

# Composite structures used on wind substation offshore New York

Lightweight, corrosion-resistant grating and storage tank improve safety and reduce maintenance.

## Background

A major energy operator is developing the first offshore wind project to connect directly into the New York City power grid. Construction of the offshore wind substation is progressing on a demanding schedule. This critical infrastructure, which collects, converts, and exports the electricity generated from the offshore wind turbines, requires lightweight and durable solutions engineered to endure relentless waves, wind, and saltwater.

NOV Fiber Glass Systems (FGS) received the contract from a long-time shipyard customer in Singapore by providing a composite grating solution that met the technical and commercial needs of both the operator and the contractor. The scope also included engineering services to cut fiberglass-reinforced polymer (FRP) grating in line with approved customer drawings, ensuring the package was fully compliant to the specifications and ready for easy installation.

Our more than 20-year relationship with the shipyard also led to an order for a FRP water storage tank. Delivering these proven composite structural products required a global effort, and our teams and partners across three continents worked together to make it happen.

## Case study facts

**Location:** New York

**Operator:** Confidential

**Customer:** Confidential

## Supply details

- One FRP polyester cleaning water storage tank
- FRP Phenolic Grating I-5500 45 mm width
- Engineering services and cutting services for FRP grating
- 481 stair treads
- 25 FRP polymer plates (2.44 m x 1.22 m x 6.3 mm)
- Seven custom-built FRP hatches
- 11 FRP ramps
- 110 FRP pipe penetrations, single pipe, and multiple pipe

## Opex benefits:

- Excellent corrosion resistance
- Enhances safety
- Reduces maintenance costs
- Proven long-term durability
- Lowers total cost of ownership





## Solution

We delivered more than 2,600 m<sup>2</sup> (27,986 ft<sup>2</sup>) of FRP phenolic grating, along with a cleaning water storage tank, 481 stair treads, and a full set of FRP polyester plates, hatches, ramps, and pipe penetrations for the jacket and topsides.

A tight schedule made the grating scope for the jacket especially challenging. To help keep fabrication on track, we worked closely with a regional partner in Norway to supply grating on short notice and recover lost time.

The FRP tank was designed and engineered in-house, then manufactured at a partner facility in Indonesia. The grating was produced in the US and precision-cut in NOV FGS facilities in Malaysia and Singapore. Additional FRP structures were supplied through our plant in Plymouth, UK.

Beyond delivery, we provided technical support to confirm that the grating could safely handle a 5-ton deck trolley.

## Results

Our FRP structural products are lightweight and corrosion-resistant, designed for faster installation and long-term reliability. By reducing topsides weight and eliminating corrosion risks, they lower structural loads, minimize hazards, and reduce maintenance needs, lowering the total cost of ownership.

Most components have already been delivered, with the remaining shipments on track as the project moves toward first power at the end of 2026. This project also marked a first for NOV FGS Singapore, which managed the grating cutting scope in-house. That experience strengthened collaboration with our Malaysian team and added new capability for future projects.

From initial engagement in 2022 through the purchase order in 2024, the project faced shifting scopes, urgent delivery requests, and regulatory pauses. Because of our decades-long relationship with the shipyard, we were able to work through each challenge with trust, transparency, and a shared focus on keeping the substation project moving forward.

This project shows how we bring together technical expertise, global reach, and responsive support, strengthened by long-standing customer relationships. That combination enables us to deliver lighter, safer, and more resilient infrastructure for offshore wind projects worldwide.