



Department of
Environmental
Conservation

Solar Projects at Closed Landfills in New York State

Federation of New York Solid Waste Associations
Spring Conference

May 4, 2015

Solar Projects at Closed Landfills

No Part 360 Permit required

Rather,

Modification to Closure Plan & Post-Closure Care Manual

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360-2.15(c) Final Closure Plan

(c)(ii): The plan must meet the requirements of subdivision (k) of this section, including the post-closure monitoring and maintenance operations manual prepared in accordance with paragraph (k)(7) of this section;

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360-2.15(k) Post-closure Operation and Maintenance

(k)(7): A comprehensive post-closure monitoring and maintenance operations manual is required. This document shall provide all information needed to effectively monitor and maintain the facility for the entire post-closure period.



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360-2.15(k) Post-closure Operation and Maintenance

(k)(3): Soil cover integrity, slopes, cover vegetation, drainage structures, and gas venting structures must be maintained during the period of post-closure monitoring and maintenance, or as required by the department.

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360-2.15(k) Post-closure operation and maintenance

(k)(9): A description of the planned uses of the property during and after the post-closure period is required. **Use of the property shall not disturb the integrity of the final cover, liners, or any other components of the containment system, or the function of the monitoring or environmental control systems**, unless necessary to comply with the requirements of Section 360-2.20 of this Subpart. The department will approve any other disturbance if the owner or operator demonstrates that disturbance of the final cover, liner or other component of the containment system, including any removal of waste, will not increase the potential threat to human health or the environment.



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DEC's Primary Areas of Concern:

- Protection of Final Cover
- Maintenance of Final Cover
- Protection of Landfill Gas System

Things to Remember

Placement of Conduit/Foundations (surface, subsurface)

Low Ground Pressure Construction Vehicles

Stormwater/Cover Impacts: erosion, rutting of cover

Inverter/Transformer Location (On-cover, off-cover)

Separation from LFG vents/collection wells

Maintenance of Cover Vegetation



Preferred method:
Surface placement
of conduit and cell
foundations







**Alternative method:
Subsurface
placement:**

Regularly (~ 20 ft)
verify depth to
geomembrane



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**Low ground pressure
construction vehicles**
- 5 to 10 psi per axle



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Stormwater impacts:

- SPDES as necessary
- Ensure no rutting or erosion of cover soils
- Properly designed access roads





**Precipitation +
Equipment =**

**Any other
problems here?**



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Inverter/Transformer Location:

- Preferred off-cover
- If on cover, proper foundation to distribute load



Landfill Gas System
Appropriate separation
of LFG vents from
equipment



Cover Vegetation - Health



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Cover Vegetation

- Mowing



Madison County Landfill



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EPA: RE-Powering America's Land

Siting Renewable Energy on Potentially Contaminated Lands, Landfills, and Mine Sites

<http://www.epa.gov/oswercpa/>

The screenshot shows the EPA website page for 'RE-Powering America's Land'. The page features a header with the EPA logo and navigation links. The main content area includes a title, a sub-header, a large image of wind turbines, and a paragraph of text. Below the text are two columns of links: 'Mapping and Screening Tools' and 'Technical Assistance and Support'. A right-hand sidebar contains a search bar, a 'Subscribe' button, and a list of related documents and reports.

RE-Powering America's Land
Siting Renewable Energy on Potentially Contaminated Lands, Landfills, and Mine Sites

Site is encouraging renewable energy development on current and formerly contaminated lands, landfills, and mine sites when it is aligned with the community's vision for the site. This initiative identifies the renewable energy potential of these sites and provides other useful resources for communities, developers, industry, state and local government or anyone interested in reusing these sites for renewable energy development.

Mapping and Screening Tools

- RE-Powering Mapper
- National Maps
- Site Screening
 - RE-Powering Screening Dataset (RSDS)
 - State Decision Tree (SDT)
 - 10, 20, 30, 60, 90, 180
 - 10-Minute Decision Tree (10-MDT)

Technical Assistance and Support

- EPA / NREL Feasibility Studies
 - Solar
 - Wind
 - Geothermal

Subscribe
EPA's RE-Powering Database

Guidance

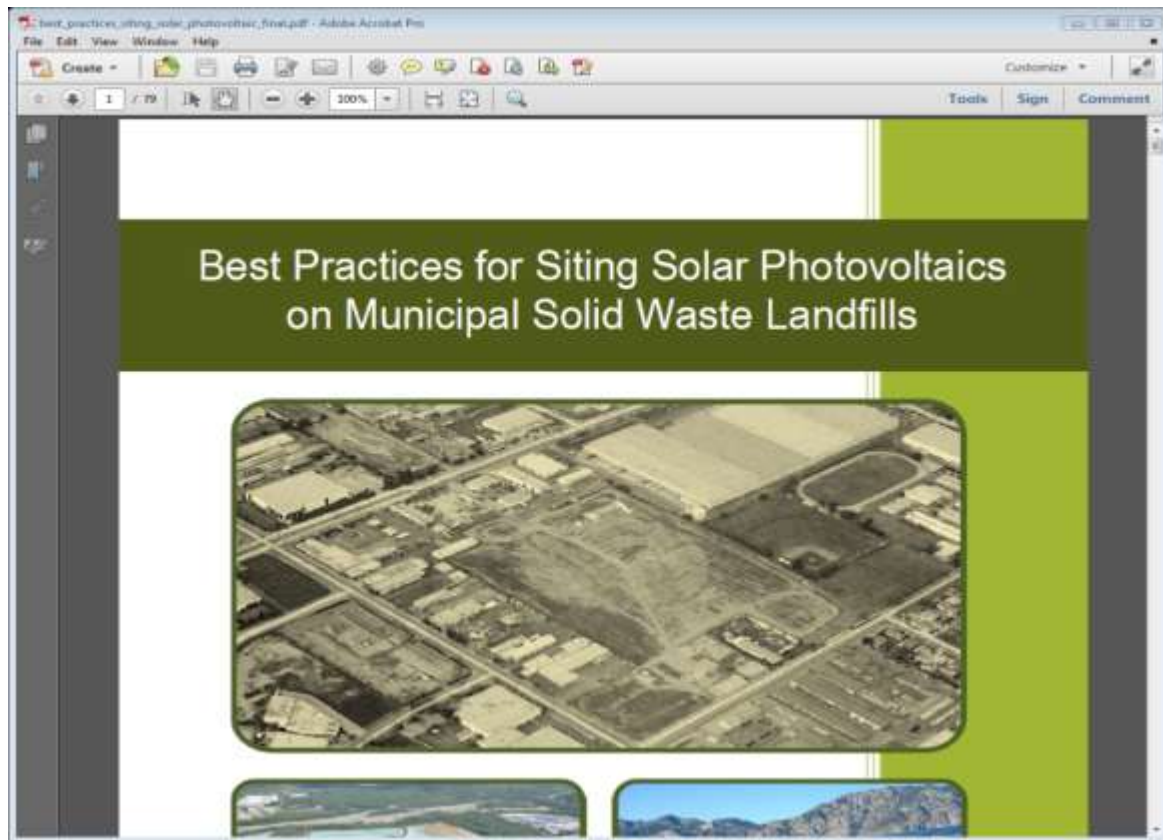
- RE-Powering Evaluation Siting Assessment
- RE-Powering Sites - Roadmap (2015 PDF) (4.4M, 8/1/15, New York)
- RE-Powering Tracking Matrix (PDF) (11.4M, 2/20/15, New York)
- RE-Powering Action Plan 2.0
- RE-Powering Eligibility Reference Guide (11.4M, 1/16/15, New York)
- Section Study - Sitecase Landfill (11.4M, 1/16/15, New York)

Why Use Renewable Energy Projects on Contaminated Lands?

Formerly contaminated lands, landfills, and mining sites offer developers a unique value proposition for renewable energy development.

Photo Credit: Shutterstock
Division of Environmental Conservation
State of New York

EPA Guidance



Google it



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EPA Solar Screening Study

EPA R2 is very supportive of Landfill/Solar projects

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EPA Solar Screening Study

- Background research on site
- Site-specific screening assessment of solar potential
- NYSERDA & PSC contacts
- Transmission/Utility Resources
- Estimated PV System Size and Costs
- Summary of Applicable Incentives



EPA Solar Screening Study

Similar assessments are also available for municipalities with Phase 1 or Phase 2 Brownfields

Conclusion

DEC's Primary Areas of Concern:

Protection of Final Cover

- Maintenance of Final Cover
- Protection of Landfill Gas System

Guidance under development

Thank You

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