



Evaluation of the RE-Powering America's Land Initiative

Fact Sheet

July 2016

Background

- EPA's RE-Powering America's Land Initiative encourages renewable energy (RE) development on current and formerly contaminated lands, landfills, and mine sites (CLs), when such development is aligned with a community's vision for the site.
- The Initiative achieves these ends through tailored redevelopment tools, sharing of best practices and success stories, outreach and partnerships, and site-specific technical support from EPA and the Department of Energy's National Renewable Energy Laboratory (NREL).
- In October 2014, EPA released the RE-Powering Initiative Action Plan 2.0. In that plan, a staged evaluation of activities was discussed to articulate outcomes, examine mechanisms used by the Initiative, and explore metrics to measure effort and impact.
- Based on the results of an initial evaluation scoping assessment (April 2015), EPA identified several aspects of the Initiative to continue to evaluate. In June 2015, EPA launched the next phase of the evaluation.

Evaluation Questions

- What role has the RE-Powering Initiative played in moving the market toward greater consideration of RE projects on CLs?
- What are the current market and other barriers to siting RE projects on CLs? Is the RE-Powering Initiative addressing the most important barriers?
- How useful are the EPA/NREL feasibility studies in raising awareness and informing decisions about RE projects on CLs?
- What are the avoided and/or additional development costs of developing RE projects on CLs rather than on undisturbed lands?
- What is the process "roadmap" for the successful development of RE projects on CLs?
- Based on the findings for Questions 1-5, how can EPA improve the effectiveness of the Initiative?

Evaluation Methods

- Conducted interviews with EPA and NREL staff, developers, local government officials, state government officials, community leaders, site owners, and experts.
- Conducted a literature review using journal articles, industry reports, government reports, and press pieces.
- Reviewed the RE-Powering Tracking Matrix, website, tools, case studies, reports, and newsletters.
- Developed a timeline of program and market development, based on interviews, literature review, and data.
- Developed a process map for a successful project, based on developer interviews and EPA documents.
- Identified cost components of solar and wind projects, and how they might change if projects are sited on CLs vs. undisturbed lands, based on the interviews and literature review.

Key Findings

- **The Initiative has helped move the market toward greater consideration of RE projects on CLs by raising awareness, extending liability comfort, and providing tools and resources.** Since 2008, the number and size of RE projects on CLs has increased, reaching 179 installations with 1.1 GW of cumulative installed capacity in Spring 2016. The Initiative has capitalized on this upward trend by: raising awareness through outreach efforts (conferences and presentations), demonstrating feasibility (EPA/NREL feasibility studies), and providing liability comfort (EPA's 2012 policy extended liability protection to tenants as well as purchasers). The Initiative has also facilitated development of the market for RE projects on CLs by providing tools to screen for potential sites, offering project development support, packaging and disseminating information, and identifying and contributing to incentives and policies. There continue to be opportunities to conduct more outreach to raise awareness and comfort with the RE-Powering concept and to seek partnerships to leverage EPA's influence.

Key Findings (continued)

- **The feasibility studies are seen as a good first step and have a signaling effect by demonstrating federal interest and commitment to RE projects on CLs.** Different stakeholder groups use the feasibility studies for somewhat different purposes. EPA regional staff use the studies to communicate the federal government's support for facilitating the cleanup and reuse of CLs with RE. State/local government officials and community leaders use the studies to assess site options, communicate with the public, and garner support for RE projects on CLs. Developers all reported that regardless of whether a feasibility study exists for a site, they conduct their own, more in-depth feasibility analysis. EPA, government, and community respondents generally reported finding the studies useful, although they noted that additional research was required to reach a final decision about how to proceed. Half of the developers interviewed have not used EPA's feasibility studies; the others indicated that the studies provided high-level generic information, but lacked the detail needed from the developers' perspective (e.g., site history, risk, usable acreage). Overall, stakeholders suggested focusing the studies on the most crucial details while reducing their overall length. Interviewees also suggested the Initiative could explore ways to facilitate the use of the study results; suggestions included: identify end-users upfront, and work with them after studies are completed to translate findings into next steps.
- **RE projects on CLs tend to cost more than projects developed on undisturbed lands; however, some benefits associated with RE development on CLs are difficult to quantify and may afford cost savings.** While most interviewees were reluctant to provide specific estimates of cost differences, they generally indicated that RE projects tend to cost more on CLs. Regulatory requirements relating to environmental remediation can add to project timing and costs; and design/engineering, construction equipment and labor, and installation labor costs can be higher for RE projects on CLs compared to undisturbed lands. One developer/expert reported that overall, developers can expect a 10-20 percent increase in costs for solar projects sited on CLs. On the other hand, several positive factors – including access to affordable land, the ability to take advantage of existing infrastructure, and financial incentives – can offset higher costs, and may confer cost savings. Financial incentives are often a crucial determinant of whether RE projects on CLs are financially viable.
- **Several barriers to developing RE projects on CLs still exist; the Initiative addresses many of these barriers to varying degrees.**
Barriers identified included liability concerns, economic infeasibility and lack of adequate financial incentives, permitting delays, and lack of readily available information on site contamination and cleanup history. Liability topped the list of barriers reported by stakeholders, with interest to consider the perspectives of financiers as well as developers and site owners. Although EPA does not directly influence financial incentives, project economics remain central to such installations, and partnerships with others might help clarify opportunities. Additional outreach and more detailed, audience-specific materials could improve the effectiveness of the Initiative's resources, tools, and knowledge products.

Report Recommendations

Based on the investigation of the six evaluation questions, the report developed the following recommendations for consideration by EPA, as it pursues its efforts under the Initiative:

- **Conduct outreach to promote the RE-Powering concept and the Initiative's resources, tools, and knowledge projects.**
- **Refine resources, tools, and knowledge products to help stakeholders address barriers effectively.**
- **Develop a strategy for the feasibility studies.**
- **Focus efforts to address significant barriers that fall within EPA's mission.**
- **Partner with other agencies and organizations to address additional barriers, leverage resources, and capitalize on opportunities.**

Next Steps

Despite the challenge of directly linking cause and effect from the Initiative's actions, this evaluation has reported important insights from our stakeholders and identified areas of emphasis for the future. EPA will continue to digest the findings and recommendations from this report as part of the development of the Initiative's next Action Plan.

For additional information or comments on this evaluation, please email cleanenergy@epa.gov.