Winner – Renewable Transformation Challenge 2019

https://sunspotpv.com/
The Problem

Nearly half the world continues to cook with wood, charcoal, and other biomass fuels, primarily over “three stone” fires.

Toxic emissions from cooking fires are a leading cause of disease and death, especially among women and children.

Deforestation and erosion of valuable cropland result from continued use of wood and charcoal for cooking.
The Solution
SUNSPOT™ Solar Electric Cooking

• Electricity produced by low-cost PV modules

• Use of high efficiency consumer appliances such as induction cooktops and electric pressure cookers.

• Monthly payments using Pay-As-You-Go (PAYG) microfinancing

Dramatic reduction in cost of solar
High efficiency electric cooking appliances
PAYG Microfinancing
The Opportunity

Three billion people cooking with biomass – 500 million six-person households.

More than 800 million people lack access to any electricity.

Potential market is both rural and peri-urban, primarily in Sub-Saharan Africa, South and Southeast Asia and Central/South America.

Agricultural co-ops are a natural partner in this type of development.
Product

SUNSPOT™ solar electric cooking system supplies energy to cook typical meals for a family of six plus electricity for lighting and mobile phone charging.

700 Wp PV, deep-cycle lead-carbon batteries and dedicated power/control electronics with PAYG compatibility, induction cooktop with starter set of pots.
Benefits

Improved health of women and children most affected by cooking through elimination of toxic cookstove emissions.

Reduced danger of burns and house fires by getting rid of open flames.

Increased Productivity through improved health and reduced time collecting fuel and maintaining cooking fires.

Less pressure on local forests and consequent erosion of valuable croplands.
Why Now?

The market is growing, and the need is great. Existing products have shown limited benefits.

- 1.2 million PAYG solar home systems sold in 2019, with a decline in 2020 due to CoVid issues. (Ref GOGLA)
- Increase in adoption of larger (50+ Wp) systems
- Increased adoption of non-lighting appliances
- First SUNSPOT pilot (10 systems) in Haiti coordinated with EarthSpark, funded by UK-DFID/MECS.
- Currently developing larger scale pilots (500+ systems) in Guatemala, Kenya and Philippines.
- Planning continues for scalable business rollout.
Competitive Advantage

At scale, SUNSPOT™ will provide critical services such as clean cooking, lighting and mobile phone charging at a cost that is competitive with current expenditures.
The SUNSPOT Team

Doug Danley
Co-Founder
Technical, Vision

Teresa Danley
Co-Founder
Consumer acceptance, Small business support

Paul Carroll
Engineering design, Business operations

Vladimir Brunstein
Power and control electronics
User Experience

Pilot project in Haiti is confirming rapid acceptance and many benefits, but more pilots are needed to gain knowledge in different cultures.

“Across the board, participants were very excited about the electric cooking solutions. All participants responded that electric cooking saved them time compared to status quo cooking.”

“One participant who has weak health mentioned the benefits of not having to be exposed to the heat of the charcoal during cooking and that electric cooking is beneficial for her health. Another testimony of one participant was how the new cooking system was convenient for her when making a tea at night after she got sick.”

Photos and report text courtesy of EarthSpark International and EnejiPwop
Awards / Press

Renewable Transformation Challenge

AMERICAN MADE SOLAR PRIZE

U.S. DEPARTMENT OF ENERGY

PV magazine

PV for cooking

Traditional solar cookers concentrate sunlight on mirrored surfaces and convert it into heat. But this summer, Sunspot unveiled Sunspot Solar Electric Cooking, a new cooker based on PV technology. The system relies on two PV modules, a lead-calcium battery, an inverter, and an induction cooker.

AUGUST 26, 2019 EMILIANO BELLINI

Gastronomía.- Paneles fotovoltaicos, última innovación de la cocina sostenible para frenar la deforestación de los bosques

Photovoltaic panels, the latest innovation in sustainable cooking to halt deforestation of forests

“Why do we do this?”

“We choose to do [these] things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills…”

John F. Kennedy 1962
SUNSPOT™
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