

## Scalable and modular Designing a standardized MW charger – marine applications

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## Urgency need for green maritime operations

EU Regulations

Fit for 55

55% by 2030

U.S. EPA 50-52% by 2030 vs 2005

IMO 50% by

2050 vs 2008

- Ports contribute to about 3% of total GHG emissions .
- It is 780 million tons of CO2 annually MDPI study in 2011 •
- Ports are significant sources of PM2.5, Nox, Sox and CO .
- Emissions from diesel engines in ports can lead to serious . health issues, including respiratory and cardiovascular diseases by EPA Environmental Protection Agency

Several key new and upcoming regulations aimed at promoting port electrification

National and Local

regulations e.g. CARB (California), (S)ECAS.

# Many ways to go green



#### We enable decarbonization of transportation and are creating a more sustainable future

We design advanced technologies for industrial application supporting our customers to increase efficiency and making the world greener and safer

# Shore Power and Vessel Charging – the differences

## Electrical and port infrastructure

always a challenge

#### Standarization

IEC 80005 vs ? Vessel charging with automation ?

### **Operational Management**

**OPS**: Various ships sizes and types, Continuous and stable supply of electricity, large cables, manual connection

**Charging**: various battery systems, Short charging time, high power transfer, automated connection, safety

## Cold Ironing vs. Battery Charging

Cold ironing focuses on reducing port emissions. Charging is suited for quick energy needs during short journeys. Future trends include higher battery capacities and charging power.





Revolutionize the way the world moves for **future generations**. Modularity and scalability needs

Adaptability to different vessel types

# Ease of expansion

# Cost efficiency

Flexibility in power supply

Future-proofing





Revolutionize the way the world moves for **future generations**.

# Innovative Solutions for a green shipping

FerryCHARGER

#### **HYPOBATT** project:

- Short stay at berth, high battery capacity, interoperability
- Side charging, flexibility installation, ship movement compensation
- Harsh enviroment, tough weather conditions
- Automation: fast and reliable connection, emergency disconnection
- High availability for charging, low maintenance effort

Ferry Charging main challenges and how Wabtec answers them ightarrow



# Achieving sustainability targets

- Environmental Benefits
- Economic Benefits
- Long-term cost savings. TCO
- Healthier environment for port workers
- Less environmental impact for communities.





# Partner with WABTEC for a Sustainable Future

Let's discuss – booth 3
Proposal for a pilot project.
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