Record Nr. UNINA9910473453603321

Autore Fang Sidun

Titolo Optimization-Based Energy Management for Multi-Energy Maritime

Grids

Pubbl/distr/stampa Springer Nature, 2021

Singapore:,: Springer Singapore Pte. Limited,, 2021

©2021

ISBN 981-336-734-2

Descrizione fisica 1 online resource (211 pages)

Collana Springer Series on Naval Architecture, Marine Engineering, Shipbuilding

and Shipping;; v.11

Altri autori (Persone) WangHongdong

Soggetti Offshore engineering

Energy technology & engineering

Electrical engineering

Lingua di pubblicazione Inglese

Formato Materiale a stampa

Livello bibliografico Monografia

Sommario/riassunto

This open access book discusses the energy management for the multi-energy maritime grid, which is the local energy network installed in harbors, ports, ships, ferries, or vessels. The grid consists of generation, storage, and critical loads. It operates either in gridconnected or in islanding modes, under the constraints of both power system and transportation system. With full electrification, the future maritime grids, such as all-electric ships and seaport microgrids, will become "maritime multi-energy system" with the involvement of multiple energy, i.e., electrical power, fossil fuel, and heating/cooling power. With various practical cases, this book provides a crossdisciplinary view of the green and sustainable shipping via the energy management of maritime grids. In this book, the concepts and definitions of the multi-energy maritime grids are given after a comprehensive literature survey, and then the global and regional energy efficiency policies for the maritime transportation are illustrated. After that, it presents energy management methods under different scenarios for all-electric ships and electrified ports. At last,

the future research roadmap are overviewed. The book is intended for graduate students, researchers, and professionals who are interested in the energy management of maritime transportation.