



Faiveley *Stemmann-Technik*

A **Wabtec** Company

/// **Going Green on Shore Power**

Georg Matzku

Head of Sales Industry Europe, Stemmann-Technik

/// Facts & Figures of Stemmann-Technik

Key Facts

Founded: 1912 in Luxembourg
since 1950 in Schüttorf · Germany

Legal form: limited liability company [GmbH]
Employees: about 500 [Schüttorf · Germany]
about 120 [France · Netherlands · Poland]

Areal: 56.000 m²
Workshop: 15.000 m²
Office: 2.700 m²

Owner: **Wabtec Corporation since 2014** (Westinghouse Air Break Technology)
components for railway industry (incl. Faiveley Transportation & GE Transportation)
(breaks, pantographs, doors, air condition, several electrical components)
about 27.000 people, 8 bn US\$



/// Industry Products – Shore Power Solutions – ShoreCONNECT

Quality Made in Germany



Cruise Vessel



Bulk Vessels



Container Vessels

/// Industry Products – Charging Solutions

Quality Made in Germany



ChargingPANTO®



ChargingREEL



ChargingSTINGER



FerryCHARGER

/// It's not easy being green

- What's the problem?
- Where to go?
- What we can do to change it?

/// It's not easy being green – what exactly is the problem?



/// It's not easy being green – what exactly is the problem?

- Nitrous Oxide (NO_x) – acid rain, loungs
- Particulate Matter (PM_{10}) –
< 10 micrometer: loungs & blood
- Carbon Dioxide (CO_2) –
Greenhouse Gas – global warming

/// Is There Any Good Reason for Going Green?


- What I want:
 - Corporate target: going green
 - Cheaper than diesel (price kw/h, taxes, port fees)
 - Practical advantage (24h work)
- What I should:
 - Pressure from local city / politics / NGO's
- What I must:
 - Defined by law (f.e. California, Brussels, Norway, IMO)



/// Conclusion of Paris Climate Conference (COP21) 2015:

The 1.5 °C goal will require zero emissions sometime between 2030 and 2050.

To this date (June 2018), 178 Parties have [ratified](#) out of 197 Parties to the Convention. In doing so they have promised to do their part to limit emissions so that global temperatures does not rise more than 2 degrees Celsius above preindustrial levels. The agreement also encourages nations to try to go further and limit a global temperature increase to 1.5 degrees Celsius.

Party	Percentage of greenhouse gases for ratification	Date of signature	Date of ratification, acceptance, approval, or accession	Date of enters into force
Latvia 	0.03%	22. Apr 16	16 March 2017	15. Apr 17



Decarbonising Maritime Transport

Pathways to zero-carbon shipping by 2035



Case-Specific Policy Analysis

Reducing Shipping Greenhouse Gas Emissions

Lessons From Port-Based Incentives



Case-Specific Policy Analysis

Zero-Emission Vessels 2030. How do we get there?

We're considering the drivers that will make
Zero-Emission Vessels viable.
Part of the Low Carbon Pathways 2050 series.



DNV·GL

ANALYSIS OF CHARGING- AND SHORE POWER INFRASTRUCTURE
IN NORWEGIAN PORTS

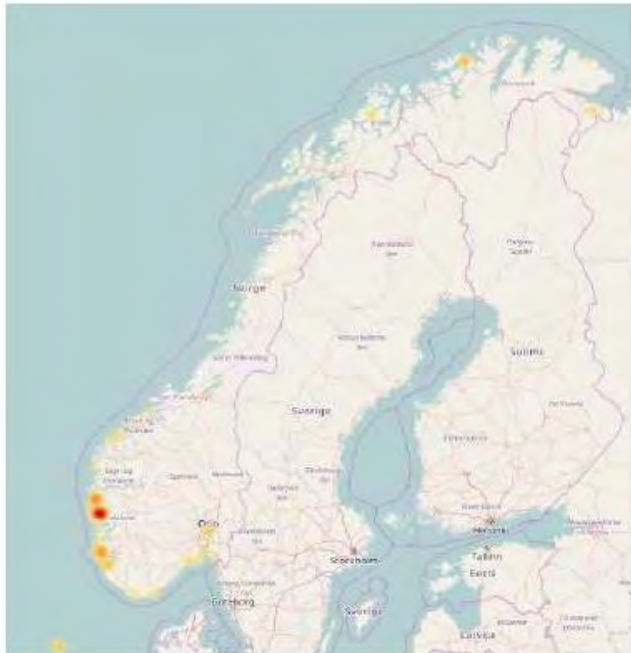
ReCharge

ENOVA SF

Report No.: 2017-0101, Rev. 0

Customer Ref.: 15/815

Date: 31.01.2017




DNV GL

Analysis of Charging- and Shore Power Infrastructure in Norwegian Ports

Environment

Carbon emissions from global shipping to be halved by 2050, says IMO

'The world's shipping industry has now, for the first time, defined its commitment to tackle climate change'

Josh Gabbatiss Science Correspondent | @josh_gabbatiss | 2 days ago | 



Announcement calls for greenhouse gas emissions to be slashed by 'at least' 50 per cent – meaning cuts could go much further *Reuters*

IMO

(International Maritime Organization):

Carbon emissions from global shipping to be halved by 2050

/// Examples by Application – cars & more

- Norway: 2025 – no new cars with combustion engines, by 2030 – zero emission since 2016 more than 40% new cars electric or hybrid cars
2020 – no oil heating in private homes
- The Netherlands: 2030 – no new cars with combustion engines
2030 – no coal power plants
- India: 2030 – no combustion engines. New cars only electric
- UK: 2040 – no new cars with combustion engines
- France: 2040 – no combustion engines for cars
2022: No power from coal power plant, atomic energy down from 75 to 50%
- California: Between 2030 and 2040 no combustion engines

/// Average Power Requirements

...for various vessels types, LVSC/HVSC, according to IEC Standard



Container Ship up to 7 MW

Cruise Ship up to 20 MW

Reefer up to 8 MW

Ro-Ro, Ferry up to 8 kW

Tanker up to 6 MW

Bulk general cargo ship up to 4 MW

ShoreCONNECT

/// Container Vessels



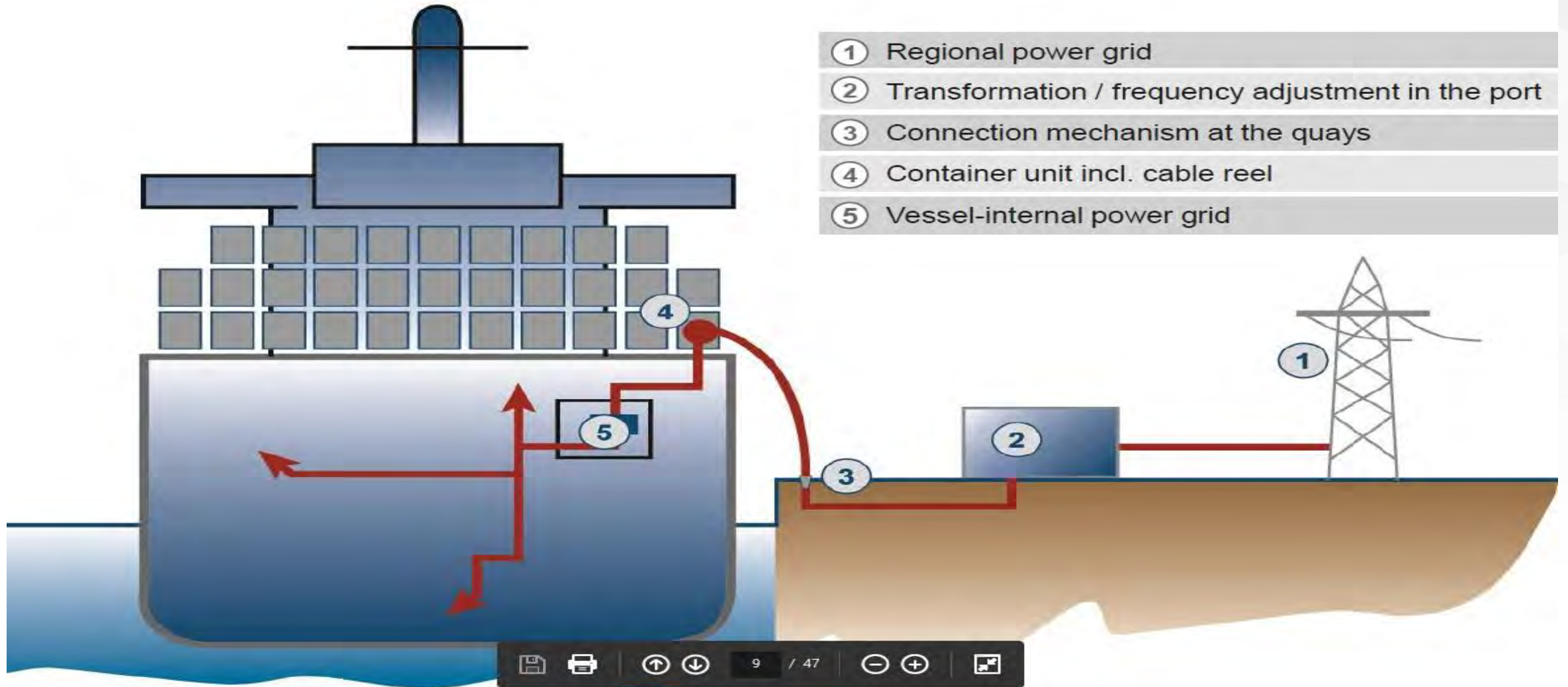
/// Cable Reel Container Systems

...for container vessels



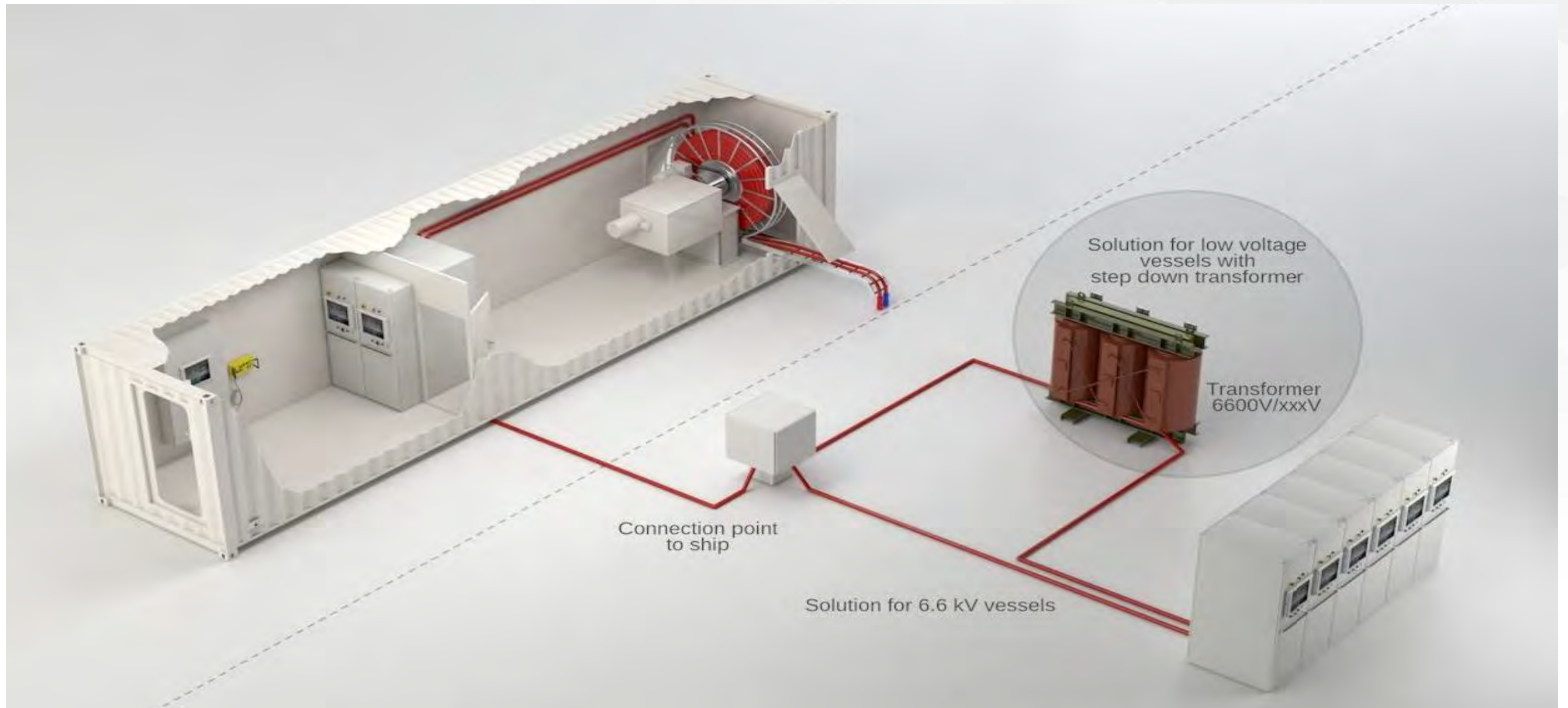
/// Cable Reel Container Systems

...for container vessels



/// Cable Reel Container Systems

...for container vessels



/// Cable Reel Container Systems

...for container vessels / mobile socket



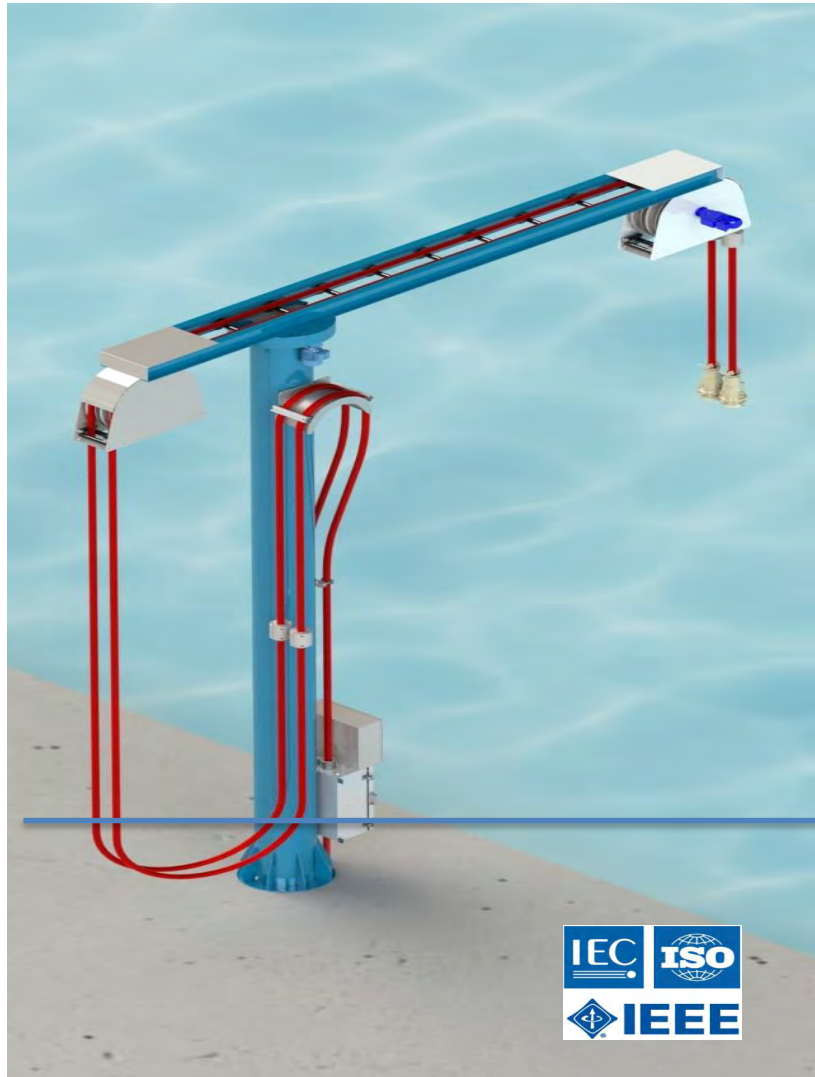
ShoreCONNECT

/// RoRo / RoPax / Special Vessels



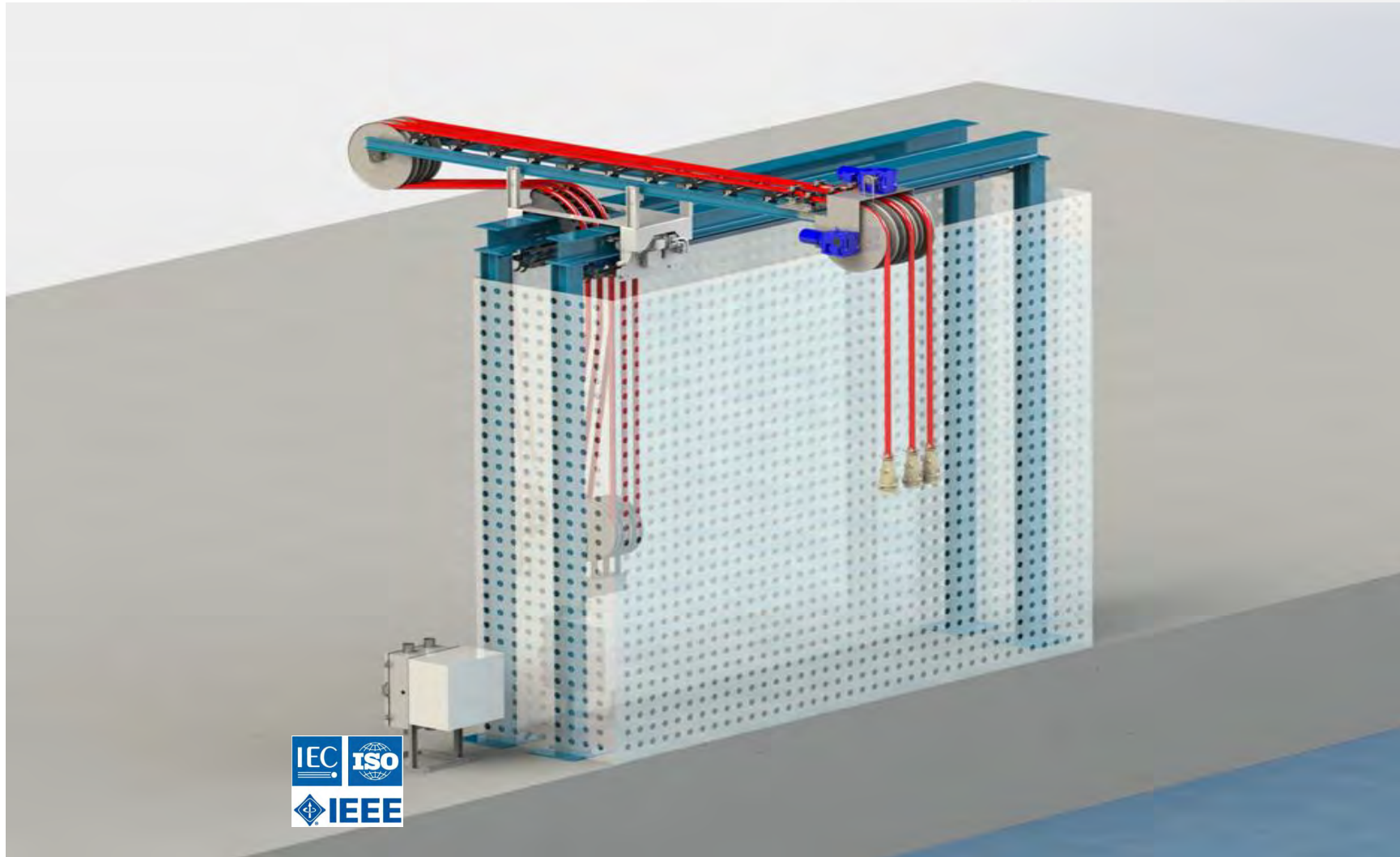
/// ShoreCONNECT Variants

...for various vessels types



/// Project Rotra Vente ShoreCONNECT Cuxhaven

...for various vessels types



/// Project Rotra Vente ShoreCONNECT Cuxhaven

...for various vessels types



/// ShoreCONNECT Variants

for various vessels types including connection box land side and/or onboard unit



/// ShoreCONNECT Variants

for various vessels types including connection box land side and/or onboard unit



ShoreCONNECT

/// Cruise Ships



/// Onshore Power Supply for Cruise Liner

...fast and simple connection to the cruise ship



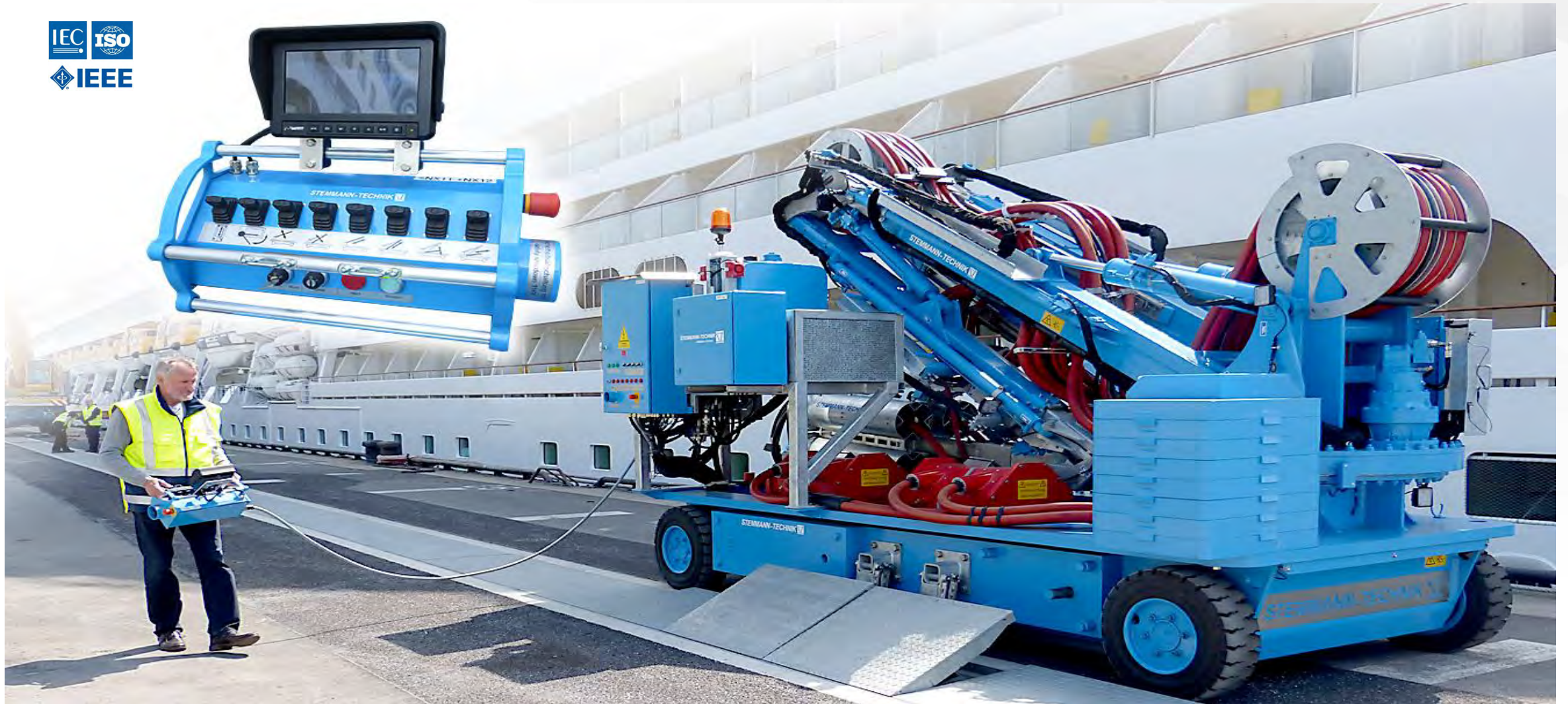
/// Onshore Power Supply for Cruise Liner

...fast and simple connection to the cruise ship



/// Onshore Power Supply for Cruise Liner

...it can be handled by any person



/// Onshore Power Supply for Cruise Liner

...it can be handled by any person



/// ShoreCONNECT – Challenges & Opportunities – Next Steps?

First it needs to work and be reliable according to specification

...and then

- smaller
- lighter
- faster
- more reliable
- more power
- nicer design



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