Environmental Report 2009 Topics

NU-ESCO Project - Promoting Energy Conservation Activities

Since July 2008, Higashiyama Campus has been operating a "groundwater purification service business," which is able to cleanse groundwater to a level suitable for human consumption. The service has reduced public water consumption equivalent to approximately 30 million yen per year. Although the maximum groundwater intake in Higashiyama Campus reported to Nagoya City is 5,200 m3, the actual current intake is only 2,900 m³ per day (including 600 m³ to be used by the groundwater purification service), while confirming that this intake does not affect the groundwater reservoir level.

Utilizing the money saved through groundwater purification, Nagoya University started the Nagoya University Energy Service Company (NU-ESCO) project, which provides funding loans to laboratories and institutes that cannot secure sufficient budget to install new energy saving facilities.

This funding, known as the Energy Conservation Promotion Fund, is granted only for the replacement of existing facilities required for education and research with energy saving models, and features a partial exemption of repayment depending on the ranking of the energy conservation effects from the newly installed facilities.

Such energy saving facilities help reduce the costs for heating, electricity, and water. The loaned fund is usually collected in three to five years, and is then re-directed into other energy conservation measures for further cost reductions. Thus, energy management is directly linked to cost management.

Applications for these grants are invited from within the university, and their suitability is assessed by the Energy Conservation Fund Selection Committee.

The photograph shows a solar-powered floating water purifier installed using one such grant. This water purification project reduced the public water used for ponds in the university premises. For further details of the NU-ESCO project, please visit: http://web-honbu.jimu.nagoya-u.ac.jp/fmd/5skannrika/energy/SyoueneTorikumi/ESCO/H20ESCO.html



Floating Water Purifier in operation

Recycling Seaweed Cultivation Nets Links Sea and Mountains

I was born in a small town called Kira-cho, facing Mikawa Bay. Challenging the trend that interesting projects can only undertaken in cities, I wanted to start a new business in my home town and launched a business in 2004 to recycle repaired nets used to cultivate seaweed as animal fencing in the mountain villages.

Mikawa Bay is known for seaweed cultivation, and the nets are used as the base for implanting. When these nets become frayed and torn after long exposure to the weather, they are usually disposed of in landfills at a chargeable basis.

At the same time, farmers in mountain villages are suffering from increasing crop damage by deer, boars, and monkeys, and developing countermeasures against them incurs further financial burdens.

"You know, a seaweed net works very well as a deer fence," someone said to me one day... and suddenly I saw one solution for these two problems in his words. The size and strength of a seaweed net is just right to fence around an agricultural field. I focused on this point and I put a used net that I had bought and mended, on an Internet auction. The item attracted an unexpected level of interest.

Once I learned that there was a demand for used nets, all I needed to do next was take action. Talking to an NPO that operates in mountain areas across Japan, I found collaborators who would work on sales of these nets and managed to gain the trust of the community through support from the local government. Thus we gradually extended the

Different regions have different problems. If someone can take time to study the problems and offer solutions, it can make people a little freer from their difficulties. And I think that it is the responsibility-and privilege-of the person who noticed a potential solution to put that solution into practice. I would like to further extend my business, which aims to help solve people's day-to-day problems.



completed Master's Degree in the Graduate School of Environmental Studies in March 2009



Animal fence made from a seaweed net.

4th Homecoming Day -Human Beings and the Earth Environment

On Saturday, 18 October 2008, the 4th Nagoya University Homecoming Day was held under the theme of "Human Beings and the Earth Environment" in Higashiyama Campus. During the event, a variety of exhibitions and presentations that demonstrate the superior educational and research activities of Nagoya University were held. The aim was to deepen the understanding of visitors about the relationship between human beings and the environment, raise awareness about solving environmental problems, and foster children's intellectual interest and environmental knowledge

- ★ The 20th Anniversary in Nagoya, Forum: Creativity in the 21st Century with Nobel Laureates Under the theme of "Problems of the Global Environment - Message from Nobel Scientists," keynote lectures and panel discussions
- were given by Nobel Laureates, Dr. Ryoji Noyori (Nobel Prize in Chemistry), Dr. Paul Crutzen (Nobel Prize in Chemistry), and Dr. Leo Esaki (Nobel Prize in Physics).
- Panel displays and educational demonstrations were presented under different categories: Human Beings, Environment (environmental problems), Nature (natural disasters), and Global Warming (climate change). The displays also included panels concerning Aichi-Nagoya COP10 CBD (Conference of Parties 10 Convention on Biological Diversity), which will take place in Nagoya City in October 2010 in cooperation with the Nagoya City Bureau of the Environment.
- There was also a science show that included a range of interesting discussions, and also demonstration experiments and games to encourage elementary and high school students to learn and think about our lives and the Earth's environment.
- ★ Discussion: Aiming at a Post-Global Warming Society Challenge by Nagoya University Following a graphical presentation of increasing climate change, including desertification/sandstorms, flooding, and tornados, a session was held to discuss the technologies and policies necessary in aiming at a post-global warming society and Audience listening to a research presentation at one event. individual efforts to prevent global warming.



Start Making Your Personal Contribution to the Environment Today

Pages 11 and 12 in the Environmental Report 2009 are dedicated to "Nagoya University's Energy Conservation Measures." Nagoya University started the Energy Conservation Summer/Winter campaign and the Lunchtime Lights Off campaign in FY2004. Energy Conservation Stickers with a built-in thermometer to check room temperatures were distributed inside the university in FY2008, so that everyone can remain aware of the air conditioner temperature settings.

Turning off the air conditioning switch and the lights whenever we leave a room is a small action—however this will produce a massive saving in energy if practiced across the entire university.

Further, the Change Your PC to Energy Saving Mode campaign was started in FY2008. Just by changing the power management settings to "low," power consumption can be reduced by 30% or more. Always turn off your PC when leaving the room. Use a staircase rather than an elevator, not only for energy conservation but also for your own fitness!









Editorial Postscript

This year's Environmental Report Digest Edition looks back over recent environmental activities conducted by the University and summarizes their history. This made me realize just how important it is to make continual, self-motivated improvement efforts. This is the reason why we introduced simple energy conservation tips that everyone can start practicing today. We hope that these tips will also introduce you to wider eco-friendly activities. The Digest Topics also include some of the social contribution activities that Nagoya University students and alumni are carrying out.

If you are interested in this Environmental Report Digest Edition, please also refer to the main Environmental Report available from the Nagoya University Web site. We will continue to create reports that illustrate the distinctiveness of Nagoya University, and we welcome your direct and honest comments towards further improvement.

Takashi Yamane, Chair, Environmental Report Review Working Group

Next Step for Nagoya University

I participated in the Self-Assessment Committee for the Environmental Report 2009 for the first time, and this became an important experience for me. I learned about the diverse environment-conscious activities that Nagoya University operates.

Aiming to become one of the most advanced environmentally-aware universities in the world, I expect that Nagoya University will yield firm results in its Global COE Program, international programs for fostering environment-conscious human resources, and in its research and educational areas, where the university's core competences lie. At the same time, we students should take the lead in establishing a range of eco projects and discuss with the university and the community about how to put such projects into practice beyond the boundaries of the university.

Cao Ying, Doctoral Course (Year 1), Graduate School of Environmental Studies

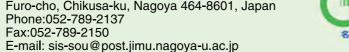
For the complete edition of the Nagoya University Environmental Report 2009, please visit: URL: http://web-honbu.jimu.nagoya-u.ac.jp/fmd/rpt.html

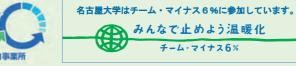
Nagova University celebrated its 70th anniversary (138th foundation anniversary) in 2009.



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Nagoya University, National University Corporation

Environmental Report

(Digest Edition)

Designated as an Aichi Cultural Property



Message from the President



Be Creative and Innovative for the Harmonious **Development of Human Beings and Nature**

As observed in the recent anomalous weather, the consequences of global warming are fraught with serious implications. This situation urges us to develop and utilize eco-friendly energy, and reduce greenhouse gases on a global scale. What we are facing today is the demand for the realization of a sustainable, low-carbon society, while still retaining the affluence of modern life. Being fully aware of the severe conditions affecting the environment, Nagoya University is actively employing a variety of energy conservation and environmental load reduction measures utilizing the creativity and innovation of our university members. One such attempt is the Nagoya University Energy Service Company (NU-ESCO) project. These efforts have resulted in Nagoya University being awarded a number of prizes, including the Nagoya Eco Establishment Awards - Excellence Prize.

Needless to say, the role and mission of a university is human resource development and making an intellectual contribution to society through its advanced education and research. Yet a university should not be satisfied just by fulfilling this mission. It should contribute to constructing a society where sustainable development with less environmental impact is possible. Out of the four Japanese Nobel laureates in 2008, three were originally from Nagoya University. This demonstrates that Nagoya University's educational and research standards indeed reach the world's highest levels. More importantly, Nagoya University is an archive of intellectual property that our excellent predecessors developed within its free and independent atmosphere. Through our cutting-edge education and research work, Nagoya University takes the initiative in the development of "technologies to reduce environmental impact," which in turn lead to "technologies with no environmental impact," further bolstering intellectual property for the next generation and for the good of society.

Michinari Hamaguchi, President of Nagoya University, September 2009

Environmental Policy

Basic Philosophy

- In recognizing the impact that our modern lives and activities have on the environment and future generations to come, Nagoya University intends to actively work towards and protect a sustainable environment.
- As the university continues to acknowledge the intellectual accomplishments of humankind, it also intends to reconsider academic priorities, as it broadens its perspective on the relationship between humans and the earth to adequately consider our long-term future together.
- Nagoya University fully commits itself, including the areas of education, research, university management, and social contribution, to realizing a better earth environment.

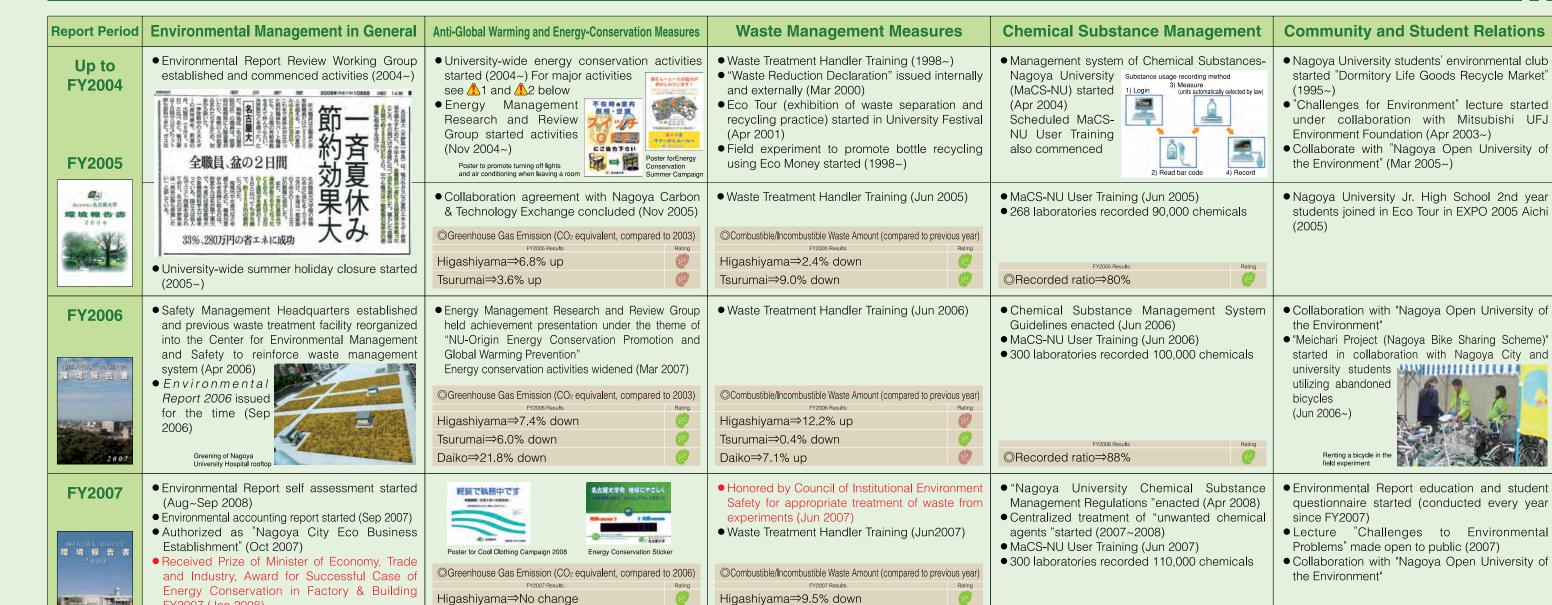
2 Basic Policy

- (1) In order to respond to environmental problems in the most appropriate manner, Nagoya University dedicates itself to the consideration of environmental problems from a comprehensive and systematic perspective, encompassing, human and natural sciences, and all other relevant fields.
- (2) Students will be encouraged to develop the ability to understand and analyze environmental problems as Nagoya University nurtures future pioneers in the field.
- (3) Through the cooperation of both students and staffs, Nagoya University will continue to create university policies that are best suited to addressing environmental issues.
- (4) Nagoya University will pursue a comprehensive and systematic policy set in order to reduce the university's negative impact on the environment and to realize objectively its proper role and influence regarding the environment.
- (5) Nagoya University is dedicated to addressing both regional and worldwide environmental issues in a proactive manner. As these policies take root from a local level, it is intended that they will also connect to larger international-level responses to environmental problems.

August 1, 2005 President of Nagoya University Shin-ichi Hirano Nagoya University continues university-wide environmentrelated activities. These activities are summarized here.

Red text refers to awards received

= Improved over previous year = Further improvement required



FY2007 (Jan 2008)

Establishment-Excellent Prize 2008 (Feb 2009)

 Received Excellent Prize, Aichi Environmental Award 2008 (Mar 2008)

Received Nagoya City Eco Business

Take further initiatives in continuing

improvement of environmental management

Factory & Building FY2007

- Tsurumai⇒10.7% up Daiko⇒0.9% down
 - NU Library and an ESCO concluded comprehensive service agreement for energy conservation (Aug 2008)
 - NU-ESCO energy conservation business started (Jul 2008~)
 - ©Greenhouse Gas Emission (CO₂ equivalent, compared to 2006) Higashiyama⇒11.0% down Tsurumai⇒1.0% up Daiko⇒8.8% down

Energy management promotion groups

in university continue organized activities

- Higashiyama⇒6.1% up 🙋 Tsurumai⇒1.0% up Daiko⇒26.1% down
- Plastic bags from NU CO-OP became chargeable OCombustible/Incombustible Waste Amount

Notice about chargeable

• 330 laboratories recorded 120,000 chemicals

©Recorded ratio⇒69%

©Recorded ratio⇒74%

MaCS-NU User Training (Jun 2008)

Nagoya University extension lectures (Aug~Oct

• 4th Homecoming Day, attended by a total of 5,000 alumni, students' families and members

• Students participated in Self-Assessment Committee for the first time and will be further involved in related activities

Energy Conservation Activities Summary

FY2009

FY2008

- Major energy-saving activities in Nagoya University (For infrastructural energy saving scheme, see 12) ① Monthly energy consumption per campus and ongoing energy conservation schemes published on Web
- ② Energy Conservation Summer/Winter campaign and Lunchtime Lights Off campaign (2004~)
- in Higashiyama Campus during summer time (2004~)
- ④ Energy conservation activity survey using energy conservation check sheet (2005~)
- 🖲 Energy conservation practice ensured by appointing Energy Conservation Promoters (2005~) ⑥ Energy conservation by university-wide summer holiday closure (2 week days in Aug) (2005~)

Scheduled Waste Treatment Handler Training and working

on waste reduction and recycling rate improvements

Tsurumai⇒1.9% down

Training (Jun 2008)

(compared to previous year)

• Waste Treatment Handler

Daiko⇒3.3% up

(Oct 2008)

- Infrastructural energy conservation measures (FY2008 Results)
 - Greening of rooftops (1,330 m² in FY2008, total 5,120 m² between FY2001~2008)
 - Usage of high-performance insulated glazing (4,230 m² in FY2008, total 10,570 m² between FY2003~2008)
 - ③ Installation of high efficiency transformers (34.1% in Higashiyama Campus, 44.9% in Tsurumai Campus, and 100% in

Promote MaCS-NU to expand usage of the

- Building refurbishment incorporating exterior wall insulation, thermal barrier waterproof sheets, thermal barrier paints, etc.
- © Energy efficiency measures taken, including installation of high-efficiency inverter lights; air conditioning system with high-efficiency inverters, human sensors, and energy-saving circulators; water cooling system with circulation powered by inverter pump, etc.