



Maritime Innovation and Competitivity

Free fuel using existing biomass

More than 230 million tons of non-hazardous municipal and industrial wastes are disposed of in landfills annually in Europe alone. At least 10% of this quantity could be available for maritime use, such that a fleet of more than 100 4800 Container TEU ships could be supplied RDF for European-based navigation.

Immediate cost benefits

The WEST system is neutral for the waste industry as no changes are required in collection, selection, treatment or transportation structures already in place.

RDF procurement and supply would be a money saving activity for the municipal solid waste (MSW) companies in place today, which have already expressed an interest in supplying the fuel for pre-determined routes, while paying an interesting tipping fee to the end user. These same waste treatment companies would be obligated to receive and dispose of the ash as is standard practice today.

Once on board, the RDF drives a steam propulsion system, almost completely eliminating use of petroleum fuels.

The increased costs associated with implementing the technology are quickly recovered through:

- Eliminating the majority of the fossil fuel costs;
- Profits derived from accepting the waste (tipping fee) and
- The possibility of increasing the cruising speed of the merchant ship.

The increase in storage space used on board by the RDF containers is well within the average unused space on board of loaded container ships.

Taking into consideration the profile of a refuse derived fuel producer, the system does not affect the normal organizational costs and is much more competitive than disposing of the waste in landfills.

Long term benefits and Returns

The life-time benefit both in terms of operating costs and overall ROI to the ship owner/operator is very substantial and use of a non-fossil fuel provides protection against fuel price fluctuations over the ship's operating life.

The potential economic benefit of equipping a 4800 TEU container ship with the patented propulsion system is an approximate Euro 1.5 million increase in pre-tax revenue annually; after taking into consideration the additional capital costs, operating costs and loss of revenue due to the increased volume the RDF fuel requires.

Independence from Fossil Fuel Fluctuations

The lifetime economic benefit to the ship owner/operator is substantial and use of waste in the place of fossil fuels eliminates the financial risk and associated hedging costs inherent in commodity fuels.