

Development of International Education and Research Center

December 18, 2020

Decision by Reconstruction Promotion Council

1. Purpose of establishing an international education and research center

The Act on Special Measures for the Reconstruction and Revitalization of Fukushima (Act No.25 of 2012) stipulates the creation of new industries, strengthening the international competitiveness of industries, and developing human resources through the development of research and development centers in the Fukushima Innovation Coast Framework.

To date, the government has united together to promote the creation of industrial clusters, development of human resources and increase in visitors, in addition to shaping key projects, such as the development of the Fukushima Robot Test Field.

In order for the government to take initiatives over a long period of time in the reconstruction and revitalization of the Fukushima Hamadori area and other districts that suffered extensive damage from the nuclear disaster, an international education and research center (hereinafter referred to as "new center") will be established as a "core center for creative reconstruction" to serve as the center for research and development and human resources development. The new center aims to conduct research and develop human resources that are essential for innovative reconstruction of Fukushima by concentrating knowledge from around Japan and abroad, to disseminate and share its experiences and achievements with the world as part of the nation's responsibility to the international community as a country that has experienced disaster, as well as to strengthen Japan's industrial competitiveness and create innovation to help find solutions to common problems in Japan and the world based on the knowledge gained through these initiatives.

2. Functions of the new center

The new center will have the following research and development functions and human resources development functions of its own and its operations will be integrated with research facilities already in place (hereinafter referred to as "existing facilities").

(1) Research and development functions

Research at the new center will be conducted that is essential for the creative reconstruction of Fukushima, including the steady progress of

decommissioning work, restoration and creation of the environment and the development of new industries, and that will lead to the creation of innovation based on the knowledge gained through these activities.

In addition to basic research, the new center will address issues in the Fukushima Hamadori area and other regions that have been difficult to resolve in the conventional style of vertically-divided research at existing facilities by newly integrating technologies and methods in an interdisciplinary way. The new center will also implement the results of research in society and developing industries through the integrated activities of industry, academia and the government, which will lead to the transformation of industrial structures and social systems.

The key research areas in which the new center is expected to engage include (1) robotics, (2) agriculture, forestry and fisheries, (3) energy, (4) radiation science, and (5) collection and dissemination of data and knowledge related to the nuclear disaster. Research areas will be further shaped in alignment with the government's overall scientific, technological and innovation policies. (Examples of potential research topics can be found in the attachment.)

(2) Human resources development functions

- The new center will promote human resources development for graduate students and others by utilizing the graduate school collaborative system and other systems based on cooperation with a number of universities.
- The new center will promote the creation of a sustainable system to develop human resources that is connected to higher education for primary, middle and high school students and others.
- The new center will also promote joint research and other activities that will lead to the development of human resources for local companies.
- The new center will gather and develop human resources responsible for R&D and verification by utilizing the world's most advanced human resources in other research institutions, in cooperation with such institutions.

3. Organizational structure of the new center

To ensure that the organization meets the following conditions, the government will be responsible for establishing a new corporate body, which will be considered based on the structure of a national research and development agency.

- Ensuring the development of a comprehensive organizational structure that can provide support for the diverse research content described in 2 (1) above in order to promote reconstruction from the nuclear disaster and Great East Japan Earthquake

- Integrated implementation of research and development that goes beyond the vertical divisions between each ministry and agency
- Securing a research environment to attract researchers and human resources with experience on the global stage

The content of the research at the new center will be shaped by a system with the participation of the Reconstruction Agency and other related ministries, including the Ministry of Education, Culture, Sports, Science and Technology, Ministry of Agriculture, Forestry and Fisheries, Ministry of Economy, Trade and Industry, and the Ministry of the Environment. The structure of the new corporate body will be decided by the fall of 2021 with the arrangement of existing facilities in accordance with the following policies and with an optimal implementation system in mind.

- Consider existing facilities without providing sanctuary. Seek synergistic effects and pursue integration to the extent possible based on arrangements for research content between the new center and existing facilities.
- Establish command tower functions to coordinate with and provide instruction to existing facilities that will not be integrated with the new center.
- Establish systems to promote collaboration with universities, local governments and private companies, etc.
- Consider ways to ensure long-term and stable operation of the new center in terms of budget, staff, etc.

4. Development of research environment and collaboration with the local community

Effective research will be promoted by maximizing the use of the Fukushima Robot Test Field and other demonstration fields, and support for various demonstration efforts by companies will result in the creation of industrial clusters. If necessary, the development of special regulatory measures will also be promoted to enable demonstrations that cannot be performed in other regions.

In addition to creating an environment to promote data-oriented research, including the accumulation of research and verified data, systems to support digital transformation will be developed. The development of an appealing research environment will also be promoted where promising young and female researchers can easily play an active role, and systems to develop human resources will also be built that will be advantageous to them in their future career paths.

Investment from industries and related private companies will also be actively promoted, and organizations and frameworks will also be developed for close collaboration with various institutions, such as local companies and

local governments. In addition, urban development will also be promoted in relation to the new center and a research environment will be developed that is linked to this in order to concentrate human resources from universities, research institutes and companies from Japan and abroad.

5. Location of the new center

The site for the new center will be selected from the areas where evacuation orders had been issued, and will be based on linkages with existing facilities, living environment, transportation access, and the intentions of participating universities and companies and in respect to the opinions of local governments.

6. Future timetable

The basic plan for the new center will be formulated in fiscal 2021.

(Attachment) Examples of potential research content

1. Robotics

- Research on the development, demonstration, and collection of data for remotely-operated robots and disaster robots that can be deployed not only at decommissioned sites, but also in a variety of harsh environments (space, deep sea, etc.), as well as sites experiencing labor shortages.
- Research on standardizing safety standards and operational systems for drones and other devices utilizing the demonstration environment of the Fukushima Robot Test Field, other.

2. Agriculture, forestry and fisheries

- Empirical research on smart agriculture for large-scale tracts of land using robot technologies at the new center in a demonstration-oriented environment under various unconventional conditions in line with policies and measures to consolidate and largely partition farmland, as well as research on the development of ICT for the entire food chain to dispel harmful rumors.
- Research on the cultivation and processing of crops that can simultaneously restore the environment and produce raw materials for bio-products, etc., as well as research on production technologies for bio-products, other.

3. Energy

- Research for the social implementation of innovative technologies, including those using hydrogen and for recycling storage batteries, which will result in the achievement of carbon neutrality and serve as the basis for new urban development and energy systems.
- Research on the cultivation and processing of crops that can simultaneously restore the environment and produce raw materials for bio-products, etc., as well as research on production technologies for bio-products (also listed under “agricultural, forestry and fisheries”), other.

4. Radiation science

- Research on the production of useful radioisotopes from radioactive waste for use in medical science, including diagnoses and drug developments, by utilizing radioactive material analytical technologies, and research on the application of radiation imaging technology to diagnostic imaging technology, other.

5. Collection and dissemination of data and knowledge on nuclear disasters

- Social science research on the integrated and long-term collection of various types of data, knowledge and lessons learned from the national and local governments, universities, companies and other organizations on the accident at TEPCO’s Fukushima Daiichi Nuclear Power Station, decommissioning, environmental impacts, reconstruction and other issues, effective methods of

disseminating information to dispel harmful rumors, and risk communication, other.