

BASIC IDEA AND CASE STUDY OF USE OF BIOMASS

- TOWARDS RESTRUCTURING OF RECYCLE-ORIENTED MEASURES -

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1. This study starts with reviewing as in Chapter 2 the trend of policies for use and promotion of biomass in Europe and America by referring to literature concerned. Next, present conditions and issues of recycle-based measures are extracted by a fact-finding survey as in Chapter 3. Finally, while introducing some cases that have been promoted by the company for which the author works, Chapter 4 summarizes what can be implemented to resolve such issues.

2. "Biomass" shall be defined as "renewable and biological organic resources other than fossil resources."

The following characteristic of the biomass is remarkable among its four characteristics:

Contribution to prevention of global warming (i.e. carbon neutral that does not increase CO₂ in the atmosphere in life cycle).

At COP3 (The 3rd Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change held in Kyoto), EU proposed such a high target as a reduction rate of 15% for warming gases for 2010 in comparison with 1990. This was a bold proposal depending greatly on a strategy of using biomass, aimed at doubling the share of renewable energy in the primary energy. EU announced that substitute fuels for oil and biofuels should account for 20% or more and 8%, respectively, of fuels for transport to be supplied by 2020. In 2003 the European Council adopted the "Directive relating to promotion of the use of biofuels for transport," and called for member countries to make national laws for measures for such promotion and tax system concerned in their own countries. In 2002, Environment and Development Summit in Johannesburg internationally agreed to the increase of use of biomass. Japan also had to address the use of biomass more positively than ever, establishing Japanese comprehensive strategy for biomass towards the end of 2002.

3. The Japanese government has established in deep earnest a legal framework of process for switching over to the recycle-oriented society. However, it seems that companies and citizens in general have not danced though the government has piped unto them. There are some reasons for slow-pace recycling steps such as:

(1) Old relevant law system has not been improved and remains effective to sustain waste-related industries.

(2) Economic resources are inappropriately allocated, including government capital.

(3) The linkage between industries is undeveloped.

It is essential to reduce waste and save resources in order to structure a recycle-oriented society. However, additional energy is required for recycling, resulting in increased emission of CO₂, where the physics law of increasing entropy applies. As for Japan's actual recycling situation, energy consumption and CO₂ emission are not properly controlled in the process of collecting waste. Vision of the recycle-oriented society lacks the viewpoint of warming prevention.

4. Let me introduce my current study, which is aimed at curbing energy consumption and reducing CO₂ emission associated with recycling flow in addition to trimming logistic costs. To be specific, at widely distributed stores where transport cars have delivered foodstuff, they collect frozen waste food on their way home from such stores. This is an answer to a question how to collect and transport biomass with great efficiency. Waste food oil is made into bio-diesel fuel oil to be used as fuel in the refrigeration system for the above-mentioned foodstuff transport cars.

5. It is necessary to switch over to such policies as promote recycle-oriented contents, use of biomass, and measures against global warming. The following matters should be considered with biomass strategy set in the core of measures against global warming.

(1) Biomass strategy should be supported by a tax system as a measure for accelerating its realization.

(2) Such regulations should be abolished as retain old type industries that impede recycle-oriented progress.

(3) Recycle-oriented progress should be obligated to control CO₂ emission.