

SPAIN: ADRIATIC LNG PROJECT

| PROJECT | EQUIPMENT | WEIGHT |
|----------|---|-----------------|
| OFFSHORE | SPMTs / STRAND JACKS AND TOWER LIFT SYSTEM / SKID SHOES AND ELEVATOR SYSTEM / CRAWLER CRANES / BARGE / HL SHIPS | UP TO 4,800 TON |

Fagioli was awarded by EXXON MOBIL for the Adriatic LNG project: an Off-Shore LNG receiving and re-gasification terminal to be installed in the Adriatic sea 1.5 km from the Po river in Italy, to be used as an important gas supply for the whole country. The concrete terminal is the first of its kind in the world with gigantic dimensions (180 metres x 88 metres x 48 metres). The purpose of this terminal is to receive natural gas in liquid form from tanker vessels every three days, for storage and subsequent re-gasification at its final destination in the Adriatic Sea, approximately 30 km from the city of Rovigo (close to Venice), and distribution via a gas pipeline to the Italian consumers. The project was performed in two phases over a period of twelve months.



Phase 1: Transportation and erection of LNG tanks inside the GBS

Transportation of two LNG Storage tanks, each in three sections (total six sections) from the construction yard at Hyundai Heavy Industries Co. Ltd (HHI), Ulsan, Korea to the Algeciras Construction site in one single shipment on board the Dockwise heavy lift vessel, MV Blue Marlin (BM). Fagioli unloaded the six tank sections weighing up to 1,600 tons each, from the marine vessel moored at site new quay, then successfully performed the site transport from quay area to the intermediate storage area and subsequent transport from storage area inside GBS.

Fagioli installed the strand jacking system to the top of the GBS and connected the jacks to the tank sections, the tank sections were then lifted from the SPMT units and lowered to the GBS tank slab.

Below: Arrival of tanks at Algeciras construction site



Phase 2: Transportation, lifting and placement of modules on top of the GBS

Fagioli carried out the transportation and lifting and placement of several huge modules. This proved to be quite challenging as the terminal was assembled in a deep dry dock, and all the prefabricated modules had to be installed on top of the GBS and skidded over a wide gap of more than 40 metres “in the air” then lifted to a height of 30 metres. So this required Fagioli to design and construct a specially made elevator system, which combined a skid and strand jack method, consisting of towerlifts, strand jacks, box girders and skidding tracks. The elevator girders, used to lift the modules up to the GBS roof were positioned 16 metres above the bottom of the GBS. The girders lifted each module 27 metres vertically to the roof of the GBS. The girders were 35 metres long. The towers had to be removed before the modules were skidded onto the elevator girders. Once the modules were on the girders the towers were moved back into position and connected to the girders. All the load-in operations were performed using self propelled modular transporters. There were 11 modules in total, all different sizes and different weights. Each module was off loaded using self propelled modular transporters before being positioned and connected to the elevator system, lifted and skidded on top of the GBS.

Main modules:

| MODULE | WEIGHT |
|-----------------------|--------------|
| Living Quarter | 1,310 tonnes |
| Flare Module | 203 tonnes |
| EIB Module | 1,650 tonnes |
| GTG Module | 2,360 tonnes |
| Pig Launcher | 460 tonnes |
| East Breasting Module | 600 tonnes |
| ORV Module | 4,800 tonnes |
| Maintenance Building | 150 tonnes |
| BOG Module | 2,100 tonnes |
| Loading Platform | 900 tonnes |
| West Breasting | 600 tonnes |

There are many more activities not mentioned in this job sheet that have been executed but with over 120 components transported and lifted.

