



海事革新与竞争力

使用现有生物量的免费燃油

每年仅在欧洲就有 2.3 亿余吨无害的城市和工业废物被掩埋。其中至少 10% 可供海上运输使用，这足够 100 艘容量为 4800 个集装箱的 TEU 货轮在欧洲海域航行之用。

直接成本收益

WEST 系统非常适合废物处理行业，不需要在收集、选取和处理方面做任何改动，运输结构也是现成可用的。

对于现有的城市固体废物处理 (MSW) 公司而言，获得并供应 RDF 在经济上很划算，它们希望能为预定的航线供应燃料，并向最终用户支付合理的填埋费。依照当今的行规，这类公司负责接收和处理用后的灰烬。

上船后，RDF 会为蒸气推进系统提供动力，几乎无须再使用石油燃料。

在实施技术方面增加的费用可通过以下途径很快收回：

- 大幅度降低石油燃料的成本；
- 接收废物取得的利润（填埋费），以及
- 有可能提高商船的巡航速度。

对于已装货的货柜船，RDF 集装箱在甲板上所占用的仓储空间不超出其平均未用空间。

综合考虑垃圾衍生燃料生成器的基本情况，该系统不影响正常的组织成本，与掩埋法相比，它更具竞争力。

长期收益和回报

在运营成本和船主/运营商的总体投资回报率方面，长期收益是巨大的，并且可在货轮的运营期限内避免受到燃油价格波动的影响。

如 4800 TEU 的货柜船配备了专有的推进系统，每年可增加 150 万欧元的税前收入，这是在考虑增加了资金成本、运营成本和因 RDF 燃料占用空间而产生的收入损失后得出的数字。

免受石油价格波动的影响

船主/运营商可长期取得丰厚的经济收益，使用废物替代石油可避免金融风险，并免除商品油的相关套期保值成本。



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.