

# Assessment of SOFC-based combined cycle power plants integrated in ship heat and power networks: A trend analysis

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## **Abstract** (4-6 lines, 500-700 letters incl. spaces)

Solid oxide fuel cells (SOFC) offer an efficient, low-emission, and fuel-flexible way of generating electricity onboard ships. Because SOFCs are often integrated with thermal cycles to improve electrical efficiency and load-following behavior, it is interesting to see how these systems compare. This study presents a structured assessment of maritime power plant architectures and the performance of various SOFC hybrid power plants. First, SOFC-based systems are categorized by their thermal cycle integration method. Second, efficiency trends in combined cycle systems are explored. Additionally, an analysis of ship types and waste heat recovery approaches highlights potential gaps in the literature and areas for further discussion.

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