

## Becoming a Green Carrier

Mobile telecommunications carriers in Japan currently emit an amount of CO<sub>2</sub> equivalent to that of approximately 10 million private vehicles/year\*. The amount of these emissions, which originate in the charging of mobile terminals as well as the operation of base stations and the manufacture and delivery of terminals, is extremely large, and the reduction of CO<sub>2</sub> emissions is a great social responsibility for all of us. Movements toward achieving a decarbonized society are accelerating throughout the world, and NTT DOCOMO, which views its response to climate change as an important corporate issue, declared its commitment to carbon neutrality by 2030 in September 2021 [1].

This declaration states that NTT DOCOMO will undertake this challenge within the company, throughout its value chain, and together with its customers and partner companies. First, we will achieve carbon neutrality within the company in a number of ways, such as by developing technologies and implementing facilities for reducing power consumption in the network and by procuring renewable energy from NTT DOCOMO's own solar power plants. Next, in the value chain, we will promote the use of renewable energy at docomo Shops by installing solar panels at their premises. Finally, for customers and partner companies, we will roll out new services designed to contribute to decarbonization such as "Green 5G" that is essentially powered by renewable energy and the sale of "green power" via the "docomo Denki" electricity service. We will also contribute to carbon neutrality throughout society by providing environmentally conscious products and services from partner companies for use by customers in conjunction with NTT DOCOMO services. Through these initiatives, NTT DOCOMO aims to become a green carrier.

In line with this declaration, NTT DOCOMO R&D will strive to develop technologies for reducing CO<sub>2</sub> emissions originating in the network and services. For the network, there are a wide variety of technologies that can contribute to a reduction in CO<sub>2</sub> emissions. These include enhanced base-station sleep functions and reduced power consumption in 5th Generation mobile communications system (5G) equipment as well as NTT's Innovative Optical and Wireless Network (IOWN) that includes a next-generation network and information-processing infrastructure. As for services, we plan to contribute to advanced solutions in various fields by developing service-related technologies that can encourage people to undergo a behavioral transformation toward a low-carbon lifestyle. We can expect the amount of CO<sub>2</sub> emissions to increase in step with an increase in the volume of communications. With this being the case, achieving a decarbonized society will require even more innovative developments in the network and services, so I feel that even more will be expected of NTT DOCOMO R&D.

In addition to the above, R&D General Affairs Department that I belong to is working on creating a safe-and-secure R&D environment at the DOCOMO R&D Center located in Yokosuka Research Park. In face of the COVID-19 pandemic, we are enhancing diverse measures to prevent the spread of infections while providing workplace vaccinations. A major theme of late is how best to achieve decarbonization at the



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DOCOMO R&D Center, and measures for reducing power consumption are being phased-in such as installing air-conditioning facilities with high energy-saving performance. We also plan to expand the use of renewable energy by installing large-scale solar panels and turning purchased power effectively into renewable energy through the purchase of non-fossil fuel certificates. Through efforts such as these, I would like to achieve "carbon neutrality from the R&D stage" and help NTT DOCOMO to become a green carrier.

In closing, I would like to introduce you to the WHARF exhibition hall at the DOCOMO R&D Center. Open to the general public, WHARF visitors can experience for themselves mobile communications of the future and the Smart Life. About 140,000 people, a great number indeed, have so far come to visit WHARF. In addition to elemental technologies making up 5G and the 6th-Generation mobile communications system (6G), WHARF brings together a number of examples of how 5G can be used in a variety of fields such as humanoid robots, eXtended Reality (XR), and esports so that our customers can experience the latest technologies. In the future, we plan to supplement these exhibits with examples of innovations related to our pursuit of carbon neutrality. At the WHARF reception desk, an autonomous-running robot greets and guides visitors, and in this way, I would like to make positive use of the DOCOMO R&D Center as a place for holding trials of new technologies.

### REFERENCE

- [1] NTT DOCOMO Press Release: "NTT DOCOMO Commits to Carbon Neutrality by 2030, Aiming to Achieve Effectively Zero Greenhouse Gas Emissions—Initiatives Begin on Helping Society as a Whole Achieve Carbon Neutrality Together with its Customers and Partner Companies—," Sep. 2021.

\* The equivalent number of vehicles is calculated by summing the amount of CO<sub>2</sub> emissions (FY2019) publically announced by Japanese mobile telecommunications carriers (DOCOMO, KDDI, Softbank, and Rakuten) and dividing by the amount of CO<sub>2</sub> emissions per private vehicle.