



## ISTANBUL PRINCIPLES FOR CSO DEVELOPMENT EFFECTIVENESS

### 4 PROMOTE ENVIRONMENTAL SUSTAINABILITY

Civil Society Organizations are effective as development actors when they develop and implement priorities and approaches that promote environmental sustainability for present and future generations, including urgent responses to climate crises, with specific attention to the socio-economic, cultural and indigenous conditions for ecological integrity and justice.



Photo: Christoph Schultz/Light Up the World

## Solar energy in Guatemala: Light up the World

Light up the World (LUTW) provides renewable energy technologies, lighting, and training to communities around the world that do not have access to appropriate and affordable energy.

## CHALLENGE

In the indigenous communities of Todos Santos Cuchumatán in Guatemala, approximately 1,000 families rely upon kerosene and disposable batteries to meet their household power needs. Not only is this a financial burden for families, it also provides poor quality light and can be a safety hazard, introducing toxins into homes and the environment.



LUTW has been working with local community partners to introduce solar photovoltaic (PV) energy systems to help families access new opportunities and reduce dependency on nonrenewable power sources. The process of designing and installing solar home systems is relatively simple, but creating a framework of local knowledge and support that ensures long-term project success is much more challenging. LUTW's focus on sustainability considers the entire lifecycle of the technology within the community.

## RESPONSE



LUTW facilitates community development by building local capacity to manage the project over the long term. In this project, LUTW and partners have facilitated the introduction of solar systems in 250 households in the community, benefitting more than 2,000 people and training nine local technicians.

Sustainability for future generations would be impossible without the participation, commitment, and guidance of local partners. Projects are coordinated in partnership with local community organizations and are designed according to community needs. In Todos Santos, LUTW works with a local nonprofit organization, IMDI, because of its depth of knowledge, skills, and strong relationships in the region.

Working closely with local organizations and beneficiaries allows LUTW to gain insight into the ways the technology can be adapted to better suit local needs and reflect the socio-economic, environmental, and cultural uniqueness of the community. This project has recently established links with a recycling company in Guatemala so that all rechargeable batteries used in the solar PV systems can now be sold back to the company and re-used in other products.

# LESSONS LEARNED & BEST PRACTICES

This project has incorporated many lessons from previous phases of the project in Todos Santos. For instance, the initial design of the solar PV systems was limited in its capacity to meet the needs of families. This meant that families were able to use light for fewer hours and charge fewer cell phones. Through the monitoring process, it was observed that cell phones have become very important to community life. Oral communication is particularly important to this Mayan culture and cell phones have become ubiquitous and widely used for coordinating transportation, business, and social activities. Due to low literacy rates in the area, it is uncommon to see someone in Todos Santos sending a text message, but you often hear cell phones ringing as people converse about friends, work, and community news. Through this learning process, LUTW was able to improve the design of the systems to respond to the social and cultural needs of the community.



## MAINSTREAM/KNOWLEDGE SHARING



As new lessons are learned they are continually integrated into LUTW's model and are incorporated into future projects with partners and communities. To be able to design renewable energy projects that are sustainable, it is important to first understand the different ways that a renewable energy system might fail over the life of a project. Project design includes tools and mechanisms that enable a project to overcome the possible points of failure. Based on both research and project experience, LUTW has identified eight critical success factors to sustaining renewable energy system use in off-grid locations. These include partnerships and planning; baseline, market, and project feasibility study; system design, community consultation, and project approach; local technical capacity; user education and knowing where to get technical support; incentives; equipment type and quality; and the political environment.

## NEXT STEPS

LUTW is planning a subsequent phase to the project, bringing renewable, clean, and reliable electricity access to more families in Todos Santos. LUTW will continue to work closely with IMDI to ensure that system design reflects the community's needs and economic capacity for long-term maintenance. Continual phases of the project will help to advance the skills of local technicians in the community, enhance the prospects of local business development to sustain the solar PV systems, and promote environmental sustainability in the region.



## FURTHER INFORMATION

For more information about LUTW's projects, please visit:  
<http://www.lutw.org>