



[Office of Clean Energy Demonstrations](#) > [Clean Energy Demonstration Program on Current and Former Mine L...](#)

# Clean Energy Demonstration Program on Current and Former Mine Land Selected and Awarded Projects





*The last mine pit being filled for reclamation on the Shaw 2 site,  
Mineral Basin*

## Awarded Projects



### **A Model for Transition: Coal-to-Solar in West Virginia**

**PROJECT FACT SHEET →**

**COMMUNITY BENEFITS  
COMMITMENTS SUMMARY →**





 ***An area that can now be utilized for solar energy on the old Wildcat Mine in Nicholas County, WV***

**Location:** Nicholas County, West Virginia

**Federal Cost Share:** Up to \$129 million

**Recipient:** Nicholas County Solar Project, LLC, a subsidiary of Savion, LLC

**Technology:** Solar (Former Mine)

**Project Impacts:**

- Transform a former coal community that experienced significant job and population loss by creating new employment opportunities, building on the region's energy-producing legacy to lead the clean energy future
- Establish a national coal transition workforce program to enable displaced workers to build skills needed to access good-paying clean energy jobs

- Demonstrate an effective renewable energy project with significant community benefits through collaboration with the local decisionmakers and community college

**Project Summary:** A Model for Transition: Coal-to-Solar in West Virginia is a 250 MW, utility-scale solar PV project proposed at two former coal mines in Nicholas County that would produce enough clean electricity to power approximately 39,000 West Virginia homes. With no feasible industrial use, these inactive mine sites provide access to existing energy infrastructure that can transmit energy to the grid. Repurposing these previously disturbed sites for solar energy development can reduce development on sensitive natural and agricultural land, produce and deliver clean power to local communities, and lay the groundwork for a regional economic revitalization starting with the workforce.

Like much of Appalachia, Nicholas County experienced a significant population decline as coal production slowed. In partnership with New River Community and Technical College, Mana Group, and National Association of Counties Research Foundation, Nicholas County Solar Project aims to establish a workforce infrastructure able to serve the state for generations to come. This project also aims to engage state labor groups and education programs, curating a curriculum and identifying pathways to good-paying, clean energy jobs. Nicholas County Solar Project and the West Virginia State Building and Construction Trades Council signed a Memorandum of Understanding to explore a Project Labor Agreement. The project has the potential to bolster overall local economic health by contributing more than \$18.5 million in property taxes over the project's proposed 40-year lifetime, helping to fill the tax revenue gap left by retired coal mines.

For more information, email [WV\\_CEML@hq.doe.gov](mailto:WV_CEML@hq.doe.gov).

## **Lewis Ridge Pumped Storage Project**



**PROJECT FACT SHEET →**

**COMMUNITY BENEFITS  
COMMITMENTS SUMMARY →**



 ***Geotechnical investigations at the Lewis Ridge Pumped Storage Project site***

**Federal Cost Share:** Up to \$81 million

**Recipient:** Lewis Ridge Pumped Storage, LLC

**Location:** Bell County, Kentucky

**Technology:** Pumped Storage Hydroelectric (Former Mine)

**Project Impacts:**

- Increase energy resilience by providing cost-effective, reliable electricity available during times of high demand or extreme weather events
- Re-use former mine land for pumped storage hydroelectric, demonstrating pathways for replicability on similar mine site across Appalachia
- Reduce emissions and local energy burdens by replacing highly polluting “peaker plants” with more cost-effective, cleaner hydropower, providing a valuable tool to balance the power grid
- Leverage local resources to provide apprenticeship opportunities and train local workforce for permanent operations and maintenance jobs

**Project Summary:** The Lewis Ridge Pumped Storage Project proposes to convert former coal mine land in Bell County, KY into a utility-scale [pumped storage hydroelectric facility](#). This closed-loop facility would consist of two artificial reservoirs at different elevations. Acting like a water battery, the facility would move water between the two reservoirs, storing up to eight hours of electricity when demand is low, and generating 287 MW during times of peak electricity demand, such as during extreme weather events. This project plans to interconnect with local transmission, improving grid reliability. The Lewis Ridge Pumped Storage Project would be one of the first pumped storage hydropower facilities constructed in the United States in more than 30 years, and the first to be built on former mine land. Repurposing former mine land with pumped storage hydropower can deliver cost-effective, reliable electricity to surrounding communities while providing backup power for intermittent renewable energy.

Due to the decline of the coal industry, Bell County, located in southeastern Kentucky, saw nearly a quarter of the community relocate, significantly decreasing the area’s tax revenues since 1970. As part of its community benefits commitments, this project anticipates creating approximately 1,500 construction jobs and 30 operations jobs, adding millions of dollars in tax revenue to the community over the project’s projected 100-year lifetime. In partnership with Shaping Our Appalachian Region (SOAR), a local nonpartisan



organization dedicated to improving the Kentucky Appalachian region, Lewis Ridge will continue expanding two-way community and labor engagement activities, which were initiated in 2022. Lewis Ridge plans to support workforce development opportunities through partnerships with unions and the Southeast Kentucky Community & Technical College and by providing a Registered Apprenticeship Program and other subsidized workforce training activities.

For more information, email [KY\\_CEML@hq.doe.gov](mailto:KY_CEML@hq.doe.gov).

## MILESHIGH Project

PROJECT FACT SHEET →



COMMUNITY BENEFITS  
COMMITMENTS SUMMARY →



**Federal Cost Share:** Up to \$80 million

**Recipient:** Freeport Minerals Corporation

**Locations:** Greenlee and Graham Counties, Arizona

**Technology:** Microgrid, Geothermal Clean Heat, and a Battery Energy Storage System (Current Mine – Copper)

**Project Impacts:**

- Generate clean heat to enable the recovery over time of billions of pounds of residual copper, a critical material, from already mined material that was previously considered unrecoverable
- Demonstrate installation of a microgrid on an active mine to increase energy resilience and reliability
- Reduce emissions from mining activities by decreasing reliance on onsite backup generators
- Prioritize workforce development by demonstrating a commitment to local economic opportunity organizations and community investments

**Project Summary:** The MILESHIGH Project, led by Freeport Minerals Corporation (FMC), plans to demonstrate the technical viability of direct-use, geothermal, clean heat to enable low-emission recovery of copper from previously mined material in the counties of Greenlee and Graham, Arizona. Located at FMC's Morenci and Safford copper mines, this project would use the area's naturally occurring geothermal heat to offset the need for fossil-based heat to increase residual copper yields. FMC also plans to install and operate a microgrid and a utility-scale battery energy storage system at the active Morenci copper mine to increase energy resilience and reliability onsite and for the surrounding community. With global electrification efforts expected to drive up copper demand, extracting these difficult-to-access resources can help secure a domestic clean energy supply chain.

The project aims to increase energy resilience for communities served by Morenci Water and Electric, decrease emissions of health-harming pollutants due to the displacement of fossil fuels for mining operations, and open new contracting opportunities that could support local and underrepresented businesses.

For more information, email [AZ\\_CEML.hq.doe.gov](mailto:AZ_CEML.hq.doe.gov).

## Mineral Basin Solar Project



**PROJECT FACT SHEET →**

**COMMUNITY BENEFITS  
COMMITMENTS SUMMARY →**



 *Mid-stage pit being filled for reclamation on the Shaw 2 site*



**Federal Cost Share:** Up to \$90 million

**Recipient:** Mineral Basin Solar Power, LLC

**Location:** Clearfield County, Pennsylvania

**Technology:** Solar (Former Mine)

**Project Impacts:**

- Leverage the region's energy-producing legacy and skilled workforce to develop critical infrastructure to supply the grid with clean, renewable solar power generation
- Avoid the displacement of natural and agricultural land for large, utility-scale solar projects by reusing previously disturbed mine land
- Demonstrate the deployment of utility-scale clean energy projects on former mine land, providing valuable lessons for building on unique terrain

**Project Summary:** The Mineral Basin Solar Project would take place on former coal mining land in Clearfield County, PA and potentially be the largest solar farm in Pennsylvania—a utility-scale 401 MW solar photovoltaic (solar PV) facility that could produce enough clean energy to power more than 70,000 homes and increase regional access to clean energy. Due to the site's topography, environmental, and geotechnical considerations, this project will serve as a demonstration for future mine land-to-solar projects in the Appalachian region.

Mineral Basin Solar Power, LLC (Mineral Basin) intends to establish plans for community benefits activities and host kickoff meetings and two-way engagements with the community and other important stakeholders to inform planning of community benefits. Mineral Basin also plans to establish agreements with Edelen Renewables to support community benefits implementation and monitoring.

For more information, email [PA\\_CEML@hq.doe.gov](mailto:PA_CEML@hq.doe.gov).

# Nevada Gold Mines Solar PV Project – Decarbonizing Gold Mines in Nevada

**PROJECT FACT SHEET →**

**COMMUNITY BENEFITS  
COMMITMENTS SUMMARY →**



 An electric shovel loading haul trucks at Nevada Gold Mines's open pit mining operations

**Federal Cost Share:** Up to \$95 million

**Recipient:** Nevada Gold Mines LLC

**Locations:** Humboldt and Lander Counties, Nevada

**Project Impacts:**

- Reduce demand for power generated from sources like coal and natural gas by generating on-site solar power for mining activities
- Utilize battery storage to increase reliability and enhance electricity self-sufficiency during off-peak sunlight hours
- Demonstrate clean energy deployment on an active gold mining site to support decarbonization efforts in the mining industry
- Build upon established practices to provide economic opportunities for rural and tribal communities

**Project Summary:** Decarbonizing Gold Mines in Nevada seeks to install solar photovoltaics (solar PV) and battery energy storage systems (BESS) on two active gold mines in Humboldt and Lander counties, NV. NGM plans to build 40 MW of solar PV and 100 MWh of BESS at the Turquoise Ridge gold processing facility in Humboldt County, and 60 MW of solar PV and 148 MWh of BESS at the Cortez mining operations in Lander County, NV. Generating clean electricity onsite at the mines would displace self-generation or grid purchase, which is primarily generated from fossil fuels. By shifting to clean energy, this project could reduce mining operations emissions by 2 million tons of carbon dioxide over the project's proposed lifetime, demonstrating a replicable way the mining industry could reach net-zero operations by 2050.

The project estimates that construction can create internships, mentorships, technical training, scholarships, and apprenticeships to expand access to mining and energy jobs in the state.

For more information, email [NV\\_CEML@hq.doe.gov](mailto:NV_CEML@hq.doe.gov).



# CLEAN ENERGY DEMONSTRATION PROGRAM ON CURRENT AND FORMER MINE LAND



**\$475M**  
in project funding  
to be distributed



Boosting workforce  
development  
opportunities across

**5** states  
**3** on former  
mine land  
**2** on current  
mine land



**5** TYPES OF  
CLEAN ENERGY



Solar



Geothermal



Pumped Storage  
Hydropower



Battery Energy  
Storage Systems



Microgrids

## FAQs

What is the Clean Energy Demonstration Program on Current and Former Mine Land (CEML)?



Why is DOE investing in clean energy on mine land?



Where are the selected projects located?



What types of clean energy technologies are included?



How were these projects selected for award negotiation?



What are the anticipated benefits of these projects selected for clean energy on former and current mine land?



How can local energy and mining communities engage with CEML projects?



How can I contact the DOE CEML team?





**Building the energy economy. Reducing environmental risks. Expanding the frontiers of knowledge with science.**

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