Technical assistance request:

We are developing a touchless electrostatic cleaning system for existing PV panels, emphasizing longevity, water conservation, and complete power restoration. We are actively seeking collaboration for large-scale prototyping and forming partnerships with leading PV plants. Furthermore, we are pursuing expertise from the NREL soiling team to enhance our efficacy testing and refine our innovation's characterization.

The proposed system is called IonCleanPV, and comprises the Ion Air Electrostatic Induction Module (IonMod) and the Electrostatic Dust Repulsion Plates (EDRP), which are the focus of our R&D. These components are mounted on a 6-axis robotic hand, serving as the end effector, which is situated on a trailer towed by a solar-powered off-road utility vehicle. We are requesting technical assistance in the following areas:

1. While our team possesses the core technical expertise required for the R&D of IonCleanPV, we recognize the unparalleled expertise of the NREL soiling team in characterizing dust, pollen, and soiling. Understanding these parameters in various geographic areas is crucial for our project. We are keenly interested in collaborating with the NREL team to garner insights and data that can inform our strategic plan for efficacy testing of IonCleanPV.
2. **Engagement with Utility-Grade PV Farms:** A significant aspect of our project involves understanding the challenges that utility-grade PV farms face with their current cleaning methodologies. We are eager to establish a dialogue with these farms to comprehend their pain points, the frequency of their cleaning cycles, power loss statistics, and other relevant metrics that can provide a real-world context for the utility and efficiency of our solution. This will also help tailor our solution to their most pressing and everyday challenges.

Arif Rahman's challenge details for challenge:

Solar Prize Round 7

Generated at Wed Sep 27 2023 01:22:07 GMT-1000 (Hawaii-Aleutian Standard Time)

Explanation

We're advancing a touchless electrostatic cleaning system for current PV panels, ensuring durability, water savings, and full power recovery. We seek support for large-scale prototyping and partnerships with major PV plants. Additionally, we're pursuing technical guidance from the NREL soiling team for efficacy testing and innovation characterization.

Key Needs

- Hardware Development (5 / 5): *No explanation*
- Science, Research and Development (5 / 5): I have PhD in electrical engineering.
- Technical Analysis (5 / 5): *No explanation*
- Fabrication & Prototyping (4 / 5): *No explanation*
- Testing and Validation (4 / 5): *No explanation*
- Product Development (4 / 5): *No explanation*
- Robotics (3 / 5): We
- Manufacturing (3 / 5): *No explanation*
- Business Development & Commercialization (3 / 5): *No explanation*
- Procurement of Raw Materials (3 / 5): *No explanation*
- Utility Scale (2 / 5): *No explanation*

Matches

1. University of North Dakota Energy and Environmental Research Center (EERC): 90.42%
2. BlochSoft Technologies Inc: 89.59%
3. Circuit Launch: 89.30%
4. IoT Conduit: 88.90%
5. Solar Inventions: 88.71%
6. New Mexico Clean Energy Resilience and Growth: 88.71%
7. Zpryme: 88.51%
8. Positive Deviancy: 88.40%
9. Center for Future Energy Systems (CFES) at Rensselaer: 88.32%
10. Amada Weld Tech Inc.: 88.17%