

# SOLAR AND BATTERY MICROGRIDS AS A SOLUTION TO THE TRIBAL "ENERGY GAP"

*Supporting Tribal Energy Sovereignty*

## The Landscape

In 2022, a report from the U.S. Department of Energy Office of Indian Energy revealed that 16,805 Tribal homes lacked electricity, primarily concentrated in the Southwest region and Alaska. Moreover, grid-connected Tribal communities experience 6.5-times more power outages, lasting 3-times longer than the broader United States. Often these blackouts are remediated by expensive and polluting diesel generators. This "energy gap" is perpetuated by an inability to initiate renewable energy projects. However, the federal government has recently allocated more than \$720 million to support tribal renewable energy development over the next decade, an increase of 600% above prior funding levels. Solar PV and battery energy storage microgrids are a viable solution to addressing this energy gap, but a myriad of hurdles prevent tribes from initiating development.

## The Problem

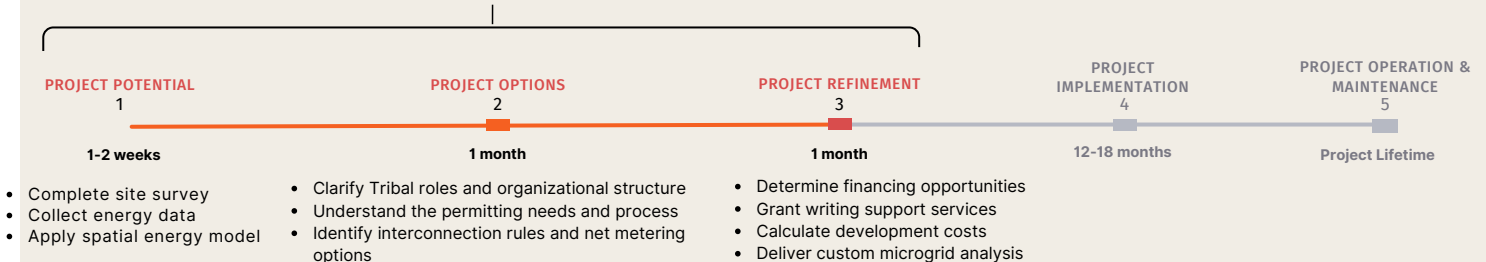
Initiating microgrid projects is the most difficult hurdle for Tribal serving entities who lack the capacity to complete technical assistance within the pre-development phase in-house; costing them time and missed grant opportunities.

## Our Solution

We are an indigenous-led microgrid service provider built for Tribal serving entities who struggle with the complex pre-development process of solar PV microgrid projects on tribal lands.

### Solar PV Microgrid Project Development Timeline

#### Sunstone Energy



### OUR RESEARCH

INSIGHTS FROM

**6**

CONFERENCES

MORE THAN

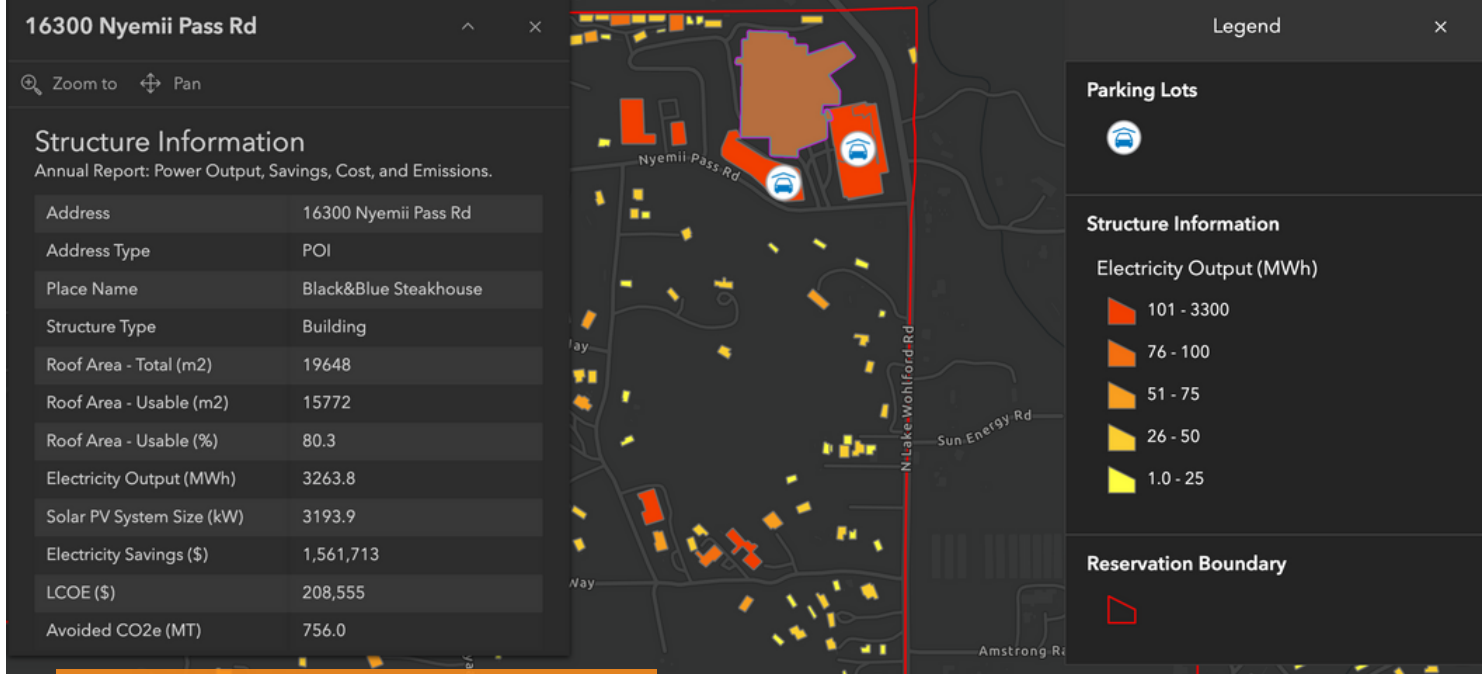
**+115**

INTERVIEWS

BASED ON

**+100**

RESEARCH STUDIES



## Our Pilot Project with San Pasqual Band of Mission Indians (SPBMI) and Prosper Sustainably



### Spatial Analysis Results

Utilizing LiDAR imagery, we assessed SPBMI's built environments for solar PV potential. Our ESRI Dashboard offers interactive models detailing annual reports on solar PV system adoption, encompassing power potential, GHG emission reductions, electricity savings, and system costs. SPBMI boasts a combined annual solar PV electricity production potential of 19,200 MWh, yielding \$9.2 million in total electricity savings, and averting 4,400 MT of CO<sub>2</sub>e emissions annually.

### Energy Analysis Results

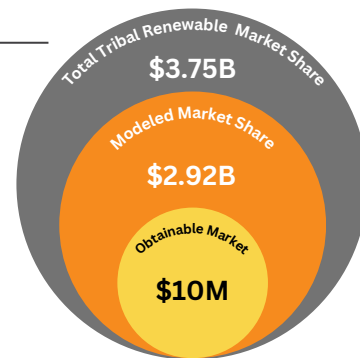
We performed an energy analysis of public works and elder buildings using the last 13 months of energy data to determine the feasibility of installing solar PV, battery storage, and EV charging stations. The XENDEE and NREL REopt online microgrid tools were used to generate the pre-feasibility analysis reports that will be used for their grant funding application.

## Competitive Advantages

- Indigenous-led expertise and Tribal advisor guidance
- Streamline, cost effective, and high quality pre-feasibility analyses
- Development and implementation of proprietary GIS-based toolkit and software

## Market Opportunity

Sunstone Energy stands to capture 5% of the estimated \$75 billion Tribal renewable energy market. We forecast 500 projects valued at \$20,000 each over the coming decade, translating to \$10 million.



## The Impact for Tribal Communities



- Fewer power outages
- Electricity savings
- Reduced pollution
- Tribal energy sovereignty

### GET IN TOUCH

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Sunstone Energy



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