

Tokyo Metropolitan Government

## Tokyo Super Eco Town Project Outline

### 1. What is the Tokyo Super Eco Town Project?

The Tokyo Metropolitan Government (TMG) has been proceeding with the development of waste treatment and recycling facilities utilizing TMG owned land in the city's waterfront area. As one of the central government's Urban Renaissance projects, this aims to propel Tokyo's transformation into a recycling based society by resolving the issue of waste in the Greater Tokyo Area and providing locations for environmental industries.

Facilities for PCB-containing waste treatment and waste fuel electric power generation are operating in the Inner Central Breakwater Landfill site, and in the Jonanjima Island district, facilities for the recycling of mixed construction waste, food waste, and used IT and other electronic devices are in operation.

The TMG will strive to resolve waste problems by promoting the development of advanced and highly reliable waste treatment and recycling facilities that will boost the percentage of treated waste and reduce the final volume of disposed waste in Tokyo.

### 2. Fundamental Concepts

- The TMG will secure the necessary metropolitan government owned land for locating the facilities, decide upon the type of facilities to be developed and which companies will operate them, and coordinate and promote the entire project.
- For the treatment of PCB-containing wastes, the Japan Environmental Safety Corporation (JESCO) will develop and operate a facility for regional treatment based upon various laws including the PCB Special Measures Law (Law Concerning Special Measures for Promotion of Proper Treatment of PCB Waste) and the Japan Environmental Safety Corporation Law.
- Businesses that have been selected based on their applications will acquire TMG land and be responsible for the development and operation of their respective facilities.

The businesses will be responsible for procuring their own funds and ensuring business feasibility. They will also be responsible for undertaking any legal procedures for city planning decisions and obtaining facility permits, etc. required for the development and operation of the facilities.

### 3. Project History

|            |  |
|------------|--|
| March 2001 | The Governor of Tokyo proposes to the central government the “Five-Year, 10 Trillion Yen Project for Urgent Revitalization of the Greater Tokyo Area” that includes the Tokyo Super Eco Town concept.  |
| May 2001   | The central government establishes the Urban Renaissance Headquarters headed by the Prime Minister.  |
| July 2001  | The Urban Renaissance Headquarters establishes the “Council for Zero Waste Emission” and commences studies on the development of waste treatment and recycling facilities in the Greater Tokyo Area.   |
| April 2002 | The TMG announces the guidelines for the Super Eco Town Project and begins accepting applications from the public. The Council for Zero Waste Emission officially announces its final report which includes concepts for facility development. |
| July 2002  | Companies selected for the Super Eco Town Project are officially announced.  |
| May 2006   | The TMG announces the guidelines for the Super Eco Town Project and begins accepting the second round of applications.   |
| July 2006  | Companies selected for the Super Eco Town Project are officially announced.  |

## 4. Facilities

### 4.1. PCB Waste Treatment

#### Japan Environmental Safety Corporation

Aomi 2-chome, Koto-ku, Tokyo  
 (Inner Central Breakwater Landfill Site)  
 Tel: 03-3599-6023  
<http://www.jesconet.co.jp>



PCB decomposition reactor

#### [Business Overview/Features]

Under the leadership of the national government, the Japan Environmental Safety Corporation promotes the regional treatment of PCB containing wastes through five centers located throughout Japan (Kitakyushu, Osaka, Toyota, Tokyo, Muroran).

This facility was established for the chemical treatment and detoxification of PCB containing wastes (high-voltage transformers, high-voltage capacitors, ballasts, etc.) from Tokyo and the three neighboring prefectures of Saitama, Chiba, and Kanagawa. Treatment operations started up in November 2005 and will conclude by 2014.

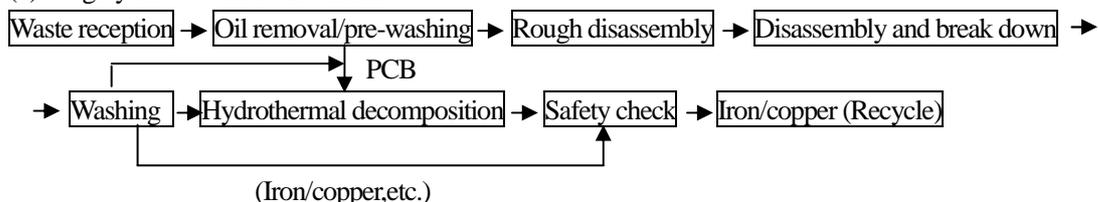
This facility treats highly concentrated PCBs by hydrothermal decomposition and low concentrated PCBs by dechlorination decomposition.

#### [Business Contents]

| Treated Waste                 | Quantity Treated<br>(Volume PCB decomposed) | Waste Generating Areas   |
|-------------------------------|---|--|
| Highly concentrated PCB waste | 2t/day                                      | PCB waste (high-voltage Transformers, capacitors, etc. in Tokyo, Saitama, Chiba, Kanagawa) |
| Low concentrated PCB waste    | 0.3kg/day                                   | Insulation oil of pole-mounted transformers within Tokyo                                   |

#### [Flow chart of the treatment process]

(1) Highly concentrated PCB waste



(2) Low concentrated PCB waste



## 4.2. Waste Fuel Electric Power Generation

### Tokyo Waterfront Recycle Power Co., Ltd.

Aomi 2-chome, Koto-ku, Tokyo  
(Inner Central Breakwater Landfill Site)

Tel: 03-6327-3190

<http://www.tgn.or.jp/tokyorp/>



Power generator

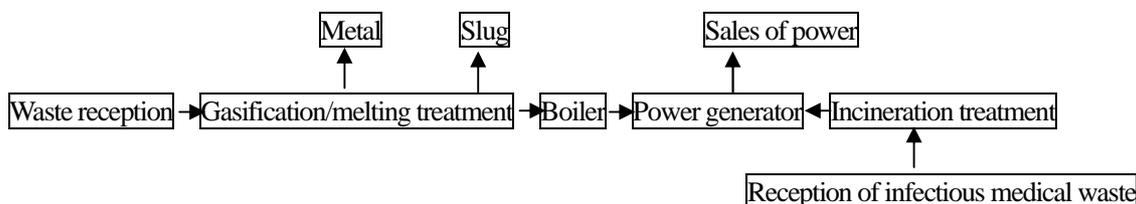
#### [Business Overview/Features]

In this facility, industrial wastes such as plastic wastes and crushed/separated residue of construction wastes are received for gasification and melting treatment. Ash is melted under high temperatures into slug to be recycled as construction material. In addition, 23,000kW of power is generated by recovering both the heat generated through this process and the waste heat of medical waste treatment. Metals such as iron, copper and aluminum are sold as valuable materials. Infectious medical wastes from medical institutions are incinerated in exclusive furnaces, and the waste heat is used for power generation. This facility is one of the largest of its kind in Japan. It aims for 100% recycling by combining material recycling and thermal recycling.

#### [Business Contents]

|  | Item                      | Quantity Treated /Produced | Waste Generator /Produced                                      |
|--|---------------------------|----------------------------|--|
| Type of Treated Wastes                   | Plastic wastes,etc.       | 550t/day                   | Various businesses/intermediate treatment facilities           |
|  | Infectious medical wastes | 100t/day                   | Medical institutions(hospitals/ Clinics,etc.)                  |
| Recycled products and their applicatoins | Electrical power          | 23,000kWh                  | Used partially within the plant;also sold to the power company |
|  | Slug                      | Approx.50t/day             | Sold as construction material                                  |

#### [Flow chart of the treatment process]



### 4.3. Construction and Demolition Waste Recycling

**Takatoshi Corporation Ltd.**

2-15 Jonanjima 3-chome, Ota-ku, Tokyo

Tel: 03-5755-8011

<http://www.takatoshi.co.jp>



Thorough pre-treatment is undertaken before automated treatment

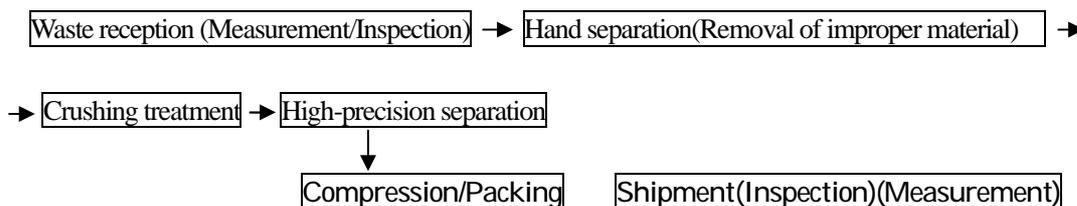
**[Business Overview/Features]**

Construction and demolition wastes that are difficult to be recycled are received at this facility. Using a recycling system with high-precision separation made possible by state-of-the-art technology, a recycle rate of over 90% has been achieved. This facility takes the fundamental position that “wastes are products” and aims for the boundless recycling of precious waste resources. Greater recycling efficiency will be sought through advancements in separation technology while also promoting a balance between people and machines. Environment-conscious operations are also conducted such as construction of a 10 meter high windbreak wall to care for the surrounding environment and equipping the facility with a high performance dust filter to protect the health of the staff.

**[Business Contents]**

|  | Item  | Quantity Treated/Produced | Waste Generator/Waste Applications                         |
|--|---|---------------------------|--|
| Type of Treated Waste                    | Industrial wastes (construction and demolition waste, etc.) | 928t/day                  | New construction/refurbishing/demolition etc. of buildings |
|  | General waste(Plastic waste,etc.)                           |                           | Wastes generated from moving ,etc.                         |
| Recycled products and their applications | Recycled sand   | Approx. 80t/day           | Reused as roadbed material, raw material for cement        |
|  | Other items   | Approx. 783t/day          | Reused as fuel for cement,reducers for blast fumaces, etc. |

**[Flow chart of the treatment process]**



**4.4 Recycle Peer Co., Ltd.**

4-3 Jonanjima 3-chome, Ota-ku, Tokyo

03-5755-8811

<http://www.r-p.co.jp>



Automated waste separation line

**[Business Overview/Features]**

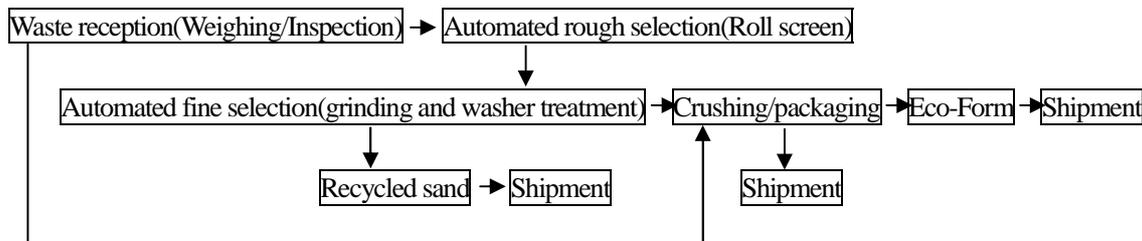
Construction and demolition waste is received at this facility and 94% is recycled. Three advanced technologies were introduced to achieve this high rate of recycling. Due to this, this facility was accredited as a nationally subsidized facility, the first private construction-related industrial waste treatment facility to receive this qualification.

- (1) Achieved automated rough selection of waste by introducing a “roll screen unit”
- (2) Achieved high utilization of earth and sand by introducing a “grinding and washer treatment unit” (separation by difference in specific gravity)
- (3) Achieved utilization of coarse particles, etc. as a secondary raw material for steel manufacturing (Eco-Form)

**[Business Contents]**

|  | Item                              | Quantity Treated/Produced | Waste Generator/<br>Waste Applications                               |
|--|-----------------------------------|---------------------------|--|
| Type of Treated Waste                    | Construction and demolition waste | 961t/day                  | New construction/refurbishing/demolition of buildings, etc.          |
|  | Business-related industrial waste |                           | Industrial waste generated from manufacturing and distribution, etc. |
| Recycled products and their applications | Recycled sand                     | Approx. 300t/day          | Roadbed material, specific gravity modifier, etc.                    |
|  | Eco-Form                          | Approx. 10t/day           | Utilized at steel plant  |

**[Flow chart of the treatment process]**



### 4.5. Used Information Equipment Recycling

**Re-Tem Corporation**

2-9 Jonanjima 3-chome, Ota-ku, Tokyo

Tel: 03-3790-2100

<http://www.re-tem.com>



Heavy equipment operations before shredding

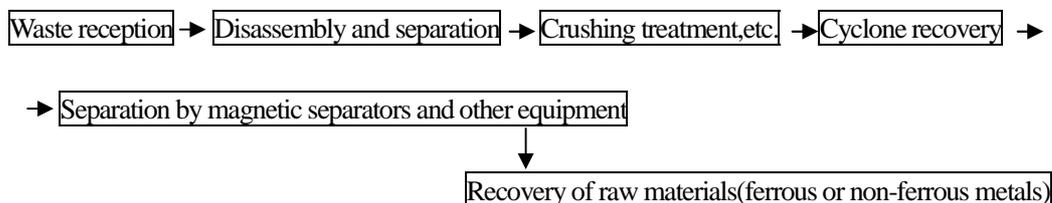
**[Business Overview/Features]**

This facility receives waste such as used iron metal matrix composites as well as electric/electronic equipment and information communication equipment. The products are disassembled and separated, and proper methods of treatment are undertaken after an accurate assessment of the composites. This leads to an extremely pure recovery of materials. As all items that have undergone the crushing treatment can be shipped out as raw materials for the materials industry, zero emission of waste (zero landfills) has been achieved.

**[Business Contents]**

|  | Item                                    | Quantity treated/Produced | Waste Generator/Waste Applications   |
|--|---|---------------------------|--|
| Type of Treated Waste                    | Metal waste, plastic waste, glass, etc. | 300t/day                  | Machines, ATMs, electrical appliances, etc. from manufacturers, banks, leasing firms and offices |
| Recycled products and their applications | Ferrous metals                          | 188.5t/day                | Sold to electric furnace manufacturers and steel works   |
|  | Non-ferrous metal                       | 40t/day                   | Sold to non-ferrous refineries, etc.   |

**[Flow chart of the treatment process]**



#### 4.6.Future Ecology Inc.

2-14 Jonanjima 3-chome, Ota-ku, Tokyo

Tel: 03-3799-7153

<http://www.f-eco.co.jp>



Data removal and confirmation of PC operation

#### [Business Overview/Features]

This facility undertakes the reuse and recycling of used personal computers and other electric, electronic, and information related equipment. For information related equipment in particular, data is removed or destroyed under strict security procedures for their safe reuse and recycling.

#### [Business Contents]

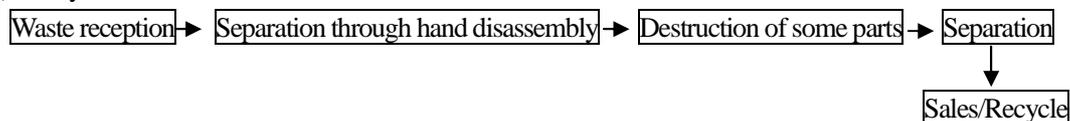
|  | Item  | Quantity Treated/Produced | Waste Generator/Waste Applications                           |
|--|---|---------------------------|--|
| Type of Treated Waste                    | Used electrical household appliances, OA machinery and electronic parts, etc. | 36t/day                   | General businesses, leasing firms, etc.                      |
| Reused products and their applications   | Electric/ information related equipment                                       | 12t/day                   | Reused after repair following removal or destruction of data |
| Recycled products and their applications | Electric/ information related equipment                                       | 24t/day                   | Recycled after data destruction, etc.                        |

#### [Flow chart of the treatment process]

(1) Reuse



(2) Recycle



#### 4.7. Animal Feed from Food Waste

##### Alfo Co., Ltd.

3-2 Jonanjima 3-chome, Ota-ku, Tokyo

Tel: 03-5755-8841

<http://www.tokyoclear.co.jp>



Ingredient for formula feed

##### [Business Overview/Features]

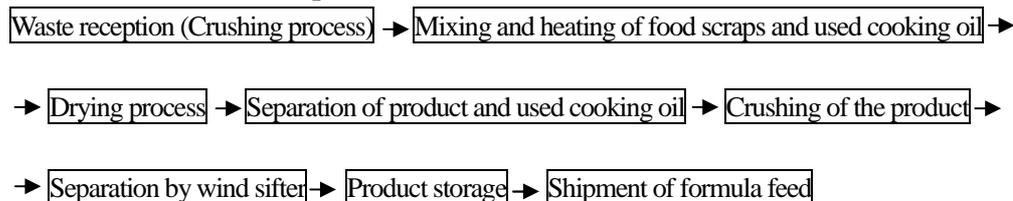
This facility receives and dries food waste (food scraps) to manufacture ingredients used in formula animal feed for the pork and poultry industries.

The advanced technology of the “low temperature vacuum drying equipment” is based on the principle of “water evaporation by deep oil frying” to manufacture feed. Feed can be manufactured in approx. 90 minutes per treatment cycle (10 tons), allowing large volumes to be treated in a shorter period of time than other compost or feed production methods.

##### [Business Contents]

|  | Item   | Quantity Treated/Produced | Waste Generator/Waste Applications  |
|--|--|---------------------------|---|
| Type of Treated Waste                    | Business related general waste (food scraps) | 140t/day                  | Kitchen scraps and leftovers (food scraps) from hotels, restaurants, supermarkets, etc.   |
|  | Industrial waste (animal and plant scraps)   |                           | Animal and plant scraps generated during the manufacturing, processing or cooking of food |
| Recycled products and their applications | Ingredient for formula feed                  | Approx. 25t/day           | Formula feed for poultry and pork industries  |

##### [Flow chart of the treatment process]



### 4.8. Biogas Power Generation from Food Waste

**Bioenergy Co., Ltd.**

4-4 Jonanjima 3-chome, Ota-ku, Tokyo

Tel: 03-5492-1461

<http://www.bio-energy.co.jp>



Fuel cell and methane gas holder

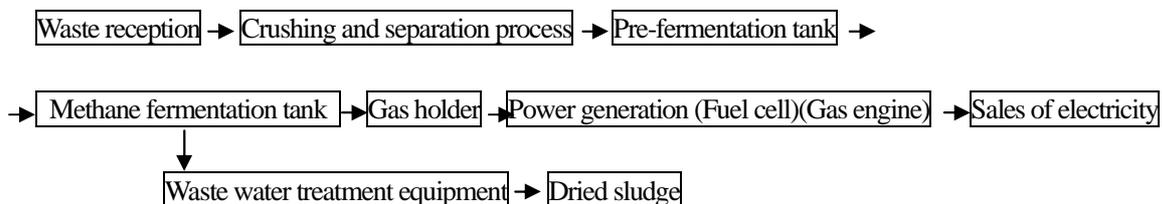
**[Business Overview/Features]**

This facility accepts food waste that had traditionally been incinerated rather than recycled because of separation difficulty. Using a methane fermentation system, methane gas is generated as fuel for application in fuel cells and gas engines. Approximately 24,000kWh of power (equivalent to electricity for about 2,400 households) is generated a day. About 60% of this is sold to an outside corporation. Because this power is generated by biomass, it has been appraised as a natural form of energy, receiving certification as a green energy. It also helps to halt global warming by creating electricity from food waste. It reduces carbon dioxide emissions by an annual 5,000 tons.

**[Business Contents]**

|  | Item                            | Quantity treated/Produced    | Waste Generator/Waste Applications  |
|--|---------------------------------|------------------------------|---|
| Type of Treated Waste                    | Business-related general wastes | Food wastes 110t/day         | Food manufactures/processors, restaurants, department stores, convenience stores, hotels, food service facilities, etc. |
|  | Industrial wastes               |                              |   |
| Recycled products and Their applications | Electrical power                | 24,000kWh (2,400 households) | Approx. 60% is sold to the power company  |

**[Flow chart of the treatment process]**



### 4.9. Rubble and Construction Sludge Recycling

**Seiyu Kogyo**

3-3 Jonanjima 3-chome, Ota-ku, Tokyo

Tel: 03-3799-7000

<http://www.seiyukogyo.co.jp>



Heating and rubbing line

**[Business Overview/Features]**

Rubble and construction sludge generated from construction sites is brought in to produce not only recycled road-bed aggregate from rubble, but also recycled aggregate for concrete - Class H (JIS A 5021), using the first operational heating and rubbing method facility in Japan.

Sludge is used to produce high quality improved-soil through dewatering and granulation/solidification, and the facility aims for 100% recycling by utilizing the cement powder generated in the heating and rubbing process as the solidification material for kneading the sludge.

**[Business Contents]**

|  | Item  | Quantity treated/Produced | Waste Generator/ Waste Applications                       |
|--|---|---------------------------|---|
| Type of Treated Waste                    | Rubble, glass, concrete, pottery wastes       | 1300t/day                 | Civil engineering, construction and demolition work ,etc. |
|  | Construction sludge                           | 700t/day                  |   |
| Recycled products and Their applications | Recycled aggregate Class H (JIS A 5021)       | Approx. 537t/day          | Re-use as a raw material for concrete                     |
|  | Recycled sand, improved-soil, recycled gravel | Approx. 1274t/day         | Re-use as road-bed aggregate, etc.                        |

**[Flow chart of the treatment process]**

