



RENEWABLE ENERGY INVESTMENTS IN COLOMBIA

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Subject : Renewable energy investments in Colombia

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1 Colombia's Competitive Advantages

The location in the center of the Americas is one of the main advantages for companies when investing in Colombia. The country has strategic access to the entire continent from the Pacific and the Atlantic with a great port infrastructure¹. There are logistical advantages both in connection times and connectivity, offering a large number of routes from the El Dorado Airport² in Bogota, ranked as one of the best in South America.

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¹ Colombian ports connect with more than 3,540 routes in regular, direct, and connecting services, offered by 27 shipping lines and 8 consolidators, with destination to more than 493 ports in the world. (Procolombia office information)

² There are more than 2,400 direct and connecting routes through 30 passenger airlines with cargo and freighter slots, with access to more than 514 cities around the world. Bogota's El Dorado Airport is the third largest airport for passenger movements and the first for cargo movements in Latin America. (Procolombia office information)





Similarly, with a few hours difference from the main capitals of the continent, Colombia offers a time zone that allows companies to efficiently serve the entire region. With the possibility of setting up in one of the 6 business cities with more than 1 million inhabitants: Bogota, Medellin, Cali, Barranquilla, Cartagena and Bucaramanga, which have developed a robust entrepreneurial ecosystem that facilitates the creation of new businesses, ensuring not only the supply chain, but also the possibility of finding allies, customers and a network for business development.

The country is the 4th largest economy in the region and is projected in the medium term as one of the countries with the most stable positive growth. It also has a population of more than 50 million inhabitants, 57% of whom are between 15 and 54 years old, which boosts the domestic market and the labor market. This market has a qualified workforce, with a diversity of training at competitive costs, as well as controlled inflation compared to other countries in the region and a network of services that supports business. The Global Competitiveness Report ranks Colombia 2nd in business dynamism and financial system stability in Latin America.

2 Investor Protection

Investment in Colombia is based on the following principles: i) Equality: it receives the same treatment as a national investment; ii) Universality: it is allowed in all economic sectors; iii) Stability: conditions may not be modified in such a way as to affect the investor adversely; iv) Automaticity: does not require prior authorization, except in mining, hydrocarbons and financial services.

According to the Foreign Direct Investment Regulatory Restrictiveness Index (FDI RRI) calculated by the OECD, Colombia is one of the countries with the fewest restrictions 0.03 (2020) becoming the third largest FDI destination in Latin America.

With the European Union there is an agreement for the reciprocal promotion and protection of investments 2012/735/EU ratified by Law 1669 of 2013 Whereby the "Trade Agreement between Colombia and Peru, on the one hand, and the European Union and its Member States, on the other hand", signed in Brussels, Belgium, on June 26, 2012. As well as bilateral with Spain, UK, Switzerland, France, Liechtenstein, Norway, and Iceland. Also have agreements to eliminate double taxation (Income tax) with the following countries: Spain, Portugal, UK, North Ireland, Czech Republic, Italy, France, Switzerland India, South Korea, Canada, Mexico, Chile; and under negotiation with Luxembourg, Netherlands, United Arab Emirates, Japan, and Uruguay.





Colombia has a network of trade agreements with the region that allow it to access a market that represents 31.8% of the world's GDP and a population of more than 1 billion inhabitants covering 97% of the countries in the region.

3 Tax Incentives

Depending on the investment's destination or location in the country, there are the following special taxation regimes:

- Free Trade Zones, with a 20% income tax rate for export activities, no VAT and tariffs on goods brought in.
- > Special Economic and Social Zones, with income tax rates of 0% for the first 5 years and 50% of the general rate for the following 5 years.
- ➤ Investments in research, technological development, and innovation, the 25% of the invested value will be deductible in the taxable period in which they are made, according to the criteria and conditions of the National Council of Tax Benefits in Science, Technology, and Innovation.
- ➤ Investment in renewable and energy efficiency projects has i) a 50% of the investment value as a discount on income tax applicable over a 15-year period; ii) VAT and import tariffs exclusion; and ii) accelerated asset depreciation.

4 Colombian NDC and Green Taxonomy

The Colombian Nationally Determined Contribution - NDC for 2030 and carbon neutrality by 2050 are international commitments that were elevated to the law of the republic (Law 2169 of December 22, 2021), making them mandatory. National mitigation goals are established by which it is sought: (i) NDC: reduce greenhouse gases (GHG) emissions by fifty-one per cent (51%) or 169,4 MTonCO2e for 2030 according to the reference scenario; (ii) achieve carbon neutrality by 2050; (iii) establish carbon budgets for the period 2020-2030 no later than 2023; iv) declares of public utility and social interest the development of projects and the execution of works for the production and storage of green H2. To this end, several measures are established in environmental matters (with particular emphasis on reducing deforestation), mobility, environmental education, and sustainable agriculture.

In Addition, the Financial Superintendency of Colombia (SFC) External Circular 05 del 2022, adopts the Green Taxonomy with which it seeks to homogenize and standardize the activities and assets that





contribute to the fulfilment of the country's environmental objectives, allowing a common understanding and interoperability between climate investment and project implementers in the compliance of standards and information reporting. It provides all the information required for clear identification of the activity or asset, which increases transparency and avoids greenwashing. This will help boost resource mobilization in the green capital market.

Life cycle analysis must be carried out to the project resulting in emissions of less than 100gCO2e/kWh. These are the initial activities included in the green taxonomy:

- Solar, Wind and Tidal energy were exempted from life cycle analysis as they have emissions of less than 100gCO2e/kWh.
- Electricity generation: Concentrated Photovoltaic CPV, Offshore Wind, Hydroelectric with an index of 5W/m3, Geothermal, Biomass, Biofuels and Biogas
- Biomass, Biofuels and Biogas manufacture.
- Energy Storage, Thermal Energy Storage and Storage of low-carbon Hydrogen.
- Transmission and Distribution of electricity from renewable sources that are on a complete decarbonization trajectory.
- Cogeneration of heat/cold and energy from Concentrated Photovoltaic, Geothermal, Biomass, Biofuels and Biogas.
- Heat/cooling production using waste heat.
- District Heating: piping and the infrastructure associated with heating and cooling distribution.

5 Renewable Energy

Colombia is very special because it has relevant renewable resources: wind (the Guajira region has double the world average in wind speed onshore and even more offshore), solar (solar radiation in Colombia is 60% over the world's average). The country is ranked 6th in the world with the highest renewable hydro resources. Together with this in the past 7 years, it has developed a strong regulatory framework to foster the development of self-generation and distributed generation thus expanding the grid capacity, in particular, in places where connection is weak or non-existent.

As a result, it went from having an installed capacity of 19MW in non-conventional to 21 solar farms, 2 wind farms, 10 large-scale self-generation projects and more than 3.000 small-scale solar photovoltaic self-generation projects, which multiplies by 100 times the installed capacity those that by 2023, which is the expected date of entry into operation, will represent more than 15% of the electricity generation matrix.





Also, the Colombia electric regulation imposes an 8% to 10% mandatory energy purchase of non-hydro renewables for retailers and distributors, starting in 2022.

Tax incentives to those who invest in the research, production and development of these projects, such as, for example, the possibility of deducting 50% of the investment made from income for a 15-year period (article 8), the exclusion of VAT in the acquisition of goods and services used in said projects (article 9) and exemption from the payment of customs duties on imports of machinery and equipment (article 10) concentrating the procedures for obtaining tax reduction certificates in a single entity, UPME.

According to the 2022 Climatescope's ranking posted by Bloomberg NEF, Colombia is positioned as the fourth most attractive emerging market for renewable energy projects investment. This is the first time is ranked in the top five and it was due to a stable policy of promoting the diversification of the energy matrix with greater participation of renewable energies, the celebration of two successful reverse auctions for renewables contracts and the application of tax incentives to investments. Renewables investment in Colombia reached a new high at \$952 million in 2021. Wind was 71% of this at \$678 million, followed by solar at \$274 million.

Recently, the Colombian government has shown special interest in the development of green hydrogen, geothermal and offshore wind projects, as shown below:

5.1 Green H2

On September 30, 2021, the Ministry of Mines and Energy launched the "Hydrogen Roadmap for Colombia". This Roadmap establishes that in areas with an optimal renewable resource such as La Guajira, green H2 could be produced at a cost of US \$1,7Kg, also aims to implement 1GW of electrolysis capacity by 2030 and foster an investment of US \$2.5 billion in the development of green and blue hydrogen production projects, as well as its distribution, storage, refueling and export network.

From that date ten (10) green hydrogen pilot projects have been implemented, also Colombian government has signed the following instruments: i) a joint declaration with France in December 2021 for a low carbon hydrogen for the creation of a "Green club" to work together towards a clean energy transition; ii) an agreement with Germany in June 2023 for the cooperation of Fraunhofer society to analyze the production of green hydrogen and its derivatives for export. On March 2024 Colombia and Germany created the Governing Board of the High-Level Group on Green Hydrogen.





In August 2022 Decree 1476 was established to Promote Innovation, Research, Production, Storage, Distribution and Use of Hydrogen. It allows green hydrogen projects to use electricity from the grid if it is backed by a bilateral supply contract and renewable energy certificates issued by a third party under recognized international standards. Blue hydrogen projects must have a CCUS.

5.2 Geothermal

According to the Colombian Geological Service - SGC, Colombia has a geothermal energy generation potential of 1.17 GW with the departments of Caldas, Risaralda, Tolima, and Nariño having the greatest potential due to the presence of volcanoes.

To develop this technology in 2022 several regulatory instruments were established: i) Decree 1318 of 2022 for the development of activities oriented to the generation of electricity through geothermal energy. Warns that geothermal energy projects may not be developed in areas of the National System of Protected Areas (SINAP) or contrary to the provisions of Law 1930 of 2018 (Bleak Upland). In addition, restrictions for areas of the Regional System of Protected Areas -SIRAP (Spanish acronym), strategic ecosystems and environmentally sensitive areas must be considered; ii) Environment and Sustainable Development Ministry, Resolution 561 of 2022 established the terms of reference TdR-019 for the Environmental Impact Study for Geothermal Energy required to start the process to obtain the environmental license for geothermal energy exploration projects whose installed capacity is equal to or greater than 10MW; iii) Energy and Mining Ministry Resolution 40302 of 2022 for the Technical requirements that will govern the Geothermal Registry and the Exploration and Exploitation Permits of the Geothermal Resource to generate electricity.

5.3 Offshore wind

A report published in January 2022 by the Ministry of Mines and Energy regarding the offshore wind roadmap for Colombia. This report analyzed Colombia's coastline potential for offshore wind projects estimated at approximately 110 GW including the use of fixed and floating funds. This has been supplemented by a draft resolution recently published jointly by the MME and DIMAR, which is the Colombian maritime authority, regarding rules, requirements, and conditions to conduct competitive processes for granting temporary permits to use the maritime area for developing offshore wind projects.





On October 2023, was launched the first round for the allocation of Temporary Occupancy Permits over maritime areas with the publication of the bid specifications. The deadline to submit the qualification documents to participate was extended until June 21, 2024. Once the companies are selected to participate, the application for the nomination of the area of interest is submitted with a deadline of September 26, 2024. The allocation of the areas is scheduled for May 2025 and the delivery of the temporary occupation permit (8 years) in October 2025. The successful bidder must conduct the pertinent studies on the area and process the respective environmental license to be granted the concession for the construction, operation, and maintenance of the wind farm for 30 years, extendable for 15 more years.

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