

# The beat goes on in Colombia

New President unlikely to slow dash to develop offshore wind in nascent South American market with a first rights auction to be completed next year, writes Daniel Dawson

Developers and financiers are optimistic that Colombia's offshore wind drive will continue apace despite a change in government.

The industry was buoyed earlier this month when the outgoing administration published a resolution outlining a competitive process for exploration and development of projects just hours before handing over power to Gustavo Petro, the South American country's first left-wing president.

The resolution allows developers to conduct pre-feasibility studies at prospective sites and later apply for long-term concessions to develop wind farms generating at least 200MW.

The Mines and Energy Ministry has meanwhile confirmed the first offshore wind auction will be completed in the second half of 2023 with the exercise to be overseen by maritime authority DIMAR.

"This is an important, first milestone in establishing offshore wind in Colombia," said Mark Leybourne, offshore wind programme lead at the World Bank, which worked with the government on the document.

According to a World Bank report published in February, Colombia could have up to 1GW of offshore wind capacity installed by 2030 and 9GW by 2050 with the right government levers in place.

"We believe there is going to be continuity in all the steps done by the former government to set up the market," said Ramon Fiestas, president of the Global Wind Energy Council in Latin America, who consulted on the World Bank report. "We

met with the (new president's) team that has been setting up the political programme," he added.

"They are clearly focused on developing renewable energies."

The World Bank estimates Colombia's entire Caribbean coastline boasts an offshore wind resource potential of up to 50GW and the first concessions will be granted off Atlantico and Bolivar departments in front of Barranquilla, the country's largest seaside city.

Developer BlueFloat Energy has already secured exclusivity on a site dubbed Veintos Alisios 32km north of the city and is conducting pre-feasibility studies.

"Colombia is becoming the flagship of offshore wind development in Latin America," said BlueFloat head of grid connection and electrical works Fernando Sada. The developer has joined forces with local partner Enerxia Renovables on the wind farm, which is expected to feature 28 bottom-fixed turbines.

While the company specialises in floating projects, bottom-fixed installations require less capital expenditure. This means the first Colombian offshore wind

farms will be built closer to the shore where the seabed is less than 60 metres deep.

"When you start in a market, especially in an early market such as Colombia, it is better to initiate with a bottom-fixed solution rather than with a floating solution," Sada added.

BlueFloat is eventually planning to install floating turbines farther offshore where wind resources are more plentiful.

Sada added there is already significant demand for offshore wind in Colombia and BlueFloat is currently negotiating power purchase agreements for the output from its projects.

"We are now in the process of developing an economy of scale," he said. "The more we develop, the cheaper it will be."

Before any hardware goes up, however, developers will have to build offshore transformers and cables to bring the high-voltage power to shore before it is converted for onshore use.

"Different developers have their own point of connection on land and it will be (their) responsibility to build all that infrastructure," Sada added.

This could require offshore wind projects to be placed



CLEAR FOCUS: President Gustavo Petro (Photo: USAID)

near major power centres, increasing efficiency and reducing the costs of tying in to the grid.

State utility company UPME already has plans to expand the network in the north of the country to accommodate new power generation from renewables, according to Craig Brown, a principal consultant with Offshore Wind Consultants.

The previous government planned to add 19GW of non-hydro renewable energy to the grid by 2050 with offshore wind expected to make a significant contribute.

Given the immaturity of the market, some experts believe the new government may have to offer subsidies or other incentives to encourage private companies to make the necessary investments. ■

## Shifting Caribbean sands a factor for foundations

Seismic activity and seabed sediments could prove a headache for developers hoping to build in Colombia's waters.

"There is a complex geology off the coast mostly due to the interactions between two tectonic plates," said OWC senior geotechnical engineer Ana Isabel Pirrone. "One is subducting below the other, which generates a vast

number of geological faults." Developers will have to "be very careful with foundations that require lateral stability" due to risks of liquefaction, she warned.

Another consideration will be the significant amount of sediment deposited along Colombia's Caribbean coasts by its many rivers. Contractors will need to be mindful of this during construction or anchoring

of cables, Pirrone added. However, due to the geographical and climatic features of the Caribbean, Colombia's offshore wind farms will be well out of the way of the region's increasingly frequent and ferocious hurricanes.

In addition, modern turbines are able to ride through tropical storms without suffering significant damage. ■

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