BRAZIL AND THE URANIUM OF THE FUTURE: A WINDOW OF OPPORTUNITY

Brazil's New Regulatory Framework for Strategic Investment in Nuclear Energy

WHAT IS THE LEGAL FRAMEWORK GOVERNING URANIUM MINING IN BRAZIL?

The mining of uranium and radioactive minerals in Brazil is subject to a constitutional monopoly held by the Federal Government. The 1988 Constitution[1] (Art. 21, XXIII) reserves for the State the exclusive competence to operate nuclear facilities and exercise control over the entire chain: exploration, exploitation, enrichment, reprocessing, industrialisation and commercialisation of nuclear minerals and their derivatives. All nuclear activity must be for exclusively peaceful purposes and be subject to the approval of the National Congress.

The current legislative framework is Law No. 14,514/2022[2], which regulates the activities of Indústrias Nucleares do Brasil S.A. (INB) and, for the first time, opens the door to the participation of private companies in selected stages of the nuclear cycle

WHO CONTROLS THE SECTOR AND WHAT IS THE ROLE OF INB?

INB is the federal state-owned enterprise responsible for exercising the Union's nuclear monopoly. Its remit covers:

- Exploration, exploitation and commercialisation of nuclear minerals and their derivatives;
- Development of technologies for the exploitation of mineral deposits;
- Conversion, enrichment, reconversion, production and commercialisation of nuclear materials;
- Production and commercialisation of equipment and materials of relevance to nuclear energy;

IS THERE ROOM FOR PRIVATE CAPITAL IN THIS SECTOR?

Yes, the law allows INB to contract private companies to operate in activities such as exploration and exploitation of nuclear minerals, run-of-mine beneficiation and technological development. [3]

The detailed regulation of private participation - including tendering criteria, safety requirements and production-sharing arrangements – is in its final stages of preparation. The Ministry of Mines and Energy (MME) has already completed the draft regulatory decree, which provides for a mandatory minimum shareholding by INB in all projects.

The **state monopoly**, however, is preserved at the strategic stages: enrichment, reprocessing, industrialisation and commercialisation of nuclear materials remain under **INB's exclusive control.**

WHICH URANIUM EXPLOITATION OPERATIONS ARE ACTIVE TODAY?

The **Mina do Engenho**, the only uranium mine in operation in Brazil, is located in Caetité, Bahia, in the Uraniferous Province. The Uranium Concentration Unit (URA), operated by INB, carries out the exploitation and beneficiation stages, producing uranium concentrate (yellowcake) with an installed capacity of 400 t/year, with potential for expansion to 800 t/year. [4]

The region contains more than 87,000 tonnes of uranium resources and more than 38 already mapped anomalies with high mineral potential.

The Cachoeira Mine — which operated as an open-pit mine from 2000 to 2015, producing approximately 3,750 t of uranium concentrate — is currently the subject of an INB-led licensing process for underground exploitation at the site.

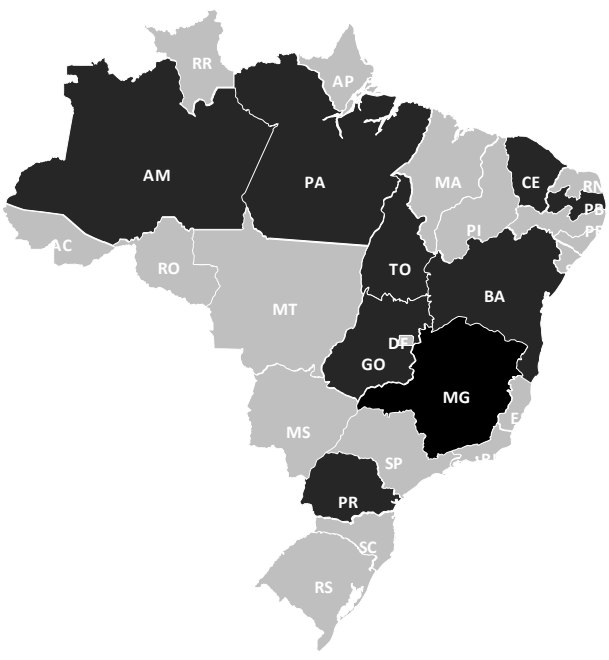
WHAT ARE THE MAIN PROJECTS UNDER DEVELOPMENT?

The most significant project currently under development is Santa Quitéria, **in the state of Ceará**. Led by the Santa Quitéria Consortium – formed by INB and Galvani (fertiliser sector) – the project explores uranium associated with phosphate deposits at the Itatiaia Deposit, discovered in the 1970s.[5]

- Estimated reserves: 80,000 t of uranium and 8.9 million t of phosphate;
- Projected output: 2,300 t/year of uranium concentrate and 1.05 million t/year of phosphate fertilisers;
- The project represents a unique dual value chain opportunity: nuclear and agroindustrial;

WHERE ARE BRAZIL'S URANIUM RESOURCES LOCATED?

Brazil holds significant uranium resources, placing the country in a prominent position in the global rankings. Resources amount to approximately 232,813 tonnes of contained uranium (U_3O_8), distributed across the states of **Bahia, Ceará, Amazonas, Pará, Tocantins, Goiás, Paraná, Minas Gerais and Paraíba.[6]**



It is estimated that resources may be even greater, given that less than one third of Brazilian territory has been subject to mineral exploration. The northern region of the country has the potential to host more than 300,000 tonnes of uranium. Potential areas have already been identified in Pitinga (Amazonas), where uranium is found in association with other minerals, and in Pará.

HOW DOES URANIUM EXPORT WORK?

It falls to National Nuclear Energy Commission (CNEN) to grant approval for the export of nuclear ores, minerals and ores of interest to nuclear energy, and minerals and ores with associated uranium and thorium, their concentrates, products and by-products, pursuant to Law No. 7,781 of 27 June 1989 and Ministerial Order No. 305 of 26 April 2010.

The service may be used by legal entities working in mining, trading or mineral commerce, duly registered with CNEN.[7]

WHY IS BRAZIL A STRATEGIC OPPORTUNITY FOR INVESTORS IN THE NUCLEAR SECTOR?

Brazil presents a strategic opportunity for investors in the nuclear sector due to factors that combine abundant natural resources with growing global energy demand.

The country ranks among the nations with the largest known uranium reserves in the world, often cited as holding the 8th position globally, although it ranks only 14th in production – which reveals that the bottleneck is not a lack of the mineral, but rather institutional constraints that, if overcome, could open up significant opportunities for new investments. [8]

Law No. 14,514/2022 authorized INB to enter into partnerships with private companies across the entire nuclear fuel cycle, from uranium extraction to the manufacture of fuel used in power plants, signaling a significant legal opening for private capital.

In addition, Brazil controls the entire nuclear fuel cycle, from exploration to fabrication – a technical capability possessed by only a few countries worldwide – a highly valuable competitive advantage in a landscape of growing geopolitical competition for energy autonomy

SOURCES:

[1] Brazilian Federal Constitution. https://www.planalto.gov.br/ccivil_03/constituicao/constituicao.htm

[2] Law No 14.514/2022. https://www.planalto.gov.br/ccivil_03/_ato2019-2022/2022/lei/L14514.htm

[3] Law No. 14,514 of 2022: A law has been published authorizing mining titles to be offered as collateral and allowing private entities to explore for nuclear minerals in partnership with INB. Cescon Barrieu – Centro de Inteligência Jurídica

[4] INB Caetité. https://www.inb.gov.br/A-INB/Onde-estamos/Caetite.

[5] INB Santa Quitéria. *https://www.inb.gov.br/pt-br/A-INB/Onde-estamos/Santa-Quiteria*.

[6] INB Resources. https://www.inb.gov.br/Nossas-Atividades/Ur%C3%A2nio/Recursos.

[7] Export Control of Raw Materials and Minerals . https://www.gov.br/cnen/pt-br/assunto/radioprotecao-e-seguranca-nuclear/exportacao-materias-primas-e-minerais-docs-e-link.

[8] The nuclear energy landscape in Brazil. https://www.nexojornal.com.br/expresso/2025/10/16/energia-nuclear-brasil-cenario-oportunidades. Published on October 16, 2025.

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