

Maritime shipping: to retrofit or not?

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Abstract— With uncertainty over technology and fuel price, carriers must make a strategic decision of investing in green technologies or switching to marine gas oil (MGO) which is considerably more expensive.

First, an investment in green technologies involves additional capital. From a profit-maximising perspective, a carrier will weigh up the marginal benefit of the retrofit solution against its marginal cost. When benefits outweigh its costs, a carrier will invest. However, if the private return on investment is negative, ship-owners will not voluntarily incur costs that their competitors may not make. For the society as a whole, though, retrofitting existing ships with green technologies has additional economic advantages. Society has to deal with the hidden costs due to polluting and harmful emissions from (existing) ships calling European ports as a result of the transport demand. In the presentation, the economic and environmental viability of scrubbers and LNG for main engines will be compared from both private and societal perspective.

Secondly, the cost impact of switching to MGO in order to ensure a reduction from 1.0% to 0.1% sulphur content will be addressed. The perspective of both the shipping lines and the shippers are explained.

Key words— maritime shipping, economics, environment, green technologies, carriers, investments in logistics.

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Abstract received by 1 May 2015.