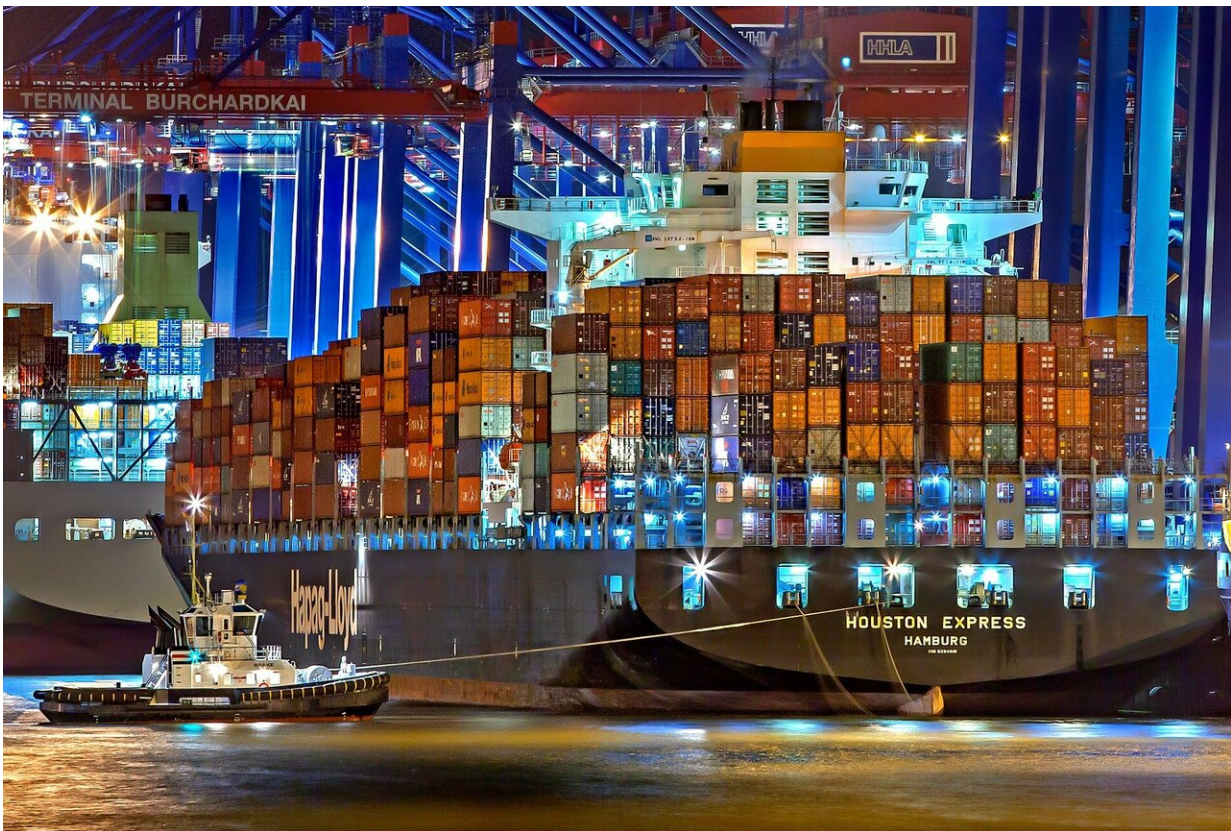


Environmentally friendly shipping helps to reduce freight costs

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Improved ship utilization rates and investments in environmentally sustainable technologies for enhanced energy efficiency would significantly reduce carbon dioxide emissions within navigation. A

recent study carried out in the Laboratory of Industrial Management at Åbo Akademi University also indicates that such measures would contribute to lowering of freight costs.

The results were obtained by combining emission abatement analysis and investment calculation.

"Through operational and technological measures it is possible to reduce both emissions and freight costs. Moreover, if the same cargo volume can be shipped using [less fuel](#), the [shipping companies](#) will gain major savings in terms of fuel costs," explains Research Director Magnus Gustafsson from the Laboratory of Industrial Management at Åbo Akademi University.

The shipping sector generates significant [carbon dioxide emissions](#), which is harmful for both the environment and the society. In recent years, the branch has witnessed both internal willingness and external pressure to reduce emissions, but development has been complicated by the tough competition in shipping.

Digitalisation offers tangible solutions. For instance, new digital planning and booking systems would facilitate smarter use of routes while also diminishing traffic with half-empty vessels or with no cargo onboard.

"By sailing fewer nautical miles with little or no cargo, it is possible to improve the capacity utilization rate and eliminate emissions caused by the so-called ballast traffic," says Henry Schwartz, Doctoral Student in Industrial Management at Åbo Akademi University.

"Our model demonstrated that [solar panels](#), optimized propellers and cold ironing— the possibility to connect to land power network at ports—are among the economically profitable investments in new

technologies. In contrast, for example, wind power installations did not appear profitable."

More information: Henry Schwartz et al. Emission abatement in shipping – is it possible to reduce carbon dioxide emissions profitably?, *Journal of Cleaner Production* (2020). [DOI: 10.1016/j.jclepro.2020.120069](https://doi.org/10.1016/j.jclepro.2020.120069)

Provided by Abo Akademi University

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