



INTERNATIONAL  
BUSINESS

# TECHNOLOGICAL ARENA

## Nuclear Energy Sector



# WHO WE ARE?

**SEBRAE - The Brazilian Micro and Small Business Support Service** is a private non-profit organization whose mission is to promote competitiveness and sustainable development of micro and small companies and to foster entrepreneurship.



# HOW DO WE SUPPORT?

- ▶ Entrepreneurial Education
- ▶ Business Opening Guidance
- ▶ Business Management Training
- ▶ Culture of cooperation
- ▶ Technology Consulting
- ▶ Credit Access Guidance
- ▶ Support for Access to National and International Markets
- ▶ Eco-efficiency



# WHO DO WE SUPPORT?

- ▶ 11.6 millions small formal business.
- ▶ The segment represents 99% of formal establishments and employs 51% of brazilians with a formal contract.
- ▶ > 40% of Brazilian exporting companies are micro and small companies.





*But they were responsible  
for only **US\$ 1.24 billion**  
in international trade  
in 2018*

# WHY NUCLEAR ENERGY SECTOR?

# Brazil Highlights

- ▶ PNE 2050 – additional 8 GW to 10 GW by 2050 in nuclear energy = 8 new nuclear power plants
- ▶ Expansion of Angra 1
- ▶ Modernization of Angra 2
- ▶ End of construction of Angra 3
- ▶ Multi-purpose reactor project
- ▶ US\$ 50 billions investments in 30 years
- ▶ Brazil controls fuel cycle technology



# World Highlights

- ▶ International Market: 158 new reactors by 2030 – US \$ 1.2 trillion (domestic market) and with international acquisitions of US \$ 530 million
- ▶ OECD - Reduction in carbon emissions and 62% increase in nuclear energy by 2040
- ▶ > 50 countries use nuclear power in approximately 220 reactors for research purposes
- ▶ 50 reactors are under construction



Source: World Nuclear Association

# Sebrae Support for the Nuclear Energy Sector

- ▶ Internationalization planning of the energy sector / APEX project
- ▶ Insertion in global supply and innovation chains
- ▶ NT2E - Nuclear Trade and Technology Exchange
- ▶ Technological Arena



# Insertion in Global Supply and Innovation Chains

## TECHNOLOGICAL ARENA

Identify, structure and enable the execution of technological development and innovation projects which meet technological demands of the production chain of the nuclear energy sector, in a replicable way for other sectors.

## TECHNOLOGICAL ARENA



The diagram illustrates a process flow within the 'TECHNOLOGICAL ARENA'. It features a world map in the background. An orange line starts from the top left, goes down, and then branches into two arrows pointing to 'DEVELOPMENT OF TECHNOLOGICAL SOLUTIONS' and 'GENERATION OF NEW BUSINESS'. A bracket connects these two steps, with an arrow pointing to 'INTERNATIONALIZATION'.

**DEVELOPMENT OF  
TECHNOLOGICAL  
SOLUTIONS**

**GENERATION OF  
NEW BUSINESS**

**INTERNATIONALIZATION**

# Anchor Companies



## STRATEGY

### THEMES

The Themes refer to **business processes**, operations, product lines, or R&DI programs **that are critical and need to be solved**. They are the focus and target the efforts to be carried out.

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### CHALLENGES

The technological challenges are the **different problems or limitations that the company has** when working on a particular theme. They represent gaps in themes that generate the need for technology, competence or solution.

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### TECHNOLOGIES AND SOLUTIONS

Solutions are **different technological approaches available** to solve a challenge. In some cases, companies may need a specific approach, in others, solutions have different technological bases.

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### REQUIREMENTS

Requirements reflect **characteristics and parameters that technology needs to have** or perform to solve the problem. Here the specific requirements for the operation of the technology are delimited.

## OPERATION

# HOW IT WORKS

We are running this phase with the anchor companies





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