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# NEWSLETTER

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July 2006

**THE JAPAN SOCIETY OF WASTE MANAGEMENT EXPERTS**

## Greetings from the New President Prof. Nobuo Takeda from Kyoto University

I was recently elected as President of the Japan Society of Waste Management Experts. It is a great honour and I would like to thank you all for your enthusiastic support and cooperation.

Most Japanese people eat rice however humans cannot digest the rice straw and chaff therefore it is discarded. In addition, various kinds of metals are used in the mobile phones and personal computers which are essential articles in contemporary life. A large amount of residue is generated from the processing of these metals and before long these products deteriorate and are destined to be thrown away. It seems that humans could not live even one day of their lives without processing waste.

At the same time, there are organisms which can digest the rice straw and chaff and convert it to energy and we



New President,  
Prof. Nobuo Takeda

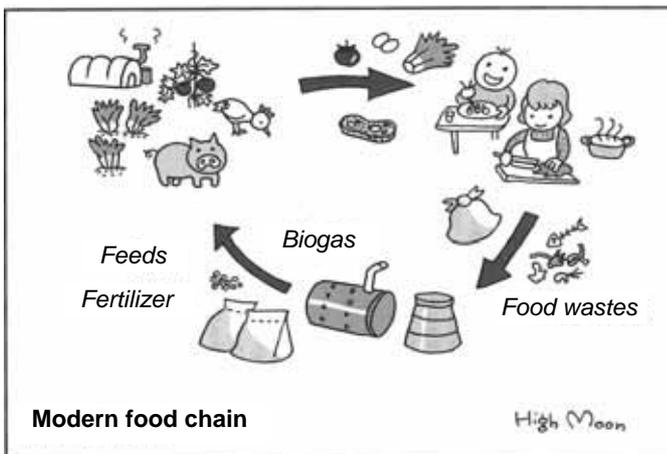
possess the technology to reuse, separate and condense tenuous metals. A methodology for the construction of a society, combining their relevant knowledge and technology to create a system, is essential for the promotion of social welfare. I think that JSWME has an important role and it will be a permanently indispensable thing for mankind.

Article 4 of the regulation of JSWME states that **“by means of cooperation and collaboration with society members and relevant foreign and domestic organisations, knowledge exchange and research publications about scientific principle theories regarding waste study as well as the application of the theories, we will attempt to promote and disseminate the study of waste and contribute to the promotion of learning in Japan.”**

In my role as president, I will encourage activities to accomplish this noble cause and create an environment for development. In addition, based on the current situation inside and outside of Japan, I consider the following to be the priority objectives for the society’s movement.

1. Improve the academic level and effectiveness of technology and measures through industry, government, academia and private sector collaboration
2. Strengthen activities for the realization of a collaborative and sustainable society for the resources and energy fields.
3. Broaden the global view and become a society which takes international leadership.
4. Strengthen the financial structure and promote further activation of member activities.

Consequently the transition of JSWME to juridical person is urgent, I will enhance members’ service by improving the affairs and finance system, increase the number of young members and enhance branch activities and I would like to present the activities of the society for the next period incorporating international contributions. I look forward to the active involvement of all the society’s members.



Comments by High Moon: “It is desired to establish a recycling system of organic matter.” *Illustrated by Prof. Hiroshi Takatsuki (Taka-tsuki literally means “High Moon”).*

## Review of the Containers and Packaging Recycling Law

A period of one year and seven months, from July 2004 to January 2006, was spent in Council deliberations as part of 10-year review of the Containers and Packaging Recycling Law, and an amended version of the law has been passed by the Diet.

### 1. Legislative background

The law was phased at the beginning December 1995 (entering full effect in 2000) and obligates producers and residents to share responsibility for waste treatment because of the difficulties presented to municipal governments in appropriately treating container and packaging waste. At the time, container and packaging waste accounted for a total of 60% of all municipal waste and even if local governments collected it, recyclers refused to accept it unless they were paid doing so. The law clearly divides up the responsibilities. Municipal governments are charged with segregating containers and packaging from ordinary waste in the process of collection (“curbside recycling”) and container and packaging manufacturers and users are required to pay recycling fees for materials that cannot be sold on the market.

### 2. Results after 10 years

The law has contributed in several areas: 1) containers and packaging recycling (the recycling rate has increased.

For example, collection rate of PET bottles by municipalities to occupy in volume of production increased from 9.8% in 1997 to 46.4% in 2004.); 2) waste reduction (the volume of landfill waste has been decreased); 3) design changes (manufactures take into account material and the quantity of waste after use in their containers and packaging design); 4) the environmental awareness (“curbside recycling” has functioned as a tool to raise the residents’ environmental awareness).

On the other hand, the followings are not so improved as to have been expected: 1) the total weight of containers and packaging waste (it was ineffective in discharge restraint); 2) improvement of “reuse” (the number of multi-way containers have been decreased); 3) the total cost (the system costs municipalities and manufactures a lot).

### 3. Points of Dispute

#### 3.1 Sufficiently Reduced?

In the amended version provisions were included for consumers, producers and municipal governments to work together on measures to address the inadequacies in programs to reduce container and packaging waste. (For example, the Minister of Environment will appoint a Container and Packaging Waste Reduction and Restraint Committee.) Producers are also obligated to file regular reports with the Minister of Environment on the volume of shopping bags used as part of a program designed to encourage reduction.

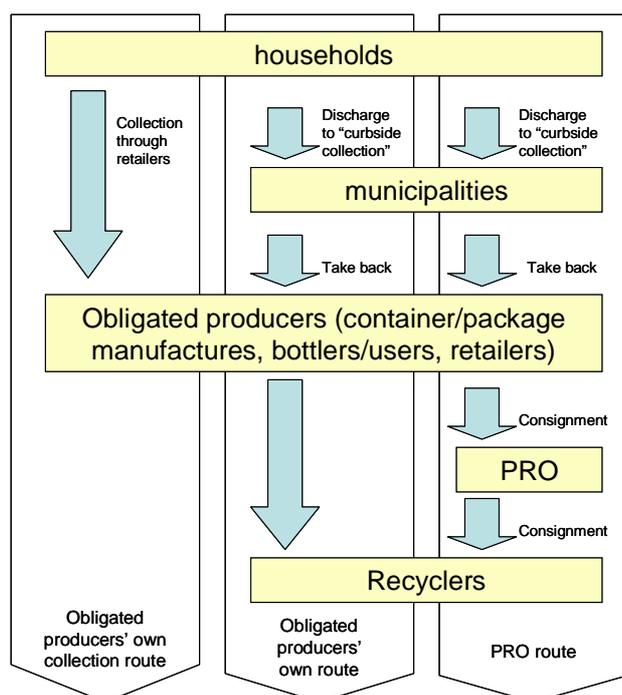
#### 3.2 Change of “the shared responsibility”?

While there are explicit provisions on producer responsibility in line with “extended producer responsibility” (EPR) concepts, municipal governments must still pay the cost of curbside recycling from their own budgets. The review process included an extended debate on whether producers and users should be required to bear these costs, but eventually concluded that the current divisions of responsibility should be retained, with the majority of the Council finding that municipal accounting systems are inadequate and a system in which municipal governments operated the services and producers paid for them would be inefficient. However, it also included stipulations that producers and municipal governments split any reduction in producer costs as a result of municipal efforts to improve the precision of curbside recycling and provide recyclers with “cleaner” collection.

#### 3.3 Et cetera...

Other amendments to the law included an increase of the fines levied against free riders (from “not more than 500,000 yen to “not more than 1 million yen”), and

Flow chart of recycling in the frame of the Containers and Packaging Recycling Law



provided measures to prevent the outflow of waste PET bottles collected by municipal governments to foreign countries. It should also be noted that there have been no amendments in the law regarding the methods for reuse of plastic containers and packaging, which are in principal subject to materials recycling, and that emergency use of “waste-to-energy combustion” is limited to “use as raw materials for fuel.”

#### 4. Future issues, next review

The amended law will come up for review 5 years after it takes effect. At that time, the Council will consider the results achieved by the current amendments. Promotion of “refillable containers” could not be fully discussed in this review, and depending on the results from the reduction programs, it is likely to be an important topic of debate in the next review.

(Tsunako Matsumoto)

**Japan’s ODA on Solid Waste Management:  
Project for the Improvement of  
Solid Waste Management in the Republic of Palau**

Republic of Palau is located in the western part of Micronesia region, extending between 131 to 135 degrees east longitude and 2 to 8 degrees north latitude. The country consists of 200 volcanic or coral islands.

The country belongs to an oceanic tropical climate. It has heavy precipitation around 4,000 mm annually, and two seasons: dry season from December to June and rainy season from July to November. The average temperature is approximately 27 degrees Celsius.

The country has nearly 20,000 of population. 70% of the population resides in the capital area, which leads to high population density in urban area. The major industries are tourism, small scale agriculture and fishery.



Present Condition of the Final Disposal Site

Especially, the tourism is the most important income factor for Palau as 90,000 tourist visit to Palau annually.

82.40% of daily goods are imported, and almost all goods are disposed within the country after use. It is not easy to acquire a new landfill site in Palau because the land is really small and limited. The growing waste volume and the difficulty to secure a disposal site is a keen concern for Palau as it can damage the environment and oceanic beauty and further affect the tourism industry. Palau needs to reduce the solid waste amount to be disposed of and prolong the life of the existing landfill, although it is not a complete solution.

The Government of Japan implemented the study for project formulation in May 2004 aiming at the sustainable solid waste management and reduction of solid waste volume in the Republic of Palau. As a result, the study suggested a technical cooperation project for the rehabilitation of existing landfill, improvement of waste collection system and recycling of solid waste. The preparatory mission from JICA had several discussions with the Government of Palau in May 2005 on the implementation framework of the project, and finally the Record of Discussions was signed by JICA and the Government of Palau. Consequently, JICA started the “Project for Improvement of Solid Waste Management in the Republic of Palau” on 13 October 2005. The project will continue for 3 years.

The overall objective of the project is the establishment of self-reliable and sustainable solid waste management in Palau. Consequently, JICA does not intend to take full leadership of the project but only support the Palau counterpart to do so.

The project outputs are shown below.

- 1 A national plan to reduce the volume of disposed waste will be developed.
- 2 The existing waste disposal practices will be improved to reduce environmental and health risks in Koror State.
- 3 The personnel of the agencies concerned with solid waste management in the Republic of Palau will be trained.

JICA expects Palau to attain the capacity to keep the safe and beautiful environment through the project.

(Satoshi Yamamoto)

**Report on the Research Conference of  
the Korea Society of Waste Management**

On May 11-12, 2006, the Korea Society of Waste Management, KSWM, held the 2006 Spring Research Conference at Korea Institute of Geoscience in Daejeong City. Professor Matsufuji, the chairman of the International Relations Committee of JSWME, and many from Fukuoka University, Hokkaido University, the National Institute for Environmental Studies of Japan and some other organizations took part. Daejeong City is one hour away from Seoul by Korea Train Express to the south, and there are many research institutes in the city as in Tsukuba City of Japan. It is also famous for hosting the 2002 Korea/Japan World Cup. In the 10th Korea-Japan International Session, the Korea-Japan Special Symposium and a poster session were held.

The theme of the special symposium was "Waste Incineration and Dioxin Issues". There were three presenters from Japan including Dr. Nobuo Takeda of Kyoto University, Mr. Hideo Azuma of Tokyo Metropolitan Government, and Mr. Isamu Kawakami of Sumitomo Heavy Industries Ltd. They presented "Incineration and Dioxin –Japan has overcome the problem", "Small Incinerator in Japan – The Regulations and Availability" and "Dioxin Emission Control in Incineration Plant", respectively. From Korea, Professor Weon-Jun Lee presented "Effective Operations of Small Incinerators", and Dr. Yong-Seung Yun "Current Status and Technology Issues for MSW Incineration in Korea". The amount of municipal waste incinerated at present in Korea is only 15%, but it will increase as people recognize that dioxins can be technically controlled.

In the poster session, 19 papers in total were presented, 10 from the Japanese side and 9 from the Korean side. The poster presenters and participants actively exchanged opinions, encouraged by the comfortable weather of early summer and relaxed atmosphere in the open air space.

Ten years have passed since the cooperation agreement between Japan-Korea waste management societies was signed, and it is to be renewed this year. During the conference, the chairmen of both societies agreed on the draft agreement and decided to have a conclusion ceremony of the agreement at the occasion of JSWME annual conference to be held in this November in Kitakyushu City. The new agreement will include a provision on the collaboration for the establishment of a SWM experts network in Asia and Pacific islands.

The author also participated an international symposium



JSWME took part in KSWME Research Conference

"Municipal Solid Waste Management Network in Asia" backed by Korean Ministry of Environment at the University of Seoul on May 12. The National Institute for Environmental Studies of Japan, Fukuoka University and Hokkaido University sent participants and presenters.

(Akio Suzuki)

**Journal of the Japan Society of Waste  
Management Experts, Vol. 17, No.3 (May 2006)**

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

Paper

***The Characteristics of Waste Cooking Oils Discharged in Kyoto City and Biodiesel Fuel Characteristics***

Kazuo Nakamura and Makoto Ikegami

***Comparative Analysis on Images of Cycle-Oriented Society***

Seiji Hashimoro, Yuichi Moriguchi, Tomohiro Tasaki and Masaharu Yagishita

***Development of a Mathematical Model for Evaluating Component Element Flow and Stock in a Municipal Solid Waste Treatment System***

Yoshiko Muro, Shinsuke Morisawa, Hirokazu Kajiwara and Minoru Yoneda

***Evaluation of the Economic Benefits of the Introduction of Household Garbage Disposers***

Kaori Kitaguchi, Yasutoshi Shimizu, Kanako Toyosada and Kyosuke Sakaue

***Preparation of Amine-Type Adsorbent Using Wastepaper and Adsorption of Metal Ions***

Hidetaka Kawakita, Katsutoshi Inoue, Keisuke Ohto, Kyoko Itayama and Durga Parajuli

**Waste Management Research**  
**Vol. 17, No.3 (May 2006)**

Preface

***Toward the Integration of LCA, LCC and MFA by Input-Output Analysis***

Shinichiro Nakamura

Special Issues: Servicizing as Eco-business for Establishing a Recycling-Based Society

***Recycling-based Society and Servicizing***

Yasuhiko Wada

***Servicizing as an Ecological Business***

Noboru Yoshida

***Green Servicizing – Toward ‘service provision-type businesses’ that reduce environmental impacts -***

Hidehiro Sasaki

***The Automobile Leasing Business and Servicizing***

Takashi Fujii

***The Electrical Appliance Rental Business from the Viewpoint of Servicizing***

Tadahiro Sato

Research Report

***A Study on the Japanese Recycling System for Air Bags from End-of-Life Vehicles***

Rie Okamura and Ken'ichi Togawa

**Journal of Material Cycles and Waste Management,**  
**Vol. 8, No. 1, 2006**

Recent issue of the Journal of Material Cycles and Waste Management contains the following articles. The articles are written in English.

SPECIAL FEATURE: E-WASTE

Review Article

***Current Status and Research on E-waste Issues in Asia***

A. Terazono, S. Murakami, N. Abe, B. Inanc, Y. Moriguchi, S. Sakai, M. Kojima, A. Yoshida, J. Li, J. Yang, M.H. Wong, A. Jain, I.-S. Kim, G.L. Peralta, C.-C. Lin, T. Mungcharoen, E. Williams

Original Articles

***Status Quo of E-waste Management in mainland China***

J. Li, B. Tian, T. Liu, H. Liu, X. Wen, S. Honda

***Environmental Contamination from Electronic Waste Recycling at Guiyu, Southeast China***

A. Leung, Z.W. Cai, M.H. Wong

***E-waste Issues and Measures in the Philippines***

G.L. Peralta, P.M. Fontanos

***E-waste Assessment Methodology and Validation in India***

A. Jain, R. Sareen

***Material Flows of End-of-Life Home Appliances in Japan***

S. Murakami, A. Terazono, N. Abe, Y. Moriguchi, H. Miyakawa

***Emission Inventory of Deca-brominated Diphenyl Ether (DBDE) in Japan***

S. Sakai, Y. Hirai, H. Aizawa, S. Ota, Y. Muroishi

REVIEW ARTICLE

***The Current Situation of Solid Waste Management in China***

Q. Huang, Q. Wang, L. Dong, B. Xi, B. Zhou

ORIGINAL ARTICLES

***Hydrogen-rich Synthesis Gas Production from Waste Wood via Gasification and Reforming Technology for Fuel Cell Application***

W. Wu, K. Kawamoto, H. Kuramochi

***Evaluation of leaching Characteristics and Environmental Compatibility of Solidified/stabilized Industrial Waste***

R. Malviya, R. Chaudhary

***Mechanical Treatment of Automobile Shredder Residue for its Application as a Fuel***

S. Endoh, K. Takahashi, J.-R. Lee, H. Ohya

Current Members of JSWME as of June 30, 2006  
(The figures in parenthesis indicate the difference  
from March 31, 2006)

Regular Members	3,284	(1)
Students	320	(45)
Non-Japanese Member	100	(6)
Public Institutions	110	(1)
Supporting Members	166	(-5)
Individuals of NPOs	4	(0)
Total	3,984	(48)

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