

Home ESW Solar Solutions and Renewable Designs

ESW at Cornell Solar Solutions and Renewable Design Team - Fall 2015

The Solar Solutions and Renewable Design team (SSRD) designs, builds, and tests solar cookers, solar dryers, water distillers, water pasteurizers, solar panels and other solar powered or alternative energy driven systems. Our mission is to improve and optimize alternative energy solutions for cooking and other household needs in cooperation with [Grupo Fenix](#), an organization at the Universidad Nacional de Ingenieria in Managua, Nicaragua, and Las Mujeres Solares de Totogalpa, a women's collective in Sabana Grande, Nicaragua and to work with groups in other countries on similar projects. Grupo Fenix works in Nicaragua to develop, implement and publicize renewable, sustainable solutions to energy needs. Las Mujeres Solares de Totogalpa has worked with Grupo Fenix building and using solar cookers, dryers, water distillers, biogas generators, charcoal production, charcoal stoves and solar panels. The women have a Solar Restaurant, in which the food is prepared with solar cookers and other alternative energy cooking methods, including use of electricity from photovoltaic solar arrays and gas from bio-digested manure. Sabana Grande is in a region suffering from deforestation and concomitant erosion of topsoil and the loss of water retention. The use of Solar Ovens reduces the need for women to spend hours of their day gathering wood for cooking fuel and helps reduce the health risks from fires used for cooking and the smoke from open fires in the cooking areas, frequently within the house.

The Solar Cooker Team works to evolve the designs of alternative energy solutions in use in Nicaragua and increase. New designs are careful to use materials and technologies available to our cooperators in Nicaragua. The team plans to visit Las Mujeres... and Grupo Fenix this January (2016) in Sabana Grande. Here is a 2 minute teaser for a video about [Las Mujeres](#) and here is the full movie called [Adelante con El Sol](#) that resulted from our Spring 2012 trip.

Current Research Projects:

1. Design a dryer/roaster system for cocoa growers in Cameroon that doesn't smoke the cocoa beans.
2. Design and build a larger direct solar food dryer than presently in use at the Solar Center.
3. Design and build an automated solar tracker for one of the Fresnel lens collector/cookers.
4. Design and build a solar autoclave.
5. develop and deliver a solar panel construction method with EVA film instead of SylGard as the cell encapsulant.
6. develop and transfer techniques to use Mylar instead of glass in solar devices.

[Articles](#)

[Team Members](#) A list of current and past members of the Solar Ovens team

[Solar Cooker Design Manuals](#)

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