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# NEWSLETTER

No.65

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July 2008

**THE JAPAN SOCIETY OF WASTE MANAGEMENT EXPERTS**

## Greeting from

**New JSWME President, Prof. Yamamoto**

It is a great honour to have been selected as the 10th JSWME president.



This year, JSWME aims to become registered as a corporation. Also, as we look toward a more material-cycle oriented society in the future, we will change our name to The Society of Waste Management and Material Cycle (provisional).

The new executive board has three vice-presidents, Prof. Sakai (planning & administration, academic research affairs), Prof. Takada (editing affairs), and Prof. Matsufuji (international relations affairs). The regular JSWME committees also plan to step up their activities.

Like other academic societies, JSWME has been discussing an impending financial situation due to the decreasing number of members. It is essential to continue working toward improving communication between the executive board, committees and branches to review plans that will stabilize finances and strengthen membership. To do so, I plan to hold more conference meetings and continue to work with others to plan for the incorporation and future prospects of the society.

My abilities as president are limited, however, and I hope the executive committee, board of directors, council, secretariat, and all the members of the society will join me in these efforts to realize our transformation into a successful public corporation.

In conclusion, I would like to reprint here “the road ahead of the society”, a document presented by the society’s future planning committee, which also received the input of many of our younger members.

## THE FUTURE OF THE SOCIETY

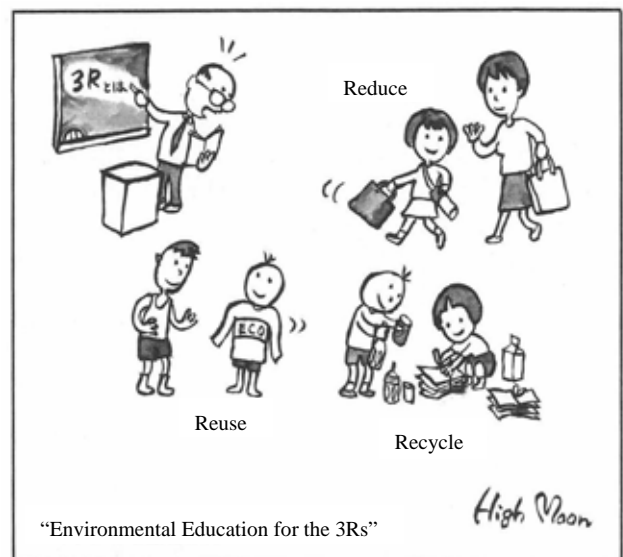
### Our Mission

We shall contribute to the advancement of the academic study of material-cycle and waste management and provide guidance from an academic perspective to face the challenges in solving waste management problems and forming a material-cycle oriented society.

### Our Roles

- 1) Offer our broad-based academic background and participation in diverse subject matter, based on close communication with society, to identify practical approaches that will contribute to society.
- 2) Contribute solutions to waste management problems and the formation of a material-cycle oriented society by
  - (i) Producing and sharing information and recommendations from an academic point of view, and
  - (ii) Establishing international, academic partnerships to advance development through shared scholarship.

We warmly welcome further ideas and suggestions from our members to help improve the road ahead of us.



“Environmental Education for the 3Rs”

Comments by High Moon: After all, it’s best to learn by doing.

**The Home Appliance Recycling Law:  
A review and future outlook**

Home appliances are viewed as essential goods and have become widespread in Japan since 1965. These appliances were disposed of as bulky waste at the end-of-life even though municipalities had difficulty to deal with them properly. At the same time, it was thought that the valuable materials contained in those disposed home appliances should be recycled. Consequently, the Home Appliance Recycling Law was enacted in 1998, and came into force in 2001. The law obligates retailers to take back certain home appliances from homes and offices and for the manufacturers to recycle and resell the materials.

The law required revision five years after enforcement, in 2006, and was evaluated and reviewed 16 times in committee over one and a half years until December 2007. In 2005, 75% of the targeted items (17.2 million items) were taken back; a 35% increase from 2001. The manufacturers also made progress in recycling those items and 334,000 tons of metal and plastic were recycled in 2005—a 58% increase compared to 2001. This also contributed to prolonging the life of final disposal sites.

On the other hand, the law requires that consumers pay the treatment and recycling costs when they dispose of these items and, as a result, the cases of illegal disposal are on the rise (The fee is established by each manufacture: ex.: air-conditioners are 3,500 yen/unit, televisions are 2,700 yen/unit, refrigerators are 4,600yen/unit, and washing machines are 2,400yen/unit). 122,000 of those four items were disposed of illegally in 2000, and 156,000 in 2005. Some suggested collecting a fee at the time of sale to deal with the problem, although this proposal was dismissed since the current system was showing good results, and there was concern over the difficulty in managing the deposits one-to-one with disposed items. At present, the manufacturers are expected to voluntarily provide financial support to municipalities, who currently bear the cost and deal with illegally disposed waste.

Another infringement taking place is that the some retailers are passing on home appliances from the consumers to businesses other than the manufacturers responsible for recycling them. This means that the items which consumers paid to have recycled can be exported and sold instead of being recycled by the manufacturers.

To counter the situation, a guideline has been established that allows retailers to distinguish between “disposed” home appliances (those targeted by law) and “discharged” home appliances (those suitable for reuse).

It has been pointed out that these “discharged home appliances” and “disposed home appliances” being exported for sale are not reused properly, and instead soon disposed of inadequately, causing health hazards and contaminating the environment. The Basel Law (a domestic law in Japan) sets criteria for used home appliances that contain toxic substance to avoid exporting home appliances that are inadequate for re-use. In addition, it is essential to be involved in international efforts to follow the Basel Convention and related international projects, as well as enhance the application guidelines.

A number of measures are being discussed to ease the ability to follow the current regulations and encourage more recycling. Recently, liquid crystal televisions have been added as a target home appliance and the legal recycling ratio has been raised (see table 1).

Table 1: Old and new legal recycling ratios (%)

Items	Original	Revised	2007FY results
Air-conditioners	60	70	87
CRTs	55	No change	86
liquid crystal TVs	--	50	--
Refrigerators	50	60	73
Washing Machines	50	65	82

(Tsunako Matsumoto)

**Follow up Program for the Action Plan of JICA  
Training Course**

1. Background

The JICA training course on Integrated Solid Waste Management was established in 1969 to transfer appropriate technology of solid waste management to developing countries. The training course is implemented by Japan Environmental Sanitation Center, which had

welcomed 391 trainees from 63 countries as of the end of 2006.

At the end of the course, trainees are required to make an action plan using the knowledge and technologies they have learned. They are then expected to implement those plans in their countries with the financial support of their government or donors. However, due to the lack of funding and human resources, many of those plans face difficulty in actually being implemented. This article discusses a follow up program implemented to support ex-trainees and facilitate implementation of the action plans.

## 2. The selected action plan

The action plan selected for this program is titled, "Improvement of existing landfill and construction of new landfill introducing Fukuoka-method", and was written by Mr. Edward Manuel Moreta, who participated in the Integrated Solid Waste Management training course in 2006.

According to the action plan, the existing landfill was an open dump riddled with problems such as fire, smoke pollution, insect infestations, and river pollution from the leachate, making it a public nuisance that attracted citizen complaints and newspaper and television coverage. The municipality would like to close the existing landfill and open a new landfill at a site acquired for that purpose, but citizen opposition has caused these plans to deadlock. The action plan aims to improve the problems of the existing landfill, such as smoke pollution, to gain public confidence and start using the new landfill.



**Meeting with the mayor and relevant people at the site**



**Instruction on installing the gas ventilation tube at the site**

## 3. The follow up program and its effect

The follow up program consisted of: 1. Technical advice for the existing landfill management and construction of a new landfill, and 2. Presentations at the seminar for improvement of the existing landfill organized by the municipality.

On-site training was conducted for installing gas ventilation and using cover soil to prevent fire and smoke. Also, technical advice was given to improve the existing landfill and drawings were done for construction of the new landfill.

Later, an open seminar was held, attended by the mayor and the government staff in charge of solid waste management, and participants showed their appreciation for our activities being done through the follow up program.

By visiting the site and checking the actual situation, it was possible to identify problems and questions that came up when trainees tried to apply what they learned back in their home countries. The follow-up program is intended precisely to help in solving these kinds of issues.

(Takashi Miyagawa)

## Report from the Korea Society of Waste Management Spring Conference

Korea Society of Waste Management Spring Conference 2008 was held at Suncheon National University in Suncheon city on 8-10 May, 2008. Suncheon city is located in southwest Korea, a 30-minute drive from the Yeosu Airport. This year is Suncheon National University's 70<sup>th</sup> anniversary.

According to the cooperation agreement between Japan and Korea, Vice-President Ide, Prof. Matsufuji, the chairman of the International Committee, and many members from Japan from Fukuoka Univ., Hokkaido Univ., Tokyo Univ., Kyushu Univ. and National Institute for Environmental Studies came to take part in the special symposium and poster session.

The poster session featured 24 presentations, 16 from Japan and 8 from Korea. The theme of the symposium was "The Current Status and Technical Prospects of CDM in Korea and Japan" and the following presentations were made.

Dr. M. Yamada (National Institute for Environmental Studies): "Issues on Application of the IPCC Guideline to CDM Projects in Asia"

Dr. T. Ishigaki (Ryukoku Univ.): "Waste Treatment and GHG Emissions: How to achieve co-benefit"

Dr. Kyoung-Sik Choi: "Status of the CDM Market and the Development of the Carbon Market in Korea"

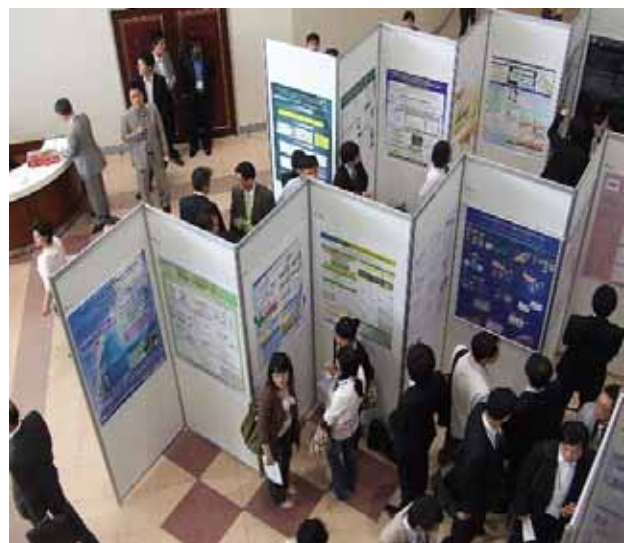
Dr. Seung-Do Kim: "How can we effectively handle CDM projects for landfills?"

Dr. Lae-Bong Han: "Landfill Gas CDM Project at Sudokwon Landfill Site"

In addition to the session and symposium, the annual meeting of the cooperation agreement was also held. It was agreed between both the Japanese and Korean members that the theme of the international symposium for the JSWME 19<sup>th</sup> annual conference in November this year will be "Producing fuel and treatment of waste plastics/papers (tentative)". Also, the 4<sup>th</sup> Expert Meeting on Solid Waste Management in Asia-Pacific Islands (SWAPI) will be held in Japan in July this year, and the 5<sup>th</sup> meeting will be in Korea in November this year.



The Special Symposium



The poster session

(Akio Suzuki)

## RDF Facilities for Municipal Solid Waste: Lessons from Japan

In Japan, the number of RDF (Refuse Derived Fuel) facilities rapidly increased from 1998 to 2003, heralded as a recycling technology which converts solid waste into fuel. One factor of this proliferation is said to be a government policy that consolidated smaller areas of

solid waste management and built larger scale incinerators. At that time, the government provided subsidies for RDF facilities and waste treatment facilities which had a capacity of more than 100t/day. This made it attractive for small municipalities to construct RDF facilities under the expectation that the products of the facilities (RDF) would be utilized as fuel for small scale boilers at local factories. Also, some power generation facilities started collecting RDF from several of those facilities.

However, it was later revealed, rather ironically, that dioxins are generated in the process of producing, drying and compaction/formation of RDF, so regulation of the production facilities and small scale boilers utilizing RDF was rolled out in February 2001. Consequently, starting in December 2002, RDF could only be used in boilers that could treat the dioxins, causing the RDF market to shrink considerably. As of March 2008, there are 53 RDF facilities for municipal solid waste operated around the country and 25 regional facilities that collect RDF for their power generation systems.

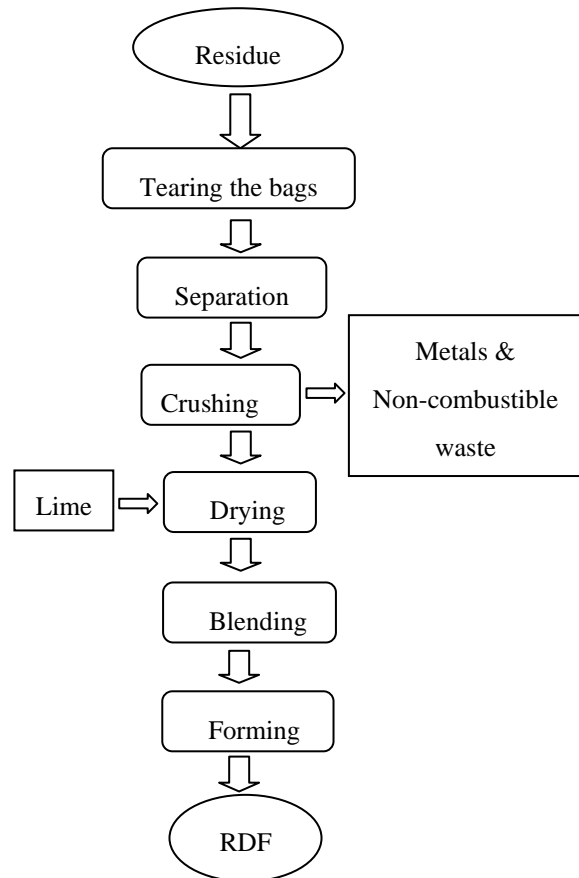
The cost of producing RDF itself was higher than expected. Automated separation to remove foreign matter is necessary even in the final process of RDF formation, which results in unwieldy high machine maintenance costs. According to one survey by a news source, for every ton of RDF, waste treatment costs varied from less than 3,000 yen (8 facilities), to 30,000–60,000 yen (27 facilities), to more than 60,000 yen (17 facilities), bringing the average to 53,000 yen. This is nearly double the 20,000–30,000 yen needed as treatment at general incinerators.

Compared to incinerators, the RDF facilities are required to control odor since there is no high-temperature treatment process used in producing RDF. Some RDF facilities have had lawsuits launched against them by residents due to insufficient odor control. Nevertheless, many RDF facilities are able to conduct odor control very well, though one of the factors that drives up production costs.

It is said that the advantages of RDF are that it is easy to transport and store. However, an accidental fire at the storage tank of an RDF power generation facility in Mie prefecture killed one fire fighter in August 2003. The investigation revealed that RDF which had absorbed moisture and rotted while in storage had generated a flammable gas and caused an explosion. Several similar accidents prompted regulation of RDF facilities under a

fire service law.

The RDF Production Flow



Obviously, the RDF experience has come with a number of unexpected surprises, although its utilization in waste for energy technology will be a much needed alternative amidst current high oil prices. From the lessons learned in Japan, the following list gives some recommendations when producing RDF:

Don't use mixed waste as raw material. Instead use separated waste to produce RDF. The high-calorie waste from businesses and industry could be a suitable feedstock.

Plan extensively how the RDF will be utilized prior to constructing the facilities. Then calculate the capacity of the storage silo based on that plan. Do not plan an unnecessarily large silo.

Design a system that is adept at reducing odors to avoid expensive end-of-pipe countermeasures later on.

**Waste Management Research**  
**Vol. 19, No.3 (May, 2008)**

Preface

*Showcasing the splendor of Hokkaido's natural environment for the world*

Harumi Takahashi

Special Issues: Construction Sludge

*Current Status and Recycling Strategies of Construction Sludge*

Masashi Kamon

*The Current Situation and Significant Issues Surrounding Construction Sludge*

Yasuhiro Tanaka

*Approaches to Construction Sludge Recycling in the Construction Industry*

Hiroyuki Sakamoto

*Steps Taken by an Industrial Waste Disposal Agency for Effective Utilization of Soft-clay Soil Produced from Construction Works*

Hiromi Hamano

Current Members of JSWME as of June 30, 2008  
(The figures in parenthesis indicate the difference  
from May, 2008)

Regular Members	2,875	(10)
Students	259	(29)
Non-Japanese Member	78	(-)
Public Institutions	98	(-1)
Supporting Members	133	(-3)
Individuals of NPOs	5	(-)
Total	3,448	(35)

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