Eco-technology

The design of the propulsion system is based on proven technology and existing infrastructure:

- Storage and loading of RDF in standard shipping containers either both on land and aboard ship requires no special or new equipment and occupies less than 5% of the ship's overall storage capacity.

- Storing the fuel in standard shipping containers provides protection against the elements during transport, storage in port and while at sea and is a zero environmental impact storage solution at the ports while waiting to be loaded.

- The operating system generates far fewer air emissions than a conventional diesel propulsion unit. The following is a summary of air emission from a diesel-fuelled engine and a waste-fuelled boiler.

It is evident that there are considerable environmental benefits in adopting the alternative system.

Fuel Type	Annual Usage in tons	HCl	CO	NO_x	SO_2	Total Organic Compounds	Particulates	HF
Bunker Oil	**46.200**	**0**	**30**	**391**	**2840**	**6**	**201**	**0**
RDF	**175.175**	**6**	**3**	**133**	**35**	**2**	**2**	**0.002**
Increased emissions RDF vs.bunker Oil		**6**						**0.002**
Reduced emissions RDF vs Bunker Oil			**27**	**258**	**2805**	**4**	**199**	
% Change		**100**	**-90**	**-66**	**-98.8**	**-67**	**-99**	**100**

Comparison of air emissions from a diesel-fuelled engine and a waste-fired steam boiler

- During operations, the RDF propulsion system includes an automated handling system, and is equipped to comply with the most strict environmental standards in force.

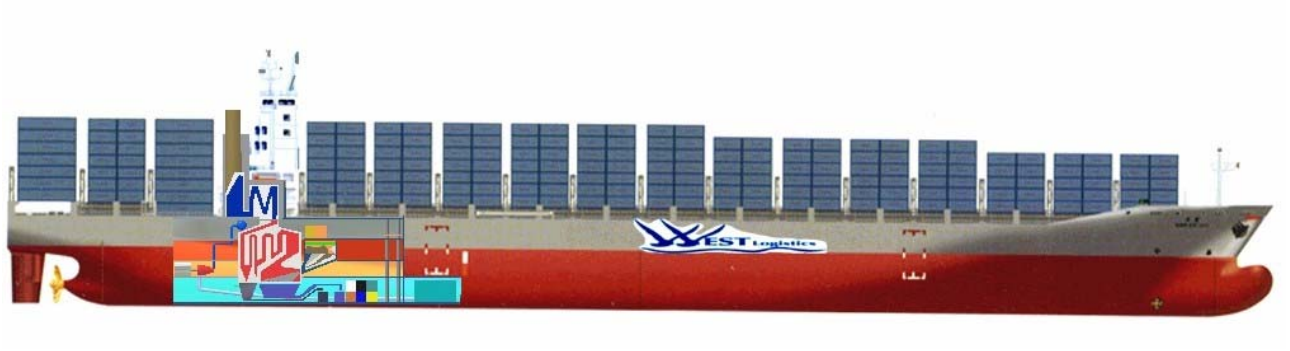
- Combustion is dioxin-free and flue gases are filtered as required by the environmental regulations using either electrostatic precipitators or a bag house, followed by a scrubber.

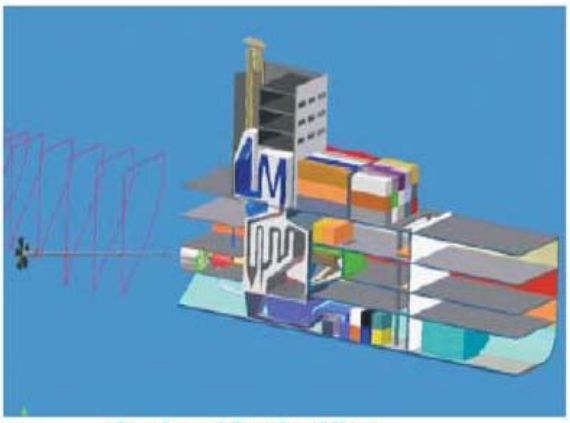
- Bottom and fly ash are collected and stored in the empty fuel containers. Upon arrival in port, the ash will be disposed of and/or recycled, in accordance with normal local industry practice of WTE facilities on land.

Kyoto and EC Directive Compliance

According to the Kyoto Treaty, the possibility of fuelling the propulsion with non-conventional fuel clears the value of the CO2 emissions in the atmosphere and officially places the system into the eco-sustainable transport systems category.

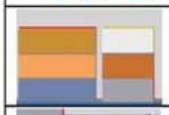
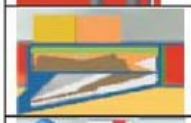
The system fully complies with all the latest European directives regarding the use of renewable energy Sources and in particular **Directive 2003/30/Ce Promoting the use of bio-fuels and other renewable fuels for transport.**





Starboard Section View

Boiler, Flue Gas Treatment and fuel handling Systems

Illustrations are from preliminary design	
	Fuel (RDF) storage in containers
	Lifting system for RDF in containers
	RDF preparation and handling area
	RDF fired boiler
	Flue gas treatment and stack
	High pressure steam line
	Steam turbine, reducing gear to propeller and link with emergency motor
	Low pressure steam line and condenser
	Ash disposal collection system
	Ash holding containers