Realizing a Low Carbon Future

Relevant GRI Standards: 102-11,12,15,29/103-2/201-2/305-1,2,5

Policies and Concepts

Reducing emissions of CO_2 and other greenhouse gases, which are the principal cause of climate change, is an important social issue. Additionally, in recent years, it has also been considered important to devise adaptation measures to prepare for the effects of climate change.

There is growing demand for conserving energy given the rising amounts of electricity use associated with the development of ICT. At the same time, ICT is expected to contribute to energy savings, the reduction of CO_2 emissions across society, and the provision of adaptation measures.

To achieve our zero environmental impact goal under the Environment and Energy Vision, the NTT Group will endeavor to curb CO_2 emissions from its own business activities by shifting to renewable energy. We will also contribute to the reduction of CO_2 emissions across society and adaptation to climate change by striving to develop and disseminate the most advanced ICT services and technologies.

Organization for Implementation

The NTT Group has established a Climate Change Actions Committee which works under the NTT Group Global Environmental Protection Promotion Committee. The Actions Committee has the senior manager of the NTT Environmental Protection Office as its chair and the people responsible for the environment at eight major Group companies as members. The committee investigates and promotes climate change-related measures in the NTT Group, promotes measures aimed at achieving our targets for climate change, formulates policy and implements measures concerning application, and advances appropriate responses to climate change-related laws and ordinances.

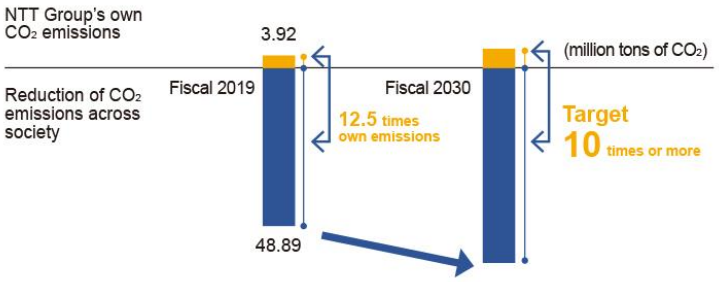
The working groups (WG) under the committee advance activities according to their respective themes. The Environmental Contribution Promotion WG undertakes consideration and diffusion of our environmental labeling system for solutions, and target value management for contributing to the reduction of CO_2 emission amounts across society. The Low-Carbon Promotion WG addresses target value management and promotion of measures for power efficiency, while the Climate Change-Related Legal Compliance WG tackles management of environmental measures related to climate change.

Targets and Results

Reduction of CO_2 Emissions across Society

The NTT Group has established a target for fiscal 2030 calling for it to contribute to reducing the CO_2 emissions of society as a whole by at least 10 times more than the NTT Group's own emissions through its services and technologies.

This target is intended to contribute to the reduction of CO_2 emissions across society by providing ICT services and technologies while curbing CO_2 emission amounts from our own business activities.



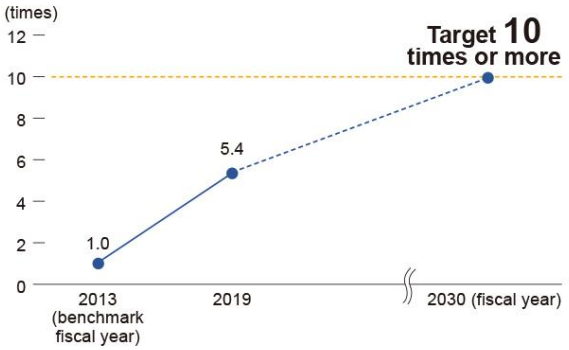
The use of information communication, which is expanding each year through the spread of smartphones and high-speed and large-capacity networks, requires energy. On the other hand, by improving efficiency and reduction of goods through digitalization, the use of information also contributes to the reduction of CO_2 emissions across society by reducing environmental load more than the energy consumption it requires.

Notes:

- The amount of reducing CO_2 across society quantifies the energy savings effects obtained through ICT services using CO_2 volume. The energy saving effect is quantified with references to the Telecommunication Technology Committee (TTC) Standard "Methodology for the assessment of the environmental impact of information and communication technology goods, networks and services (JT-L1410)" and the calculation method specified by the "LCA of Information and Communication Technology (ICT) business organizations" research group of the Life Cycle Assessment Society of Japan.
- The effects of energy savings obtained through the introduction of ICT services include, for example, reduced electricity usage by homes, companies and factories from energy management, alleviation of traffic congestion using analysis of congestion and operation information, and reduced electricity usage from the streamlining and optimization of transportation schedules.
- The amount of CO_2 emissions for the NTT Group includes the emissions from facilities necessary for other telecommunication carriers and data centers to provide their services.

Power Efficiency of the Telecommunications Business

The NTT Group has established the target for fiscal 2030 to improve the power efficiency per data transmission in our telecommunications business to at least 10 times higher than in fiscal 2013*1. Electricity is essential to the continuity of the telecommunications business and it also accounts for more than 90% of the NTT Group's CO_2 emissions. We set this target because improving the efficiency of using electricity both reduces the risk of business disruptions and helps mitigate climate change.



We are introducing highly energy efficient equipment and improving the efficiency of network structures based on our Energy Efficiency Guidelines.

In October 2018, NTT became the first telecommunications carrier in Japan to join the EP100*2 international initiative on energy efficiency led by The Climate Group. By participating in such an international initiative, we intend to publicly declare the NTT Group's commitment to the environment and express our stance on international environmental issues.

*1 The telecommunications businesses subject to the calculation for power efficiency are the domestic businesses of the telecommunications business segment appearing in our Annual Report (NTT East, NTT West, NTT Communications, NTT DOCOMO, and NTT DATA).

*2 An international initiative comprising companies pledging to double the energy efficiency of their operations (improve energy efficiency by 50%) as participants.

CO_2 Emissions from Business Operations

As part of its efforts to promote the Environment and Energy Vision, the NTT Group announced its participation in the SBT in May 2020. We will set our reduction targets for greenhouse gas emissions based on the SBT as an initiative for achieving zero environmental impact.

GHG Emissions of the NTT Group

More than 90% of the NTT Group's CO_2 emissions are indirectly generated emissions produced through electricity usage. We are working to curb these CO_2 emissions by reducing electricity usage with the goal of raising power efficiency per data transmission in our telecommunications businesses by at least 10 times compared to fiscal 2013 levels. We are also seeking to reduce CO_2 emissions from company vehicles by introducing low-emissions vehicles such as hybrid and electric vehicles into our fleet.

In fiscal 2019, the NTT Group's Scope 1 (directly generated GHG emissions) GHG emissions fell by 16% year-on-year to about 0.138 million t-CO_2e and Scope 2 (indirectly generated GHG emissions) CO_2 emissions fell by 7% to 3.06 million t-CO_2e*.

In addition to disclosing the environmental impact generated by our business activities, the NTT Group also calculates and discloses Scope 3 emissions (GHG emissions produced over the entire value chain), which includes indirect emissions that have been generated while providing ICT services and other activities. In fiscal 2019, Scope 3 emissions amounted to about 19.65 million t-CO_2e.

* The NTT Group provides equipment and the like necessary for other telecommunications carriers and data centers to provide their services. To date, we have included the fuel and electricity required for this equipment in our disclosed CO_2 emissions in accordance with reporting methods outlined by the Act on Promotion of Global Warming Countermeasures. However, as calculation methods have been established based on the Ministry of the Environment's Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (ver. 2.3), we have adopted these for calculating the above CO_2 emissions as Scope 3 from fiscal 2019.

Initiatives for Tackling Climate Change

Environmental issues related to climate change, energy (electricity), resources, and ecosystems carry the potential to be both risks and opportunities for the NTT Group's business activities. These risks and opportunities are prioritized by the Global Environmental Protection Promotion Committee, and major KPIs are reported to the CSR Committee. Further, risks and opportunities identified as having a significant impact on business, such as laws, regulations, and systems related to the environment, are presented to the Business Risk Management Committee, which identifies Companywide risks, and to the Board of Directors.

Among these, risks and opportunities posed by climate change are specifically recognized as environmental issues of particular significance for society as well as the NTT Group. We are seeking to more closely integrate our management strategies and environmental management with regard to risks and opportunities driven by future climate change by implementing assessments and actions in accordance with our management strategies.

Scenario Analysis

The NTT Group formulated the medium-term management plan "Your Value Partner 2025" to resolve social issues by advancing digital transformation through the Group's business activities. Under the keywords "Your Value Partner," we are working to achieve this plan by utilizing the Group's management resources and capabilities, such as R&D, ICT infrastructure, and personnel as well as collaborating with partners.

In accordance with TCFD recommendations, we decided to examine climate-related risks and opportunities involved in the Group's operations based on different climate-related scenarios. The following is a report on the results of our latest scenario analysis for transition risks and physical risks.

Scenario	Outline	References for Methodology
Transition Risk Scenario	Scenario in which the decarbonization of society is rapidly achieved (a future in which the target increase of 2°C has been attained)	IEA World Energy Model Documentation 2019
Physical Risk Scenario	Scenario in which physical risks materialize (a future in which the average temperature has risen by 4°C)	IPCC Fifth Assessment Report Synthesis Report on Observations, Projections and Impact Assessments of Climate Change, 2018

Under the above scenarios, we considered possible future events and the NTT Group's business developments in the coming years to identify the risks and opportunities and then organized the NTT Group's response to the risks and opportunities accordingly.

Climate-Related Risks

Risk Category		Timescale	Outline of Risks	NTT Group's Response
Transition Risks	Policy and Legal Risk	Medium-term	・Heavier burden of environmental taxes and FIT ・Introduction of carbon pricing	・Promote green energy ・Enhance energy efficiency
	Market and Reputation Risk	Short-term	・Losing customers and damage to the corporate image if considered efforts are insufficient	・Promote ICT services that contribute to mitigating climate change ・Publicize the effects of ICT services in reducing CO_2 emissions
Physical Risks	Acute Risk	Short-term	・Frequent service interruptions caused by an increase in frequency of natural disasters such as torrential rains and flooding	・Ensure the stability and reliability of telecommunications services in anticipation of large-scale disasters
	Chronic Risk	Medium- and long-term	・Higher operating costs caused by increases in electricity consumption for air conditioning	・Promote measures for reducing electricity consumption of air conditioning equipment

Climate-Related Opportunities

Opportunity Category	Timescale	Outline of Opportunities	NTT Group's Response
Products and Services	Short- and medium-term	Rise in demand for ICT services that improve energy efficiency due to the growing momentum for addressing climate change	Promote ICT services that contribute to mitigating climate change
Low-Carbon Products (Renewable Energy)	Medium- and long-term	Rise in demand for renewable energy aimed at realizing a decarbonized society	Expand the business of a new company (NTT Anode Energy Corporation) established to promote renewable energy
Investment in R&D	Long-term	Need for technological innovations for further improving the energy efficiency of telecommunications and data centers	Promote the IOWN concept
Products and Services	Short- and medium-term	Rise in demand for business continuity services due to the frequent occurrence of natural disasters	Expand in the business continuity solution business

Risks Driven by Changes in Laws, Regulations and Systems

Changes in laws, regulations, and systems pose the risk of raising our operating costs through higher electricity prices.

The Act on Special Measures concerning the Procurement of Renewable Electric Energy by Operators of Electric Utilities, which came into force on July 1, 2012, stipulates that costs due to the feed-in tariff (FIT) will be recovered from users through a surcharge on electricity charges. Also, electricity prices have been hiked due to the tax introduced in October 2012 on the use of all fossil fuels for global warming countermeasures (environmental tax). As such, risks driven by changes in laws, regulations and systems have already materialized in the form of higher electricity costs.

FIT taxes are increasing every year, resulting in the risk of higher electricity charges in the future. It is also possible that carbon pricing will be introduced in Japan toward achieving the below 2°C target*1, which may further increase the risk of operating costs.

Since the NTT Group uses more than 8 billion kWh of electricity each year to operate its telecommunications facilities in Japan, revisions in the laws, regulations, and systems may create the risk of suffering a severe financial impact.

*1 The target of constraining the increase in global temperatures at well below 2°C from before the industrial revolution, as designated under the Paris Agreement that came into effect in November 2016.

Note: Scale of Assumed Risks: The environmental tax burden resulting from phased-in hikes has increased electricity charges by 0.11 yen/kWh, resulting in an additional financial burden of 720 million yen a year for the NTT Group. In addition, we estimate the tax burden resulting from the FIT system will cause electricity charges to increase by between 2.9 and 3.45 yen/kWh. In this case, the NTT Group will incur an additional financial burden of between 19.1 and 22.7 billion yen a year (estimated from actual electricity usage in fiscal 2019 of 6.59 billion kWh). With regard to carbon pricing, the NTT Group is expected to incur an additional burden of 13.2 billion yen based on an estimated carbon price of 2 yen/kWh.

Risk Avoidance Measures

We have been pursuing measures for reducing electricity usage to minimize the increase in operating costs.

Specifically, we have reduced electricity usage by focusing on consolidating telecommunications equipment, which account for most of the NTT Group's electricity usage, and upgrading to equipment with higher levels of energy efficiency (or carrying out upgrades ahead of schedule). We are also working to enhance air conditioning and power supply facilities by introducing air conditioner optimal control systems (Smart DASHR) and high-voltage direct current (HVDC) systems. With regards to electricity purchases, we have introduced systems to analyze electricity usage to reduce actual electricity charges.

We are also preparing for the introduction of carbon pricing in the future by promoting the shift to renewable energy to reduce CO_2 emissions arising from electricity usage in our own business operations. In the Environment and Energy Vision, announced in May 2020, we stated our quantitative target of raising the proportion of renewable energy for the NTT Group as a whole by 30% or more by 2030.

Risks Driven by Rising Temperatures

Increases in electricity consumption by air conditioning equipment in response to rising temperatures may pose the risk of higher operating costs.

The equipment used at our telecommunications facilities and data centers is set to operate within a specific range of temperatures. Those exceeding this range could cause equipment shutdowns and failures. For this reason, we maintain room temperatures within a certain range, including through the use of air conditioners. When ambient temperature rises, the energy efficiency of air conditioners declines and that in turn raises electricity consumption.

Therefore, the NTT Group faces the risk of suffering a severe financial impact due to increases in energy costs caused by rising electricity usage.

There is also a risk of service interruptions due to the growing number of natural disasters caused by rising temperatures.

The NTT Group has operations both domestically and abroad, and supports society and business activities through its telecommunications networks and information systems. In addition, the NTT Group provides a multitude of services that serve as necessary lifelines that ensure people's safety in their everyday lives. Natural disasters such as earthquakes,

tsunamis, typhoons, and floods could cause system and network failure. As a result, there may be occasions when disruptions in the NTT Group's business operations make it impossible to provide reliable services, which may lead to the NTT Group being held liable for related damages, potentially damaging the NTT Group's credibility and corporate image. A large-scale disaster in particular might not only severely damage the NTT Group's telecommunications networks; it could also harm NTT Group employees or inflict damage to systems that could take a long time to restore, and the resulting emergency electricity use restrictions could hinder the NTT Group's ability to provide reliable services. These events may lead to reductions in income and substantial repair costs.

* Scale of Assumed Risks: We estimate that a 1°C rise in ambient temperature results in increasing electricity charges for air conditioning used at our telecommunication facilities and data centers between 0.1 and 0.3 yen/kWh. In this case, the NTT Group will incur an additional financial burden of between 660 million and 2.0 billion yen a year (estimated from actual electricity usage in fiscal 2019 of 6.59 billion kWh).

Risk Avoidance Measures

We have been pursuing measures for reducing electricity usage related to air conditioning equipment to minimize the increase in operating costs.

Specifically, we operate air conditioner optimal control systems that save energy. We have installed wireless temperature sensor modules that automatically control the air conditioners in response to temperatures detected by the sensors. We also seek to conserve electricity by maintaining appropriate temperature settings for air conditioners, by installing diffusers and blank panels to release exhaust heat from equipment, and by efficiently laying out double flooring to improve airflow and prevent hotspots.

In fiscal 2019, we invested approximately 8.9 billion yen into measures for reducing electricity usage, including those related to air conditioning facilities discussed above (service life of these measures: 15 years). To reduce the risk of service interruptions due to natural disasters, the NTT Group is working to strengthen the resilience of our equipment and ensure early restoration of telecommunications services by expanding base stations equipped to deal with disasters, deploying and enhancing the functions of mobile power supply vehicles, portable satellite equipment, and other mobile equipment as well as participating in disaster drills held in the respective regions. NTT's telecommunications equipment and buildings are designed to withstand natural disasters. For example, our facilities are equipped with flood doors and other defenses according to their location to prevent the inundation of telecommunications equipment.

Climate-Related Opportunities

Damage from such natural disasters as heavy rains and more frequent typhoons is becoming more common as the climate changes, and there is a growing risk of water and lightning damage and power outages, which also cause extensive damage when they occur. As a consequence, many companies need to take measures to ensure that if emergency situations such as disasters occur in the future, the organizations are able to continue important operations and restore order quickly.

The NTT Group has developed a solution business that leverages its reliable track record and expertise in business continuity planning gained over 100 years of protecting and sustaining Japan's telecommunications, which cannot be allowed to be interrupted in the event of a disaster, and considers this to be an exceptional opportunity. The NTT Group is able to develop business continuity solutions across a wide range of fields, including the cloud technology from NTT Communications, NTT DATA, NTT COMWARE and NTT Ltd., and the technology relating to buildings and power from NTT FACILITIES. In particular, NTT FACILITIES has been making substantial efforts toward winning new business.

Various measures are currently being considered to fulfill the goal of keeping the rise in global temperatures below 2°C compared to before the Industrial Revolution. The use of ICT has been recommended as one such measure. The NTT Group provides diverse ICT services as a telecommunications carrier and expects climate-related businesses will expand in the following areas.

- Further expansion in demand for smart energy businesses such as energy management using ICT, and energy-saving data centers resulting from the growing interest in efficient energy use in local communities, buildings, and households
- Expansion in a business for business continuity solutions using ICT and cloud technology accompanying corporate transition to cloud services and advances in digitization
- Expansion in demand for ICT services that ultimately reduce environmental loads, such as work style and operational reforms due to the spread and establishment of teleworking and remote work, and digital transformation (DX)
- Rise in demand for BCP-related ICT services addressing contingencies including natural disasters and system failures

Data centers are essential for using ICT in the ways described above. The NTT Group operates a large number of highly reliable and energy efficient data centers as part of its longstanding data center business that mainly involves NTT Communications, NTT DATA, NTT COMWARE, and NTT Ltd. Because of the need to provide solutions to climate change, we believe demand will grow for the NTT Group's data centers, which have a reliable track record as well as the largest floor area in the world.

Adaptation to Climate Change

The NTT Group is moving forward with initiatives for the adaptation of the NTT Group and of society to play our part in

adapting to climate change, and in developing and disseminating examples of adaptation.

Contributing to Adaptation to Climate Change

Disaster-resilient telecommunications networks and equipment

The NTT Group is striving to develop disaster-resilient telecommunications networks and equipment. These initiatives are disaster mitigation measures to continue providing telecommunications services in the event of a disaster as well as adaptation measures for disasters caused by climate change.

Adaptation of Society by Providing ICT

Installation of Wi-Fi and Storage Batteries in Public Phone Booths

We are installing backup power sources for Wi-Fi access points set up inside public phone booths to secure a means of communication during prolonged power outages. The initiative mitigates damages from disasters and serves as an adaptive measure against disasters caused by climate change.

Backup Power Supply Service based on Distributed Power Technology

The NTT Anode Energy Group provides renewable energy along with backup power for equipment needed during a power outage by installing distributed power systems including solar power generators and storage batteries at facilities that serve important functions at times of a disaster, such as shelters, with the aim of bolstering disaster prevention capacity of local communities. The company is also conducting verification tests to develop backup services with even higher resilience against disasters by using the direct-current power supply technology it accumulated through storage batteries installed at NTT station buildings and telecommunications businesses.

Main Initiatives

Shift to Renewable Energy

As one of the pillars of the Environment and Energy Vision, we are promoting the shift to renewable energy for the NTT Group as a whole. In 2020, we have been driving the switch to 100% renewable energy at the head office of NTT Holdings and four facilities of NTT Laboratories.

Furthermore, the NTT Group is developing renewable energy sources while also promoting their use in its own business activities. For example, NTT Anode Energy is focusing on the development of renewable power stations such as solar power plants while using the NTT Group's ICT and direct-current power supply technologies to develop and provide solutions that make advanced use of distributed energy resources such as renewable energy generators and storage batteries. This is to contribute to the establishment of social infrastructure that facilitates the spread of renewable energy and realize a sustainable society.

Pursuing Initiatives across the Industry for Energy-Efficient ICT Devices

NTT is a member of the Telecommunications Carrier Association (TCA) and in that capacity, participates in the ICT Ecology Guideline Council,*1 an organization that seeks to enhance the energy efficiency of telecommunications-related products. The council formulates guidelines on the criteria for evaluating the energy efficiency of telecommunications devices, and NTT has contributed to the technical aspect of this effort. The NTT Group's Energy Efficiency Guidelines are based on the guidelines created by this council.

In August 2010, eight NTT Group companies*2 acquired the Eco ICT Logo on submitting self-evaluations of their CO_2 emissions reduction efforts, including the establishment of Energy Efficiency Guidelines. The Eco ICT Logo was created by the ICT Ecology Guideline Council to signify efforts by telecommunications service providers to reduce CO_2 emissions.

We will continue to drive the development and procurement of energy-efficient equipment, and work with the ICT Ecology Guideline Council to help bring both vendors and carriers together to promote the industry-wide procurement of energy-efficient equipment. We will ensure that vendors are consistently provided with requirements for NTT Group specification processes, and include energy efficiency information disclosure and our corporate stance on energy efficiency in our criteria for selecting vendors.

*1 ICT Ecology Guideline Council: An organization established jointly by the Telecommunications Carriers Association, Telecom Services Association, Japan Internet Providers Association, Communications and Information Network Association of Japan and ASP-SaaS-IoT Cloud Consortium to drive industry-wide efforts to address the issue of global warming.

*2 The eight NTT Group companies are NTT, NTT East, NTT West, NTT Communications, NTT DOCOMO, NTT DATA, NTT FACILITIES, and NTT COMWARE.

ICT Ecology Guideline Council WEB https://www.tca.or.jp/information/ecoict/index.html (Japanese only)

Environmental Labeling System for Solutions*

The NTT Group has been implementing an environmental labeling system for solutions formulated in fiscal 2009, which enables us to communicate the environmental contributions made by ICT to customers in a manner that is easy to

understand, and to promote Group environmental efforts.

Under the system, ICT solutions offered by Group companies that provide a certain level of environmental load reduction effects are certified as environmentally friendly solutions and the companies are allowed to display the environmental label designated by the NTT Group. A solution must meet the criteria of demonstrating a reduction rate of over 15% based on a quantitative assessment of the reduced volume of CO_2 emissions.

Certified solutions and their assessment results are published in the Environmental Labeling System for Solutions section under NTT Group Environmental Protection Activities on the official NTT website. In fiscal 2019, 6 solutions were certified as environmentally friendly, bringing the total number of certified solutions to 84 (as of March 31, 2020).

* The Environmental Solution Label is a self-declared program (TYPE II) formulated by the NTT Group.

Environmental Solution Label https://www.ntt.co.jp/kankyo/e/protect/label/index.html

Group-Wide TPR Campaign to Reduce Electricity Usage

The NTT Group has been working on Group-wide energy conservation activities named the TPR (Total Power Revolution) Campaign since October 1997 with respect to the electricity it consumes, which accounts for over 90% of the CO_2 emissions from its business activities. By promoting efficient energy management at buildings owned by NTT and installing energy-efficient electrical power units, air conditioning systems and telecommunications equipment, we managed to continue to reduce electricity usage across the NTT Group by approximately 260 million kWh from projected levels in fiscal 2019.

Energy-Saving Data Centers

NTT Communications offers data centers with a PUE* of less than 1.2, and NTT COMWARE offers data centers with a PUE of less than 1.1, which are at the top worldwide for energy efficiency. We are striving to enhance PUE for our other data centers as well, introducing five-star equipment with the highest level of energy efficiency in accordance with the NTT Group Energy Efficiency Guidelines. NTT FACILITIES has been developing technology for reducing the electricity consumption of data centers by incorporating higher efficiency technology for electrical power units and air conditioning systems as well as central air conditioning control systems.

* Power Usage Effectiveness: PUE is calculated by dividing the total power consumption of a data center by the power consumption of the computing equipment it houses. It is a figure larger than 1, with higher efficiencies represented by values approaching 1.

Promotion of EV100

The NTT Group is committed to reducing its corporate fleet and converting to electric vehicles (EV). We will replace 50% of our general-purpose vehicles with EV by 2025 and 100% of our fleet by 2030. Accordingly, we are establishing battery charging stations for EVs on the grounds of our telecommunications buildings.

To convey our initiative to the public, in October 2018 NTT became the first telecommunications operator in the world to become a member of the Climate Group's EV100* international initiative. In May 2020, we established the Electric Vehicle Promotion Consortium in a joint effort with Hitachi, Ricoh, and Tokyo Electric Power to expand the use of electric vehicles in the commercial sector. Looking ahead, we will promote the shared use of vehicles, decarbonization in the area of mobility, use of EV at times of a disaster, and initiatives related to systems and regulations.

* EV100: International initiative for promoting commercial use of EV and development of the service environment.

Initiatives for Realizing the IOWN Concept

The development of ICT has dramatically increased the volume of information being transmitted through networks. Up to now, energy has been saved by enhancing power efficiency through the introduction and renewal of highly energy-efficient telecommunications equipment. However, the performance and efficiency of integrated circuit technology which has grown in line with Moore's law, is thought to be approaching its limits in terms of speed and energy consumption due to the restrictions of nanoscale fabrication and integration density. NTT Laboratories is advancing research and development that incorporates optical technology into signal processing with the aim of using photonics to realize a base for a new kind of computing. This has resulted in the development of a modulator with the lowest ever reported energy consumption and an optical transistor which transfers a high-speed optical signal to another light with gain (announced in April 2019).

The NTT Group is advancing the development of photonic technology and we have established the IOWN (Innovative Optical & Wireless Network) concept as one of the pillars of an all-photonic network that incorporates photonic-based technology throughout entire networks, including terminals. The target of this all-photonic network will be to realize power efficiency that is 100 times greater in areas where photonics technology is applied, and we expect it will radically reduce energy consumption. We are collaborating with global partners and specialists in a wide range of research and technological fields with the aim of realizing the IOWN concept.

Please see page 026 for details about initiatives on realizing the IOWN concept.