

Panelist

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Ph.D., The University of Tokyo, Graduate School of Engineering, Research Center for Advanced Science and Technology, Tokyo, Japan

Master of Business Administration at INSEAD, Fontainebleau, France.

Board Member of the Association for the Environmental Economics and Policy, Japan. (2004-2009)

Chairman of the Association for the Chinese Environmental Issues. (2004-present)

Articles & Books

“Climate change: I will answer most of the questions!”, Iwanami, 2009.

“China Environment Handbook”, (ed) China Environment Research Group, Sososya, 2009.

1. Objectives and Backgrounds

It is very important to address the issue of climate change in the Asian region that will grow rapidly and will emit the Greenhouse Gas enormously.

This research analyzes the possibility of the low carbon growth in the Asian region from the three perspectives such as institution/governance, technology and value/philosophy. By this analysis, it will be possible to clarify the basics of the low carbon development taking the diversity of the region into the consideration. Moreover, it will provide useful insights to the other research topics in the S-6 project and send the clear message not only to the Japanese stake-holders but also to the influential stake-holders in the Asian region.

Specifically, this research focuses on the three countries, China, India, and Indonesia. It analyzes: 1) Major factors for the realization of the low carbon society from institutional perspective, 2) barriers for the leap-frogging development with advanced technologies and 3) Asian value/philosophy or way of thinking for the Asian specific development.

2. Research Method

First, we identify the Business as usual (BAU) scenario and low-carbon scenario in each countries. Second, we clarify the issues and barriers for the implementation of these scenarios considering the elements as follows:

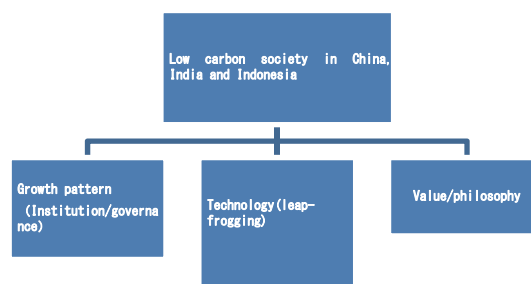


Fig. 1 Research scheme

Identification of the scenarios

- Bau scenario and low-carbon scenario
- Numerical targets, assumptions, decision making process

Institutional issues

- Present and future policies (e.g. regulation, subsidy, tax, emission trading, MRV)
- Influences of the globalization (e.g. embedded emission), National system, Economic policy, trade policy, resource constraints, distribution of the wealth, national characteristics, etc.
- Policies for the Energy intensive industries (e.g. export regulation by the export tax hike)
- Barriers for the implementation and consistencies with other policies

Technology

- Policies for the Renewable, Nuclear power, CCS, Demand Side Management (DSM) as the leap-frogging technologies
- Electrification of the rural areas
- Domestic and International technology transfer
- Mindset for the CCS and Nuclear power by the policy-maker as well as general public

Value

- Emergence of the civil society (NGO, Volunteer)
- CSR (Environment annual reports, Environmental ISO, Lohas)
- Regulations (e.g. EU environmental/trade regulations, de-carbonisation of supply-change)

3. Results

There already exist several scenarios made public either by the governments or by the research institutes (Table 1, Fig. 2)

Table 1 Contents of the Chinese low-carbon scenarios

Low-carbon scenario
Comprehensively integrate the considerations of sustainable development, energy security, international competitiveness, energy saving, emission reduction potentials, etc. Shift in production and consumption patterns and technology development help advances low carbon society. Accelerate the development of energy saving equipment manufacturing, nuclear power generation, renewable energy industry, etc. CCS technology is disseminated in power industry. Expand investment for low carbon economic development. Disseminate energy saving production and life style.

Source : China Energy Research Institute

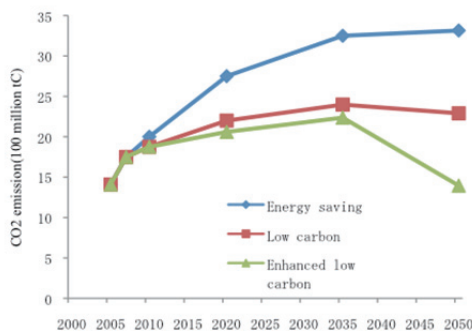


Fig. 2 Changes in CO₂ emissions under each scenario

Source : China Energy Research Institute

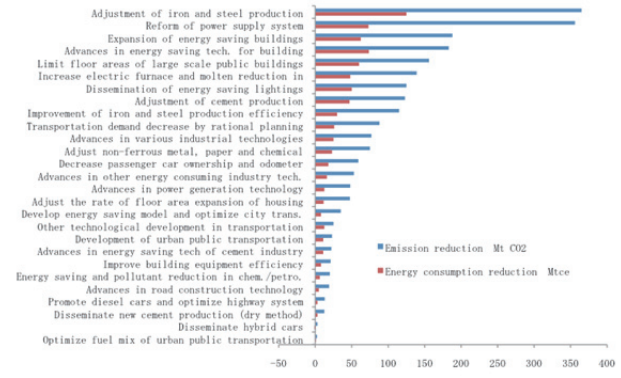


Fig. 3 Energy consumption reduction and CO₂ emission reduction up to 2020 under low carbon scenario

Source : China Energy Research Institute

In China, investments on energy conservation and renewable energy have increased sharply. However, more investments are needed to realize the low carbon society. Following is the brief introduction of the current status of the steel industry from the perspectives such as institution, technology and value.

As for the institution, two factors of production adjustment in iron and steel industry and reform in power supply system (reform in power source mix and efficiency improvement in power generation technology) will contribute significantly to emissions reduction until 2020 (Fig. 3). China needs to review the introduction of more cost efficient measures such as carbon tax and emissions trading system to minimize cost required to achieve the targets, in addition to enhancing current policies (such as closure of inefficient production sites, provision of subsidies and imposing energy tax).

As for the technology, what China needs for the future is the introduction of advanced technologies that has not been commercialized or thoroughly disseminated even in Japan (such as molten reduction process or CCS)

As for the value, for the moments, it is necessary for China to implement “draconian” measures such as closures of the small factories. However, it is not sure how long the Chinese government can depend on such measures as more democratic way of thinking prevails across China.