

Principal Research Results

International Climate Regime after Kyoto Protocol – Scenario for Future Framework Centering around Technology Development and Diffusion –

Background

Kyoto Protocol under United Nations Framework Convention on Climate Change came into force on February 16th, 2005. This is an important first step, but the current situation is different from what was expected when the Protocol was adopted in 1997. The United States does not ratify it and developing countries do not have reduction targets. International negotiation on future framework after the first commitment period started at COP10 in 2004. However, there are conflicts between the European Union and the United States over continuation of national cap approach and between developed and developing countries over participation of developing countries. Thus, the negotiations are in stalemate and we need to explore other options for the future framework than the current cap-and-trade approach.

Objectives

To develop the scenario for institutional development of future framework centering around technology development and diffusion rather than continuation of the Kyoto Protocol

Principal Results

- (1) Cap-and-trade approach seems not to be a successful framework, because Parties cannot commit ambitious numeric quantity targets. GHG emissions in the future are uncertain and not predictable in advance, which discourages Parties to assume obligations on future emissions. Furthermore, national cap is regarded as constraint for economic activities and is not welcomed.
- (2) To avoid difficulty of the cap-and-trade approach, we developed the scenario for institutional development of future framework centering around technology development and diffusion on the basis of interdisciplinary literature on international negotiations and technology development. In this scenario, under international cooperation, countries promote technologies at all development stages including R&D, demonstration and diffusion, considering national circumstances and interests. Concretely, Japan and China promote energy efficiency and conservation, US and Australia develop carbon capture and storage, and EU develops renewable energy. Figure 1 shows timeframe of the scenario and Figure 2 illustrates its key concept.
- (3) Advantages of technology-oriented framework are (a) long-term development of technologies, (b) positive participation of countries who find that technology development and diffusion is in line with national interests, and (c) effectiveness for prevention of global warming.
- (4) This scenario deviates from current negotiations on UNFCCC and Kyoto Protocol. To realize the scenario, we need a window of opportunity for changing the current negotiations, and new concepts need to be accepted by stakeholders. Political and administrative leadership is necessary for constructing an alternative international collaboration framework instead of Kyoto Protocol.

Future Developments

We are now considering possible international framework for technology development and diffusion for energy efficiency in East Asia and will propose an alternative regime to Kyoto Protocol.

Main Researcher: Taishi Sugiyama,
Research Scientist, Socio-economic Research Center

Reference

International Climate Regime after Kyoto Protocol - Scenario for future framework centering around technology development and diffusion: CRIEPI Report: Y04023 (May 2005) (in Japanese)

1) Stalemate of the current cap-and-trade regime and startup of various regional efforts (till 2005)

a) There are conflicts between European Union and United States over continuation of national cap approach and between developed and developing countries over participation of developing countries, b) Regional efforts on specific technologies start up, specifically carbon capture storage in the United States and several other countries, renewable energies including wind and biomass in Europe, and energy efficiency in East Asia.

2) Deepening of regional efforts (till 2008)

a) Parties adopt “Bonn Protocol” which sets numeric emission reduction targets only for developed countries. However, among them, only European countries ratify it, and the new Protocol turns into a regional treaty. B) Other developed countries depart from the Protocol process and make regional frameworks for technology development and diffusion. And they agree on a global umbrella treaty named “Global Agreement for Climate Technologies (GACT)” which integrates various regional efforts.

3) Further Integration into the New Framework (till 2012)

a) Criticism on the Protocol arises even in Europe because it cannot impose targets on other countries and European countries cannot afford to pay assistance for developing countries which is more than billions of dollars annually. As a consequence, the Protocol loses momentum, b) On the other hand, energy efficiency regulations and supporting measures for carbon capture and storage are further developed under GACT, and countries expect emissions reduction under the new framework, c) European Union joins the agreement in order to get global legitimacy for its emissions trading scheme and renewable energy policy.

Fig.1 Time-series development of future scenario for framework centering around technology development and diffusion

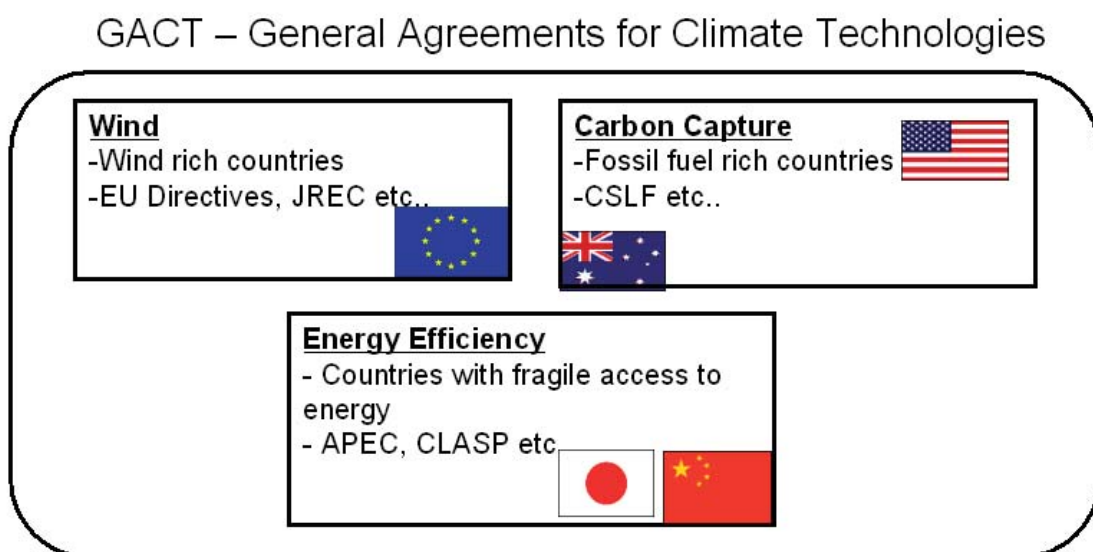


Fig.2 Technology development and diffusion in each region

(APEC: Asian-Pacific Economic Cooperation. CSLF: Carbon Sequestration Leadership Forum. CLASP: Collaborative Labeling and Appliance Standards Program)