



NEWSLETTER

No.23

This Newsletter is published four times a year, printed on recycled paper.

January 1998

THE JAPAN SOCIETY OF WASTE MANAGEMENT EXPERTS

Dear Waste Management Experts

A Happy New Year, 1998!!

You must have a big dream at the beginning of the new year. The 21st century is just around the corner, and perhaps mankind's No.1 task in the 21st century will be to overcome the present environmental problems. The most serious of all those problems, we believe, is one associated with waste.

The 3rd Conference of Signatories to the Convention for Global Warming Prevention (COP3) held in Kyoto, Japan last December was really important for discussion of limiting emissions of the greenhouse effect gases including carbon dioxide (CO₂) from the year 2000 onward. Control of greenhouse effect gases calls for international cooperation in the solving of various global environmental problems.

For proper waste treatment and processing, particular emphasis must be put on building a resource circulating society with various global-scale problems taken into account. Provisions for waste management must be incorporated into all manufacturing and distribution activities from the start. That is, waste generation

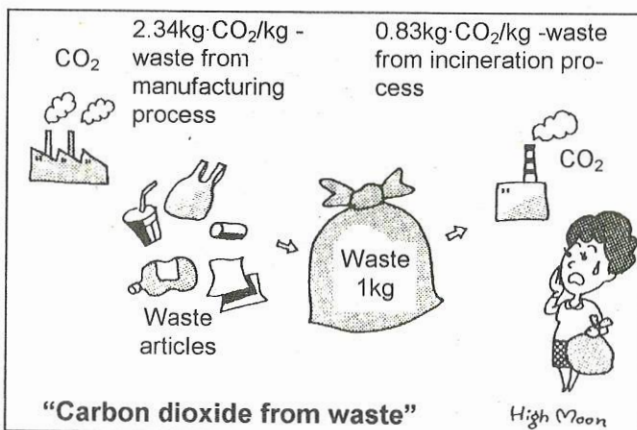
and discharge must be controlled. Infinite recycling of discharged waste should be promoted, and the residue that does need treatment of disposal must be incinerated in a manner that permits recovery of energy or finally disposed of in a way that does not impose an environmental burden. We must aim at constructing an ideal society in the 21st century -- a "zero emission society" or "resource circulating society".

Hence the Japan Society of Waste Management Experts (JSWME) will make further studies and publicize their outcome to contribute to the construction of an ideal society in the 21st century.

In this issue of the Newsletter, current trends in energy recovery from waste in Japan will be presented. An English-language section was introduced last year at a research presentation meeting of the Korea Solid Wastes Engineering Society and the JSWME. Thus, exchange of information in the english language, a major medium for international communication, has begun. You are urged to give information in english to members of the JSWME.

We wish you good health and well-being in the year 1998!

(by Masaru Tanaka, Editor in Chief)



Cartoonist's note : Reduction of waste by 1kg results in cut-down of carbon dioxide by 3.17kg.

Waste-to-Energy Plants in Japan

In accordance with to the General Guideline for the Introduction of New Energy formulated by the Ministry of International Trade and Industry in December 1994, measures to increase waste-incineration power generation were taken as part of the action for prevention of global warming and for the effective use of resources. Under the current plan, the total power generated by the heat from the waste incineration process is to increase to 2 million kW by the year 2000 and to 4 million kW (equivalent to the combined output of four large nuclear power plants) by the year 2010.

The first Japanese waste to energy plant, Nishiyodo Plant in Osaka city generating power by incinerating municipal waste began operating in 1965, and was used for 30 years. Tokyo Metropolitan Koto Plant (with three 600t/day units generating up to 50,000 kW) which is expected to start operation in 1998, will be the largest in Japan in terms of both incineration and power generation capacity.

According to the Agency for Natural Resources and Energy, a total of 146 waste-incineration power plants were in operation in Japan in March 1996. Their combined capacity for waste treatment was 71,000 t/day (approx. 40% of the total capacity of all waste treatment facilities), and their combined power output was approx. 569,000 kW, (3 billion kWh), of which 447,00 kW (2.55 billion kWh generated in 89 plants) was sold in 1996. (Source: June 12, 1997 issue of Daily Electric Communications). At the end of March 1997, there were 193 waste-incineration plants (including those under construction) with a combined output of approx. 990,000 kW. There are 13 manufacturers in Japan who construct waste to energy plants.

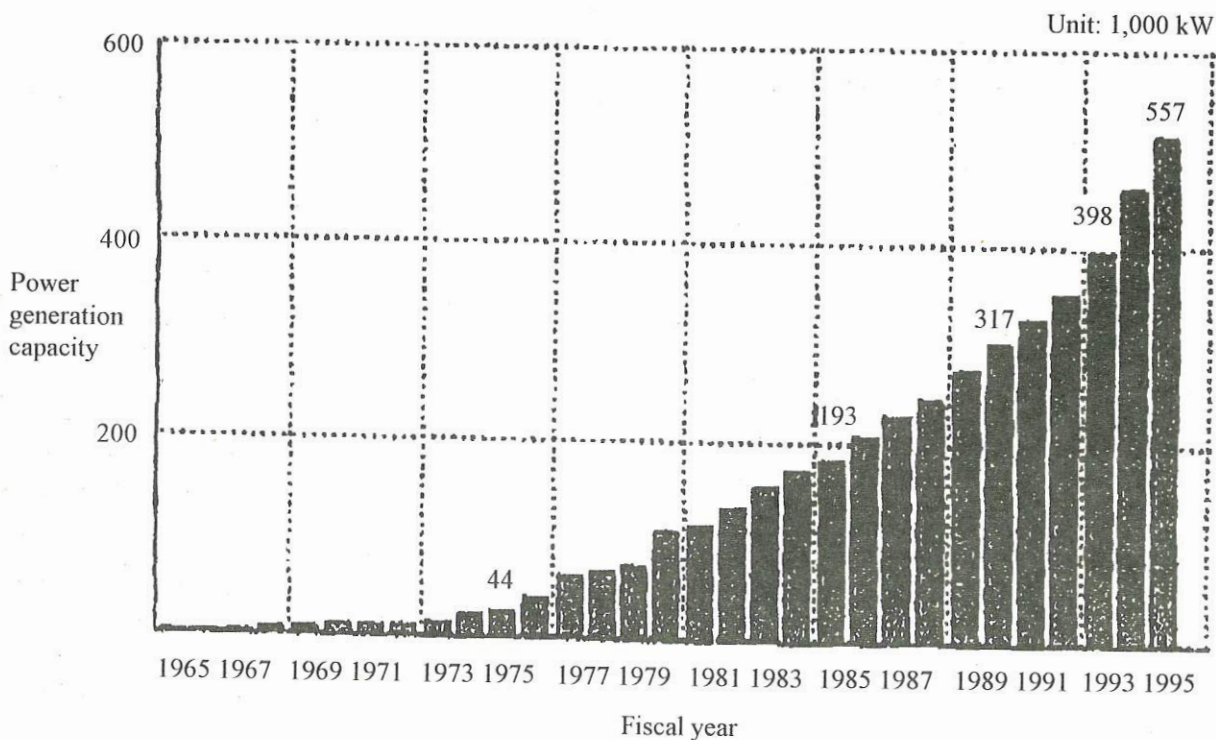
Recently, some municipal incineration plants for high-efficiency power generation have started operation, with the steam set at 400°C and 40 bar. Furthermore, in October 1997, a test plant designed to attain 500°C

and 100 bar started operation. Using gas turbine exhaust to superheat the steam from a waste-incineration boiler, and combined-cycle power generation for higher generation efficiency plant started in December 1996.

The first industrial-waste-incineration power plant had the capacity to generate 800 kW for a paper manufacturer. The Agency for Natural Resources and Energy reported that 50 industrial-waste-incineration plants altogether were in operation as of the end of March, 1996. Their combined power output was approx. 246,000 kW, which accounted for 44% of the total power output of all municipal-waste-incineration plants. The total power generated by them, however, was 810 million kWh, 27% of the total power output of the municipal-waste-incineration plants.

From the 1960's to the 1980's, industrial-waste-incineration plants were used primarily by highly energy-consuming sugar and paper manufacturing companies. In the 1990's, they have been developed to automobile, chemical and food manufacturers, sewerage sludge and industrial waste treatment contractors, etc. Most of their power plants are relatively small in capacity; about 600 kW or less though the largest industrial-waste-incineration plants constructed in the 1990's is Toyota Motor's Environment Center which consumed 16,000 kW.

(by Kenji Kakeda)



“Figure IV-6 Change in Power Generation Capacity of Waste Incineration Plants”
(Source: Waste Management in Japan, Japan waste management association)

The Second Joint Presentation Meeting of JSWME and KSWES Held

The 8th Annual Convention of the Japan Society of Waste Management Experts was held at the Kawaguchi General Culture Center Lilia in Kawaguchi for three days from Oct. 28 to Oct. 30 1997. 332 presentations (including 66 posters) were given at this convention, and approx. 1600 individuals participated. Both the number of presentations and the number of participants have been sharply increasing yearly. This is evidence at growing concern about waste issues.

JSWME and KSWES Joint English Sessions were held for the first time as part of the Spring Conference of the Korea Solid Wastes Engineering Society at Soon Sil University in Korea on May 9, 1997. Since it had been reported that these sessions were very significant and successful (Newsletter No.21, July 1997), the JSWME held English sessions during the 8th Annual Convention in Japan.

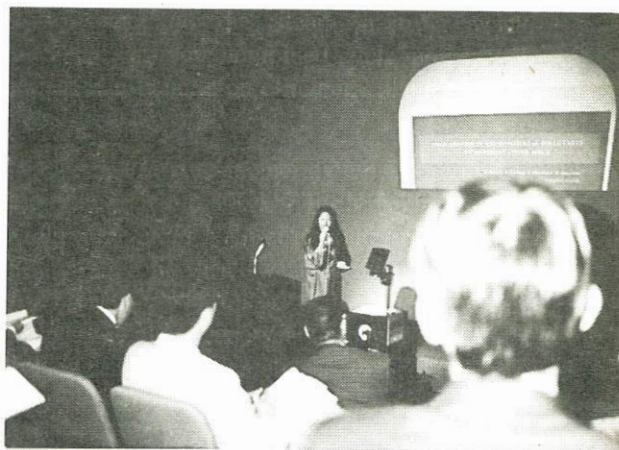
Five English sessions (26 presentations -- 11 from Japan and 15 from Korea--including posters) were held in two rooms on Oct. 29, 1997. The actual attendance, 110 individuals, exceeded expectations. Approx. 40 individuals participated in sessions concerning planning and recycling, and 70 in incineration/landfill/treatment sessions.

Dr. Kap-Soo Dho, President of the Korea Solid Wastes Engineering Society, gave a presentation on "Introduction to Seoul Green Vision 21 of Seoul Agenda 21". This presentation concerned the status of the waste problem and its solution under the environmental plan for Seoul.

In spite of some concern prior to the convention, we had heated sessions as are usual at international conferences. Even at the party after the sessions, the atmosphere remained heated and there were discussions about some presentations. An award for an excellent presentation at an English session similar to those for excellent presenters at the main sessions was proposed at this party.

English sessions will be included in the convention to be held by the Korea Solid Wastes Engineering Society in May 1998. We look forward to a large number of presentations and a large attendance for this convention.

(by Yuzo Inoue)



Presentation Scene of the English session

Privatization of Solid Waste Management in Malaysia

The comprehensive nationwide privatization of solid waste management, which will be the first in the world, is going to start in Malaysia. The JICA (Japan International Cooperation Agency) Malaysia Office is conducting a study of the Malaysian privatization experiences not only in solid waste management but also in water supply and sewerage services in order to facilitate the learning of these experiences by other developing countries.

The Malaysian Government has emphasized privatization since the privatization policy was first in announced 1983. In 1991, the government published its "Privatization Master Plan". In this plan, the objectives of privatization are stated as follows (i) to relieve the financial and administrative burden of Government, (ii) to improve efficiency and productivity, (iii) to facilitate economic growth, (iv) to reduce the size and presence of the public sector in the economy, and (v) to help meet the national economic policy targets.

In accordance with this policy, the Government decided to privatize solid waste management. In the Seventh Malaysian Plan 1996-2000, which is the national 5 year development plan, solid waste management is listed in major between projects earmarked for privatization 1996 and 2000. It states that "Solid waste disposal will be privatized to a consortium, and under this proposal an integrated waste management system will be adopted to minimize environmental degradation".

Solid waste collection and disposal has been the re-

sponsibility of local authorities (city councils and municipal councils) in Malaysia. The idea of privatization is that the consortium will be in charge of the whole solid waste management system from collection to final disposal. It is not contracting out collection and transportation to the private sector. Labor and equipment in local authorities, including ones in contractors, will be absorbed by the consortiums. Also, the scope includes not only solid waste management but also grass cutting and maintenance of drains, roads and public places.

Four consortiums have already been chosen to undertake privatization region by region (north, central and east, south, Sabah and Sarawak). At present, the consortiums are preparing to take over the work from local authorities. For example, Alam Flora Sdn Bhd, which will cover the central and east region, started collection and disposal of solid waste in Kuala Lumpur in 1997 on a contract basis. Northern Waste Industries Sdn Bhd, which will cover the northern region, has drawn up a technical master plan for the management of solid waste for 20 year period.

The details of privatization, including tariffs and mode of payment are under discussion by the Government (the Ministry of Housing and Local Government, the Economic Planning Unit and the Treasury) and the four consortiums. The government has also been drafting a Solid Waste Management bill for deliberation. For hospital solid waste, another mode of privatization will be applied. The progress of the nationwide privatization of solid waste management in Malaysia will attract a good deal of attention from all over the world.

(by Taisuke Watanabe)

**Journal of the Japan Society of Waste Management
Experts Vol.8 No.7 (Nov. '97)**

These volumes contain the following technical papers.
(written in Japanese with English abstracts)

Paper

Treatment Process for Photo-processing Waste Containing High-Strength COD and Ammonium Nitrogen
by Kimihito Futono, Binle Lin, Aki Yokoi, Masaaki Hosomi and Akihiko Murakami

Screening Studies on Dioxin Using Enzyme Immunoassay

by Ruriko Sakai, Masahiro Osako, Yukihiro Yoshida, Naoki Haga, Kiyoshi Iwashima and Masaru Tanaka

Toxicity of Municipal Waste Incinerator Fly Ash Using Algal Growth

by Hidehiro Kaneko

Current Management Situation and Concerns Regarding the Handling of Organic Solvents at Osaka University

by Kazuhiko Akegawa, Masafumi Tateda, Michihiko Ike and Masanori Fujita

Estimation of Energy Recovery and Reduction of CO₂ Emissions by Advanced Power Generation from Municipal Solid Waste

by Suehiro Otoma, Yasufumi Mori, Tomonori Asou and Ryoji Samejima

Enhanced Biodegradation of Refractory Chemicals in Film-processing Wastewater by Fenton Pretreatment

by Aki Yokoi, Kimihito Futono, Binle Lin, Masaaki Hosomi and Akihiko Murakami

Errata

Newsletter No. 22:

- (1) P. 3 Note, 3 for Fig. Waste Paper Price Review IFW → 1US\$
- (2) P. 3 "The Bekasi Training Institute....Indonesia" is a contribution by Kazuki Mori.
- (3) P.3 Last line in Cartoonist's note I → in

NEWSLETTER NO.23

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