

Rubbish as Fuel for Marine Propulsion

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An interesting new proposal for a marine propulsion fuel source was presented at the World Maritime Technology Conference in London last month.

Worldwide Ecological Shipping & Transport (WEST) of Rome has developed a patented process whereby large container ships could be powered by Refuse-Derived Fuel (RDF).



Studies calculate that Europe could sustain a fleet of 100 large container ships powered by Refuse Derived Fuel.

The brainchild of Italian engineer Michael Cabibbo, who designs refuse burning power generation plants, the proposal calls for 4,800 TEU container ships powered by a steam propulsion system driven by an RDF fired boiler.

More than 230 million tons of non-hazardous municipal and industrial wastes are disposed of in European landfills every year.

Over the past 20 years, the per capita production of municipal solid waste has more than doubled and, as landfill sites have become more scarce, the cost of disposal has increased exponentially. An established technical solution to the problem, closing the waste treatment cycle by using a thermal recovery process such as waste to energy (WTE) facilities which produce electricity and/or heating, is not universally popular. Nobody wants an 'incinerator' built near them, and many existing WTE facilities require costly pelletising before use, resulting in an uneconomic waste management system.

WEST's call for a fleet of 4,800 TEU boxships running on RDF for European based navigation would consume at least 10% of the waste mountain and promises ecosystem protection, increased environmental security with cuts in air emission by up to 98% and an independence from fossil fuel price fluctuations.

One RDF container ship would consume 176,000 tons of waste over 275 annual days of navigation. Studies calculate that Europe alone could sustain a fleet of 100 such ships.

The WEST system is neutral for the waste energy 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 municipal solid waste companies and once on board, the fuel would boost operator profit from accepting the waste tipping fee. The potential economic benefit of equipping one ship with the WEST system is an approximate ?1.5m increase in pre-tax revenue annually. The increase in storage space used on board by RDF containers is said to be well within the average unused space on loaded container ships and any loss of revenue has been taken into consideration when calculating financial benefit.

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