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Solar Solution: Basic needs for tribal elders



Written by Anne Fischer | 04 May 2011



Nearly 20,000 rural Navajo homes in the US do not have electricity or basic human services, and many of these homes are occupied by elders with health issues or disabilities. As a solution, Navajo non-profit [IINA Solutions](#) of Scottsdale, Arizona and international solar specialist [Mark Snyder Electric](#) of Poway, California and [Global Solar Water Power Systems](#) established the Plateau Solar Project to bring solar electricity to residents in this area.

The Plateau Solar Project was established to bring solar electricity to residents of Navajo Nation.

Mark Snyder Electric designed a 2.43 by 6 metre (8 by 20 foot) stand-alone structure that includes all that is needed to power a home. Called the Enertopia Multi-Purpose Utility Structure (EMPUS), the unit is insulated to R-42 and climate controlled. The 2kW solar PV tracking system from [Day4 Energy](#) is connected to 16 350 amp hour solar batteries. A unique aspect of the design is that the 500-gallon water tank doubles as a traumwall in that the tank absorbs the warmth during the day, and then lets the heat back out at night when it cools off. Heat is sent into the home through two insulated ducts from the EMPUS. The EMPUS also includes a composting toilet, sink and shower and water catchment.



The stand-alone utility building, called the EMPUS, will provide heat, electricity and hot water to the tribal Hogan, with a hallway connecting the two

According to Elsa Johnson, Director of IINA Solutions, the Plateau Solar Project takes an uncompromising approach to its solar installation program. "Paramount concerns in designing a robust solar system with a potential lifespan of 25 years include

complying with safety principles even though the tribe has no safety and installation standards, proper wiring and re-wiring, training, regular maintenance, integrating sanitation features, and sustainable job creation.”



A solar tracking system provides electricity to the EMPUS

Once an EMPUS has been set up and connected to an elder's home, they will receive training in basic maintenance of the system. **MidNite Solar** designed a charge controller with Navajo voice-over for monitoring and alerting maintenance personnel.

Phase Two of Plateau Solar Project includes installations for 100 off grid elders with potential partial USDA Rural Development funds, a sustainable training and jobs program in addition to a solar maintenance program. The program hopes to get additional funding, as the Renewable Energy Investment Funds and USDA grants are only good for about 100 or fewer systems and project leaders would like to expand the program to help the thousands that currently live off the grid.



Plateau Project Director Elsa Johnson gives a tour to National American Indian Housing Council Executive Director, Mellor Willie