

Reclaimed Land for Solar

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Abstract

Our project focused on addressing the problems associated with solar energy's land consumption and utilizing the land occupied by closed landfills. Through research associated with siting photovoltaic solar installations on closed landfills, Leicester Landfill was found to be a viable site for a solar installation that could provide the community with significant amounts of clean energy.

Problems



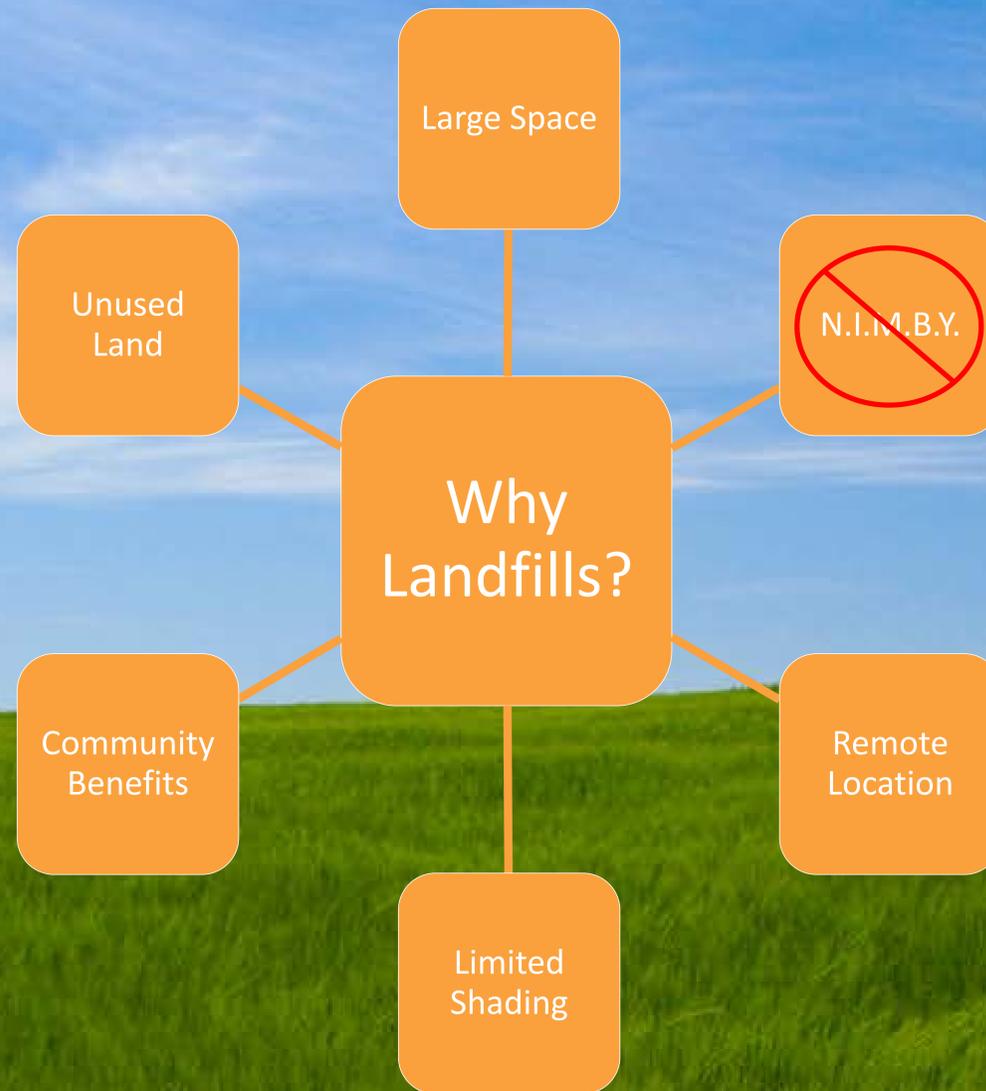
Solar Requires Large Amounts of Land



Green on Green Harm



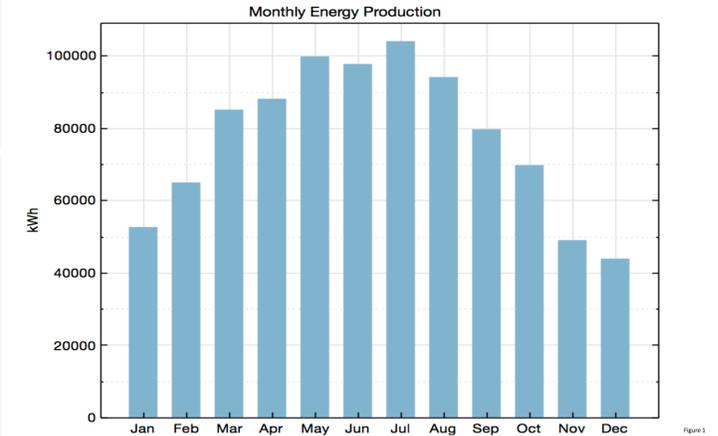
Numerous Unused Landfills



Leicester Landfill



Results Leicester Landfill



Annual Energy Production: 928,750 kWh
 124 Estimated Homes
 Revenue: \$154,000 annually

Background

- Landfill has to be inactive and capped for solar field use
- 466 currently inactive landfills in Massachusetts alone and an estimated 100,000 closed landfills across the United States
- Important Siting Considerations:**
 - Proximity to transmission lines
 - Road access
 - Water runoff
 - Topography/ Shading
- Green energy is provided while revitalizing this unused land

Methods

- Researched solar energy production and landfills
- Interviewed expert at EnterSolar, and Professor LePage
- Evaluated several local landfills
- Researched Case studies about Solar on Landfills
- Selected Leicester Landfill to investigate, and visited the site
- Predicted possible energy output using similar case studies and computer simulation

Acknowledgements

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References

1. "Solar Energy Production and Landfills." [EnterSolar](#).
 2. "Interview with Professor LePage." [WPI](#).
 3. "Case Studies about Solar on Landfills." [WPI](#).
 4. "Leicester Landfill Site Visit." [WPI](#).
 5. "Energy Output Prediction." [WPI](#).

Conclusion

The placement of solar photovoltaic systems on landfills is a tried and proven practice. Currently there are many landfills that are being closed and capped in addition to all of the land already occupied by closed landfills, which is underutilized. Not only is this land being revitalized, but green energy also benefits the local community.