GEC

日本における廃棄物リサイクル促進のための取り組み

Initiatives for promoting waste recycle business in Japan

民間企業・地方自治体によるエコタウンの取り組みに関する調査からわかったこと

Findings from survey on eco-town initiatives by private sectors and local governments

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Background

- The Global Environment Centre (GEC) is an organization in Osaka, Japan that supports the United Nations Environment Programme's International Environmental Technology Centre (UNEP/IETC).
- The GEC began supporting the "UNEP Eco-Town Project" in 2004. Under the objective of providing information to help developing countries solve waste problems and transform themselves into resource-recycling societies, the GEC has been introducing the concepts, measures, and initiatives of Japan's eco-towns, conducting surveys on the state of waste management and recycling industries in developing countries, holding seminars on eco-towns, and creating reports and publications.

Background

- Under the objective of promoting and supporting the building of eco-towns in developing countries, in 2009 the GEC began the new activity of creating an “eco-town and recycling technology database.”
- The purpose of the database is to post information that will be of reference when developing countries actually create policies, plans, and methods for eco-towns. The following types of information are planned for posting in the database.
  - What types of recycling technologies actually exist? What points must be noted when applying such technologies?
  - What types of initiatives and methods exist for promoting eco-towns?

Survey on Needs for Recycling Technologies Necessary for Building Eco-Towns

- Prior to creating an environmental technology database, a survey was conducted to clarify the needs for recycling technologies to support the building of recycling societies. The survey was conducted based on a list of recycling technologies used by eco-towns in Japan.
- The survey was conducted in 2009 in Bandung, Indonesia and Penang, Malaysia, which are cities subject to the UNEP eco-town project. In Bandung the survey was conducted by the Universitas Padjadjaran's Institute of Ecology (IOE) and in Penang the survey was conducted by the Socio Economic Research Institute (SERI).

Results of Survey on Needs for Recycling Technologies (1)

Waste classification	Type of waste	Recycling technology
Waste plastic	Waste plastic	Shredding / sorting/ manufacturing recycled products
	Waste plastic	Shredding / granulating / de-chlorinating / dismantling / distilling / turning into oil
	Waste plastic bottles	Sorting by label / sorting by bottle color / shredding / washing
	Waste plastic, waste plastic bottles	Turning into pellets
	Used textiles, used clothes, waste polypropylene	Cutting up / thermal compression
Waste wood	Waste plastic + waste timber	Breaking up / melting down / churning / mixing / molding
	Waste wood	Sorting / breaking up / carbonizing / board manufacturing
	Waste wood	Molding using a needle machine
	Food waste	Turning into bio-gas
	Sludge + food residue + rice hulls	Mixing / processing

Results of Survey on Needs for Recycling Technologies (2)

Waste classification	Type of waste	Recycling technology
Waste paper	Hard-to-recycle waste paper	Melting / removal of foreign materials / bleaching / processing
	Paper containers and wrapping	Shredding / manufacturing spreading materials
	Newspaper waste paper	Turning into cellulose fiber
Other	Waste tires, waste rubber	Kneading / fabricating
	Glass bottles (one-way bottles)	Cleaning / inspecting / turning into cullet
	Used fluorescent tubes	Breaking up / sorting
	Household electric appliances, office automation equipment	Dismantling / breaking up / sorting materials
	Sludge and dust that contains valuable metals	Drying / melting / reducing
	Incineration ash + combustion residue + sludge	Pre-processing / blending / burning

Survey on Japan's Eco-Town Recycling Technologies

- Based on the results of the survey on needs for recycling technologies, in 2010 the GEC conducted surveys with the objective of gathering information on the following things concerning recycling technologies adopted by Japan's eco-towns.

  (Eco-town recycling companies: 12)

  - Technology process
  - Background (Why did the company start the recycling business?)
  - Factors in success, difficulties faced, tasks and challenges

  (Local governments: 10)

  - Eco-town plans
  - Background (Why did the local government start the eco-town program?)
  - Difficulties faced, unique methods and initiatives, tasks and challenges

Results of Survey of Recycling Companies

Why did the Company Start the Recycling Business? (Multiple answers given)

- Asked to do so by the local government: 8 companies
- Enactment of a recycling law (concerning household appliances or containers, wrapping, etc.): 7 companies
- Securing or expansion of new business: 7 companies
- The company president or parent company has a strong interest in the environment: 6 companies
- The company was collecting waste from the beginning:
  5 companies (general trash, waste paper, waste timber, etc.)
- Taking in new societal demands: 3 companies
  (Securing rare metals, disposing of confidential documents, etc.)

Points for Success

- Selling Recycled Products
  - Was introduced to a company that would buy recycled products (PE/PP/PET, recycled oil, etc.)
  - There was a group that would cooperate with selling recycled products.
  - Found a company or local government that would actively purchase recycled products from a CSR standpoint (products recycled from waste paper, etc.)
  - The parent company provided cooperation or support for collecting waste materials or selling recycled products (recycled fluorescent tubes).
  - The parent company or an affiliated company started purchasing recycled products or residue (collected metals, slag, methane gas, etc.).

Points for Success

- Technological Aspects
  - Applied the company's existing technology or know-how (iron-making, smelting, household electronics, paper-making, etc.)
  - Had already developed or established recycling technology (turning waste plastic into oil, recycling waste paper, etc.)
  - Was introduced to a company that has recycling technology (turning waste plastic into flakes, recycling waste timber, etc.)
  - There was an organization that would cooperate in technology development (recycling waste paper, etc.)

Tasks in Common

- Foreign materials mixed in
  - Waste plastic, plastic bottles
    - Cans, bottles, glass, trash, leftover drink liquid, dirt and sand, batteries, knives

Tasks in Common

- Foreign materials mixed in
  - Food waste
    - Plastic bags, plastic containers, chopsticks, forks, spoons, plastic, paper, cardboard
  - Waste paper
    - Clips, strings for binding paper, plastic, calculators
  - Waste timber
    - Nails, clamps, nuts and bolts, chains

Tasks in Common

◆Dirty collected items

◆Clean collected items

Comments Common among Recycling Companies

- Points for success in the recycling business
  - How will you secure a constant amount of waste materials?
  - Is it possible to obtain waste materials that are properly separated?
  - How will you secure people or businesses to sell recycled products to?

Results of Survey of Local Governments

Why did the local government start an eco-town program?

Main reasons (multiple answers given)

- ◆Reasons related to waste management
  - Lack of waste disposal facilities or incineration capacity (7)
  - The agriculture, forest, or fishing industry generated a large volume of organic waste (3)
- ◆Reasons related to industrial development
  - Decline of local important industries, necessity for rejuvenating the local economy (4)
- ◆Reasons related to leadership
  - Leadership of the governor, mayor, or other local influential figures (3)
  - Initiative of administrative officials (3)
- ◆Influences of laws
  - Legal obligation to form a plan to reduce waste (2)
  - Government development of laws related to recycling (2)）

Original Advantages

- Utilization of existing technologies
  - Manufacturing and iron-making industries or research institutes were concentrated in one place, and private-sector companies had a reservoir of various technologies.
  - Because of proximity to a metropolitan area, many intermediate waste processing plants were located there and companies handling waste disposal had a reservoir of intermediate processing technologies.
- Understanding and cooperation of residents
  - Because pollution had occurred in the past, residents were already very environmentally conscious.
  - In the process of overcoming past pollution, a structure in which the government and residents hold dialogues had already been built.
  - As a result of government guidance, residents were already used to separating their trash before collection.
  - As a result of government guidance, residents were already familiar with efforts to reduce trash and recycle.

Unique Initiatives by Local Governments (1)

- Promotion of cooperation among private-sector companies
  - Government arrangement of opportunities and meetings in order to promote business-matching for resource-recycling led by the private sector
  - Government hiring of private-sector company retirees to serve as resource-recycling business coordinators
- Utilization of local universities
  - Promotion of local university support for research and development of private-sector businesses' recycling technologies
  - Commissioning of local universities to evaluate the appropriateness of recycling business

Unique Initiatives by Local Governments (2)

- Support for procurement of information necessary for starting recycling business
  - Government research on the amount of recyclable waste produced and provision of information to private-sector companies
  - Government provision of grants for research conducted by private-sector companies concerning how to secure waste materials and sales channels for recycled products
  - Broad disclosure to private-sector companies of prefectural information concerning amounts of waste generated and amounts disposed of
  - Identification of problematic waste items in each area, and private-sector company and government consideration of methods of recycling such waste
  - Classification of waste items according to whether they should be recycled by the prefecture as a whole or by each respective area, and public announcement of policies

Unique Initiatives by Local Governments (3)

- Securing finances for eco-town programs
  - Introduction of a tax for disposing of industrial waste, and using it to operate a system to promote resource recycling and for grants to private-sector companies
- Prioritizing recycling companies
  - Prioritizing procurement from the city government office and recycled products from public projects
  - Designating recycling companies as places to take general waste
  - Using waste plastic recycled fuel for sludge incineration facilities at public sewage-treatment plants
  - Urging prefectural and city engineering departments to use recycled cement

Unique Initiatives by Local Governments (4)

- Improvement of incentives for recycling companies
  - Establishment of a system for local government endorsement of recycled products
  - Awards recognizing companies that are outstanding in practicing the 3Rs
- Other forms of support for recycling companies
  - Assignment of employees to provide support to each recycling company

Unique Initiatives by Local Governments (5)

- Cooperation by residents for securing recyclable waste materials
  - Holding symposiums in various areas of the prefecture in order to obtain a consensus among residents concerning a resource-recycling society
  - Television appearances by the mayor to urge residents to recycle their trash
  - Visits by elementary school students to tour recycling companies as part of their social studies classes
  - Training for resident representatives, and cultivation of area leaders for promoting separation of trash and recycling
  - Formation of a patrol team of city employees to provide residents with guidance about separation of trash
  - Display of a trash-separation slogan and logo on trash collection trucks and the uniforms of trash collection employees
  - Promotion of separation of household trash according to the respective collection days for waste plastic and those for cans, bottles, and plastic bottles
  - Implementation of a unique collection system for small household electric and electronic devices such as mobile telephones

Summary

- All local governments, private-sector companies, and residents are facing a lack of waste disposal facilities. It is necessary for all cities to reduce and recycle trash.
- There are a wide variety of methods for creating plans, selecting technologies and implementing them, initiatives, partnerships, and support systems aimed at achieving resource recycling. If such things are adopted flexibly in accordance with the situation of the area, resource recycling will be promoted.
- The cooperative leadership of the top leaders of both local governments and private-sector companies can be an important element in success.
- Involving a variety of stakeholders is extremely useful in securing things such as business partners, financing, waste materials, sales channels for recycled products, and technological support.
- It is extremely important to obtain residents' understanding and cooperation (promoting separation of trash before it is collected, acceptance of recycling companies, establishing regulations, etc.). For this reason, it is important to actively improve residents' awareness and disclose information to them.

GEC will compile this information and use it to build a database.

Thank you for your attention.

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