

## Ecuador solar incentives

A solar boom will provide investment opportunities of all shapes and sizes, writes Quito-based Joaquín Martínez, a Strategy Analyst at Avanti...

Ecuador is on the cusp of a renewable power revolution. Growing awareness of the need for renewable generation, coupled with pioneering projects has kickstarted growth for the clean energy industry. With some progress underway, Ecuador will deliver huge growth in investment opportunities over the next few years. Solar generation looks particularly attractive.

Ecuador is already a green leader. Between 82-85% of Ecuador's electricity generation comes from renewable sources. Yet, wind and solar produce less than 1% each, signalling enormous growth potential. Hydropower in Ecuador has been hit by the high-profile failure of Coca Codo Sinclair dam, which is severely underperforming, currently producing below a third of its installed capacity. Development of new hydroelectric projects is hit by increased regulatory oversight and political uncertainty, limiting the issuance of construction permits. Likewise, wind projects also suffer as authorities keep modifying the terms to qualify for environmental licences. If one is lucky enough to be approved, operation permits take years to be issued.

Unlike hydroelectric and wind, solar, especially at the small scale requires minimal involvement from government authorities. There are no complicated contract term negotiations with government ministries or complicated processes. For instance, the current wait-time to connect a private solar generation to the national grid is around three months. This expedited installation process is fuelling solar growth. The complicated approval permits which hydroelectric and wind projects suffer from, are not a problem for solar projects.

Ecuador enjoys a comparative advantage in relation to other countries: its location on the equator gives 12 hours of sunlight throughout the year. This prolongs the solar daily production time allowing a slightly higher production of electricity per unit of cost. In other words, Ecuador can produce solar electricity for more hours each day than other countries. Production intermittency and peak production capacity, which are common concerns in renewable projects, have slightly more predictability in Ecuador. In addition, given Ecuador's perpendicular solar radiation, it is not necessary to mount panels over tilting structures allowing more cost-effective projects.

One interesting project is the 1.5MW solar plant installed by Grupo KFC earlier this year in Intag, a community close to Quito. The project cost around \$1.1million and is intended to power 13 of the chain's restaurants. Opportunities for bigger projects are also available. One recent example is the signing of El Aroma development, a solar production facility in the northern coastal province of Manabí (a coastal province) which will receive an investment of \$150million and have an installed capacity of 200MW. Ecuador has fiscal incentives to promote the development of all sizes of solar projects. For instance, panel imports are exempt from import and sales tax, as well as income tax deductions.

Local firms will also need to remain at the frontier of technological know-how. As the installation of solar production continues, the industry will require building the accompanying maintenance services for cutting edge technological systems. External actors are called to bring the expertise, training local technicians and maintenance teams. Cooperation between involved parties, as well as innovative thinking will accelerate Ecuador's goal to adopt renewable production methods. In this quest towards a fully renewable Ecuadorian electricity grid, investors of all sizes will find plenty of opportunities in the years to come.

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Ecuador's Constitution of 2008 explicitly states that the government will promote the use of clean and alternative energy sources. This commitment sits alongside other pledges to promote energy efficiency, provide access to public services, preserve the environment and maintain food and water security, among others. In August 2015, the Ecuadorian government announced a US\$7 billion program for the country's energy transformation. Government officials stated that by the end of 2015, 93 per cent of the country's electricity will be sourced from hydropower. The country is also investing in other forms of renewable energy, such as wind power through the 16.5MW wind farm in Villonaco and in solar energy projects in the Galapagos Islands.

The National Plan for Good Living 2013-2022 (PNBV-SENPLADES 2013-2017) sets a target of reaching 60 per cent of national capacity from renewable energy sources by 2017. Objective 11.1 of this National Plan lays special emphasis on hydropower and bioenergy. The Electrification Master Plan 2013-2022, approved by Resolution CONELEC 041/13, puts forward plans for 25 hydropower projects totalling 4.2GW of new capacity by 2022, as well as an additional 217MW of solar, wind and other non-conventional renewables. Previously, the National Plan for Good Living 2009-2013 had set out a target of six per cent of installed capacity being sourced from renewable energy (other than large hydro) by 2013.

From 2000-2015, Ecuador had a feed-in tariff system to support renewable electricity deployment. The feed-in tariff evolved over time in terms of duration, rates and technologies included. In 2013, Regulation CONELEC 001/13 removed solar PV from the feed-in tariff and set overall technology-specific capacity limits for wind, biomass and biogas, CSP, ocean energy and geothermal installations eligible for the tariff. In 2014, Resolution CONELEC 014/14 maintained the feed-in tariff only for biomass and biogas, with differentiated rates for the first time, and for hydropower smaller than 30MW.

Small-scale generators smaller than 1MW do not require a permit for operation (Decree 1581 of 1999). However, in order to benefit from the feed-in tariffs, they needed to be registered with the CONELEC. The procedures for registration of small projects were established in 2008 by Regulation CONELEC 009/08. In 2013, Regulation CONELEC 002/13 superseded the 2008 regulation, and introduced two payments: a



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registration guarantee of US\$7,000 for projects smaller than 500kW and US\$15,000 for projects larger than 500kW; and an execution guarantee of one per cent of the total project cost.

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