Case Study

Gas Agility

The world's largest LNG bunkering vessel

Liquified natural gas (LNG) is a competitive solution that contributes to the International Maritime Organization's (IMO) long-term strategy of reducing greenhouse gas emissions from ships. LNG bunker ships are used to refuel LNG-powered vessels at sea.

The Gas Agility can carry a colossal 18,600 m3, making it the largest LNG bunkering vessel to date. The vessel operates in Northern Europe, supplying LNG to commercial ships, including CMA CGM's nine ultra-large container vessels for at least 10 years.

A ballast water system compensates for various cargo loads that a ship may carry at different times, including changes in weight during loading and unloading. It also provides stability and maneuverability during a ship's voyage.

In 2018, Hudong-Zhonghua Shipbuilding Group awarded us a contract to provide a new ballast water system for Gas Agility. Delivered in April 2020, the state-of-the-art vessel meets the highest technical and environmental standards.

Problem

The purpose of this vessel is to hold as much LNG as possible and refuel other larger container ships. Keeping the vessel as lightweight as possible is vital to overall productivity. The weight-saving capabilities of our lightweight Bondstrand™ composite products ensure that the vessel can reserve as much fuel as possible, allowing it to operate to its optimal ability.

Since our clients operate in harsh marine environments, corrosion is always a big challenge. Our products are engineered to endure unforgiving conditions with excellent corrosion resistance while requiring minimal maintenance.

Another challenge we overcame was the design of the water ballast system. Due to the confined spaces of the vessel, our client relied on our design and engineering expertise to deliver a system that could be successfully installed.

Supply Details

Applications

- SOx Scrubber
- Seawater intake and discharge effluent

Design Specifications

IMO A753(18) LEVEL 3, BV CLASS RULES

Quantity

- 148 m of 8-in. to 10-in. Bondstrand piping
- 62 Flanges
- 44 Fittings
- 35 Spools

Size Range

- 3" to 20"

Timeframe

- 2018-2020

CAPEX Benefits

- Low weight, typically ⅔ lighter than steel
- Fast installation
- High strength
- Meets offshore fire reaction requirements

OPEX Benefits

- Minimal maintenance
- Excellent corrosion resistance
- Non-sparking, no earthing
- Proven durability
- Enhanced safety

Solution

The benefits of working with us were elevated due to early engagement in the project. Our expert engineers advised on layout optimization, performed stress analysis, prefabricated pipe spools, and assisted with the installation of the ballast system.

We manufactured and installed the prefabricated spools of Bondstrand 7000M GRE pipe and fittings for the water ballast system. Our products will last the lifetime of the vessel, creating the perfect solution for the customer. We always go the extra mile and were happy to train the yard workers on installing the pipe system.

Weight Savings

Our GRE piping weight = 4.1T

Equivalent steel weight = 14.7T (based on Sch XS)

Total 113% weight savings!