Contribution ID: **132** Type: **Paper**

Hybrid energy- and propulsion system for vessels in timetable operation

Thursday, 21 June 2018 09:15 (15 minutes)

The energy consumption of propulsion and all on board systems is becoming more and more into the focus of attention in shipbuilding and operation.

After some ample and intensive analysis and measurements of multiple operational profiles of ships, it was determined that a new, hybrid propulsion system, will be the optimal solution to reduce fuel consumption in timetable operation.
This parallel hybrid system which incorporates propulsion as well as the general energy management of all energy consuming parts on board as a holistic system, so that the distinct, transient processes can be smoothed out as much as possible. This allows the multiple diesel engines which are the main energy producers, to work at their most efficient operating point (or they shut off entirely due to battery buffers). The focus of the project is set on considering the integration of the different systems, their optimal cooperation with each other and the required system dynamics.

First measurements at the pilot vessel show that fuel consumption can be reduced by up to 22%. Also they show that, with the additional help of downsizing relevant components, the costs of operation can be reduced up to 40% (excl. crew costs).

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Session Classification: Machinery and Systems Design

Track Classification: Ship propulsion, machinery and systems