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Beyond renewables: Industrial energy efficiency offers Brazil a new opportunity to reduce emissions

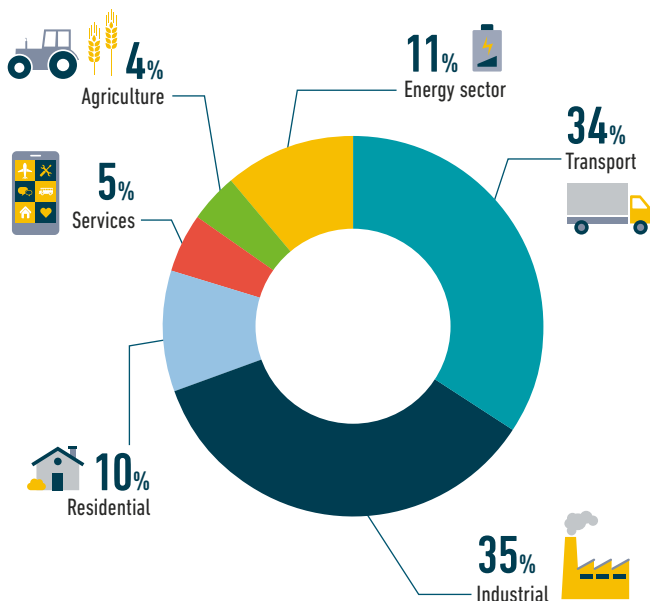
Thanks to its huge hydropower capacity, Brazil already boasts one of the cleanest electricity portfolios in the world. Around 65 per cent of the country's electric power is sourced from hydro and a further 15-18 per cent is derived from wind, solar, and biomass¹.

Yet, despite its significant dependence on renewable energy sources, Brazil's track record in energy efficiency is considerably lagging. Since the 1980s, the Brazilian Government has tried to promote industrial energy efficiency measures through various policies and legislation. However, a lack of targeted finance and regulatory barriers continue to limit significant progress on energy efficiency.

In a country where industry consumes one third of total energy consumption, Brazil's industrial sector offers vast potential to reduce emissions and associated economic costs.

National final energy consumption

The majority of Brazil's energy is consumed by transport and industry.



FAST FACTS

Population: 209.3 million

The industrial sector and the economy

Industries such as iron and steel production, automobile assembly, petroleum processing, chemicals production, and cement making are responsible for 21% of Brazil's GDP and employ around a quarter of the population.

Industrial energy growth

Brazilian industry is projected to increase energy consumption at 2.2% per year, from 84 Mtoe to 101 Mtoe in 2016 and 2026 respectively².

Industrial energy policy

Brazil has a number of plans and policies related to energy efficiency. This includes a commitment under its Nationally Determined Contributions to reduce its greenhouse gas emissions by 37% below 2005 levels by 2025, and the National Energy Efficiency Plan which aims to reduce electricity demand by 10% by 2030.

Accelerating industrial energy efficiency in Brazil

Nearly half of Brazil's energy efficiency savings could come from industry, primarily in the form of fuel savings. Energy intensity could be improved by 40% in pulp and paper, and iron and steel manufacturing sectors alone. Vast potential for energy efficiency can also be found in industrial small-to-medium enterprises (SMEs), which provide livelihoods to 16 per cent of the Brazilian workforce.

To unlock the potential of industrial energy efficiency, an array of systemic policy and financial interventions are required in addition to wide-scale capacity building and awareness raising.

¹ IEEA Statistics, 2016. 'Share of electricity generation by fuel'. www.iea.org/statistics/

² Carbon Trust, 2017 adapted from MME, 2017

³ Carbon Trust, 2017 adapted from MME, 2017

⁴ IEA Efficient World Scenario: www.iea.org/topics/energyefficiency/e4/brazil/

⁵ Carbon Trust, 2017 adapted from SEBRAE, 2014, p. 41; SEBRAE, 2017, p. 7



CAPACITY BUILDING

Capacity building in the financial sector

Brazilian companies and SMEs often prefer commercial credit lines with higher interest rates to circumvent bureaucracy and a lack of collateral. Domestic financial subsidies, grants and other instruments are available to support energy efficiency investments, but they are generally considered unattractive due to a number of barriers:

- **Customer related barriers** include a lack of regulatory drivers, awareness of technology and capacity to identify and implement opportunities.
- **Supply chain related barriers** include limited risk allocation framework and an inability to provide collateral to secure loans that improve energy management practices particularly among SMEs.
- **Finance related barriers** include bureaucracy and high-risk perception among financiers.

To capture the financial sector's attention, the Accelerator is delivering a series of events and training workshops targeted to senior bank and credit managers as well as technical staff. This work also includes the creation of an energy efficiency risk assessment tool for potential investors and finance providers.

Financial institutions and trade associations currently engaged with the Accelerator

- Brazilian Association of Law and Economy (ABDE)
- State Agency for Development (AgeRio)
- Development Bank of Santa Catarina (Badesc)
- Development Bank of Southern Brazil (Badesul)
- Banco do Nordeste
- Bandes
- Development Bank of Minas Gerais (BDMG)
- Brazilian Development Bank (BNDES)
- Caixa Econômica Federal (CAIXA)
- Development Bank of Sao Paulo State (Desenvolve SP)
- Sicredi

CONTACT

Since its launch, the Accelerator has engaged dozens of critical actors on the road to energy efficiency. For more information on how your organization can support and join the movement contact the Accelerator's Morocco project coordinator, Nurzat Myrsaliev: n.myrsaliev@unido.org

To find out more about the Industrial Energy Accelerator contact our global project manager, Rana Ghoneim: R.Ghoneim@unido.org



When we talk about industrial energy efficiency, we are talking about sustainability and the opportunity to improve productivity in Brazil. These workshops with the finance sector are very important opportunities to mobilise capital and leverage the potential of energy efficiency."

Association of Brazilian Development Bank.



POLICY

Examining potential policy solutions

Brazil has a number of governmental plans and regulations that bear relevance to industrial energy efficiency, however most are non-compulsory and lack targets. Efficiency policies with the greatest impact are mostly focused on electricity savings and consumer goods. A lack of dedicated policy, combined with disinterest and uncertainty from the financial sector, means the vast majority of Brazil's industrial energy efficiency potential remains untapped.

Working with government counterparts, the Accelerator is recommending a number of regulatory drivers that can enhance the uptake of industrial energy efficiency. This includes a series of policy cost and benefit impact simulations.



PIPELINE

Kickstarting an industrial energy efficiency revolution

Brazil's barriers to achieving industrial energy efficiency are complex and require a systemic effort to influence the large scale shift required. By convening financial actors and examining potential policy solutions, the Accelerator is contributing to the growth of Brazil's energy service market and the kickstart of larger pipeline investment initiatives.

About the Industrial Energy Accelerator

In partnership with key government agencies and industry stakeholders, the Industrial Energy Accelerator works on the ground to rally government, industry and finance around solutions that ignite change in energy-intensive industries. We then take our knowledge and experience to the world, sharing what we have learned to inspire a global movement for industrial energy efficiency.



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