

# STEMMANN-TECHNIK

A Wabtec subsidiary



## Alternative Maritime Power Systems

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## Alternative Maritime Power Supply & Charging Systems

Reduction of Emissions in Ports



The emissions caused in the port area are a growing problem due to the increasing capacities of the ports.

The onshore power supply units will replace the diesel-powered vessel generators to a large extent.



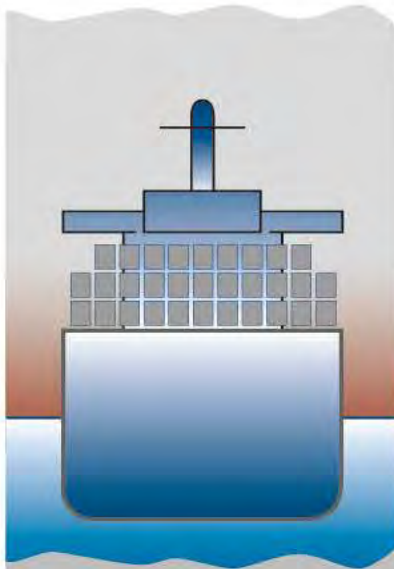
The implementation of emission limit values and environmental specifications in general expedite this development.



# Alternative Maritime Power Supply & Charging Systems

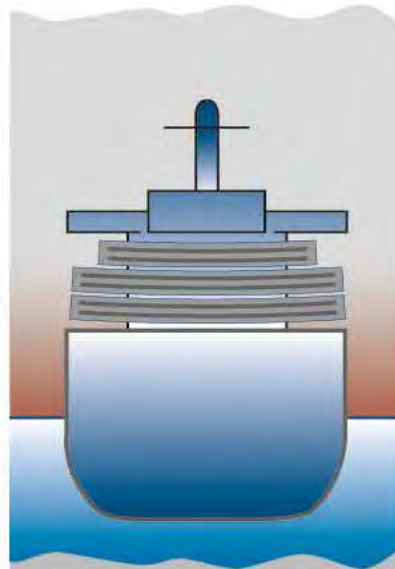
Various Solutions for...

## Container Vessels



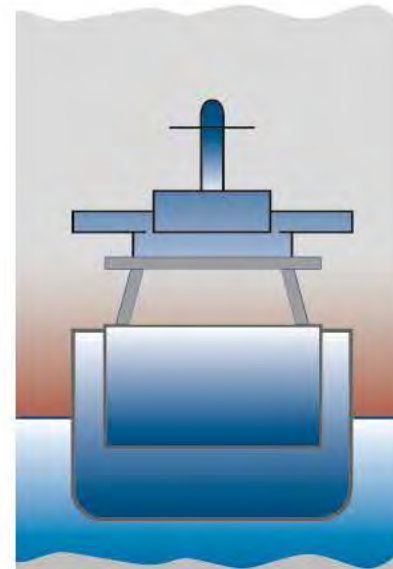
Onshore Power Supply via Cable Reel Container System

## Cruise Liner



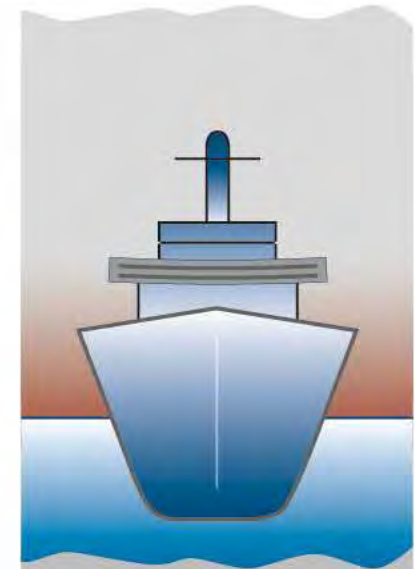
Onshore Power Supply via Cable Reel / Mobile Carrier System

## Electrical Ferries



Quick Charging Connection via Pantograph System

## Yachts

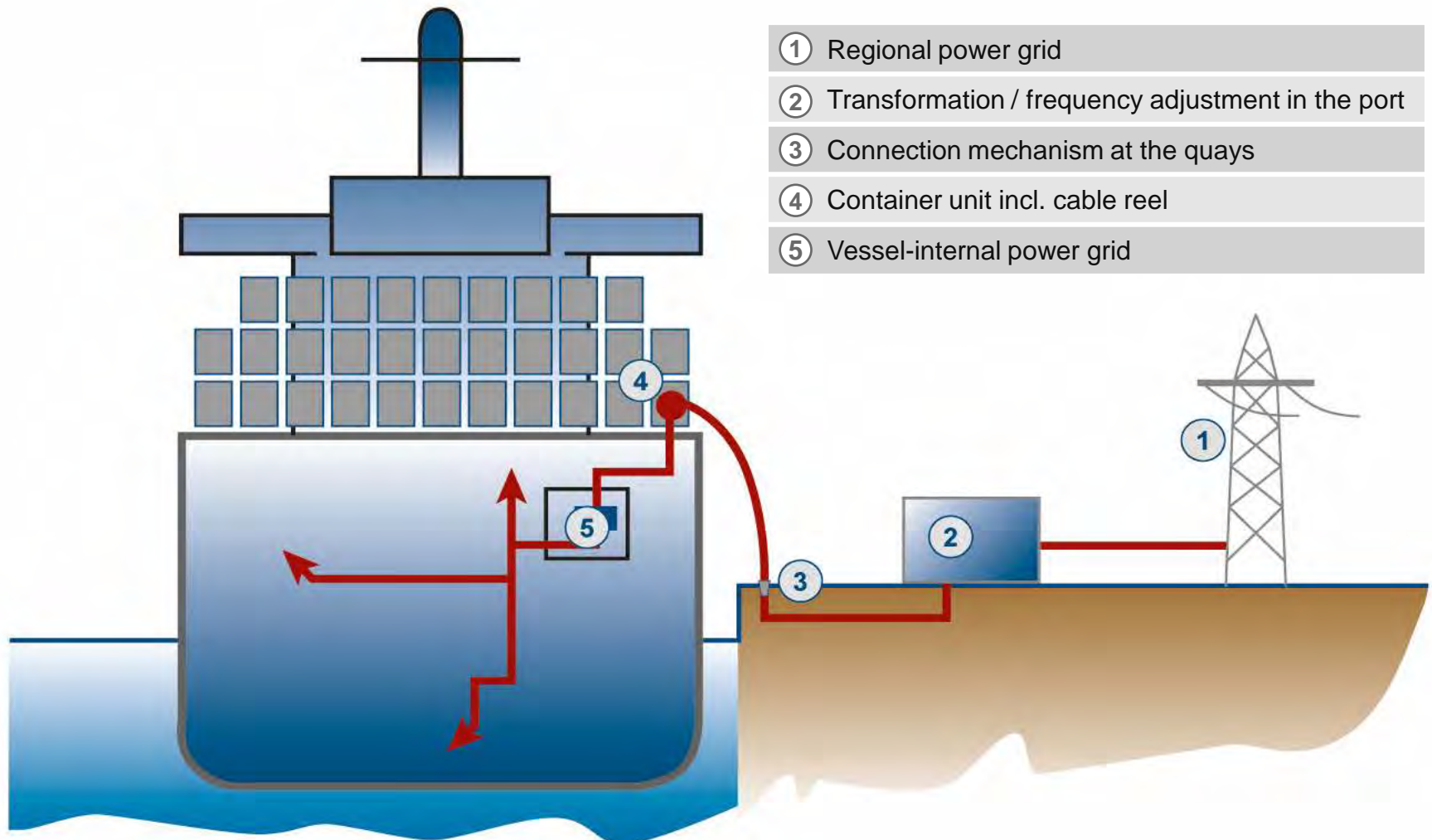


Special Applications via Cable Reel System



# Alternative Maritime Power Supply & Charging Systems

## Onshore Power Supply via Cable Reel Container Systems





## Alternative Maritime Power Supply & Charging Systems

Onshore Power Supply via Cable Reel Container Systems for Container Vessels

### Onboard System





## Alternative Maritime Power Supply & Charging Systems

Onshore Power Supply via Cable Reel Container Systems for Container Vessels

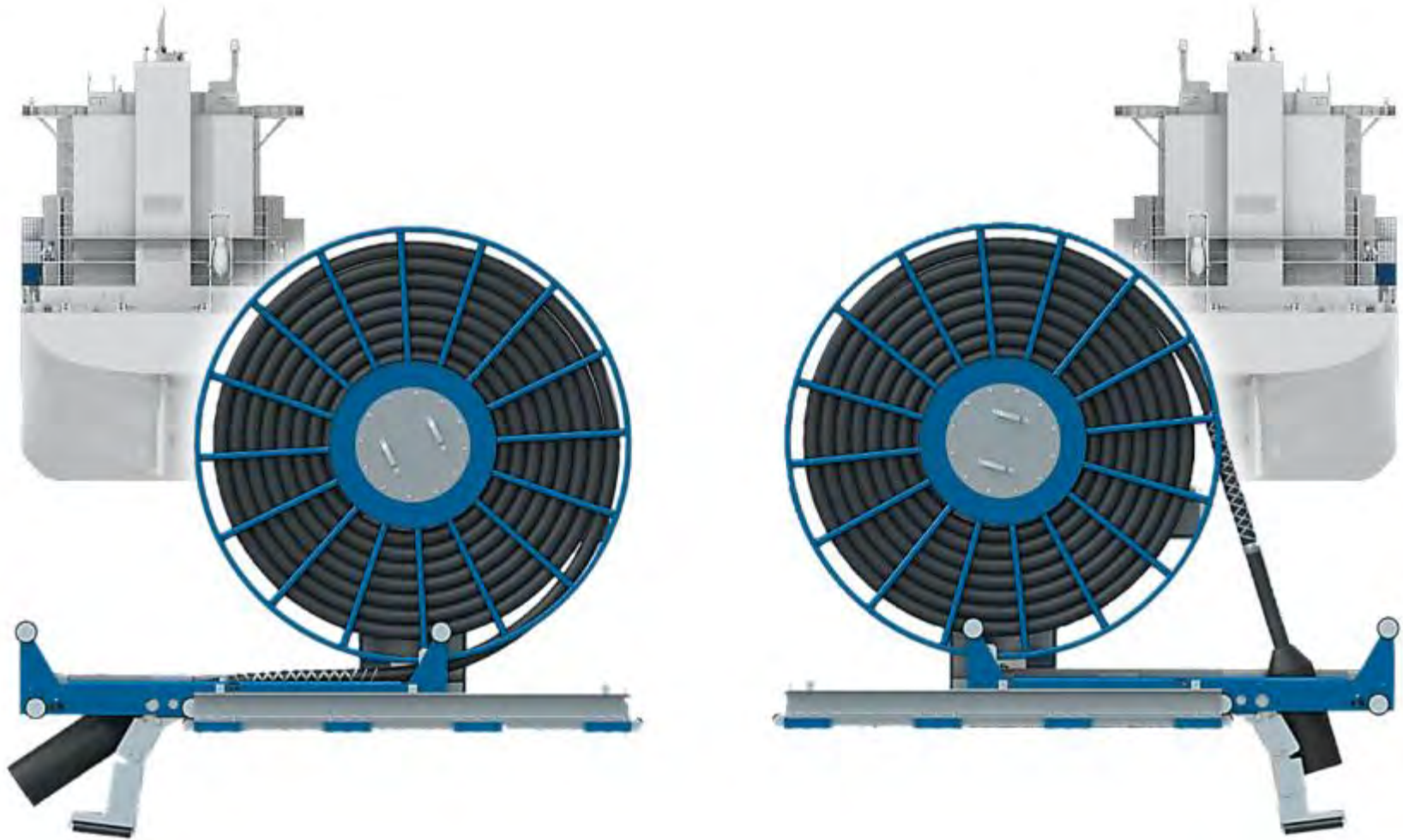


The feed of the onshore power supply for container vessels is realised for example by the installation of a 40 ft. HC-container in the bottom storage row.

The system consists of a spiral cable reel with slip ring assembly and fibre optic rotary connector incl. the drives for the reel and the extension system of the roller conveyer.

## Alternative Maritime Power Supply & Charging Systems

Onshore Power Supply via Cable Reel Container Systems for Container Vessels





## Alternative Maritime Power Supply & Charging Systems

Onshore Power Supply via Cable Reel / Mobile Socket System for Container Vessels

### Onshore System



Combination of HC-container installation on board and mobile socket installation onshore.

Flexible mounting heights depending on the local conditions.

Flexible traveling lengths depending on the local conditions.

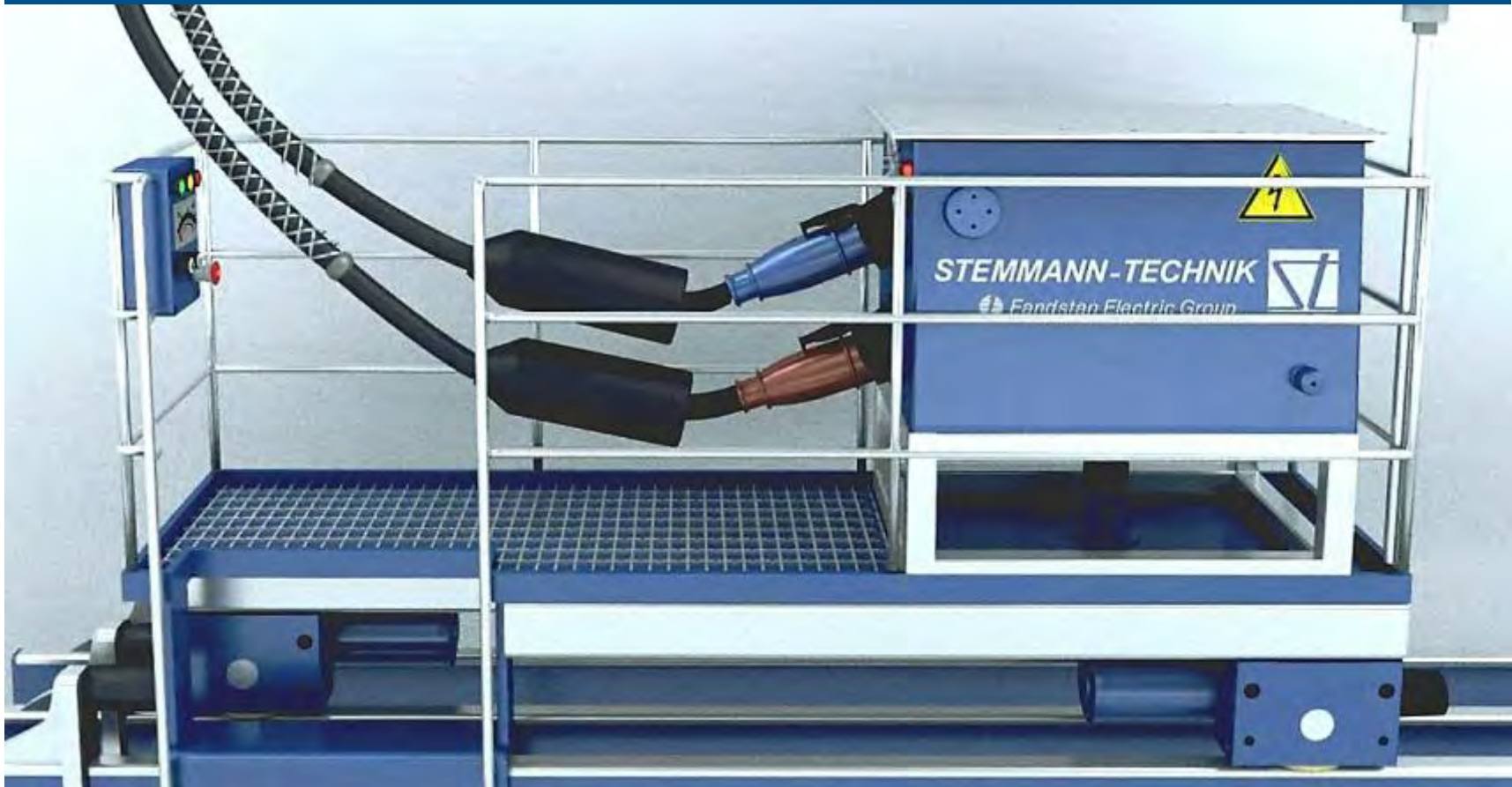




## Alternative Maritime Power Supply & Charging Systems

Onshore Power Supply via Cable Reel / Mobile Socket System for Container Vessels

### Onshore System





## Alternative Maritime Power Supply & Charging Systems

### Container System Advantages



HC-container installation in the bottom storage row requires no special housing installation on board.

Installation/cable pay-off on port- or starboard side possible.

Constant tension on cable by torque motor.

Excess tension-coupling for protection from damage to the mechanical parts.

The operation is effected by means of a radio remote control.

Decades of experience in the construction and manufacturing of cable reels.



# Alternative Maritime Power Supply & Charging Systems

Onshore Power Supply via Mobile Carrier Systems for Cruise Liners

## Onshore System





## Alternative Maritime Power Supply & Charging Systems

"SAMP Hamburg Altona Project"





# Alternative Maritime Power Supply & Charging Systems

"SAMP Hamburg Altona Project"

**Terminal Situation**



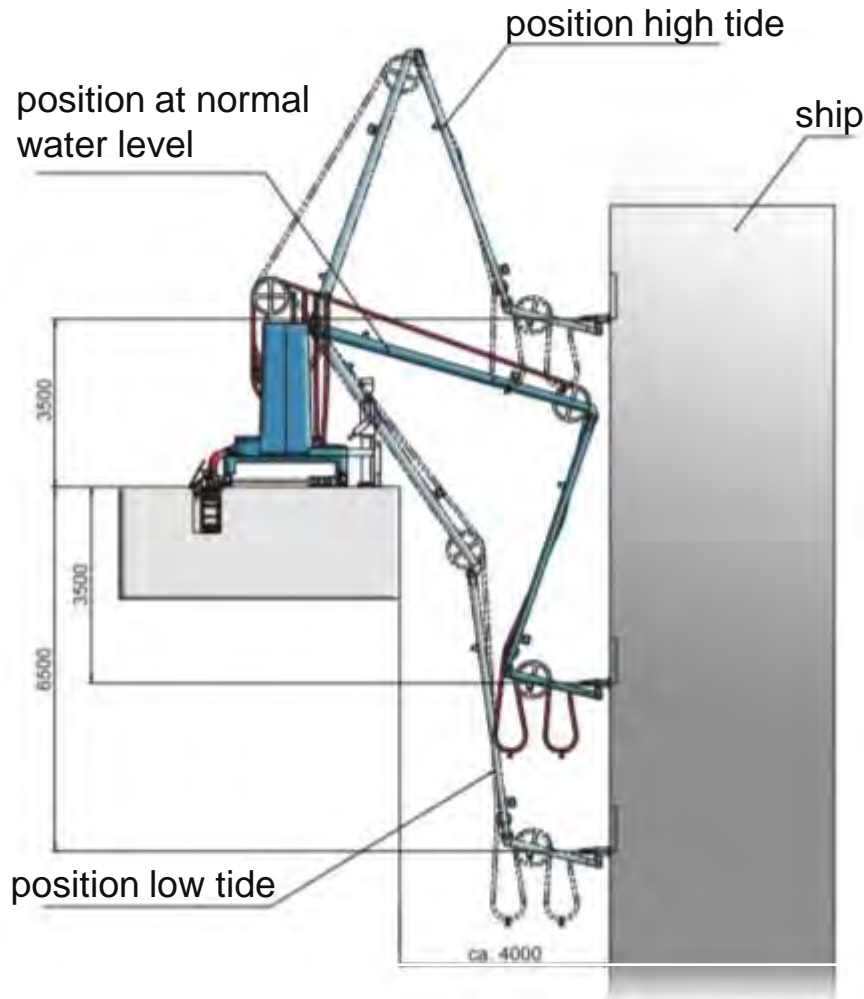
**Ship's hatch / Control Cabinet**





# Alternative Maritime Power Supply & Charging Systems

## Requirements



High tide, height difference hatch/quay: **3.5 m**

Low tide, height difference hatch/quay: **6.5 m**

Travel distance parallel to quay wall: **300 m**

Distance between ship and quay wall: **4 m**

Distance between SAMP-System and quay wall: **approx. 2.5 m**

Distance between hatch and socket: **approx. 3.5 m**

Hatch dimensions (h x w): **1.2 x 0.8 m**

Transmittable voltage: **12 MVA**



# Alternative Maritime Power Supply & Charging Systems

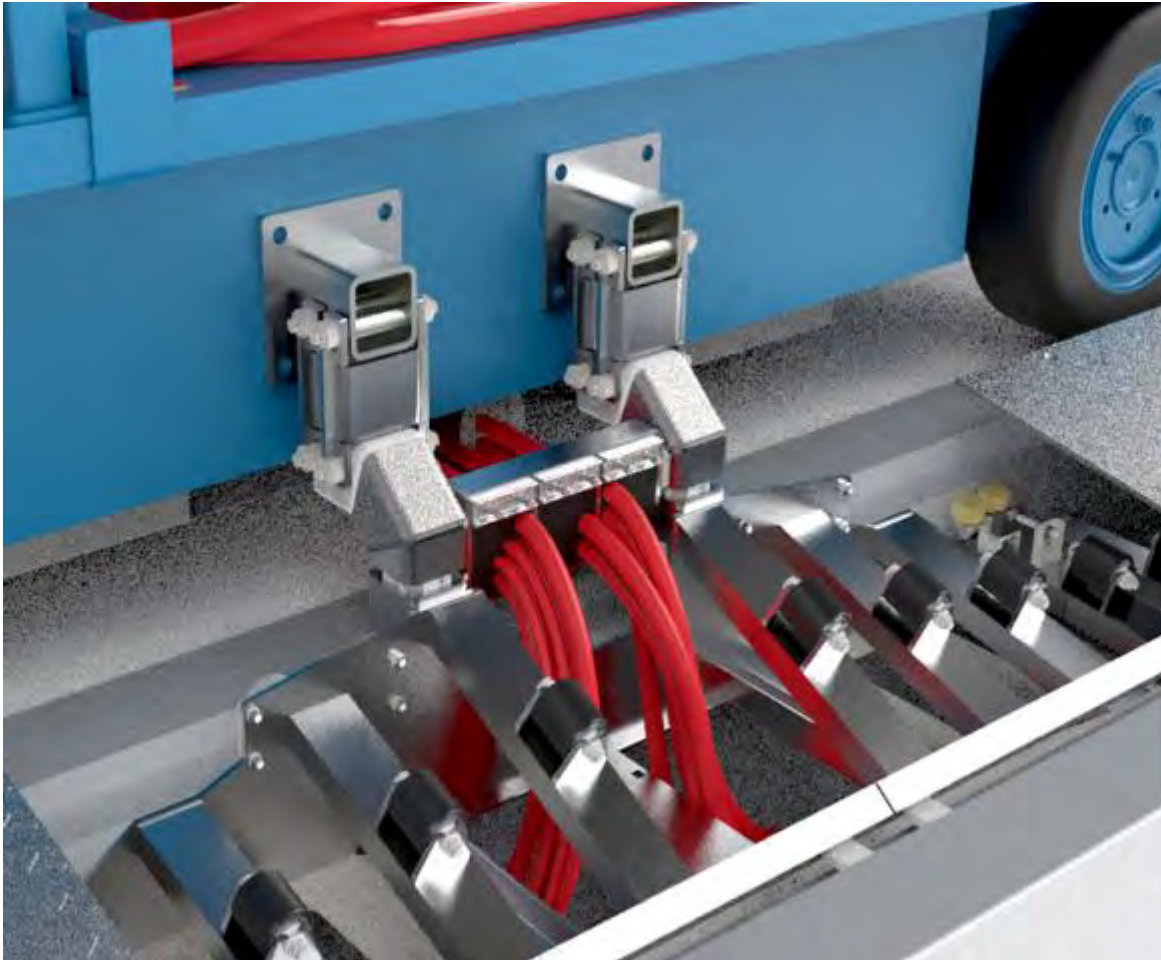
Port Side / Cable Duct





## Alternative Maritime Power Supply & Charging Systems

Transfer Vehicle / Cover Lifting Device with Cable Guideway / Animation





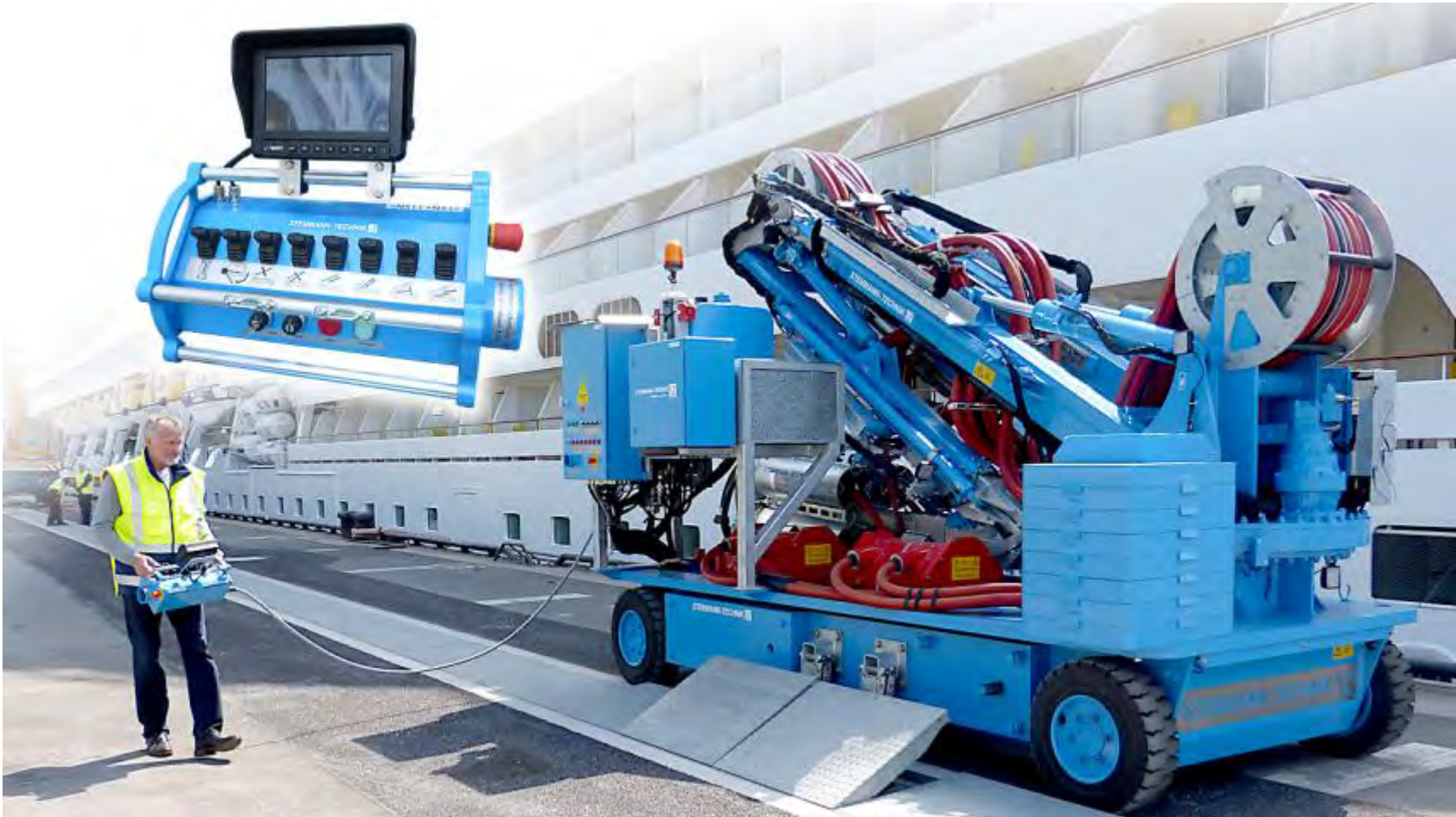
# Alternative Maritime Power Supply & Charging Systems

## Telescopic Plug Holder System



# Alternative Maritime Power Supply & Charging Systems

## Control Panel





# Alternative Maritime Power Supply & Charging Systems

Quick Charging Connection via Pantograph Systems for Ferries





## Alternative Maritime Power Supply & Charging Systems

Quick Charging Connection via Pantograph Systems for Ferries

### System especially for ferries that cover short distances

120 cars / 360 passengers

Fully recharge in 10 minutes

Passenger service since 2015

400 kW to cruise at 10 knots

Replacement of 2,000-hp diesel engine

Saving 264,000 gallons of fuel/year

Saving nearly 3,000 tons of CO<sub>2</sub>/year

Powered by 800 kW battery

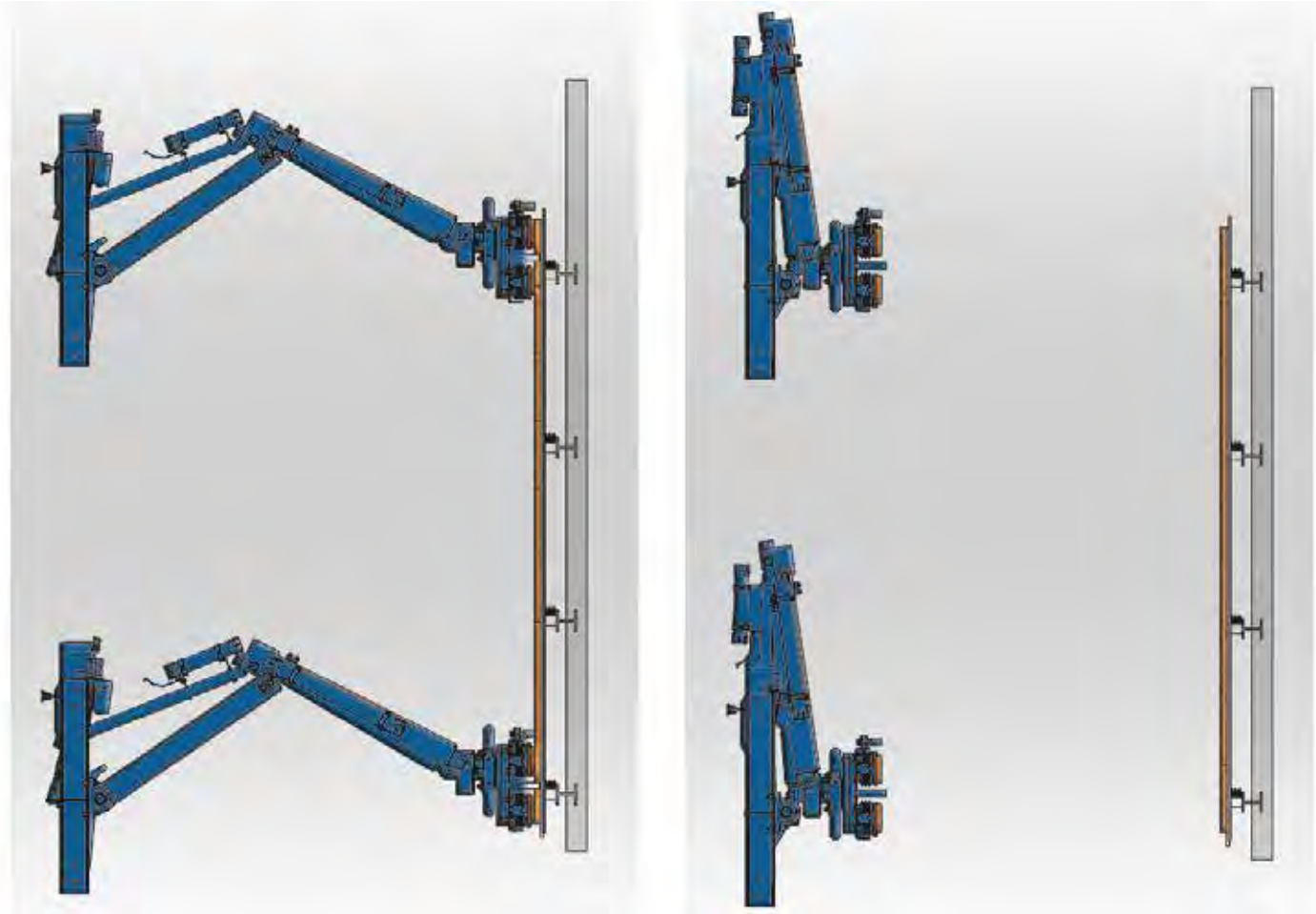




# Alternative Maritime Power Supply & Charging Systems

## Pantograph System

low tide



high tide



## Alternative Maritime Power Supply & Charging Systems

Quick Charging Connection via Pantograph Systems for Ferries

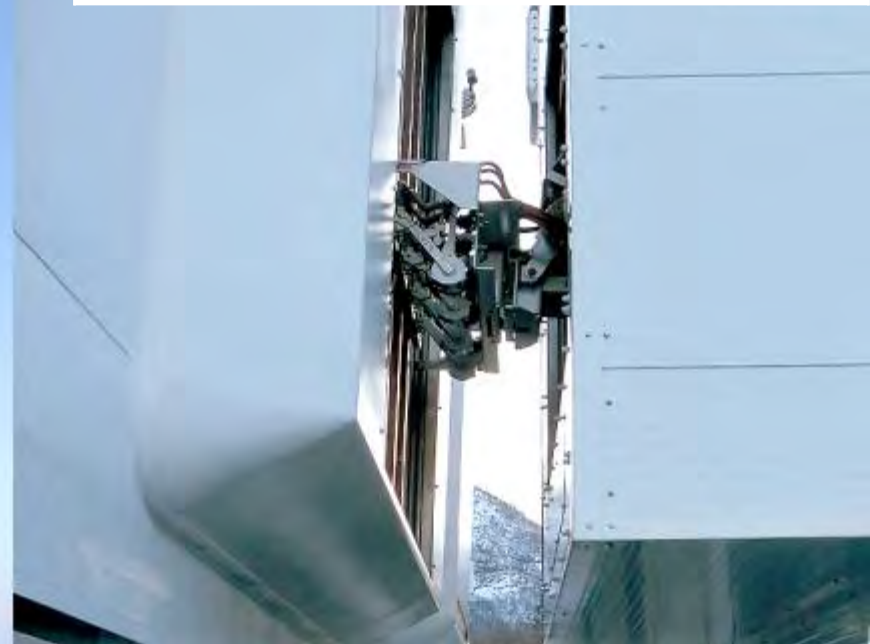
### System especially for ferries that cover short distances

Fully automated

Connecting/disconnecting  
time only 7 seconds

Compensates the ferry  
movement while docking

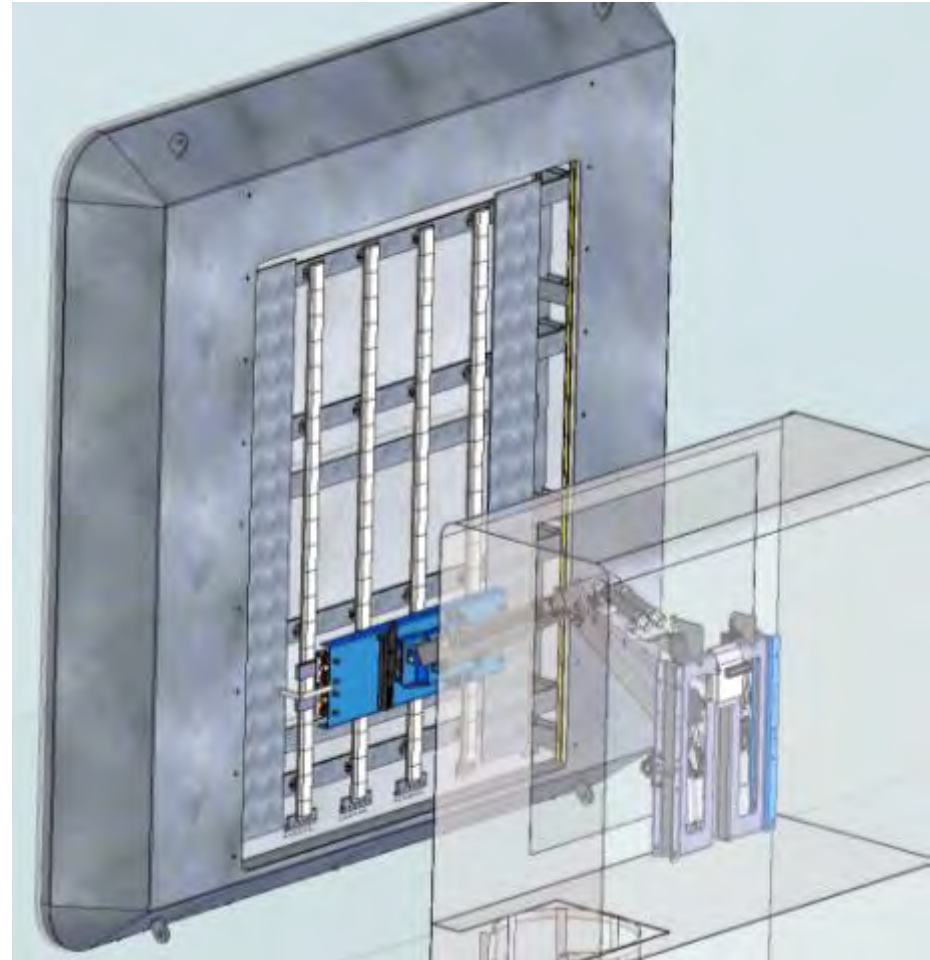
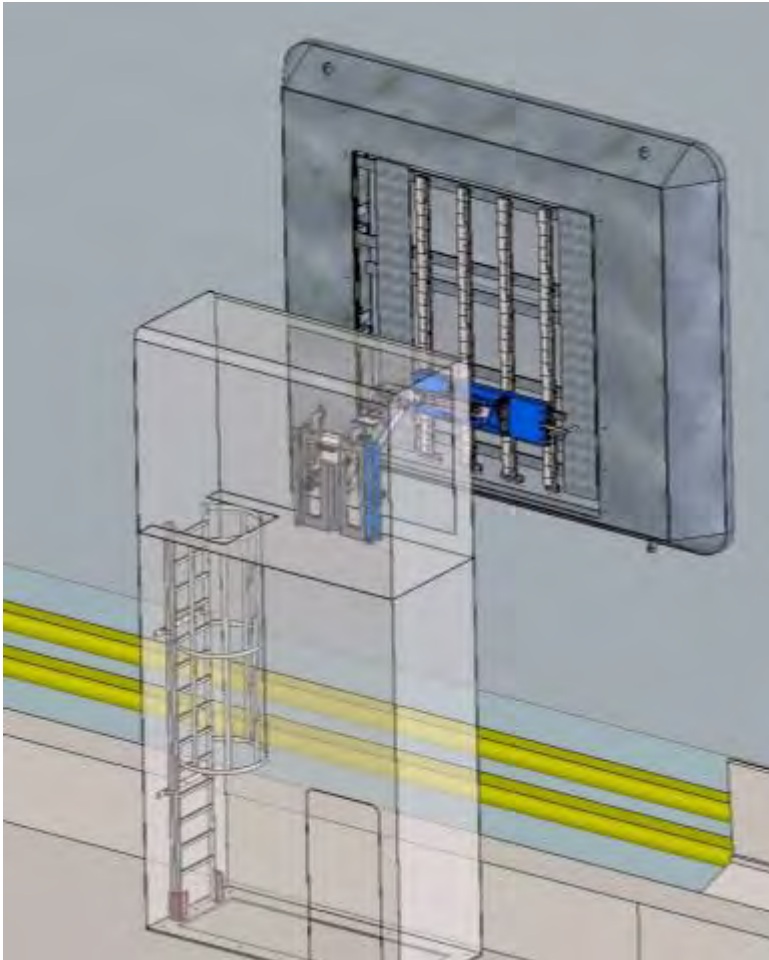
System secured into  
attractive housing





## Alternative Maritime Power Supply & Charging Systems

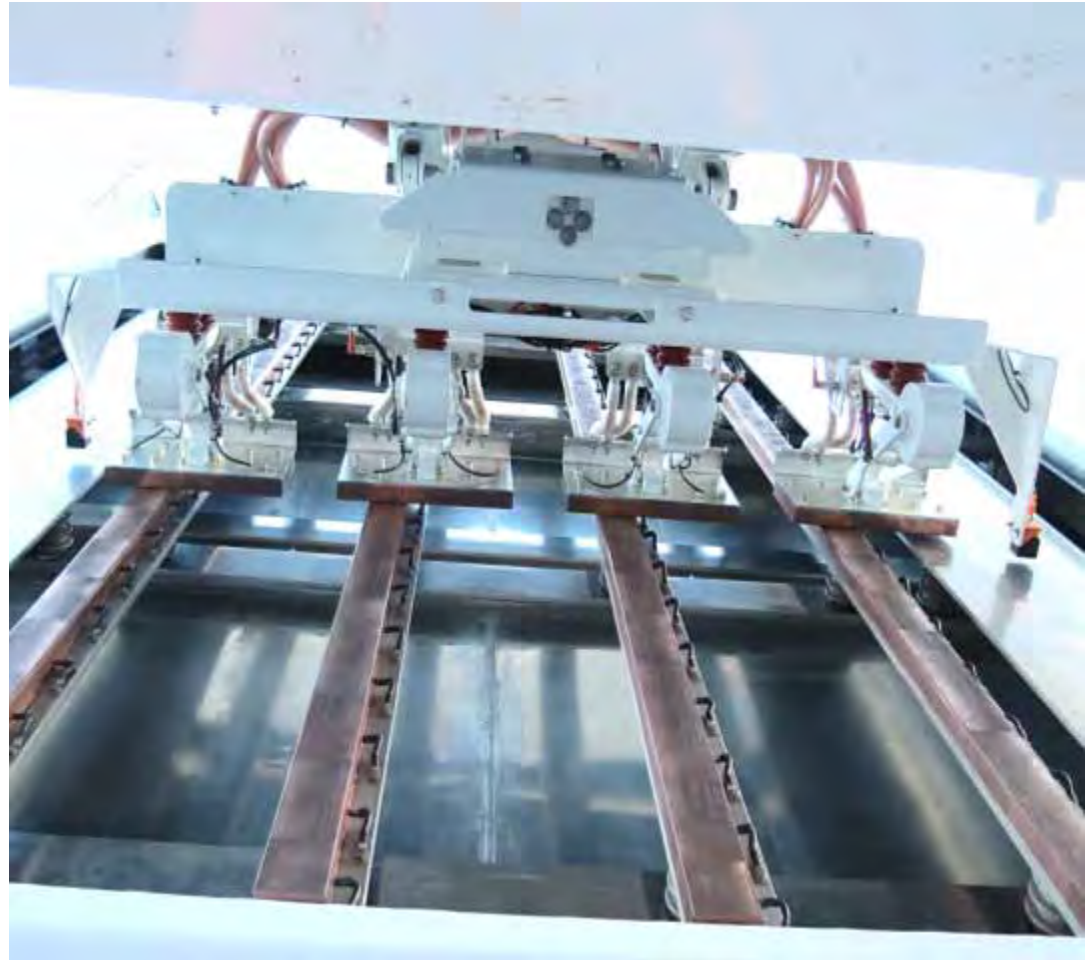
Quick Charging Connection via Pantograph Systems for Ferries





# Alternative Maritime Power Supply & Charging Systems

## Pantograph System





# **STEMMANN-TECHNIK**

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## **Thank You for Your Attention**

### **For more detailed information, please visit us at booth 48**

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