

Abstract: Native to Native Energy Sovereignty is a path to net zero emissions through deep energy retrofits, electrification, and onsite renewables for four tribes in North Dakota, South Dakota, and Montana. This project builds on the successful foundation of Red Cloud Renewable (RCR), a 501 (c)(3) non-profit organization based on the Pine Ridge Reservation in South Dakota. RCR has provided renewable energy training to more than 1200 Native American students from more than 70 tribes. RCR accomplishments include manufacturing and or installing more than 1,100 solar heating systems for families on 11 reservations and installing 25 KW of solar energy for Kili Radio, the *Voice of the Lakota Nation*. The RCR Tribal Train the Trainer program trains solar teachers leading to national (NABCEP) certification.

For this initiative, Red Cloud Renewable teams with representatives from four Native American Tribes, the South Dakota Community Action Agency (DOE Subgrantee), as well as nationally recognized Wx, energy and solar subject matter experts. This place-based initiative is unique in it's Native to Native approach that develops a well-trained native workforce that addresses deep energy weatherization retrofits, carbon reduction and electrification by removing cultural barriers and with tools and techniques appropriate to the housing stock and remote locations.

This project establishes a replicable process for deep energy retrofits and carbon reduction in some of the poorest counties in the US. Oglala Lakota County (home of Pine Ridge Reservation) has a per capita income of \$10,388 (US Census Bureau). The land area is over 2 thousand square miles with a population density of 6.5 per square mile. This proposal lays the important groundwork to create equity in housing with safe, efficient, cost effective and carbon neutral homes to be available to the most disadvantaged and underserved populations. This proposal further fosters local empowerment to continue and maintain this initiative while creating the means to generate local income and prosperity.

The team will identify 30 homes for deep energy and renewable retrofits including photovoltaics and vertical wall solar collectors (where applicable). Electric conversions will include heat pump water heaters and heating systems when appropriate to optimize end use efficiency and to reduce utility costs. It is anticipated that selected houses will receive a 2- 4 kW photovoltaic array. This approach is backed up with cost effective technical approaches and implementation supported by field based and classroom training of a Native workforce.

To facilitate the installation of deep energy retrofits, given the extreme remoteness of the communities served, this initiative will build a Mobile Weatherization Installation and Training Lab (MWITL) to be used as a base of operations for weatherization installations and as a mobile training facility. The MWITL addresses the challenge of weatherization in remote locations and reduces contracted labor and extensive travel time from the current weatherization subgrantee offices.

This project will break new ground for expanded weatherization program funding and delivery by addressing the challenges inherent in Native housing in a way that serves the greater good and benefit of Native populations and the DOE Weatherization Assistance Program. Only by addressing these questions, considerations and challenges on the ground, with and by Native American leaders, will we find the answers and solutions that are needed to address the climate crisis in underserved tribal communities across the U.S.