

Energy storage on yangtze river freight ships

How much power does the Yangtze River ship have?

The 120 meter long ship has a fully electric drive with 1,800[kW] of total installed power. It is able to swap battery packs en route, enabling it to cover over 600 nautical miles of routes on the Yangtze River fully electrically without having to moor and recharge.

Will the Yangtze ship be electrified?

A sister ship will be launched shortly, and the plan is for vessels on the entire Yangtze to be electrified. As half of the world's inland shipping is in China, and the Yangtze is by far the biggest inland shipping route, that means that this ship is the lead vessel in electrification of about half of all inland shipping.

How much does a battery pack cost on the Yangtze River?

It is able to swap battery packs en route, enabling it to cover over 600 nautical miles of routes on the Yangtze River fully electrically without having to moor and recharge. Total costs for the battery pack are estimated at EUR16-EUR25M, which could be reduced as certain propulsion equipment is not required.

Will the Yangtze River run all the way on batteries?

It's not going to run all the way on batteries it carries onboard, of course. Battery energy density is increasingly good and will be multiples of today's in the coming years, but steaming 1,000 km upstream, even in the 3.6-kilometer-per-hour average water speed of the Yangtze, is a huge energy requirement.

Will a 700-mile electric-drive-only container ship ply the Yellow Sea?

And now, a proof point. The Yangzhou shipyard in northern China, inland from Shanghai on the Yangtze River, just launched an electric-drive-only 700 container ship which will ply a regular 1,000-km (600-mile) route up and down the river and to the world's largest container port on the Yellow Sea.

How long is a Yangtze river boat?

The vessel is a 10,000-DWT specific route river/coastal vessel - or feeder ship type - with a length of 119.8 [m] and a moulded beam of 23.6 [m]. It has a design draft of 5.5 [m] feet to provide good manoeuvrability along the Yangtze river, designed to sail a route stretching more than 600 miles along the river and to the sea.

How low can the Yangtze go? Although Asia's longest river is making a slow recovery from the late-2022 drought that stopped some of the traffic up the "golden waterway" ...

In an effort to spur the development of electric shipping and the battery technology required for the ships, China's Cosco Shipping will build and operate two 700 TEU electric ...

yet set electric ship adoption targets. Only Jiangsu Province proposed the goal of "Achieving the large-scale deployment of 17 inland electric ships", but it is not powerful enough ...

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The China Classification Society (CCS) in late April said it will be collaborating with several partners to build China's first fuel cell-powered public service vessel for operations in the Yangtze River basin. The ship, with a ...

In June 2013, while in Yangluo New Port in Wuhan, General Secretary Xi Jinping pointed out that "The Yangtze River Basin must strengthen cooperation, play the role of inland waterway shipping, and turn the entire ...

Developed for COSCO Shipping, the two vessels are part of an effort to build an electrified network for shipping along China's Yangtze River. The ships can transport up to 700 TEU while ...

At 3:30 pm on Saturday, the Yangtze River transportation history added a new chapter when a new liquefied natural gas-powered ship, the Innovation 5, loaded with 5,400 ...

The Yangtze River is an important transportation route that has seen its freight volume exponentially grow over the years. Despite its importance in shipping key commodities ...

The proportion of shore power used by inland river ships in the Yangtze River basin from 2025 to 2060 (Fig. 4 (a)) is predicted based on the reconstruction of ship-power receiving ...

This is the first demonstration pilot of purely electric ships in the Yangtze River basin with the power exchange mode, which is conducive to addressing the challenges of ...

It is expected that a single ship can reduce carbon dioxide emissions of 2,918 tonnes, equivalent to 2,035 family cars a year, or 160,000 trees. It is reported that the first ship ...

The vessel is also expected to help in promoting the green development of the Yangtze River shipping industry, which has received increasing attention in recent years. In 2020, four ministries, including ...

At 8:50 on December 20, with the official grid-connected operation of No. 9 unit of Baihetan Hydropower Station, 16 million-KW units of the power station were put into operation ...

adoption of battery ships in the Yangtze River Region. In terms of climate, battery-powered vessels could serve as an important tool for reducing carbon emissions in inland ...

The vessel has so far been put to use on the Yangtze River, shipping cargo from Jiangsu to ports up to Shanghai. The route covers close to 1,000 kilometres without needing recharge. The container ship is expected to ...

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The Yangtze River, as the busiest inland river in the world, has implemented more stringent ship pollution prevention regulations in recent years. The new energy pure battery ...

In 2023, COSCO launched a battery-electric container vessel operating on the Yangtze River with an installed battery capacity of 50 MWh. To allow a sufficiently short duration for energy replenishment, the vessel ...

Recent data from the Yangtze River Water Resources Commission indicate that the river's drainage area fell about 30 percent in July and is 60 percent lower than normal in August, with the river ...

Though a single LFP battery cell is less energy dense, China has developed LFP battery systems for ships that are denser than the NMC ...

A package of 10 innovative service measures on supporting high-quality integrated development of the shipping industry in the Yangtze River Delta was unveiled on Wednesday.

01 Section on Superstructure ·Smooth crossing the Yangtze River Bridge The ship has a total length of 335.00m, a length between ... and the first largest single C-type LNG ...

This 3,000-ton cargo ship is a new electric cargo ship converted from a fuel-fired ship. The two sets of removable batteries on the deck of the ship can store 2,200 kWh of ...

A Foot in the Water for Cruising on Battery Power Maritime Executive reports that China has launched the first of two 700 TEU electric container ships, for the Yangtze service. These are forerunners of the Asian ...

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A view of the "Three Gorges Hydrogen Boat No. 1" Photo: Screenshot from Hubei Daily. China's first hydrogen-powered ship completed its maiden voyage on the Yangtze River in Yichang, Central China ...

In recent years, carbon emission reduction in the shipping sector has increasingly garnered scholarly attention. This study delves into the pathways for carbon emission reduction in shipping across the Yangtze River, ...

Recently, the successful sea trial of first 1000-ton battery electric cargo ship in the Yangtze River Basin has attracted major domestic media reports. The ship is equipped with V& T motor controller, and its successful ...

The first operational voyage opened the hydrogen era of Yangtze River shipping. Liu Liang, director of the administration of navigational affairs on the Yangtze River under the Ministry of Transport, said that in recent years, ...

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Among electrical energy storage systems, batteries have been most frequently integrated into vessels because of their significant advantages. ... focussed on canal and ...

The linear programming models were solved using IBM ILOG CPLEX 12.6.1, with a CPU time limit of 1 h for CPLEX. The Yangtze River is the inland river with the largest freight ...

The development of energy storage technologies, particularly lithium batteries, is increasingly impacting ship propulsion (Wang et al., 2022). Electrification is becoming an ...

The 120 meter long ship has a fully electric drive, can carry up to 700 TEU and is able to swap battery packs en route. The vessel is designed for Chinese inland and coastal waters, covering over 600 nautical miles of routes ...

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