

## **Brazil: Way to Become One of the Sustainable Leaders**

For Brazilians, renewable energy is nothing new. Most of the electricity utilized in the nation is produced by water. Additionally, sugarcane alcohol fuels more than half of the nation's automobile fleet. However, wind and solar energy are a recent addition to Brazil's renewable energy environment.

These energy sources had little significance for the nation not less than ten years ago. But since the start of this decade, solar energy has begun to follow the same trajectory as wind power. "This is an issue that is occurring globally." The private Brazilian Centre for Infra-Adriano Structure's Pires, an energy expert, notes that although Brazil is a latecomer, it is particularly rich in such resources. The head of the Brazilian Wind Energy Association, Élbis Gannoum, concurs. Brazil ranked just 15th in the world in terms of installed capacity in 2012. However, we are currently at position 9. Brazil also had the fifth-largest investment in the sector last year. Brazilian wind energy facilities now have an installed capacity of around 12 gigawatts (GW), and another 6 GW of plants are being developed. Together, they will account for around 10% of the nation's current 170 GW of installed energy capacity. Brazilian strong and steady winds alone have a capacity of up to 500 GW if used at their full capability. According to Élbis, "the market and installed capacity will continue to increase for at least the next 15 to 20 years, and in 2022 wind power should be the second most significant source of energy in Brazil, behind hydropower."

Brazil is one of the countries that creates the most jobs in the renewable energy sector, and there are more than 1 million open positions. Irena, the International Renewable Energy Agency, claims that the nation is only surpassed by China in terms of new employment generated. Jobs in the biofuels, hydropower, wind, solar, biomass, and biogas industries are among them. But that is not entirely unexpected. The nation has had the most jobs related to renewable energy in Latin America since 2018.

Brazil, described by the Brazilian musician Jorge Ben Jor in his lyrics as a "tropical land blessed by God and lovely by nature," is rich in natural resources and has a significant potential for energy production. This may undoubtedly be a key route for the nation's economic revival by creating jobs and money. The Brazilian government claims that 83% of Brazil's electricity comes from renewable sources. Hydropower (63,8%), wind (9,3%), biomass and biogas (8,9%), and solar (1,4%) are the most often utilized sources of energy.

Brazil has historically concentrated its efforts on building a sizable, dependable, and robust infrastructure system for energy generation from hydroelectric power plants due to the abundance of hydro resources in the country. Around 200 are now operational, and as the nation's energy grid is thought to have degraded and requires replacement, this number is anticipated to rise. Despite being the least expensive source of electricity, hydropower requires a significant amount of fixed capital and frequently has social and environmental implications. Additionally, because hydroelectric plans depend on rainfall patterns constantly, there is an added risk to their operation, which tends to drive up the cost of capital expenditures in such facilities.

Brazil has a significant amount of potential to produce electricity using solar and wind energy. However, due to Brazil's continued lack of generating and distribution infrastructure, this promise has not yet been fully fulfilled. Infrastructure for alternative energy has lately attracted a few investments, and enthusiasm among investors is growing daily. The number of green bond emissions used to finance these projects provides evidence of this; of the 23 green bond emissions now outstanding, 10 are used to finance wind and solar power facilities, making up 23% of the total debt issued through this category of asset. The results demonstrate that solar and wind energy sources are expanding their presence in the Brazilian energy landscape given their lower cost and quicker

construction times.

There are a few interesting facts about Brazilian renewable energy:

- The energy produced by Brazilian winds can reach 500 gigawatts.
- Brazil is the second-largest hydroelectric power generator in the world.
- Brazil uses ethanol in all its gasoline.
- The world's first sustainable biofuels economy is found in Brazil.
- Investors are taking notice of Brazil's technical advancements in renewable energy.

Brazil's use of renewable energy continues to serve as a global model. The South American nation has demonstrated that investing in sustainable, natural electricity sources is both economically feasible and environmentally good simply by sheer numbers. The majority of the nation is run on ethanol, hydropower, solar, and wind energy. It is anticipated that this tendency would persist as the global demand for sustainability increases.

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