manufacturing. Improper waste disposal in unlined pits and landfills contributed to soil and groundwater contamination on the airport property and in the surrounding community. EPA placed the site on the Superfund program's National Priorities List (NPL) in 1983.

Cleanup activities included removing source materials and monitoring and treating contaminated groundwater. Over the past 30 years, EPA has treated more than 6.6 billion gallons of groundwater and removed 130,000 pounds of volatile organic compounds, 100,000 tons of metals and 10,000 tons of polychlorinated biphenyls (PCBs) from soil and groundwater. Cleanup and groundwater treatment and monitoring are ongoing. Treated water is returned to the municipal water supply for use as drinking water. Tucson International Airport remains operational.

In 2013, the Tucson Airport Authority started a three-phase solar project to cover airport parking lots with solar array canopies. In December 2017, it celebrated the project's completion with a ribbon-cutting ceremony. The 2.5-MW solar canopies provide shade and generate up to half of the electricity needed to power the airport terminal and concourses. The $14.3 million project generates about 411,800 kilowatt hours a month, resulting in monthly savings of $35,000 for the airport. Grants from the Federal Aviation Administration and the Arizona Department of Transportation funded the project. The design also includes "green walls" vegetated with plants that provide cool climate conditions under the solar panel installation.

The solar canopies over the parking lot at Tucson International Airport.

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