



# ECUADOR: MUCH MORE THAN IMAGINARY LAND

**Ecuador** – Although Ecuador is crossed by the equator and its name alludes to this fact, it is far more than this navigational concept would suggest.

Renowned for its biodiversity – inspiring the young Charles Darwin to develop his theory of evolution – Ecuador's natural

resources are also a wonder to behold.

Derived from the different climatic levels present from the sea to the 6,262m elevation of El Chimborazo, Ecuador's landscape

defines the conditions for the development of responsible hydroelectric projects. Today these hydropower projects are complementing the non-conventional renewable energies which are in full implementation in Ecuador.

According to the historical account of the Electric Company of Quito, it was 1895 when electric light first arrived and just a few years later, in 1899, when the first hydroelectric plant began operations in the city of Loja with 212 kW machines. Not long after that, in 1923, ANDRITZ arrived in Ecuador with a 250kW power plant for the city of Riobamba.

In more recent years, ANDRITZ completed the Sigchos project of 18 MW (with three Pelton units), the 50 MW Due I project (with two Francis units) and Due II with a third unit of 15 MW. In addition, ANDRITZ installed electromechanical equipment in the emblematic 1,500 MW Coca Codo Sinclair plant (eight Pelton units). In 2022, this plant managed to generate 6,828 GWh, representing around 25% of the total electricity produced in the country. Furthermore, being located on the Pacific slope of Ecuador, it became a very important energy contributor during the last months of 2023 as it helped to overcome the low runoff on the Amazon slope as a result of the 'El Niño' phenomenon that is currently affecting the countries of the region.

Ecuador currently has 5,191MW of hydroelectric capacity in operation from 71 plants and has plans to increase the supply of electricity, given that it requires about 400 MW of new generation each year to safely meet the growth in demand. Ecuador is promoting the participation of private companies and is also seeking to incorporate new renewable energy sources. ANDRITZ is participating in several of these initiatives, additionally offering services and technical support, proposing – in a proactive manner

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**74.6%** Share of electricity generation from hydropower in total production

# NAN LINE

## ECUADOR

Total population: 18 million

GDP per capita: 6,389 USD

Total installed hydro capacity: 5,191 MW

Hydropower capacity added: 84 MW

Hydro capacity under construction: 303 MW

Share of generation from hydropower: 74.6%

Hydro generation per year: 24,635 GWh

Technically feasible hydro generation potential: 189,300 GWh

All figures concern 2022;

Sources: TheWorldBank, IMF, IHA, Hydropower & Dams World Atlas 2023

– initiatives for the modernization of some power plants that will require important interventions in the coming years.

According to Generation Expansion, Chapter 4 of the Electricity Master Plan, Ecuador has a technically feasible hydro-electric potential of 31,000 MW distributed across 11 basins. Ecuador's CELEC EP Electrical Corporation has produced definitive studies and structuring for large-scale hydropower projects such as Abitagua (165 MW), Cardenillo (600 MW), Santiago Zamora (2,400 MW). In addition, CELEC have started contracting conceptual engineering studies for the implementation of pumped storage solutions with reference to some of the reservoirs that already exist in the country.

ANDRITZ trusts in the establishment of adequate mechanisms by the Ecuadorian authorities to allow the future development and financing of new power generation projects. Those projects that are responsible, sustainable, and in harmony with development objectives of the millennium and the conservation of the environment will ensure that ANDRITZ will continue to contribute its experience in their development and execution.



Inspection of main inlet valve, Coca Codo Sinclair hydropower plant



Unit hall, Sigchos hydropower plant

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