Challenges in China's Shore Power Market: Underutilization and Disparity in Subsidies

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- Shore power in China gained momentum during the '13th Five Year Plan' period (2016-2020), which focused on environmental protection, energy conservation and emissions reduction from China's transport sector.
- According to Power Technology Research, China has overinvested in the development of its shore power infrastructure, leading to the under-utilization of this technology on ports in the country.
- In the upcoming years, the shore power market of China is not expected to grow at the pace that was previously forecasted.

Shore power in China gained momentum during the '13th Five Year Plan' period (2016-2020), which focused on environmental protection, energy conservation and emissions reduction from China's transport sector. In light of the 13th Five Year Plan, the Ministry of Transport prepared the 'Ships and Ports' plan, which encouraged the use of shore power and would, in turn, reduce emissions from Chinese ports and improve the air quality of port cities. The 'Ships and Ports' plan set a target to construct 400 shore power connections by 2020 for specialized berths for containers, ro-ro passengers, cruise ships, passenger transport above 3,000 tons and dry bulk cargo above 50,000 tons on major ports and ports in the ship emission control area.

According to Power Technology Research, even though China was able to achieve its target of 400 shore power

connections by 2020, the technology utilization rate has been lower than what Chinese state officials would have expected.

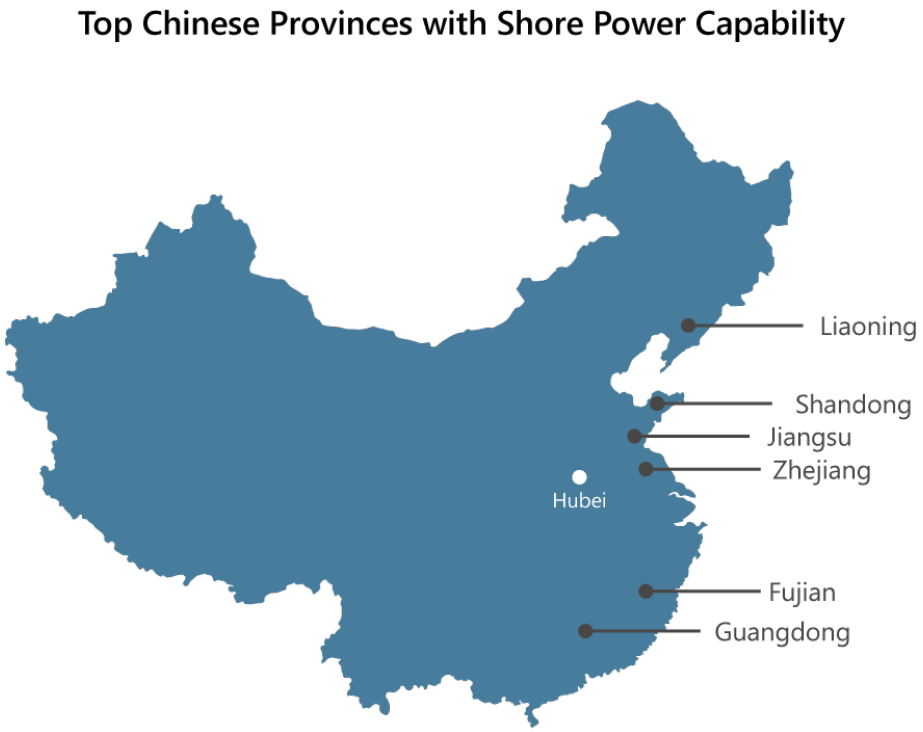

Figure 1: Top Chinese Provinces with Shore Power Facilities.
Source: Power Technology Research

Challenges in the Shore Power Market of China

China's shore power market faces a number of challenges that have led to underutilization, ranging from disparity in subsidy for shore power, and a lack of enthusiasm in certain provincial governments for shore power to patchy oversight in the use of shore power as well as overcapacity. Until and unless these challenges are addressed, the shore power market in China is not expected to pick up pace and post significant growth, which is necessary to curtail emissions from the transport sector of the country and achieve climate goals.

Disparity in the grant of subsidies to ports

A lack of coherent policy and disparity in subsidies have led to a vast difference in the per unit price of electricity at shore power facilities on Chinese ports. Ports that have government funds at their disposal, such as Guangzhou port,

provide a subsidy of USD 0.015 per kilowatt-hour; on the other hand, Shenzhen and Xiamen Port have linked electricity prices with international fuel prices. As there is no government subsidy for using shore power at the Foshan port, withdrawing power from shore power facilities at the port costs USD 0.47 per kilowatt-hour, which is relatively high.

Lack of enthusiasm in certain provincial governments

In China, provincial governments are usually responsible for the improvement and maintenance of the local air quality. Certain provinces in the country generally pay more attention to the environment and have introduced subsidies on shore power supply to ships that dock on their ports, along with rewards for ships using shore power for the first time. Other provinces are yet to incentivize the use of shore power for vessel owners, which has led to underutilization of shore power systems on their ports.

Patchy oversight on the use of shore power in various provinces

The inability to implement policies that render the use of shore power mandatory is affecting the utilization rates of shore power facilities in the country. According to Guangxi's Department of Transportation, one of the reasons for the low utilization rate of local shore power is that the policy that requires ships berthing at the coastal ports for more than 3 hours and inland ports for more than 2 hours to withdraw power from the shore instead of on-board diesel generators is not being strictly followed. On the other hand, the Shanghai port can impose penalties around USD 1500 to ships that are equipped with shore power reception facilities but fail to use them as required.

Over investment in shore power systems

China, in general, has over invested in the shore power systems, coupled with the problem of underutilization on ports because of low vessel traffic. Guangxi Port is one example of a port with installed shore power systems, but these are highly underutilized due to a lack of vessel traffic. The situation is further aggravated by the absence of policy that renders withdrawing power from the shore mandatory.

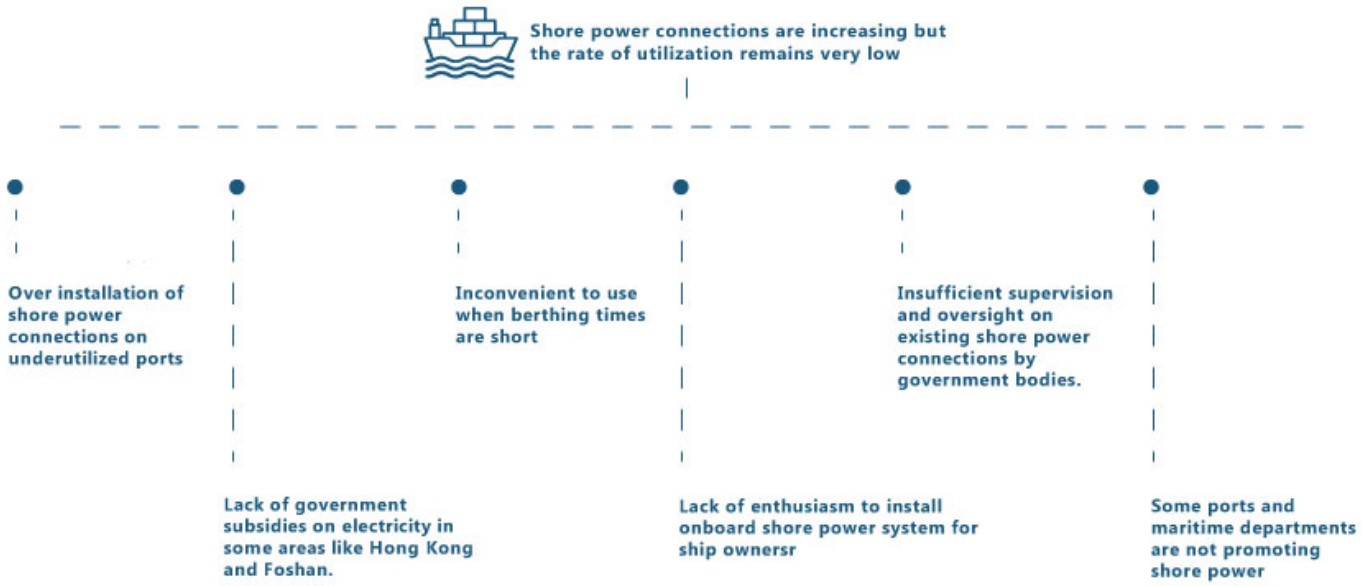

Figure 2: Major issues faced by the Chinese shore power market.
Source: Power Technology

Looking Ahead

According to Power Technology Research, China has overinvested in the development of its shore power infrastructure, leading to the under-utilization of this technology on the ports in the country. As a result, in the upcoming years the shore power market of China is not expected to grow at a pace as was previously forecasted. The Chinese government's zero-Covid policy has also contributed to the underutilization of the infrastructure and will be responsible for any potential slowdown in the future, along with the impediments discussed earlier. Major shipping cities of the country, including Shanghai, Shenzhen, and Guangzhou, are currently under a complete lockdown.

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