Case Study

Kawaguchi City (Saitama Prefecture, Japan)

Numerical Target:
"Creating a 20.1% Rate of Recovery Before Intermediate Waste Processing"
Methods for achievement: "Kawaguchi City Active Plans for Waste Reduction"

In recent years, many cities have been advocating and putting forward plans for "resource circulation model society building, not with the idea of "disposing, burning, and creating landfills" from waste, but with the idea of reducing the amounts of final waste to as near to zero as possible by managing the cycle of "exhaust controls, classified refuse collection, and resource recovery". In order to bring this about, citizens, enterprises and local governing bodies need to make unified efforts toward waste reduction and resource recovery at each and every level of production, distribution, consumption, and disposal.

As Kawaguchi City, known to have a well-developed system for managing waste materials, has no fiscal waste disposal sites within its administrative districts, it has dealt with this kind of waste reduction and resource recovery by building up its own characteristic classified refuse collection method consisting of "station collection", "strategic point collection", and "collection by citizen group". This has been called the "Kawaguchi City Method", and not only has it been the object of many inspections and much research study for many domestic and overseas local governing bodies but it also indicates one practical, exemplary illustration of waste management.

A prompt reconsideration of this method has been investigated to go along with the changing situation in these past several years, however. The opportunity for this reexamination was provided by the enactment in June 1995 of the "Law for Promotion of Separate Collection and Recycling of Container and Packaging", or the so-called "Container and Packaging Recycling Law".

Kawaguchi City is located in the southernmost part of Saitama Prefecture, across the Arakawa River and adjacent to Tokyo. It has long been known as a "metal founding town", but it has recently also expanded into the machinery, chemical, and precision machinery industries. Approximately 450,000 people live in this city's roughly 56 square kilometer area, and the high population density of this city as well as the citizen- s' awareness of its various problems has helped to further its projects on waste reduction from an early stage. A resource recovery movement by community, centering on the local society, started here in 1978. The "Kawaguchi Method", namely, that of classifying and sorting waste materials at their point of origin, has spread rapidly. It has helped not only to promote the diffusion of pioneering measures to deal with waste issues, but it has also resulted in stimulating and energizing the region.

In July of the same year, Kawaguchi City established both the "Kawaguchi Municipal Council for Measures Concerning Waste Materials", an advisory organ to the mayor, and the proposal-creating organ, the "Kawaguchi Municipal Eco-Recycle Promotion Committee". As a result, a proposal was put forth for the "New Kawaguchi Method", consisting of the three pillars of "Thorough Resource Recovery", "Provision of Recycling Facilities", and "Charging Fees for Waste Disposal".

Here, we will be taking a look at the "Kawaguchi City Active Plans for Waste Reduction", based on a system of reduction reconstructed from both hard and soft aspects. In order to reach the numerical targets that the city submitted to the 20% Club, "Creating a 20.1% Rate of Resource Recovery Before Intermediate Waste Processing", it is expected that most emphasis will be placed on measures for the stages of waste creation and waste disposal. Therefore, the following will first introduce measures which are being taken by the citizens and enterprises concerning controls on the generation and disposal of waste materials.

Strategy 1: The "Clean Promotion Officers" and the "Eco-Recycle Promotion Businesses"

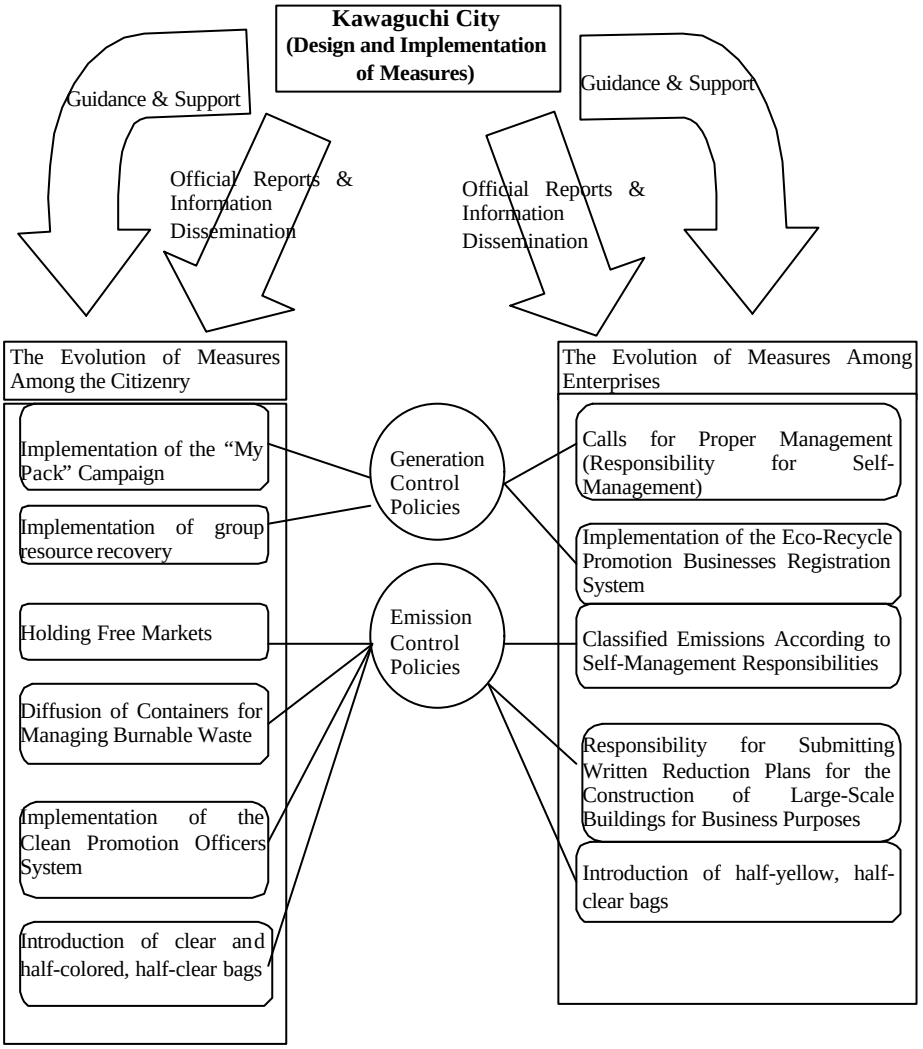
The waste generation rate for Kawaguchi City has leveled off since the 1990 fiscal year, and out of the total of 181,229 tons in 1996, household waste amounted to 141,179 tons (77.9%) and enterprise-related waste amounted to 40,050 tons (22.1%). The resource recovery rate increased from 12.0% in 1991 to 15.1% in 1995. These existing practical achievements were ushered in as a result of thoroughgoing waste management carried out for the most part after waste elimination. To be more precise, the waste that was eliminated was incinerated at either the Totsuka Environment Center or the Aoki Environment Center, then shredded and crushed at the Totsuka Environment Center Shredding and Crushing Facility, and then either recycled or stored as recyclable waste at the Recycling Center.

Due to the recent growth in the amount of PET bottles being collected, in concurrence with the "Container and Packaging Recycling Law", however, problems have begun to occur in the management abilities of the Recycling Center and in regard to shortages of stockyards. Also, since the disposal of the residue from incineration has been entrusted to 4 disposal sites outside the city, the cost burden for this disposal is greater than before. The city plans to deal with these limitations on management abilities by placing emphasis on waste reduction, especially on controls at the levels of the generation and the elimination of waste.

The "Kawaguchi City Active Plans for Waste Reduction" put forth measures for both enterprises and citizens to cooperate in controlling the generation and elimination of waste materials (Figure 1).

The first item we will give attention to from among those measures designed for ordinary citizens is the "Clean Promotion Officers System" for elimination controls. Clean Promotion Officers are chosen from among the citizenry, and they serve for a period of two years as local leaders who provide a link between the citizenry and the administration. Their 4 major roles are in the (1) diffusion of waste materials reduction and proper management information, the (2) guidance concerning the classification and elimination of waste materials, (3) resource waste collection by regional groups, and (4) other cooperative measures with the city administration. This system, by he[illegible] initiatives take root in the region, has obtained results as both diffusion and de[illegible]vell as practical activities.

Figure 1.



With the "resource waste collection by groups", citizens grant subsidies of 10 yen per 1 Kg of recovered resource waste and work to promote the recovery of resource waste Materials by local residents' groups. This recovery movement has been carried out since 1978 (c.f. photo), and there is a tendency for the amount of recovered waste to increase with every year, but since the prices of used paper, which has been the main recovery item since 1996, have been hovering at a low, a situation of "reverse compensation" is being brought about where the acceptance of some items is being refused. This is why the city has been calling for citizens and enterprises to use recycled paper products and has also implemented the "Emergency Cascade Program for the Expanded Use of Recycled Paper", a program which draws together ideas for the use of recycled products.

Group Resource Recovery of Kawaguchi City

Next, the "Eco-Recycle Promotion Business Registration System" is one of the generation control measures designed for enterprises. Municipal shops and enterprises which are making efforts for waste reduction and resource recovery are registered as "Eco-Recycle Promotion Businesses" which aim at diffusion and development. Also, according to the "Kawaguchi Municipal Ordinance Concerning the Reduction of Waste Materials and Their Proper Management" (enforced from 1995), enterprises are made responsible for their own activities in the management of general business waste materials eliminated.

In connection with this, a system of charging fees for enterprise-type waste based on specific volume has been implemented. This is a system whereby reasonable fees, determined by the cooperation of the 3 branches of the citizenry, enterprises and the municipal government, are levied directly upon the one who eliminates the waste materials.

The prospect of applying such a system of charging fees on household-type waste in the future is currently being investigated.

Strategy 2: Project Simulation

General plans as well as working plans which anticipate waste reduction have become necessary for each of the stages of collection, transportation, and treatment.

Based on the contents of the "Container and Packaging Recycling Law", Kawaguchi City launched its "Classified Collection Plan" which will continue for a period of 5 years from April 1997. According to Article 8 of the same law, there are 7 categories of container and packaging waste materials, which are the objects of this plan, and these include steel cans, aluminum cans, colorless glass bottles, brown glass bottles, glass bottles of other colors, paper packaging, and PET bottles. The total sum of the proceeds for bottles and cans is restored to the town block associations as a subsidy according to the amount collected.

By the year 2000, those cardboard boxes, paper containers and packaging, and plastic trays, whose application has currently been delayed, will be included in this system as targets for classified waste collection. In the written plan, a computer simulation method has been put forth in order to calculate the necessary added costs and numbers of personnel that will be necessary at this time as well as to estimate the influence that the components mixed into the incinerated waste will have on the amount of electricity which can be generated (utilizing the heat generated at the Totsuka Environment Center for generating electricity). Using as basic data items such as the estimated population within each generation zone as well as the per capita amounts of eliminated waste, the collection routes, the operating speeds of the transportation vehicles, and the capacities of the collection vehicles, this simulation can calculate the target amounts for collection within each generation zone for the year 2001. In accordance with this, estimates can be made about items like the necessary numbers of collection vehicles, the necessary number of times for collections, the necessary numbers of personnel, and the necessary business expenses involved.

These simulation operations are formally intended for the 1999 fiscal year, but in the course of the fractionalization of the waste classification process which has accompanied the changes in the system of laws, the city has up until now carried out systems maintenance and preparation based on such detailed model analysis as this. This method is most effective particularly for creating a business plan based on the new laws and ordinances, and it is also possible to apply it to other cities.

The city has begun to hammer out the following new measures for resource recovery of waste materials, utilizing both the citizens and the enterprises as the main subjects of its plans.

- The establishment of a registration system for recycling planners
- The establishment of a recycling fund
- The diffusion of stores which handle recycled goods
-An understanding of the actual waste elimination conditions of waste-emitting enterprises and the creation of guidelines
- The preparation of a recycling manual
-The reuse of recovered metals, recovered resources, and effective, usable items from large-scale waste

The "recycling planner registration system" is a system where leaders who promote things like resource waste collection by regional groups and consumer movements are registered as "recycling planners", and they are provided with opportunities for lectures, inspection tours, analysis of waste components, and participation in events in conjunction with the municipal government. The city is also investigating the possibility of a method of building up funds for activities, partly from the profits derived from the expansion of resource recovery and partly from municipal subsidies, to be called the "recycling fund", in order to sustain spontaneous recycling activities among the citizenry.

The "recycling manual" is for the use of enterprises. This manual, prepared as a recycling manual to include the knowledge and the ideas that the city has cultivated up until the present, is to be distributed to businesses, and it is designed to help businesses promote internal resource recovery.

As the pioneering activities of citizens and enterprises has great significance even for the waste collection stage, the city plans from now on to promote the active participation at the citizens' level, not only in creating active plans but also with regard to the alterations in the systems of laws.

Conclusion

Within its long term plan, lasting for a 23-year period from 1995, Kawaguchi City is working out targets for a 45% reduction in waste emissions and for a four-fold increase in the amounts of resource collections.

These ambitious numerical figures not only allow for expected figures in fields as yet not started, such as waste generation and elimination controls, but, as we have seen, have already brought about solid results.

Mr. Hiroshi Fujinami, the Assistant Chief of the Environment Management Section in the Department of the Environment of the Kawaguchi Municipal Government, says that the most important thing for waste reduction and resource recovery is to work toward dissemination of information and the enlightenment of the people through things like education about the environment and practical activities carried out by the citizens.

Mr. Fujinami also states, "I think that there are still too few case examples in Japan where the local governing bodies are dealing with placing the final responsibility for waste materials with the parties that emit the waste. The "Container and Packaging Recycling Law" as created with reference to Circulation Economic Law in Germany and Eco-Embarrage Law in France, but in order to allow such awareness as having lifestyles where people reduce waste and preferring to use returnable bottles and slightly inconvenient items over using throw-away paper packaging to take root among the populace, it is necessary to aim for a much more increased awareness, especially in school education."

In its efforts to deal with waste reduction and resource recovery over its long-term, 15-year plan, Kawaguchi City is catching a glimpse of the stance it needs for a long, drawn-out reforms in the awareness of its citizens. The objectives of each and every local governing body are being questioned anew in regard to how far they allow the idea, of the principle of making the waste emitter have the final responsibility, to penetrate from the ground up through the level of the citizen.

Budget (1997)- 9,301,662,000 yen.
Staff (1997)- 382 persons (148 proper staffs and 234 temporary staffs).

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