

# Chapter 10

## Industrial Waste Information Exchange Program in Japan

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## **Chapter 10. Industrial Waste Information Exchange Program in Japan**

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### **Introduction**

Industrial Waste Information Exchange Program (WIEP) is an attempt to link industrial waste generator and waste user. There are many industrial WIEPs in Japan, which are operated either by the local government, Chamber of Commerce, or private companies. “This paper overviews the industrial WIEPs in Japan and identifies some of the obstacles in its implementation and its implications to other Asian countries.”

#### **I. Brief History of Industrial Waste Information Exchange Program in Japan**

The government of Oita prefecture initiated the Industrial WIEP in 1976. After the success of the program, other local governments such as Yamaguchi, Ehime and Tochigi also started similar program. Prefectural level governments were main initiators of the program.

Clean Japan Center (CJC), a non-profit organization, which was supervised by the Ministry of International Trade and Industry (MITI), now, Ministry of Economy, Trade and Industry (METI), supported some local government for initiating programs, such as raising awareness and feasibility studies. CJC also organized programs to create linkages of several Industrial WIEPs. It was considered that it might be difficult to match generator and user of some specific waste in a prefecture. The programs were paper-based in the beginning, but they gradually started to use internet.

According to the survey in 2003 by *Indust*, a Japanese magazine focusing on industrial waste management, 22 local governments among 47 prefectures in the country conducted Industrial WIEP. Among them, 20 programs used internet-based information exchange. The remaining two local governments also planned to use internet in the near future. Six local governments asked affiliated public corporation to implement the program.

**Table 1. Joint Waste Information Exchange Program in 1987**

	Prefectures	Beginning.
West Seto Wide Area	Oita, Ehime, Yamaguchi, Hiroshima, Kagawa, Fukuoka	In 1983, Oita, Ehime and Yamaguchi started the joint program. Gradually other prefectures also joined.
Central North Wide Area	Niigata, Toyama, Yamanashi, Nagato,	In 1984, four prefectures started the joint program.
Kanto Central North Wide Area	Niigata, Tochigi, Gunma	In 1985, three prefectures started the joint program.
North Metropolitan Wide Area	Ibaragi, Fukushima	In 1985, two prefectures started the joint program.

Source: Clean Japan Center (1987).

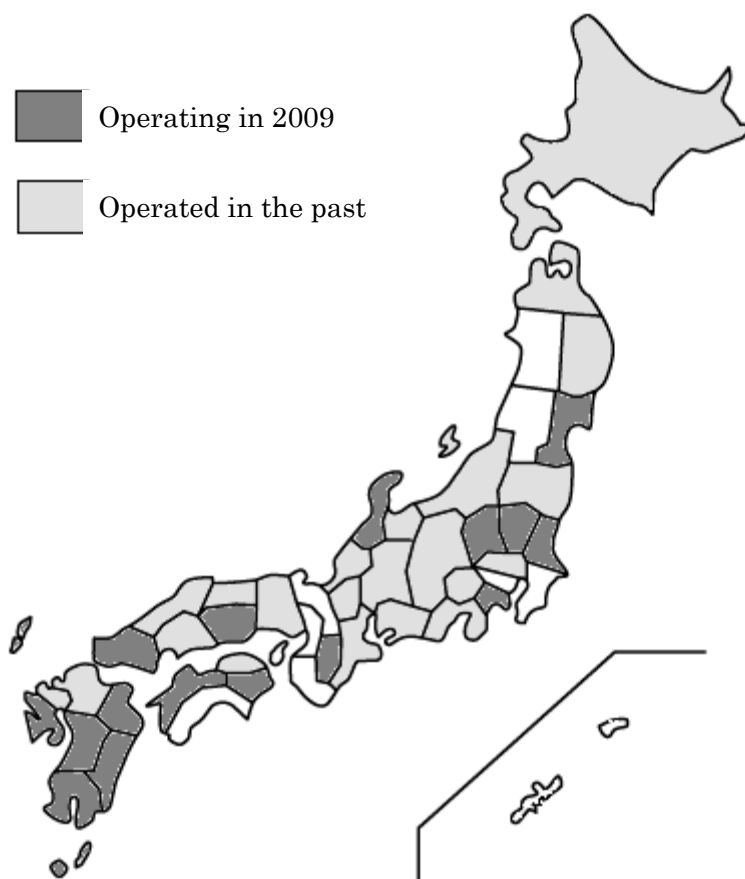
Based on the information on the websites and literatures, among 47 prefectures, 16 prefectures are currently conducting industrial WIEPs, and 19 prefectures had conducted the program in the past (Figure 1).

Around 1990, the activities supporting WIEP by CJC was finished. WIEPs operated by local governments were not so active in 1990s.

Other than local government, at least two local level Chambers of Commerce and Industry conducted industrial information exchange program. Chamber of Commerce in eastern part of Osaka started the program in 1982.

Private companies also started same kind of business. One of the earliest attempts was the program run by Clean Kobe Recycle Co. Ltd., which was established in 1975 by large industries. Web-based matching business was well established by Recycle-one in 2001.

**Figure 1. Waste Information Exchange Program Conducted or Supported by Local Government in Japan**



Source: Compiled from websites of prefecture government and other literature.

## **II. Case Studies**

In this section, three cases of industrial WIEP are reviewed. The first one is the case of Oita prefecture, which is the first program of waste information exchange initiated by local government. The second one is the joint program run by Chambers of Commerce in Eastern part of Osaka prefecture. The third case is the program operated by Recycle-One, a private company, established in 2000.

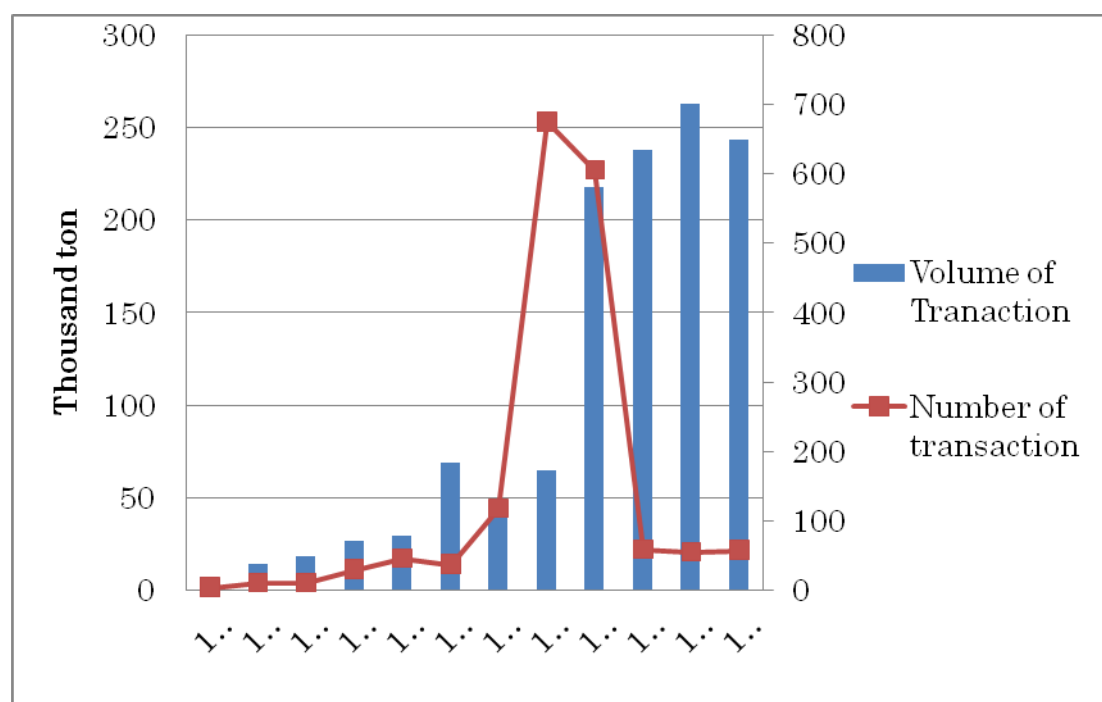
### *II-1. Local Government: Oita Prefecture*

The Oita prefectural government conducted a survey on industrial waste generation in manufacturer and power generation sector in FY 1975 and FY 1976. During the plant visits for this survey, they found out that potentially recyclable wastes

were not utilized. In 1976, they initiated a program on registration of recyclable industrial waste from large waste generator and information dissemination on recyclable waste to potential users. This was the first industrial WIEP in Japan.

In 1979, the questionnaire survey to a number of factories was conducted by Oita prefecture with CJC (CJC, 1980). The survey was subsidized by MITI. It became an opportunity not only to collect information, but also for factories to know about the program. The target industrial sectors included the following: non-ferrous metal smelter, construction, manufacturer, wholesaler and retailer, transportation and communication, cleaning services and cooperatives of farmers and fishermen. In total, questionnaire was sent to 953 establishments. The collection rate of questionnaire reached 75%. Potential supply of waste reached 487 thousand tons, out of which 55.7% could be utilized as fuel, feeds for cattle, neutralizer, and material for land development without any pre-treatment. Potential demand of waste was 203 thousand tons. Through this survey, 26 deals on waste plastics were reached between waste generators and users within half a year.

**Figure 2. Result of WIEP in Oita Prefecture**



Source: Clean Japan Center (1989).

In November 1980, Oita started joint program with Ehime and Yamaguchi Prefectures in coordination with CJC. In April 1983, Kagawa and Fukuoka Prefecture and four cities joined the program. In April 1985, Okayama prefecture and

Hiroshima-city took part in the program. The program was called as the Joint WIEP in Nishi-Seto Wide Area in Japan. After the region expanded, the number and volume of transaction increased significantly (Figure 2).

*II-2. Chamber of Commerce and Industry: East Osaka*

Five chambers of commerce and industry in Eastern part of Osaka prefecture started Industrial WIEP in 1982. Another chamber established in 1999 also joined the program.

When the chambers planned to start the program, they asked Osaka Prefecture Government to join the program. But the government turned down the request, because the government was afraid of the opposition from existing waste treatment companies in the region.

**Table 2. Examples of Transaction, Through Waste Information Exchange Program**

Waste	Utilization	Transaction started
Waste sand from casting	Road construction	1982.9.-
Steel slag	Road construction	1982.9.
Waste concrete and asphalt	Road construction	1982.11
Waste wood	Chip for fuel	1984.1
Sawdust	Flooring material	1983.8
Activated sludge	Fertilizer	1983.6

Source: Data obtained from Kitaoosaka Chamber of Commerce and Industry.

After several years of implementation, they shift their priority from waste exchange to waste reduction of factories. Now six chambers organized a joint committee of experts, which consists of several experts from research institutes and universities. Experts review the application from factories, visit the site and make recommendation. Experts are paid through an honorarium, but not as much as the conventional consulting fee. The officer of the Chamber of Commerce said that the voluntary contribution from experts was a key in the success of the program (based on hearing from officers in Kita Osaka Chamber of Commerce and Industry in November 2008).

### *II-3. Private Business: Case of “Recycle-one”*

Recycle-One is a private company that initiated the matching business between waste generators and users through internet in January 2000. The registration fee was collected since 2001. The amounts of fee for waste generators and users are 60,000 Japanese yen and 300,000 Japanese yen respectively. One of the merits of their system is the settlement of an account on the internet. Waste generators and users can make agreement of transaction on the internet. Another merit of this system is that it provides detail information on waste users in the web page. Recycle-one also checks the facility and management of waste users. Even if waste users have licenses from government, Recycle-one excludes some waste users which do not satisfy the required minimum standard.

The matching business grew after a major auto manufacturer registered into their matching service. In the beginning, they believed that would continue to grow by doing this type of service. But gradually they faced high cost to deal with many kinds of wastes, because there were those that difficult to handle, and also the amount of each waste was small. In addition, some manufacturers did not want to reveal the information of waste in detail. Thus, they started consulting services to registered companies, including waste minimization. Recycle-one get information on the waste under the condition of keeping the information confidential. Recycle-one selects several candidates of waste users, and ask them to quote a price of treatment. Recycle-one provide information about the three potential users to waste generator, and the latter will then choose a contractor.

As the number of success transaction decreased, waste generators and users feel it is not beneficial to register in the waste information exchange system. Recycle-one make registration free of charge.

### **III. Reviews on Industrial Waste Information Exchange Program in Japan**

CJC reviewed the experiences of WIEP and tried to identify the obstacles in WIEP and future actions in FY 1985. It pointed out following points:

- In 1984, 13 programs were implemented. 333,664 tons of wastes were traded, based on WIEP;
- By distributing information, WIEP could promote recycling of waste, which was considered as non-useable unless the program was conducted;
- Organizations implementing the program have often no clear target or vision;
- To utilize specific waste which is difficult to recycle, additional treatment is

needed. The WIEPs do not provide advices to waste generator, for reduction of waste; and

- The impact of WIEP program is not captured well, because some trade is triggered by WIEP, but not counted as successful as illustrated in these cases:
  - After the trade based on WIEP, new transaction is agreed between the generator and the user, without WIEP.
  - Companies in same industry got the information of successful case, and made transaction without WIEP.

*Indust*, which is a Japanese magazine focusing on industrial waste management, conducted a survey on Industrial WIEP in 2003. Results showed that there were 22 local governments which conducted Industrial WIEP; 8 local governments were planning to start or resume the program; and 12 local governments did not have plan to start or resume the program. The problems and difficulties of implementing the programs were pointed out as follows:

- There is no guarantee about the quality of waste;
- There is limited number of waste users;
- There is no guarantee on the ability and compliance of waste users; and
- There are some alternative programs, such as disclosure of the list of recycling companies.

#### **IV. Conclusion**

Based on the review of previous literature and interview with staffs in Recycle-one and Kita-Osaka Chamber of commerce, about the industrial WIEP, the following are some of the implications to other Asian countries:

- The number of transaction depends on information dissemination. The number of transaction may decrease in several years. Regarding the remaining waste, it is hard to find users in the region, or hard to be recycled;
- The more coverage area, the more successful transaction; and
- It is better to combine WIEP and consulting services for reducing waste. Thus, the experts' participation is a key to success.



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