KAE MURAKAMI
Energy and Global Warming Prevention Department
Environment Bureau
The City of Hiroshima

村上 加枝
広島市環境局エネルギー・温暖化対策部企画課
Hiroshima: A City of Peace

Hiroshima City was the first city to suffer the devastating power of an atomic bomb. It transcended this catastrophe and continues to appeal to the citizens of the world to work for peace.
Hiroshima: Hub in the Western Part of Japan

We have a population of over one million residents and have become a hub for economy, culture and politics in the Chugoku-shikoku region of Japan.
Hiroshima’s Natural Landscape

Hiroshima is blessed with a rich, abundant natural environment. Six rivers flow down from the verdant mountains, through the city and out to the Seto Inland Sea. We consider Hiroshima to be an Aqua polis.
Emissions of Greenhouse Gases in Hiroshima City

10,000 tons - 700,000 tons
CO₂

Greenhouse gas emissions

Industrial sector
Business sector
Transportation sector
Household sector
Other
Waste sector

624.0 619.5 619.8 619.2 618.2 622.5

1990 2001 2002 2003 2004 2005
Fiscal Year
Emissions of Greenhouse Gases in Hiroshima City (Comparative Status)

- Hiroshima City: -0.2%
- Industrial Sector: -15.9%
- Household Sector: +17.4%
- Business Sector: +14.3%
- Transportation Sector: -10.1%
Hiroshima City Global Warming Countermeasures Regional Promotion Plan

Established May, 2003

Greenhouse Gas Reduction Target for Hiroshima City: 6%

Compared to base year
-6%

Improved energy efficiency
Measures by citizenry & businesses
Measures by the city administration

Compared to base year
+4.3%

Greenhouse Gas Emissions

(10,000 tons - CO2)

No Countermeasures

Countermeasures

Base year fy 1990

Target year fy 2010

637

664

598

Reduction Factor 1

Reduction Factor 2

Reduction Factor 3
Achieving a 6% Reduction in Greenhouse Gases

<table>
<thead>
<tr>
<th>Reduction Factor 1</th>
<th>Improved energy efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction of emissions in the home and office made possible through energy conservation. This will be achieved through upgrading to energy-efficient technology such as top-runner systems available for air conditioners, refrigerators, lights, TVs in homes and offices, as well as automobiles.</td>
<td>CO₂ reduction 439,100 tons</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reduction Factor 2</th>
<th>Measures taken by citizenry &amp; businesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction of carbon dioxide through energy-saving measures during household and business activities and when using vehicles.</td>
<td>CO₂ reduction 154,600 tons</td>
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<table>
<thead>
<tr>
<th>Reduction Factor 3</th>
<th>Measures by the city administration</th>
</tr>
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<tbody>
<tr>
<td>Reduction of carbon dioxide through promoting Hiroshima City Hall Environmental Protection Action Plan and introducing equipment at waste incineration plants that generates power through burning waste.</td>
<td>CO₂ reduction 63,200 tons</td>
</tr>
</tbody>
</table>
To keep the effects of global warming within acceptable levels, it is necessary to prevent the average global temperature from rising 2°C.

In order to prevent the average global temperature from increasing 2°C, it is necessary for developed nations, including Japan to reduce emissions of greenhouse gases by 60 - 90% by fiscal year 2050.

70% reduction of Hiroshima City’s greenhouse gas emissions by fiscal year 2050 (compared to fiscal year 1990)

50% reduction of Hiroshima City’s greenhouse gas emissions by fiscal year 2030 (compared to fiscal year 1990)
Considering an ordinance for the prevention of global warming (planned for 2009)

### Business Activities
- Training energy conservation advisors to run consultation services for home and office
- Development of carbon offset plans

### Transportation
- Lanes for eco-friendly vehicles
- Promoting low-emission vehicles
- Promoting alternative fuels
- Attracting hydrogen stations
- Cycling City Hiroshima

### City Activities
- Energy conservation in city hall (lighting)
- Installing solar power in public facilities
- Rainwater cisterns, greenery on walls
- Facilitation of alternate fuel vehicles
- Energy conservation standards in city owned buildings

### Household Activities
- Encouraging residential upgrades (solar power, solar thermal conversion, housing insulation, double pane glass)
- Elimination of incandescent lights
- Reduction of plastic shopping bags
- Partnerships with the media & NPO
ACTIVITY PROFILE — HIROSHIMA —

Transport
- Sustainable car use
- Parking space management
- Public transport
- Zero carbon transport
- Transport planning
- Involvement staff in mobility plans
- Waste management
- Collaborate with large-scale consumer
- Cooperation with SME’s
- Civic participation
- Renewable energies
- CHP/District heating
- Improvement existing building
- Waste management

Climate Policy
- CO2-Monitoring
- Institutionalization
- Action program
- Involvement of the public
- Participation of local actors
- Regionalisation
- CO2 Compensation
- Energy Management
- Staff Motivation
- City as role model
- Urban planning

Energy
- Improvement existing building
- Waste management
- Sustainable car use
- Zero carbon transport
- Transport planning
- Involvement staff in mobility plans
- Transport
- Energy

Waste Management
- Collaborate with energy supply companies
- Collaborate with large-scale consumer
- Cooperation with SME’s
- Civic participation
- Renewable energies
- CHP/District heating
- Improvement existing building
- Waste management
- Sustainable car use
- Zero carbon transport
- Transport planning
- Involvement staff in mobility plans
- Transport
- Energy

ACTIVITY PROFILE — HIROSHIMA —
### Strengths

<table>
<thead>
<tr>
<th>Activities</th>
<th>Contributing Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Dioxide Monitoring</td>
<td>• We have setup CO$_2$ concentration monitoring stations in the city to promote CO$_2$ awareness.</td>
</tr>
<tr>
<td>Waste Management</td>
<td>• 1976: Hiroshima was the first major city in Japan to initiate a five category garbage separation system. (Hiroshima has the lowest waste disposal amounts per person among all government-designated cities in Japan.)</td>
</tr>
<tr>
<td></td>
<td>• Hiroshima citizens and companies have considerable awareness and concern for environmental issues, thus increasing our potential for progressive efforts.</td>
</tr>
<tr>
<td>Sustainable Transportation Planning</td>
<td>• Hiroshima City has created strong building blocks for transportation in the Ota River delta.</td>
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<tr>
<td></td>
<td>• The city has established an environmentally friendly public transportation system, such as streetcars and new transit system called the Astramline.</td>
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</table>
Good Practice 1: CO₂ Monitoring

CO₂ Awareness

CO₂ concentrations are measured in specific locations in the city. The amount of CO₂ is displayed in City Hall and the Hiroshima Children’s Museum.

- Central downtown location
- Near a major road
- Out in the countryside
Monitoring stations have been installed at three locations:

- A central part of the City
- Next to a national highway with high traffic volume
- In a suburban area with low traffic volume

This display makes it possible to compare modern day and 18 century emissions.
This graph shows the changes in CO$_2$ concentration of the previous day.
Standby Power is the setting on electrical equipment whereby the appliance is ready to be quickly turned on by remote control or timer settings. This function can often be found on TVs or video/DVD players. However, setting an appliance in standby uses energy.

Take just a little time to think about it. There are certainly appliances you don’t use very often. Consider unplugging them when not in use. Through doing so, one household can reduce their carbon footprint by 90 kg per year. This will also amount to a savings of about 3,300 yen for you.
Good Practice 2: Waste Management

Amount of Household Waste Disposed of Daily per Citizen

Japan Ministry of the Environment,
Survey on the Disposal of General Waste FY 2005
“Hiroshima 8”
- 8 Categories for Household Waste Disposal -

- Combustible Waste
- Incombustible Waste
- Recyclable Waste
- Large Waste
- PET Bottles
- Toxic Waste

Until March 31, 2004

As of April 1, 2004

- Combustible Waste
- Recyclable Plastics
- Other Plastics
- Incombustible Waste
- Recyclable Waste
- Large Waste
- PET Bottles
- Toxic Waste

Newly Recycled
### Results of “Hiroshima 8” Waste Disposal Policy

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Waste (Tons)</th>
<th>Incombustible Waste</th>
<th>Recyclable Plastics</th>
<th>Other Plastics</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2003</td>
<td>33,494 t</td>
<td></td>
<td>18,524 t</td>
<td>7,284 t</td>
</tr>
<tr>
<td>FY 2005</td>
<td>29,138 t</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **33,494 t** in FY 2003 was reduced to **29,138 t** in FY 2005, representing a 13% reduction.
- 91% of recyclable plastics were recycled.
- Landfill disposal was reduced to one fifth.

One year’s collection of household waste
City residents, the private sector and the local government are working together on our 8 challenges to achieve three goals. (Established in July, 2004)
Goal 1: Reduce the Total Amount of Disposal

Lifestyle innovations will reduce the total amount of disposal by 20% or more.

444,000 tons \rightarrow 350,000 tons
Thorough compliance with the waste collection system will nearly double the amount of recycling.
The reduction and recycling of waste will reduce the amount of landfill disposal by up to 50%.
Good Practice 3: Transportation Planning

Future Transportation Vision
comprehensive concepts and policies

Established in June 2004
Public Transport Infrastructure for Everyone

Strengthening the public transport network

Upgrading public transport services

Improving connections between different public transportation services

Putting express bus services in operation

Upgrading several of our streetcars to LRT

Improving public transport nodes
Encouragement of alternative means to automobile, promotion of traffic demand management measure

- Eco-friendly vehicle lanes
- Cycling City Hiroshima

Eco-friendly roadways

Improving cycling routes
## Weaknesses

### Inadequate policies directed at energy efficiency

<table>
<thead>
<tr>
<th>Proposed Activities</th>
<th>Contributing Factors to our weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve energy efficiency as a basic principle of urban planning</td>
<td>Inadequate policies directed at energy efficiency</td>
</tr>
<tr>
<td>Renovate existing buildings in the industrial, business and housing sectors</td>
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</tr>
<tr>
<td>Encourage the introduction of CHP and district heating and cooling systems</td>
<td>Inadequate long-term vision for urban planning</td>
</tr>
</tbody>
</table>

**We must**

Collaborate with energy companies

Define energy efficiency as a basic principle of urban planning
Collaboration with our sister city – Hanover, Germany

Set up CO₂ Concentration Monitoring Systems

Provide Hanover with material on energy consultation services for citizens and businesses

Environmental education exchange for children focused on energy and resource conservation
Thank you for your attention!