

# South America braces for offshore wind

Brazil and Colombia are lining up projects which would provide hundreds of gigawatts

Feedback



On the line: Colombian president Gustavo Petro (centre) signing the Treaty of Escazú in November

Tom Azzopardi December 21, 2022



## Summary

- Brazil and Colombia are setting in motion the first offshore wind projects in South America.
- Brazil also aims to develop local supply chains to cater to the needs of the emerging wind energy industry.
- However, poor grid infrastructure remains a challenge in both countries.

All along South America's blustery coastlines, foreign energy firms are staking claims to develop the huge offshore wind farms they hope will play a key part in the global energy transition.

As the world tries to transition away from fossil fuels, the sea has become the new frontier. Driven by the twin threats of climate change and soaring energy prices, governments are increasingly looking to offshore wind as the answer, offering clean energy on a scale unthinkable on land.

So far, China and the [North Sea countries](#) in particular have led the way, although their lead will narrow over the decade as the US and other Asian countries join the race — the former of which will complete its first large-scale offshore wind facility next year.

Lagging much further behind is South America, but that is now set to change.

Brazil's Atlantic coast may look very different from the North Sea, but companies are betting that the wind potential is just as great. The

government says this potential could be as much as 700GW.

Along its 7400-kilometre coastline, companies are jostling for space. Attracted by the Atlantic's constant breeze and broad continental shelf, companies have applied for environmental licences to install more than 170GW of offshore capacity, matching Brazil's existing generation capacity, according to environmental regulator IBAMA.

The largest park proposed so far, Veritas's Alpha Park, would consist of 400 15MW turbines for a total of 6GW of installed capacity, more than most nuclear power plants, although the capacity factor — the amount of energy produced versus the total capacity — for offshore wind can vary between 30% and 60% of total capacity, versus 100% of nuclear plants.

Oil majors BP, Equinor and Royal Dutch Shell, as well as renewables specialists Qair Group and Iberdrola, are among the contenders for the Brazilian offshore wind auctions. Some smaller companies have joined the wind rush too.

### **Great potential**

The potential in Colombia is almost as great. A World Bank study published earlier this year found that the Atlantic littoral zone could theoretically support more than 100GW of offshore capacity, of which around half is environmentally and technically feasible. Off the north-eastern La Guajira peninsula, capacity factors exceed 70%, compared to just 30% or 40% for most onshore facilities.

"Colombia's Caribbean coast is probably the second- or third-windiest place on Earth," explains Armando Politi, country manager for Spain's BlueFloat Energy in Colombia.

The company is one of the most committed to Colombia's offshore wind, with three projects worth more than 2GW of installed capacity already at the pre-feasibility stage.

Brazil and Colombia have no plans to offer subsidies for offshore wind energy, instead relying on falling technology costs to make it competitive with other sources. This should happen by the end of the decade, predicts Mr Politi.

Despite the length of Brazil's coastline, several projects overlap in the most sought-after spots, leading the Mines and Energy Ministry to plan a series of auctions to award seabed concessions. The first is expected to take place early next year.

Given the time required for licensing, engineering work and construction, Brazil's first offshore wind turbines could begin turning by 2030, predicts Elbia Gannoum, CEO of the Brazilian wind energy association ABEEólica.

The drive to offshore wind comes as left-leaning governments take office in both countries. Both Gustavo Petro in Colombia and Luiz Inácio Lula da Silva in Brazil are committed environmentalists who may actually accelerate the offshore programs begun under their more business-friendly predecessors.

"The current government has a strong focus on environmental issues," notes Mr Politi. Mr Petro's signing of the Treaty of Escazú, a regional deal strengthening environmental rights, has likely ruled out any new hydroelectric projects being built in Colombia, strengthening the hands of alternatives such as offshore wind, he adds.

## Tenders at sea

The new government is committed to holding its first seabed tender next year.

“Lula loves renewables,” says Ms Gannoum, who advised the former leftist leader on energy policy during his first government. “Lula began the wind boom in 2003/04 and they believe it is an important for investment,” she says.

Given the size of the investments involved, one of the Brazilian government’s main concerns is to ensure that concessions end up in the hands of companies with the financial capabilities and technical credentials to carry them out.

“You need the big players that can take the risks,” says Marcelo Frazão, head of energy and natural resources at Rio de Janeiro-based law firm Campos Mello Advogados. “There will be a very scrutinised approach by the Ministry of Mines and Energy in terms of making sure that the requirements are there to avoid speculative behaviour.”

## Demand vs infrastructure

While the wind is plentiful, a bigger challenge is the demand. Colombia’s power grid is full of bottlenecks which could prevent huge blocks of wind power being transported to where it is needed.

Plans to build a new transmission line to carry power from a dozen onshore wind farms under construction in La Guajira to the rest of the country has run into opposition from indigenous communities.

As a result, many investors are looking to combine offshore wind with energy-intensive industries.

In Brazil, many companies are eyeing the potential to harness offshore wind energy to produce green hydrogen which could power other industries or be shipped across the Atlantic to the US or Europe. Among others, French Qair and Australian Fortescue Future Industries have signed memoranda of understanding (MoU) with the ports of Pecem and Suape (in the states of Ceará and Pernambuco, respectively) to develop green hydrogen projects.

Colombia’s state oil firm **Ecopetrol** has announced partnerships with France’s EDF and Japan’s Mitsui, among others, to incorporate green hydrogen into operations, with investments set to reach \$300m by 2024. Tech giants are also eyeing Colombia’s potential to become a Latin American data hub powered by renewables, notes Mr Politi.

Infrastructure should be less of a problem in Brazil. It has also already begun expanding ports which could also become hubs for manufacturing the components required for offshore wind development, creating new investment opportunities.

Goldwind, Siemens Gamesa and GE all have manufacturing facilities in the country, as well as local players WEG and Wobben Windpower.

“Because of the size of the market, there’s little doubt that a large portion of the supply chain will be located in Brazil,” Mr Frazão concludes.

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