Science for Environment Policy

Ship manufacturers encouraged to keep track of materials

1.http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32013R1257

An inventory of materials used in ship construction could minimise waste and increase ships' recycling rates and resale value, according to the Sustainable Shipping Initiative (SSI). Although extra data management would be required on the part of suppliers, manufacturers and owners, it would help make the industry more efficient and future-proof with regard to developments in international legislation on ship building.

Over 90% of international goods are traded by sea. Whilst other large transport industries, such as cars and aviation, have established component listing schemes, the shipping industry has no similar standardised practice. This is despite the fact that ships are often constructed with valuable materials, such as lengths of flexible cabling, and can contain hazardous materials, including asbestos. Recording material use in cars has allowed toxic components, such as chromium six, to be stringently regulated, reduced and, where necessary, disposed of safely.

In an effort to change the status quo in shipping, the SSI worked with a variety of businesses and academics to investigate how ships could be better designed, built, dismantled and re-used. Recording the use of materials was identified as a major area which would have an impact at all stages of a ship's life-cycle. This data could be used to instil responsibility for the social and environmental effects of the materials used during a ship's lifespan — from construction to recycling.

Pilot projects and consultations with four major shipping companies were initiated. Two of these companies used Hewlett-Packard's Compliance Data Exchange (CDX) software system to help trace and track materials used in ship construction. This system helps manufacturers to collect, analyse and report data from all levels of the supply chain. Supplementary research from the University of Strathclyde analysing the waste streams of 1 000 vessels from five years of recycling data was used to highlight ongoing trends.

During the pilot projects there was reluctance from within the industry regarding material tracing and tracking. It was seen as a very time consuming and costly activity, there were no immediate incentives, manufacturing trade secrets could be breached and the CDX software had to be adopted not only by manufacturers, but also by those along the supply chain.

Despite these reservations, the pilot projects demonstrated that the process was feasible – in total, data were collected for over 96% of the materials in the ships that were part of the project.

Several positive effects of the inventory process were identified. Having a database of materials makes it easier to report in line with existing environmental regulations, and protects against future changes in requirements. The data could instil responsibility in the industry for the social and environmental effects of the materials used during a ship's lifespan — from construction to recycling. Lastly, the process also encourages transparency, which could lead to greater competition and suitable partnerships in the supply chain as well as in ship recycling.

The pilot projects are ongoing, but the aim is to create a well-defined set of reporting guidelines so that these practices can be adopted more widely. This would help ships to comply with recent European legislation 1257/2013[1], which states that an inventory of hazardous materials must be kept on board any ship entering an EU port. The researchers add that a greater focus on material use may lead to improvements, not only in recycling but also in initial ship design.