



LOTWA SYSTEM

Seaport Energy Storage Container Integrated System





Overview

As a bridge to connect the land and sea, the emissions within a seaport have significant effects on the urban environment. In order to reduce gas emissions, electrification of seaports has been a promising tr.

What is integrated seaport energy system?

The seaport integrated energy system can simultaneously consume the fuel and electric energy to accomplish the work of providing power, heating, and cooling power for berthed vessels. Fig. 10. The power supply and demand balance for the seaport multi-energy system. Fig. 11. Resource scheduling decisions for integrated seaport energy system. 4.2.3.

What is the scheduling model for seaport integrated energy system?

The overall model is formulated as a Mixed Integer Linear Programming (MILP) problem and solved by GUROBI. The main contributions of the paper are summarized as follows. The scheduling model for seaport integrated energy system is proposed accounting of the operating flexibility of BAP, reefer area and cold-ironing.

What is a multi-energy system in a seaport?

As illustrated in Fig. 2, in the energy supply side of seaport, we consider a multi-energy system that combining onsite photovoltaic (PV), wind turbine (WT), bulk power grid, and CCHP systems, which consumes fuel and electricity, and provides power, heating, and cooling service for vessels.

Which vessels participate in the integrated multi-energy system for Seaport based on CCHP?

Reefer vessels and cruise vessels with a large number of cooling and heating demand, respectively, are also considered to participate in the integrated multi-energy system for seaport as flexible demand. Fig. 2. Structure of seaport energy supply for vessels based on CCHP system.



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