Energy storage investment brazil

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The Brazilian energy storage market has witnessed a surge in interest and investment, driven by the country"s commitment to transitioning towards cleaner and more sustainable energy sources. The demand for reliable and flexible energy storage solutions has been accentuated by the growing share of renewable energy in the overall energy mix. As intermittent renewable sources, such as solar and wind, become increasingly integral to the energy landscape, the need for efficient energy storage technologies becomes paramount to ensure a stable and resilient power grid.

CELA"s study projects a substantial market value of over US$12.5 billion per year by the end of the forecast period in 2040. This growth is underpinned by factors such as increasing energy demand, advancements in energy storage technologies, and supportive government policies promoting clean energy adoption. The study highlights the potential for a diverse range of energy storage solutions, including battery storage, pumped hydro storage, and innovative technologies like flow batteries.

CELA"s study underscores the tremendous growth potential within Brazil"s energy storage market, driven by a confluence of factors aligning towards a sustainable and resilient energy future. As the market continues to evolve, stakeholders across the value chain have the opportunity to contribute to and benefit from this transformative journey. The envisioned expansion of the energy storage sector not only aligns with Brazil"s clean energy goals but also positions the country as a key player in the global transition towards a more sustainable energy paradigm.

Despite significant investments, Brazil’s transmission infrastructure lags behind the addition of renewable energy capacity, with an expected average of 3-5GW annually over the next decade (BNAmericas, 2023). As transmission capacities catch up, energy storage solutions will become a vital component of network management as the share of intermittent renewable energy rises. Even with abundant hydro power resources, the case for battery-based storage strengthens each day due to its multiple functionalities in grid management.

For a long time, Brazil’s energy storage segment was not given priority in its policy and regulatory structure. This may have been due in part to the country’s predominantly hydropower-based power system. However, with the significant increase in renewable energy, there has been a shift in the scenario. Despite this, the response in terms of policy and regulations has been slow. Nevertheless, the growing adoption of renewables-based generation is leading to a reassessment of utility-scale storage’s role in managing the grid.

The regulator’s recent guidelines for the distributed generation segment could indirectly benefit battery storage. In January 2022, updated norms on distributed generation were introduced that require all capacities to be included under the net metering regime from 2023 onwards. This move will make it easier for

solar PV-based prosumers, who inject net surplus generation back to the grid, to use battery storage. Under the previous regime (without net metering), such capacities would have had to pay fees to inject excess energy into the grid.

The pipeline of utility-scale solar PV projects in the country can be a significant driver of demand for grid-scale energy storage. This is because hybrid projects that combine solar and storage configurations are becoming more prevalent. The lack of timely grid connectivity can reinforce the need for linked-storage systems.

Off-grid energy storage in Brazil presents more significant opportunities in the near term than the utility-scale segment. Battery-based energy is a competitive option in several Brazilian states due to the substantial difference between peak and off-peak tariffs. A study by consulting entity Greener (as of July 2022) found that for a typical commercial/industrial consumer, the difference between peak and off-peak tariffs in the state of Rio Grande do Norte stood at $R3.004/MWh. The study also found that battery storage translated to 36% savings on the tariff.