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Italian Navy future fleet - Analysis of on board electrical systems and cold ironing

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Shore connection has become a topic of huge technical interest both for merchant ships and for military ships. The Navy's fleet renewal program offers the opportunity to reconsider this aspect within the main naval bases of the Italian peninsula. In particular, the presentation analyzes the overhaul project of the Stazione Navale Mar Grande's electrical system in Taranto with the aim to be ready to host the future fleet in 2027. Starting from cost-efficiency and versatility point of views, in order to reach the least infrastructural impact on the station and considering the cold ironing current standards (e.g. IEC/ISO/IEEE 80005 "Utility connections in port"), a working methodology is proposed to optimize the final results for several future scenarios, in order to guarantee the maximum flexibility and interchangeability for the mooring and shore connection services to be provided for different ship sizes and electrical power levels. Finally, further improvements in the electricity grid are considered (potential "spin off"), such as energy efficiency systems, green energy sources and distributed cogeneration integrations to meet the needs and to gain the desired load shaving.

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