

# Brazil's green pivot: ambition meets reality

With surging renewables growth and strategic incentives, Brazil offers a compelling, if complex, landscape for climate finance and green infrastructure. This is the latest in a series of country analyses, where **TEI Times** looks at Brazil's generation and consumption profiles, policy, emissions targets and potential for a future increase in foreign participation in domestic decarbonisation projects.

**B**razil's energy transition is gaining global attention as it prepares to host the global climate negotiations in 2025 (COP30), balancing its role as both a major emitter and a clean energy leader. The government has set bold climate targets and launched investment-friendly policies, yet foreign investor confidence remains tempered by regulatory volatility and economic risks.

## Decarbonisation commitments

Brazil has a distinctive position in a decarbonising world for at least three reasons. Brazil plays a crucial role in absorbing and storing CO<sub>2</sub>, as the largest Amazonian country. It is a large greenhouse gas emitter, with a 4.3 per cent global share according to the Climate Change Tracker, with as much as 75 per cent of the total emanating from agricultural and land-use activities – in most large emitting countries it comes from energy. Last, but not least, the share of clean energy as a percentage of electricity output is amongst the highest in the world.

The administration of President Lula da Silva, in power since early 2023, released updated emissions targets in late 2024. The nation is targeting to cut greenhouse gas emissions by between 59 and 67 per cent below the 2005 levels by 2035 and reach carbon neutrality by 2050. The nation's efforts, however, score poorly. It ranks 28th in the Climate Change Performance Index, one of the medium-performing countries. The policies and actions in recent years are viewed as 'insufficient' by the Climate Action Tracker.

President Lula wants to improve its profile but has been facing many challenges, many historical in nature. Brazil has been reliant on fossil fuels and continues to support oil and gas investments. The government has to rebuild environmental policy, which was negatively impacted by policy rollbacks and budget reductions under the previous Jair Bolsonaro government. It needs to better execute the slowdown of deforestation which had surged under Bolsonaro.

## Energy mix

Brazil accounts for about 1.8 per cent of global energy supply, based on statistics from Energy Institute. Fossil fuels accounted for more than two-thirds of energy supply and for about 48 per cent of primary energy consumption. Oil was the principal fossil

fuel, accounting for about 48 per cent of energy supply and 36 per cent of consumption. The reliance is because the Latin American giant is one of the top 10 oil producers in the world.

By comparison, fossil fuels occupy a tiny share of power generation in Brazil. About 90 per cent of electricity was sourced from clean energy sources. Hydroelectric power was responsible for 55.4 per cent of the total output 746 TWh in the country in 2024. Renewables, chiefly solar and wind, were responsible for 31.9 per cent, nuclear for 2.1 per cent and other clean sources for 0.4 per cent.

Wind power installed capacity witnessed a compound annual growth rate of 17.4 per cent in the 10 years to 2024, reaching 33 GW, according to IRENA. Solar capacity rose at an annual rate of 87 per cent, to 53.1 GW. Electricity output from wind and solar have been the fastest growing in the country, according to calculations based on data from Ember Research. Wind generation's annual growth rate was 20 per cent and solar was 87 per cent. Comparatively, the annual growth rate for the same period for nuclear was 0.8 per cent, and for hydroelectric power it was 1.6 per cent. The annual growth rate for coal and gas fired generation was negative 5.1 per cent.

## Investment environment

With surging renewables growth and strategic incentives, Brazil offers a compelling, if complex, landscape for climate finance and green infrastructure. It offers a great number of climate business and investment opportunities. Its population size, low per capita electricity consumption, and the scope for industry electrification are some of the growth factors. Yet, the country's renewables investment profile for foreign investors currently should be viewed as medium to high risk.

The political environment has been volatile while policy and regulatory shifts have led to uncertainty and created a lack of long term visibility for investors. Some high profile past corruption scandals related to state-owned energy companies further raises investors' doubt. Further raising investment risk, the economy is expected to grow slowly, at 1.7 to 2.9 per cent, in the coming quarters, inflation may hover at about 5 per cent, and interest rates could stay at around 15 per cent, based on forecasts



**Jacobelli: Brazil has a distinctive position in a decarbonising world**

collated by Trading Economics. Importantly, long term sovereign rating also highlights risk. In early 2016 Moody's rating was adjusted from Baa3 (stable) lower medium grade to Ba2 (Negative) Non-investment grade Speculative, though it improved to Ba1 positive since late 2024.

The Brazilian government is not standing still. It is trying hard to attract investment in its energy transition. Media and research platform Green Central Banking examined Brazil's green finance efforts in late 2024. The organisation highlighted that in 2024 when it held the G20 presidency, the country had launched a G20 taskforce to broaden climate discussions across central banks, finance ministries and others. The central bank earned the highest green finance score by Green Central Banking of any non-European country. It underlines that Brazil's climate risk disclosures aligned to global standards and a developing currency hedge programme could reduce costs for foreign investors. It mentioned that the \$2 billion sovereign sustainable bond was a good start, albeit some experts were concerned the labelling was too broad.

## Policies and incentives

Foreign investment policies have managed to attract foreign investors into the country despite the challenges and risks. Santander bank cites statistics from UNCTAD showing that Brazil was the fifth largest recipient of foreign direct investment in 2024 with inflows amounting to about \$66 billion. This translated into a total stock of foreign direct investments amounting to about \$997.5 billion.

Brazil has actively announced policies and incentives in favour of energy transition projects. There are tax relief measures for investors in approved infrastructure projects, including clean energy, typically for equipment purchases such as wind power equipment and components. In practice, companies do not have to pay federal taxes on such equipment which directly reduce project costs.

The country has also been supporting renewable energy through subsidies. For example, it spent about \$3.2 billion in subsidies for renewables in 2023 – an increase of 27 per cent over 2022, according to Argus Media. In August 2024, the country launched the National Energy Transition Policy (PNTE) focused on transitioning to a low-carbon economy. The initiative is aimed at mobilising about \$380 billion in energy transition related investments over the next decade. The projected amount is expected to come from both domestic investors as well as foreign. It is designed to be cross-sectoral and align with climate, fiscal and industrial policy.

## Investment backdrop

There are several examples of foreign investments in Brazil's energy transition, including from China, Europe and the US. Italy's Enel invested in the 716 MW Lagoa dos Ventos wind farm in 2021. France's Volterra operates a 320 MW solar farm in the state of Rio Grande do Norte. Chinese engineering giant Power Construction Corp. of China (POWERCHINA) built a 425 MW solar complex in the state of Ceara. Amazon, Microsoft, and US tech giants are building data centres which will be powered by clean energy.

While these companies may not always directly invest in generation facilities, they can sign bankable corporate clean energy long-term power purchase agreements. In fact, some experts argue that Brazil's abundant clean energy supply, could lead to a boom in data centre construction.

Brazil's ambitious energy transition goals coupled with government incentives makes the country an interesting target for foreign investments. Should the country be able to build a relatively stable political and economic outlook, foreign investors interest will not lack.

*Prepared for The Energy Industry Times by Joseph Jacobelli, Managing Partner, Asia Clean Tech Energy Investments Ltd.*

**Electricity generation in Brazil (2000-2024)**

