

From CCMT Importer to CCMT Exporter: The Case of China

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Global Forum on Trade , OECD
Trade and Climate Change

9-10 June 2009

I. The Development of CCMT in China: from Trade to Technology Innovation

Evidence from Trade

- Annual growth rate of 42% for both CCMT import and export (2001 – 2008)
- Both the top CCMT importer and the top CCMT exporter among developing countries
- Top 5 exporter around the world with regard to:
solar energy (3), wind energy (5), ocean energy (4), geothermal energy (5) and hydro power (2).

Source: A recent research made by Dr. Veena Jha for ICTSD and China Custom statistics

Evidence from Technology Innovation

- Increase in Trade reflects the development of China's CCMT innovation.
- Research on CCMT invention and patent shows:
 - 4th in the world
 - 1st among emerging countries.
 - China's comparative advantage lies in cement (2), geothermal (2), solar, hydro and methane.

Source: CERNA Research Program on Technology Transfer and Climate Change

II. How Did China Achieve This?

1. Government Support

- **Legislation and policy:** 11th Five-year Plan (2006-2010) and a series of supporting laws and policies
- **Financing:** 210 billion RMB (about \$31 billion) invested in climate change reaction out of China's 4 trillion RMB (about \$580 billion) economic stimulus plan

1. Government Support

- **Supervision:** A leading group for climate change reaction and energy conservation and emissions reduction (June 2007)
- **Assessment and valuation:** Performance of local governors directly linked to the result of assessment and valuation for energy conservation and emissions reduction.

2. International Cooperation

- International cooperation is a key factor for promoting CCMT development in China.
- According to UNFCCC report, China accounts for:
 - over one third of the CDM projects, and
 - over half of the total investment.

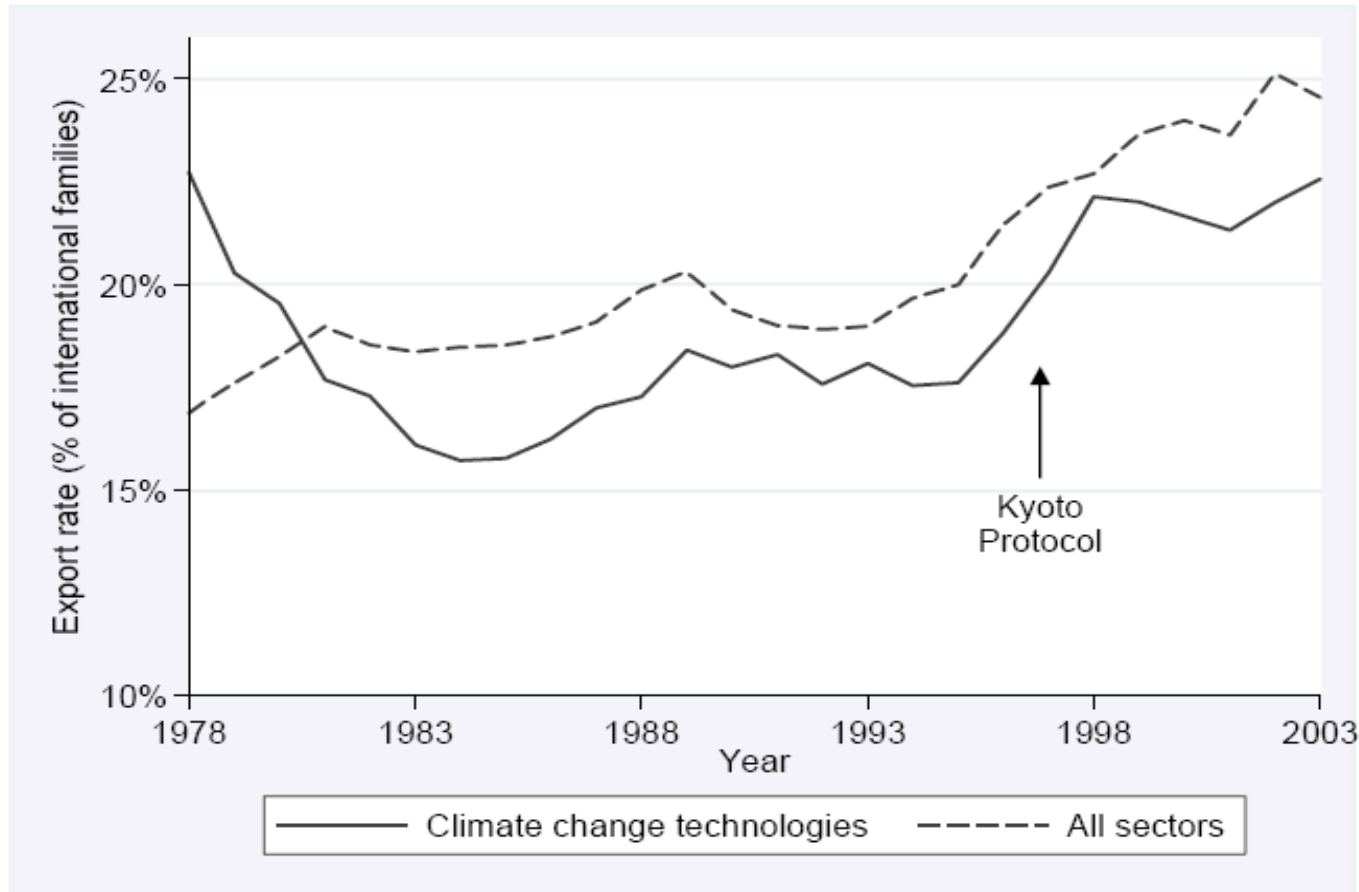
III. Huge Potential for CCMT Diffusion: from the Global Perspective

1. Imbalance in Technology Innovation

- Emerging countries 18%
 - Mainly from China (5.8%), Korea (4.6%) and Russia (4.2%)
- Developed countries 82%
 - Japan (40.8%), US (12.8%), Germany (12.7%)

Source: CERNA Research Program on Technology Transfer and Climate Change

2. Low CCMT Export Rate



Source: CERNA Research Program on Technology Transfer and Climate Change

3. Low portion from developed countries to emerging countries

Origin \ Destination	Developed countries	Emerging & transition economies
	Developed	5812 (75.9 %)
Emerging & transition economies	377 (4.9 %)	112 (1.5 %)

Source: CERNA Research Program on Technology Transfer and Climate Change

IV. Basic Difficulty for CCMT Diffusion

High Cost

- CCMT born as luxury goods
- Besides, the economic costs for CCMT diffusion mainly include:
 - High profit or extra technology transfer fee
 - Tariff and non tariff trade barriers
 - Sunk cost related to the disposal of old machines and infrastructures
 - Adaptation cost of new technologies

Lack of Financing

- Developing countries can not afford large scale CCMT utilization due to:
 - Financial constraint due to less developed economy
 - Urgent need for economic development

V. Trade Liberalization as A Way to Promote CCMT Diffusion

Trade Liberalization is A Way to Promote CCMT Diffusion

- According to World Bank report (2007), trade in climate-friendly goods would increase by:
 - 7.2% by eliminating only the tariff barriers, and
 - 13.5% by eliminating both the tariff and non tariff barriers.

But Not The Most Effective Way for Its Purpose.

- Trade in climate-friendly goods is not so sensitive to tariff reduction.
 - 30% relatively sensitive, 30% almost no sensitive at all, overall tariff elasticity is only 0.15
- Trade liberalization does not essentially reduce the basic difficulties
 - Which is the main part of the high cost?
 - Financing ability of developing countries improved?
- Trade liberalization may cause significant side effects
 - Imbalanced result and therefore extra burden for trade negotiation

VI. The Other Side of Trade Liberalization and Climate Change

Low Carbon Economy

- Emphasis of the trade and climate change agenda shifted from the environmental side to the economic side
- Low carbon industry represents the future of the world economy
- Economic development of developing countries should not be the cost for a low carbon economy

**VII. International Cooperation as
the Most Effective Way to
Promote CCMT Diffusion and
Transfer**

Climate Change is a public goods problem

- Free markets and trade can not provide complete solutions
- Government intervention and public policy within a country
- Institutional and compulsory international cooperation mechanism leaded by the governments

Reiteration of China's Proposals

- Set up specialized organizations to ensure institutional arrangement for technology development and transfer.
- Establish a specialized financial mechanism to provide financial support for technology development and transfer.
- Establish a review and evaluation mechanism to ensure the effective sustainable implementations of technology development and transfer.

Thank you!