ENVIRONMENTAL ADMINISTRATION OF TOKYO
(MAINLY WASTE MANAGEMENT)

ANMC21 Joint Project:
Promotion of Environmentally Sound Waste Management and Resource Recycling

February 16, 2009
MY NAME IS
YUTAKA TANIGAMI

I BELONG TO
PLANNING SECTION, WASTE MANAGEMENT DIVISION, TMG

MY OFFICIAL TITLE IS
DIRECTOR, PLANNING FOR WASTE MANAGEMENT & RECYCLING

ANYTHING ELSE ···········
TOTAL POPULATION
12,805,039
AS OF JAN 2008

Tama District
(30 municipalities)
population 4,084,714

23 Wards Area
(23 municipalities)
population 8,577,742

Izu & Ogasawara Islands
(9 municipalities)
population 28,573

TMG Office
Tokyo Metropolis

Hills and mountains

Megalopolis

Subtropical islands
INTRODUCTION OF TOKYO

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OUTLINE OF TMG
(TOKYO METROPOLITAN GOVERNMENT)

- PERSONNEL (AS OF AUG. 2008)
  - GOVERNER’S BUREAUS (17)  43,735
  - PUBLIC ENTERPRISE BUREAUS(3)  14,476
  - EXECUTIVE COMMISSIONS(7)  108,675
  - LEGISLATIVE ORGANS(1)  146
  SUM.  167,032

- The Metropolitan Buildings
  - Tokyo Metropolitan Main Building No.1: 243 meters (797 ft) high with forty-eight stories above and three stories below ground.
  - Tokyo Metropolitan Main Building No.2: 163 meters (535 ft) high with thirty-four stories above and three stories below ground.
  - Tokyo Metropolitan Assembly Building: 41 meters (135 ft) high with seven stories above and one story below ground.
OUTLINE OF TMG (2)

■ FINANCE  (FY 2009)

■ REVENUE & EXPENDITURE
  ■ 6,856 BILLION YEN(¥)
    □ 68.5 BILLION $(US)
    □ 114 BILLION $(£)
    □ 2,657 BILLION Thai Baht

■ DETAILS OF CATEGORY
  ■ SOCIAL WELFARE & PUBLIC HEALTH  18.6%
  ■ EDUCATION & CULTURE           22.1%
  ■ CIVIL ENGINEERING WORKS        19.6%
  ■ POLICE & FIRE WORKS            20.5%
  ■ LIVING ENVIRONMENT             5.3%
THE OUTLINE OF

BUREAU OF ENVIRONMENT
Bureau of Environment
Tokyo Metropolitan Government

Personnel (607)

Bureau of Environment

Environmental Policy Division 80
Urban and Global Environment Division 45
Environmental Improvement Division 81
Automotive Pollution Control Division 55
Natural Environment Division 74
Waste Management Division 80
Tama Environment Office 100
Landfill Site Management Office 94

Personnel

AS OF AUGUST 2008
## Details of Budget of Bureau of Environment in 2009

<table>
<thead>
<tr>
<th>Category</th>
<th>(US Million $)</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel</td>
<td>5235</td>
<td>12.0%</td>
</tr>
<tr>
<td>Planning &amp; Study</td>
<td>10897</td>
<td>25.0%</td>
</tr>
<tr>
<td>Climate Change</td>
<td>5696</td>
<td>13.1%</td>
</tr>
<tr>
<td>Air &amp; Soil Pollution</td>
<td>845</td>
<td>1.9%</td>
</tr>
<tr>
<td>Automobile Pollution</td>
<td>4516</td>
<td>10.4%</td>
</tr>
<tr>
<td>Protection of Natural Environment</td>
<td>9997</td>
<td>22.9%</td>
</tr>
<tr>
<td>Waste Management</td>
<td>6435</td>
<td>14.8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>43621</strong></td>
<td></td>
</tr>
</tbody>
</table>
THE OUTLINE OF WASTE MANAGEMENT OF TMG

- **GENERAL WASTE** (HOUSEHOLD WASTE)
  - This management is carried out by the responsibility of 62 local self-governing bodies in Tokyo.
  - TMG gives them technical advices.
  - TMG operates the disposal site at Tokyo Port.

- **INDUSTRIAL WASTE**
  - This management is carried out by the responsibility of generators themselves.
  - Generators can entrust their waste treatment to the companies that permitted by TMG.
  - TMG gives permission of their companies and guide them.
GENERAL WASTE

一般廃棄物

- HOUSEHOLD WASTE
Amount of General Waste in Tokyo
(recyclable waste excluded)

unit: 10,000 tons

TAMA and Islands

23 Special Wards

Flow of General Waste in Tokyo

- Amount of recyclable waste: 59
- Amount of waste generation (recyclable waste excluded): 438
- Intermediate treatment amount: 437
- Amount of reduction: 343
- Direct final disposal amount: 1
- Final disposal amount: 73
- Total amount of recycled waste: 112

FY 2006
UNIT: 10,000 tons

Amount of recyclables collected by the community groups: 31

Group recovery amount

Total amount of recyclable waste

Intermediate treatment amount

Amount of reduction

Direct final disposal amount

Final disposal amount
Amount of General Waste Generation by Waste Type in Tokyo

都内の一般廃棄物の種類別排出量

<table>
<thead>
<tr>
<th>Waste Type</th>
<th>Amount</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combustible waste</td>
<td>229</td>
<td>46%</td>
</tr>
<tr>
<td>Recyclable waste</td>
<td>59</td>
<td>12%</td>
</tr>
<tr>
<td>Noncombustible waste</td>
<td>62</td>
<td>12%</td>
</tr>
<tr>
<td>Bulky waste</td>
<td>8</td>
<td>2%</td>
</tr>
<tr>
<td>Carried-in waste</td>
<td>139</td>
<td>28%</td>
</tr>
<tr>
<td>Total</td>
<td>497</td>
<td></td>
</tr>
</tbody>
</table>

FY 2006
UNIT: 10,000 tons
Collection of General Waste

Collection of General Waste in the commercial district

Collection point
Combustibles (twice a week)

Incombustibles (twice a month)

Bulky Wastes (subscription)

Recyclables (once a week)
(Used paper, bottles, cans, plastic envelopes etc.)

Incinerators

Pulverization Facilities

Ash Melting Furnace

Sanitary Landfill

Ash

Residue

Slag
Incinerators

Toshima incineration plant (capacity: 400t/d) (power generation capacity: 7,800kW)

Shin-kouto incineration plant (capacity: 1,800t/d) (power generation capacity: 50,000kW)

Each incineration plant in 23 wards area has a certificated environmental management system based on the ISO14001.
## Number of incineration plant in Tokyo

<table>
<thead>
<tr>
<th>Areas of Tokyo</th>
<th>Number of plant</th>
<th>Total Capacity (t/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>23 Wards Area</td>
<td>22</td>
<td>13,000</td>
</tr>
<tr>
<td>Tama District</td>
<td>19</td>
<td>5,374</td>
</tr>
<tr>
<td>Islands</td>
<td>10</td>
<td>86</td>
</tr>
</tbody>
</table>
Recycling of incinerator ash

**23 Wards Area**
- Ash Melting Furnace
- Molten slag
- Asphalt pavement material, etc

**Tama District**
- Eco-Cement Plant
- Eco-Cement
- Concrete product
Sanitary Landfill in Tokyo Bay

THIS IS THE LAST LANDFILL SITE IN 23WARDS AREA
INDUSTRIAL WASTE
產業廃棄物
Amount of Industrial Waste in Tokyo

FY: 2006
UNIT: 10,000 tons

<table>
<thead>
<tr>
<th>Year</th>
<th>Others</th>
<th>Sewage</th>
<th>Sludge</th>
</tr>
</thead>
<tbody>
<tr>
<td>'82</td>
<td>500</td>
<td>700</td>
<td>900</td>
</tr>
<tr>
<td>'87</td>
<td>550</td>
<td>750</td>
<td>950</td>
</tr>
<tr>
<td>'92</td>
<td>600</td>
<td>800</td>
<td>1,000</td>
</tr>
<tr>
<td>'97</td>
<td>650</td>
<td>850</td>
<td>1,050</td>
</tr>
<tr>
<td>'98</td>
<td>700</td>
<td>900</td>
<td>1,100</td>
</tr>
<tr>
<td>'99</td>
<td>750</td>
<td>950</td>
<td>1,150</td>
</tr>
<tr>
<td>'00</td>
<td>800</td>
<td>1,000</td>
<td>1,200</td>
</tr>
<tr>
<td>'01</td>
<td>850</td>
<td>1,050</td>
<td>1,250</td>
</tr>
<tr>
<td>'02</td>
<td>900</td>
<td>1,100</td>
<td>1,300</td>
</tr>
<tr>
<td>'03</td>
<td>950</td>
<td>1,150</td>
<td>1,350</td>
</tr>
<tr>
<td>'04</td>
<td>1,000</td>
<td>1,200</td>
<td>1,400</td>
</tr>
<tr>
<td>'05</td>
<td>1,050</td>
<td>1,250</td>
<td>1,450</td>
</tr>
<tr>
<td>'06</td>
<td>1,100</td>
<td>1,300</td>
<td>1,500</td>
</tr>
</tbody>
</table>

UNIT: 10,000 tons
Flow of Industrial Waste in Tokyo

FY 2005
UNIT : 10,000 tons

- Amount of waste generation: 2,445
- Direct recycling amount: 11
- Intermediate treatment amount: 2,379
- Amount of reduction: 1,521 (62%)
- Direct final disposal amount: 56
- Final disposal amount: 141 (6%)
- Total amount of recycling: 784 (32%)
Amount of Industrial Waste by Waste Type in Tokyo

FY 2006
UNIT : 10,000 tons

Total 2,445

- Sewage sludge: 1,259 (52%)
- Construction sludge: 240 (10%)
- Other sludge: 120 (5%)
- Wood waste: 29 (1%)
- Rubble: 567 (23%)
- Metal waste: 40 (2%)
- Others: 245 (8%)

Sewage sludge: 1,259 (52%)

Metal waste: 40 (2%)

Wood waste: 29 (1%)

Rubble: 567 (23%)

Other sludge: 120 (5%)

Construction sludge: 240 (10%)

Others: 245 (8%)
Measures taken in coming five years by Tokyo Metropolis
Six solid waste issues that Tokyo Metropolis is facing
東京が直面している6つの廃棄物問題

1. Society is still generating a massive amount of solid waste.
2. Waste plastics whose treatment is depending on landfill disposal
3. Great deal of construction sludge that has not been effectively used
4. Appropriate treatment of hazardous waste and other substances that should be thoroughly carried out
5. Inappropriate waste treatment that is repeatedly found
6. Solid waste management and recycling businesses that require sound development
Waste plastics whose treatment is depending on landfill disposal

Discharge approx. 570,000 tons

Recycle 26%

Incineration 27%

Landfill 47%

FY2006
Great deal of construction sludge that has not been effectively used

<table>
<thead>
<tr>
<th>Description</th>
<th>FY 2005</th>
<th>Unit: 10,000 tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction sludge</td>
<td>44</td>
<td>32%</td>
</tr>
<tr>
<td>Mixed waste</td>
<td>25</td>
<td>18%</td>
</tr>
<tr>
<td>Glass, ceramic and porcelain waste</td>
<td>25</td>
<td>18%</td>
</tr>
<tr>
<td>Rubble</td>
<td>23</td>
<td>16%</td>
</tr>
<tr>
<td>Others</td>
<td>17</td>
<td>12%</td>
</tr>
<tr>
<td>Other sludge</td>
<td>6</td>
<td>4%</td>
</tr>
</tbody>
</table>

Total: 141
### Appropriate treatment of hazardous waste and other substances that should be thoroughly carried out

徹底すべき有害廃棄物等の適正処理

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount of discharge</th>
<th>Inside Metropolis</th>
<th>Outside Metropolis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infectious waste</td>
<td>32,000 tons</td>
<td>17,000 tons (53%)</td>
<td>15,000 tons (47%)</td>
</tr>
<tr>
<td>Waste asbestos</td>
<td>4,000 tons</td>
<td>5 tons (0.1%)</td>
<td>4,000 tons (99.9%)</td>
</tr>
<tr>
<td>Others*</td>
<td>36,000 tons</td>
<td>12,000 tons (33%)</td>
<td>24,000 tons (67%)</td>
</tr>
<tr>
<td>Total</td>
<td>72,000 tons</td>
<td>29,000 tons (40%)</td>
<td>43,000 tons (60%)</td>
</tr>
</tbody>
</table>

*Others include the four items; waste oil, combustion residue, sludge, and flyash.
Plan objectives

i) Reducing final disposal of FY 2010 into 1.6 million tons (35% reduction compared to FY 2004)

ii) Promoting recycling of waste plastics in order to reduce final disposal into zero

iii) Increasing recycling of construction sludge by 50%
Plan objectives

iv) Establishing a management system of hazardous waste inside Tokyo Metropolis

v) Strengthening extensive liaison in Metropolitan sphere in order to reduce illegal disposal of industrial waste into zero

vi) Establishing a system in which good industrial waste management contractors can raise their market value
Thank you for your attention