



# Technical Assistance Request

## ABSTRACT

## We need solar panels that shed snow.

Solar panels are not designed for snow and ice conditions, yet snowfall impacts the reliability of solar power and cost of maintenance.

NREL models show the affected areas of the United States risk PV losses of 2-16% annually. Northern Minnesota (where our team is located) expects to lose 10-16% PV energy production annually. In one extreme case, a site in Northern Alaska is estimated to have annual snow PV losses reaching almost 40%.

We have developed a solution that uses standard solar panel manufacturing techniques to create a solar panel that is optimized to reduce losses from snow and ice. The unique combination of features will make testing key to ensuring long term reliability.

## REQUESTS

### Aluminium Extrusion

We need access to a manufacturer that can produce a small batch of aluminium extrusion with anodization for our initial prototypes and pilot projects, with the potential to iterate our product quickly and expand with our production quantity as needed.

### Laboratory Testing

We are going to use our voucher funding to characterize our module, ensuring our unique frame and adhesive can handle the load, stress, heat and moisture of our target climate conditions. This significant effort is intended to de-risk our technology solution and prove that it can last or exceed the standard panel lifetime. Sandia National Laboratories and CFV Labs will be working with us to model the loads and stresses incurred from various weather conditions, and compare our performance to benchmark product data. With this additional data, we can accurately model our solar panel design and understand performance expectations. If needed, we can make the necessary changes to prepare our design for UL certification.

### Patent Expertise

We need mentorship and assistance pursuing intellectual property protection. We have an informal relationship with an attorney, but we need permanent representation. We have several provisional patents filed and need help expanding them to full IP protection.



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## Introductions to Solar Panel Manufacturers

We are currently working with one solar panel manufacturer and would like to connect with additional companies to gain a better understanding of differences in assembly lines, supply chain and efficiency opportunities.

## Introductions to Installers

While we have many personal connections, we need help extending our reach to solar installers and customers across our target areas. We know this problem is prevalent in the industry and has been studied extensively; gaining more personal connections will help guide our product strategy and development. **For our primary audience**, we need introductions in the United States: Alaska, Maine, Michigan, Minnesota, New York, Pennsylvania, Vermont, and Wisconsin. **To consider expanding our market**, we need introductions in countries like Canada, Belarus, Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Norway, Poland, Russia, Sweden, and Ukraine.

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### To offer assistance, please reach out:



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### OUR PARTNERS:

