Inland river vessels equipped with solar power generation

How to choose inland power systems for inland ships?
The proposed alternative solutions represent the development direction from the perspective of reducing emissions; however, in actual cases, the selection of power systems for inland ships must take into account the overall economy of the power system. Inland ships as well as ocean-going ships are both sensitive to price.

Are battery power and hybrid power alternative solutions for inland ships?
In order to adapt to existing policies and regulations,alternative solutions for the power system of inland ships are proposed. Aimed at canal and Yangtze River ships,two case studies are carried out to analyse the application of battery power and hybrid power,which are viewed as the typical alternative solutionsfor future inland ships.

What are the features of New Power Systems for inland ships?
Table 1. Features of new power systems for inland ships. Greatly reduced SO X,NO X,good economy,slow response speed,and poor efficiency under low load. Ships with stable navigational profiles and fewer low-load conditions. High energy efficiency; wide speed range; zero vibration,noise,and emissions; poor endurance.

Can solar energy be used as a power source in a ship?
New energy sources, including solar energy, wind energy and fuel cells have already been introduced into ship power system. Solar energy can now be used as the main power source to propel small-scale ships, and as an auxiliary power source in large-scale ships to supply lighting, communication devices and navigation system.

Can new energy sources be integrated into traditional ship power systems?
The integration of new energy sources into traditional ship power systems has enormous potentialto bring the shipping industry in line with international regulatory requirements and is set to become a key focus of ship-related researches in the immediate future. 1. Introduction

Do inland ship power systems need more redundancy and reliability?
Ships with complicated conditions require the power system to have greater redundancy and reliability. In Table 2, the alternative solutions for different inland ship power systems are proposed based on three dimensions: tonnage, voyage distance, and navigational conditions. The details are explained as follows:

Using fuel cells with higher power generation efficiency to replace traditional marine power plants can make ships use fuel more efficiently and cleanly. ... combining heat ...

This is a case study on how to decarbonize an inland waterway ship with solar PV technology. Flexible solar PV panels from Wattlab are placed on an inland ship"s hatches in order to reduce fuel consumption while idling or ...

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Liquefied natural gas (LNG) is widely regarded as the midterm solution toward zero-carbon transportation at sea. However, further applications of gas engines are challenging due to their weak dynamic load performance. ...

176 polish maritime research, no s22018 polish maritime research special issue 2018 s2 (98) 2018 vol. 25; pp. 176-181 10.2478/pomr-2018-0090 application of solar photovoltaic power ...

inland waterway vessels are generally not allowed to navigate at sea [3]. Xing et al. [4] compared the operational energy efficiency of inland waterway vessels with seagoing vessels and ...

Discover the vital role of various vessels in power plants with Red River LLC, ... Efficiency is the name of the game in power generation. Vessels, with their intricate designs and robust ...

on river speed and direction of navigation (upstream and downstream). The average speed of a cargo ship of this size is equal to 14.4 km/h, with the average main engine load equal to 75% ...

To provide a reference for practical applications of green and intelligent inland vessels, this paper summarizes the development status and five key technologies of green ...

The evaluating on EEDI and fuel consumption of an inland river 800PCC integrated with solar photovoltaic system. In recent years, the inland river shipping industry in China has been ...

Zero emission solution combining solar energy, hydrogen generation and fuel cell propulsion for a barge in Nile River. ... the Yangtze River is one of the major inland shipping ...

In recent years, the inland river shipping industry in China has been facing the pressure to comply with "low carbon shipping" policies. Solar energy as one of the most widely used new energy ...

Recently, the first domestic oil-gas-electric hybrid ship "New Yangtze 26007" equipped with Hang Gear"s "Advance" hybrid power input marine gearbox successfully completed its trial voyage. The successful trial voyage of ...

inland navigation. Contrary to maritime navigation, inland vessels are often operated by entrepreneurs who live with their family on board the vessel in private accommo-dation. To ...

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