Serrita Solar Complex

Terrain-following tracking system overcomes rocky and sloping ground

Pernambuco, Brazil

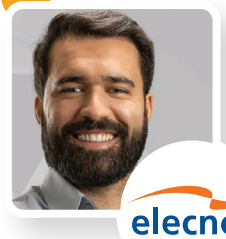
Brazil's first utility-scale solar project to deploy NX Horizon-XTR™ trackers, Serrita solar power plant represents a landmark development. In a sensitive, semi-arid ecosystem, XTR enhanced project feasibility by reducing excavation costs and improving installation speed. In choosing XTR, the site developer and EPC also minimized the project's impact on biodiversity and met requirements to build using domestically sourced content.

Name of Project	Serrita Solar Complex
Location	Pernambuco, Brazil
Size	68.8 MW
Developer	Enerfin (subsidiary of Elecnor)
EPC	Elecnor (Spanish)
Owner	Statkraft (Norwegian)
Offtaker	State of Pernambuco (under public-private partnership)

Project Overview

The Serrita solar complex is the first project in Brazil to deploy NX Horizon-XTR™ (or XTR), Nextracker's terrain-following solar tracking technology. Located in the semi-arid Sertão region of Pernambuco, the site presented a unique set of environmental and engineering challenges including hard, rocky ground, and undulating topography. The EPC on the project, Elecnor, also had strict requirements to preserve the topsoil and biodiversity.

By utilizing NX Horizon-XTR™, Elecnor was able to reduce earthworks by 50%, slashing excavation costs and eliminating the need for extensive grading and the widespread use of explosives. The solution further enabled rapid installation and minimized disruption to the local ecosystem.



"Nextracker's XTR terrain-following tracker brought efficiency and innovation to the Serrita project, contributing greatly to the project's success. The installation was faster and easier due to predefined pile heights and XTR's adaptability to the land's natural contours."

– Renan Lucas Ganassini
Director of Renewable Projects, Elecnor

Project Benefits

50% reduction
in earthwork (grading)

50% domestic content

25% reduction
in State's electricity costs

Faster installation
with pre-assembled parts

The Challenge: Rocky Ground and Undulating Terrain

The developers were aware of the hot, dry climate and rocky terrain of the Sertão region in the northeast of Brazil, and Elecnor knew they would need a smart, strategic partner like Nextracker to take on the challenge. The region is susceptible to desertification, brought on by drought and deforestation, as well as soil degradation. Given these conditions, traditional solar tracker installation methods would have required substantial excavation, driving up costs and increasing regulatory hurdles.

In addition to the rocky and sloping ground, the site also featured a hard rock stratum that can necessitate Category 3 earthworks, which includes the use of explosives. Extensive groundwork can have a significant environmental impact and has the potential to cause construction delays due to the complex nature of the site preparation.

The project also had to meet local content requirements under Brazil's FINAME program, ensuring that at least 50% of materials were locally sourced.

The Solution: NX Horizon-XTR™ Saves Costs and Offers Greater Flexibility

The XTR tracking system was key to overcoming these challenges. By adapting to the site's undulating topography, the deployment of the terrain-following trackers significantly reduced the need for grading while still delivering robust structural integrity.

Nextracker's project engineering team worked closely with Elecnor to optimize construction resulting in a 50% reduction in grading, by approximately 65,000 Bank Cubic Meters, while minimizing the number of rock implosions required. The need for re-seeding also decreased through the retention of the topsoil, maintaining vegetation that is important to the region's ecosystem.

Additionally, through strategic local manufacturing partnerships, components such as torque tubes, piers, and Self-Powered Controllers (SPCs) were sourced from Brazilian suppliers, ensuring compliance with national financing requirements and fostering regional economic development.

The Result: Simplifying Complex Site Conditions with Advanced Trackers

The advantages resulting from the selection of XTR for the Serrita solar plant were manifold.

By avoiding extensive earthworks, capex savings amounted to more than $1M (USD), dramatically improving Serrita's feasibility. Through close technical collaboration with Nextracker, the teams overcame the challenges posed by the hard rock strata, reducing the need for blasting with explosives and extensive grading.

The XTR tracker system design also accelerated the project timeline. Pre-assembled components made for faster installation, while GPS-guided pile driving minimized the need to adjust trackers manually.

Serrita represents a compelling chapter of Pernambuco's sustainable-development story, delivering low-impact construction, affordable clean-energy production, and local job creation.

As the first deployment of NX Horizon-XTR™ in Brazil, Serrita solar complex sets a precedent for future utility-scale solar development in the country, demonstrating how innovative technology and strategic collaboration can deliver cost-effective power generation projects.