

Abstract

Driven by the causes and consequences of global warming that are looming and by IMO's willingness to reduce greenhouse gases, we question the possibility of the return of wind propulsion systems on merchant ships, such as the rotor, the sail and the kite.

First, the three wind support systems, the various tests that have already been carried out and the projects under development will be described allowing us to theoretically know the possible reductions in consumption of these different systems.

Secondly, a calculation method was developed based on speed polar diagrams, tanker type vessel characteristics, routing software and climatological data to be able to calculate the fuel savings on Atlantic shipping routes, this for each wind system.

Finally, we concluded that the kite is the most efficient but least consistent system for North Atlantic crossings from west to east.

Additionally, we observed that the results after calculation were not very satisfactory for the three wind power assisted systems on the route between France and the Rio de la Plata estuary and crossing the Atlantic from East to West with the North-East trade winds. Different solutions were then considered in order to maximise these results.