

RE-Powering America's Land

Evaluating the Feasibility of Siting Renewable Energy Production on Potentially Contaminated Land

Silver City, New Mexico

RE-Powering: EPA/NREL Feasibility Studies

The U.S. Environmental Protection Agency's (EPA) *RE-Powering America's Land* Initiative encourages renewable energy development on current and formerly contaminated land, landfills and mine sites when it is aligned with the community's vision for the site. EPA and the U.S. Department of Energy's (DOE) National Renewable Energy Laboratory (NREL) are collaborating on a project to evaluate the feasibility of siting renewable energy production on potentially contaminated sites. This effort pairs EPA's expertise on contaminated sites with NREL's expertise in renewable energy. The feasibility studies provide site owners and communities with a technical and economic assessment of installing renewable energy on a given site.

Site Description

The Chino Mine is located near the town of Hurley in Grant County, New Mexico, about 12 miles east of Silver City. The active, 9,000-acre mine is one of the largest open-pit copper mines in the world. The Hurley smelter was completed in 1939 and modernized in 1984. The smelter operated until 2003 and was decommissioned in 2007. A major portion of the smelter was reclaimed by 2007 and is subject to monitoring requirements to ensure reclamation success. Parts of the smelter residuals (slag) and the original tailings pile adjacent to the smelter site are scheduled to be reclaimed by 2014. The reclaimed smelter site covers about 25 acres and the older tailing dams cover about 1,920 acres. The area includes pipelines, roads, monitor wells, and buildings; however, most of the site is available for consideration of renewable energy potential.

Community Goals

In the midst of remediation activities, plans are evolving to bring renewable energy production to the area based on the abundant solar resource. Given the substantial energy consumption at the mine and increasing electricity costs, both industrial and residential stakeholders are interested in exploring renewables as a means of off-setting and stabilizing energy prices. In this vein, development plans for regional water distribution are investigating use of solar energy to power pumping stations. In addition to the potential cost savings, success in this regional project could also enhance regional sustainability and strengthen community ties.

Feasibility Study: Solar

EPA and NREL conducted a study on the potential for solar power generation on the Freeport McMoRan Chino Mine site. The feasibility study evaluated the technical and economic opportunities and challenges at the site. The completed study:

- Provides a preliminary analysis of the viability of the site;
- Assesses solar resource availability;
- Identifies possible system size, design and location; and
- Reviews the economics of the proposed system.

The Chino Mine site is suitable for a large-scale photovoltaic (PV) system because it is nearly flat, has adequate road and solar access, is zoned for industrial uses, and has extensive electrical distribution to the whole site, including an onsite substation. A very large PV capacity up to 348 megawatt (MW) could potentially be developed at the Chino Mine site based on available acreage across three locations on the site. Project economics, evaluated under multiple ownership cases, showed viability under existing market conditions.

Freeport McMoRan Chino Mine Grant County Silver City, New Mexico

Site Facts:

Site type: Mine Site
Renewable technology: Solar

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The information presented in this fact sheet is from the site's initial proposal, site visit(s), discussions with community stakeholders, and other information collected in preparation of the feasibility study. This fact sheet is for informational purposes only and may not reflect the site's current regulatory or remediation status.

For more information, visit www.epa.gov/renewableenergyland or contact cleanenergy@epa.gov



Study Published in April 2013