

## Consideration of Hybrid Technology & Associated Machinery



**Mr. Paolo Scialla**

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Mr. Paolo Scialla, born 20.01.1966 in Trento (Italy), attended the Italian Naval Academy 1985-89, master degree at Pisa University 1991 in Electrotechnical Engineering. Served as Electrical Engineer Officer on submarine and fuel replacement ship and as Chief Electrical Officer on frigate, and destroyer. Joined Lloyd's Register (LR) Marine 1998, since then dealing with passengers, cargo ships and mega yachts new construction and in-service surveys for electric power and propulsion systems, machinery control, monitoring, safety systems, electronic equipment and components. Now Lead Specialist of Electrotechnical Systems at LR Trieste Technical Support Office. Dealing with Classification, Certification and Risk Assessment of new Technologies in Marine Applications including alternative fuel, hybrid power and propulsion systems, autonomous machinery operation and navigation with particular focus on the Cyber Security aspects.

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### **Abstract:**

The technological advances in energy storage devices and distribution systems have seen further uptake in hybrid propulsion and powering solutions across a widening variety of marine applications. In this paper the authors provide details of some of the challenges for this technology and the approaches made by Lloyd's Register to provide the required level of industry assurance. Focus is made on the offshore and towage segment covering aspects such as propulsion systems and bollard pull certification