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A Pioneer in Clean Electricity Production, Costa Rica Wants to Share Its Knowledge

by *George Rodríguez*

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Having produced almost all its electricity from renewable sources last year, Costa Rica, a country with a solid international image as a protector of the environment, wants to share its knowledge.

The idea is for this Central American nation to become a “green hub” and make available to others the lessons it has learned over decades of using renewable sources for the generation of its electricity, which reaches almost all of its approximately 5 million people ([NotiCen, May 19, 2016](#)).

A long tradition

Costa Rica opted for environmentally safe electricity almost 70 years ago, when it created the state-owned Instituto Costarricense de Electricidad (Costa Rican Electricity Institute, ICE). At the time, ICE focused on hydroelectric power, but over the years, it broadened the scope of its production to sources such as biomass, geothermal, solar, and wind.

Fuel is a source for less than 1% of the energy produced, according to Laura Lizano, an energy expert with the Environment and Energy Department (Ministerio de Ambiente y Energía, MINAE). This is unavoidable, she said, since some of the renewable sources are not constantly available.

“There is a thermal participation, of course” Lizano told LADB. “There has to be, actually, because we can’t depend only on variable resources.” A backup is necessary because sources such as sun or wind are not always available in the amounts needed, and this affects electricity distribution, she pointed out.

She said Costa Rica is willing to share its vision and vast experience in this field by becoming a center for generating knowledge and information that can be shared with the rest of the world. Costa Rica is already providing services to other countries on an individual basis, she said. “For example, ICE is providing Bolivia support on geothermal energy,” she said.

Lizano spoke a month after Costa Rican President Luis Guillermo Solís told the World Future Energy Summit held in Abu Dhabi in January about his country’s environmentally friendly energy production.

At the start of the gathering, Solís pointed out that over the past two years Costa Rica’s electricity has been generated from renewable sources, including biomass, geothermal, and wind. “The previous models are no longer viable today,” he said.

Nevertheless, Costa Rica still has to deal with the carbon emissions generated by fossil fuel-run modes of transport, he told the gathering. “This is one of our greatest challenges, and we must reduce these emissions if we are to comply with our ambitious goal of becoming one of the first carbon-neutral countries in the world by the time of our independence bicentennial in 2021,” he said.

At the time, the president told the local *Khaleej Times* that Costa Rica's technical experience in this field is available to countries that might need support.

"We have more than 50 years' experience in hydroelectric power ... [and] significant experience forming public policies that distribute this energy and add value to it," he said. "So, our technical teams can help countries that need that help ... But more importantly, we'd like to build an alliance with the UAE and with other countries ... to guarantee that the Paris Agreement and other multilateral energy agreements will be maintained."

He warned that in the next few years, there might be "a push from certain sectors that don't want to comply with the Paris Agreement, which we consider fundamental," he said. He was referring to the accord, reached last year during the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change, that seeks in general to mitigate greenhouse gas emissions ([NotiCen, Jan. 7, 2016](#), [NotiSur, Dec. 18, 2015](#), and [Jan. 8, 2016](#)). The executive secretary of the Paris meeting was Costa Rican environmental expert Christiana Figueres ([NotiCen Aug. 4, 2016](#), and [NotiSur, Sept. 2, 2016](#)).

Optimistic about Paris accord

Regardless of the negative scenario he painted, Solís said he was optimistic about the future of the Paris accord, adding, "This is an effort that needs to continue and cannot be abandoned ... [because] the forces that are against the development of renewable energy, and those who aren't aware of the existence of climate change, have not been fully defeated. They keep expressing themselves by not taking decisions that are urgently needed to reach the world's goals."

Costa Rica is among the top producers of electricity in Central America, according to a study released last year by the Economic Commission for Latin America and the Caribbean (ECLAC). The study showed that in 2015, on a regional scale, the eight countries making up the Central American Integration System (Sistema de la Integración Centroamericana, SICA, which also includes the Dominican Republic) produced 64,076 Gigawatt hours (GWh) ([NotiCen, Feb. 16, 2017](#)).

The document placed Costa Rica as the bloc's second-largest electricity producer, with 16.7% of the total, just under the Dominican Republic (23.3%) and above Guatemala (16.1%).

Of the grand total, 54% (34,629 GWh) came from renewable sources, while the other 46% was generated from hydrocarbons, according to the study. The bloc's renewable energy production was mostly of a hydraulic origin (67.6%), followed by biomass (10.9%), geothermal (10.6%), wind (9.1%), solar (1.7%), and biogas (0.1%).

Costa Rica was the top producer of the region's renewable energy, having accounted for 30.6%, followed by Guatemala with 20.4%, and Honduras with 10.8%.

Regarding non-renewable electricity in SICA member countries, Belize showed the lowest proportion (0.1%) and Costa Rica was second to last (0.4%), while the Dominican Republic headed the negative list (46.7%), followed by Honduras (16%).

The share of renewable sources in energy production by country showed an almost perfect 99% for Costa Rica, followed by Belize (92.4%) and Guatemala (68.4%) next.

Expanding mission

ICE was created by decree in 1949, a year after the 44-day revolution that gave birth to the Costa Rican Second Republic. The institute's original aims were the sustainable development of Costa Rica's energy-producing sources to provide electricity on a massive, national scale. Its mission was broadened 14 years later to encompass the establishment, improvement, and nationwide operation of the country's telecommunications system.

ICE's socially sensitive mission made it possible for the electric and telephone services to reach even remote rural communities.

In 1963, ICE began modernizing the telephone service, which until then had been offered through a few manually operated switchboards. Today, according to official figures, Costa Rica has a telephone network consisting of 10 million fixed numbers and an equal amount of mobile numbers.

The institute is now known as Grupo ICE, and consists of the original company plus three partners—Compañía Nacional de Fuerza y Luz (National Power and Light Company, CNFL), Radiográfica Costarricense (Costa Rican Telegraph Company, RACSA), and Cable Visión, a cable television company.

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