Kanazawa University Carbon Neutrality Initiative Plan (Summary)

～Kanazawa E⁴-CAMPUS for Carbon Neutrality～

University wide polic

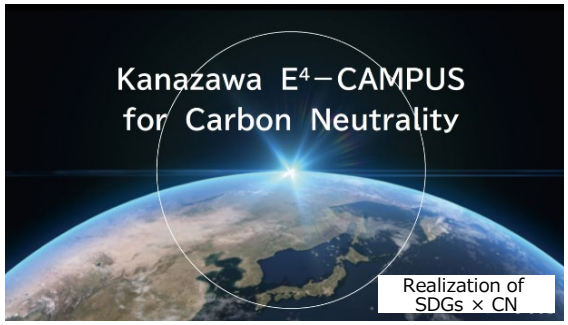
Kanazawa University is based on the pillars of “Research”, “Social Contribution”, “Education”, and the realization of Carbon Neutrality (CN) “Campus". In order to lead the development of society by realizing CN through "future intelligence," the entire Kanazawa University will contribute to society by promoting human resource development and research and development as a front-runner.

Four specific initiatives

Research

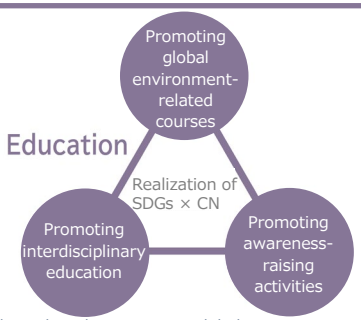
Promote research and development aimed at solving technical issues in order to achieve CN, and pursue basic research that can generate innovations that contribute to problem solving using the university's "comprehensive knowledge," and deepen the integration of the humanities, sciences, and medicine.

Kanazawa E⁴−CAMPUS for Carbon Neutrality



E4-CAMPUS embodies the university's mission and ambition to achieve CN, and as a knowledge base in East Asia, it aims to achieve CN and the SDGs through universal education, research, medical care, and social contributions related to the environment, energy, and ecosystems.

Education



Through education on global environmental issues, we aim to develop human resources who can contribute to the realization of decarbonized societies in the local and global communities, and achieve sustainable societies including CN.

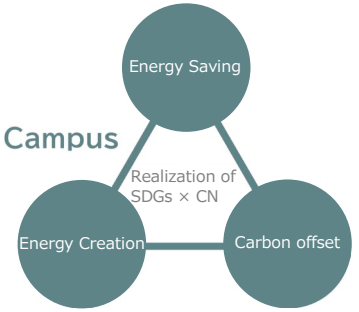
Social Contribution

We aim to realize a sustainable society, including a CN one, by promoting the implementation of our research results in society through policy recommendations to local governments and collaboration with private companies.

Towards achieving the SDGs

Our university's action plan will promote efforts that contribute to the achievement of the Sustainable Development Goals (SDGs) adopted at the United Nations Summit in 2015.

Campus



We aim to achieve CN on campus through initiatives such as energy generation, energy conservation, use of renewable energy, and preservation of the forest environment.

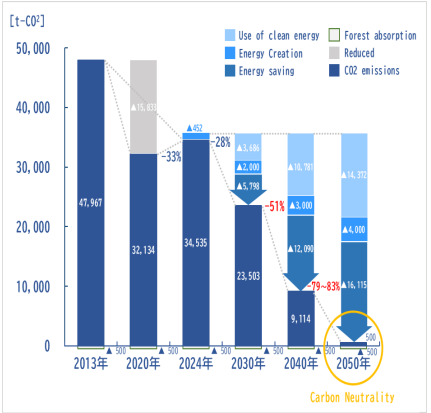
Greenhouse gas reduction targets

Mid-term target

By 2030, compared to 2013
Aiming for a **reduction of 51% or more**

Long-term target

Aiming to achieve
Carbon neutral by 2050



2024 results compared to 2013
Achieved a 28% reduction!

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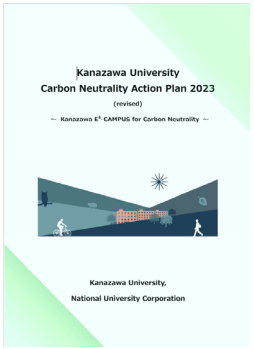
Roadmap（～2050年）

Item	Details of the initiative	CY2020 ▶	CY2030 ▶	CY2040 ▶	CY2050
Research, Social co-creation initiatives	Green Energy	Expanding the use of organic solar cell modules (for agriculture, etc.) and scaling them up		Establishment of a circulation system for solar cell resources by introducing recycling technology	
		Development of next-generation electricity storage and energy storage technologies and construction and implementation of power grids to make renewable energy the main power source			
	Material Creation	Breaking away from dependence on fossil fuels Utilization of biomass and development of advanced resource circulation technology			
	Resource circulation	Development of highly efficient carbon and metal recycling technology			
	Social Systems	Social implementation of autonomous driving technology in urban areas		Multi-regional deployment of autonomous driving technology	
	Social co-creation	Demonstration experiments of cutting-edge environmental technologies on campus through the Future Intelligence Demonstration Center		Introduction of environmental policies and systems in the Hokuriku region and social implementation of cutting-edge environmental technologies	
Educational Initiatives	Education that contributes to CN	Enhancing CN-related subjects			
		Visualization of CN-related subjects in the syllabus			
		Development of high school-university collaboration and reskilling education			
		Enhancing CN-related international student programs			
		Establishment and development of new minors and degree programs			
Working Towards a Carbon Neutral Campus	Energy Saving	Planned equipment upgrades			
	Energy Creation	Installation of renewable energy facilities			
	ZEB building	Achieving Nearly ZEB or better when newly built and ZEB Ready or better when renovated			
	Use of clean energy	Procurement of electricity from renewable energy sources			
	Securing forest absorption capacity	Planned maintenance and preservation			
	Operational Initiatives	Daily energy saving, introduction of BEMS, etc.			
	Experimental equipment updates	Planned equipment upgrades			

All members and diverse organizations must transcend their respective positions, and we must also work with a wide range of outside organizations. Deepening collaboration with stakeholders to co-create world-class innovations

It is estimated that the social implementation of the results of our research will result in a reduction of hundreds of millions of tons per year, far exceeding the greenhouse gas emissions on campus (approximately 35,000 tons). The ripple effects are expected to have not only a national impact, but also to the entire planet.

FY2024 Initiative Results　Progress Report『e:C0Real』



① Results of research and development and social co-creation initiatives
② Results of educational initiatives
③ Campus Initiative Results

…The plan is divided into basic policies and initiatives that remain unchanged to a certain extent, and the results of initiatives that are updated every year, and is structured around the results for fiscal year 2024.

【Explanation】e:C0Real combines the words "Eco" and "zero carbon," and also conveys the meaning of becoming a core hub for green innovation.

Research Topic

■Joint research results in the field of resource circulation
Demonstration Test for CO_2 Recovery from Waste Incinerator Exhaust Gas

Under a comprehensive partnership agreement between Kanazawa University and ACTREE Corporation, a joint research project titled "Research on CO_2 Concentration from Incinerator Exhaust Gas Using Waste Heat" was launched. In FY2024, a newly developed two-stage CO_2 adsorption unit was introduced into a demonstration test system using actual incinerator exhaust gas at ACTREE's R&D Center, where zeolite is used as the CO_2 adsorbent.

【Explanation】Demonstration Test Unit for CO_2 Concentration and Recovery from Incinerator Exhaust Gas

■Results of efforts in the social systems field
Social implementation of autonomous driving technology

As part of the METI-commissioned project titled "Support Project for Development and Demonstration of Unmanned Autonomous Driving for Mobility DX Promotion (Data Acquisition Project)," we collected a large volume of driving data and evaluation scenarios for autonomous vehicles on the Shin-Tomei Expressway, where autonomous driving priority lanes have been installed.

In FY2024, building on the achievements of our research to date, we established the startup Moveez Inc., with the aim of accelerating the social implementation of autonomous driving technologies. By leveraging private funding and other resources, we are strengthening our efforts toward practical application.

Social co-creation Topic

■Activities of the MIRAICHI Research Center

The MIRAICHI Research Center supports the social implementation of research seeds across the university. In FY2024, one supported project launched a startup, and four were selected for the Tech Startup HOKURIKU (TeSH) GAP Fund program.

A new building will be completed in March 2025 and begin operation in July, featuring shared labs and startup support facilities. The center will act as a hub for social co-creation and provide one-stop support in collaboration with research seeds from the Hokuriku region.

In addition to 15 projects selected in FY2023, three new projects were chosen in FY2024 for their contributions to a sustainable society, bringing the total to 18.

【Explanation】MIRAICHI Research Center exterior (above) / 3rd floor open floor co-creation space (below)

Campas Topic

■Operation of the Kakumakita District Solar Park

As our university's first large-scale energy creation initiative, we will begin operation of a solar power generation facility (755kW) using a PPA model in April 2024.

The amount of electricity generated has progressed smoothly, generating 979,000 kWh per year and reducing greenhouse gas emissions by 452 t-CO2 per year, equivalent to approximately 1.3% of the entire university's total emissions.

【Explanation】Panoramic view of the solar park (taken at the end of February 2024)

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