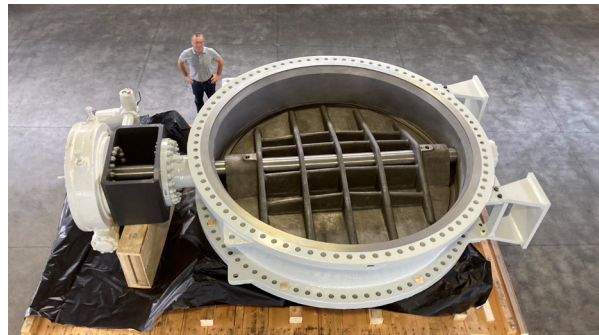


# LNG Titans: Engineering Superior Valve Solutions for the World's Largest LNG Project

## RESULTS

- With over 2,000 Vanessa™ Series 30,000 triple offset valves (TOV) and approximately 3,400 Biffi™ electric and pneumatic actuators installed, Emerson is the leading supplier of isolation valves and actuation solutions for the world's largest Liquefied Natural Gas (LNG) project to date.
- Emerson met our customer's expectations by supplying advanced technologies that addressed the requirements for fugitive emissions, safety, tightness, and operability, tailoring product design to meet the project's specifications, and delivering a massive order.
- This project also features the largest Vanessa Series 30,000 TOVs ever constructed. These gigantic valves are integrated with Biffi electric actuators.
- Thanks to successful order execution for the four original LNG mega trains, Emerson has been awarded the main isolation valve and actuator supply for the facility's two-train expansion.



*Custom-built Vanessa Series 30,000 Triple Offset Valve*



*Vanessa Series 30,000 Triple Offset Valve*

## APPLICATION

- Solutions cover the entire LNG value chain, from gas treatment to liquefaction.
- Vanessa Series 30,000 TOVs for process on/off, regulation/control, maintenance, emergency shutdowns, and manual isolation of cryogenic pipelines. Pressure class ranges from 150 to 900, cryogenic or high cycles in different materials, manually operated or actuated.
- Biffi ICON3000 and ALGA/S actuators in various ranges, including quarter turn electric and pneumatic actuators with custom paint and CX protection level for offshore applications. Biffi completed the package with actuators for linear valves and additional components and configurations tailored to the project's valve needs.

## CUSTOMER

LNG project in the Middle East. The greenfield facility has four LNG mega trains, associated utilities, and offsite facilities. Each mega train has the capacity to produce 8 million tons of LNG per annum (MTPA). The facility's future expansion includes two additional trains.

## CHALLENGES

- The project required a large number of products for various LNG applications and the construction of gigantic valves that ranged from 66" double-flanged cryogenic, customized for Class 600 piping, to 120" and 126" double-flanged in basic configuration.
- Because valves are the primary source of fugitive emissions in LNG plants, the customer sought a valve supplier that could incorporate advanced emissions-capture technologies in the new greenfield installation.
- The valve and actuator manufacturers needed to demonstrate the capability to meet the engineering and technology specifications, manage the construction process, and ensure timely delivery.

## SOLUTION

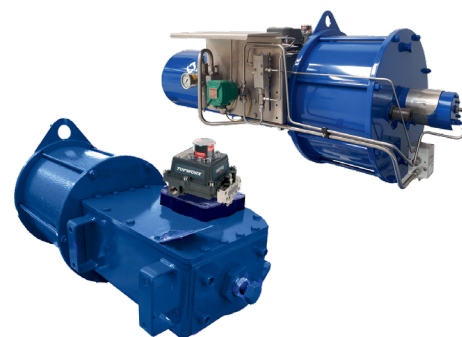
- The customer trusted Emerson with this massive enterprise. As both are Emerson brands, the synergy between Vanessa and Biffi is strong. The customer's manufacturing plants are geographically close, making order and inspection activities easier to manage and adding value to this colossal LNG project's technical and logistics activities.
- Vanessa valves were built on demand to meet the project's specifications. From a technology perspective, the Vanessa Series 30,000 TOV represents the ultimate fit-for-purpose valve for LNG applications. Its advanced systems meet and exceed the customer's most stringent requirements concerning operability, tightness, fugitive emissions, and safety.
- Biffi has over 70 years of experience in the oil and gas and LNG markets, working closely with valve makers worldwide. Its portfolio covers most LNG project needs for automated valves, such as quick-acting for HIPPS service, with electric, pneumatic, and low- and high-pressure actuator options. The electric actuator gear was redesigned to include a mirroring shape, allowing easy installation. In addition, the pneumatic actuators were tailored to meet valve specifications.

*"We are really grateful to Emerson for your support in advancing this priority shipment."*

EPC Procurement Representative



*Biffi ICON3000 multi-turn electric valve actuator*



*Biffi ALGA/S pneumatic actuator*

### Emerson's valve solutions are trusted by the world's largest and most complex LNG projects and facilities

From project initiation to facilities maintenance, Emerson offers the most complete portfolio of valves, actuators, and regulators designed to optimize the entire LNG value chain. Our future-focused solutions harness the power of data to reduce emissions, increase plant safety, ensure equipment reliability, and save costs.

#### Learn more:

- Our LNG valve solutions: [Emerson.com/LNGvalves](https://emerson.com/LNGvalves)
- Vanessa: [Emerson.com/Vanessa](https://emerson.com/Vanessa)
- Biffi: [Biffi.it](https://biffi.it)



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