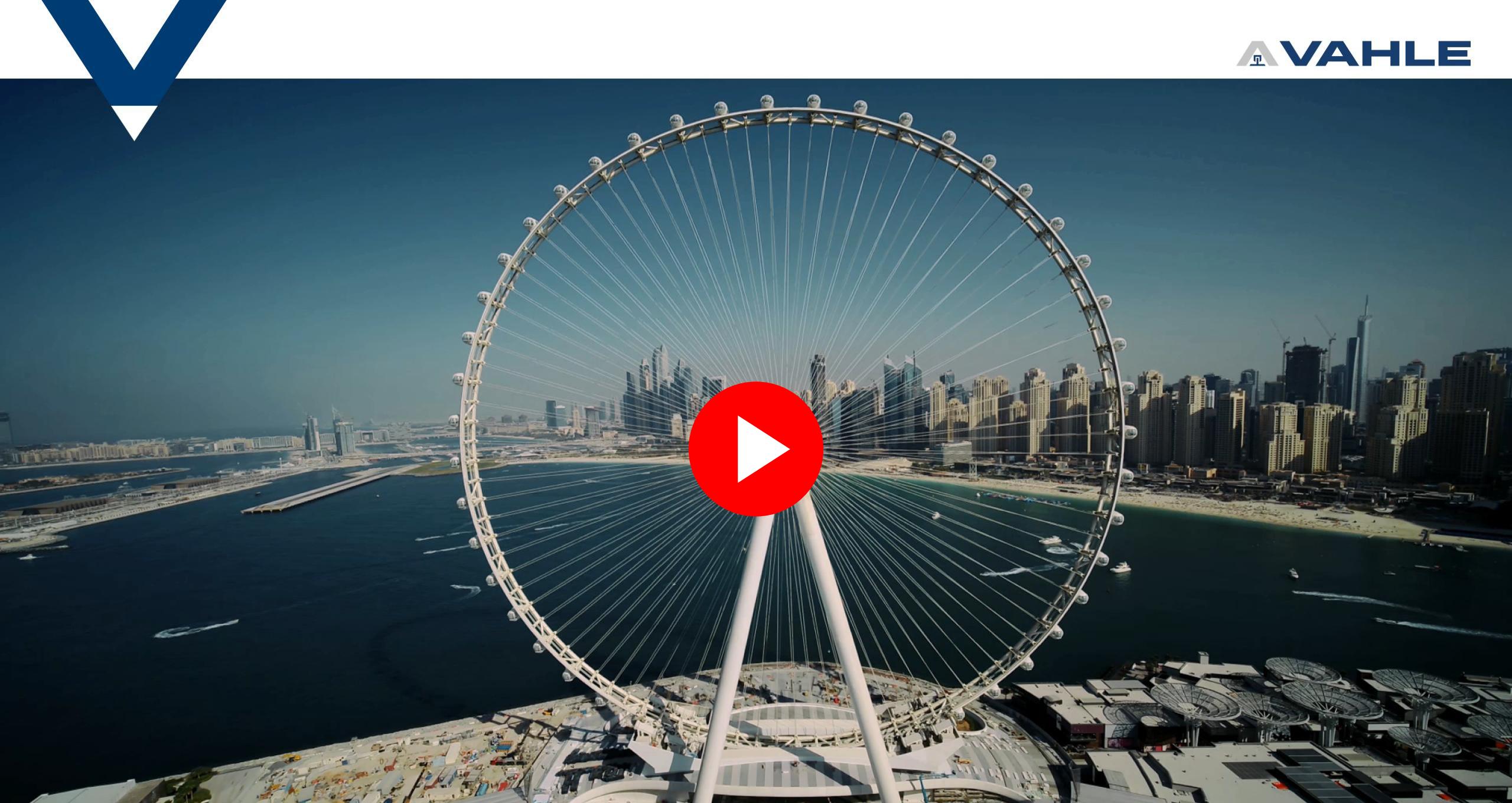


THE ZERO EMISSION TERMINAL - HOW TO CONNECT TO THE GREEN FUTURE



IN 1912, PAUL VAHLE DEVELOPED
THE WORLD'S FIRST COPPER CONDUCTOR RAIL.





 **> 200 Mio.**

TOURNOVER IN
EURO (2024)



 **> 825**

EMPLOYEES



 **14**

MARKET
ORGANIZATIONS



 **5**

PRODUCT
GROUPS



Energy Transmission



Intralogistics



Data Communication



Crane Technology



Positioning



Automotive



Control Systems



Port Technology



System Solutions



9.7 Billion

People will populate
our planet by 2050

Source: United Nations



Air Pollution

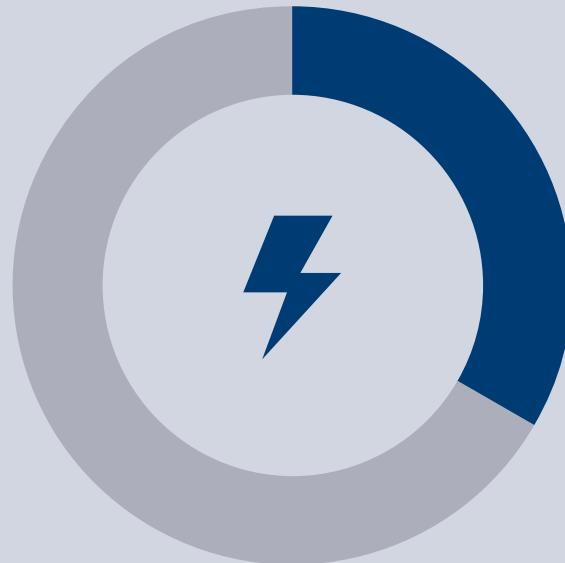
99%

of the world population breathes
air that exceeds WHO quality
limits

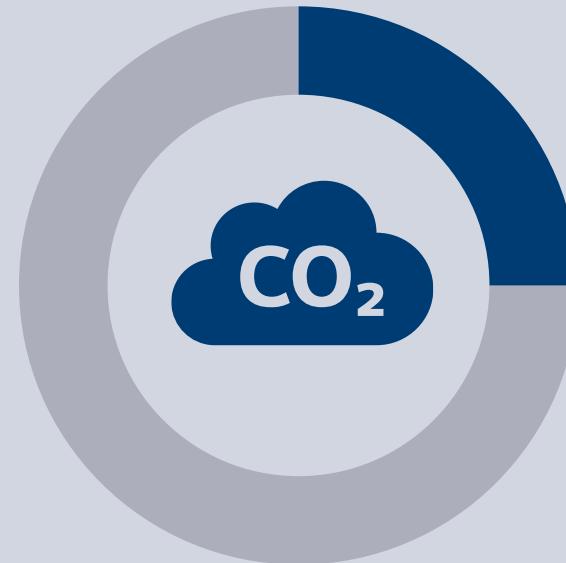
90%

of the world's children are
breathing harmful air

Transport is responsible for



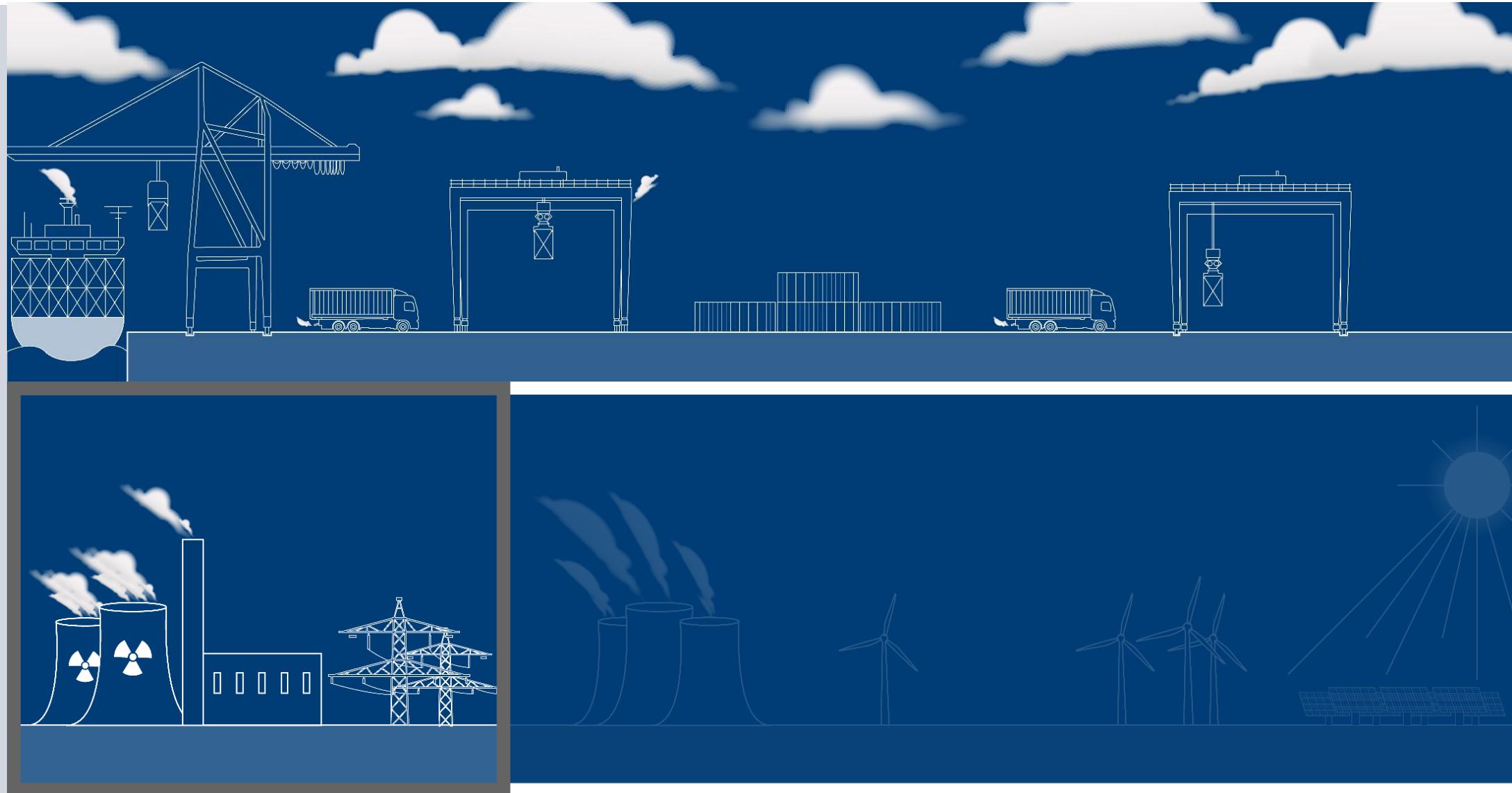
33%
of all energy
consumed



25%
of global CO₂
emissions

Simplified Container Terminal Overview

In a changing world – 20 years ago



Simplified Container Terminal Overview

Nowadays and in the future



PORT TECHNOLOGY

CONTAINER HANDLING



**Motorized
Cable Reels**



**Festoon & USMG
Solutions**



eRTG Systems

Truck Charging



Shore Power



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SPECIAL PROJECTS

Ferris Wheels, ...



**PEOPLE MOVER
TRAMS, TRAINS, ...**

Simplified Container Terminal Overview



1.0 ELECTRIFICATION

Insulated conductor rails 1000V, 1000A with aluminium/stainless steel

2.0 POSITIONING

Precise position feedback with a contactless reading head

3.0 DATA COMMUNICATION

Interference-free and safe data & video

2020 - 300 Mbps

2023 - 600 Mbps

2025 - 1 Gbps

4.0 - AUTOMATION

Combination of electrification, positioning and data communication for remote control





Crane electrification enables

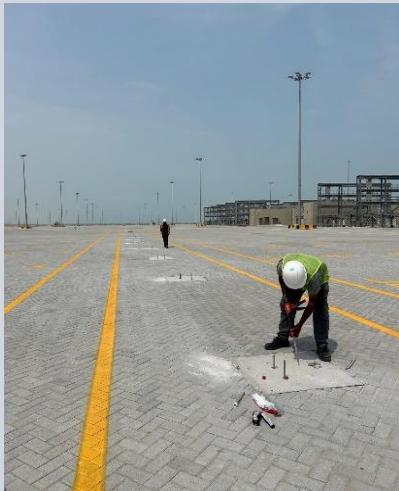
>60%

Annual costs savings on
operational and maintenance
costs of RTG cranes, using
VAHLE's eRTG solutions.

Project study - Khalifa Port | Abu Dhabi

Impressions – Trimotion compact – Installation and commissioning

VAHLE



Project study - Khalifa Port | Abu Dhabi

Impressions – Trimotion compact – Installation and commissioning



Benefits of VAHLE Electrification & Automation Solutions



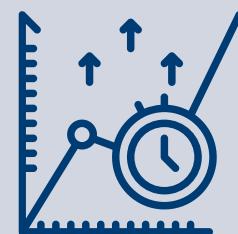
ECONOMIC

- Optimized OPEX
 1. Reduced dependency on fossil fuel supplies
 2. Reduced GenSet maintenance cost
 3. Personnel costs are saved
 4. Productivity is increased
- Optimized Total Cost of Ownership



ECOLOGIC

- Reduction of CO₂ emissions and noise pollution
- Sustainable and green – at best with renewables



EFFICIENT

- Flexible yard operation
- Automatic connection system
- Autosteering
- Seamless synchronization
- Human Safety



Thank You