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Alternative Energy Projects at Superfund Sites

Status Update and Highlights from Across the Country

2023



EPA's Superfund Redevelopment Program helps communities return formerly contaminated lands to productive use. Many Superfund sites are well suited to support alternative energy production, including solar, wind, landfill-gas-to-energy, geothermal, hydropower and biomass projects. About a quarter of projects are able to offset some or all on-site energy demands for cleanup efforts. In other areas, energy produced on Superfund sites serves to advance cleaner and more cost effective energy technologies. About 64% of alternative energy projects are happening at sites in communities with potential environmental justice concerns.

Alternative Energy at Superfund Sites

Number of Superfund Sites:	96
Number of Projects:	138
Installed Capacity (MW):	587
Energy Production (MWh):	1,562,823



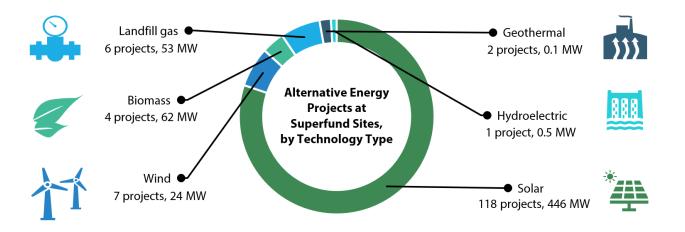
131,551 HOMES

Installed capacity of alternative energy facilities at Superfund sites is enough to power more than 131,551 homes for one year



The largest alternative energy facility is Greenleaf Power's Plainfield Renewable Energy biomass cogeneration plant at the Gallup's Quarry Superfund site in Plainfield, Connecticut. The 37.5-megawatt facility uses waste wood to generate enough electricity to power the equivalent of about 40,000 homes in Plainfield. The facility provides a market for waste biomass materials that would otherwise be taken to a landfill or left to decay, leading to off-gassing of methane and other greenhouse gases.

In collaboration with <u>EPA's RE-Powering America's Land Initiative</u>, the Superfund Redevelopment Program is <u>supporting reuse planning</u> at Superfund sites with renewable energy assessments at six sites. These assessments characterize alternative energy sources, stakeholder priorities, financial impacts and site suitability. EPA's Superfund Redevelopment Program is collaborating with state and federal agencies and The Nature Conservancy to determine areas most suitable for solar and other renewable energy development on the Carson River Mercury site. Several areas within the site have been identified as potentially suitable for solar. These areas will be further explored by The Nature Conservancy as part of a statewide effort called Mining the Sun. This effort is a collaboration between The Nature Conservancy and the Nevada Mining Association to promote the development of renewable energy plants on historic mining sites in Nevada.



Alternative Energy Spotlight – Global Sanitary Landfill

Old Bridge Township, New Jersey

The Global Sanitary Landfill Superfund site covers 57.5 acres. Much of the site is bordered by wetlands and residential areas are located north and west of the site. Today, people's exposure to the contaminants at the site remain under control. Annual monitoring of groundwater and wetlands is ongoing.

AC Power LLC, a solar developer specializing in previously disturbed properties, identified the site's reuse potential in 2017 and retained outside counsel and experts to evaluate site-related risks and responsibilities. They proposed to place a 2.8 megawatt solar array atop the landfill cap. In 2021, the New Jersey Board of Public Utilities awarded the project capacity under the second year of its Community Solar Pilot Program, enabling the development to move forward. After Old Bridge Township's approval of the Global Landfill project, AC Power collaborated with New Jersey Resources Clean Energy Ventures (NJRCEV), which became the project's long-term owner and operator.

The project became operational in October 2023, providing power to about 400 homes. The design of the solar facility is compatible with the site's cleanup plan, ensuring the longterm protectiveness of human health and the environment.

For more information, please visit <u>www.epa.gov/superfund/</u> <u>globalsanitarylandfill</u>.

Site Timeline

1968 to 1984

Global Landfill Reclaiming Corporation used the area for solid waste disposal.

1968 to 1977

Disposal operations buried drums containing paint, paint thinner and various solvents in the landfill. Pollutants leaking from the landfill contaminated groundwater under the site.

1984

A failure in the landfill's structure exposed hazardous wastes to nearby wetlands. Global Landfill Reclaiming Corporation stopped all disposal operations.

1989

EPA added the site to the Superfund program's National Priorities List.

1991

EPA and the New Jersey Department of Environmental Protection (NJDEP) selected a cleanup plan for stabilizing and capping the landfill.

1997

EPA, with NJDEP concurrence, selected a cleanup plan for groundwater monitoring, excavation and disposal of contaminated sediment, and five years of ecological monitoring.

2009

EPA approved the engineering design for the cleanup.

2012

The site's potentially responsible parties finished implementing the cleanup plans.



Image used courtesy of CS Energy.

¹ These figures are estimates, based on publicly available developer information, communication with EPA staff and the National Renewable Energy Laboratory's PVWatts calculator (pvwatts.nrel.gov/pvwatts.php).

² Based on average annual electricity consumption of 11,880 kwH per household per year, from <u>www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references</u>.

Site	EPA ID	Technology Type
*AEROJET GENERAL CORP.	CAD980358832	Solar
*AMERICAN CYANAMID	NJD002173276	Solar
ANNISTON ARMY DEPOT (SOUTHEAST INDUSTRIAL AREA)	AL3210020027	Solar
APACHE POWDER CO.	AZD008399263	Solar
*ARMOUR ROAD	MOD046750253	Solar
*ARSENIC TRIOXIDE SITE	NDD980716963	Geothermal
BARKHAMSTED-NEW HARTFORD LANDFILL	CTD980732333	Solar
*BRICK TOWNSHIP LANDFILL	NJD980505176	Solar
*BROOKHAVEN NATIONAL LABORATORY (USDOE)	NY7890008975	Solar
*BRUNSWICK NAVAL AIR STATION	ME8170022018	Solar, Biomass
*CAMP LEJEUNE MILITARY RES. (USNAVY)	NC6170022580	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
CIBA-GEIGY CORP.	NJD001502517	Solar
*CINNAMINSON TOWNSHIP (BLOCK 702) GROUND WATER CONTAMINATION	NJD980785638	Solar
COMBE FILL NORTH LANDFILL	NJD980530596	Solar
*CONTINENTAL STEEL CORP.	IND001213503	Solar, Wind
CURTIS SPECIALTY PAPERS	NJD057143984	Solar
*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
*FORT GEORGE G. MEADE	MD9210020567	Solar
*FRONTIER FERTILIZER	CAD071530380	Solar
GALLUP'S QUARRY	CTD108960972	Biomass
*GE - HOUSATONIC RIVER	MAD002084093	Solar
*GEMS LANDFILL	NJD980529192	Solar
GROVELAND WELLS	MAD980732317	Solar
HAVERHILL MUNICIPAL LANDFILL	MAD980523336	Solar
INDUSTRI-PLEX	MAD076580950	Solar
*IRON HORSE PARK	MAD051787323	Solar

Site	EPA ID	Technology Type
ISLIP MUNICIPAL SANITARY LANDFILL	NYD980506901	Solar
*JET PROPULSION LABORATORY (NASA)	CA9800013030	Solar
KIN-BUC LANDFILL	NJD049860836	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
*MCGUIRE AIR FORCE BASE	NJ0570024018	Solar
*NATIONAL SEMICONDUCTOR CORP.	CAD041472986	Solar
*NAVAL WEAPONS STATION EARLE (SITE A)	NJ0170022172	Solar
NEBRASKA ORDNANCE PLANT (FORMER)	NE6211890011	Solar
*NEWMARK GROUND WATER CONTAMINATION	CAD981434517	Solar
*NORTHWEST PIPE & CASING/HALL PROCESS COMPANY	ORD980988307	Solar
*NYANZA CHEMICAL WASTE DUMP	MAD990685422	Solar
*OAK RIDGE RESERVATION (USDOE)	TN1890090003	Solar
OMEGA HILLS NORTH LANDFILL	WID000808568	Landfill gas
*ORONOGO-DUENWEG MINING BELT	MOD980686281	Solar
*OTIS AIR NATIONAL GUARD BASE/CAMP EDWARDS	MA2570024487	Wind
*PACIFIC COAST PIPELINE	CAD980636781	Solar
*PALMERTON ZINC PILE	PAD002395887	Solar
PANTEX PLANT (USDOE)	TX4890110527	Wind
*PARRIS ISLAND MARINE CORPS RECRUIT DEPOT	SC6170022762	Solar
PARSONS PAPER MILL	MAD001114362	Solar
*PEMACO MAYWOOD	CAD980737092	Solar
*PETERSON/PURITAN, INC.	RID055176283	Solar
PICATINNY ARSENAL (USARMY)	NJ3210020704	Solar
PICILLO FARM	RID980579056	Wind
PINE BEND SANITARY LANDFILL	MND000245795	Landfill gas
*POWNAL TANNERY	VTD069910354	Hydro
*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
*SACRAMENTO ARMY DEPOT	CA0210020780	Solar

Site	EPA ID	Technology Type
*SAVANNAH RIVER SITE (USDOE)	SC1890008989	Biomass
SCIENTIFIC CHEMICAL PROCESSING	NJD070565403	Solar
SOLA OPTICAL USA, INC.	CAD981171523	Solar
*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
SUTTON BROOK DISPOSAL AREA	MAD980520696	Solar
*TRAVIS AIR FORCE BASE	CA5570024575	Solar
*TUCSON INTERNATIONAL AIRPORT AREA	AZD980737530	Solar
UNITED CHROME PRODUCTS, INC	ORD009043001	Solar
*USARMY/NASA REDSTONE ARSENAL	AL7210020742	Solar
*USN AIR STATION CECIL FIELD	FL5170022474	Solar
*VENTRON/ VELSICOL	NJD980529879	Solar
*W.R. GRACE & CO., INC. (ACTON PLANT)	MAD001002252	Solar
WASHINGTON COUNTY LANDFILL	MND980704738	Solar
WELLS G&H	MAD980732168	Solar
*WELSBACH & GENERAL GAS MANTLE (CAMDEN RADIATION)	NJD986620995	Solar
WEST KINGSTON TOWN DUMP/URI DISPOSAL AREA	RID981063993	Solar
*WILLIAMS AIR FORCE BASE	AZ7570028582	Solar
YORK COUNTY SOLID WASTE AND REFUSE AUTHORITY LANDFILL	PAD980830715	Solar

Notes:

* Denotes sites located in communities with potential environmental justice concerns, as identified by EPA. NASA = National Aeronautics and Space Administration USDOE = U.S. Department of Energy