

STEADY IN THE MISSION OF TRANSMITTING GOOD ENERGY FROM RENEWABLE SOURCES IN BRAZIL

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The increase in energy production generated by renewable sources on a global scale, as found and predicted by the International Energy Agency (IEA) in the document 'Renewables – Analysis and Forecast for 2028,' places Brazil, China and the United States in prominent positions. Brazil leads this additional production in Latin America, in a scenario in which the large-scale development of hydroelectric sources is giving way to photovoltaic and wind plants. Regarding Brazil, the IEA also highlights that, in order to meet the limitations of the transmission system given the growing volume of load resulting from the expansion of renewable sources that need to be connected to the system, the country recently held an Auction for the development of transmission systems, connecting high potential areas with demand centers.



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In December 2023, State Grid Brazil Holding (SGBH) won the complete Lot 1 of Transmission Auction 2/2023, held by Aneel (Brazilian National Electric Energy Agency). The project corresponds to the construction, operation, and maintenance of an 800 kV transmission system in ultra-high voltage direct current (UHVDC), which will be implemented through the concessionaire Graça Aranha Silvânia Transmissora de Energia (Graça Aranha Silvânia Energy Transmitter). This is a system whose Transmission Line route extends for 1,468km (about 917,5 miles), passing through the states of Maranhão (MA), Tocantins (TO) and Goiás (GO), interconnecting converter substations in Graça-Aranha (MA), located in Northeast Region of the country and Silvânia (GO), in Brazil Midwest.

With a total investment for implementation estimated at R\$18 billion, this is a new opportunity for State Grid to step up renewable energy transmission in Brazil. This set strengthens the entire national interconnected energy system, helping to ensure that load demand in the main consumer centers – Southeast and Midwest – is supplied by any generation point in the country, notably by the

intensification of solar and wind energy sources in the Northeast. Without this new connection for the flow of renewable sources, there would be no way to produce so much energy and transmit it simultaneously to the National Interconnected System (SIN).

With Line Commutated Converter (LCC) technology applied to the UHVDC transmission system, it is possible to transmit large blocks of energy over long distances. SGBH, which has been operating in the country since 2010, has a history of innovation and successful experience in implementing, operating and doing maintenance of UHVDC 800kV transmission lines from Belo Monte and Xingu–Rio (BMTE and XRTE), making use of this technology with great success.

This evolution of the national integrated system only became possible due to technological cooperation between China and Brazil, a partnership that, in 2024, will celebrate 50 years of commercial relations. Brazil and China have comparable continental dimensions and present similarities related to the challenges of transferring large blocks of energy over long distances and involving significant geographic diversity. This unique characteristic brings the two countries together on a beneficial scale in the development of innovative technologies for the electricity sector.

Furthermore, the Brazilian energy matrix, made up mostly of renewable energy sources, endorses Brazil as a fundamental partner in the journey being followed by China to bring forward the goals for solar and wind energy by five years and become a leading nation in renewable energy.

In the current context in which we are suffering the effects of climate change and energy transformation, we know that it is essential to continue expanding the use of renewable sources to meet the growth in electricity demand, taking advantage of the same sources that we have in abundance in Brazil: sun, wind and water resources.

We remain firm on the path to this transformation, meeting the growth demand to make the load reach consumer centers safely, transmitting blocks of energy over long distances. SGBH lines will always be available and ready to transmit this good energy. **ET**

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