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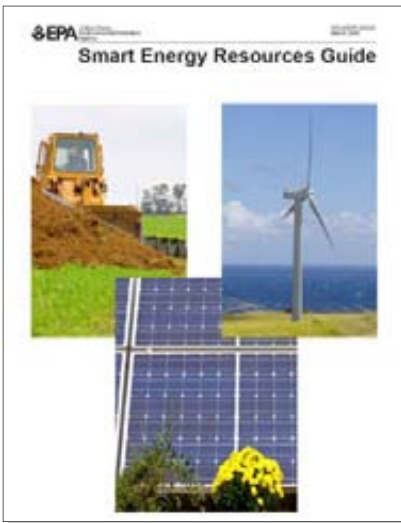


RARE Project Summary

Smart Energy Resources Guide (SERG)

USING SCIENCE TO MAKE A DIFFERENCE IN U.S. EPA REGION 9, THE PACIFIC SOUTHWEST REGION

Regional Applied Research Effort Smart Energy Resources Guide: A Resource for Greener Remediation



Remedial actions taken to clean up hazardous waste sites for environmental restoration and potential reuse are often themselves sources of diesel and greenhouse gas (GHG) emissions. The Cleanup-Clean Air Initiative (CCA) was established by U.S. EPA Region 9's Superfund and Air Divisions to encour-

age GHG and diesel emissions reductions at cleanup sites. Through these efforts, CCA staff engaged in pilot projects and changed Emergency and Rapid Response Service and Response Action Contracts to include language on renewable energy and clean diesel.

Many remediation systems, such as pump-and-treat, may operate for many years, demanding electricity from fossil fuel-powered utilities. Heavy-duty equipment used in construction during site remediation is usually diesel powered. Opportunities to reduce these emissions exist through innovative approaches and new technologies. The purpose of the Smart Energy Resources Guide (SERG) is to provide information on available mechanisms to reduce emissions from energy use at cleanup sites. Examples include energy efficiency upgrades, implementing on-site renewable energy projects, and carbon sequestration.

An overview of renewable energy technologies is presented including costs, availability, applicability, estimated emissions reduction benefits, permitting, vendor information, funding

resources, and success stories. Renewable energy technologies covered in this guide are solar, wind, landfill gas, anaerobic digesters, and gasifiers. Additional methods for using renewable energy are provided. Similar information is provided for diesel emissions reduction technologies and cleaner fuels. This document includes information on reducing diesel emissions through retrofitting diesel equipment, using cleaner and alternative fuels, and simple, low-cost practices such as idle reduction. Currently, approximately 15 EPA cleanup sites are using cleaner diesel technologies and fuels or renewable energy to power their remediation systems.

The SERG is a tool for project managers to help them assess and implement these

technologies and practices at cleanup sites. With this information, project managers may be better prepared to discuss emissions reductions strategies with contractors and developers. While resources cited in this document focus on U.S. EPA Region 9, many are applicable in other parts of the United States.

What the SERG Can Do for You

The SERG provides information on practices and technologies that can reduce emissions from electricity and diesel use at cleanup sites. This information can be used to:

- Assess possibilities of cleaner electricity and diesel at cleanup sites.
- Share information with contractors.
- Provide background information in order to better communicate with contractors and/or developers on emissions reductions strategies.
- Provide a starting point for implementing cleaner electricity and/or diesel projects.
- Reference guide for funding opportunities.
- Reference guide for tools to help estimate costs of technologies and emissions reductions.

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www.epa.gov/nrmrl/pubs/600r08049/600r08049.htm