



Redeveloping Coal Power Plants: Solar + Storage

Retired coal power plants provide a ready opportunity for redevelopment into clean energy infrastructure, including new solar and storage projects. Existing land and facilities at the power plant site can be repurposed, including disturbed lands for solar arrays and electricity infrastructure for connections to the grid. Combining site features with lucrative financial incentives from federal or state and local authorities can make projects at these locations more competitive compared to greenfield clean energy projects.

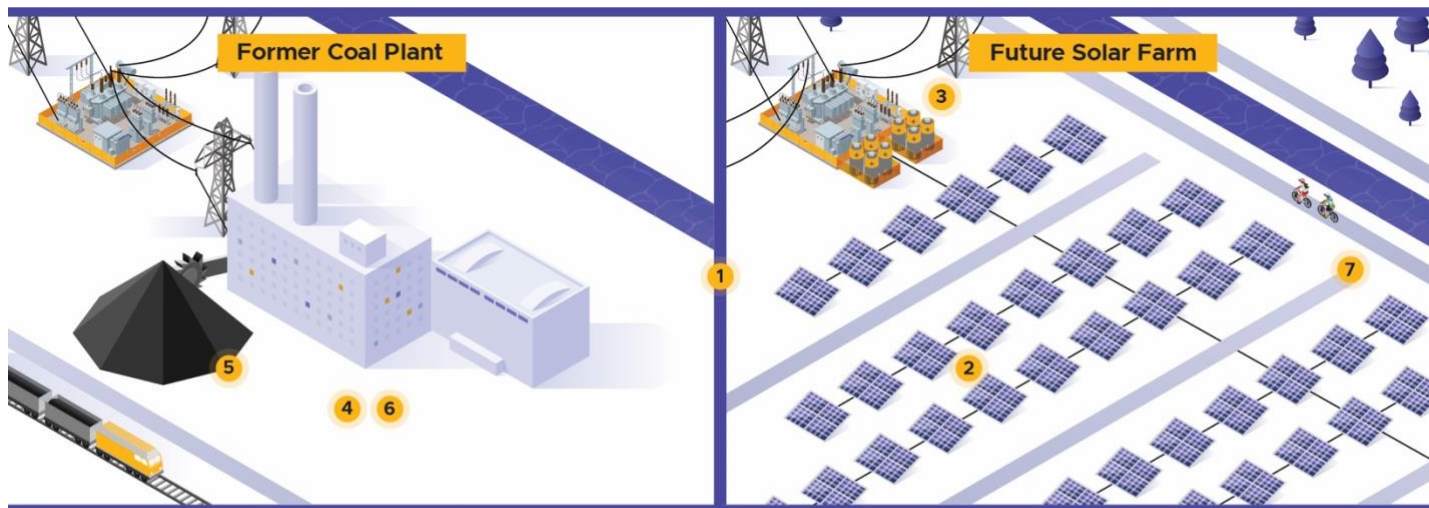
Repurposing former coal plants can bring economic revitalization to hard-hit energy communities, and is a multi-stakeholder process requiring the input of developers, communities, local governments, nonprofits, and utilities. These groups can work together to maximize existing equipment, infrastructure, and permits to create new uses and value streams. This fact sheet summarizes key considerations and approaches to support communities and developers in repurposing coal power plants to solar and storage facilities.

What are key considerations for coal to solar plus storage redevelopment?

Every coal power plant redevelopment project has its own characteristics. A site assessment will determine what can be done in terms of resource quality, environmental and siting regulations, and onsite infrastructure. When considering redevelopment, it is good practice to consider multiple potential uses, like combining energy-related redevelopment with habitat restoration or recreation.

Considerations for solar and storage include:

- **Incentives:** Solar photovoltaics (PV) can be eligible for a federal [investment tax credit \(ITC\) or production tax credit \(PTC\)](#). Energy storage, alone or paired with solar PV, can also be eligible for a federal investment tax credit. Coal-generating units that have retired since 2010 likely qualify as [energy communities](#) – which opens up an additional federal tax credit bonus for local clean energy development. Department of Energy loans for [Energy Infrastructure Reinvestment](#) (EIR) can further support redevelopment and associated remediation. Electric cooperatives and certain other tax exempt organizations such as local governments, Tribes, and U.S. territories can now access Inflation
- Reduction Act (IRA) tax incentives through [elective pay](#). There may also be federal and state government incentives for [brownfields](#) redevelopment.
- **Point of interconnection:** A coal power plant's point of interconnection with the bulk electric system might be repurposed for solar and storage development, providing significant time and cost savings, as long interconnection queues are a significant hurdle to renewable energy projects elsewhere.
- **Land:** Solar panels have been installed successfully on coal ash landfills and other environmentally disturbed areas that might otherwise go unused. A megawatt of solar panels covers [~3-4 acres of land](#), not including setbacks and the footprint of the plant. Capacity can be scaled to meet available acreage. Components can be readily transported to the site, easing logistics.
- **Workforce:** Projects that pay prevailing wages and employ apprentices from registered apprenticeship programs can increase by five times the base value of their tax credit. Projects should also engage workers, unions, and other local community groups to evaluate opportunities for incumbent workers to contribute to remediation and new energy



- 1 **Energy Infrastructure Reinvestment (EIR)** loan guarantees from Department of Energy.
 - To "retool, repower, repurpose, or replace energy infrastructure" to clean uses.
 - Remediation and redevelopment can be covered in a single transaction.
 - Commitment deadlines: September 2026.
- 2 **Solar PV IRA tax credits:** ITC (§48, §48E) or PTC (§45, §45Y)
- 3 **Energy storage IRA tax credits:** ITC (§48, §48E). Storage can be standalone (not necessarily paired with renewable generation).
- 4 **Energy community bonus** for siting clean energy in qualifying areas where a coal-powered generating unit has retired since 2010.
- 5 **Brownfields grants** from the [Environmental Protection Agency](#) to assess or clean-up sites with real or potential contamination. Grants also available for related job development. EIR can also finance environmental remediation as part of a redevelopment project.
- 6 **Electric cooperatives and certain other non-profits:** IRA tax credits now available through [elective pay](#) mechanism.
- 7 **Potential local incentives** for clean energy, remediation, or brownfield redevelopment.

infrastructure construction and operation (e.g., through Community Benefits Agreements).

project development should start now to allow loan commitments by September 2026.

Getting started on redevelopment


All stakeholders can:

- ✓ Engage with the local utility to understand the timing of coal retirements and consideration of replacement resources (e.g., through the utility integrated resource planning (IRP) process).
- ✓ Raise awareness of key federal incentives:
 - Renewable energy cost assessments conducted before the IRA (passed August 2022) should be updated to reflect the latest costs and incentives. IRA clean energy tax credits create a decade-long window of opportunity.
 - Some retiring coal plants can qualify for an energy community tax credit bonus for local clean energy development.
 - Energy Infrastructure Reinvestment loan financing through the U.S. Department of Energy can support clean redevelopments;

There may also be specific roles for certain stakeholders. Considerations may include:

- **Owner of retiring coal power plant:** Develop a request for information or request for proposals for redevelopment in anticipation of a closure.
- **Energy regulator:** Ensure that federal and state financial support are included in the assessment of redevelopment options.
- **Local authority (e.g., municipal and county governments):** Engage with the plant owner to understand the effects of redevelopment options on local tax revenues and employment.
- **Community organizations:** Promote and facilitate participation in public engagement processes (e.g., the NEPA process).
- **Educators (e.g., community colleges and apprenticeship programs):** Identify future workforce needs and tailor curricula accordingly.

Examples of Coal to Solar + Storage Projects

	Coffeen, IL	Baldwin, IL	Mount Tom, MA
	Coal plant capacity: 1000 MW Replacement solar capacity: 44 MW Replacement battery capacity: 6 MW Land area needed: 331 acres Replacement jobs: 66 (full time & indirect)	Coal plant capacity: 1260 MW Replacement solar capacity: 68 MW Replacement battery capacity: 9 MW Land area needed: 500 acres Replacement jobs: 29 full time	Coal plant capacity: 136 MW Replacement solar capacity: 6 MW Replacement battery capacity: 3 MW Land area needed: 29.5 acres Replacement jobs: 1 to 3 full time

Note: Jobs may not be permanent

Relevant data and information for coal power plant redevelopment

Redevelopment options can be informed by national and local datasets (visit the [Coal Power Plant Redevelopment Visualization Tool](#) for publicly accessible database and map). Site-specific assessments can help further refine options.

Relevant metrics include:

People and Environment: CDC Social Vulnerability Index, percentage working in coal or fossil energy, population, income, poverty status, internet access, vehicle access, vulnerability to climate change, health burdens, clean water, wastewater infrastructure, legacy pollution, energy burden, population with a 10-mile radius, apprenticeship programs.

Supporting Infrastructure (proximity and details):

Electricity transmission, electricity substations, rail lines, pipelines, EPA Brownfield proximity, planned

electric generators, navigable waterways, ports, marine freight facilities, balancing authority, control authority, nearest other power plant.

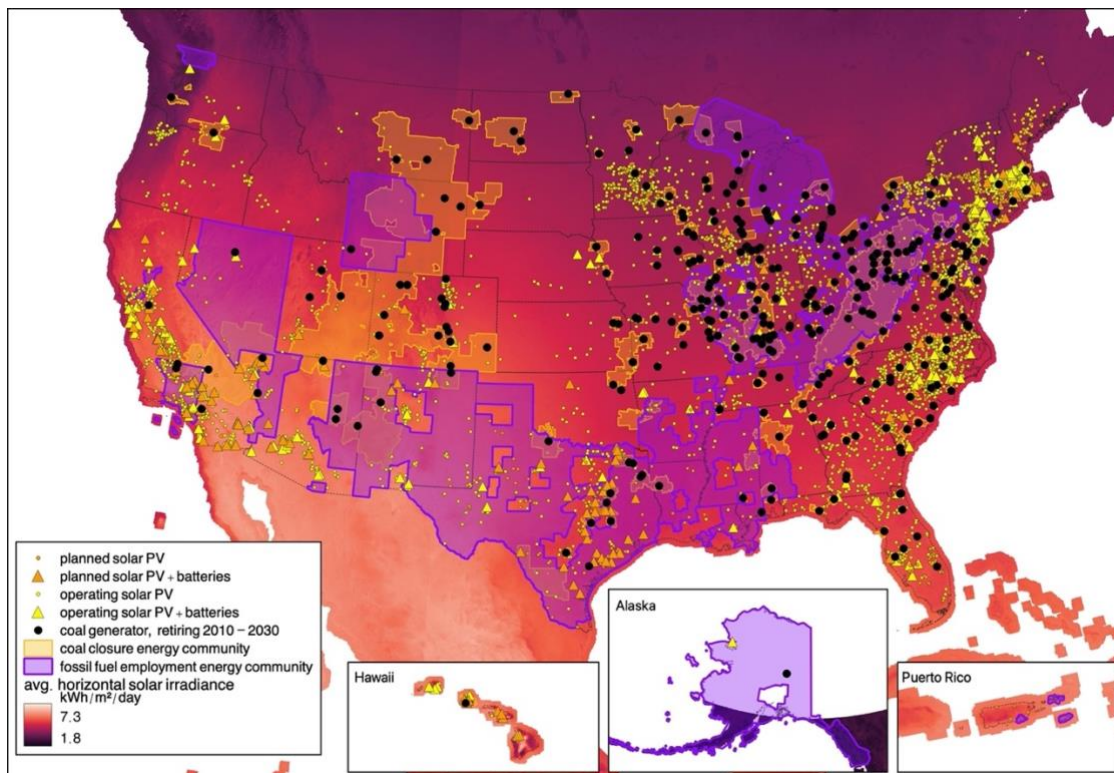
Site-specific Assessments: Retiring power plant (mix of technologies, installed capacity, build date, last planned retirement, partial or full retirement), local economic development contact, retail electric service territory (name and address, customer quantity, summer/winter/net electricity generation (MWh/month), retail and wholesale generation (MWh/month)).

Additional Considerations: National incentives and funding/financing opportunities, control area (ISO/RTO, regulated/re-structured), environmental and siting regulations, ratepayer impact assessment, resource complementarity assessment, setbacks and local zoning ordinances.

For more data and information, visit: energycommunities.gov/

Solar plus Storage Redevelopment Opportunities on Retired Coal Power Plant Sites

There is high potential for solar + storage in energy communities where coal power plants are retiring

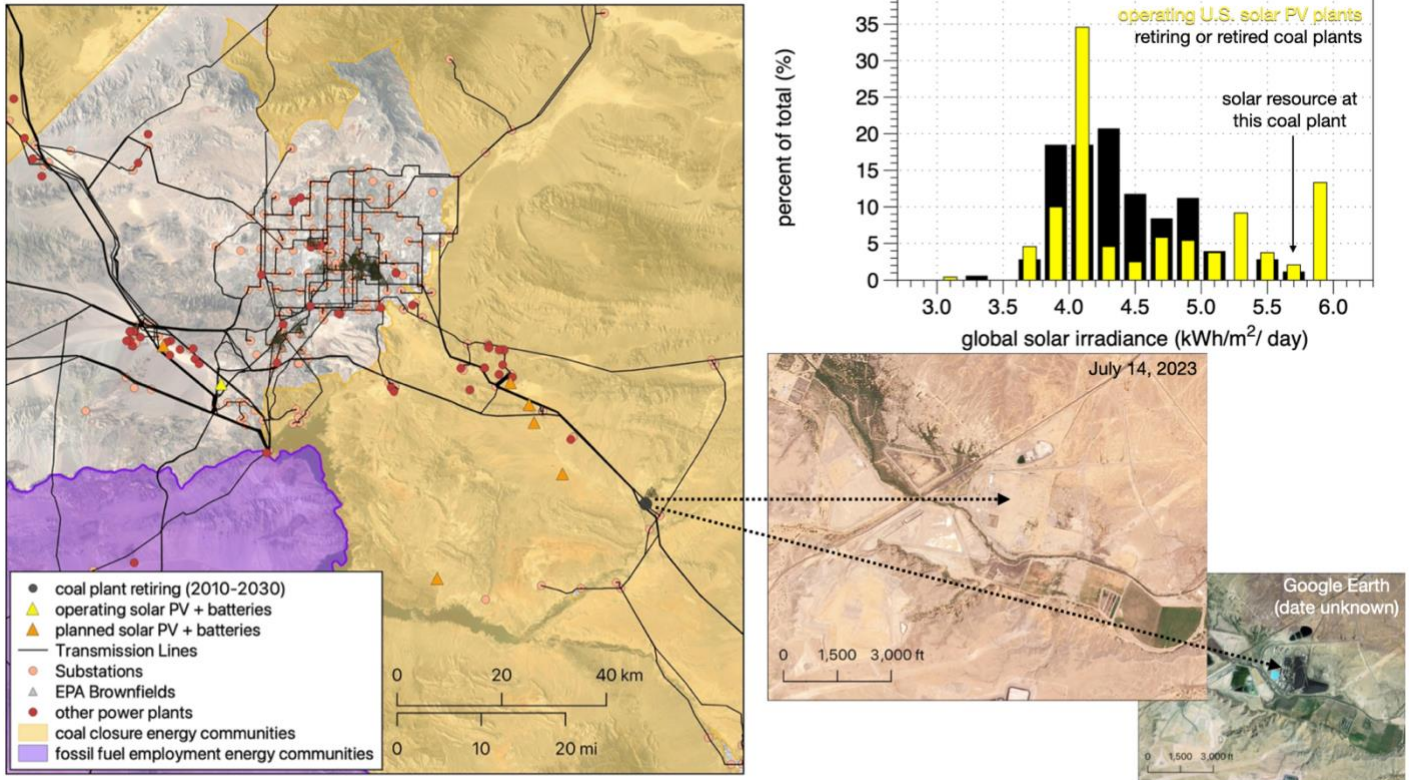


Coal electricity generators retiring between 2010-2030 according to the EIA, as well as tax incentive areas and solar-related electricity generation. Solar resource data is missing over most of Alaska as the National Solar Radiation Database v3.0 does not calculate global horizontal irradiance above 60°N. Not all Coal Closure areas are co-located with retiring coal generators because the IRS identified only areas that already experienced a closure: future retirements before the end of 2030 will result in new Coal Closure areas.

Coal to solar plus storage site redevelopment example

A 550-MW plant was constructed in 1967 along a major rail line that supplied coal, and generated electricity until its full retirement in 2017. Environmental cleanup efforts began in 2020, removing the structure to a depth of six feet and pollutants from the adjacent 91-acre ash impoundment site, making the site ready for redevelopment. The site is within an official energy community, meaning it can qualify for an additional tax credit bonus. Solar resources of the site are estimated to be quite high at about 5.7 kWh/m²/day. A nearby solar PV + battery facility came online in 2021 and the Energy Information Administration (EIA) lists six more as planned before December 2025.

Coal to Solar + Storage Theoretical Example



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Visit the [Coal Redevelopment project website](#) for additional resources.