EU Maritime Carbon Tax Policy Accelerates Chinese Development of Green Shipping Industry

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Abstract. The EU’s carbon tax will be levied from 2018. This paper discusses the negative effects of EU maritime tax on Chinese shipping industry. The policy will increase in the cost of shipping enterprises and make changes in Chinese shipping policy. Chinese carbon emission measurement methods and standards in shipping will be affected. Application of energy saving technology and equipment for ships will be accelerated. At last, this paper points that countermeasures of developing green shipping in China. Chinese shipping enterprises need to use science and technology to balance shipping cost and green development. It’s necessary to actively research and develop new fuel technology and upgrade equipment. It’s helpful to make integration of the different size of shipping companies, and form a new structure of Chinese shipping industry situation. To adapt to the new situation of the world, we can develop green shipping policies and regulations in line with Chinese reality.

Introduction

When the haze became Chinese 2016 annual keywords, when the United Nations annual climate conference has become the focus of global attention, our living environment has been seriously threatened. The green industrial revolution induced by global climate change is accelerating on a global scale. Green development has become a major trend of global economic development. The focus of the green revolution is the unity of economic growth and low carbon. China is the world's largest developing country, and a big shipping country. Shipping industry is the basic industry of a country's national economy, which is related to the national economic lifeline and national security. The implementation of the "maritime carbon tax" policy in 2013 will be officially launched in the year of 2018, which brings forward new requirements for the development of Chinese shipping industry.

Related Concepts

Maritime Carbon Tax

Maritime carbon tax was first proposed by European Commission, the carbon dioxide emissions tax on ship fuel combustion, the fuel oil tax to carbon ratio, in order to reduce fuel consumption and carbon dioxide emissions. European Commission launched a draft carbon emissions regulation in the maritime field in 2013, the monitoring and reporting and verification of carbon dioxide emissions from ships docked at EU ports (MRV system), that is referred to as the maritime carbon tax. This policy is aimed at all the ships of 5000 MT and above, which will enter, exit and stop in the ports in EU. That is for all marine activities in the pots in EU, regardless of that whether or not the carbon emissions occur in EU.
Definition of Shipping Industry

Shipping mainly refers to ocean transport; that is not including air transport. The shipping enterprise is not only conform to the "company law" provisions of the statutory conditions of People's Republic of China, but also to meet the provisions of the "Regulations" of People's Republic of China waterway transportation management, and the enterprise which engaged in ship transportation. The broad sense of the shipping industry is a collection of companies, including the collection of enterprises directly or indirectly engaged in shipping, such as the following enterprises: ship owners, shipping agents, freight forwarders, ocean shipping companies, port enterprises, shipping associations or management organizations. This paper uses this definition.

Development status of Chinese shipping industry

Brief Overview on Chinese Shipping

Shipping is recognized as not only the most economical and efficient mode of international transportation, but also a reliable way. According to IMO, the international shipping industry is responsible for 90% of the global trade transportation tasks. The data of Ministry of Transport shows that more than 10,000 million tons of cargo throughput of all above scale ports in 2016. Lloyd's List daily news recently announced the 2016 container port in the world top 100 list (China port accounts for twenty-two percent). China occupies seven seats of the top 10 list. Shanghai port (first), Shenzhen port (third), Ningbo port (Fourth), Hong Kong port (fifth), Guangzhou port (seventh), Qingdao port (eighth) and Tianjin port (Tenth). Obviously, China has become one of the world's major shipping powers from the total point of view.

Central European Routes become the Focus of Chinese Shipping Industry

In the import and export trade between China and EU, shipping becomes the main mode of transportation, more than 80% are dependent on shipping transport, that has reached more than 750 million tons only in 2014. It can be seen from the data of the China customs and China National Bureau of Statistics that the trade between China and the EU is getting closer and closer. Central European routes play a very important role in trade. In 2014, the total import and export volume of China and the EU was $775 billion, which has been the first place in the trade volume in all regions for several years.

The Negative Effects of Maritime Carbon Tax on Chinese Shipping

Increase in the cost of shipping enterprises. The carbon tax policy of the European Union will increase the operating costs of shipping enterprises. Mainly including the following costs:

A. Carbon tax to be paid to EU. The ship of 5000 tons or more need to pay maritime carbon tax to EU when it’s entering, exiting, and stopping in the ports in EU since 2018. It is estimated that the carbon tax will increase the operating costs of shipping companies by 2% - 5%. It will deteriorate the downturn in the shipping industry and reduce the competitiveness of Chinese shipping enterprises.

B. Related management costs. The EU mainly takes advantage of the EU-ETS system and MRV system to complete the collection of marine carbon tax. The detection of carbon dioxide emissions from ships, or report or verification, will increase the management costs of shipping business management. Such as consultation and communication costs, statistical management cost, and the relative human costs when understanding rules and implement the policy.

Changes in Chinese Shipping Policy. Many people mistakenly believe that the pollution of the ocean is far away from us, and we do not have to pay the cost for that. Over a long period of time, the waste water and air pollution from ships is ignored. China has not issued directly related policies to
regulate the green development of the shipping industry. However, the implementation of the carbon tax policy of the European Union, bring direct pressure to energy conservation and emission reduction for many shipping companies. Therefore, it is necessary to adapt to the trend of the development of the global low-carbon shipping from the perspective of industry and national level.

**Carbon Emission Measurement Methods and Standards will be Affected.** The introduction of the carbon tax has led EU to grasp the initiative in the low carbon green development of global shipping industry. The EU clearly put forward the maritime carbon tax collection measures in the MRV system. The IMO has given tacit consent to the practices and standards of the maritime carbon tax, which will be used as reference for the global shipping industry. Chinese policy of green shipping is bound to be no exception, will be in accordance with the requirements of the EU.

**Application of Energy Saving Technology and Equipment for Ships will be Accelerated.** The collection of maritime carbon tax is determined according to the amount of carbon dioxide emissions from ships. In order to reduce taxes, shipping enterprises will reduce the cost from the perspective of low carbon emission. They will choose low-carbon fuels, cleaner and more efficient fuels. It will stimulate them to research and development of marine fuel utilization technology and related equipment. In addition, ship size is also a reason for their consideration.

**Countermeasures of Developing Green Shipping in China**

Using advanced science and technology to balance the shipping cost and green development. It is necessary for Chinese shipping companies to go green development path, but also to reduce the cost of shipping companies, the simplest way is to achieve scientific management as the following:

**A. Reduce Speed of Ship.** According to statistics, the fuel consumption and speed of ship are cubic relation, reducing the ship speed by 5% can reduce exhaust emissions by 15%. It’s important to find a balance between speed and emission by the way of scientific computing.

**B. Full Use of Shore Power.** In order to avoid the pollution of the atmospheric environment in ports, the ship can avoid the fuel consumption and reduce the carbon emission by using the shore power. It is believed that the carbon emission will be reduced, if the ships will be able to use the shore electricity during the port berthing.

**C. Improve Ports’ Operation Efficiency.** It is more difficult for the port to be polluted when the ship docked at the port, which will bring greater impact on local people. To reduce the carbon emissions from ships docked at the port, we can improve the efficiency of the loading and unloading of goods in the port to reduce the time of stopping.

**Actively Research and Develop New Fuel Technology and Upgrade Equipment.** Many developed countries have developed low-carbon energy saving technology used in shipping. STX, a well-known shipbuilding company in South Korea, has developed a complete set of ship technology, "green dream" technology, which has been successfully applied to the new ship. It can save energy and reduce carbon emissions. Japan has developed a solar power generation ship in which solar cells can generate electricity in any weather, which is the first to use this technology in large cargo vessels. EU and USA have promoted the use of energy-saving devices on board to reduce fuel consumption and carbon emissions. Actively learning from the experience of these advanced countries in green shipping, we need to research and develop new fuel technology and upgrade equipment.

**Integration of the different sizes of shipping companies, form a new structure of Chinese shipping industry situation.** Maritime carbon tax will increase the burden of shipping companies. In face of the competition of international shipping market and the adverse effects of carbon tax, it is necessary for Chinese shipping industry to integrate. Responding to Chinese reform of supply side, we may accelerate the merging of international and domestic shipping enterprises. We can construct a new situation of Chinese green shipping industry from the following aspects: Information sharing,
fleet building, construction of the pier, Joint research and development of marine energy saving
technology and equipment.

**Adapting to the New Situation of the World, We Develop Green Shipping Policies and Regulations in Line with Chinese Reality.** Chinese shipping companies and industry associations, as well as some scholars oppose the EU carbon tax policy. They believe that EU makes use of its economic position to formulate policies to grab the interests of other countries. Chinese shipping industry is facing this great influence. However, the policy is indeed from the perspective of global low-carbon environmental protection, and it can promote the development of the world’s shipping industry to the direction of low-carbon green. At present, Chinese has no laws and regulations to control the carbon emissions, and there is not a set of methods and standards for the determination of carbon emissions. It is necessary to work out the laws and regulations of China's shipping industry on the emission of greenhouse gases. It can make us more accurate and efficient in the implementation of relevant international conventions and regulations, but also has an important significance to promote the rapid development of China's shipping industry emission reduction work. It further accelerates the development of China's shipping industry green.

**Conclusion**

This paper argues that the implementation of carbon tax in the EU is an irreversible fact. We are no longer going to talk about its legitimacy, and don’t have to oppose it. We should accept the fact that this policy will be soon implemented. We can take this opportunity to accelerate the development of Chinese shipping industry to green.

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