With the climate change problem growing more serious globally, public expectations for nuclear energy are rising as the world moves towards the achievement of carbon neutrality by 2050. In addition to playing a role in improving global energy security and serving as a base-load power source, nuclear energy works together with renewable energy, playing an essential role in ensuring a stable power supply. Yasunori Inada, the Vice President and Executive Officer and CEO of Nuclear Energy Business Unit leading the nuclear energy business of the Hitachi Group, talks about the business vision, initiatives and future prospects in light of the expectations for and global trends in nuclear energy in recent years as energy-related geopolitical risks have surfaced in various parts of the world.

### Issues Surrounding Energy Market and Expectations for Nuclear Energy

---How will the energy market have to change to achieve the carbon neutrality of society?

I think that the 28th Conference of the Parties to the UN Framework Convention on Climate Change (COP 28)
The Road to Carbon Neutrality

Energy Highlights

The figure shows the outlook for energy supply and demand in FY 2030
(Source) “Comprehensive Energy Statistics of Japan”, 2022 preliminary figures published by the Agency for Natural Resources
*The sum of the values shown may not be 100% in some cases for a reason of round values
*Renewable energy here, including geothermal power, wind power, and solar power, but not hydroelectric power, includes unused energy
Energy Highlights

To improve Japan's energy security, it is important to reduce its dependence on thermal power generation and diversify the sources of its energy. I think that, to overcome this situation, we need to begin operating nuclear power plants again in Japan to increase their output, which is only 6% of the power generated at present, to a certain ratio while also moving ahead with the introduction of renewable energy. Increasing these percentages directly contributes to carbon neutrality. Further, in addition to energy diversity, their distribution, that is, having diverse energy sources distributed across the nation, is also important. If large-scale energy sources, such as thermal and nuclear power plants, are positioned in each region as a base and a certain amount of the energy demanded in each region can be generated from local renewable energy, such as solar or wind power, a stable power supply can be maintained even in an emergency, such as one of the increasingly serious natural disasters. This will increase Japan's resilience.

■ Initiatives for Effective Use of Nuclear Energy by the Next Generation

——While the environment surrounding energy is changing, what are your feelings about the changes in the public opinion regarding the use of nuclear energy?

According to opinion polls, the number of people who have positive opinions about nuclear energy are increasing, mainly among young people. We feel this change in recruitment. The number of students applying to Hitachi’s nuclear energy department has increased 1.6 times from the previous year. On the whole, the number of people who understand the significance and features of nuclear energy and those who think seriously about the future of Japan and the energy problem seems to be increasing, mainly among the younger generations. I think this is the successful result of steady awareness-raising activities by people involved in the industry including ourselves, in addition to the diversification of information media.

Of course, more than a few people have negative feelings about nuclear energy. This is not surprising because we experienced the great risks involved in nuclear energy in a visible way with the accident in Fukushima. As I have told you, however, there are risks in energy selection which are hard to realize in everyday life, such as risks generated by the increase in global warming that would be a result of failing to achieve carbon neutrality, as well as the risks created by the stagnation of the power supply. All of these risks threaten our livelihood and they could be fatal.

I believe that the increase in the number of people with positive opinions about the use of nuclear energy, mainly among young people, signifies their mature awareness of these diverse risks and their willingness

Yasunori Inada, the Vice President and Executive Officer and CEO of Nuclear Energy Business Unit
to make choices for the future while accepting a certain level of risk.
In recent years, we have experienced the impact of the situation in Ukraine in the form of rising electricity prices. There is a clear difference in electricity prices between western and eastern Japan, which is attributed to the different nuclear power plant operating rates. I think this experience is serving as a catalyst encouraging people to think about the energy issue as a visible problem.

—Based on what you have told us, what role do you think Hitachi’s nuclear energy business plays in supporting the energy infrastructure of Japan and the world?

Our top priority is the decommissioning of TEPCO’s Fukushima Daiichi Nuclear Power Station. I think the entire industry must work as one to complete this mission. Hitachi has been working actively on technology development and onsite work needed for specific tasks, including the removal of fuel debris, the handling of treated water, and the decontamination and environmental improvement of the plant premises.

Our second role is to contribute to the improvement of Japan’s energy security. As I said, it is important to increase the output from nuclear power plants to a certain ratio. Our role in this is fully supporting electric power companies toward the resumption of operations. We have been working together with the individual electric power companies for many years, aiming to comply with the new regulatory standards in Japan that reflect the lessons learned from the Fukushima accident. As a result, the resumption of operations is finally coming into sight now. I hope that resumption of operations will enable electric power companies to invest in more efficient technologies, resulting in a virtuous circle toward the solution of the energy problem in Japan.

Finally, we contribute to the realization of a carbon-neutral society. To fulfill the globally growing demand for nuclear energy, we are developing highly innovative advanced boiling water reactor (HI-ABWR) and small modular reactor (SMR) by leveraging the technologies and experience that we have cultivated over many years.

In particular, demand for small modular reactors has been growing overseas due to their lower cost, shorter construction period and high investment predictability. The BWRX-300 is a small light-water reactor that we are developing with GE Hitachi Nuclear Energy, a joint venture with GE Vernova of the US. Construction of the first unit is planned in Canada, and we plan to receive orders for tens of units. If these reactors begin operating smoothly, we can contribute to the stable energy supply in countries overseas, which will increase the motivation of our young employees. Hitachi is also working on technology development on an ongoing basis in view of the next generation, including the development of a fast reactor and the establishment of a nuclear fuel cycle. In particular, the work of our highly motivated young human resources contributing to society in the future would make me happy.

Contributing to the Future through Collaborative Creation Based on Trust

—In closing, what tasks do the nuclear energy industry as a whole have to do toward this future and what are Hitachi’s aspirations?

First and foremost, the development of the human resources who support nuclear energy industry is a pressing task. After the Great East Japan Earthquake, the construction and operation of nuclear power plants was suspended, and the situation has remained almost unchanged to date. This has resulted in an increase in employees of electric power companies who have never operated a nuclear power plant and employees of plant manufacturers who have never constructed or maintained a nuclear power plant. If this situation does not change, technologies and the knowledge of construction, operation, and maintenance is lost, even if the momentum for the use of nuclear energy increases,
the human resources to support it could be absent. This is a pressing task that confronts the entire nuclear energy industry. To achieve this task, we are digitalizing knowledge by applying metaverse technologies and other technologies in collaboration with overseas partners. Having said that, nuclear energy is a comprehensive engineering science where experience counts at the end of the day. There are many things that you cannot understand without onsite experience. It is important to pass down technologies and knowledge while the people with experience in construction and operation are with us. Resuming the operation of plants and the construction of new plants is very meaningful from the perspective of human resource development. Moreover, trust is the most important part of moving the nuclear energy business forward. Playing a significant role in society and people’s lives carries with it a certain amount of responsibility. This business cannot operate without the trust of not only our customers but also the people in the community and our partners. We also have the mission of continuing to share neutral and correct information widely in an easy-to-understand manner, which is even more important because we are a manufacturer with knowledge of the technologies. At Hitachi, we have been working since our founding to make society better with constant technological innovations, guided by our mission of contributing to society through the development of superior, original technology and products. The nuclear energy department, which overcomes issues one by one for sustainable energy in the future together with diverse partners including electric power companies, is also an important business for Hitachi’s embodiment of its mission. We will continue to contribute to the realization of a carbon-neutral society in the future by globally engaging in collaborative creation based on trust, driven by the spirit that we have inherited from our predecessors.

1992 Joined Hitachi, Ltd.
2017 General Manager of Nuclear Engineering Procurement Division, Hitachi-GE Nuclear Energy, Ltd.
2019 Vice President and Director, Hitachi Plant Construction, Ltd.
2020 President and Representative Director, Hitachi Plant Construction, Ltd.
Assumed current role in 2023.

Yasunori Inada
The Vice President and Executive Officer and CEO of Nuclear Energy Business Unit
If we change the start, we can start the change.

SILENT INNOVATION.

Every day, transmission lines supply the world’s energy. From our daily lives to global manufacturing, it all starts here.

That’s why our Power Grids, Energy Solutions, and Nuclear Energy business units are committed to innovation. And now, it’s why we strive to make our energy systems carbon neutral.

It may be a quiet change. But it’s a big change, because it brings us closer to our goal: A sustainable future for all.