

Environmental Report Summary [Continuing Improvement in Environmental Activities]

Nagoya University continues university-wide environment-related activities. These activities are summarized below.

= Improved over previous year
 = Further improvement needed
 = Red text refers to awards received.

Report Period	Environmental Management in General	Anti-Global Warming & Energy-Conservation Measures	Waste Management Measures	Chemical Substance Management	Community & Student Relations																		
FY2006 	<ul style="list-style-type: none"> Safety Management Headquarters established; previous waste treatment facility reorganized into the Center for Environment Management and Safety to reinforce waste management system. Environmental Report 2006 (inaugural issue) issued (Sep 2006) 	<ul style="list-style-type: none"> Energy Management Research and Review Group held achievement presentation under the theme "NU-Origin Energy Conservation Promotion and Global Warming Prevention." Energy saving activities got into full swing. (Mar 2007) <table border="1"> <tr> <td>Greenhouse Gas Emissions (CO₂ equivalent, compared to 2003)</td> <td>Evaluation</td> </tr> <tr> <td>Higashiyama → 7.4% ↓</td> <td>✓</td> </tr> <tr> <td>Tsurumai → 6.0% ↓</td> <td>✓</td> </tr> <tr> <td>Daiko → 21.8% ↓</td> <td>✓</td> </tr> </table>	Greenhouse Gas Emissions (CO ₂ equivalent, compared to 2003)	Evaluation	Higashiyama → 7.4% ↓	✓	Tsurumai → 6.0% ↓	✓	Daiko → 21.8% ↓	✓	<ul style="list-style-type: none"> Combustible/Non-combustible Waste Amount (compared to previous year) <table border="1"> <tr> <td>Higashiyama → 12.2% ↑</td> <td>✓</td> </tr> <tr> <td>Tsurumai → 0.4% ↓</td> <td>✓</td> </tr> <tr> <td>Daiko → 7.1% ↑</td> <td>✓</td> </tr> </table>	Higashiyama → 12.2% ↑	✓	Tsurumai → 0.4% ↓	✓	Daiko → 7.1% ↑	✓	<ul style="list-style-type: none"> Chemical Substance Management System (Guidelines enacted, (June 2006)) Management System of Chemical Substances (MaCS-NU) User Training held (June 2006) 300 laboratories registered approx. 100,000 chemicals. <table border="1"> <tr> <td>Registration ratio → 88%</td> <td>✓</td> </tr> </table>	Registration ratio → 88%	✓	<ul style="list-style-type: none"> Collaboration with "Nagoya Open University of the Environment" "Meichari Project (Nagoya Bike Sharing Scheme)" started in collaboration with Nagoya City and university students utilizing abandoned bicycles (June 2006-) 		
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FY2007 	<ul style="list-style-type: none"> Self-assessment of Environmental Report started. (Aug-Sep 2008) Environmental accounting report started. (Sep 2007) Authorized as "Nagoya City Eco Business Establishment" (Oct 2007) Received Prize of Minister of Economy, Trade and Industry Award for Successful Case of Energy Conservation in Factories & Buildings FY2007 (Jan 2008) Received Excellent Prize, Aichi Environmental Award 2008 (Mar 2008) 	<ul style="list-style-type: none"> Greenhouse Gas Emissions (CO₂ equivalent, compared to 2006) <table border="1"> <tr> <td>Higashiyama → No change</td> <td>✓</td> </tr> <tr> <td>Tsurumai → 10.7% ↑</td> <td>✓</td> </tr> <tr> <td>Daiko → 0.9% ↓</td> <td>✓</td> </tr> </table>	Higashiyama → No change	✓	Tsurumai → 10.7% ↑	✓	Daiko → 0.9% ↓	✓	<ul style="list-style-type: none"> Waste Treatment Handler Training held. (June 2007) Honored by Council of Institutional Environment Safety for appropriate treatment of waste from experiments. (June 2007) Waste Treatment Handler Training held. (June 2007) <table border="1"> <tr> <td>Combustible/Non-combustible Waste Amount (compared to previous year)</td> <td>Evaluation</td> </tr> <tr> <td>Higashiyama → 9.5% ↓</td> <td>✓</td> </tr> <tr> <td>Tsurumai → 1.9% ↓</td> <td>✓</td> </tr> <tr> <td>Daiko → 3.3% ↓</td> <td>✓</td> </tr> </table>	Combustible/Non-combustible Waste Amount (compared to previous year)	Evaluation	Higashiyama → 9.5% ↓	✓	Tsurumai → 1.9% ↓	✓	Daiko → 3.3% ↓	✓	<ul style="list-style-type: none"> Nagoya University Chemical Substance Management Regulations* enacted. (Apr 2008) Centralized treatment of "unwanted chemical agents" started. (2007-2008) Management System of Chemical Substances (MaCS-NU) User Training held. (June 2007) 300 laboratories registered approx. 110,000 chemicals. <table border="1"> <tr> <td>Registration ratio → 74%</td> <td>✓</td> </tr> </table>	Registration ratio → 74%	✓	<ul style="list-style-type: none"> Environmental Report education and student questionnaire started. (Planned to be conducted every year from FY2007) Lecture "Challenges to Environmental Problems" opened to the public. (2007) Collaboration with "Nagoya Open University of the Environment" 		
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FY2008 	<ul style="list-style-type: none"> Received Nagoya City Eco Business Establishment - Excellent Prize 2008. (Feb 2009) 	<ul style="list-style-type: none"> NU Library and ESCO concluded comprehensive service agreement for energy conservation. (Aug 2008) NU-ESCO energy-saving project started. (July 2008-) <table border="1"> <tr> <td>Greenhouse Gas Emissions (CO₂ equivalent, compared to 2006)</td> <td>Evaluation</td> </tr> <tr> <td>Higashiyama → 11.0% ↓</td> <td>✓</td> </tr> <tr> <td>Tsurumai → 1.0% ↑</td> <td>✓</td> </tr> <tr> <td>Daiko → 8.8% ↓</td> <td>✓</td> </tr> </table>	Greenhouse Gas Emissions (CO ₂ equivalent, compared to 2006)	Evaluation	Higashiyama → 11.0% ↓	✓	Tsurumai → 1.0% ↑	✓	Daiko → 8.8% ↓	✓	<ul style="list-style-type: none"> Waste Treatment Handler Training held. (June 2008) Plastic bags became chargeable at NU Co-op. (Oct 2008) <table border="1"> <tr> <td>Combustible/Non-combustible Waste Amount (compared to previous year)</td> <td>Evaluation</td> </tr> <tr> <td>Higashiyama → 6.1% ↑</td> <td>✓</td> </tr> <tr> <td>Tsurumai → 1.0% ↑</td> <td>✓</td> </tr> <tr> <td>Daiko → 26.1% ↓</td> <td>✓</td> </tr> </table>	Combustible/Non-combustible Waste Amount (compared to previous year)	Evaluation	Higashiyama → 6.1% ↑	✓	Tsurumai → 1.0% ↑	✓	Daiko → 26.1% ↓	✓	<ul style="list-style-type: none"> MaCS-NU User Training held. (June 2008) MaCS-NU registered approx. 120,000 chemicals. <table border="1"> <tr> <td>Registration ratio → 69%</td> <td>✓</td> </tr> </table>	Registration ratio → 69%	✓	<ul style="list-style-type: none"> Nagoya University extension lectures held. (Aug-Oct 2008) 4th Homecoming Day, attended by a total of 5,000 alumni, students' families, and local residents
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FY2009 	<ul style="list-style-type: none"> Action Plan for CO₂ Emissions Reduction (20% reduction from 2005 level by 2014) Excellent Engineer of Energy Conservation, Chubu Region Electricity Usage Rationalization Committee Chairperson's Award 2009* received. Prize for Public Entity, Green Reporting Award* received. (Sponsored by Toyo Keizai Inc., Green Reporting Forum) 	<ul style="list-style-type: none"> ESCO projects conducted at Tsurumai Campus. Energy-Saving patrol implemented. <table border="1"> <tr> <td>Greenhouse Gas Emissions (CO₂ equivalent, compared to 2006)</td> <td>Evaluation</td> </tr> <tr> <td>Higashiyama → 14.1% ↓</td> <td>✓</td> </tr> <tr> <td>Tsurumai → 2.8% ↑</td> <td>✓</td> </tr> <tr> <td>Daiko → 8.8% ↓</td> <td>✓</td> </tr> </table>	Greenhouse Gas Emissions (CO ₂ equivalent, compared to 2006)	Evaluation	Higashiyama → 14.1% ↓	✓	Tsurumai → 2.8% ↑	✓	Daiko → 8.8% ↓	✓	<ul style="list-style-type: none"> Waste Treatment Handler Training held. (June 2009) <table border="1"> <tr> <td>Combustible/Non-combustible Waste Amount (compared to previous year)</td> <td>Evaluation</td> </tr> <tr> <td>Higashiyama → 19.8% ↓</td> <td>✓</td> </tr> <tr> <td>Tsurumai → 2.0% ↑</td> <td>✓</td> </tr> <tr> <td>Daiko → 14.0% ↑</td> <td>✓</td> </tr> </table>	Combustible/Non-combustible Waste Amount (compared to previous year)	Evaluation	Higashiyama → 19.8% ↓	✓	Tsurumai → 2.0% ↑	✓	Daiko → 14.0% ↑	✓	<ul style="list-style-type: none"> Management System of Chemical Substances (MaCS-NU) strengthened. Asbestos treatment for all relevant facilities at the University completed. (Mar 2010) Implementation of measures to improve work environment at Tsurumai Campus launched. <table border="1"> <tr> <td>Registration ratio → 63%</td> <td>✓</td> </tr> </table>	Registration ratio → 63%	✓	<ul style="list-style-type: none"> "ECO LABO" Project (Meichari Project 2009) implemented. Daiko Campus Cleanup (June 2009) Noise control measures (installation of sound-proof panels) implemented.
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FY2010 	<ul style="list-style-type: none"> Environmental policy revised. The new environmental policy comprises four basic components: Basic Position, Environmental Management, Environmental Performance, and Social Responsibility & Environmental Communication. The University's environmental efforts are presented in separate sections according to each component of the Basic Policies. A list of educational and research activities related to the environment created. 	<ul style="list-style-type: none"> Results of the University Hospital ESCO projects conducted at Tsurumai Campus: 7,207 tons of CO₂ emissions reduced. Energy-Saving patrol implemented. <table border="1"> <tr> <td>Greenhouse Gas Emissions (CO₂ equivalent, compared to 2009)</td> <td>Evaluation</td> </tr> <tr> <td>Higashiyama → 9.6% ↑</td> <td>✓</td> </tr> <tr> <td>Tsurumai → 21.1% ↓</td> <td>✓</td> </tr> <tr> <td>Daiko → 18.4% ↑</td> <td>✓</td> </tr> </table>	Greenhouse Gas Emissions (CO ₂ equivalent, compared to 2009)	Evaluation	Higashiyama → 9.6% ↑	✓	Tsurumai → 21.1% ↓	✓	Daiko → 18.4% ↑	✓	<ul style="list-style-type: none"> Waste Treatment Handler Training held. (June 2010) <table border="1"> <tr> <td>Combustible/Non-combustible Waste Amount (compared to previous year)</td> <td>Evaluation</td> </tr> <tr> <td>Higashiyama → 3.0% ↓</td> <td>✓</td> </tr> <tr> <td>Tsurumai → 6.3% ↑</td> <td>✓</td> </tr> <tr> <td>Daiko → 30.0% ↑</td> <td>✓</td> </tr> </table>	Combustible/Non-combustible Waste Amount (compared to previous year)	Evaluation	Higashiyama → 3.0% ↓	✓	Tsurumai → 6.3% ↑	✓	Daiko → 30.0% ↑	✓	<ul style="list-style-type: none"> Management System of Chemical Substances (MaCS-NU) strengthened. System for chemical substance registration at time of delivery introduced. (May 2010) <table border="1"> <tr> <td>Registration ratio → 100%</td> <td>✓</td> </tr> </table>	Registration ratio → 100%	✓	<ul style="list-style-type: none"> Environmental circle "Song of Earth" for COP10 Cooperative activities
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Energy-Saving Activities Summary (2004-)

Major energy-saving activities at Nagoya University (For building equipment-related energy-saving measures, see the list marked * on the right; portion per campus and ongoing energy conservation measures published on website (2004-))

- Summer/Winter Energy-Saving Campaign and Lunchtime Lights Off Campaign (2004-)
- E-mail notice to reduce power consumption when usage is predicted to exceed the contracted capacity on Higashiyama Campus during summer time (2004-)
- Higashiyama Campus during summer time (2004-)
- Energy saving practice using energy saving check sheet (2005-)
- Energy saving practice ensured by appointing Energy Saving Promoters (2005-)
- Energy saving through university-wide summer break closure (2 weekdays in Aug) (2005-)
- Energy Saving Patrol (2006-)

Building equipment-related energy-saving measures (FY2010 results)

- Roof top greening (FY2010: 647 m²; total FY2007-2010: 8,314 m²)
- Installation of high efficiency transformers (44.8% on Higashiyama Campus, 44.8% on Tsurumai Campus, 100% on Daiko Campus)
- Installation of exterior wall insulation, thermal barrier waterproof sheets, thermal barrier paints, etc.
- Installation of high-efficiency inverter lights; air-conditioning system with high-efficiency inverters, motion sensors and energy-saving circulators; water cooling system with circulation powered by inverter pump

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Nagoya University, National University Corporation Environmental Report 2011 (Digest Edition)



The full version of the Environmental Report can be found at: <http://web-honbu.jimu.nagoya-u.ac.jp/fmd/rpt.html> (in Japanese)

Message from the President



Michinari Hamaguchi
President of Nagoya University

濱口道成

Nagoya University's Commitment to Harmonious Development of Human Beings and Nature

On behalf of Nagoya University, I would like to extend our deepest sympathy to all those affected by the Great East Japan Earthquake. We will continue to go all-out in our efforts to help affected areas and people recover as quickly as possible.

In fiscal 2010, in addition to the earthquake, tsunami and nuclear crisis in Japan, various weather anomalies, such as prolonged high temperatures in summer, and natural disasters were experienced around the world. Furthermore, the 10th Meeting of the Conference of the Parties to the Convention on Biological Diversity (COP10), held in Nagoya, and other environmental events have prompted urgent global action to address important environmental issues, such as continuous greenhouse gas reduction, protection and sustainable use of biological resources, and development of natural energy. In October 2010, Nagoya University revised its environmental policy to clarify its environmental goals and specific actions to be implemented. To fulfill our mission as a major leading university in Japan, and in keeping with the spirit of our new environmental policy, we have vigorously promoted environment-related education and research activities as well as various projects including facility upgrades. All constituent members of our university—students, faculty and staff—have actively been involved in environmental initiatives, including voluntary campus environment improvement activities (by student circles), university-wide programs to support COP10, and facility-related projects (construction and renovation of buildings, replacement with energy-efficient equipment) to achieve the goal of realizing the low-carbon eco-campus described in the Nagoya University Campus Master Plan 2010. Thanks to concerted and dedicated efforts by all University members, remarkable results have been achieved.

To meet the expectations of our stakeholders and society at large, we will continue our earnest, university-wide efforts to realize our environmental policy. In the Environmental Report 2011, we will share with you our environmental commitment as well as the progress and results of our environmental activities. In closing, I would like to sincerely ask for your continued support and encouragement for our future activities.

September 2011

Environmental Policy

The fundamental principles of scholarly activity for Nagoya University are set down in the Nagoya University Academic Charter. Within the Charter, it is written that "Based on the academic traditions of freedom and generosity, our mission is to contribute to the happiness and well-being of human beings, through research and education related to humanity, society and nature. The development of civilization and the current activities of human beings will have a great influence on future generations. Therefore, based on our Charter, and in order to fulfill our role in society and to contribute to the harmonious development of humanity and nature through research and education that are rich in imaginative power, we hereby set the following fundamental principle and policies of Nagoya University regarding the environment.

1 Fundamental Principle

Recognizing that human beings have created a vast diversity of cultures and values, we will, for the benefit of future generations, consider which aspects should be truly respected, and contribute to the realization of a society that can maintain such traditions and values.

2 Basic Policies

Basic Position

(1) In order to investigate the causes of environmental problems, and find suitable means for dealing with them, all academic fields will develop educational and research programs that aim toward sustainable development.

Environmental Management

(2) In order to plan further improvements in environmental management, we will (together with related parties) consider what attitudes and actions are necessary for universities, put them into practice, and further pursue them.

Environmental Performance

(3) Recognizing (together with related parties) that our own activities involve environmental effects and responsibilities, we will work to find comprehensive and systematic solutions that will reduce our environmental impact, and enable us to take preventive measures.

Social Responsibility and Environmental Communication

(4) With respect to laws and ethics, we will work to enhance trust from local and international communities, by making information available publicly, and through communication and mutual understanding with related parties.

(Approved by the President on August 1, 2005)
(Revised on October 12, 2010)

Revision of the Environmental Policy

The Nagoya University Environmental Policy, which had been in effect and remained unchanged since August 2005, was revised in October 2010 to respond more flexibly to changes in the environment surrounding the University.

The revised Environmental Policy clearly sets forth the basic policies that all related parties of Nagoya University must follow to ensure more practical environmental activities.

Introduction of Educational and Research Activities

Educational and research activities relating to environmental preservation undertaken by Nagoya University are listed in the Environmental Report 2011 (full version). From among the many educational and research projects, projects related to automobiles have been selected and featured in the Report.

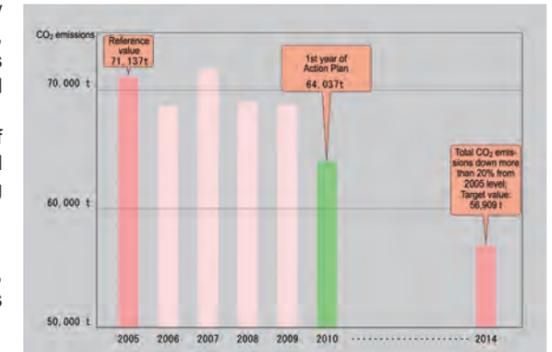
Results of Action Plan for CO₂ Emissions Reduction

In the Nagoya University Campus Master Plan 2010, Nagoya University announced a combined target of reduced CO₂ emissions from the Higashiyama, Tsurumai and Daiko campuses by more than 20% by 2014 from the 2005 level, as well as an action plan to achieve that target. (See page 9 of the Environmental Report 2010.)

In fiscal 2010, the starting year of the action plan, despite a long spell of scorching heat in summer, CO₂ emissions decreased by 10% compared to fiscal 2005, thanks to various new attempts including centralized control of air-conditioning units in the buildings.

Combined CO₂ emissions from Higashiyama, Tsurumai and Daiko Campuses

* The amount of increased CO₂ emissions due to the increased area of facilities after 2006 and introduction of large experimental apparatus is not included.



Engineering and Science Building—Super Energy-Saving Building

In March 2011, the Engineering and Science Building (E & S Building) was completed, which incorporates various energy-saving features.

The official name of this building is the "Central Building of Graduate School of Engineering/Particles and the Universe Research Building." The building houses the Graduate School of Engineering, the Department of Architecture of the Graduate School of Environmental Studies, and the Kobayashi-Maskawa Institute for the Origin of Particles and the Universe, to which Dr. Maskawa and Dr. Kobayashi, Nobel Prize winners in Physics, belong. The E & S Building is a complex research facility that includes a Nobel Prize exhibition room, lecture rooms, an assembly hall and a library.

The E & S Building incorporates various energy-saving technologies, including LED lighting in the entire building, sun-shading eaves and vertical louvers, rooftop greening, dry mist system, natural ventilation system and earth tubes. The Building meets Class "S" standards of the Comprehensive Assessment System for Built Environmental Efficiency-Nagoya (CASBEE-Nagoya).

The Environmental Report 2011 introduces Nagoya University's energy conservation efforts through facility improvement, featuring the E & S Building with a number of innovative energy-saving features.



Activities to Support the 10th Meeting of the Conference of the Parties to the Convention on Biological Diversity (COP10)

In October 2010, the 10th Meeting of the Conference of the Parties to the Convention on Biological Diversity (COP10) was held in Nagoya City, Aichi Prefecture. COP10 is one of the largest international conferences on the theme of the environment held in Japan in the first half of this century. Nagoya University undertook various activities and programs to support COP10, including public symposiums and a Nagoya University Museum special exhibition. The Environmental Report 2011 contains a list of all COP10-related activities and programs undertaken by the University, from which a joint forum hosted by Nagoya University and the COP10 Support Executive Committee—"COP10 Dialog Forum between Experts and the Local Public"—was selected and featured in the Report.

Environmental Circle "Song of Earth"

The Nagoya University Environmental Circle "Song of Earth" was formed in 1994 by a dozen or so students who were interested in environmental activities. The Circle's regular activities include weekly meetings, campus cleaning activities, and study meetings on environmental activities. The Environmental Report introduces the activities performed by Club members in 2010.

