

“Asia LCS scenarios and actions to reduce GHG emissions by half by 2050:A proposal from the Asia low carbon project

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Realizing a target to reduce GHG emissions by half by 2050 is an international challenge and the key is to achieve a low carbon society (LCS) in Asia which has a growing economy and diversified background. In this region, it is urged to go straight to a new social foundation which leads to a LCS based on sustainable and low carbon technologies instead of following conventional resources- and energy-intensive economic development patterns pursued by the developed countries. We focus on some domestic and international factors which influence the realization of LCS by conducting the following five subprojects (Figure 1).

#### (1) Asia low carbon scenario development

The project develops a vision toward a low-carbon society considering country-specific environmental and developmental concerns and quantifies the pathways to realize the above vision, along with concrete countermeasure, using back-casting methodology. This study also considers other important global problems like food security – landuse competition – bioenergy linkage, millennium

development goals, sustainable development and energy security, together with climate change analysis, so as to evolve synergistic solutions.

#### (2) Basic analytical research on potential of low carbon development in Asia

Several questions have been posed to analyze the possibility to realize Asia LCSs such as feasibility of leapfrogging, conflict/synergy of sustainable development paths, possibility to continue or reform the cultural characteristics, and possibility to utilize Asian wisdom. The development path of each country and domestic political system, historical culture and national characteristics are considered to analyze the formation of a LCS taking into account diverse aspects of Asia.

#### (3) Options and processes for establishing medium to long term international and domestic governance architecture toward low carbon Asia

This research proposes the design of institutional architecture in various level of governance, taking into account linkage between global level, a local level

(Asia), a national level and a local level, as well as between and within public and private sectors. It also proposes a financial mechanism and institutions for technology development and transfer to realize emission reduction potential of various countries and further reductions.

**(4) Study on reduction of GHG emission associated with increasing resource consumption by economic development**

The target of this research is to predict greenhouse gas emissions from Asian countries from the future resource demand and production of materials associated with economic developments and popularization of low-carbon technologies, and to examine the potential for these countries' contribution to a low-carbon society through balanced demand and supply and efficient and cyclic utilization of materials. Specifically, we adopted two points of view. The first is the viewpoint of material supply side such as efficiency improvement and switching energy sources in material production, application of alternative

resource by stocked recyclable and renewable resources, international specialization, and international resource circulation. The second is the viewpoint of the demand side such as developing social infrastructure with lower resource consumption levels, taking advantage of area characteristics of Asia, switching possession types of durable goods and shifting to types of consumption, which are less resource intensive.

**(5) Research on realization of measures for low carbon transport system in Asia**

The planning and implementation of countermeasures to suppress the emission growth from the transportation sector is one of the main factors to achieve the LCS. It is expected that CO<sub>2</sub> would increase drastically because of economic growth and urbanization. Thus a new transport model proposal is required to analyze the decoupling of CO<sub>2</sub> emission and economic growth to achieve 'Sustainable Transport' system which satisfies transportation demands in a low carbon way.

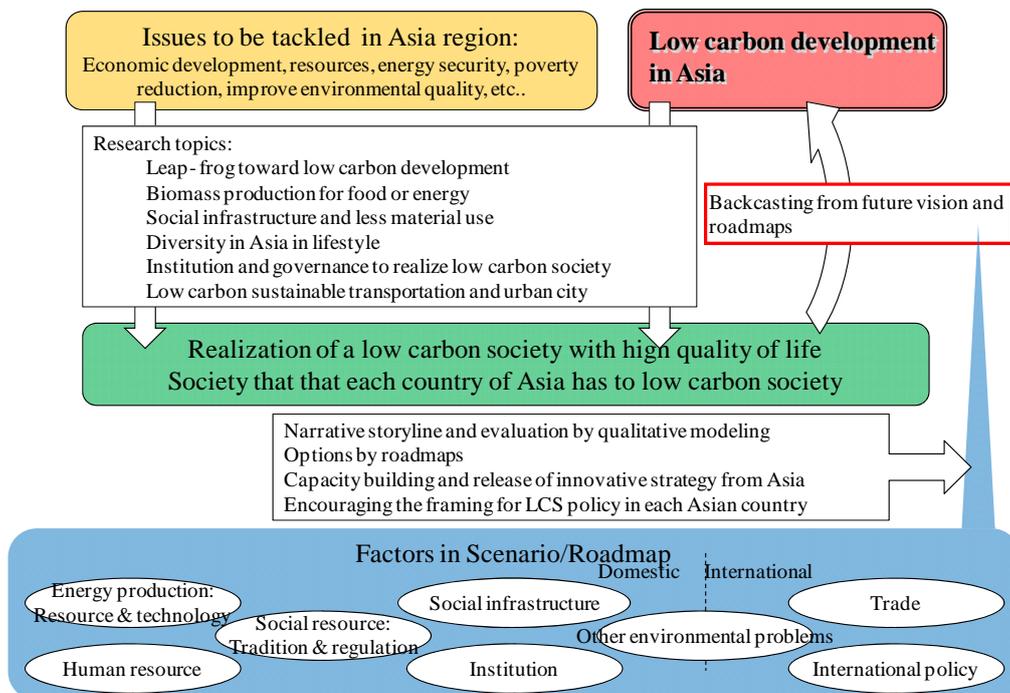


Figure 1 The research topics and the process of Asia low-carbon project