



Tensar Mechanically stabilised layer installed using Tensar stabilisation geogrid



Working Platform
Nº 465

Hacom Hoa Binh 5 Phase 1 Wind Power Plant

📍 Bac Lieu Province, Vietnam

CONSTRUCTED IN 2021

Benefits

37% reduction

in CO₂ emissions by using less
stone aggregate

30% - 45% thinner

access roads, platform &
storage yard construction with
Tensar geogrid

Rapid construction & reduced construction time and cost

as a result of reduced aggregate
quantities.

Tensar ensures on-time operations

Mechanically Stabilised Layers (MSLs) incorporating Tensar stabilisation geogrids enabled access roads, working platform and storage yard construction at a temporary jetty port for a new wind farm. The wind farm was to be built over weak ground and had tight schedule from the government's Feed-In Tariff policy.

CLIENT'S CHALLENGE

Phase one of the Hacom Hoa Binh 5 Wind Farm involved building 11km long of 5m wide unpaved access roads, temporary working platforms at 26 wind turbine locations for crane operation, and about 2.4 hectares of a temporary jetty storage yard. These works were constructed over a farm of natural shrimp ponds which required roads and platforms supporting heavy construction traffic & equipment over the weak and saturated ground without being over budget.

TENSAR SOLUTION

Tensar proposed multi-layered Tensar stabilisation geogrid to stabilise the stone aggregate and reduce the construction thickness by 30%-45%. This reduced the need for piles and concrete slab/girders required in conventional designs for crane working platforms. As a result, fuel and water consumption was reduced by 42%, leading to significant time and cost savings. Additionally, the use of MSLs led to a 37% reduction in CO₂ emissions by minimising quarrying, truck movement, and placing & compaction activities on-site.



(Left) Completed scene of one project's line/branch in October 2021 | (Right) Zoomlion ZCC9800W crawler crane in operation on a stabilised platform

PROJECT BACKGROUND

The Hacom Hoa Binh 5 Wind Power Project (phase 1) is one of the largest onshore wind power projects in the Mekong Delta province of Bac Lieu, Vietnam. It consists of 26 Envision turbines with a total capacity of 80MW in an area of 32 hectares and expects to generate more than 280 million kWh of electricity annually.

Existing ground conditions were consistent with approximately 20m thick of very low undrained shear strength of 12kPa muddy clay from the ground surface and increases with depth to 24kPa at the bottom of the soil layer. This project's scarcity of soil and backfill material was a primary concern as well as the tight project schedule was needed to satisfy the Feed-in Tariff (FIT) policy deadline introduced by the Vietnam government.

The developer was under pressure to seek a comprehensive solution that would be a cost and time-effective construction method, reduced machinery needs, and minimise material supply and traffic volume.

A total of approximately 300,000 m² of Tensar stabilisation geogrid was used in the project to form MSLs. Tensar's products were also used with site-won soil to stabilise the subgrade before constructing the platform. A single layer of stabilisation geogrid was installed under the padding layer of turbine foundation as well. This contribution ensured everything was ready in time for the arrival of the first turbine sections in July 2021.

On the other hand, Tensar MSLs helped to reduce the carbon footprint for the wind farm construction phase which was also an important feature and achievement for any renewable energy scheme.

Main contractor

Hacom Ninh Thuận
Construction JSC

Distributor

Hung Viet Construction
Investment Production JSC

Client

Hacom - Bac Lieu Energy
JSC – a member of Hacom
Holdings Investment JSC

“Tensar's solution and participation in the implementation contributed to the success of the project.”

Mr Tran Phu Chien

President
Hacom Holdings Investment JSC