

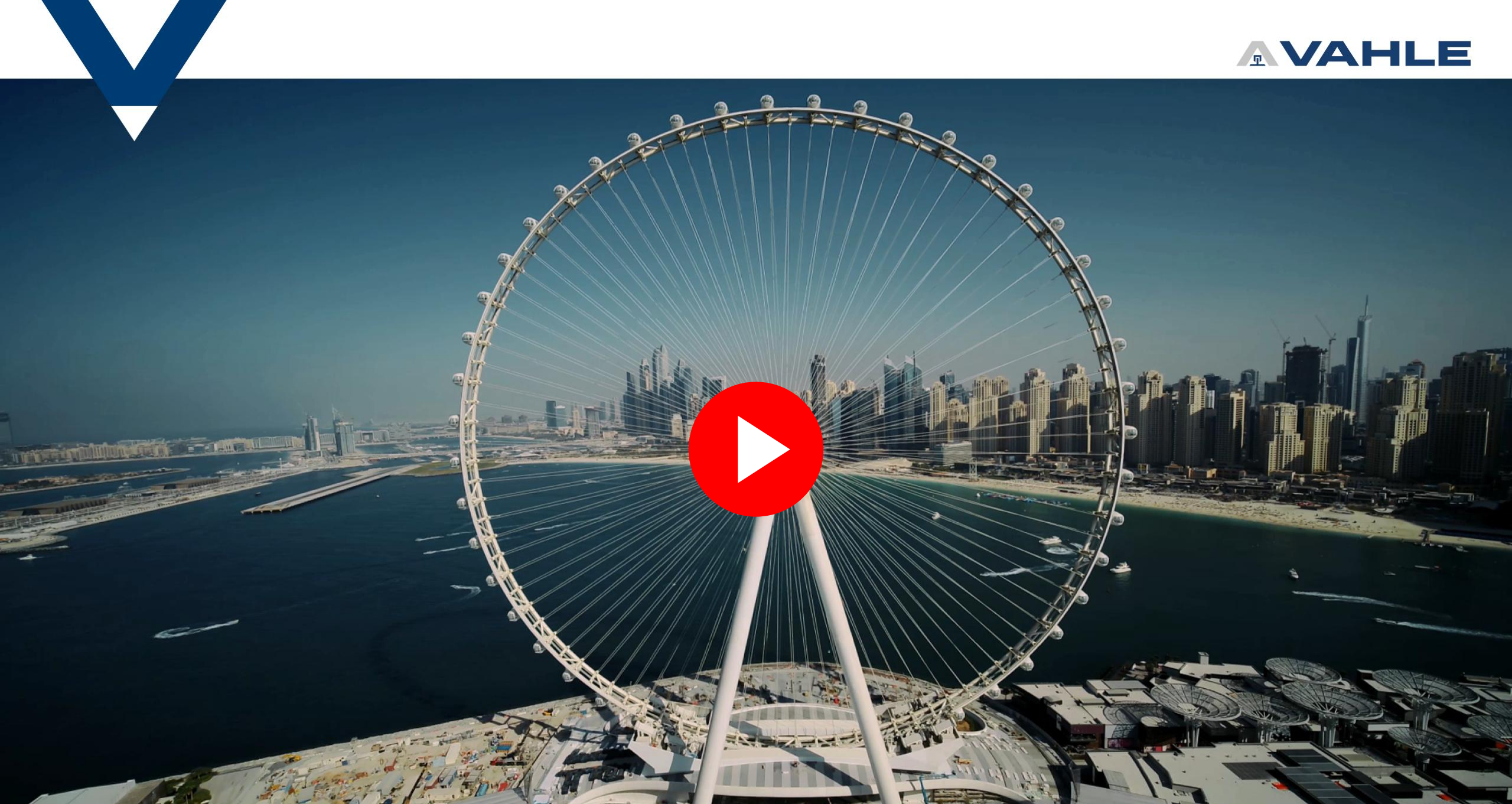
# THE ZERO EMISSION TERMINAL - HOW TO CONNECT TO THE GREEN FUTURE



Freitag, 30. Januar 2026

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





 **> 200** Mio.

TURNOVER IN  
EURO (2024)

 **> 825**

EMPLOYEES

 **14**

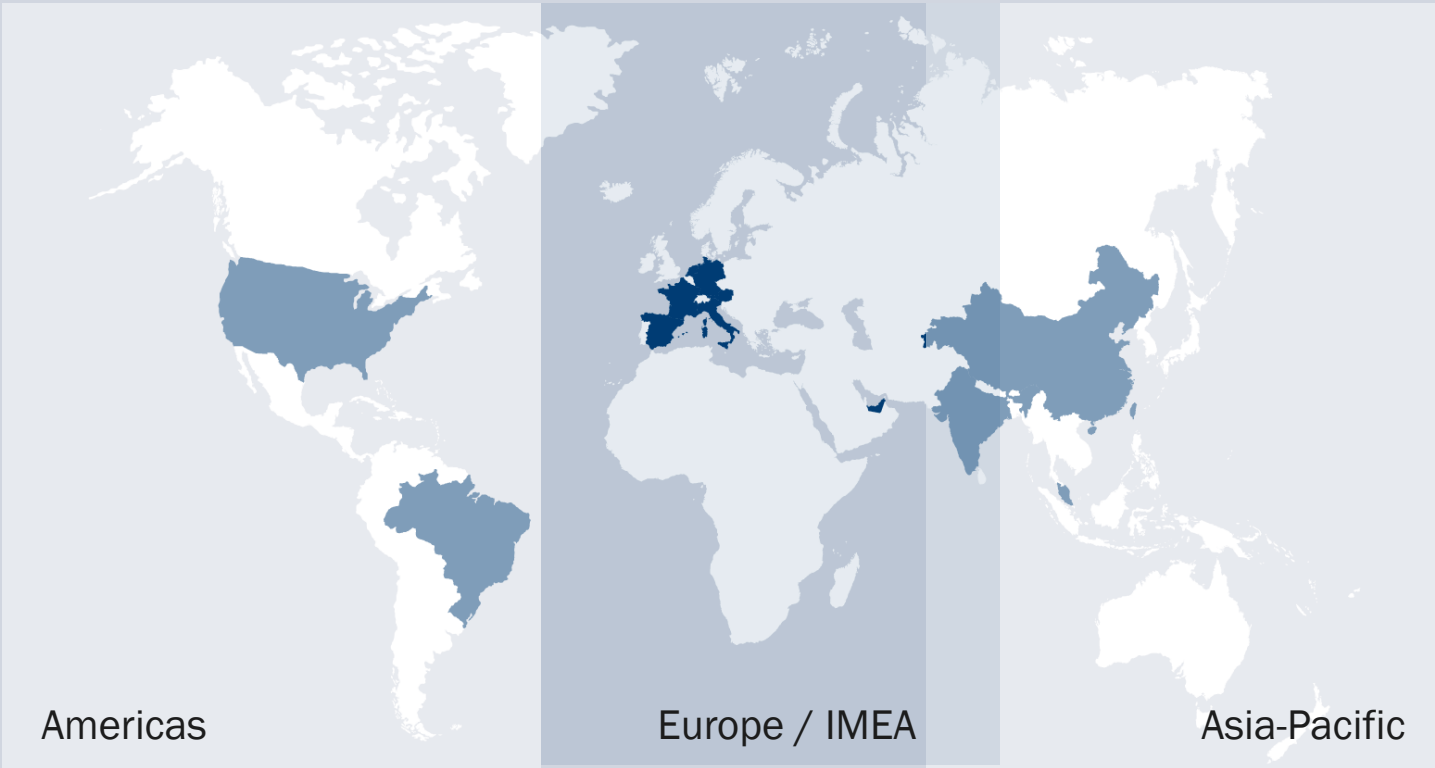
MARKET  
ORGANIZATIONS

 **5**


PRODUCT  
GROUPS


 **4**

TARGET  
MARKETS





 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

A large, detailed aerial night photograph of a city, likely Dubai, showing a dense grid of skyscrapers and buildings with their lights on. A large blue 'V' shape is overlaid on the top left corner of the image.

## Air Pollution

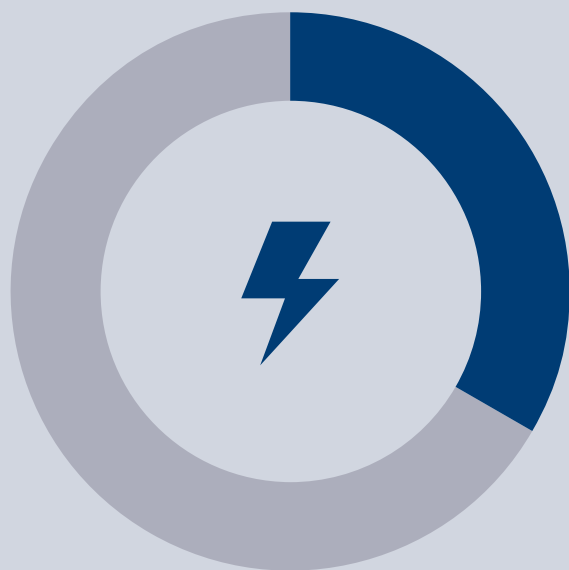
**99%**

of the world population breathes  
air that exceeds WHO quality  
limits

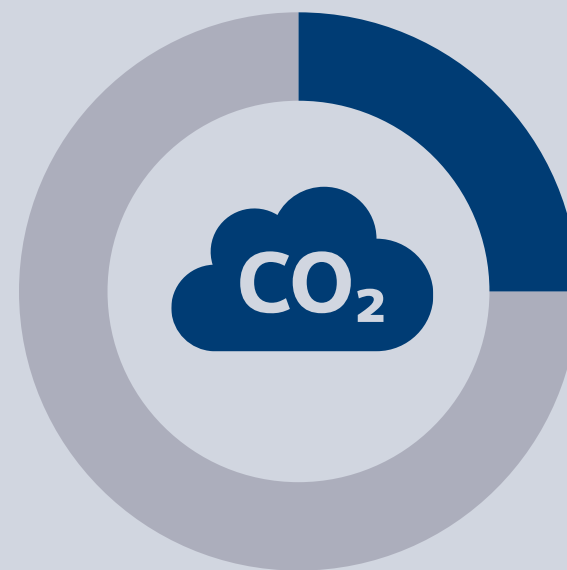
**90%**

of the world's children are  
breathing harmful air

Transport is responsible for



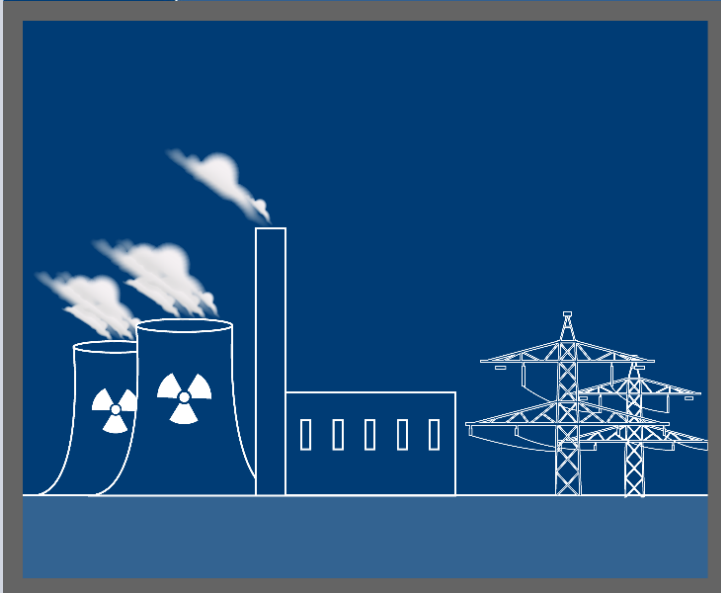
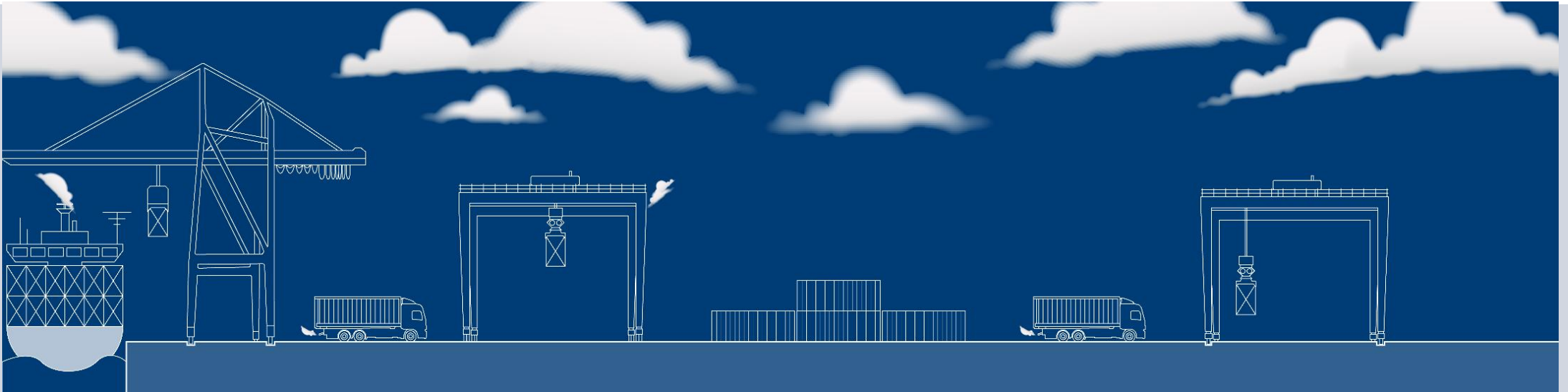
**33%**  
of all energy  
consumed



**25%**  
of global CO<sub>2</sub>  
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



## Truck Charging



## SPECIAL PROJECTS Ferris Wheels, ...



## PEOPLE MOVER TRAMS, TRAINS, ...

# Simplified Container Terminal Overview



# Container Terminal Automation

Step by step approach



## 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

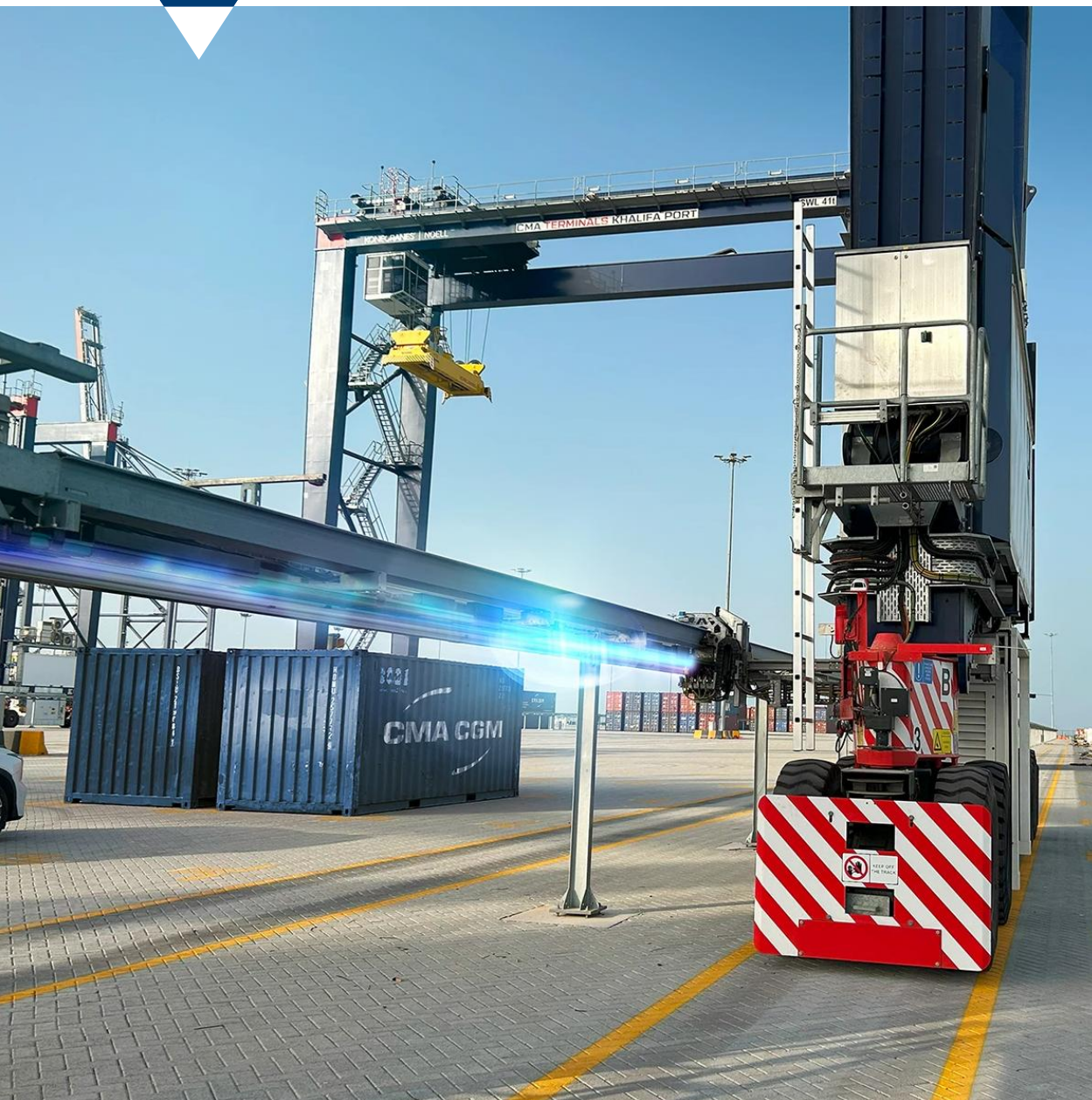
2023 - 600 Mbps

2025 - 1 Gbps

## 4.0 - AUTOMATION

Combination of electrification, positioning and data communication for remote control





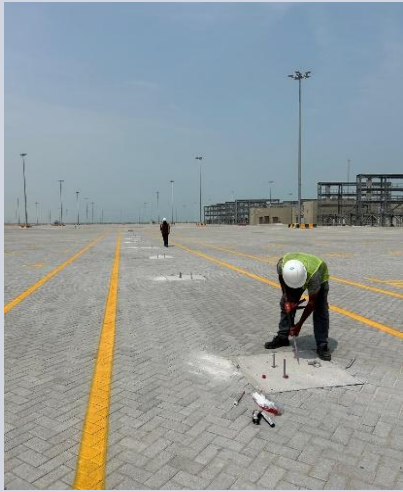
Crane electrification enables

**>60%**

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

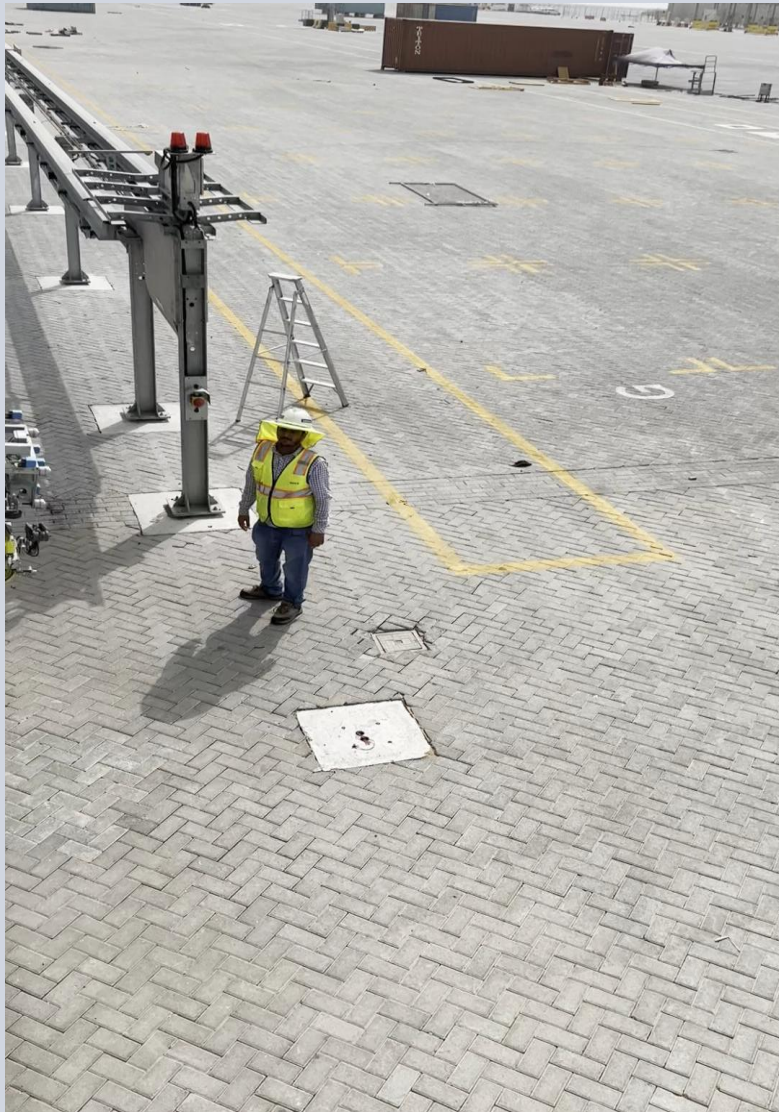
# Project study - Khalifa Port | Abu Dhabi

Impressions – Trimotion compact – Installation and commissioning



# Project study - Khalifa Port | Abu Dhabi

Impressions – Trimotion compact – Installation and commissioning





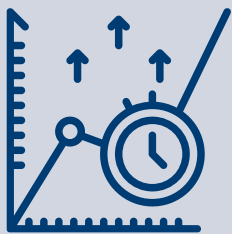
## ECONOMIC

- 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 CO<sub>2</sub> 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**