



Nuclear Energy in Brazil: Brazil: Advances and Prospects

With increasing global demand for renewable energy sources, nuclear power has emerged as a key player. In Brazil, nuclear energy has proven to be a reliable and clean source of power. In this presentation, we will discuss the advances made thus far and the exciting prospects for the future.

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Overview of Nuclear Energy in Brazil



Diversification of Energy Sources

With the Brazilian government's efforts to diversify its energy sources, nuclear power has become an important player, with 2 nuclear power plants, Angra 1 and Angra 2, contributing approximately 3% of the country's total electricity generation.



Angra 1 and Angra 2

NPP Angra 1 and 2 are located in the municipality of Angra dos Reis, in Rio de Janeiro. Both have been in operation since the 1980s and have a combined capacity of over 2 GW. These units are managed by Eletronuclear, a subsidiary of ENBPAR, a state-owned Brazilian electric utility.

Operational Performance of Angra 1 and Angra 2

Unit	Maximum Power (MW)	Net Electric Power (GWh)	Availability Factor (%) (%)
Angra 1	657.5	5,038	76.3
Angra 2	1,350	10,884	85.4

In addition to their capacity, Angra 1 and Angra 2 have consistently delivered reliable energy, with high availability factors.

Construction of Angra 3



Construction Update

Despite delays, construction of Angra 3 resumed in 2020 and is currently expected to come online in 2029. Once completed, Angra 3 will add another 1.4 GW of electric power to the National Interconnected System.



Benefits of Angra 3

Angra 3 will have a positive impact on Brazil's energy mix, providing clean and reliable power to the grid. The increase in nuclear energy capacity will also help boost energy independence and security.

Expansion of the Uranium Enrichment Plant Plant in Resende

Increased Autonomy

The Resende plant, controlled by INB (Indústrias Nucleares do Brasil), is responsible for enriching uranium for use in the country's nuclear power plants. EXPANSION The recent expansion will help increase Brazil's autonomy in the production of nuclear cycle fuel.



Expansion of the Uranium Mine in Caitité



Impact of Expansion

The uranium mine in Caitité, located in the state of Bahia, provides an essential raw material for the nuclear fuel cycle. The current project EXPANSION aims to expand production to ensure the supply of nuclear fuel for future years and strengthen Brazil's position in the nuclear arena.



Achievements So Far

Thus far, the expansion project has yielded positive results, such as increased production and the development of new technologies for uranium extraction.

Development of the New Uranium Mine in Santa Quitéria



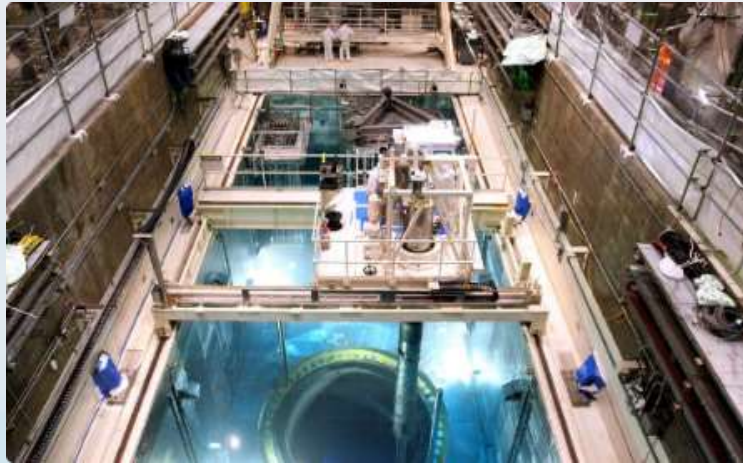
1 Diversification of Resources

The Santa Quitéria project seeks to diversify diversify Brazil's uranium production by mining mining a new deposit in the northeast region region of the country, with an expected annual annual production of 2.400 tons of uranium uranium concentrate strating in 2027

2 Strengthening Sovereignty

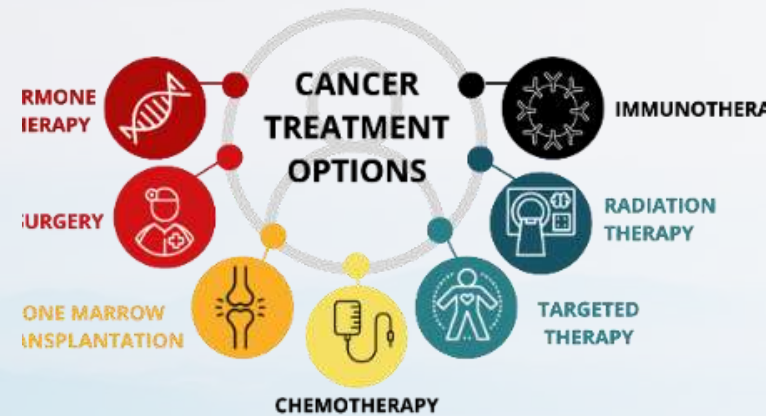
This initiative will be essential towards strengthening Brazilian sovereignty in a critical critical area for national defense such as nuclear energy. It will support the development of the nuclear industry, advance advance science and technology, and promote promote investment in the region, resulting in resulting in economic and social benefits. benefits.

The Brazilian Multipurpose Reactor (RMB) (RMB) Project



Applications and Advantages of the RMB

The RMB Project aims to build a multipurpose reactor with applications in science, technology, and the production of radiopharmaceuticals. By providing a source of radioisotopes, the RMB can contribute to the advancement of the country's medicine, industry, and research fields.



Future Contributions of the RMB

The RMB's development could significantly contribute to cancer treatment, where radiopharmaceuticals have shown significant benefits. It represents a meaningful opportunity for Brazil to bring innovative and accessible technologies to its people.

The Nuclear Power Generation Laboratory (LABGENE) Project



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Purpose and Objectives of LABGENE Project

LABGENE is focused on projects geared towards research and development within the nuclear the nuclear industry. With its modern facilities, capable staff, and updated equipment, LABGENE equipment, LABGENE targets research and development in several fields, such as nuclear reactor nuclear reactor physics, materials science, and safety.

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Importance to Brazil's Nuclear Industry

By providing a space for advanced research and development, LABGENE will be a valuable asset valuable asset to Brazil's nuclear industry, reinforcing its position as a supplier of nuclear nuclear technologies and equipment to the rest of the world.

The Brazilian Nuclear-Powered Submarine Submarine Program (PROSUB)

Strategic Objectives of PROSUB

- To sustain Brazil's strategic position in the the South Atlantic
- To develop domestic naval technologies
- To ensure national sovereignty on defense matters

The Importance of PROSUB

PROSUB, the Brazilian nuclear-powered submarine submarine program, represents a significant technological milestone for Brazil. The construction construction of the first nuclear submarine designed designed and constructed in Brazil requires mastery mastery of a series of complex technologies, challenges that can be conquered through science, science, innovation, and cooperation.

The Brazilian National Nuclear Safety Agency Agency (ANSN)

The Role of ANSN

The ANSN operates under the Ministry of Mines and Energy, and its mission is to regulate and oversee all activities involving nuclear energy in Brazil.

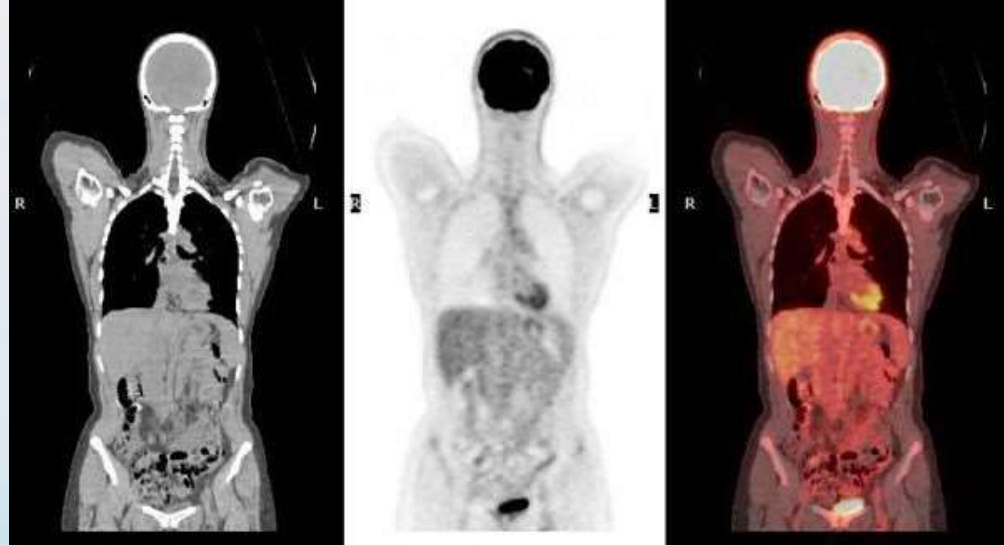
Contributions of ANSN

With its creation, ANSN would make important contributions to ensure nuclear safety, environmental and radiation protection, and security in nuclear facilities and activities in Brazil. It will play a central role in guaranteeing the safety and protection of both people and the environment.

Expansion of Nuclear Medicine

Impact of Nuclear Energy Advancements on Medicine Medicine

- With the expansion of nuclear energy production in Brazil, Brazil, it is expected that nuclear medicine will have more more resources to help expand and improve the services services dedicated to diagnosis and treatment options for options for patients.
- With emerging nuclear medicine target therapies, Brazil has the opportunity to provide patients with cutting-edge therapies with new imaging agents and cancer treatments.



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The Importance of Nuclear Medicine

Nuclear medicine is a field of medicine that uses radionuclides, radionuclides, enhancing the imaging contrast in scans and allowing allowing for more accurate diagnosis and treatment of medical medical conditions. Nuclear medicine imaging procedures are are noninvasive, and the amount of radiation exposure they generate is generally lower compared with other diagnostic imaging

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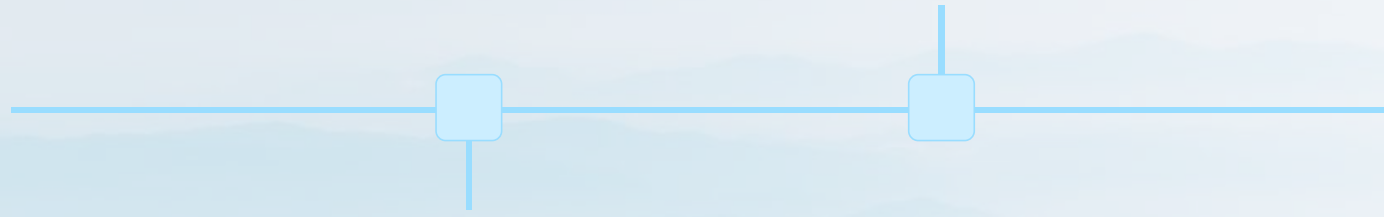


Brazilian Civil Society Nuclear Associations



*Associação Brasileira
para Desenvolvimento
de Atividades Nucleares*

COMPANIES



ABEN
ASSOCIAÇÃO BRASILEIRA DE
ENERGIA NUCLEAR

PROFESSIONALS



**ENBPAR Empresa de Participações
em Energia Limpa e Nuclear**



100% ENBPAR

**Total Capital
30% ENBPAR
70% ELETROBRAS**



**Voting Capital
60% ENBPAR
40% ELETROBRAS**

100% ENBPAR



Expansão nuclear



Conclusion



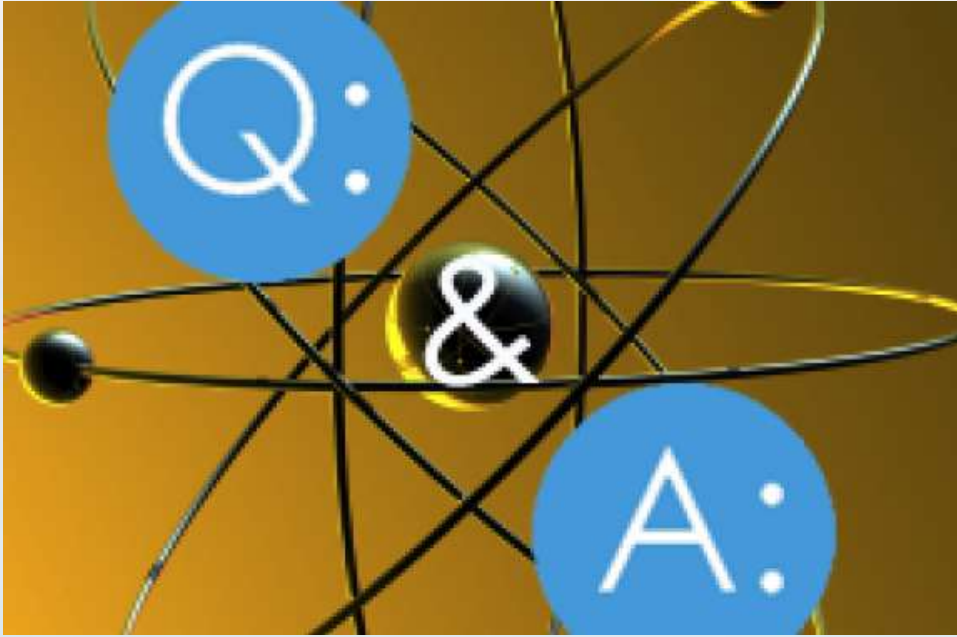
Nuclear Energy's Role in Sustainable Development

Nuclear energy has become an essential source for source for Brazil in its effort to achieve clean energy. It has contributed to the country's energy energy stability and independence while providing providing significant benefits regarding health, health, science, and technology. The advances presented here exhibit how nuclear energy can play a can play a significant role in sustainable development development as we move towards achieving a cleaner future.



A Cleaner Future

The world is transitioning towards sustainable methods of energy production with good reason. The reason. The benefits of clean energy in terms of of protecting the environment and our health cannot cannot be overstated. Brazil is no different and is is striving to meet its energy needs through reliable, reliable, safe, and responsibly produced energy energy sources such as nuclear energy.



**Thank you for attending
this presentation on nuclear energy in Brazil
Please feel free to ask any questions you may have.**