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January 2007

**THE JAPAN SOCIETY OF WASTE MANAGEMENT EXPERTS**

**–New Year Greetings –  
JSWME President, Prof. Nobuo Takeda**

A happy new year to all the JSWME Newsletter readers. I would like to express my greetings and declare my new year's resolution.

I was appointed as the 9th president of the JSWME last spring. Since then, I have made every effort to develop my managerial capacity for the first few months, and I was able to manage various activities such as the publication of the JSWME journals, and the holding of the annual conference, different committees and charters with the great help of board members and committee members.

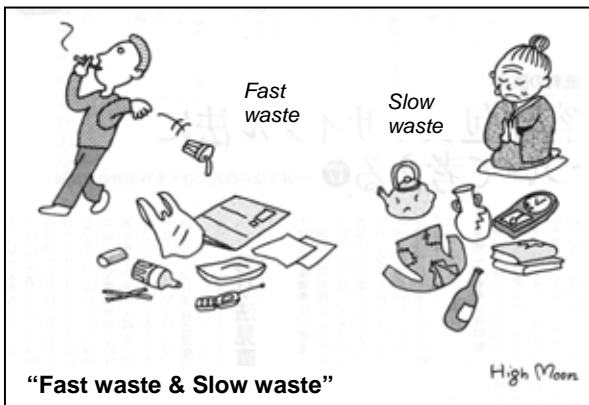


Prof. Nobuo Takeda

Since the turn of the 21st century, Japan has faced large changes on economic, social and political aspects both in a positive and negative way. Common knowledge, conventional rules, and tacit understandings have been abandoned. It may be unpleasant to say this at the beginning of the new year, however, I cannot help looking at the situation severely and bearing a sense of crisis.

As for the transition of JSWME to juridical person, one of the main issues of this term, I recognize an offensive part and defensive part.

Let us look at the defensive part. The society should be regarded as a public organ in terms of taxation and



Illustrated by Prof. Hiroshi Takatsuki (Taka-tsuki literally means "High Moon".)

positioning in society. It must fulfill accountability to the society. "Doing good for the society" is not enough: it is necessary to enhance its compliance.

How about the offensive part? The JSWME has a great asset, i.e. the knowledge and technology of the members. It must be proactively utilized by the society, and this will be more efficient and effective if it goes through the juridical entity. It will be necessary to establish a win-win cycle whereby the JSWME endorses the activities of each member and members' activities strengthen the authority of the JSWME.

It is also important to steadily activate both international and local activities, not just pleasing everyone. I expect all the members to recall the original spirit at the time of the JSWME establishment, and to vigorously launch the second stage of the rocket.

**Japan's ODA on Solid Waste Management:  
The Study on National Waste Minimization  
in Malaysia**

Since the mid 1980s, solid waste generated in urban areas in Malaysia has been increasing year by year due to rapid urbanization and diversified lifestyles. As a result, problems with increasing waste management costs and securing landfill sites have arisen in the country. The Ministry of Housing and Local Government (MHLG) has taken the lead in promoting and establishing recycling systems; however despite the government's efforts, Malaysian data shows that the rate of recycling of solid waste remains at about 2 to 5% per year.

In order to improve the situation, the Government of Malaysia and the Government of Japan have launched on a joint study titled "The Study on National Waste Minimization in Malaysia (hereinafter, "the Study")" with the technical assistance of the Japan International Cooperation Agency (JICA). The Study commenced in July 2004 and ran for a total of 25 months until July 2006.

The objectives of the Study were as follows:

- (1) To formulate the Master Plan, Action Plans for the federal and local governments, and Guidelines necessary to promote Waste Minimization (Reduce, Reuse, Recycle) in line with the National Strategic Plan for Solid Waste Management in Malaysia (NSP).

(2) To strengthen the institutional capacity of the federal and local governments for management of waste minimization.

In the first phase of the Study, the current status and issues in Malaysia were analysed through a survey on waste amount and composition as well as waste flow. In tandem with the surveys, a number of PCM (Project Cycle Management) workshops were conducted in four local authorities (LAs) that were selected as model LAs.

Based on an appreciation of current issues, the Study recognized the need to introduce or reinforce certain key measures to promote waste minimization, that is, “Enhancement of Awareness”, “Strengthening of Partnership among Stakeholders” and “Introduction of Source Separation.”

To achieve the objectives of the Study, a number of pilot projects (PPs) were carried out in the second phase of the Study. The PPs included:

PP-I: Establishment of a National Recycling Information System (Target Group: MHLG and eleven selected LAs)

PP-II: Local Recycling Network and Source Separation of MSW (Target Group: Miri, Pulau Pinang and Subang Jaya)

PP-III: 3Rs Activities in Primary and Secondary Schools (Target Group: Miri and Johor State)

In tandem with the PPs, the LA officers with the technical support of the Study Team formulated the Local Action Plan for the model LAs. On-the-job training was extended to these officers with respect to the use of various survey methods to collect data, evaluate the data and appreciate the current status of waste minimization within their area of administrative jurisdiction, and concomitantly, to establish waste minimization targets.

Following the conclusion of the PP period, some of model LAs recognized the need to set up a permanent Waste Minimization Unit in the local council, rather than



Photo: Briefing on Source Separation for residents in target area

an ad-hoc unit to promote, implement and monitor the waste minimization program at the local government level. As a permanent component in the local council, the Waste Minimization Unit would be in a better position to expand the target areas for source separation, and launch the various activities advocated in the Local Action Plan. Indeed, such a move would ensure the continuity of the activities, private-public initiatives and partnerships that were established by the Study.

Arising from the Study, a “Core Team to promote 3Rs activities in Malaysia” was formed comprising officers from MHLG and the model LAs. Using knowledge and experience acquired in the course of the Study, the Core Team is tasked with disseminating their experience and information to other LAs in the country; and where necessary, the Core Team is required to guide and advise these LAs in setting up a Waste Minimization Unit to initiate and implement the waste minimization program and related activities.

The Study formulated the Master Plan on Waste Minimization with the vision of realizing a “Material Cycle Society through 3Rs”. To realize the vision, the Study also drafted the Federal Action Plan to guide the federal government in its efforts. The Master Plan strategies and key actions advocated by the Federal Action Plan are outlined below.

Master Plan Strategies	Federal Action Plan
Strategy-1: Enhancement of Awareness on Waste Minimization	Action-1: Enhancement of Awareness Raising Activities under the National Recycling Program (NRP)
	Action-2: 3R Activities in Schools
Strategy-2: Strengthening of Partnership for 3Rs Activities	Action-3: Formulation of Stakeholders’ Networking and Development of Partnership Activities on 3Rs
Strategy-3: Enhancement of Institution to Strengthen Government Policies on Waste Minimization	Action-4: Strengthening of Legal, Regulatory and Financial Mechanism
	Action-5: Improvement of Information Management
	Action-6: Provision of Guidance to LAs on LAP-WM

The Study was culminated in a Final Seminar held in June 2006. It was conducted by the Minister of the Ministry of Housing and Local Government, and a total of 300 participants from the federal and local governments, NGOs, and other stakeholders participated in the seminar. The Master Plan on Waste Minimization was introduced to the participants as a future direction for waste minimization in Malaysia. Potential obstacles and measures were raised and discussed by the participants at the Panel Discussions held during the seminar. The seminar was a good opportunity for the Malaysian people to reaffirm the significance of waste

minimization activities. The seminar also benefited from the participation of Japanese experts on waste who have worked with the Malaysian Government over the years. They include Prof. Sakurai of Okinawa University, Prof. Matsufuji of Fukuoka University and Mr. Hirai of the Tokyo Metropolitan Government.

(Hisashi Yamauchi)

**Waste to Energy in Japan (2)**  
*Superheater for highly-efficient power generation  
and its corrosion*

In order to efficiently recover energy from waste incinerators, it is necessary to raise the temperature and pressure of steam in the boiler as much as possible. Accordingly, it is becoming popular in large facilities to use superheat steam at a temperature of 400°C instead of steam at 300°C or lower as before.

At such a high temperature, boiler corrosion becomes an issue. In the 1990s, NEDO (New Energy and Industrial Technology Development Organization of Japan) carried out a series of studies on metal materials to be used for superheaters, and the corrosion mechanism and corrosion resistance of different materials were investigated. As a result, at 400°C, materials containing Cr at 20–25% and Ni at 20–25% showed the least corrosion wastage. Corresponding materials include 25Cr-20Ni steel and 22Cr-32Ni-Fe alloy.

The corrosion mechanism of the boiler water tubes is complex: it involves not only effluent gas temperature and HCl concentration, but also other gases such as moisture and composition and the melting point of ash adhering to the boiler water tubes. To prevent ash deposition, tail-end boilers, which set the water tube horizontally, are applied in some cases. It is also

important to control gas temperature and tube wall temperature within an appropriate range by properly arranging superheaters and economizers in order to respond to the fluctuation of gas temperature which is vulnerable to incineration load. Further, protective tubes are often installed to avoid corrosion by soot blow. The selection of appropriate materials and structure and sound operation management has demonstrated that the superheaters can be utilized for over 5 years. Nevertheless, since corrosion of the superheater is unavoidable, the facility structure and space availability should allow for its replacement.

Many municipalities in Japan used to landfill plastic waste, but there is a tendency to start incinerating non-recyclable plastics for heat recovery. As a consequence, the calorific value of waste increases, and high load and low oxygen operation to prevent dioxin inevitably raise incineration temperature. This can cause corrosion of the first pass of the boiler installed at the upper part of the incineration chamber. It became a common countermeasure to apply weld cladding using heat and corrosion resistant alloys such as Inconel or 50Cr-50Ni to the water-cooled wall of the first pass.

Furthermore, because of the high temperature and high pressure of steam, corrosion of the inner part of the boiler tube, i.e. alkali corrosion or hide-out by phosphate, is another concern. Therefore, it is also important to carefully select chemicals to treat boiler water, control boiler water quality, and properly operate boilers particularly at the start-up and downtime of the incinerator.

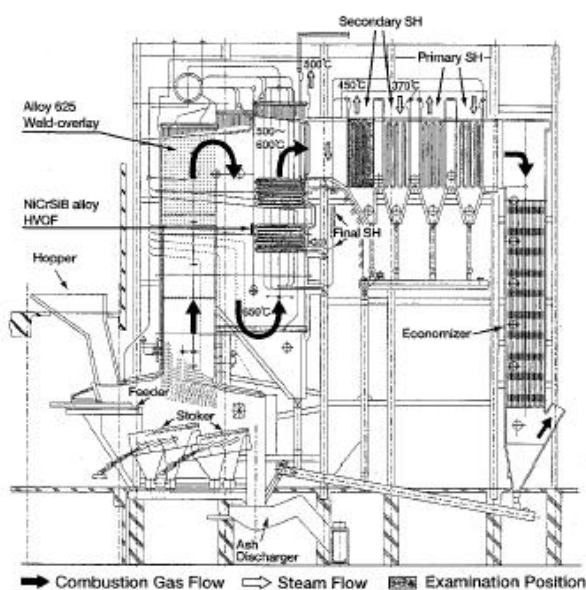
(Kouji Arita)

**The 17th Annual Conference of JSWME, Kitakyushu,  
and the International Session**

The 17th annual conference of JSWME was held during November 20-22 at the Kitakyushu International Conference Center in Kitakyushu City, Fukuoka Prefecture. Eco-town project, a venous industry, was first started in Kitakyushu City in Japan. The City, a steel empire at one time, is a role model for the 3Rs now. Located in the northernmost part of Kyushu Island, Kitakyushu City has thrived as a gateway for trade with Asian countries since early times. The international session was held in the second day including the Japan-Korea symposium and the English poster presentation. Prior to the Japan-Korea symposium, signing ceremony to renew the cooperation agreement between JSWME and KSWM (Korea Society of Waste Management) was held.

**a. Signing Ceremony of Renewed Cooperation Agreement between JSWME and KSWM, and International Symposium**

It has reached ten years since JSWME and KSWM had concluded the cooperation agreement in 1996. The signing ceremony of renewed cooperation agreement



Pilot plant for High-efficient power generation  
(from NEDO report)



Signing Ceremony of Exchange Agreement  
Between JSWME & KSWM

was held by the presidents of both societies, Dr. Nobuo Takeda of JSWME and Dr. Oh-Sun Yoon of KSWM at November 22, 2006 in Kitakyushu International Conference Center.

The cooperation agreement was concluded to promote the academic interchange and thus contribute to the development of knowledge and mutual understanding. Since then members of each society have attended the other society's annual conference mutually to present their research results in English. Japan-Korea (international) symposium from KSWM has been held in JSWME annual conference. More than 50 members from KSWM participated to the 17<sup>th</sup> JSWME conference.

It is added in the renewed agreement that both societies shall make effort to collaborate with joint publication of English journal and to cooperate for establishing a network of experts on solid waste management in Asia and Pacific islands.

Following the signing ceremony the international symposium was held in the theme of "Significance of Society Based Exchange and toward Regional networking". Dr. Nobuo Takeda made wide topics of lecture including the establishment and activities of JSWME, the history of solid waste management in Japan, dioxins problem and expectation for further collaboration toward sustainable society. Dr. Oh-Sun Yoon introduced the history of KSWM establishment, the policy of 3Rs in Korea and so on. Then joining Dr. Yasushi Matsufuji and Dr. Jong-In Dong, chairman of international relations committee of each society, an open discussion was held including involving the floor. Proactive opinions were exchanged such as young members should contribute to lead future cooperation.

### b. English Poster Presentation

The English poster presentation was held in November 21 on the first floor of the exhibition hall of the Kitakyushu International Conference Center. As previous year, the Japanese posters and the English ones were categorized by the topics and displayed regardless the language. There were 36 English posters, of which 26 from Korea, 9 from Japan (including posters presented by foreign students studying in Japan) and one joint

presentation.

The themes of papers were: landfill (8 posters), incineration (6 posters), recycling (6 posters), biological treatment including the methane fermentation of kitchen waste (4 posters), gasification and melting (3 posters), waste management and planning (2 posters), Waste to energy (2 posters) and others (5 posters). The posters were reviewed by the participants and "Characteristics of dissolved organic matter in leachate from MSW landfills contained incineration residue" by Dong-June Seo, *et al.*, of University of Seoul and two others won the most excellent poster presentation award.

(Akio Suzuki, Takashi Miyagawa and Hideo Azuma)

### The Second Expert Meeting on SWM in Asia and Pacific Islands was Held

The Second Expert Meeting on SWM in Asia and Pacific Islands was held by JSWME and others during 22-24 November at the Kitakyushu International Conference Center. Following the agreement at the first expert meeting in Tokyo last year, 14 experts from 12 countries and regions in Asia and Pacific Islands participated in the meeting and discussed about network establishment. Further, a seminar and research presentations on 3R initiative by the overseas experts was held on the 23<sup>rd</sup> and 24<sup>th</sup> with about 120 participants.

At the expert meeting, various subjects such as the name of the network, its objectives, activities, and memberships were actively discussed. Consequently, it was agreed to launch "Society of Solid Waste Management Experts in Asia & Pacific island (SAPI)" and the Chair's Summary was prepared. It was also decided to examine the details of society's operation and activities by setting up two working groups "administrative group" and "scientific research planning group", and to carry forward further activities on an internet basis.

The seminar opened with the addresses by Mr. Hideto Yoshida, director general of waste management and recycling department of Ministry of the Environment, and Mr. Hirotohi Kakisako, director general of environment bureau of Kitakyushu City, followed by the



Participants of the 2<sup>nd</sup> Expert Meeting on SWM  
in Asia & Pacific Islands in Kitakyushu

keynote speech by Professor Tanaka of Okayama University, who was also an executive committee chairman of the expert meeting, and 15 presentations by the experts on current situations and issues of waste management in Asia and Pacific Islands. The 3R research presentations included 9 reports such as the studies by the Special Research Fund for 3R Initiative by Ministry of the Environment and the eco-town project in Tsingtao, China.

(Haruo Matsumura and Hideo Azuma)

**Journal of the Japan Society of Waste Management Experts, Vol. 17, No.5 (September 2006)**

Recent issues of the Journal of JSWME contain the following articles. The articles are written in Japanese with the abstract in English.

Paper

***Applicability of a Monitoring Method for Methane in the Ambient Air at Landfill Sites Using a Portable Open-path Analyzer***

Noboru Tanikawa, Toru Furuichi, Kazuei Ishii, Koji Matsuo and Takaya Iseki

***Application of the Markov Chain Model for Analyzing the Average Number of Times of Use of Wood Pulp in Japan***

Hiroyuki Yamada, Ichiro Daigo, Yasunari Matsuno and Yoshihiro Adachi

***Humidity Control Characteristics of Charcoal Prepared from Plastic Wastes***

Motoi Machida, Satoshi Sunohara, Saburo Moriwaki and Hideki Tatsumoto

***Model for Evaluation Sorted Collection and Transportation of Household Plastic Packaging***

Minoru Fujii, Shinsuke Murakami, Keisuke Nansai, Seiji Hashimoro, Yuichi Moriguchi, Toshitada Koshikawa and Akira Saito

***Separation of PCBs from PCB-absorbed Activated Carbon Using a Vacuum Thermal Recycling Process***

Satoshi Saitoh, Bingqiao Zhu, Sachiko Konno, Hiroshi Ohbayashi, Satoshi Nakai and Masaaki Hosomi

Note

***Slag Texture and Density Control Factor***

Yu Hara, Katsuhiro Tsutsumi and Hikotarou Yoda

***Detoxification of Fly Ash by Mechanochemical Treatment with Blast Furnace Slag and the Usability of the Residues as Cement Materials***

Yugo Nomura, Kazuo Fujiwara, Makoto Takada, Satoshi Nakai and Masaaki Hosomi

**Waste Management Research  
Vol. 17, No.5 (September, 2006)**

Preface

***3R and Stationary in a Sound Material-Cycle Society***

Toru Furuichi

Special Issues: Asbestos Waste Management

***Management of Asbestos-containing Wastes***

Hideto Yoshida and Yasuyuki Hata

***Micro-quantitative Analysis of Asbestos –A Highly Sensitive Analysis Using Analytical Electron Microscopy-***

Norihiko Kohyama

***Evaluation of Asbestos Fibers Release from MSW Treatment Facilities***

Hideto Nagatsuka, Yasuo Kawabe and Hideaki Fujiyoshi

***A Study on the Temperature and Residence Time Needed to Resolve Asbestos Using a Simulated Cement-Burning Kiln***

Akira Owada and Tomoki Iwanaga

***High Temperature Melting for Detoxification of Asbestos Waste and Some Analytical Challenges***

Shin-ichi Sakai, Takashi Yamamoto, Yukio Noma, Akiko Kida and Atsushi Terazono

Review

***Present Status of Metal Recycling and its Problems***

Takashi Nakamura, Etsuro Shibata and Toshikazu Shiratori

Current Members of JSWME as of November 30, 2006  
(The figures in parenthesis indicate the difference from June 30, 2006)

Regular Members	3,316	(12)
Students	334	(20)
Non-Japanese Member	102	(2)
Public Institutions	110	(0)
Supporting Members	163	(-1)
Individuals of NPOs	4	(0)
Total	4,029	(33)

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