

Solar Energy Potential and Cost-Effectiveness Analysis Report

Product Mission Statement

"Our mission is to harness the power of data and technology to empower individuals and organizations to make informed decisions about solar energy investments. We strive to provide accurate, location-based solar potential assessments to optimize renewable energy utilization, reduce carbon footprints, and support a sustainable future."

User Stories

1. **As a homeowner**, I want to enter my address into the application so that I can find out the solar energy potential of my location.
2. **As an investor in renewable energy**, I want to identify the most cost-effective locations for solar panel installations so that I can maximize my return on investment.
3. **As an environmental planner**, I want to access a broad range of locations' solar capabilities so that I can plan for sustainable urban development.
4. **As a solar panel installer**, I want to know the best positions on a roof to install panels so that the efficiency of solar energy capture is maximized.

MVP

The MVP for this product will consist of:

1. A simple code where users can input an address.
2. Integration with the Google Geolocation API to convert addresses into latitude and longitude coordinates.
3. Integration with the Solar API to retrieve solar potential data based on the coordinates.
4. An algorithm to process the data and identify the location with the highest solar potential and cost-effectiveness.
5. A results page displaying the most cost-effective location for solar energy capture and the potential solar energy output for the user's specific location.
- 6.

Third-Party APIs to Demonstrate User Stories

1. **Google Maps Geocoding API**: Used to translate an address provided by the user (homeowner, investor, environmental planner, or solar panel installer) into geographic coordinates.
2. **Solar API**: Utilized to retrieve solar potential data for the given coordinates, which would be essential for homeowners to assess the viability of solar panels on their property, for investors to find the most profitable locations, and for planners and installers to determine optimal placement for solar infrastructure.