

# Trelleborg at every interface



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# Introduction

## TRELLEBORG AT EVERY INTERFACE

In the LNG arena, diversity is the norm. From traditional terminals to bunker barges and everything in between, interfaces can vary substantially.

Find fast ROI and meet demanding safety standards.

Optimize the business model of your transfer operation with Trelleborg.

Trelleborg has unique oversight of the entire LNG supply chain, and interfaces throughout, with the most integrated and configurable solutions.

**Safety and efficiency. In any transfer operation. For any business model.**



“Across international markets, LNG is traded as a commodity. In international shipping, it is used as a fuel. Each require the safe, efficient and cost effective transfer of LNG.”

## 24/7 SERVICE AND SUPPORT

Trelleborg's global technicians offer full aftersales service and support for LNG applications.

This includes remote support, on-site support, customized training, spare parts and tailored maintenance programs.

# Import Terminal



## Import Terminal



Want to know more? Just click on the headings.

## Smarter terminal management

### SAFEPILOT

SafePilot is the new generation of navigation and piloting software. Developed in conjunction with working marine pilots from across the world.

Touch screen technology. Modules to meet different operational needs. The only fully integrated piloting system available.

### QUICK RELEASE HOOKS (QRHs)

QRHs are the foundation of modern mooring systems. Trelleborg's SmartMoor QRH is designed to be released by an operator when a mooring line is attached, even under full load. Remote release functionality reduces the risk of an incident.

### METOCEAN MONITORING

Real-time MetOcean data and trends assist operators in maximizing their berth's operating window by providing measurements at berth. Tide, current and wave information can be provided to jetty operators, the central control room and the vessel.

### FENDER SYSTEMS

All Trelleborg's high-performance fenders are manufactured in accordance with PIANC guidelines and come in a range of compounds. High-performance solutions combine low reaction force and hull pressure with good angular performance and rugged construction.



# LNGC

Want to know more? Just click on the headings.

## Smarter fuel economy

### SHIP PERFORMANCE MONITORING (SPM)

Fuel is the largest operational cost of running a vessel. Accommodating all ship system configurations and easy upgrades, modular systems monitor the power of the propeller shaft, fuel flow, water depth, emissions and GPS position.



LNGC

# Small-scale LNG



## Small-scale LNG



Want to know more? Just click on the headings.

## Smarter small-scale innovation

### TRANSFER HOSES

Trelleborg's latest innovation for the LNG industry, Cryoline hose technology is perhaps one of the most significant and game-changing for mini and small-scale LNG projects. Cryoline handling solutions allow for quick installation at a greatly reduced capital expenditure.

### UNIVERSAL SAFETY LINK (USL)

The USL has been specifically designed for small-scale LNG applications. Fiber optic technology allows a single operator to monitor process data from both sides of the transfer process.

# Export Terminal

Want to know more? Just click on the headings.

## A smarter approach to safety

### **SHIP-SHORE LINK (SSL)**

Trelleborg's SSL has been an industry leading product for large scale LNG transfer for almost 20 years.

### **EMERGENCY SHUTDOWN SYSTEMS (ESDS)**

The transfer of hazardous liquids necessitates the use of ESDS. Trelleborg's ESDS enables rapid and controlled shutdown in emergency situations, across shore-side and ship-side sub-systems.





# FSRU<sub>s</sub>



**FSRU<sub>s</sub>**



Want to know more? Just click on the headings.

## Smarter ways to simplify complexity

As FSRU applications develop, systems integration becomes more complex due to the combination of conventional jetty mooring and docking and offshore ship-to-ship systems. Trelleborg makes integration simple and cost effective.

Increasingly adopted in FSRU applications, QRHs are an essential part of the docking and mooring system during LNG transfer. A compact footprint for the mooring equipment on the FSRU is necessary, to save deck space and simplify under-deck reinforcement requirements.

The SSL system handles the operation of liquid transfer from an LNGC and controls all process plant data for high pressure gas output from FSRU to shore. It controls mooring load monitor data if the FSRU is fitted with QRHs.

HALO Fenders bring together Trelleborg's manufacturing capability and Teekay's operations expertise to offer a host of operational, technical and service benefits. A premium pneumatic fender offering which is fully ISO 17357-1:2014 compliant, HALO Fenders provide a complete fender solution from a single point of contact to ensure safer, more reliable ship-to-ship transfer operations. HALO Fenders provide fast mobilization, with global access to 400 fenders, stocked in three strategic locations, with 32 rental and service bases.

# Our commitment

Trelleborg has unique product portfolio, with touchpoints across the entire LNG supply chain, and interfaces throughout. We remain committed to supporting our customers in the LNG sector by optimizing interface management and empowering consistent communications and standardized practices.

## Contact

Visit our website to find out more

**[WWW.TRELLEBORG.COM/EN/MARINE-SYSTEMS](http://WWW.TRELLEBORG.COM/EN/MARINE-SYSTEMS)** 

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