

# **Modeling the interactions among green shipping policies**

## **Abstract**

Many policies and practical measures have been designed for emission reduction in shipping. Many have studied their contribution to emission reduction and impacts on the shipping industry without considering their interactions. This study analyzes how a change in one policy or measure affect the others using a system pulse model. The results suggest that the factors influencing shipping emissions are inter-dependent, and the developed systematic shipping emission model fluctuates periodically. We find that slow steaming is actually not effective in emission reduction in the long-run as it impacts the implementation of other policies. It poses a high demand for the adoption of the EEDI (Energy Efficiency Design Index) policy so as to promote the application of advanced technologies in the shipbuilding process. It also suggests that although the implementation of the EEDI policy can promote the adoption of the EEOI (Energy Efficiency Operating Index) policy, the EEOI policy actually relieves the demand for the EEDI policy.