

Automating for a sustainable future

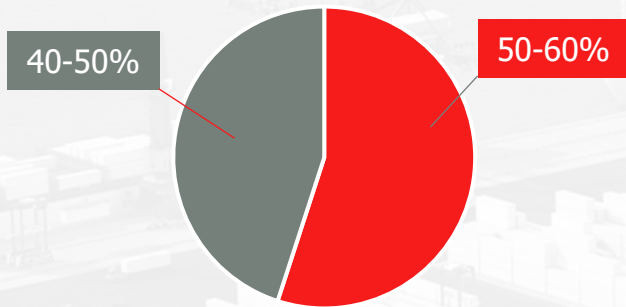
The state of port sustainability and automation

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THE PARIS AGREEMENT

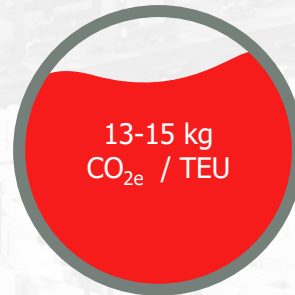
The need to reduce GHG emissions.

CO2 emissions in terminal operations.*



- Scope 1 - direct (mostly fossil fuels)
 - Scope 2 - indirect (mostly purchased electricity)
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Typical emissions



*Excludes Marine Vessels, **Excludes Scope 3



The way forward:

Electrification
Decarbonization
Optimization of energy use

KONECRANES SUPPORT UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

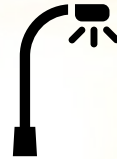
Sustainability is more than emissions



Safety



Well-being



Light Pollution



Noise Pollution



Scarcity of Land

The need to automate

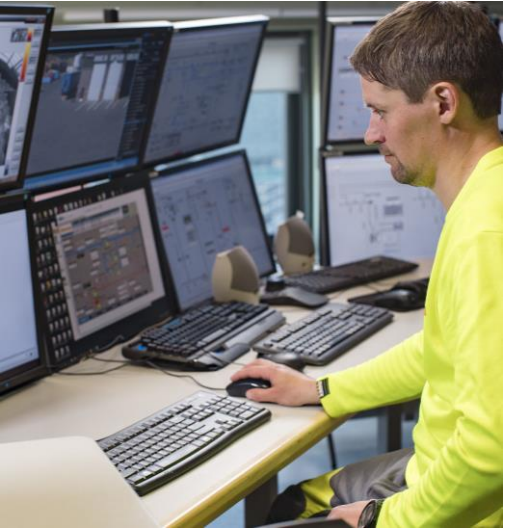
Benefits of Automation for Port Sustainability

Sustainability

Productivity

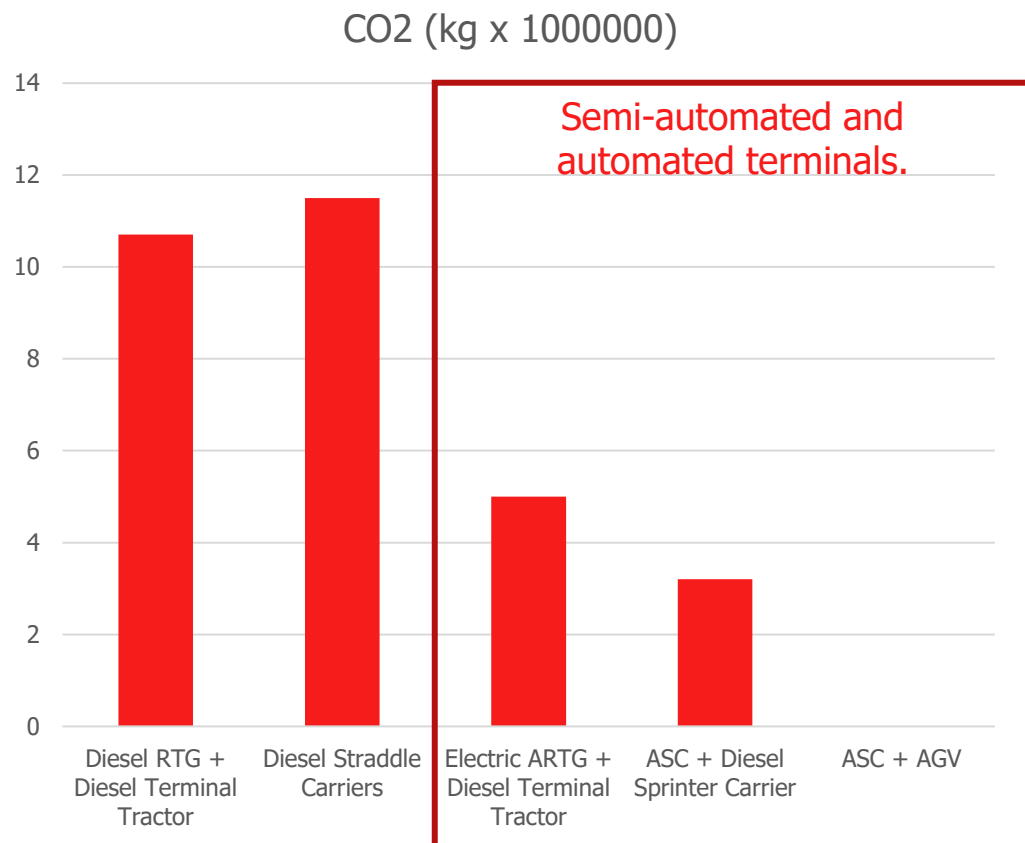
Financial Return

Safety



CO₂ emissions comparison between terminal types

1MTEU terminal



Based on studies by Portwise

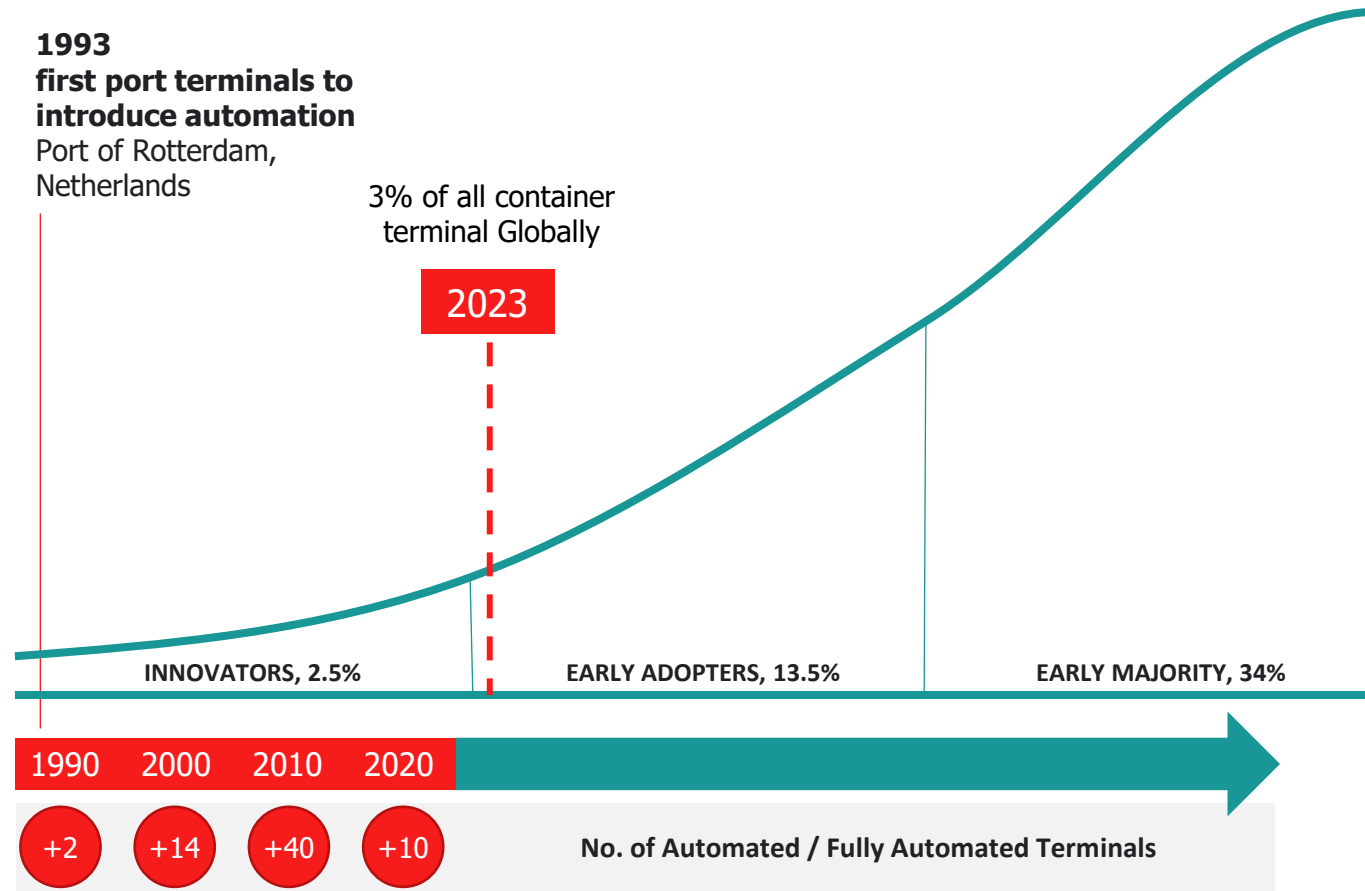
Automated terminals produce less CO₂ emissions:

- Minimal reliance on fossil fuel.
 - Electric equipment
 - Optimal operations
 - Reduced human-related vehicles – often reliant on internal combustion engine.
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- As renewable energy sources become more prevalent, the CO₂ emissions associated with electricity generation decrease

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**60% of our sales from eco-efficient equipment.
By 2026 our goal is to offer fully electrified offering.**

The path to port automation...



76%
Automated terminals opened after 2012

>50%
Of top 100 container ports are automated

≈15%
of all trade handled via automated terminals

i 65% of all world's automated container terminals run with Konecranes

Largest call size (TEU)	Automated	Full automated
1000 <	4	0
1000-4999	3	0
5000-9999	4	1
10000-14999	8	4
15000-19999	4	0
20000-23963	5	2
23963	17	11

It's time to act

At Konecranes we know we can always find a safer, more productive and sustainable way.

...if **we don't act?**

CO2 emissions
will keep rising

Risk to safety
& wellbeing

Exacerbate
land scarcity

Competitive
threat from
reactive
terminals

In the face of these potential impacts, the industry needs to:



**Transitioning to
cleaner energy**



**Adopt
electrification**



**Incorporate
automation**



Thank you & enjoy the rest of the webinar