Using Carbon Trading to Seize the Commanding Heights of Economic Development

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Abstract:

Global warming that caused global environment worsen is one of the most serious human problems. So UN commission on climate change negotiated with its member states to sign the treaty of "Kyoto Protocol", which is a legally binding agreement on climate change. In this agreement, an effective measure is to introduce the carbon trading. Carbon trading essentially trades the right to emit greenhouse gases. Through the effect of carbon trading market, it is important to construct the price of carbon, which reflects the scarcity of the right to emit greenhouse gases and the want of the well earth environment in essence. Carbon market and carbon trading activity in china exists in the Initial stage, we must seize the valuable opportunity to maintain sustainable economic development.

Along with the economic crisis sweeping the globe, low carbon economy has become a hot issue in the global economic field. Meanwhile, global warming and climate change will be a serious challenge of the survival of human. In order to curb carbon dioxide and other gases that have been blamed for global warming, a huge part of the solution recognized by all governments and scholars is reducing emission of greenhouse gas which is dominated by carbon dioxide. So carbon trading is a feasible and effective way.

1. Formation and mechanism of carbon trading

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In response to the global-warming crisis, in Rio de Janeiro of Brazil, the 1992 UN Conference on Environment and Development clearly raised the concept of "sustainable development". Through this conference, more than 150 countries had established "United Nations Framework Convention on Climate Change", which was called UNFCCC for short. UNFCCC is the first convention to take full control of greenhouse gas emissions including carbon dioxide discharge, and is an international convention to fight global warming which causing a lot of and adverse effect to the development of society and economy. After that, in December 1997, the third Conference of the Parties (COP) under the UNFCCC held in Kyoto of Japan, which aimed at limiting carbon emissions in developed countries. In this way, we can curb global warming. The conference ended with an agreement of "Kyoto Protocol". The Protocol took formal effect in February 16, 2005. "Kyoto Protocol" is internationally binding and enforceable agreements that will encourage countries to reduce greenhouse gas emissions.

"Kyoto Protocol" worked out three mechanisms of the energy conservation and emission reduction: Clean Development Mechanism (CDM); Joint Implementation (JI); Emissions Trade (ET).

"Clean development mechanism" helps to exchange the emission reduction units (ERU) between developing countries and developed countries at CDM registry. The emission reduction units make developing countries to cut emissions in the context of sustainable development. This transaction will benefit to developing countries. Also, "Clean development mechanism" can assist developed countries to acquire certified emission reductions (CER), improved the UNFCCC fulfill efficiency with cost reduction at the same time.

"Joint Implementation" exchange or get certified emission reductions units, superior in supervisory committee sector of developing countries. This system applies the emission reduction units (ERU) as its emission reduction units.

"Emissions Trade" certifies the emission reduction units, including "emissions reduction units","emissions reduction warrants (ERW)", "assigned amount units (AAU)", "Removal units (RMU)" and others. All the things are conducted by the National Registry sector of developing countries.

2. International market in carbon

2.1 Market structure

Carbon trading market can be divided into allowance-based markets and project-based markets. It is graded according to the source of original transaction products (greenhouse gas emissions). The principle of allowance-based markets is carbon cap-and-trade regime. Specific for, total quotas of carbon emissions are determined by market manager. Then, market manager allocates the emission quotas among the participants. The participants carry out the emission quota trading according to their own needs. Project-based markets apply benchmark - transaction as principles. In such transaction, once certified availability, the projects below the benchmark emissions level or carbon sequestration projects can obtain emission reduction units after (such as ERU and CER of "Kyoto Protocol").

2.2 Market participants

Participants of international carbon trading market can be divided into three categories, such as suppliers, end-users and intermediaries. The carbon trading markets involves companies or national subjecting to emission constraints, emissions reduction project developers, consulting agencies and financial institutions. End-users are enterprises and countries facing the emissions constraints. Enterprises and countries by constraints need to buy quota of emission rights or emission reduction units. With this trade, end-users meet the regulatory requirements and avoid being punished.

2.3 Trading tools
In current, the most important trading tools are emission rights, emission forwards and emission options in various carbon trading markets.

1) Emission rights product

Emission rights are the primary product in carbon trade, building a foundation for the product design and trading. The IET market is established with "Kyoto Protocol", which mainly specializing in the Assigned Amount units (AAU) trade and its forwards and options trade. System of EU Carbon Emissions Trading (EU ET) major trade EU Allowances units (EUA) and its forward and options trading. Related products of Certification Emission Reduction units (CER) are mainly merchandised in primary and secondary CDM markets. Major traded on the exchange of JI market include Emission Reduction units (ERs) related products. Voluntary markets trade each national quota. All these products involved above have the same emission reductions. Unit of these emission reductions of carbon dioxide equivalent is tone, but they can not make cross-market transactions.

2) Derivative product

Other than those mentioned above, various derivatives investment of finance have the suitable development as more and more financial institutions established in recent years. These particular types of derivatives provide a new form of risk management and arbitrage in the two sides on supply and demand of carbon emission rights. Currently, the major derivative product of carbon finance include: monetization of receivable carbon emission rights, guaranteed delivery of carbon emission rights, arbitrage trading, and insurance services.

3. Current status of carbon trading market

As a burgeoning financial market, carbon trading market develops rapidly in recent years. According to World Bank, all countries' total carbon financial market transactions for more than 10 billion dollars in 2005. This figure reached 126 billion dollars in 2008. Among these four years from 2005 to 2008, the volume of the carbon trading increased more than 10 times. Figure 1 is the volume of global carbon trading and figure 2 is the total value of those transactions in 2008. We can see from these two figures that the based-quota market transactions amounts to 92 billion dollars, accounting for almost 74% all of total carbon financial transactions. And the number of project-based trading and turnover reached 72 billion dollars. In addition, the secondary trading market based on CDM market has developed rapidly, which main trading products include spot transaction, forward transaction and futures business of CER.

The World Bank also predicted that the total transaction value and market scale of global carbon trading in 2010 and 2012 could reach 60 billion dollars per year. In 2012, total output of global carbon market will reach 150 billion dollars. Carbon trading market is seen as having the best shot at eclipsing international oil market as the world's largest transaction market. If one takes the long view, the international carbon trading system beyond 2012 is definitely something to look forward to. Figure 3 shows the growth of global carbon financial market from 2005 to 2007. It can be seen that over time the amount of carbon financial market increased significantly.
4. Prospect of establishing carbon trading market in China

4.1 Internal advantage

China is the world's second largest consumer of energy after the US, and is the biggest producer and consumer of coal. In the next twenty years, China will become the world's largest energy consuming country. Depending on imports, China buys stockpiles of commodities such as crude oil from Middle East and other Asian countries. The purchasing power enhances continuously. However, energy consumption with low energy efficiency releases great amount of greenhouse gases and energy-saving reduction technology falls behind the developed countries, which become a great significance in social harmony and economy development in China. So China has vast potential and tremendous scope for emission reduction. Developed countries perform their obligation of emission reduction at higher costs. In contrast, China can complete the emission reduction task at lower costs. As a result, using CDM mechanism, China can convert domestic emission reduction obligations into financing products and trading products. Statistical data from the United Nations Development Program (UNDP) showed that China possessed 1/3 carbon dioxide reductions in the global market. In 2012, China will account for 41% emissions targets supplied by United Nations.
Meanwhile, China's remote western regions have substantial land natural resources which almost occupy the total area more than 70%. But less than 1/3 people in China will live in western regions. So there are great deal of wastelands can be opened up. The Temperature here varies greatly between day and night, which climate is characterized by less clouds and superior light and heat condition. This weather conditions will help to promote the photosynthesis. In order to protect our environment, we can implement carbon sequestration projects in the vast west. Also it will improve the local economy and achieve the goal that can develop continuously.

4.2 External advantage

We will conclude that the great potential in global carbon trading market is great. It is expected to become the world's largest market. Europe and the United States, Japan and other developed countries have reaped tremendous environmental and economic benefits. No doubt, going with thrive of the global carbon trading market, China's carbon market will be promoted.

The rule of "Kyoto Protocol" is proposed that developed country must fulfill the emissions reduction task of 5.0 billion ton of carbon dioxide until 2012. Half of the task should be completed by the domestic, the other half of 2.5 billion ton can be completed through the CDM, JI and emissions trading. In this emissions reduction task, the system of CDM and JI will complete about 10 billion to 1.5 billion ton. So far, the figure for the cuts has not yet reached 300 million ton. So China, especially the western areas, should seize this great opportunity to realize greenhouse gas emissions taking advantage of advanced environmental technologies and efficient capital abroad.

According to the foregoing analysis, it is known that we have more commercial opportunities and market space in the current carbon trading market. We must seize the valuable opportunity to get sustainable economic development.

References