

RE-Powering America's Land

Evaluating the Feasibility of Siting Renewable Energy Production on Potentially Contaminated Land

Lawrence, Kansas

RE-Powering: EPA/NREL Feasibility Studies

The U.S. Environmental Protection Agency's (EPA) *RE-Powering America's Land* Initiative encourages renewable energy development on current and formerly contaminated land, landfills and mine sites when it is aligned with the community's vision for the site. EPA and the U.S. Department of Energy's (DOE) National Renewable Energy Laboratory (NREL) are collaborating on a project to evaluate the feasibility of siting renewable energy production on potentially contaminated sites. This effort pairs EPA's expertise on contaminated sites with NREL's expertise in renewable energy. The feasibility studies provide site owners and communities with a technical and economic assessment of installing renewable energy on a given site.

Site Description

The 467-acre former Farmland Industries Nitrogen Plant sits at the gateway into Lawrence, Kansas. From 1954 until it closed in 2001, the plant produced an array of nitrogen-based fertilizer products. Soil, ground water, surface water, and sediment throughout the site are contaminated, primarily with nitrate and ammonia. Subject to corrective action under the Resource Conservation and Recovery Act (RCRA), the site requires significant environmental remediation and demolition, with some actions completed and others ongoing. Remediation measures include implementation of ground water interception trenches, installation of a French drain system and recovery wells, soil removal, and ongoing groundwater monitoring activities. With about 300 acres of uncontaminated area on the site, redevelopment of these portions may be initiated in parallel with remediation activities.

Community Goals

The city plans to redevelop the property as a business park for tenants engaged in industry, business and research. To promote redevelopment, the city intends to provide the infrastructure and support necessary to attract tenants that incorporate principles of sustainability into their construction plans and operations. In keeping with the spirit of this approach, renewable energy generation onsite is critical to the city's redevelopment vision for the site. A renewable energy feasibility study was requested to inform the site's redevelopment plans and provide the city with the analysis it needs to realize its vision for the future use of the site.

Feasibility Study: Biopower

EPA and NREL conducted a study on the potential for biopower power generation on the former Farmland Industries Nitrogen Plant site. The feasibility study:

- Provides a preliminary analysis of the viability of the site;
- Assesses biopower potential;
- Identifies possible facility type, size, and location;
- Reviews the economics of the proposed facility;
- Provides lessons learned from the process; and
- Serves as a guide to other communities considering how to meet renewable energy goals.

After initial assessment work, it was determined that the prospective site in Lawrence would not be a good candidate for a biomass facility based on considerations related to utility market, potential resources, and community goals. Based on these factors, a full feasibility study was not undertaken for this site. This study emphasizes the importance of screening potential candidates for key technical, policy, and economic factors at an early stage. Preliminary analyses can distinguish between good candidates and poor ones early on, saving time and money that can be employed to address more site options.

Farmland Industries Nitrogen Plant Site Lawrence, Kansas

Site Facts:

Site type: RCRA

Renewable technology: Biopower

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The information presented in this fact sheet is from the site's initial proposal, site visit(s), discussions with community stakeholders, and other information collected in preparation of the feasibility study. This fact sheet is for informational purposes only and may not reflect the site's current regulatory or remediation status.

For more information, visit www.epa.gov/renewableenergyland or contact cleanenergy@epa.gov



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