

Study on policies to diffuse Bioethanol and Biodiesel in India

Tomotaka INOUE

Key Words : Bioethanol, Biodiesel, diffusion, Jatropha

1 . Background and Purpose

Greenhouse gas emissions have been increasing drastically and air pollution has become more and more serious in India because of rapid economic development and population increase. And, as crude oil price has been rising, it is an urgent business for India to reduce the oil import dependence. In these situations, the policies to introduce bioethanol and biodiesel have become active. The purpose of this paper is to make it clear what policies India should take to diffuse these fuels in the future.

2 . Research methodology

First, I analyze the case studies of Brazil and Germany, which succeed to expand those products and are the world leaders now, and make it clear what policies were effective for the diffusion of those products. Second, I review the state of Indian policies. Third, I compare Brazilian and German policies to Indian ones, and extract some policies that the formers have taken but the latter dose not in order to make it clear what policies will be needed for the diffusion of those in the future in India.

3 . Case study : Brazil and Germany

In the case of Brazil, the government related agencies such as IAA played a key part and expedited "Proalcohol program". And reliability for fuel quality, on the one hand, has risen because fuel standards and quality management systems were arranged. On the other hand, government has set up a production targets, monitored the market, guided the related industries and changed the ethanol-mixing rate in order to stabilize the ethanol supply. Moreover, bioethanol is the cheapest in the motive fuels. These factors made it success to diffuse bioethanol widely in Brazil.

In the case of Germany, government subsidized to farmers and encouraged to produce energy crop in fallow fields. And biodiesel is the cheapest in the motive fuels because it is exempted from taxation.

And, they paid attention to biodiesel to satisfy the environmental norms, which are getting stricter gradually. Moreover, fuel standards and quality management systems make biodiesel more reliable. These factors made it possible to diffuse biodiesel widely in Germany.

4 . The current state of India

India has drawn up the phase-in diffusion targets and plans of bioethanol, and now it is in the early diffusion stage. There are some economic incentives such as commodity tax cut, statutory minimum price. Standards of E5 have been already issued, but those of E10 are under consideration. Even though emissions norm is getting stricter, it is lax comparing to the ones in developed countries.

India has drawn up the phase-in diffusion targets and plans of biodiesel, and now it is in a short time after introduction of it. Many Jatropha Programs in which they make biodiesel from non-eligible Jatropha oil have been implemented all over India. Various interested parties such as Indian and state governments, private companies, NGOs and farmers are involved in the programs, and various networks have been organized. However, there is no fuel standards and biodiesel market.

5 . Policies that India should take in the future

To diffuse bioethanol, it is necessary for government agencies to intervene in the related industries. Fuel standards and quality management systems, on the one hand, should be arranged to make the fuel quality more reliable, and the stable supply system should be build. On the other hand, ethanol must have price competitiveness against sugar and gasoline.

To diffuse biodiesel, it is necessary to do R&D works and demonstrations, and arrange fuel standards and quality management system as soon as possible in order to make biodiesel more reliable. Moreover, biodiesel market should be created quickly.