



MoorMaster automated mooring can reduce annual carbon emissions from container vessels by tens of thousands of tonnes.

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## Automated mooring can cut pollution equal to a million cars. Free tool available for ports to calculate impact.

A new case study by Starcrest Consulting Group shows fast mooring with Cavotec's [MoorMaster automated mooring system](#) can reduce annual carbon emissions from container vessels by tens of thousands of tonnes in a single port.

If installed at every container terminal worldwide, the technology could save carbon dioxide equal to a million cars. Starcrest has developed a tool that

estimates the potential fuel savings and emission reductions from adopting automated vacuum mooring in container terminals. The tool is free to use and available for download at [www.cavotec.com/moormasterforcontainer](http://www.cavotec.com/moormasterforcontainer).

The latest estimates show that maritime transport contributes between two and three per cent of greenhouse gases, and projections suggest that the sector's carbon footprint is set to grow as trade volumes increase.

Several initiatives aim to develop ocean-going vessels powered by zero-emission fuels, but the majority of vessels are expected to burn heavy fuel oils for decades to come. This means that the maritime industry needs to reduce its carbon footprint with existing vessels to slow carbon build-up in the atmosphere and meet the targets of the Paris Agreement.

Cavotec asked leading environmental consultancy Starcrest Consulting Group to estimate the potential environmental benefits of fast mooring with MoorMaster in container terminals and develop an easy-to-use tool for ports to calculate their own potential benefits.

For example, the tool shows that the technology could reduce carbon emissions by up to 20,000 tonnes per year across the two San Pedro Bay ports in Southern California, and a similar amount in Port of Oakland in Northern California. In each case, the technology could also cut harmful nitrogen oxides at berth by up to 50 tonnes per year.

“The potential efficiency improvements from the MoorMaster system can translate into emission reductions from mooring operations that aren't generally being targeted. These savings have the potential to create further system efficiencies and associated reductions. In advanced air pollution control areas like California, these reductions could be significant,” says Bruce Anderson, Principal at Starcrest.



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MoorMaster replaces conventional mooring lines with remotely operated vacuum pads that moor vessels in seconds at the touch of a button. Rapid mooring and release enable vessels to connect faster to shore power in port and reduces the use of tugs, further reducing harmful emissions.

Every minute saved in port also increases the amount of time that ships can spend at sea, making it possible for ships to cruise at lower speeds, which saves fuel and further reduces emissions.

“These findings clearly demonstrate how MoorMaster helps ports reduce their environmental impact with the existing vessels and infrastructure,” comments Nicklas Vedin, Vice President of Product Management, MoorMaster at Cavotec.

“For an average 3,500 TEU vessel, the tool shows a total carbon reduction of around nine tonnes of carbon dioxide per call with the inputs used in the case study. Multiplied by the close to 500,000 container terminal calls per year across the world means that the technology could potentially reduce global emissions of greenhouse gases by several million tonnes per year, the equivalent of emissions from one million cars,” adds Vedin.

The tool, developed by Starcrest, estimates the potential fuel savings and emission reductions from adopting automated vacuum mooring in container terminals. The user enters values for parameters such as vessel calls per year and vessel size. Operational data is also entered for mooring and release

times and cruising speed. The tool is free to use and available for download at [www.cavotec.com/moormasterforcontainer](http://www.cavotec.com/moormasterforcontainer).

## About MoorMaster™

MoorMaster eliminates the need for conventional mooring lines by replacing them with automated vacuum pads that moor and release vessels in seconds. Its patent-protected Active Control™ technology minimises vessel motion, thereby drastically improving port productivity. First introduced two decades ago, MoorMaster is the only proven and widely used vacuum mooring technology. It is used at bulk, container handling, lock, roll-on/roll-off, and ship-to-ship applications worldwide. Discover the latest generation of MoorMaster here: [www.moormaster.com](http://www.moormaster.com).



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Cavotec is a leading cleantech company that designs and delivers connection and electrification solutions to enable the decarbonization of ports and industrial applications worldwide. Backed by more than 40 years of experience, our systems ensure safe, efficient, and sustainable operations for a wide variety of customers and applications worldwide. Learn more at [cavotec.com](http://cavotec.com).

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