

Process Checklist

Superfund Renewable Energy Siting

The following checklist provides a flexible guide for integrating renewable energy development activities into the Superfund assessment, cleanup, and reuse process. Site-specific conditions may lead to implementing some key considerations during steps that differ from those specified below.



Step 1. Screen Site and Environmental Conditions

Is my site large enough for renewable energy?

While there is no set minimum size for renewable projects, sites with more suitable land for solar or wind development tend to have better project economics than smaller sites. The [RE-Powering Mapper](#) is a useful resource to identify and initially assess sizing-related factors for renewable development. In addition, the [RE-Powering Tracking Matrix](#) has several example projects that illustrate how renewable development were integrated in the Superfund cleanup process.

Are the local solar or other energy resources sufficient to support renewable energy?

All sites under consideration should be screened for basic resource potential before they are considered for renewable development. For some types of renewable energy, such as biomass or geothermal projects, more in-depth and site-specific assessments are suggested for this stage. The National Renewable Energy Laboratory (NREL) maintains useful energy resource maps with national-scale data to evaluate [solar](#) and [wind](#) resources.

Is cleanup needed on the site? Have potentially responsible parties (PRPs) been identified?

Integrating renewable energy development into the Superfund cleanup process requires careful coordination among EPA Remedial Project Managers (RPMs), Potentially Responsible Parties (PRPs), developers, site owners, the public, and other stakeholders. In some instances, emergency response (removal) sites may be viable for renewable energy projects. Interested developers and municipalities will need to work closely with On-Site Coordinators (OSCs) on these projects.

There are natural links between renewable energy development and sites that have been newly identified and referred to the Superfund program, especially during site characterization and remedial investigation (PA/SI and RI/FS) stages. However, for sites where Superfund cleanup is underway, additional time and coordination will be required to successfully integrate renewable energy into the project. Coordinate with RPMs, PRPs, and other stakeholders to keep up to date with current site conditions and environmental assessment process. The [RE-Powering Mapper](#) contains point-of-information contacts for each site in the Mapper.

□ Have you confirmed the willingness of liable parties, site owners, and the community to consider renewable energy development? Are there any local moratoriums on new renewable energy projects?

It is critical that the reuse of a site matches both community priorities for redevelopment and remains protective of human health and the environment in the long-term. Discuss the potential development with site managers, the community and local government, and PRPs (if applicable) to confirm willingness to consider renewable energy on site. EPA may issue “comfort letters,” on a case-by-case basis, which can clarify environmental liability related to a site and potential sale or acquisition of a property. These letters can be useful to provide interested parties with information on a site to make informed decisions regarding acquisition and reuse.



The Preliminary Assessment/Site Inspection (PA/SI) phase of the Superfund process offers time for renewable energy screening, but uncertainty about the extent of contamination (and thus liability) will make renewable energy development unlikely at this stage.

□ Identify potential non-contaminated areas based on sampling results and confirm site suitability for renewable energy.

Once the Remedial Investigation and Feasibility Study (RI/FS) has been completed, use site sampling results to identify potential contamination, sources, and best locations for renewable energy development. Areas that have been sampled and are ready for reuse without cleanup actions may be considered for renewable energy development immediately.

Consider the site terrain conditions and climate concerns that may impact the long-term protectiveness of a remedy and the operations and maintenance of the renewable facility. Are there site preparation concerns, such as shading or leveling the ground, that could be considered during the Remedial Design phase of the Superfund process that would make a renewable energy project more feasible?



The Remedial Investigation/Feasibility Study (RI/FS) phase of Superfund site cleanup occurs before the remedial decisions are made and is an ideal time for stakeholders to start planning for renewable energy development. There is no uniform timeframe for the investigation and assessment phases of Superfund sites, and the process often takes several years. Renewable energy developers should understand how long the RI/FS phase is expected to take at their sites when establishing a site control strategy. This will help ensure that site control options or other contract mechanisms extend sufficiently long and will help avoid undue financial commitments by the developer before the RI/FS phase is complete.

□ Have you evaluated the project economics of a renewable project on site? What are the approximate local wholesale and retail prices for electricity?

A renewable energy project’s economic feasibility can depend on many factors, including permitting requirements, transmission or distribution interconnection locations, technology, local electricity prices, and financial incentive policies. The environmental conditions on site, cleanup necessary, and associated timeline for cleanup are also important factors impacting the economic feasibility of a development. Incorporate the findings of the PA/SI and RI/FS into the renewable energy development timeline and the impacts to the renewable energy cost analysis.

Step 2: Integrate Cleanup Planning and Renewable Design

Incorporate Renewable Energy into Cleanup Planning and Design

Conduct a detailed analysis on ways to incorporate renewable energy design requirements into cleanup design in collaboration with appropriate Federal, state, Tribal, or local officials as needed (e.g., solar panel integrated landfill caps).

Have you considered any Engineering Controls, Institutional Controls, or other activity and use limitations required by the cleanup remedy into renewable design?

In the Record of Decision (ROD), fully document the engineering and institutional controls (ECs and ICs). Consider these controls in the renewable energy design, including soil grading/disturbance, slope, cap or cover design, stormwater management, soil stability, and anchoring.

Confirm the design, operations, and maintenance of the renewable energy facility will not interfere with any remedial activities (e.g., groundwater monitoring well data collection, extraction well operation, remedy operations and maintenance), ICs, and/or ECs in place. Ensure that ECs and/or ICs comply with renewable energy leases or other agreements.



The renewable energy development should consider compatibility with the selected cleanup remedy and the Remedial Design. The cleanup remedy will be documented in the ROD issued by EPA. Once the ROD is finalized and the public has had a chance to review and comment, the site lead (the PRP or EPA on Fund-led sites) will move into Remedial Design, which should be coordinated with the renewable design process.

Continue Stakeholder Engagement Activities

As the design phase on the remedy and renewable energy project continues, invest time in community meetings and other public outreach with local governments to keep stakeholders informed and involved as appropriate. Many projects require land use review by local departments such as planning review boards or other permitting bodies. Projects should consider the necessary approvals and timeline when estimating project periods and associated risks.

Consider opportunities to participate, as appropriate, in public meetings held during the Superfund process to respond to any community concerns as they arise on the integration of renewable energy into the cleanup.

Identify Renewable Energy Specific Budget and Process Approvals and Permits

With the Remedial Design and ICs in hand, finalize the design for the renewable energy project based on site understanding. Gather final cost information on constructing a renewable energy facility separate from the cleanup budget.

Assist the renewable developer to determine what permits are necessary and provide site information for environmental, engineering, or other studies that are recommended. Permits, such as land use, environmental, siting, building, or other permits, may be required. Review applications for interconnection and, as relevant net-metering agreements, to the appropriate local utility.

Step 3: Implementing Cleanup and Renewable Energy Project

Are you actively coordinating construction activities across the cleanup and renewable energy teams?

Hold meetings between remedy construction team (e.g., Remedial Project Manager, contractors) and the renewable energy development team to examine ways to coordinate construction activities. Consider including community or local government stakeholders to minimize the impacts of construction activities on communities.



Renewable energy development can begin at this stage in areas of the property where cleanup is not taking place, on areas where cleanup is not needed, or progressively as areas complete cleanup activities. During cleanup, renewable energy development should not interfere with the implementation and protectiveness of the cleanup remedy.

Have you confirmed that ECs and ICs are in place?

Inspect cleanup and renewable energy infrastructure to ensure the cleanup protectiveness is not compromised during any construction. Confirm that the ECs and ICs for the site are in place and are being followed.

Step 4: Post-Construction and Operation

Ensure Remedy Protectiveness is Intact

Inspect cleanup infrastructure to ensure remedy protectiveness is not compromised by the renewable energy development activities. Following the implementation of a remedy, EPA conducts Five-Year Reviews to monitor the protectiveness of the cleanup remedy. Facilitate site access and monitoring activities with renewable energy operations.

Negotiate a Site Access and Cooperation Agreement

Collaborate with PRPs and developers to negotiate and execute a Site Access and Cooperation Agreement. The agreement will outline how access and land use for operations and maintenance of the energy facility and ongoing environmental monitoring activities will be managed by cooperating entities over the entire term of the Site Access and Cooperation Agreement.

Have you checked that ECs and ICs are in place and being adhered to?

Ensure that ECs and ICs are being adhered to as the renewable energy site operates and that the operations do not interfere with any other monitoring activities.