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# Brazil to push Angra 3 with private investment

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Works on the 1.4GW <u>Angra 3</u> nuclear power plant in Rio de Janeiro state have been going on for 35 years and are just 62% complete, attesting to the challenges Brazil faces in completing the unit.

Construction started in 1984 and was interrupted for the first time in 1986, as resources became unavailable during the economic crisis. Works then resumed in 2010 but halted again in 2015 when corruption allegations under the <u>Lava Jato probe</u> emerged. Former president Michel Temer and former energy minister Wellington Moreira Franco were arrested for allegedly having received bribes linked to Angra 3 contracts.

#### UNIT

Angra 3 will be the country's third nuclear power unit. <u>Angra 1 and 2</u> started operations in 1985 and 2001, respectively, and together account for 1.2% of installed generation capacity, according to power sector regulator Aneel.

Choosing <u>Bento Albuquerque</u> - who promotes nuclear power - as energy minister is a sign that authorities take Angra 3 serious. Since Albuquerque took office in January, the energy ministry has pushed for finishing Angra 3 as necessary to satisfy with rising electricity demand while hydroelectric generation potential wanes. The ministry also argued the plant would stimulate the nuclear chain, from fuel production to energy generation.

Specialists, however, are divided. Francelli Jodas, a partner at consultancy firm KPMG, believes the country could turn to other sources to guarantee energy supply, such as wind and solar power and thermopower generation fired by <u>natural gas from pre-salt areas</u>.

"Angra 3 is important mainly due to the high investments already made, but I do not believe it is a necessity. If we were to choose on the construction of a nuclear power plant starting today, the country could choose not to do it," she told BNamericas.

In contrast, supporters believe developing such plants helps not only maintain stability of energy supply in a scenario of higher use of intermittent sources, such as wind and solar, but also technological advancement.

"Civil use of nuclear technology is intense in many industries, such as health and the environment," Olga Simbalista, former president of Brazil's nuclear power association Aben told BNamericas.

According to studies, complete construction of Angra 3 would demand around 15.5bn reais (US\$4.1bn) plus the 9.9bn reais already invested. Earlier this year state-run power firm <u>Eletrobras</u>, which controls the country's nuclear firm <u>Eletronuclear</u>, started consulting with private partners that could have an interest in Angra 3. So far, resources for the nuclear power units came from development bank <u>BNDES</u>, but this time public coffers are empty so private partners need to step in.

Until the end of 2018 authorities said they were confident to finish the plant by 2023, but specialists believe this deadline is no longer possible and point to 2026 as more realistic. In July, Brazil classified the plant as a priority under its partnerships program. According to the energy ministry, the next steps will be the definition of the legal and operational partnership model and beginning studies regarding the technical, legal and economic-financial aspects of the selection of a private partner.

Still, private investments for the unit should get legislative approval, which will prolong the process.

"The biggest legal challenge for this project is to create a contract model that is viable legally and economically but that also has congressional approval," Fábio Di Lallo, a lawyer specialized in the electric power market at Brazilian law firm Souto Correa Advogados told BNamericas.

The partnership model still needs to be defined, but the hypothesis under analysis points to the establishment of a specific purpose society in which Eletronuclear would have a minority. Another option is a private partner acquiring a stake of Eletronuclear itself. A last option includes signing an engineering, construction and operation contract with a foreign firm, which would finance the unit but not control it.

#### POSSIBLE PARTNERS

According to former Aben head Simbalista, companies from France, South Korea, <u>China</u>, Russia, and the US have expressed interest.

"Interested companies have made many visits to the site and know the project well, so they are able to engage in it," Simbalista said.

French company <u>EDF</u> could be one of those firms, as it already has a <u>memorandum of understanding</u> with Eletronuclear to cooperate in the nuclear power segment. Russia's <u>Rosatom</u> is also seen as a potential partner since it owns technologies similar to those to be developed for Angra 3.

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