

The design and result of Yang Ming's eco-friendly smart vessels are listed below:

Vessel design	Result
Using electrical fuel injection engine	Cutting 20% on nitrogen oxides emission
Converting vessels to onshore power	Reducing exhaust gas and preventing air pollution
Using low-sulphur fuel oil	Lowering emission of sulfur oxide
Using energy efficiency propeller	Reducing friction and recycle kinetic energy and curtailing fuel oil consumption by 4~5%
Modifying ship's bulbous bow into low speed and sea sword type	Lowering friction and cutting fuel consumption by 8~10%
Installing stern tube with air seal	Preventing oil leakage and pollution
De-rating main engine horsepower	Reducing the fuel consumption of main engine per unit horsepower by 3~4%
Using shaft generator and shifting main engine to power generator during navigating	Lowering fuel consumption
Modifying turbo charger	Increasing air intake rate and lower fuel consumption
Using full spade rudder	Heightening steerage, saving energy and reducing cavitation on the stern
Using low friction paint on underwater hull	Lowering hull friction underwater, greatly saving fuel consumption