

# Nextracker Uses Speed and Smarts to Help Build Largest Solar Power Plant in the Americas

## Project Overview

Sprawled across nine square miles of arid desert in Coahuila, Mexico, the grid-connected 828 MW<sub>DC</sub> Villanueva solar power plant represents a pinnacle of innovation, quality, supply chain, and logistical orchestration. The yearly output of the plant generates more than 1,850 gigawatt hours of energy, enough electricity to annually meet the consumption needs of over 1.4 million Mexican households and offset more than a million tons of carbon emissions. Part of Mexico's first long-term auction following its Energy Reform Program, the project – the largest solar PV plant in the Americas – represents a major step in transforming the country's "sunbelt" of high solar irradiation as a part of a nationwide goal of generating 50% of its total electricity from clean energy sources by 2050.

Name of Project	Villanueva Solar Power Plant
Location	Coahuila, Mexico
EPC	Nextracker
Subcontractor	Swinerton Renewable Energy (SRE)
NX Horizon Tracker Rows:	28,668
Capacity	828 MW
Developer	Enel Green Power (EGPM)
Modules	2,580,120 PV modules



We're proud to be Nextracker's installation partner for this landmark solar project in Mexico. The on-time shipment and logistics of manufacturing and delivering large quantities of trackers and associated hardware by Nextracker enabled efficient installation of over 828 MW of solar trackers to date by our SRE team

– **George Hershman**, President at Swinerton Renewable Energy (SRE) and SOLV Inc.

## The Challenge: Logistics and Safety Top of Mind

The unprecedented size of Villanueva demonstrates Nextracker's ability to massively scale in emerging solar markets and innovate with on-time, high-quality PV system deployment. As part of its meticulous supply chain management, Nextracker expanded its local manufacturing footprint by qualifying suppliers in Tijuana and Ramos Arizpe, Mexico for torque tubes and dampers. The scale of Villanueva also necessitated complex logistics planning, with 3,300 ocean containers and full truckloads of building material arriving at the site. Some 40 kilometers of onsite roadbuilding supported an entire village of human support and services, the transportation of 450 daily workers from nearby Torreón as well as a peak daily flow of 60 trucks traveling to all corners of the site.

A collective focus on safety was maintained over the course of the construction and commissioning of Villanueva. As the tracker installer with general contractor SRE, Nextracker held daily job hazard analysis meetings with safety managers to educate the workforce on tackling difficult working conditions of extreme heat, billowing sand and strong winds. These efforts resulted in 5 million man-hours with zero accidents while maintaining an installation rate of 100 MW per month.

## Solution: NX Horizon™ Smart Solar Tracker with NX Data Hub

The NX Horizon™ solar tracker is easily and rapidly installed and features enhanced energy yield and lower operations and maintenance (O&M) cost. The independent-row, mechanical architecture braces against the shifting sand dunes with minimal to no grading required. The architecture also facilitates sequential commissioning as the project installation progresses, which resulted in the generation and transmission of electricity nine months ahead of schedule at Villanueva. Quality engineered for maximum efficiency and reliability, the self-aligning module rails and vibration-proof fasteners allow structural fastening and electrical bonding of the PV module frame in one easily repeatable movement, helping the Villanueva team to achieve a world record of 20,430 solar panels installed in one day.

Debuting Nextracker's monitoring and control platform, NX Data Hub, Villanueva is one of the largest – and smartest – solar PV plants in the world, with a modern Web interface that offers advanced data collection and bidirectional communication via Flex's cyber-secure SmartNexus™ platform, and industry-leading asset management capabilities. Contracted to manage ongoing monitoring and digital O&M initiatives for Villanueva, Nextracker provides EGPM with a full-spectrum global services program across the power plant lifecycle, from manufacturing to construction and maintenance throughout its operational life.



### Features & Benefits

**1,064,840 tons**

of CO<sub>2</sub> emissions avoided per year

**1,850 GWh**

of CO<sub>2</sub> emissions avoided per year

## Benefits

Villanueva provides inexpensive, clean electricity to hundreds of thousands of homes and businesses in the region, significantly increasing the renewable portfolio of the Comisión Federal de Electricidad (CFE), one of the largest electricity generators, distributors and marketers in Mexico. Under the terms of the PPAs, EGPM will supply electricity for 15 years and clean energy certificates for 20 years.