

岡山大学

OKAYAMA UNIVERSITY

ENVIRONMENTAL
REPORT 2017



OKAYAMA
UNIVERSITY

GLOBAL GATE FOR LEARNING



OUT LINE 2017

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Scope of this Environmental Report (Research and Education Activities in the Areas Listed Below)

Tsushima Campus / Shikata Campus / Kurashiki Campus (The Institute of Plant Science and Resources) / Misasa Campus (The Institute for Planetary Materials) / Attached Schools (Higashiyama Campus: Kindergarten / Primary School / Junior High School / Hirai Campus: School of Special Needs Education)
(Cases that include areas that are not listed above are described therein.)

Period and Issuance of the Report

Period: April 2016 to March 2017

Issued: September 2017 (Planned date of next issue: September 2018)

1.Okayama University at a Glance

University Name : National University Corporation Okayama University

Address : 1-1-1 Tsushima-naka, Kita-ku, Okayama 700-8530 Japan

Foundation : April 1870

President : Hirofumi MAKINO

Students and Staff : 18,551 people

Name of Campus : Tsushima Campus / Shikata Campus / Higashiyama Campus / Hirai Campus / Hachihama Campus / Tsudaka Campus / Kurashiki Campus / Misasa Campus / Honjima Campus / Ushimado Campus / Haga Campus etc.

Classification	Breakdown	Classification	Breakdown
Executives 9 people	President (1) Executive Vice Presidents (6) Inspectors (2)	Graduates 2,969 People	Master's Course (1,670) Doctor's Course (1,210) Professional Degree Course (89)
Faculty and Administrative Staff 4,048 people	Professors (484) Associate Professors (391) Senior Assistant Professors (130) Assistant Professors (505) Research Associates (9) Teachers (100) Clerical Employees/Technical Employees (2,429)	Children 1,358 people	Primary School (622) Junior High School (535) School of Special Needs Education (58) Kindergarten (143)
Undergraduates	10,167 people	Total	18,551 people

2. Message from the President



Hirofumi MAKINO
President, Okayama University

Okayama University has set the goal of establishing a new paradigm to address wide ranging issues related to humankind's coexistence with nature, issues such as the environment, energy, food, economy, health-care, safety, and education, through the application of innovative concepts expanded from conventional intelligent systems to ensure sustainable development. To achieve this, I have created a vision, "Going beyond, toward a fruitful academic capital," to achieve the goal includes the 17 items in the Sustainable Development Goals established by the United Nations in 2015.

Okayama University now offers programs in 11 faculties, 7 graduate schools, and 3 research institutes, including environmental programs in the Faculty of Environmental Science and Technology and the Graduate School of Environmental and Life Science that focus on research and education designed to develop better solutions for society. Furthermore, the Environmental Management Center that was established as a special waste fluid processing plant in 1975 continues to provide solutions for application to environmental management. The Environment health & Safety Department that we established in 2004 was restructured into the Environment Health & Safety Intelligence Department in 2015 to enhance strategic performance. We recognize the importance of achieving a thorough and comprehensive approach to the environment, safety and health through the combined efforts of all staff at the university, and are committed to our responsibility to respond to the expectations of the local community as a model of sustainability.

As is set forth in our environmental policy, based on the recognition that protecting and passing down the bounty of nature in the global environment to the next generation should be a fundamental pursuit, Okayama University strives to do its part in contributing to the realization of a sustainable recycling-oriented society and reducing environmental load through its research and education programs as well as in a wide range of other activities throughout the university with the goal of creating a sustainable campus. Our social responsibility has increased due to current social conditions such as the urgent need to consider measures against global warming. With this as a focus, we include the promotion of education on environment and safety, including risk management for chemical substances, and energy-saving measures in our 3rd Mid-Term Plan. We promise to push forward toward the achievement of each goal.

I hope this report helps everyone in the Okayama University community to fully understand our approaches to environmental issues, and I look forward to your continuing cooperation and support in our pursuit of sustainability.



3. Okayama University Environmental Policy

Basic Principle

Based on the recognition that protecting and passing down the bounty of nature in the global environment to the next generation should be a fundamental pursuit, Okayama University strives to do its part in contributing to the realization of a sustainable recycling-oriented society and reducing environmental load through its research and education programs, and in a wide range of other activities throughout the university with the goal of creating a sustainable campus. In addition, we have also worked with the city and its communities to establish a new university town designed to serve as a base for international research in collaboration.

Basic Policies

Okayama University leverages the characteristics of its 11 faculties and seven graduate schools, related three research laboratories, attached hospital and schools to promote the following activities:

1. Research and education related to the global and regional environments and biodiversity, the cultivation of human resources that exhibit a high degree of comprehension applicable to environmental areas both at home and abroad, and research that contributes to the preservation and improvement of the environment.
2. Extension courses and symposiums on the environment, collaboration with regional society, and contributions to the environment.
3. Compliance with laws, regulations, agreements, and voluntary standards regarding the environment.
4. Global environment preservation activities in business activities:
 - (1) Promotion of energy saving
 - (2) Measures against global warming
 - (3) Measures for resource saving
 - (4) Waste reduction, recycling, and the proper processing of hazardous waste
 - (5) Promotion of green purchasing
 - (6) Thorough management of chemical substances
5. The continual improvement of environmental preservation activities by faculty, students and everyone else at Okayama University.

April 1, 2017

Hirofumi MAKINO

President, Okayama University



4. Environmental Education

Environmental Education Courses

Okayama University provides a wide variety of environment-related programs in both general education and major subjects at each faculty. We have set the goal of becoming a sustainable university and hope that many students take an active interest in enrolling in these environment-related programs.

Okayama ESD Project Received the 2016 "UNESCO-Japan Prize"

Graduate School of Environmental and Life Science Prof. Hirofumi ABE

(1) Education for Sustainable Development (ESD) and Approaches in Okayama City

The United Nations Decade of Education for Sustainable Development (UN-DESD) started in 2005. UNESCO was designated as the lead agency for its promotion during the decade. The ESD-related organizations in the Okayama City area established the Okayama ESD Promotion Commission in April 2005. The area was certified as one of the seven initial Regional Centres of Expertise (RCE) on ESD by the United Nations University in June 2005.

The Graduate School of Environmental and Life Science and the UNESCO Chair at Okayama University have been promoting ESD in collaboration with stakeholders in Okayama RCE as well as domestic and international organizations. The UN-DESD came to an end in 2014. UNESCO and the Ministry of Education, Culture, Sports, Science and Technology (MEXT) in Japan held the UNESCO World Conference on ESD in Okayama City, Aichi Prefecture and Nagoya City in November 2014.

(2) Okayama ESD Project Received the " UNESCO-Japan Prize "

The UNESCO-Japan ESD Prize is funded by the Government of Japan and consists of three annual awards during the five-year period from 2015 to 2019. Winners are selected every year by the Director-General of UNESCO on the basis of recommendations submitted by an independent jury of five international ESD experts. The three 2016 Prizewinners were chosen from among 120 nominations submitted by 64 UNESCO Member States and 10 NGOs in official partnership with UNESCO. The Okayama ESD Promotion Commission was selected as the 2016 UNESCO-Japan Prizewinner. Prof. Hirofumi Abe at Okayama University, the chairperson of Okayama ESD Promotion Commission, received the prize from the Director-General of UNESCO on 11 October 2016.



Award Ceremony at the UNESCO head office
(© UNESCO)

(From left, Ms. Sato, Japanese ambassador for UNESCO, Ms. Konishi, Okayama City official, Prof. Abe, Okayama University, and Ms. Bokova, the Director-General of UNESCO)

Environmental Education at the Okayama University Faculty of Education's Affiliated Kindergarten

Our kindergarten nurtures children through contact with a wide range of nature, including small animals, flowers, vegetables, trees, water, sand, and soil.

Every morning, students in oldest age group (5- and 6-year-old children) are in charge of pulling weeds, raking leaves, and watering plants. Through these activities, the children experience a great feeling of satisfaction by cleaning their living environment and learn a lot from the soil, water and other aspects of nature they come into direct contact with. Children also learn a lot more from the many other activities they are involved in at the kindergarten, activities such as growing plants, taking care of smaller animals, and separating garbage.

We believe this experience in childhood develops the children's awareness of the natural environment and environmental conservation, which forms the foundation for future environmental education.



Individual and Group Responsibilities
- Cleaning Fallen Leaves

“Environment and Local Community – Learnings from Mizushima, Kurashiki City”: Environmental Education as a Community-Based-Practical Learning

Academic and General Okayama University Regional Research Association(AGORA)
Assoc. Prof. Kanae ISHIMARU

This course focused on the environment and the local community, in relation to a pollution problem which arose at Mizushima area of Kurashiki city. The course includes lectures of the various actors in pollution issue, fieldworks to the site, group works using role-playing and RPA tools, and open house presentation. Aims of this course are to train the mind to think through critical examination from multiple points of views, which enables students to have good humanity and actions when they become an individual as a member of society.



Students talking with pollution victims.

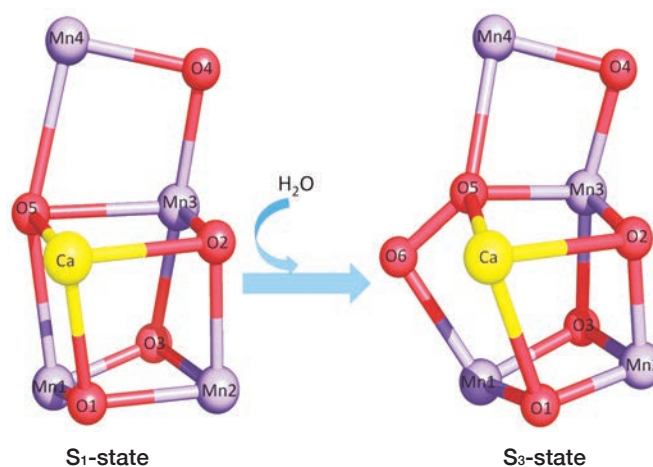
5. Environmental Research

Learning from Photosynthesis of Plants for the Highly Efficient Utilization of Solar Energy

Research Institute for Interdisciplinary Science Prof. Jian-Ren Shen

Photosynthesis performed by various plants and other photosynthetic organisms utilizes light energy from the sun to convert CO₂ and water into carbohydrates, concomitant with the release of molecular oxygen. The organic compounds and oxygen produced by photosynthesis are indispensable for sustaining almost all life forms on the earth. The first reaction of photosynthesis is the water-splitting reaction catalyzed by photosystem II (PSII), a huge membrane-protein complex. Elucidation of the mechanism of water-splitting is not only important for the complete understanding of photosynthesis, but may also bring important clues to artificial photosynthesis that aims to utilize light energy efficiently.

In order to reveal the water-splitting mechanism, we have solved the structure of PSII at 1.9 Å resolution using synchrotron radiation X-rays in 2011. In 2015, we utilized femtosecond X-ray free electron lasers (XFEL) to solve the radiation damage-free structure of PSII at a high resolution, which uncovered the damage-free structure of the catalytic center for water-splitting, a Mn₄CaO₅-cluster. In 2017, we used a pump-probe approach with the XFEL to solve the structure of a reaction intermediate state, the S₃-state, induced by two flash illumination. The results showed that a new oxygen atom was inserted near O5, a unique oxo-bridged oxygen within the Mn₄CaO₅-cluster, enabling O5 and O6 to form a molecular oxygen (Figure).



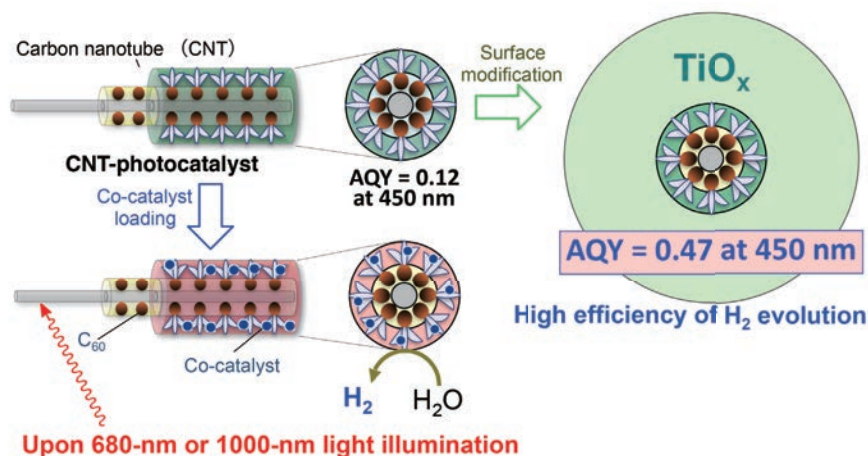
Structural changes of the Mn₄CaO₅-cluster during the S₁-S₃ state transition.

Carbon Nanotube Photocatalyst for Effective use of Solar Energy

Graduate School of Environmental and Life Science

Assoc. Prof. Yutaka TAKAGUCHI, Sr. Asst. Prof. Tomoyuki TAJIMA

New photocatalysts based on single walled carbon nanotubes (SWCNTs) have developed. SWCNT/C60 coaxial heterojunction was fabricated via a self-organization technique using fullerodendron to make SWCNT act as the photocatalyst. And they performed the highly efficient H₂ evolution reaction from water, e.g., the (8, 3) SWCNT/fullerodendron coaxial photocatalyst shows H₂-evolving activity (QY = 0.015) upon 680-nm illumination, which is the absorption of (8,3) SWCNT. Furthermore, the efficient strategy to improve the solar energy conversion efficiency of SWCNT-photocatalysts by the decoration with a TiO_x shell via the sol-gel method using Ti(PrO)₄ was reported. Since the TiO_x shell can act as an electron extracting layer, the efficiency of the photocatalytic H₂ evolution surprisingly improved from 0.12 (QY before TiO_x-decoration) to 0.47 (QY after TiO_x-decoration) upon photoirradiation using monochromic light ($\lambda = 450$ nm). Owing to strong absorption coefficients and ease of modifications of SWCNTs, the CNT-photocatalyst could be a powerful candidate of the material for the solar energy conversion and H₂ production without CO₂ emission.



CO₂-free hydrogen production from water using the CNT-photocatalyst.

6. Environmental & Social Contributions

Volunteer Activity for Environmental Preservation of Forest Resources

Academic and General Okayama University Regional Research Association (AGORA)

Prof. Satoshi MIMURA

Volunteer activity for environmental preservation of forest resources is designed to help students learn about the importance of forests and forestry, including their public functions, through a 2-week program of activities involving the use of wood. It is an environmental education program in which students learn about forest preservation and the cultivation of water resources through on-site experience.

Okayama boasts the highest production of Japanese cypress in Japan. However, the industry has been faltering because of falling timber prices, the aging of and drop in the number of individuals engaged in forestry, and the growing number of planted forests whose urgent maintenance is being neglected because of decreasing manpower in the industry. To address these issues, university students are helping to develop sound planted forests.

In 2016, the volunteer activity was held twice with the participation of 16 Okayama University students. They were mainly engaged in on-site work, but also had interaction with children and other residents in the community. They then held a meeting on the final day to report on the results of their activity.



Thinning Activity

Extension course Hosted by the Faculty of Environmental Science and Technology, Okayama University: “Ability of Chemistry to Realize a Sustainable Society Friendly to the Environment”

To solve the environmental issues and energy problem, not only development in chemical technologies but also construction of environmentally friendly, sustainable societies are important tasks. On Saturday, September 24 and Sunday, September 25, 2016, Okayama University held an extension course under the theme of “Ability of chemistry to realize a sustainable society friendly to the environment.” Six faculty members of the Faculty of Environmental Science and Technology gave lectures, in which challenging activities based on chemistry and latest research outcomes were introduced.

- (1) Glass and the environment Prof. Tokuro NANBA
- (2) Molecular technologies challenging the environment-conscious materials
Assoc. Prof. Yutaka TAKAGUCHI
- (3) Chemical engineering struggling with environmental issues Prof. Yoshiei KATO
- (4) Inorganic materials contributing to environmental preservation and improvement
Prof. Yoshikazu KAMESHIMA
- (5) Environment-friendly chemical processes converting wastes into valuable substances
Prof. Yukitaka KIMURA
- (6) The environment and plastics
Prof. Kunio KIMURA



At a lecture on the second day

Public Lecture Hosted by the Okayama University Waste Management Research Center “Sorts of Waste Recycling ~ Watch The Recycling Trends ~”

Public lecture on the title of “Sorts of Waste Recycling ~ Watch The Recycling Trends ~” was held by Okayama University Waste Management Research Center on 11th of June, 2016 (Sat). The following lectures in terms of importance in waste discharger’s positive recycling activities, waste recycling trend of biomass waste and small home appliances were presented.

- (1) “Recent activities of 3R promotion of solid waste”
Assoc. prof. Yasuhiro MATSUI, Waste Management Research Center
- (2) “Energy utilization of biomass waste”
Prof. Katsuya KAWAMOTO, department of Environmental Science and Technology
- (3) “Recycling trend of small home appliance waste”
Vice-director, Prof. Takeshi FUJIWARA, Waste Management Research Center

After the seminars, we provided sufficient time for questions and answers, and had discussions among participants and the three presenters. The active opinion exchanges among participants and presenters made for an effective discussion of the issues.



Scene of public lecture ~ lecture students listening eagerly

Public Lecture Hosted by the Okayama University Environmental Management Center

“The Environmental Problems in Japan and Environmental Activities Held by Okayama University”

On Saturday, December 10, 2016, Okayama University Environmental Management Center hosted a program of public presentations entitled “Environmental Problems in Japan and Environmental Activities Held by Okayama University.”

First, Shinichi NISHIMURA, Head of the Environmental Management Center, talked about the environmental issues in Japan that began with pollution problems and which have changed along over time, and about the concept of the environmental management developed through the changes of the environmental policies of Japan.

Prof. Fumiaki TAKEUCHI then talked about the influence of global warming, the importance of the proactive measures, basic environmental plans established by Okayama University, and cases and evaluations of measures. Assoc. Prof. Shinichi SAKIDA finished up the presentations with a talk on Okayama University’s environmental management organization, environmental education and research, voluntary environmental activities, and environmental load with reference to the Environmental Report released each year. Participants were pleased with the presentations, stating that they were very meaningful and highlighted the importance of eco-friendly activities. Furthermore, some asked Okayama University to continue with social contributions aimed at solving a wide range of environmental issues.

Participants in the public presentations hosted by Okayama University received certificates of completion.



Ceremony for Award of the Certificate of Completion

Public Presentations Hosted by the Okayama University Environmental Management Center “Composition of Future Society Seen from Resource Circulation”

On Saturday, June 18, 2016, the Okayama University Environmental Management Center hosted a program of a public presentations entitled “Composition of Future Society Seen from Resource Circulation.” The following presentations were given:

- (1) “Plan for the 21st Century, an Era in which the Relationship between Humans and the Earth may Change”
President of the Institute for Promoting Sustainable Societies Itaru YASUI
- (2) “Future Resource Circulation Utilizing Urban Mines”
Department of Materials Engineering, The University of Tokyo
Designated Assoc. Prof. Ichiro DAIGO
- (3) “Achievements and Future Approaches in Kawasaki Ecotown Project – Creating a Sustainable City Utilizing Environmental Technologies and Industries”

Economic and Labor Affairs Bureau, International Economic Affairs Office City of Kawasaki Akikazu KOBAYASHI
Each of the presentations provided a wealth of interesting information on ways to develop a sustainable future society, including concepts and case studies on achieving goals for global warming set by the Paris Agreement, effective utilization of urban mines as resources, the introduction of excellent technology developed at Kawasaki Ecotown, and also future tasks to be carried out. Participants asked many questions.

During the Environment Month Campaign in June of each year, the Environmental Management Center holds public presentations. We hope to see you there too.



Public Presentation

7. Voluntary Environmental Improvement Activities

Complete Ban on Smoking at Okayama University-Tasks and Measures-

Health Service Center Prof. Yoshiaki IWASAKI

Okayama University completely banned smoking on campus on April 1, 2014 as part of its program to prevent passive smoking. Decreased passive smoking in university staff after the ban was confirmed by questionnaire and assessment of urinary cotinine levels. However, smoking around the university campus and heat-not-burn tobacco use remain as a problem.

In an effort to reduce smoking around the university campus, we have posted warning posters, sent alert e-mails to students, recommended that smokers to consult an outpatient clinic about smoking cessation, and provided a detailed explanations of the university policy against smoking to the neighborhood associations around the campus.

On the other hand, heat-not-burn tobacco may be harmful for users and lead to passive smoking. The Special Committee Against Passive Smoking reported to the chairperson of the Health and Safety Committee of Okayama University that heat-not-burn tobacco should also fall under the complete ban on smoking on campus.



Notice of Complete Ban on Smoking in Campus

Recycling market

ECOLO, the Okayama Univ. Environmental Club (Okayama daigaku kankyo-bu) held its annual event, recycling market “Recycle Ichi,” on March 30th, 2017.

This year, we collected about 400 items from seniors, and most of these were then sold. In addition, several television stations and newspapers came to cover the event. We appreciated the chance to publicize the event to the community.

Our hope is that this event will encourage all students to think more about the environmental issues the world is facing. Our vision is to hand these eco-friendly activities down to the next generation and maintain the recycling systems at Okayama University. To achieve this goal, ECOLO will continue holding this event.



Recycling market

Clean Campus 2016

The Okayama University Cooperative Association Student Committee (C.C.C!) “Clean Campus 2016” activity took place at the Shikata Campus on October 9, and at the Tsushima Campus on October 16. The C.C.C! holds its clean campus activity in autumn every year hoping that it will increase student interest in the environment. In addition to activity staff, 51 students, teachers and other employees at Okayama University participated. The garbage they collected filled eight 90-liter bags included 909 cigarette butts.

The C.C.C! posts a report on this activity in its newsletter and continues with its cleaning activities, calling for the collection of plastic bottle caps and empty lunch set containers to raise student awareness about the environment and encourage them to take action.

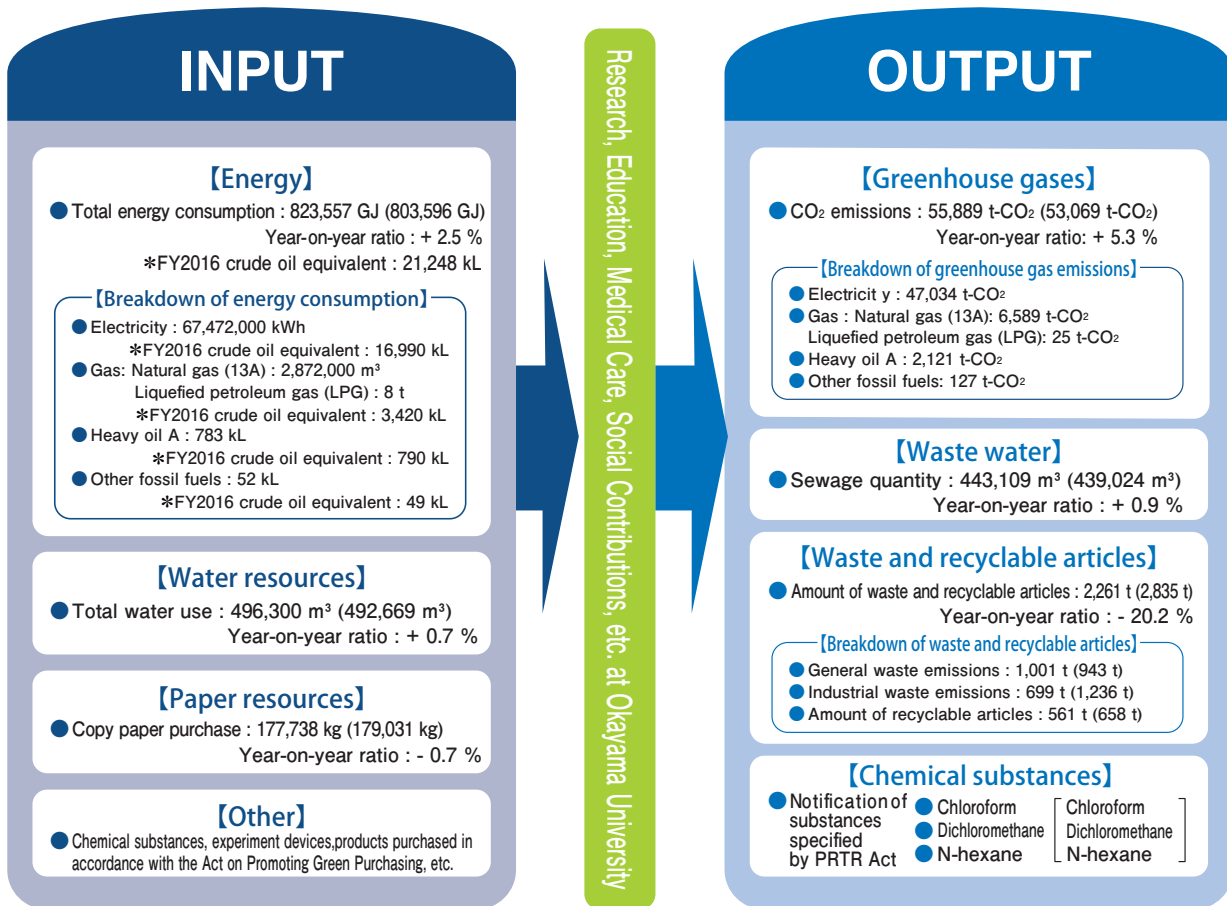


Clean Campus 2016

8. Environmental Load

We produce environment load in a wide range of activities in research, education, and medical care at Okayama University. The next figure gives an overview of the FY 2016 Okayama University Material Balance.

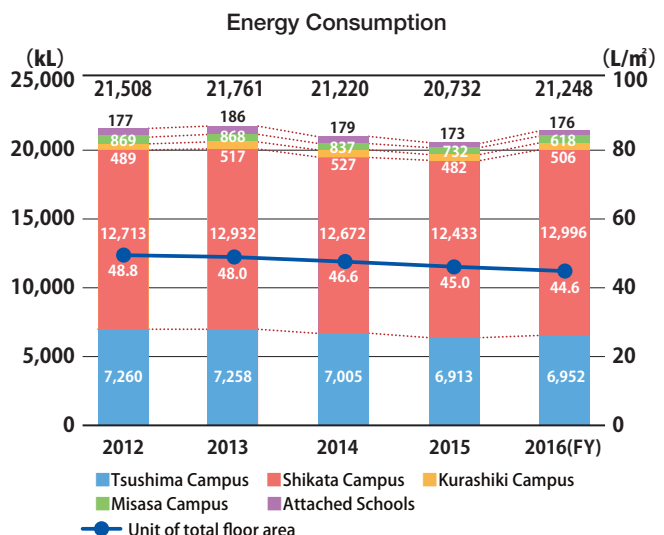
Okayama University understands its environmental load, and sets the six priority items described below to reduce it : (1) Promotion of energy saving; (2) Measures against global warming; (3) Measures for resource saving; (4) Waste reduction, recycling, and the proper processing of hazardous waste; (5) Promotion of green purchasing; and (6) Thorough management of chemical substances.



Environmental Load of Okayama University for FY2016. Parentheses denote environmental load for FY 2015.

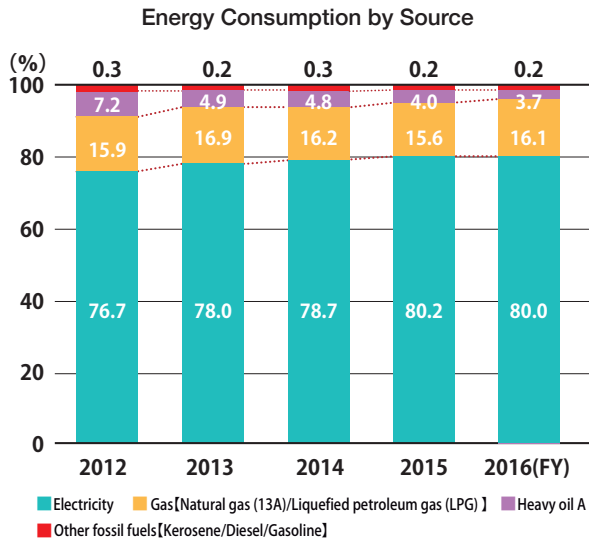
Energy Consumption

Total energy consumption by Okayama University in FY 2016 was the crude oil equivalent of 21,287 kL (increase of 2.5% from the previous year). The decrease was mainly the result of decreased air conditioner use due to a milder summer (July – September) and winter (December – March) compared with past Okayama City averages.



Energy Consumption by Source

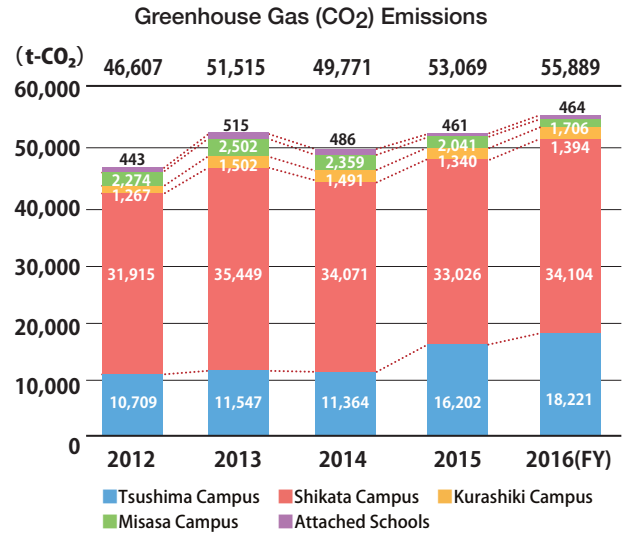
Looking at total energy consumption by Okayama University, the ratio of heavy oil consumption is on the decrease in the medium- and long-term run while electric power consumption is on the increase. This suggested a greater need to enhance our approaches to energy saving, including improvement of facilities, and electricity saving by employees and students at the university.



Greenhouse Gas (CO₂) Emissions

Okayama University is working on the reduction of greenhouse gases, especially CO₂ emissions from energy consumption, as one of its measures against global warming.

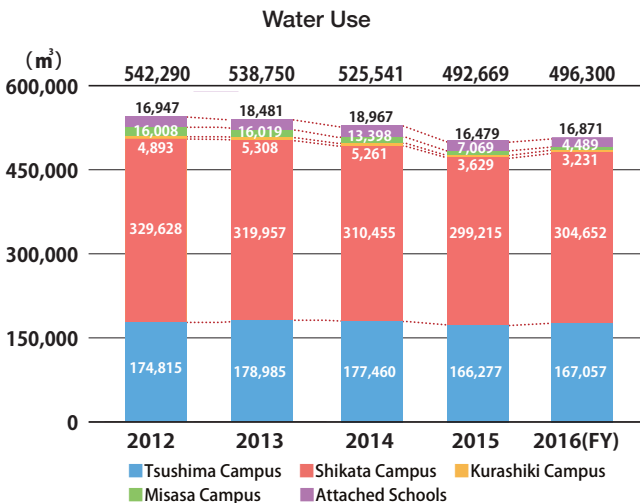
CO₂ emissions in FY 2016 totaled 55,889 tons, a 5.3% increase from the previous year. This increase resulted mainly from an increase in the coefficient along with changes of factors applied in the conversion of electricity to CO₂ equivalents.



Water Use

Total water use in FY 2016 was 492,669 m³, a 0.7% decrease from the previous year.

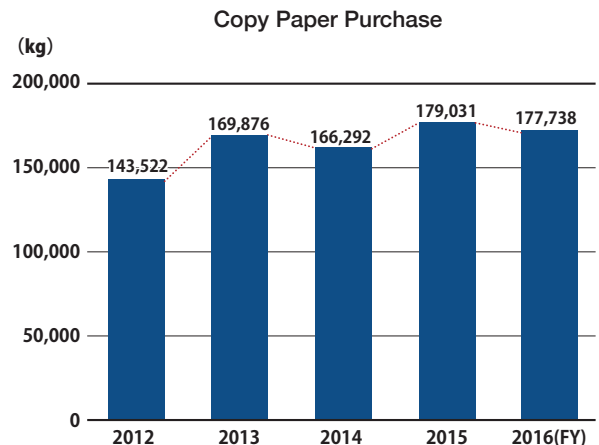
We continue working on saving water through the implementation of equipment and enlightenment activities.



Copy Paper Purchase

Okayama University works on reducing the use of paper, especially copy paper. Copy paper purchased in FY 2016 totaled 177,738 kg, a 0.7% decrease from the previous year.

We promote reduced paper use by tracking individual copy machine use, the increased use of tablets and encouraging two-sided printing. We analyze copy paper use to establish resource-saving measures.

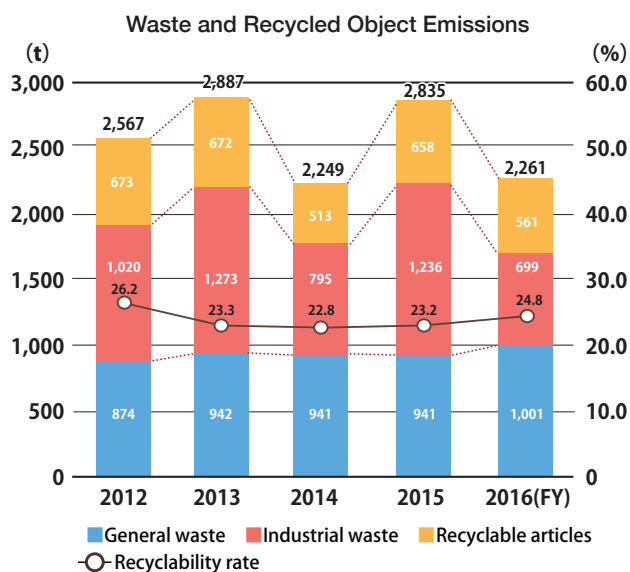


Waste and Recycled Object Emissions

All emissions have been decreased, while the ratio of the recyclable articles against the total waste (recyclability rate) of FY 2016 increased a little from the previous year. However, General wastes has increased

University employees and students are engaged in waste separation. Checks have continued at waste collection sites on campus, and paper waste collection for recycling is well known throughout the campus.

We continue to promote waste separation, and the reduction and recycling of waste.



Facility Improvement Considering the Environment

Okayama University has developed a sustainable campus that contributes to a sustainable and environmentally friendly society with a focus on reducing environmental load through the promotion of energy and resource saving.

For facility improvement in 2016, the university adopted spray foam heat insulation for exterior walls, double-layered windows, rooftop heat insulating, waterproof materials, LED lights, high- efficiency transformers and air conditioning systems, total heat exchange type ventilators, recycled piping material, and energy-efficient appliances that are compliant with the Act on Promoting Green Procurement. In order to reduce our environmental load, including resource saving, we reduce, reuse, and recycle by-products generated through construction work. In addition, with the implementation of measures to reduce exhaust gas emissions and the use of low-noise type construction equipment, we consider the environment around the construction sites. We continue working on facility improvements that consider the global environment and the reduction of maintenance costs.



Faculty of Education Lecture Hall Rooftop
(High-efficiency air conditioner/ Rooftop heat insulating and waterproof materials)

Education for measures for controlling global warming

Okayama University established its Basic Plan to Promote Global Warming Countermeasures (“Basic Plan”) targeting the period between 2016 and 2020 to specify the reduction of greenhouse gas emissions, the provision of care for the environment through the purchase and use of green products, the improvement and management of facilities, the provision of information on the state of greenhouse gas emissions by employees and students as well as measures to reduce them, and evaluation of the system and its state of implementation.

The Environmental Management Center makes a wide variety of posters to promote global warming countermeasures in line with the Basic Plan (Photo). We also deliver materials to highlight the importance of global warming countermeasures to students, teachers and other employees at the university.

We also hold seminars on priority issues to promote global warming countermeasures, examples of countermeasures, and evaluation results, actions we have taken to follow the Act on Promoting the Reduction of Emissions of Chlorofluorocarbons Emissions, and measures for resource saving.

In order to reduce greenhouse gas emissions, Okayama University collects data on energy used throughout the campus, and works to raise the awareness of students, teachers and other employees through the dissemination of the Basic Plan and evaluations of the state of our measures to promote continual enlightenment activities and improve our facilities.



Poster for controlling global warming

Appropriate Management of Chemical Substances

Okayama University handles a wide range of chemical substances in its research, education, and medical care activities. In order to promote the appropriate management of these chemical substances, we instituted the Chemical Substance Management Regulations and Implementation Guidelines on April 1, 2014. The regulations clarify the management system, scope, and target substances, which facilitated the reinforcement of the university’s chemical substance management system.

We also promote increased employee and student awareness about chemical substances through chemical substance management seminars, education and practice prior to experiments, and audits of chemical substance management.



Chemical substance management seminar

Editorial Note

I was assigned this April to supervise environmental management at Okayama University. My specialty is organic synthetic chemistry, and I have been working on environmental preservation and related studies from the perspective of chemistry. While I am in this post, I would like to listen to the voices of those who are engaged in on-site work to establish better approaches to environmental management.

In Environmental Report 2017, in addition to the actual status of our environmental education and research, regional contributions, environmental activities as well as measures for energy and resource savings, we also featured the utilization of highly efficient solar energy researched by Professor Jian-Ren Shen, who is one of the world's top researchers in photosynthesis reaction mechanisms. I hope this will provide direction to consideration of future environment and energy issues.

As is in the above message from new Okayama University President MAKINO, we will reinforce university operations to achieve the sustainable development goals (SDGs) in partnership with the United Nations based on our slogan, "Creating a vibrant academic environment here in Okayama." The Okayama ESD Project led by Professor Hirofumi ABE (former Director of Okayama University) received the 2016 UNESCO-Japan Prize on ESD. This will raise the awareness of the entire university community about the need to create a sustainable society and address environmental problems. I look forward to your continuing support and cooperation.

Seiji SUGA

Executive Vice President for Finance and Facilities,
Okayama University

Edition & Planning: Environmental Management Committee, Environmental PR Council
Fumiaki TAKEUCHI, Shinichi NISHIMURA, Kuranoshin KATOU, Hideki KASAHARA, Tadashi AKASHI,
Yasuhiko YAMASHITA, Sinzai MASANORI and Toshitugu MOROIZUMI



University Mark

OKAYAMA UNIVERSITY ENVIRONMENTAL REPORT 2017

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