Environmental Report 2021

KOBE UNIVERSITY

Kobe University
Environmental Report 2021

Message from the President



Masato Fujisawa, University President

April 2005: Professor at Kobe University Graduate School of Medicine
February 2014: Director of Kobe University Hospital
February 2018: Advisor to the President of Kobe University
April 2019: Dean of Kobe University Graduate School of Medicine and School of Medicine
April 2021: President of Kobe University

Located in an international port city, Kobe University constantly strives to pursue knowledge and cultivate human resources who can contribute towards society, in keeping with its ideal of fostering 'harmony between theory and reality'. The university has produced many graduates with active careers across all fields.
Looking at the world today, there are many problems occurring on a global scale, such as the COVID-19 pandemic that began the year before last. Natural disasters such as earthquakes and localized torrential rains; climate problems related to global warming; environmental and energy crises facing societies that aim to become carbon-free; poverty, famine, and food-related problems in developing countries; human rights issues related to race and gender; peace issues involving nuclear weapons; the chaos of international politics; health and welfare issues in super-aging societies. There is no end to the list of challenges we must face, and all of these are global issues that the whole world must tackle together. At Kobe University, we aim to actively engage in cutting-edge international joint research and education directed towards resolving these worldwide problems.
With regard to Japan, Prime Minister Yoshihide Suga announced in his general policy speech at the 203rd Extraordinary Diet Session on October 26, 2020 that: "We will aim for zero total greenhouse gas emissions by 2050. In other words, we are aiming to realize a carbon-neutral, carbon-free society by 2050." At a climate summit held by the United States on April 22, 2021, he added the following target for greenhouse gas reduction in Japan by FY 2030, "We will reduce [emissions] by 46% from FY 2013, and continue to challenge ourselves to reach the goal of 50%," stating, "As a country that supports the world's manufacturing, I want Japan to lead the world in becoming carbon-free by setting an ambitious top-level goal that is appropriate for our future growth strategy."
To become a carbon-neutral society by 2050, not only technological innovation, but also economic and social innovation is essential, and for that, broad knowledge spanning the humanities and social sciences to the natural sciences is necessary. Through their education, research, and activities that contribute to society, universities are expected to develop the scientific knowledge that forms the basis of governmental/regional policies and innovation, and have a mandate to make this knowledge widespread. Universities also play an important role in encouraging their communities to become carbon-neutral by serving as hubs of knowledge in each community, then expanding that community model to the rest of the world.
In light of this, Kobe University will participate in the University Coalition for Achieving Carbon Neutrality as a platform to improve the university's function and dissemination power by strengthening cooperation with national and local governments, businesses, and other universities and colleges both in Japan and abroad. Mirror-ing the slogan of 'multidisciplinary co-creation and collaboration', all of our staff and students will work together in order to bring about creative improvements and invigorate Kobe University's core image as a global knowledge hub that will enliven the bright societies of the future. In a society that continues to change as we reach the end of the COVID-19 pandemic, Kobe University will become the center of the community, aiding the local revital-ization of the economy, culture, life, the environment and human activity, while doing our utmost to transmit information through-out Japan and the world in order to benefit global society.
Thank you all for your continued support and cooperation.

Environmental Charter

Kobe University established an Environmental Charter on September 26, 2006 and carries out various environmental conservation activities based on these basic philosophy and policies. The environmental and energy-saving efforts of the university are summarized in an annually publicized environmental report.

Basic Philosophy

As a world-class center for research and education, Kobe University endeavors to advance initiatives that address two crucial modern-day issues: environmental conservation and the creation of a sustainable society.
This university is committed to building pathways towards the realization of a sustainable society, something that remains a shared goal for humanity. To do this, we are utilizing the local mountains and oceans to cultivate capable, environmentally-aware individuals. We regularly publicize academic information from the cosmopolitan city of Kobe to the rest of the world, and we are leading the way in environmental conservation efforts.

Basic Policies

1.Cultivate and Support Environmentally Aware Individuals

A university's greatest obligation is the cultivation of people. We continuously revise our educational programs in order to foster the development of individuals who are always conscious of the global environment and the impact of their behavior on it. By combining knowledge of the humanities, social sciences, and natural sciences, and collaborating with global and local society, we strive to cultivate highly compassionate individuals who possess a thorough understanding of the environment.

2. Promote Research to Maintain and Support the Global Environment

It is necessary to consolidate the results of numerous research studies in order to overcome the various challenges facing to world, conserve the Earth's environment and create sustainable societies. We promote research into environmental problems in individual fields as well as interdisciplinary research that combines related fields, and strive to disseminate the results both locally and globally.

3. Take a Leading Role in Environmental Conservation

Each individual's behavior is important when it comes to conserving the Earth's environment. Through our daily activities, we protect the environment, make efficient use of energy and natural resources, and rigorously manage dangerous substances, thus setting an example as an environmentally-conscious campus. Furthermore, we disclose information about our environmental conservation activities, continuing to make improvements through communication with those involved.

Environmental Management

●Environmental Management Policy

Conservation of the global environment and the creation of sustainable societies are the most important issues of our time. In working toward the "Kobe University Vision", we will do our utmost, as an institute for education and research which meets the highest international standards, to tackle these issues through all our activities at the university. In March 2016, we established the Basic Policy to Encourage Environmental Management During the Third Mid-Term Goal Period (FY2016 to FY2022), which was based on the Kobe University Environmental Charter and the Kobe University Basic Policy on Environmental and Facility Management. Our environmental conservation activities are based on this policy.

Basic Policy to Encourage Environmental Management During the Third Mid-Term Goal Period

Conservation of the global environment and the creation of sustainable societies are the most important issues of our time. In working toward the "Kobe University Vision", we will do our utmost, as an institute for education and research which meets the highest international standards, to tackle these issues through all our activities at the university. Based on the Kobe University Environmental Charter and the Kobe University Basic Policy on Environmental and Facility Management, which summarize the basics of this university's environmental and facility management, we established the following environmental management policy during the Third Mid-Term Goal Period.

I. Promote the 3Rs

By promoting the 3Rs (reduce, reuse, and recycle) among all university members, we will take assertive action to reduce waste while simultaneously reducing resource consumption.

II. Efforts to Streamline Energy Use

By promoting effective energy usage practices, we will work to reduce the average yearly energy consumption rate* by more than 1%, and reduce CO_2 emissions throughout the university.

(*) Consumption rate measured according to the total floor area of buildings.

III. Execute and Maintain Environmental Management Cycles

To encourage environmental management, we will continue to develop an ongoing action plan and implement our PDCA cycle.

●Paper Waste Reduction Initiative

The results of an investigation into trash can garbage and garbage collection sites by a group of environment surveyors found that the amount of recyclable paper mixed in with trash had decreased, and garbage was being sorted appropriately for the most part.

We are continuing our activities to encourage environmental management. Posters on trash separation and recycling are put up in each department in order to spread awareness on proper separation and disposal of recyclables (cans, glass, PET bottles), combustible trash, non-combustible trash, recyclable paper, confidential documents, etc. In addition, we designed standardized stickers for trash cans. These stickers are attached to separated bins in areas such as hallways to promote the 3Rs with regards to paper usage and waste.

Garbage investigation (indoors)

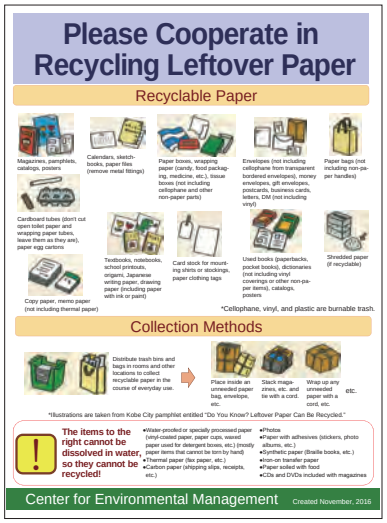
Garbage investigation (outdoors)

Separate trash cans

Stickers indicating waste separation

Containers for recyclable paper

Shredders for confidential documents



Material Balance

Material balance is the amount of energy and resources used for conducting business activities (“input”), and the environmental load generated by those activities (“output”).

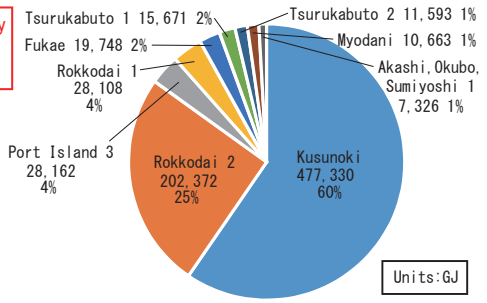
As our basic policy for environmental management, Kobe University promotes activities related to the 3Rs (reduce, reuse, recycle) activities, the streamlining energy usage, and the continued implementation of the environmental management cycle. We are actively working to conserve the environment based on this policy.

INPUT		FY 2020
Total energy	GJ	800,973
Electricity consumption	MWh	64,618
Gas consumption	1,000m^3	3,816
Heavy oil consumption	kL	0.31
City and other water usage	1,000m^3	287.1
Miscellaneous water usage	1,000m^3	39.4
Paper usage	t	127.46

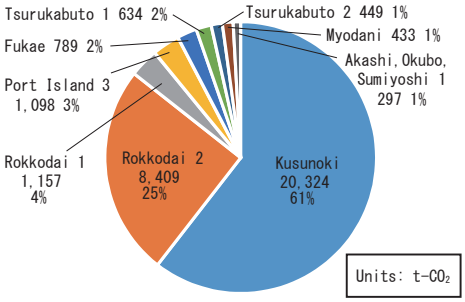
University Overview		FY 2020
Student body (undergraduate)	People	11,521
Student body (graduate)	People	4,559
Study body (affiliated institutions)	People	1,315
Foreign student body	People	1,227
Students on academic scholarships	People	11,420
Teaching faculty	People	5,145
Foreign exchange programs with overseas universities	Institutions	372

OUTPUT		FY 2020
CO_2 output volume	t-CO_2	33,590
Wastewater	1,000m^3	296.6
Waste material (OA paper, newspaper, cardboard, confidential documents, etc.)	t	259.6
Waste material (raw garbage)	t	3.8
Waste material (combustible waste)	t	532.3
Waste material (large items)	t	143.0
Waste material (non-combustible waste)	t	0.0

Proportion of energy used by each campus or complex



Proportion of CO_2 emitted by each campus or complex



Energy Conservation and Climate Change Prevention

●Energy Consumption

In FY 2020, energy consumption from electricity, gas, and heavy oil totaled approximately 801,000 gigajoules (*1). Energy consumption decreased by 5.9% compared to FY 2019, and the energy consumption per unit area (calculated by dividing the energy consumption by the total floor area of all buildings) also decreased by 5.7% compared to FY 2019. We will continue to work to conserve energy.

*1: Converted calorific values for electricity, heavy oil, gas, etc. based on Article 4 of Regulations on Rationalization of Energy Use, etc.

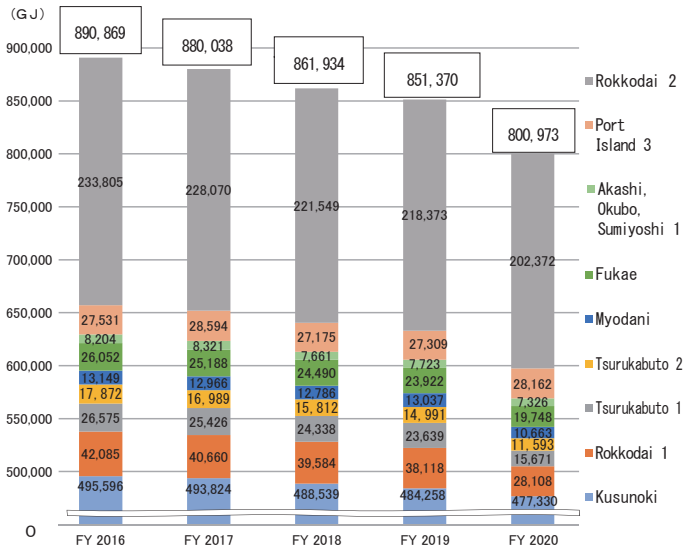


Figure 1: Energy consumption

FY 2019 1,665 GJ/1,000m² — 5.7% reduction — FY 2020 1,570 GJ/1,000m²

●CO_2 Emissions

CO_2 emissions (33,590 t-CO_2) per unit floor area (510,188 m^2) in FY 2020 increased by 1.08% compared to the previous fiscal year. While energy consumption did decrease (Figure 1), we assume that changing electricity suppliers in FY2020 also had an effect on this result.

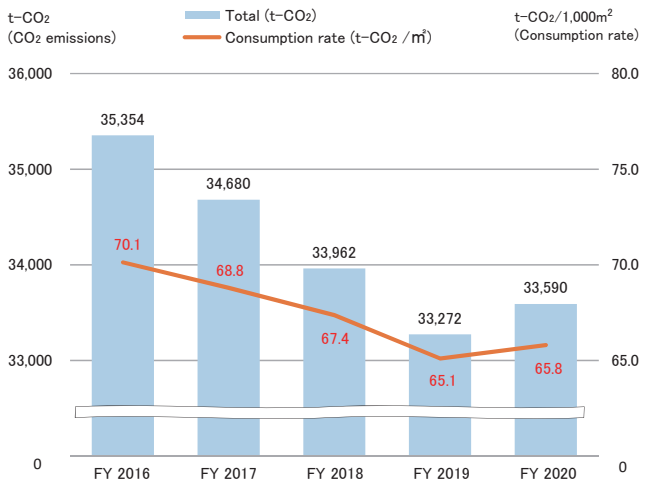


Figure 2: CO_2 emissions

●Electricity Consumption

In FY 2020, the electricity use at our 11 main building complexes decreased 5.6% from the previous fiscal year.

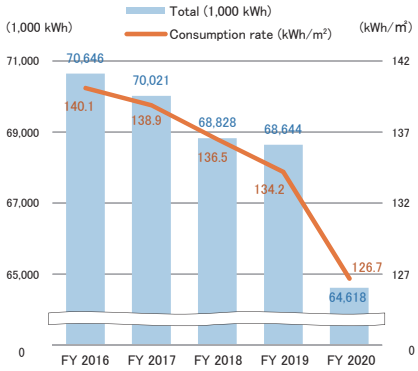


Figure 3: Electricity consumption

FY 2019 134.2 kWh/m² — 5.6% reduction — FY 2020 126.7 kWh/m²

●City Gas Consumption

In FY 2020, city gas usage at our 11 main building complexes decreased 5.6% from the previous fiscal year.

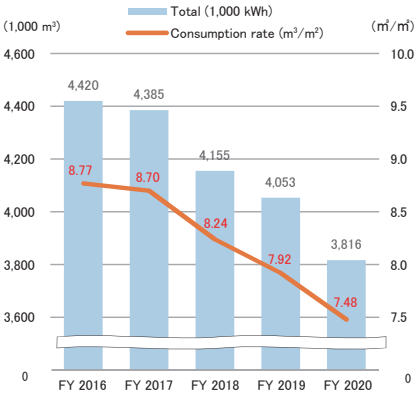


Figure 4: Gas consumption

FY 2019 7.92m³/m² — 5.6% reduction — FY 2020 7.48m³/m²

●Heavy Oil Consumption

Heavy oil consumption for FY 2020 decreased by 40.0% from the previous fiscal year. This is a result of alterations made since FY2017, including the demolition of an absorption-type water cooler/heater's fuel tank in the Fukae region, changing to gas sources, as well as increasing the use of electric heat pumps.

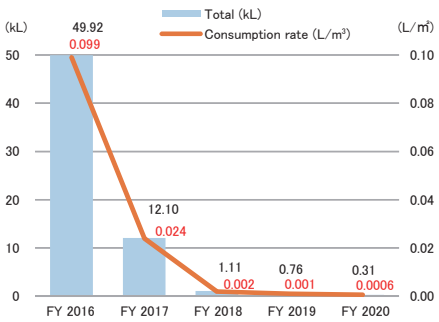


Figure 5: Heavy oil consumption

FY 2019 0.001 L/m² — 40% reduction — FY 2020 0.0006 L/m²

Resource Conservation and Recycling

●Water Usage

Water usage for FY 2020 decreased by 91,000m^3 (21.8%) compared to the previous fiscal year.
In particular, we believe that remote learning had a big impact on reducing water usage at the Rokkodai and Tsurukabuto campuses.
At Rokkodai, we are conserving resources by using river water from Mt. Rokko for toilets and experiments. We will continue working on ways to use water resources efficiently.

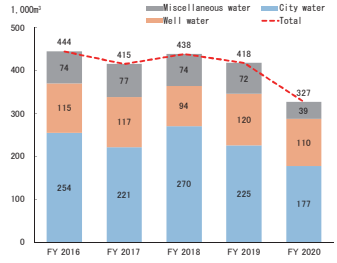


Figure 6: Water usage

●Waste

Waste volume from FY 2016-2020 is shown in Figure 7. Waste volume for FY 2020 was 938.7 t, a 21.0% increase from FY 2019.
However, the recycling rate in FY 2020 was 29.7%, higher than in FY 2019.
The FY 2020 recycling rate by waste type is shown in Figure 8. According to this figure, it is clear that the recycling rate for OA paper, newspapers, magazines, and cardboard has not improved. If the recycling rate for paper reaches 90%, the total recycling rate for all waste will increase from approximately 29.7% to 39.9% (calculated according to FY 2020 waste volume). Kobe University will follow its basic policy to encourage environmental management, and work to further improve the recycling rate.

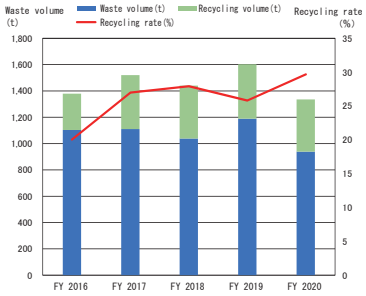


Figure 7: Amount of waste generated

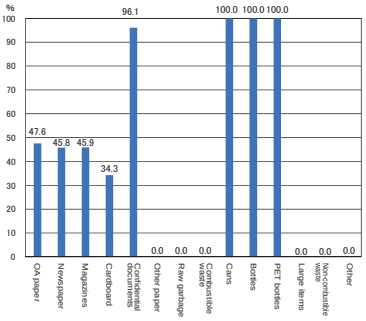


Figure 8: FY 2019 recycling rate by waste type

●University-Wide Office Paper Consumption

Changes in consumption of office paper from FY 2016 to FY 2020 are shown in Figure 9.
Consumption decreased 32.3% (60.93 t) from the previous fiscal year. We believe that holding classes and meetings online as part of the COVID-19 response was a major reason for the decrease.
We will continue to work to reduce our paper usage by making conferences and lectures paperless, introducing double-sided printing, printing multiple pages per sheet, and reusing the reverse side of paper that has already been printed on once.

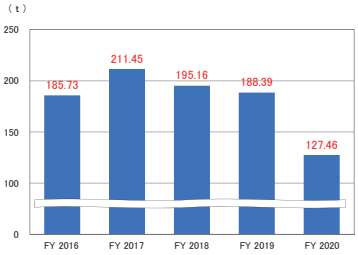
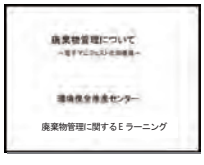


Figure 9: University-wide paper usage

●Expanding E-Learning About Waste Management

According to the Waste Management and Public Cleansing Act (the Waste Management Law), businesses have a responsibility to appropriately dispose of waste created during business activities. Universities tend to produce a variety of waste related to research and education, although the quantities are small. However, the Waste Management Law is complicated and difficult to understand. In 2019, with the goal of promoting a shift to electronic manifests, we held an electronic manifest meeting that focused on how to digitize the waste management slips, which are given to waste disposal companies, as well as highlighting important points in the Amended Waste Management Law.
In FY 2020, it was difficult to hold explanatory meetings in person due to COVID-19 prevention measures. Due to these restrictions, and with the goal of getting more related personnel interested, we made the electronic manifest information accessible to all university staff members as an E-learning course on the university website Using the presentation materials from the FY 2019 explanatory meeting as a starting point, we revised the course so that it gave a comprehensive understanding of waste management. As part of the shift to E-learning, we divided it into six units that we uploaded separately, to reduce file size and to make it possible for people to watch only the necessary units. Each unit is about four minutes long, collectively forming an E-learning tool with a total length of just over 20 minutes. We used sound composition software to facilitate deeper understanding by not only providing on-screen text but also voiceover.
We will continue to find ways to improve understanding by adding confirmation tests, etc., while at the same time continuing to revise the content in accordance with amendments to laws and ordinances.



Green Purchasing and Procurement and Environmentally Friendly Contracts

●Green Purchasing and Procurement

The Act on Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities (Green Purchasing Law) was implemented in April 2004. This law stipulates the necessary procedures for the promotion of environmentally friendly goods procurement, etc. by the national government, providing information on increasing the demand for such goods, and aims to realize a society capable of sustainable development with less impact on the environment. It was established with the aim of contributing to people's health and cultural life both now and in the future, with the government and other organizations taking the initiative in stimulating the purchase of environmentally friendly goods.
Based on this Act, Kobe University creates a policy for procuring eco-friendly materials every year. It procures materials based on this policy, publicizes the results, and provides reports to the Ministry of Environment and Ministry of Education, Culture, Sports, Science and Technology.
The university conducted a study on procurement results for 275 items across 22 fields. A selection of these results for 9 major fields are shown in Table 12. In FY 2020, we achieved a 100% procurement rate for the designated items.
We will continue to create procurement policies based on the Green Purchasing Law, and proactively work to procure eco-friendly materials.

Table 12: Achievements in green purchasing and procurement in FY 2019

Category	Item	Total procurement volume	Procurement rate for specific items
Paper	Copy paper	127,109kg	100%
	Toilet paper	39,877kg	100%
	Other	1,318kg	100%
Stationery	Ballpoint pens	8,320	100%
	Envelopes (paper)	187,644	100%
	Other	63,921	100%
Office furniture, etc.	Chairs, desks, etc.	2,519	100%
OA equipment	Copy machines, printers, etc.	6,046	100%
Lighting	Fluorescent tubes	8,786	100%
Interior	Curtains	186	100%
Work gloves		4,663	100%
Other textile products	Blue tarpaulins	26	100%
Services	Printing	254	100%
Average			100%

Current Status of Environmentally Friendly Contracts

In accordance with the Act on Promotion of Contracts of the State and Other Entities, Which Show Consideration for Reduction of Emissions of Greenhouse Gases, etc. (hereafter referred to as the "Environmentally Friendly Contract Law"), we must strive to promote contracts that take into account the reduction of greenhouse gases and other pollutants. This covers contracts relating to the following 7 areas: electricity supply, purchase or rental of vehicles, procurement of ships, energy-saving renovations (ESCO projects), building design, industrial waste processing, and building maintenance management.
At Kobe University, we signed a contract in FY2018 for the fundamental design of a replacement ship for deployment in coastal waters after requesting environmentally friendly designs and proposals. The main engines, generators, and motors of the ships are currently under construction. We are working to cut emissions of greenhouse gases and other pollutants by procuring replacement ships that use engines designed according to the principles above.
The eight environmentally friendly contracts for high-voltage and special high-voltage electricity supply in the Rokkodai, Kusunoki, and Fukae areas, etc. are two-year contracts that cover FY 2020 and FY 2021, and they are being implemented as shown in Table 13.

Table 13: Electricity supply in each area

	Amount of Power Contracted	Planned Amount of Power to be Used	Successful Bidder
Rokkodai Area	7,030kW	24,434,000kWh/year	Kyuden Mirai Energy Corp.
Tsurukabuto 2nd Campus (Graduate School of Human Development and Environment)	672kW	1,602,000kWh/year	Hope Inc.
Fukae Area (Graduate School of Maritime Sciences)	873kW	2,196,000kWh/year	Hope Inc.
Myodani Area (Graduate School of Health Sciences)	331kW	1,075,000kWh/year	Hope Inc.
Port Island Area	Integrated Research Center 267 kW Integrated Research Center Annex 409 kW Incubation Center 149 kW	3,568,000kWh/year	Hope Inc.
Other 4 Areas	Secondary School attached to Kobe University 208 kW Elementary School attached to Kobe University 173 kW School for Special Needs Education attached to Kobe University 102 kW Food Resources and Education Research Center 93 kW	847,000kWh/year	Hope Inc.
Kusunoki Area	7,040kW	36,720,000kWh/year	Kyuden Mirai Energy Corp.
International Clinical Cancer Research Center	477kW	1,942,700kWh/year	Hope Inc.

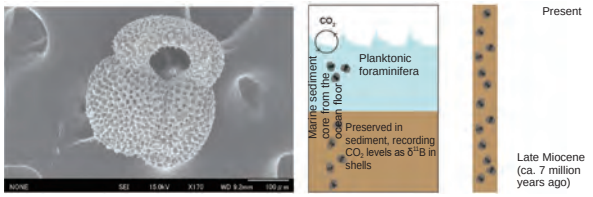
Research

PDF p.13

Research into Past, Present, and Future Climate Change

Kaoru Kubota, Assistant Professor, Graduate School of Human Development and Environment

I am currently involved in research based on chemical analyses of planktonic foraminifera fossils collected from ocean sediments off the coast of Africa. Past atmospheric concentrations of carbon dioxide are preserved in the boron isotopes in the shells of foraminifera (see figure below).
Paleoclimatology, the field of researching past climate changes, also provides a large amount of information that is useful for predicting future global warming. At the Department of Environment and Sustainability in the Faculty of Global Human Sciences, we promote paleoclimatology and enlighten students about the dangers of future anthropogenic climate change through coursework and practical training.



Electron microscope image of planktonic foraminifera and conceptual diagram of the reconstruction of carbon dioxide using sediment from the ocean floor

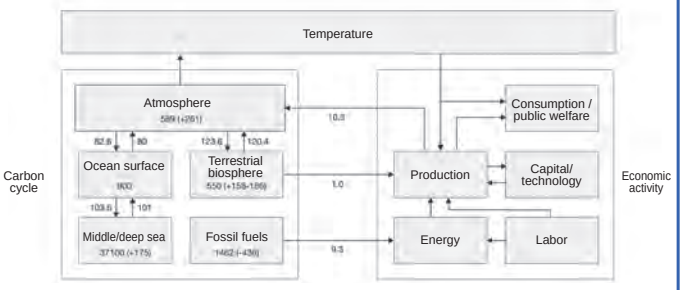
Research

PDF p.14

Economic Analysis of Climate Change

Hiroaki Sakamoto, Associate Professor, Graduate School of Economics

In my research, I am interested in seeing how we can resolve environmental issues, not by appealing to people's consciences, but by effectively designing social or economic rules. Part of my research is on establishing an underlying theoretical framework by, for example, using a mathematical model to evaluate the theoretical performance of carbon pricing, or combining economic and climate models to calculate a formula for the reasonable price of carbon dioxide (see figure below).



Research

PDF p.15

Toward Carbon-Neutral Heat Engines

Tomohisa Dan, Professor, Graduate School of Maritime Sciences

Climate change is related to the increase in the concentration of new CO_2 added to the atmosphere. To realize a carbon-free society, the production and use of plant-based biomass fuels is essential. In this report, with the goal of using bio-ethanol in gasoline engines, I analyzed the correlation between engine performance and exhaust gas composition.

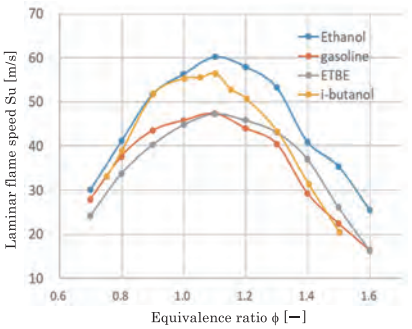


Figure 1: The relationship between equivalence ratio and laminar flow combustion speed when burning alcohol fuel

Conservation Activities

PDF p.16

Energy Saving by Reducing Ventilation: ~Example of a Book Storage of the University Library~

Satoru Takada, Professor, Graduate School of Engineering

The following is an example of an investigation into book storage conducted with the cooperation of the Kobe University Library. The measured results showed that there are many times when the outdoor humidity is higher than the humidity inside the book storage room. After closing the ventilation ducts, the humidity level is stabilized at a low value. In addition, a simulation using an analytical model showed that by reducing the ventilation rate, an environment that prevents mold from growing on the books can be achieved, and at the same time, the dehumidifier's energy consumption is reduced, resulting in energy savings.

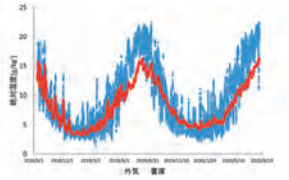


Figure 1: Comparison of humidity in the storage room and outdoor humidity (measured data)

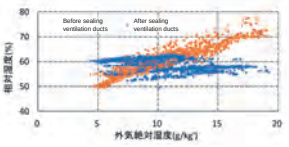


Figure 2: Comparison of humidity before and after the sealing of ventilation ducts

Other

PDF p.17

Cooperating with Projects by the Ministry of the Environment to Promote the Spread of ESG Regional Finance

Nobuyoshi Yamori, Professor, Research Institute for Economics and Business Administration

As a committee member of the Association for Exchanging Opinions About the ESG Regional Finance Promotion Program, which was established by the Ministry of the Environment, I advise regional financial institutions that apply to subsidy programs provided by the Ministry of the Environment. In this role, I also contributed towards putting together the Practical Guide to ESG Regional Finance to provide guidance to regional financial institutions.
In addition, I help to evaluate and select award cases for the Ministry of the Environment's ESG Finance Award Japan (Minister of the Environment Award) as a member of the judging committee, working to foster awareness of ESG in the financial sector.
I am proceeding with my research goal of using finance to revitalize and promote regional economies. I would like to continue my involvement in the Ministry of the Environment's projects in order to contribute towards the dissemination of ESG regional finance.

Online awards ceremony

Preparing this Report

The Environmental Report summarizes the results of environment-related activities at this university between April 2020 and March 2021, and is published as the Kobe University Environmental Report 2021.
The Environmental Report is predominately aimed at our students and faculty, with the objective of promoting communication about the environment both in and outside Kobe University. We introduce education, research, and projects carried out at the university, in addition to highlighting efforts to promote environmental management etc., as a way of measuring our environmental performance.

Guidelines used as references

"Environmental Report Guidelines, 2018 Edition"
(Published in June 2018 by the Ministry of the Environment)

"Manual for Writing Environmental Reports: For the Environmental Report Guidelines, 2018 Edition"
(Published in March 2019 by the Ministry of the Environment)

*For more information, see the full Japanese language Environmental Report 2021 on the Kobe University website. (Page numbers at the top indicate the page number in the PDF version.)

Topics

PDF p.7

Food Loss Diaries and ESD Exercises

Risa Kojima, Associate Professor, Graduate School of Economics (Director of NPO Gomi-Japan)

Food Loss Diaries have the advantages of being adaptable to household differences and presenting highly generalizable solutions for reducing food loss. I believe that establishing methods for dealing with food loss, which can be used by anyone and in a diverse range of households, will contribute towards preventing household food loss and waste in Japan.
In our ESD (Education for Sustainable Development) exercises, we analyzed scattered garbage using river surveillance cameras in Kobe City, because of the COVID-19 pandemic restrictions. As a result, we were only able to obtain limited information, which helped us learn how important field research is.

Anyone can use the Food Loss Diary App for free without having to enter their personal information. Please check the link below. An overview of the results of this study and information about Gomi-Japan's other research and projects are also available on the Gomi-Japan website below.

Food Loss Diary
https://gomi-jp-foodloss.com/
NPO Gomi-Japan Website
https://gomi-jp.jimdofree.com/

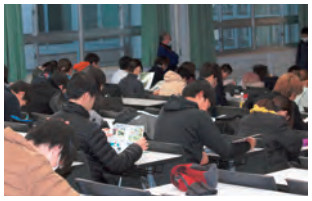
Food Loss Diary App

Topics

PDF p.8

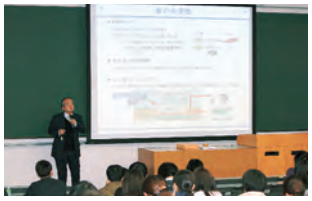
Environmental Education Using Environmental Reports

To make the Environmental Reports made at this university better known within the university, and to gather opinions and feedback from students to guide the creation of future Environmental Reports and environmental conservation activities, we have been holding these events since FY 2011.



Introductory Environmental Studies

Global environmental issues represent one of the largest global challenges of this century. Most environmental issues are the result of individuals' ordinary social and economic activities, and to resolve them, it is essential that each individual gain a deeper understanding of environmental issues. At the Center for Environmental Management, we hold lectures in Introductory Environmental Studies A/B as university-wide common subjects.



Topics

PDF p.9

The Activities of Kobe University Students' Environment Club 'Ecofuru'

Kobe University Environment Club 'Ecofuru'

Following initiatives to charge money for plastic shopping bags, the movement to abolish plastic straws has also been growing recently. We created a fun E-learning tool that focuses on the problem of ocean plastics pollution, where waste plastic flows into the ocean. The content uses data including numerical figures to inform users about the current situation regarding ocean plastics pollution, and presents ways to reduce plastic use that everyone, including students, can put into practice.

Kobe University Environment Club 'Ecofuru'
Twitter:https://twitter.com/iRg FHqkxYMi8X5N

Education

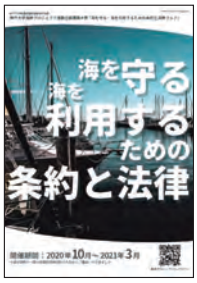
PDF p.10

Exhibition of Books About the Ocean Environment in Library for Maritime Sciences

Noriko Yamamoto, Administrative Staff, Library for Maritime Sciences

With the goal of getting people to think about the ocean environment using books, we chose related themes for the special exhibition. The series of special exhibitions are linked to the "Kaijin Project" (activities to promote Kobe University's nautical branding) and based on various themes that are deeply connected to the sea, such as earth science, international law, and logistics. We will continue to improve students', facultys' and visitors' familiarity with marine environments, through special exhibitions and other activities.


The exhibition



Exhibition poster Treaties and Laws for Using The Sea and Protecting the Sea

Education

PDF p.11

Developing Practical Coursework with the Aim of Building a Carbon-Free Society

Takeshi Shimamura, Professor, Graduate School of Law

Technological innovations in renewable energy and energy saving are undoubtedly necessary for the realization of a carbon-free society, however the reconstruction of social systems is also essential. At Kobe University's Graduate School of Law / Faculty of Law and Graduate School of Economics / Faculty of Economics, we have developed programs to enable students to acquire a background in both law and economics. This fiscal year, together with researchers from the Institute for Global Environmental Strategy (IGES), we visited sites where efforts were being made to become carbon-free, and organized exercises which involved bilateral discussions with people from companies and NPOs striving towards decarbonization.


Proposal for the establishment of an environmental council


Solar Installation in Inami-cho/ Rokkenya Pond Reservoir

Education

PDF p.12

Cultivating Human Resources to Manage Wildlife Conservation Through a Practical Session on Dealing with Nuisance Wildlife

Mieko Kiyono, Associate Professor, Graduate School of Human Development and Environment

Working together with the NPO Research Institute for Sustainable Advancement of Traditional Outlying and Mountainous Neighborhoods, we held training sessions for the local residents, mainly in Tamba-Sasayama City, Hyogo Prefecture. One of those training sessions was a practical for high school students on how to deal with nuisance wildlife. In this practical, which began in FY 2018, a mixture of Kobe University students and high school students from Tamba-Sasayama City gather each year to create new approaches for dealing with nuisance wildlife. Please take this opportunity to come learn about wild animals together with local high school students and think about new ways of coexisting.


Idea exchange and planning through workshops


Students learning how to obtain location information about Japanese macaques

*For more information, see the full Japanese language Environmental Report 2021 on the Kobe University website. (Page numbers at the top indicate the page number in the PDF version.)

Outside Opinion

"The Act on the Promotion of Business Activities with Environmental Consideration by Specified Corporations, etc., by Facilitating Access to Environmental Information, and Other Measures (Environmental Consideration Promotion Law)", which went into effect in 2005, requires businesses stipulated by Cabinet Order to issue environmental reports as an important means of communication with stakeholders, to promote businesses' voluntary and proactive consideration of environmental matters. This Environmental Report follows the "Environmental Report Guidelines, 2018 Edition" and the "Manual for Writing Environmental Reports: For the Environmental Report Guidelines, 2018 Edition," and may be judged to be an appropriate environmental report.

It adheres to the three basic policies mentioned in the Message from the President at the beginning and in the Environmental Charter – "Cultivate and Support Environmentally Aware Individuals," "Promote Research to Maintain and Support the Global Environment," and "Take a Leading Role in Environmental Conservation" – and it may inferred from this that a comprehensive approach combining the humanities, social sciences, and natural sciences is being taken in education and research activities as well as in environmental management.

In the Environmental Education, Research and Topics presented in the second half of the report, a diverse range of efforts as well as educational and research activities related to urgent and important challenges for the human race such as climate change, carbon neutrality, biological diversity, and ocean plastic are introduced, highlighting the comprehensive power of Kobe University. The collaborative efforts with the Ministry of the Environment on a project to popularize ESG regional finance, with its goal of establishing sustainable regional societies, can be highly evaluated for their progressiveness. The creation of E-learning content by members of the student environment club 'Ecofuru' is also an excellent effort that fosters a high level of environmental awareness among students and can serve as an example to other universities.

As for environmental management, it is my understanding that simple and effective organizational systems are in place for environmental conservation, and a system has been established to ensure that the PDCA cycle continues without fail through the regular implementation of groups to investigate the environmental aspects and their improvement. However, I was bothered by the fact that there is no concrete connection between the organizational systems for environmental conservation and environmental management. Since it may be understood that there are already sufficient systems in place that act as an environmental management system (EMS), how about restructuring them into an EMS that matches the Message from the President, Charter, and so on? I felt that it was a shame that, even though there is already an EMS, environmental management is listed as an independent item. The descriptions of energy consumption and general waste management were very easy to understand. However, in FY 2020, the government declared states of emergency relating to the still-ongoing COVID-19 pandemic, and education and research activities were partially restricted due to these and other measures, resulting in a significant decrease in consumption of energy and other resources. Next year and beyond, there must be discussions to determine whether or not the activities conducted during the atypical circumstances of the last fiscal year can be directly compared with ordinary fiscal years.

Conversely, I felt that there was insufficient information to gain a concrete understanding of the risk management situation, such as the management of waste fluids from experiments and chemical substances. The chemical substances used at your university, which cover the science, engineering, and medical departments, are restricted by numerous laws and ordinances. The role of this Environmental Report would be better fulfilled if there were clear descriptions of how these laws and ordinances are observed.

While I pointed out some parts in the second half that could be improved in future, overall, this is a solid environmental report that is extremely rich in content. More than anything, I was impressed by how astute environmental awareness is being fostered among faculty and students through finely tuned systems.

Name: Yasuro Fuse

Current position: Associate Professor, Molecular Chemistry and Engineering / Center for Environmental Science, Kyoto Institute of Technology

Profile

Mar.1998: MS (Engineering), Kyoto Institute of Technology
Apr. 1998: Educational staff, Center of Environmental Science, Kyoto Institute of Technology
Mar.2009: Ph.D. (Engineering), Kyoto Institute of Technology
Apr. 2013: Assistant Professor, Center of Environmental Science, Kyoto Institute of Technology
Feb.2020: Associate Professor, Center of Environmental Science, Kyoto Institute of Technology
Apr. 2020: Vice President, Center of Environmental Science, Kyoto Institute of Technology

- Awards: Technology Prize, Environmental Safety Council of Universities, etc., Nov. 2010
- Research Fields: Environmental dynamics analysis, environmental impact evaluation, environmental materials / recycling, organic chemistry
- Affiliations: The Chemical Society of Japan, The Japan Society for Analytical Chemistry, Environmental Safety Council of Universities and Colleges, The Japanese Society of Limnology, Japanese Humic Substances Society, Japan Society for Atmospheric Environment, Japan Society on Water Environment

The Words "Environmental Conservation" Are a Promise to the Future

Hiromasa Imaishi, Director, Center for Environmental Management

The world is facing tumultuous times. Firstly, the way it rains has changed compared to the past. It differs in that a month's worth of rainfall rains all at once, which is quite unendurable and causes rivers to flood rapidly. There are many theories as to what triggers global warming, and it's difficult to pinpoint specific causes. No matter what the data shows, there is an undoubtable sense of regret that "we went a little overboard" among the people who have lived through this warming process. We have also thrown away things in order to maintain mass production. Durable consumer goods that lost their place turned to ash in furnaces, and the smoke polluted the atmosphere to the point of creating visible smog. Under these circumstances, I think it's great that ideas about trying to create a sustainable society are becoming more frequently discussed as buzzwords. Resolving these environmental problems cannot wait. First, let's turn off our faucets properly. Let's wash and reuse containers, even disposable ones. Let's try to use public transportation such as trains instead of cars as much as possible. We can make these small efforts, all the while believing that they will accumulate into a "promise to the future."

About the Cover

In order to further publicize this Environmental Report to our students (who comprise the majority of the university population), we created the cover by requesting photos and illustrations from undergraduate and graduate students at the university, as well as from students at our affiliated schools. The cover photo was selected by the Environmental Planning and Assessment Committee, with the photo below receiving the grand prize.

From the many works submitted, we also selected two photos for Excellence Awards as shown below. We would like to take this opportunity to express our thanks to all those who submitted photos and illustrations.

Grand Prize (Cover photo/illustration)

Photo by Kazuki Koizumi, 4th year, Department of Physics, Faculty of Science, Kobe University

Shooting location: In front of the Research Infrastructure Center

Photographer's comment

"Together": I composed it so that the growth of the trees symbolizes how research has advanced.

Excellence Awards (Cover photo/illustration)

Photo by Kazuki Koizumi, 4th year, Department of Physics, Faculty of Science, Kobe University

Shooting location: Path next to the Information Science and Technology Center connecting the Faculty of Science to the Faculty of Engineering

Photo by Kiryu Ito, 2nd year Master's program student, Graduate School of Science, Technology, and Innovation, Kobe University

Shooting location: Rokkodai 1st Campus (next to the Rokkodai Main Building)

■Date of issue: September, 2021
■Created by the Center for Environmental Management

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