Energy efficiency brazil

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The main objective of this document is to monitor the progress of energy efficiency in Brazil, through the use of indicators. In 2020 the first "Atlas of Energy Efficiency in Brazil - Indicators Report" was published - with analysis up to the year 2018. This work updates and complements, in a more condensed way, the first report with data up to the year 2021, consolidating the sixth cycle of EPE"s work in the development of the database of energy efficiency indicators.

This year"s Atlas of Energy Efficiency includes a special focus on the steel industry in Brazil, another relevant outcome of the cooperation between EPE, the International Energy Agency - IEA and the Instituto A?o Brasil. The special chapter presents a national and international analysis of the steel industry sub-sector, with a special focus on advances in energy efficiency and carbon emissions mitigation.

Brazil is endowed with a rich mix of energy sources, from natural gas to wind and solar. As such, the country is well positioned to be a global energy leader. Despite the promise of its growing capacity, rising supplies have not translated into lower bills for consumers and businesses. The gap is particularly stark when comparing Brazil with other energy-rich economies. For example, in 2019, Brazil"s electric power rates for captive industrial consumers ran, on average, 65 percent higher than US prices and 35 percent over Canada"s, which boasts a similar reliance on hydropower.

This is the paradox of Brazil"s energy markets: if generation capacity is growing, why do its power prices remain stubbornly high? Diversifying and optimizing the energy systems, cutting grid losses, and investing in energy efficiency could help expand Brazil"s energy mix and potentially lower prices.

In 2019, Brazil produced 122 million cubic meters a day, up 9.4 percent year over year.3Boletim mensal de acompanhamento da ind?stria de g?s natural, Novo Mercado de G?s, June 2020, mme.gov; volume includes gas that is reinjected or consumed at exploration and production platforms. Given its reserves, Brazil has potential to more than triple natural gas output to 380 million cubic meters by 2050.

Despite the abundance of energy assets, Brazilians still pay high prices for energy. Our review of Brazil"s market mechanisms and pricing structures identified three approaches that could help push down costs (see sidebar, "Analyzing challenges and opportunities in Brazilian energy").

McKinsey analysis shows that, given the steady decline in costs, wind farms already have the lowest levelized cost of energy, and solar will exceed that level in three to four years. But in boosting the share of renewables, grid operators must also invest in solutions that can better balance the volatility of renewable power combined with cyclicality of demand--in other words, when clouds or windless periods lower output.

Brazil loses about 18 percent of the power it generates within its transmission and distribution grids. That

number is close to the regional average but considerably above the 8 percent losses in Europe and North America. The country should strive to achieve those international benchmarks in an effort to decrease end-customers" tariffs, especially commercial ones, and to increase the competitiveness of Brazil"s companies.

Companies should reflect on how cheaper power will affect their business plans. In addition, Brazil can build on its world-class position in low-carbon energy through hydropower generation by developing its other renewable assets, preparing for an era of sustainability. Electricity powers nearly every aspect of our lives, work, health, and wellness. In any scenario, a lower-cost grid could position Brazil to be more efficient, resilient, and competitive in the long run.

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