

Research on Accounting Recognition and Measurement of Carbon Emission Right Trading

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Abstract: With the issue of climate change being concerned by more and more people, greenhouse gas emission trading as a new form of commodity trading has also been rapidly developed. The establishment of a national carbon market will inevitably lead to more frequent and larger trading of carbon emission rights, which will require accounting treatment of corresponding businesses. This paper combines the accounting treatment methods of carbon emission right trading proposed at home and abroad and the relevant provisions of China's accounting standards, hoping to provide reference for the confirmation and measurement of China's carbon emission right trading accounting.

1. Introduction

From the Kyoto protocol to the Copenhagen world climate conference, developing low-carbon economy has become the current global consensus, and all countries have put forward their own emission reduction commitments. With the further development of pilot carbon emission market and national carbon emission market, China will become the largest carbon market in the world. The total amount of carbon emission quota is about 3 to 4 billion tons of carbon dioxide equivalent, and the annual trading volume may exceed 8 billion yuan. The huge market inevitably needs the corresponding accounting system to assist, among which the most basic is the accounting recognition and measurement of carbon emission rights. In China, the carbon trading market has just started. Therefore, it is of great significance to build a sound carbon accounting system for the development of China's carbon trading market.[1]

2. Carbon Emission Rights and Trading

Carbon emission trading refers to an important mechanism to promote environmental protection by using market economy. It allows enterprises to use these reduced carbon emissions and use or trade internal and domestic energy resources on the premise that the total emission stipulated by carbon emission trading is not exceeded. Under theme 17 of the Kyoto protocol, carbon emission trading is a tradable quota system based on the quota calculated from emission reduction and emission limitation commitments listed in annex B of the protocol. For example, for A global limit of 100 units of carbon emissions, country A gets 15, country B gets 10 and other countries get 75. If country A emits only 10 units and country B emits 12 units, then country B can buy two units from country A. At present, the eu is leading the world in promoting carbon emission trading. It has developed an emission trading scheme that is applicable in the eu region. By identifying the greenhouse gas emissions of ten thousand units in a specific field and allowing emission reduction subsidies to enter the market, the goal of reducing greenhouse gas emissions can be achieved.

The signing of the Kyoto protocol in 1997 proposed that the emission of greenhouse gases, including carbon dioxide, should be limited under the premise of reasonable environmental capacity. As a result, carbon emission allowances became scarce and became a valuable product called carbon asset, which is also called carbon emission right. Such increasingly scarce assets have the potential to flow under the premise of "same rights and different responsibilities" between

developed and developing countries. Since the developed countries have the obligation to reduce emission compulsively, while the developing countries do not, the distribution of carbon assets in the world is different. In addition, the essence of emission reduction is energy. Developed countries have high energy efficiency and advanced new energy technologies, so developed countries have high cost and difficulty in emission reduction. In developing countries, however, energy efficiency is low and emission reduction space is large, so the cost is relatively low. This leads to different costs for the same emission reduction unit in different countries. Demand in the developed world is high, and supply capacity in the developing world is high, creating a carbon trading market.

The basic principle of carbon trading is that one party of a contract receives a greenhouse gas emission reduction amount by paying the other party, and the buyer can use the emission reduction amount purchased to reduce the greenhouse effect, so as to achieve the emission reduction target. Due to the diversity of enterprises' emission and emission reduction costs, some enterprises with more emission rights can sell the surplus indicators to enterprises with less emission rights. It can be seen that carbon trading refers to the trading of carbon emission rights by emitters in the real economy according to the cost of emission reduction. Carbon trading brings climate factors that have been out of balance sheet into the accounting system.[2]

3. Accounting Recognition of Carbon Emission Right

The accounting recognition of the expenditure of carbon emission right should first solve the problem of expense or capitalization. Most scholars believe that China's carbon emission right should be recognized as an asset. According to the definition of assets, this paper holds that carbon emission rights can be owned or controlled by enterprises and are expected to bring economic benefits to enterprises, which conforms to the definition of assets and should be recognized as assets. The debate among scholars mainly focuses on what kind of asset carbon emission right should be recognized as. There are three mainstream views: the first view holds that carbon emission right should be recognized as intangible asset; Recognition of carbon emission quota accounting as intangible assets is a common practice in the world, such as Germany, France, Belgium, Portugal, Spain and other countries all regard carbon emission quota as intangible assets. In addition, carbon emission rights are recognized as intangible assets in IFRIC3 and measured in accordance with IAS38. As far as the EU carbon market is concerned, more than 60% of the EU carbon market is included in enterprises' choice to measure carbon emission rights in the form of intangible assets.[3] However, there are some drawbacks in recognizing carbon emission rights as intangible assets, for example, it is not conducive to accurately measuring carbon emission rights for trading or investment. The second view is that carbon emission rights should be recognized as financial assets; In 2002, the United Kingdom issued the British Emission Trading Accounting Procedure (Draft for Opinions), which recognized the emission rights as financial assets. If carbon emission rights are recognized as financial assets, they can be measured according to IFRS9. However, the IASB Interpretation Committee has clearly pointed out that carbon emission rights do not meet the definition of financial assets. The main reason is that carbon emission rights themselves do not represent contractual interests with cash income or other financial assets. They are not financial derivatives and require neither initial investment nor delivery at a future agreed time.[4] The third view is that inventory should be recognized. Firstly, this paper argues that the third view is unreasonable, because carbon emission right does not have physical form and does not meet the definition of intangible assets. Therefore, carbon emission right should be confirmed between intangible assets and financial assets. Secondly, the accounting confirmation of carbon emission right, which is a new thing, should not be generalized, but should be differentiated according to the purpose of the enterprise.

If an enterprise holds carbon emission rights for its daily production and operation, it should be recognized as intangible assets, which is also a common practice internationally. First, the asset is intangible. It has no physical form. Secondly, this asset is identifiable because its economic interest orientation is clear and it is the inflow or outflow of economic interest caused by the business of carbon emission. In addition, it is non - monetary. Therefore, carbon emission right fully conforms

to the definition of intangible assets "identifiable assets owned or controlled by enterprises without physical form", which should be recognized as intangible assets.[5]

But if a company buys a carbon right for trading purposes, it no longer makes sense to recognise it as an intangible asset. At this time, carbon emission rights are similar to financial instruments such as stocks and bonds, which are held by enterprises in order to obtain investment income brought by market fluctuations. Therefore, carbon emission rights for this purpose should be recognized as financial instruments. As for which financial instrument is confirmed, the relevant provisions of the financial instrument standard can be followed.

4. Accounting Measurement of Carbon Emission Right

Accounting measurement is an accounting record process that determines the amount of economic events to be recorded under a certain measurement scale by using specific measurement units and selecting reasonable measurement attributes. The same carbon emission right has differences in the essence of its economic business under different purposes of enterprises, which will also affect the corresponding accounting measurement. Therefore, the accounting measurement of carbon emission rights should also be distinguished according to the purpose of enterprises.

For the carbon emission right held for production and operation and recognized as intangible assets, due to the reason that it fully conforms to the definition of intangible assets and is less affected by the relevant market environment, its accounting measurement should be compared with the accounting measurement of intangible assets, that is, the measurement attribute of historical cost is adopted.[6]

As for carbon emission rights held for trading purposes and recognized as financial instruments, they are greatly affected by the market, so different measurement attributes should be selected according to different market activity levels. For China, a unified carbon emission right trading market has not been formed, and the active degree of carbon emission right trading market varies greatly in different regions. If fair value is adopted for measurement, a series of problems will occur. Therefore, this paper holds that, for regions with inactive market, the carbon emission right for trading should adopt the historical cost measurement attribute, which can make the measurement result more authentic and reliable. For regions with more active markets, the fair value measurement attribute should be adopted, so that the measured amount can better reflect the current situation of the market and meet the purpose of holding enterprises for trading.

5. Conclusion

With the gradual improvement of carbon emission trading market at home and abroad and the improvement of environmental protection awareness of governments and people around the world, the accounting treatment of carbon emission trading becomes more and more important. First of all, the accounting recognition should be recognized as different assets according to the purpose of holding different enterprises. At present do not need to create new accounting subjects, can apply intangible assets and transaction financial assets of these two subjects. The former for business, the latter for trading; Then, the accounting measurement should not only refer to the confirmed accounting subjects, but also be combined with the current situation of the relevant carbon trading market. Then, the accounting measurement should be based on the recognized accounting items and the current situation of the relevant carbon trading market to choose between historical cost and fair value. With the continuous development of practice, the treatment of carbon emissions trading will continue to develop.

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