

The Megatrend to meet IMO demands for CO2 reduction 2030/50

Henrik Jevrell / Rainer Altmeyen

Athens, Mar 30th 2023

/// Facts & Figures Stemmann-Technik GmbH

Founded: 1912 in Luxembourg
since 1950 in Schüttorf · Germany

Owner: part of **Wabtec Corporation** since 2014 Wabtec (**W**estinghouse **A**ir **B**rake **T**echnology) manufactures products for locomotives, freight cars and passenger transit vehicles, builds locomotives and is active in various other industry segments i.e. ports & maritime
NYSE: WAB, S&P 500 appr. 28k employees, 9 Bn US\$

Employees: about 750

Sites: Germany (2), Poland (1)

Areal: 56.000 m²

Workshop: 15.000 m²

Office: 2.700 m²



/// What's the Challenge? Zero emission latest in 2050 according to COP21 in Paris



global temperature shall not raise more than +2 degrees Celsius above the pre-industrial level

IMO-Goals:

2030: 40% CO2-Reductions
2050: 70% CO2-Reductions compared to 2008



it is extremely likely that human influence was the dominant cause of global warming between 1951 and 2010



NEWS | 09 August 2021

IPCC climate report: Earth is warmer than it's been in 125,000 years

Landmark assessment says that greenhouse gases are unequivocally driving extreme weather – but that nations can still prevent the worst impacts.

APAC | SEPTEMBER 16, 2020 / 11:21 PM / UPDATED 4 DAYS AGO

EU parliament votes to make ships pay for their pollution

By Kate Abnett

3 MIN READ

BRUSSELS (Reuters) - The European Parliament on Tuesday voted in favour of including greenhouse gas emissions from the maritime sector in the European Union's carbon market from 2022, throwing its weight behind EU plans to make ships pay for their pollution.



FILE PHOTO: Shipping containers are being loaded onto Xin Da Yang Zhou ship from Shanghai, China at Pier J at the Port of Long Beach in Long Beach, California, U.S., April 4, 2018. REUTERS/Bob Riba 7/File Photo

/// The Megatrend to reduce CO2 emission

Where do we come from where are we



If we say we started here:

- Ships powered with coal,
- Cranes powered with coal,
- Goods moved by trains in harbors
trains powered with Coal.



And today we are here:

- Containers moved by E-RTG and electrical trains
Cranes running on electricity,
- Ship connected with shore connect,
- Ships propulsion electricity
- Supply-chain optimization tools

/// Crane electrification

Solutions from one supplier / One service agreement

Logistic



/// Shore Connect = On-shore power supply = Cold Ironing

Shore
Connect



- Enabling cold ironing 1... 20 MVA
- Concept: Extension cord between landside and shipside plugs
- Manual connection
- Interchangeability of different ships on many terminals
- Standard IEEE / IEC

/// Ferry Charging / Plug-In (Hybrid)



- Enabling battery charging 0,5 ... 25 MW
- Concept: mechanically guided
- Fully automated plugging
- Fully automated connection and charging
- Interchangeable - typically within fleet
- Standardisation pending

Ship steam on-
electricity



/// Ship propulsion by Slip Ring Assemblies

Ship propulsion

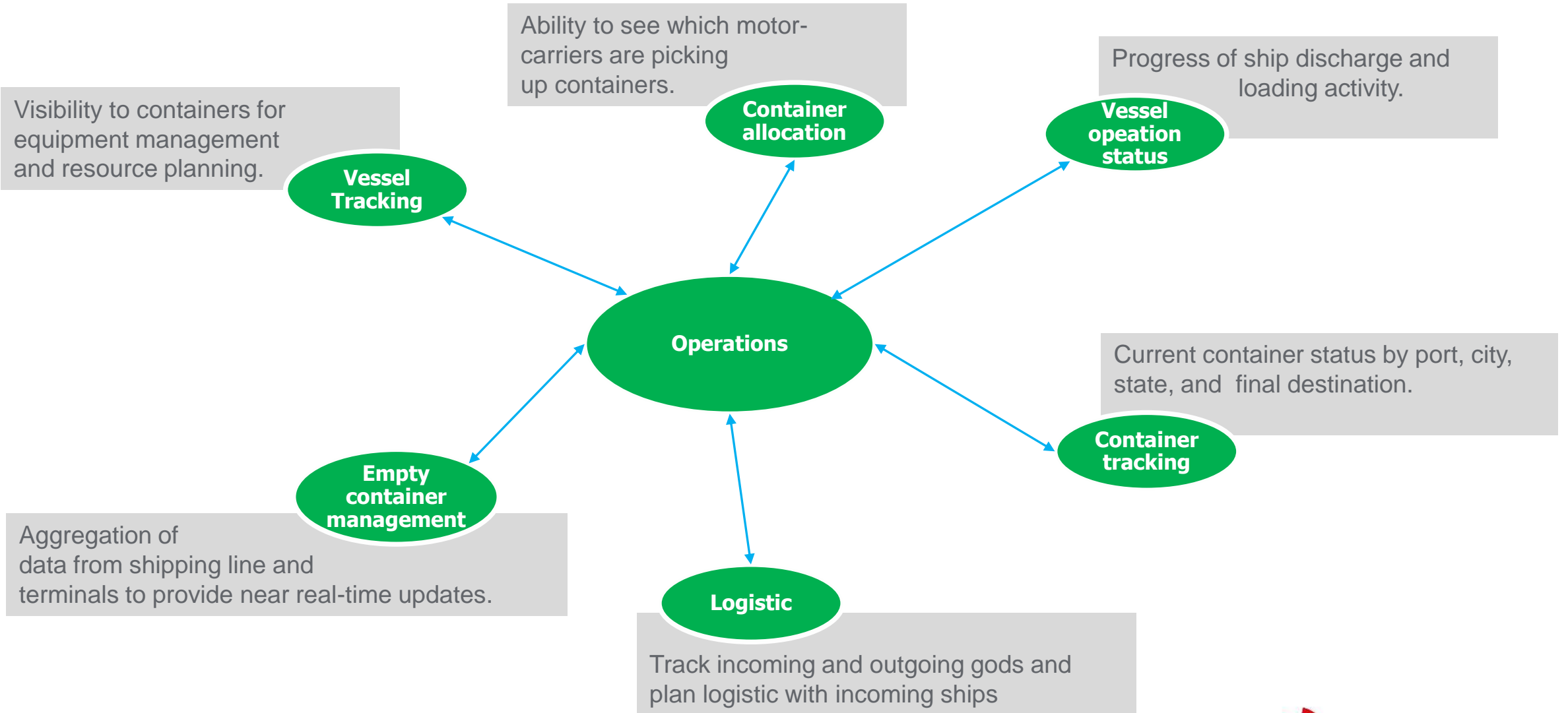


- Building slip rings for pod drives
- High reliability
- Compact design for limited space
- Low maintenance cost
- Low and high Voltage

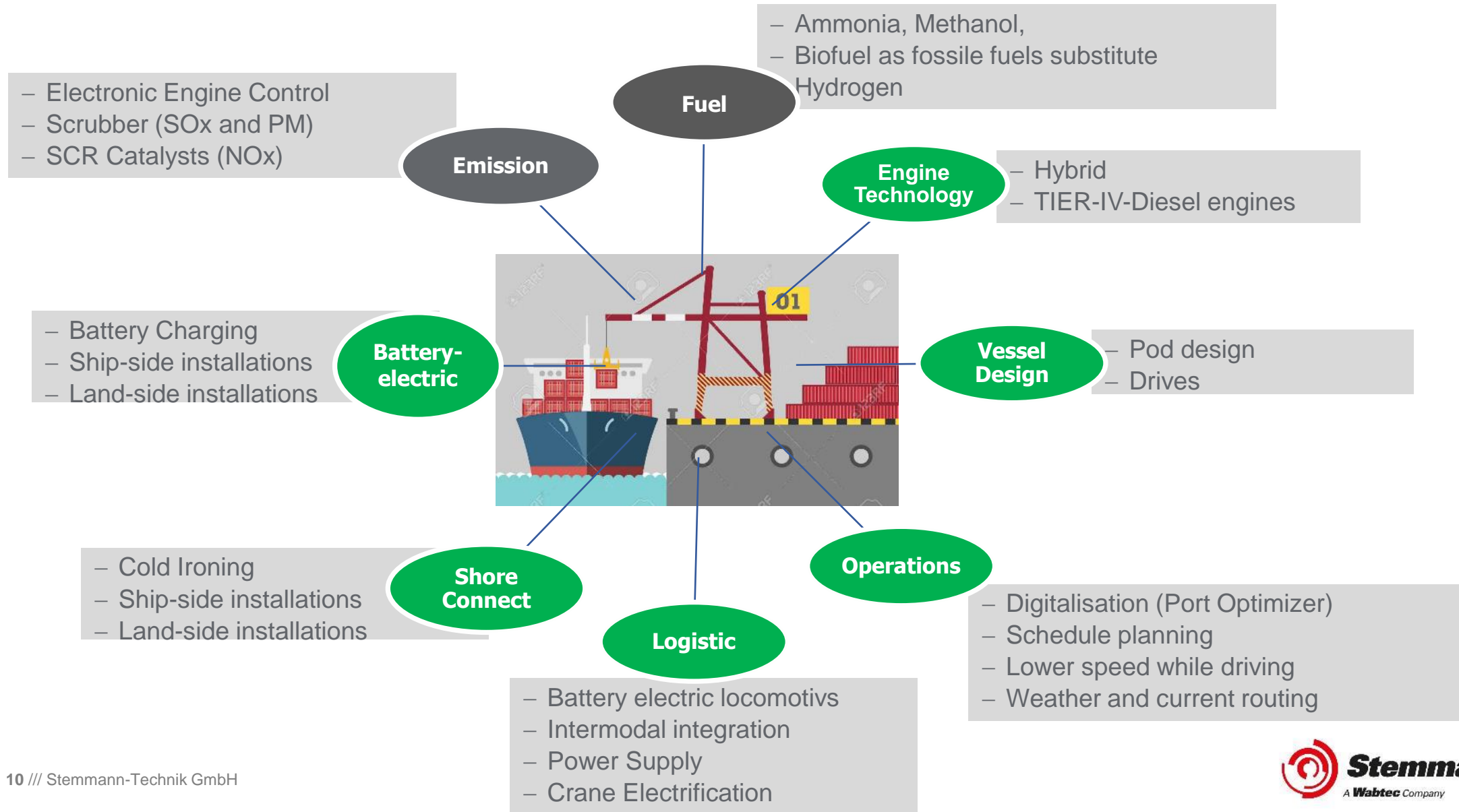


/// Supply chain optimization tools Port Optimizer

Logistic operations



/// Were do you find Wabtec in the Mega trend to reduce CO2 and GHG Emissions



/// The Megatrend to reduce CO2 emission

Where are we and where will we go



And today we are here

- Containers moved by E-RTG and electrical trains
Cranes running on electricity,
- Ship connected with shore connect,
- Ships propulsion, electricity
- Supply chain optimization tools

What will the future look like?

- We dont know!
- **What we do know is that Wabtec / Stemmann will be here to develop the market and support you!**



Stemmann-Technik

A ***Wabtec*** Company

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