American-Made Solar Prize Round 7 Ready! Contest Submission

EmpowerSun Solutions

Bridging the solar gap for underserved communities

Technical Assistance Request (2 pages PDF, including images, Will Be Made Public)

We envision a future where renewable energy, particularly solar power, is accessible to all, including those with limited financial resources. Our initiative focuses on creating a software program that automates and facilitates feasibility studies for solar projects (.5 to 5MW). However, to achieve this vision successfully, we acknowledge the need for assistance and support in various critical areas and from national labs and members of the American-Made Network.

Technological Expertise and Development: Developing a comprehensive software program necessitates specialized technical expertise. We will utilize our team's expertise in engineering, consulting and software development, and will seek additional assistance from other technical experts such as geographic information system ("GIS") experts.

Data Integration and Analysis: The success of our software relies on accurate data integration and analysis. Assistance is required in sourcing reliable and up-to-date solar resource data, weather patterns, geographical data, and market trends. Moreover, expertise in data analytics to derive meaningful insights from this data is crucial to optimize the software's functionality and relevance to low-income communities.

Community Outreach and User Engagement: To ensure the software caters to the specific needs and challenges of underserved communities, we require assistance in engaging with potential users, understanding their unique requirements, and gathering feedback will help tailor the software to be intuitive and user-centric. Effective user engagement is critical to drive user adoption and maximize the positive impact of the software within these communities.

Financial Modeling and Grant Opportunities: Financial viability is a fundamental aspect of solar projects. Our team has the expertise in developing accurate financial models within the software, considering costs, incentives, tax credits, and potential revenue streams, and will seek additional legal and accounting expertise from national laboratories and the American Made Network. Additionally, guidance in identifying and applying for grants and funding opportunities that could fuel the sustainability and scalability of our initiative is highly valuable.

Collaborations and Partnerships: Collaborations with organizations, institutions, and industry experts are essential to enrich the software's capabilities and reach. We will identify potential partners who share our vision and can contribute to the development and implementation of the software. Partnerships will encompass local community organizations, renewable energy organizations, nonprofits, and government agencies.

National Renewable Energy Laboratory (NREL): In the event of securing the grant, our collaboration with the NREL is anticipated to play a crucial role in enriching our project. NREL stands as a fount of expertise that we aspire to leverage effectively. Their extensive research and meticulous analysis of diverse photovoltaic (PV) technologies provide valuable insights into efficiency, durability, and performance across varying environmental conditions. We envision drawing upon NREL's expertise to ascertain the most appropriate PV technologies to offer as options within our software/application.

Moreover, recognizing NREL's significant expertise in grid integration, specifically regarding the efficient assimilation of solar energy into the existing electrical grid, we anticipate leaning on this specialized knowledge. As we endeavor to craft a comprehensive understanding of how a project impacts the grid, it will invariably influence our customers' financial projections. Therefore, the guidance from NREL will be pivotal in shaping the successful implementation of our solar energy initiative.

In conclusion, EmpowerSun's journey towards creating a software program supporting low-income communities in solar feasibility and constructability studies is ambitious and impactful. We recognize that collaboration and assistance from experts and stakeholders in these key areas are paramount to realizing our vision successfully. Together, we can drive sustainable solar initiatives and make renewable energy a reality for underserved communities, fostering a brighter and cleaner future for all.