



# Success Story: ECODIT Helps University to Electrify Nicaragua

José Luis Cáceres García is a professor of solar energy and energy conservation at the Universidad Tecnológica La Salle (ULSA), a research university focused on engineering and sustainable energy in León, Nicaragua. Professors like Mr. García have been key to Nicaragua’s energy revolution. Just ten years ago, the majority of Nicaraguans lacked access to electricity. High power plant maintenance and operational costs, an overreliance on fossil fuels, and a preponderance of remote rural areas unconnected to the national grid have made electrification difficult for the country.



Photo credit: CEFF-CCA

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Professor José Luis Cáceres García,  
Universidad Tecnológica La Salle,  
León, Nicaragua

In recent years, the government has worked with the private sector and academia to leverage renewable energy alternatives to connect more Nicaraguans to the grid. Today, 70 percent of Nicaraguans have electricity. However, more than one million Nicaraguans in remote and off-grid rural areas lack access to electricity. “Nicaragua is still a developing country in regard to renewable energy development,” said Professor García. As such, Professor García and his colleagues focus on developing sustainable clean energy solutions to fill Nicaragua’s energy gaps.

Now, thanks to the USAID Clean Energy Finance Facility for the Caribbean and Central America (CEFF-CCA), a three-year (2015-2018), \$10 million grant program supported by USAID, the U.S. Department of State, and the Overseas Private Investment Corporation and implemented by ECODIT, Professor García and his colleagues will have the resources to more effectively find these solutions. CEFF-CCA has provided four grants to the university to increase its research capacity to facilitate the electrification of Nicaragua’s off-grid communities.

**Clean Energy Finance Facility for the Caribbean and Central America Activity Overview**

**Period of Performance:** October 2015 – October 2018  
**Value:** \$12 million  
**Client:** The United States Agency for International Development (USAID)  
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ULSA is just one of 18 grantees that was supported by CEFF-CCA. “The fund is supporting promising yet undercapitalized renewable energy and energy efficiency projects and initiatives with the power to improve access to energy in 20 countries in the Caribbean and Central America,” said CEFF-CCA Chief of Party Jorge Barrigh. “There is much evidence that this support will significantly contribute to the sustainability of the evolving clean energy transition in Central America and the Caribbean.”

With ECODIT support through CEFF-CCA, ULSA undertook a number of initiatives to facilitate increased energy access in the country. The university conducted a demand and load-mapping study of various energy-poor rural areas of the country, which resulted in a comprehensive database of energy gaps and opportunities in these areas. This study not only led to an abundance of information to inform the country’s efforts to increase energy access, but helped the university build its capacity in Computer Assisted Personal Interviews (CAPI), Geographic Information Systems (GIS), Weather Data Collection, and Communications. The university also developed a software, Valu-Sol, which estimates electricity consumption behavior and calculates the costs and credit requirements for clean energy system installation in homes, farms, and businesses.



In addition, CEFF-CCA support enabled ULSA to establish centers devoted to renewable energy. These include the country’s first-ever Business Center for Natural Resources and Renewable Energies (CENRENER) and a state-of-the-art renewable energy laboratory. The business center serves as a link between the private sector and the university for renewable energy projects, while the laboratory provides the university with facilities to develop and trouble-shoot renewable energy in Nicaragua.

“Thanks to CEFF-CCA, ULSA is now a key player in the clean energy sector,” said ULSA Vice Rector Norman Reyes. Professors and staff say the new facilities have enhanced research and learning. “The new lab and equipment have enabled me to better teach my students to practically apply the concepts we have learned in class, and they have helped me to better understand concepts related to clean energy,” said Professor García.

Moreover, Professor García said the new facilities are enabling ULSA to become a force in ensuring an energy-secure future for his country. “Now that ULSA has the capacity to undertake applied research on renewable energy issues, our faculty and students can contribute to developing more efficient renewable energy technologies and increasing Nicaragua’s energy access, especially in rural areas.”