



## The Establishment of the CCS Business Act Will Mark a Major Milestone for Social Implementation of CCS in Japan

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Carbon dioxide capture and storage (CCS) technology has been considered to be one of the important technologies that curb the increase in atmospheric CO<sub>2</sub> concentration and contribute to tackling global warming. For nearly 30 years since its founding, RITE has engaged in research and development on CCS. RITE has been highly regarded for the development of CO<sub>2</sub> separation and capture technologies and fundamental technologies concerning the underground storage of CO<sub>2</sub> and the elevation of those technologies to practical application levels through verification tests conducted in Nagaoka City, Niigata Prefecture.

Now, CCS is going to enter a new stage. In the 213th ordinary session of the Diet, the Bill for the Act on Carbon Dioxide Storage Businesses (CCS Business Act) was passed into law. The establishment of the CCS Business Act, which provides a legal framework concerning the licensing system for CCS businesses and the ownership of CO<sub>2</sub>, will be an important milestone for social implementation of CCS in Japan. This Act is expected to accelerate CCS projects by private sector in Japan, enabling the commencement of CCS on a commercial level by around 2030. To establish CCS as a new industry, moreover, it is indispensable to address a wide variety of challenges, including developing technologies, ensuring economic efficiency, and fostering social acceptability. With the CCS Business Act as momentum, Japan should seek to foster companies that play a key role in the CCS value chain and create an industrial base with an eye toward the overseas expansion of CCS business.

The full-fledged social implementation of CCS would be a major step toward the realization of carbon neutrality by 2050. IEA analysis shows that CCS will help reduce annual CO<sub>2</sub> emissions by 3.6 billion to 7.2 billion tons by 2050. The Japanese Ministry of Economy, Trade and Industry has set a target of reducing 0.12 billion to 0.24 billion tons of CO<sub>2</sub> per year by 2050 with CCS. To carry out such large-scale CCS projects, risk management for safely storing CO<sub>2</sub> underground becomes important. To do this, it is necessary to select the right storage sites by accurately investigating the underground geological conditions of potential sites and, based on the evaluations, conducting a long-term simulation of injected CO<sub>2</sub> behavior. In addition, continuous monitoring of the CO<sub>2</sub> storage reservoirs should be conducted to ensure that CO<sub>2</sub> is stored as intended. RITE's R&D results in this field and the findings obtained through its verification tests in Japan and abroad will be utilized for the risk management of CCS business in the future.

To implement CCS projects, it is indispensable to obtain understanding and cooperation from local communities, in addition to ensuring technological safety. To establish CCS as an effective means against global warming and as a new industry in Japan, it is vital to resolve technological challenges and move forward steadily while gaining public trust. For the sound development of CCS projects, at the same time, it is necessary to develop, in addition to engineers, human resources equipped with the ability to approach issues from diversified perspectives, including

global environment protection and social acceptability. Cooperation between the public and private sectors is essential in promoting CCS-related education and human resource development. In this respect, the role of RITE is very important. I sincerely hope that the results of the R&D conducted thus far by RITE will be able to contribute to Japan and the world as a key technology to both tackle climate change and encourage economic growth in the future.