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# What is the Future of Renewables in Central America?

Inter-American Dialogue's Latin American Energy Advisor

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***Q and A: What is the Future of Renewables in Central America?***

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In January, a consortium of Gamesa and Iberdrola began construction on Central America's largest wind farm, the 102 megawatt Cerro de Hula project in Honduras. Also, the Honduran government said it would invest \$2.1 billion between 2010 and 2016 for 52 hydroelectric projects, while Costa Rican President Laura Chinchilla has also said she wants to make her country the first to run 100 percent on renewable energy. What is the state of wind, solar, geothermal and other renewable energy projects in Central America? Given that the price of oil has surpassed \$100 per barrel, is it likely that there will be a new push for financing of clean energy projects? What other factors influence investment in Central America's renewable energy sector?

**A: Jeremy Martin, director of the energy program at the Institute of the Americas:**

"Smiling faces and congratulations justifiably abounded at the 'primera piedra' ceremony in Honduras for the Cerro de Hula project. For President Lobo, the executives of Mesoamerica, the project's developer, and other energy actors across the Isthmus, there is cause for optimism. But a dose of realism is also necessary when it comes to the prospects for wider deployment of renewable energy in Central America. Central America counts enormous renewable energy resources, but it is currently utilizing relatively small amounts—17 percent of hydroelectric and 15 percent of geothermal sources, while wind and solar are virtually untapped. Recent trends have actually seen fossil fuel-based generation increase to almost 50 percent of power production. Fossil fuel imports and their fiscal drag have long been the bane of Central American governments; oil price volatility presents significant macroeconomic and energy security risks. But the upside is that soaring prices have been motivational for the region's effort to diversify its energy matrix. The long-anticipated completion of the SIEPAC electric integration project later this year should serve to open the potential for improved economies of scale and a way to deal with renewable energy intermittency issues at a regional level. But perhaps most relevant is the concerted effort of SIEPAC to further establish clear and consistent regulatory policies and rules of the game for both renewable and traditional energy deployment in Central America. For Central America, renewable energy is a fairly dormant but significant potential resource. Beyond its contribution to the Honduran energy grid, perhaps Cerro de Hula will mark a transitional moment to a larger renewable profile for the region."

**A: Juan Roberto Paredes, renewable energy specialist at the Inter-American Development Bank:**

"Central America, when seen as a region, is a net hydrocarbon importer showing a heavy dependence on oil price increases. This fact exerts additional pressure on governments, since civil society and consumers in general demand from them effective measures to minimize price impacts. As the global recovery continues, it is expected that oil will reach higher prices than those seen after the recession (the Brent barrel has passed again the psychologically important barrier of \$100). But when seen as individual countries, the use of renewable energy sources is highly uneven. On the one side, countries like Costa Rica produce 95.1 percent of its electricity from those sources while it is just 25.5 percent in Nicaragua. While most governments are aware that a change from an oil dependent energy matrix to a greener one implies better energy security and price certainty in the long term, there is still reluctance to provide the right incentives to renewable energy investments. This will remain so at least for some decades ahead. A recent study from ECLAC on the economics of climate change in Central America showed that, in the absence of more aggressive policies towards a greener region, the contribution of renewable sources would fall from 63 percent in 2008 to 36 percent at the end of the century. Coal and natural gas will step in as the energy sources of choice. In short, this means going in the wrong direction if we accept that future generations will also have to witness peak gas and coal prices. The good news is that several efforts have been successfully carried out to create a regional electricity market and physical interconnection, with the support of the IDB through the SIEPAC project, that will also ease connection of distributed generation among member countries. Hopefully from just renewable sources, if governments want to do so."

**A: Jorge Asturias, subregional coordinator for Central America for the Latin American Energy Organization (OLADE):**

"Data from OLADE and the World Bank demonstrates that Central America has a large potential for renewable energy generation, mostly in hydroelectric generation. The region's hydroelectric potential is estimated to be about 24,000 megawatts (MW), of which only about 4,200 MW was installed in 2009 (Costa Rica, Guatemala and Honduras hold about 70 percent of the hydro potential in the region). The geothermal potential in Costa Rica, El Salvador, Guatemala and Nicaragua is less than 1,000 MW in each country and has been developed mainly in El Salvador (204 MW) and Costa Rica (166 MW). Geothermal plants are owned by companies with a majority private investment component, with the exception of Costa Rica, where ICE operates the largest plant of this type. Solar energy is used only for rural electrification projects or water heating, especially for those communities which are located too far from the electric grid (typically projects developed by governments and by NGOs). Only two countries have developed wind energy resources, Costa Rica (120 MW) and Nicaragua (40 MW), though in 2012 Honduras will be the third country with 100 MW. Current power expansion plans in the region include a total of 144 power projects to be developed between 2008 and 2022, with a total capacity of 13,719 MW, of which 56 percent would come from renewable sources. Oil prices have certainly contributed to the development of renewable energy projects in Central America and governments are now clear that it is time to change the energy matrix. In 2007, ministers of energy approved the Central American Sustainable Energy Strategy 2020. One of the goals they set is to increase the participation of renewables in the regional electricity market by 11 percent, mainly by building hydroelectric projects. The development of the renewable potential in Central America faces many difficulties; among other investment

costs, some projects have a substantial social and environmental impact and private investors face development risks that are difficult to manage. Governments must, among other things, invest in deeper feasibility studies for projects of a larger scale. It is important to conduct risk assessment for larger projects; this should focus on the impacts of such projects on people and their environment."

**A: José María Blanco, regional director of the Biomass Users Network-Central America:**

"The timing for increasing the flow of private capital into the renewable- energy power business in Central America is one of the most interesting in the last decades. More supportive policy environments in all countries have reversed the growing path of expanding power generation mainly with imported oil, a positive step to reduce the high vulnerability in the power industry. At the regional level, it will see in the short term the benefits of having on-line for the first time a major highway for power transmission of about 300 megawatts, the SIEPAC project, which will serve 6 of the 7 regional countries. This involves the challenge of not only optimizing its operation but also putting in place the appropriate regulations to enable the high potential for renewable energy projects even more. However, this trend should be complemented with public policies to develop energy efficiency markets. All consuming sectors need economic incentives to participate in the power market with rational choices, a task still pending in Central America. The principle that a saved kilowatt is still cheaper than an installed kilowatt should be an integral part to reduce the ever-increasing appetite for electricity in all the Central American countries."

*The Energy Advisor welcomes responses to this Q&A. Readers can write editor Gene Kuleta at [kuleta@thedialogue.org](mailto:kuleta@thedialogue.org) with comments.*