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Environmental

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Environmental principles and policies

Environmental principles

We provide customers with innovative products and services by promoting the effective use of energy and resources, promoting diversity and resource circularity. These are just some of the ways in which Nissan is striving to achieve its environmental philosophy "A symbiosis of people, vehicles, and nature".

To achieve our environmental principles, we have clearly defined our ultimate goal: "To manage the environmental impact caused by our operations and products to a level that

can be absorbed by nature and pass on rich natural capital to future generations" and set what we want to be: "A sincere eco-innovator." This means endeavoring to leave as small an ecological footprint as possible for the Earth's future. Beyond deepening our awareness of the environment, we strive to conduct all business activities with consideration and kindness for people, society, nature and the Earth, as a means of contributing to the development of a better society.

Nissan's environmental philosophy: A symbiosis of people, vehicles, and nature

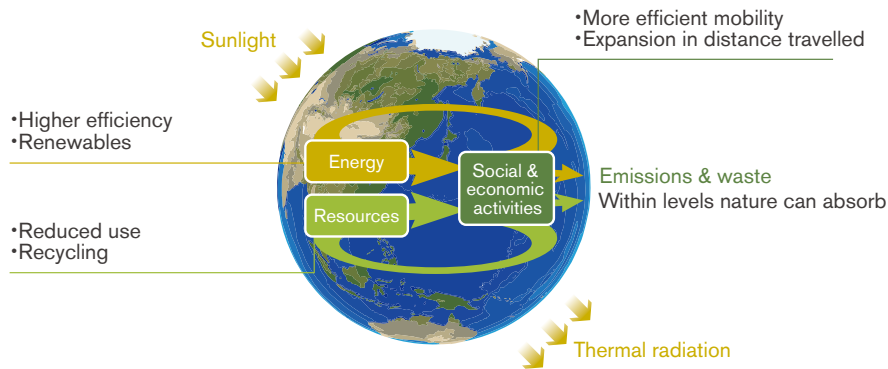
In addition to deepening our understanding of the environment, we conduct all of our operations, including production and sales, with consideration for people, society, nature and the earth, as a means of contributing to the building of a better society.

Ultimate goal

We will reduce the environmental impact and resource consumption of our corporate operations and vehicles throughout their life cycles to a level that can be absorbed by nature and pass on rich natural capital to future generations.

What we want to be: A Sincere Eco-Innovator

Sincere: Proactively address environmental challenges and reduce our impact on the environment.
Eco-Innovator: Develop a sustainable mobility society through innovative technology in products and services.



* Based on Beyond Growth: The Economics of Sustainable Development, by Herman E. Daly

Understanding of environmental issues

Environmental and social issues have received increasing attention in recent years. Society faces various challenges, including poverty and hunger, energy issues, climate change, natural resource security, information security, and conflicts that pose threats to peace. These issues are also being addressed by the World Economic Forum (WEF).

In aiming to address these various challenges, Nissan recognizes that providing safe, secure, and sustainable mobility to all individuals and delivering value to society has become increasingly important.

Among these issues, climate change is viewed as a factor contributing to large natural disasters that occur frequently around the world each year, and the need to reduce the impact of climate change is now greater than ever before. In the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report released from 2021 to 2023, it was emphasized once again that there is no doubt that climate change is caused by human activities, and that urgent and enhanced measures are needed without delay to limit the global average temperature rise to 1.5°C.

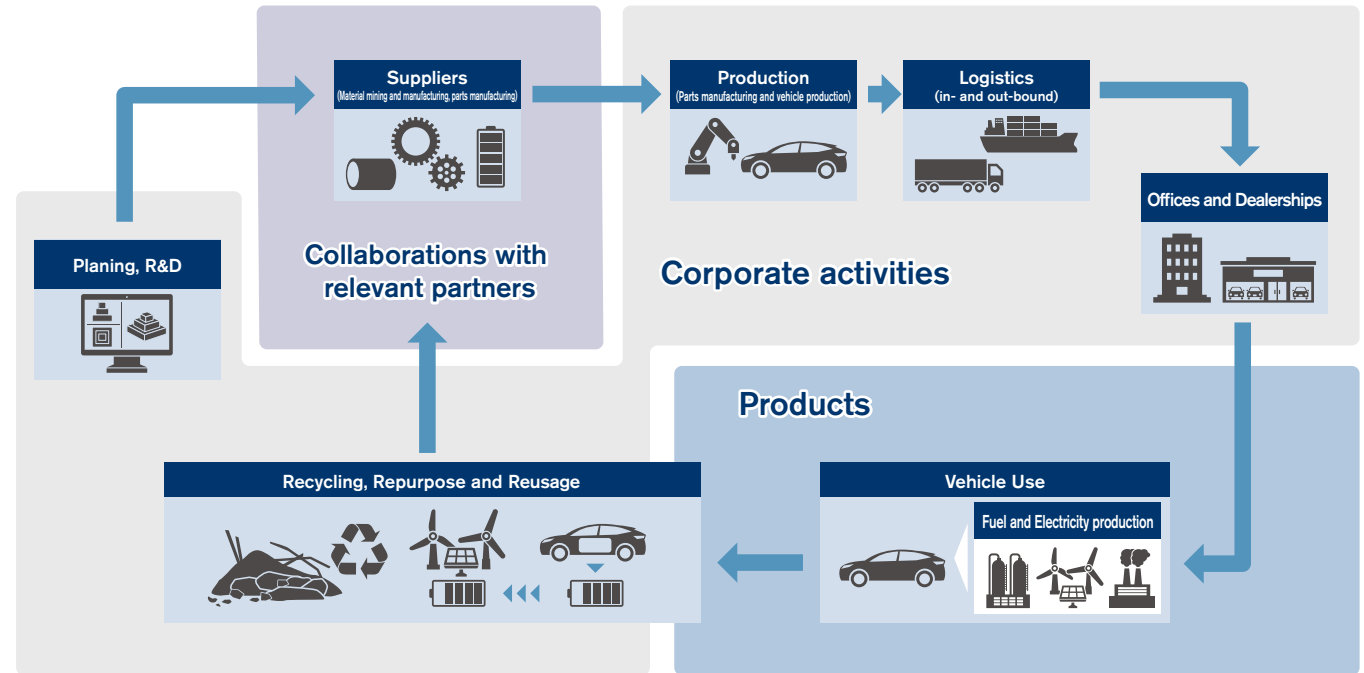
At the 28th Conference of the Parties (COP28) to the United Nations Framework Convention on Climate Change (UNFCCC) was held in December 2023, ambitious targets were proposed to address climate and biodiversity issues. These targets include concrete action plans aimed at halting the loss of nature, reversing current conditions, and promoting the rapid phase-out of fossil fuels by 2030 in order to achieve the global goal of resolving climate and biodiversity issues.

The automotive industry is complex and diverse, and it is both dependent on and has an impact on the global environment. Nissan is committed to sustainability initiatives that mitigate climate change and conserve energy, preserve air quality and other natural capital, use mineral resources efficiently, properly manage chemical substances, efficiently allocate scarce resources, and promote good health. In addition, we are pursuing business structure reforms enabling us to move away from dependence on fossil fuels.

Strategic approach to environmental issues

To solidly contribute to resolving global environmental issues,*1 Nissan engages in direct discussions with environmental experts, investors, NGOs, NPOs, and other organizations throughout the world, analyzing*2 potential opportunities and risks. As a global automotive manufacturer, we consider not only corporate activities but also those upstream and downstream as part of our responsibility. Our scope of analysis covers the entire value chain from the procurement of raw materials for vehicles to transportation, disposal, recycling, and product use, including suppliers. Based on this analysis, we identified materialities*3 that we should address and have identified Climate change, Resource dependency, Air quality and Water as important areas to focus on as Nissan's mid-term to long-term environmental strategy. Specific action plans*4 were established through 2030 to target these key areas. Recognizing that the key areas identified are interconnected, and by addressing them comprehensively, Nissan will also contribute to addressing the challenges of nature-related issues, including biodiversity. We will also assess impacts associated with the transition to decarbonization and promote activities that focus on achieving a just transition without adverse impacts in order to achieve carbon neutrality.

Nissan Value Chain



*1 Click here for more information on Nissan's understanding of global environmental issues. >>> P016
 *2 Click here for more information on potential risks facing the company, ecosystem assessments, and climate change scenario analyses. >>> P018
 *3 Click here for more information on sustainability materiality, including the environment. >>> P004
 *4 Click here for more information on Nissan's medium-term environmental action plan (NGP2030) >>> P024

Initiatives to identify impacts and dependencies on nature, including biodiversity

Global trends

At the 15th United Nations Biodiversity Conference (COP15) held in 2021 and 2022, it was discussed that we are on the verge of an unprecedentedly multifaceted crisis, including significant loss of biodiversity and degradation and pollution of both land and sea.

That same year, University of Cambridge Emeritus Professor Sir Partha Dasgupta published *The Economics of Biodiversity: The Dasgupta Review* espousing the idea of introducing natural capital into the economy, which was referenced at the G7 Summit and contributed to influencing international politics.

These international discussions are backed by scientific evidence acquired from the world's first Millennium Ecosystem Assessment conducted by the United Nations from 2001–2005. Along with climate change mitigation, maintaining rich ecosystems and biodiversity are important environmental issues for Nissan.

The assessment identified two key trends:

1. Deterioration of global ecosystems, which is progressing at an unprecedented rate and scale.
2. Ecosystems that create many ecosystem services, such as food, freshwater supplies, climate control, and protection from natural disasters, all of which substantially benefit humanity.

Analyses of impact and dependency on ecosystem services

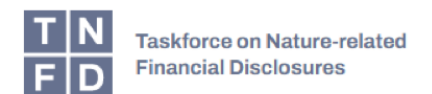
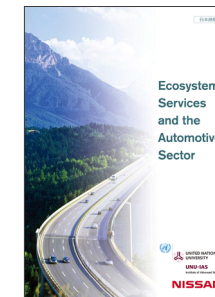
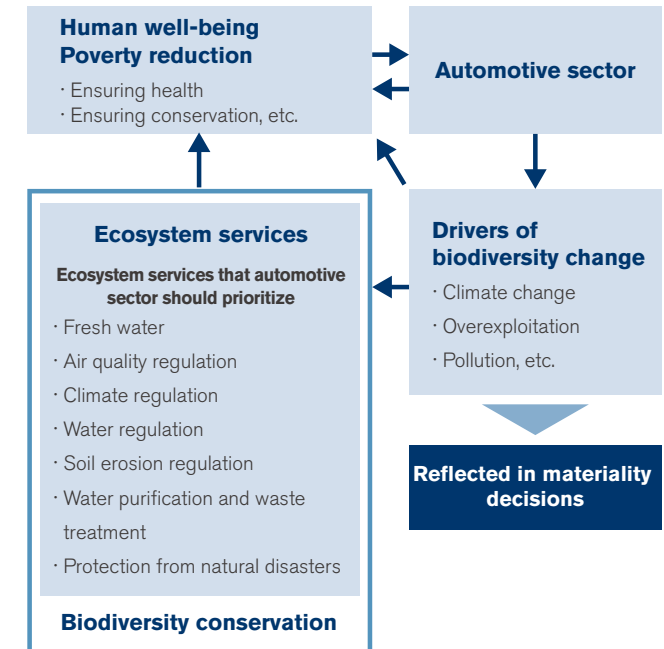
In light of global trends, Nissan rapidly launched assessments of its overall value chain, from the mining of material resources to the production and operation of

its vehicles. Together with the United Nations University, Nissan utilized the Corporate Ecosystem Services Review*1 methodology in conducting research to ascertain the impact and dependency its own corporate activities have on ecosystems. The findings of that research were published in the 2010 report entitled *Ecosystem Services and the Automotive Sector**2.

Through this assessment, seven ecosystem services were identified as priorities for Nissan and the automotive industry as a whole: Fresh water, air quality regulation, climate regulation, water regulation, erosion regulation, water purification and treatment, and natural hazard regulation. In order to understand the relation of these with the automotive industry, Nissan has identified: Energy sourcing, mineral and material sourcing, and water usage as priority areas and conducted assessments to determine the dependencies on and impacts on these ecosystem services. A detailed analysis was conducted to assess impacts and dependencies with regard to each of these ecosystem services. Also in 2013, we estimated that the use of water resources in the upstream resource procurement process was more than 20 times the amount of water used by Nissan, and we also conducted analyses related to air quality.

Ecosystem and biodiversity assessments are reflected in materiality decisions and incorporated into specific actions as Nissan Green Program policies and strategies. Nissan endorsed the TNFD*3's recommendations and joined the TNFD Forum to support its activities, believing that it is important to communicate more clearly and accurately these initiatives to investors and other stakeholders. We will consider further disclosure in line with the recommended framework.

Ecosystem services and automotive industry's involvement (impacts and dependencies)



*1 Developed by the World Resources Institute (WRI) in cooperation with the World Business Council for Sustainable Development (WBCSD) and the Meridian Institute based on the UN Millennium Ecosystem Assessment (MA).

*2 Click here to read "Ecosystem Services and the Automotive Sector". https://www.nissan-global.com/EN/DOCUMENT/PDF/ENVIRONMENT/SOCIAL/ecosystem_services_and_the_automotive_sector.pdf

*3 TNFD: Taskforce on Nature-related Financial Disclosures

Climate change scenario analysis to strengthen strategies for 2050 society

Nissan's efforts toward the environment have achieved continuous results by consistently reaching milestones backcasted from our long-term vision. However, compared with 2006 when we formulated the long-term vision based on the 2°C scenario from the Intergovernmental Panel on Climate Change (IPCC) report, the threat of extreme weather due to climate change is increasing, and thus we believe it is necessary to enhance our strategy and make it more resilient amid growing uncertainties.

In 2015, the 21st Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC) adopted a framework (the Paris Agreement) aimed at limiting global temperature increase to "well below" 2°C.

COP26 in 2021 announced its resolution "to continue efforts to limit temperature rise to 1.5°C" to emphasize 1.5°C restriction, while adding the "reduction of global carbon dioxide emissions to virtually zero by mid-century." Similar to the Paris Agreement, the Sustainable Development Goals (SDGs) adopted by the United Nations in 2015 also called for concrete measures to address climate change.

The scenario analysis conducted for the purpose of strategic enhancements assumes societies based on the 4°C and 2°C scenarios presented in the International Energy Agency (IEA) time horizon up to 2050 and the 1.5°C scenario in the IPCC special report. Furthermore, in consideration of factors including changes in customer and market acceptance, tightening automobile regulations and the transition toward clean energy, Nissan's business activities, products and services were examined in terms of strategic resilience to the opportunities and risks posed by climate change in the following four steps.

Four steps for review

- Evaluate past materiality, investigate risk factors with a decisive impact on the automotive sector due to climate change in documented studies and define main drivers in categories such as population, economy, geopolitics, climate change policy and technology.
- Categorizing main drivers into physical risks and transition risks, then considering the trade-off relationships of each, we examined the rise in the Earth's average temperature in three scenarios of 1.5°C, 2°C, and 4°C, and confirmed the range of risks for the 1.5°C and 4°C scenarios based on a 2°C reference.
- Based on the degree to which the automobile sector was impacted and the timeline, items with a more substantial impact were screened from the main drivers.
- Changes, conditions, and effects were adjusted in each scenario to provide guidance based on qualitative evaluation of the elements necessary for enhancing strategies.

Policies and regulations, Technological changes, Market changes correspond to transition risks, while Extreme weather falls under physical risks.

Envisioned scenarios and associated opportunities and risks

Scenario assumption	Area of impact	Business activity opportunities and risks related to ongoing climate change
1.5°C	Policies and regulations	Complying with a further tightening of vehicle fuel efficiency and exhaust gas regulations may have an impact on the development of electric powertrain technologies and production costs and may influence production costs
		Increased burden of energy costs due to expansion of carbon taxes, expand investment in energy-saving equipment as policy
	Technological changes	Cost effects of utilizing next-generation vehicle technologies such as in-vehicle batteries and other EV-related technologies as well as expanding autonomous driving technologies
		Increased demand will affect supply chains for rare earth metals used for in-vehicle batteries materials and cause an increase in stabilization costs
Market changes	Changes in consumer awareness leads to reduced new vehicle sales due to the selection of public transportation and bicycles and the transition to mobility services	
4°C	Opportunities	Expand the provision of power management opportunities with Vehicle to Everything (V2X), an EV energy charging/discharging technology, and redefine the value of EV, especially with Vehicle to Grid (V2G)
	Extreme weather	The impact on the supply chain and the operation of production bases due to extreme weather such as heavy rain and drought will increase property insurance costs and air conditioning energy costs
	Opportunities	The need for securing emergency power sources using EV batteries is increasing as a disaster preparedness and mitigation measure

As a global automobile company, it will be more than 170 countries and markets where our production facilities operate and our products are provided, therefore we will get the impact from climate change all over the world. When taking a comprehensive perspective of this scenario analysis, even the market infrastructure, regulations and actual usage are different. Nissan's electrification and other related advanced technologies have the potential to create opportunities for effective capabilities in scenarios other than 2°C. Nissan has come to recognize once again the importance of further accelerating efforts toward this realization as well as the fact that activities integrated with the supply chain are essential for responding to risks.

In particular, the expansion of zero-emission vehicles is not only a major step towards the shift to a carbon-free society as an automobile sector, it is also a technology that contributes to the resilience of society in power management and disaster preparedness and mitigation. Nissan believes this will create value for society and business. However, if the societal response to climate change is delayed, possible risks include additional transitional policies and regulations for a decarbonized society, increases in R&D efforts and changes in market demand or corporate reputation. Possible physical risks, such as an increase in extreme weather and rising sea levels, may lead to cost increases and declines in vehicle sales that have the potential to substantially influence on our financial situation. To avoid risks such as these to the extent possible and create future opportunities, Nissan is leveraging knowledge gained from scenario analyses for use in actual activities and reviewing strategies for expanding resilience. We believe it is important to more clearly and accurately communicate these impacts and the strategies considered to investors and other stakeholders. Nissan supports the Task Force on Climate-related Financial Disclosures (TCFD)'s recommendations and will strive to disclose information in line with its recommended framework.

Financial impact assessment of carbon tax effects

In fiscal 2021, we conducted a financial impact assessment, based on the scenario analysis that we had already disclosed. Below are the results of our assessment of the impact of carbon taxes.

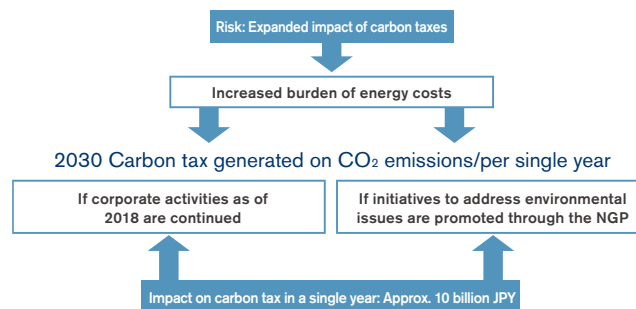
Background to financial impact assessment scenario selection

Pricing for CO₂ emissions is progressing, and an increasing number of countries and regions are introducing carbon taxes. Although the level of taxation and the industries

subject to the tax vary by country and region, this analysis will focus on the financial impact of the carbon taxes due to their significant impact on companies.

Evaluation of calculation methods and estimated taxes, assumptions

In our calculations, we referred to the IEA report and other reports on carbon taxes as the basis for our carbon tax projection. The carbon tax on GHG emissions in 2030 was calculated by comparing cases where:
 1) Corporate activities as of 2018 have been continued, and
 2) The Nissan Green Program promotes environmental activities and the impact of annual carbon tax could be curbed

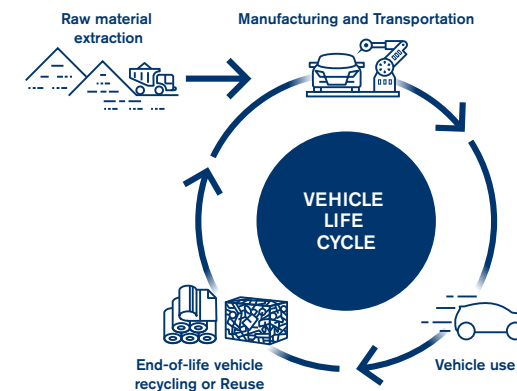


Impact on business outlook

We estimated that the carbon tax impact of Scope 1 and 2 could be kept to approximately 10 billion JPY if the environmental issues addressed in the Nissan Green Program were implemented, compared with the case where GHG emissions were not reduced.

Lifecycle assessment to reduce environmental impact

Nissan identifies potential risks by conducting life cycle assessment (LCA). The LCA method is used to quantitatively evaluate and comprehensively assess environmental impact, not only during vehicle use, but at all stages, including raw material extraction, manufacturing and transport, as well as reuse or end-of-life vehicle recycling. Our LCA methods received certification from the Japan Environmental Management Association for Industry until 2012. Since 2013, they have been certified by the third-party organization TÜV Rheinland in Germany, with the certification being renewed in December 2023. The latter certification is based on ISO 14040 and ISO 14044 standards and validates the environmental impact calculations in our product LCA. We have been expanding the application of the LCA method and enhancing our understanding of the environmental impact of our products especially of our best-selling models worldwide in quantitative terms. Coverage on a unit basis has reached approximately 80% of global models and approximately 90% in Europe. Through the continuous implementation of LCA, we will promote the visualization and reduction of environmental impacts throughout the vehicle life cycle.



Global environmental management framework and governance system

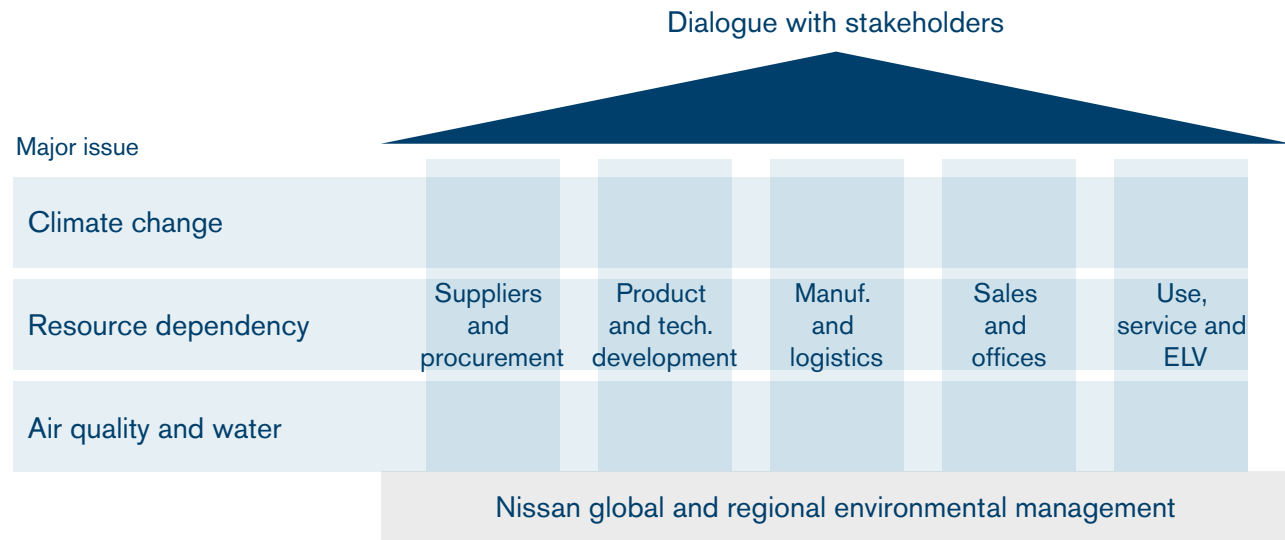
Environmental management governance

To promote comprehensive environmental management as a global company while responding to a diverse array of environmental issues, Nissan has a governance system built on dialogue and partnership with each region and many corporate functions as well as with a variety of stakeholders. The Global Environmental Management Committee (G-EMC), co-chaired by the Chief Sustainability Officer (CSO) and the Director who is Representative Executive Officer, President and CEO, determines overall policy and the content of reports before the board of directors.

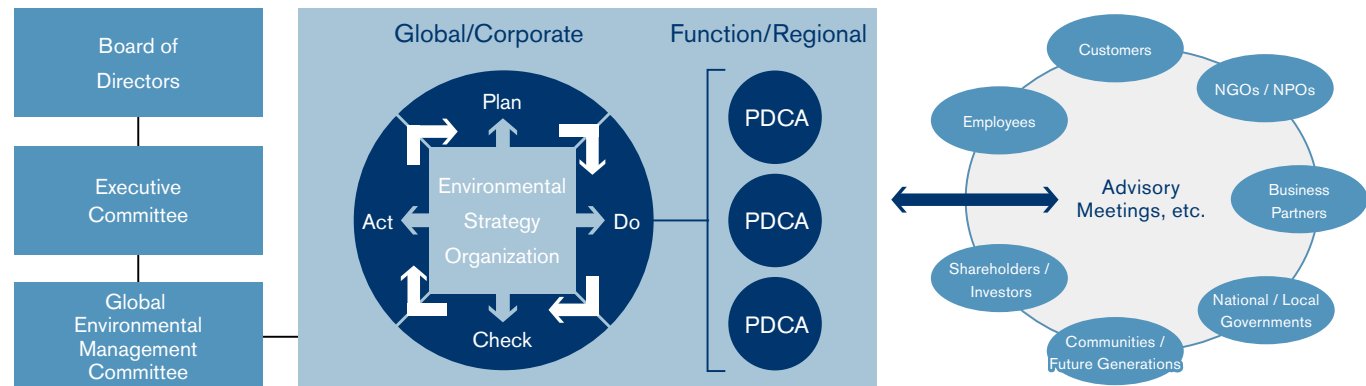
Its meetings are attended by the relevant corporate officers to cover the whole value chain. Executives also clarify risks and opportunities at the corporate level and determine the specific programs to be undertaken by each division, using PDCA cycles to manage and operate the environmental programs efficiently. Environmental risks are regularly reported in Internal Control Committee meetings to strengthen corporate governance.

We actively communicate with a broad range of stakeholders through our sustainability (ESG) data book and by answering inquiries from various environmental rating agencies.

Global environmental management framework and governance



Environmental management organization



Climate change in the executives' performance-based incentives

Since fiscal 2021, the company has incorporated the performance indicators for sustainability in performance-based cash incentives*1 that form a part of the long-term incentive program to increase its mid- to long-term corporate and social value. In fiscal 2024, those performance indicators and evaluation weights were reviewed and updated to further strengthen the climate change-related initiatives.

- From FY2021 External evaluation on carbon neutrality (evaluation weight 5%)
- From FY2024 A CO₂ performance score covering the entire value chain based on emission reductions across seven areas (evaluation weight 10%)

Enhancing environmental management based on ISO 14001

All major production sites around the world have obtained ISO 14001 environmental certification. In Japan, product development processes and all major facilities, including global headquarters, research and development, production, and logistics, have also obtained ISO 14001 certification. The assigned environmental management officer coordinates companywide goals and shares the goals with the employees through local offices. Local offices are responsible for the activities at each facility and division and for coordinating the proposals submitted by employees. By engaging in discussions at least once a month, the ISO secretariat and local offices confirm progress toward established goals, share best practices, improve management systems, develop plans for the next fiscal year, and communicate requests from local facilities and divisions. The items discussed are reported to the environmental management officer twice a

year (once at the management review conference) to further enhance overall management.

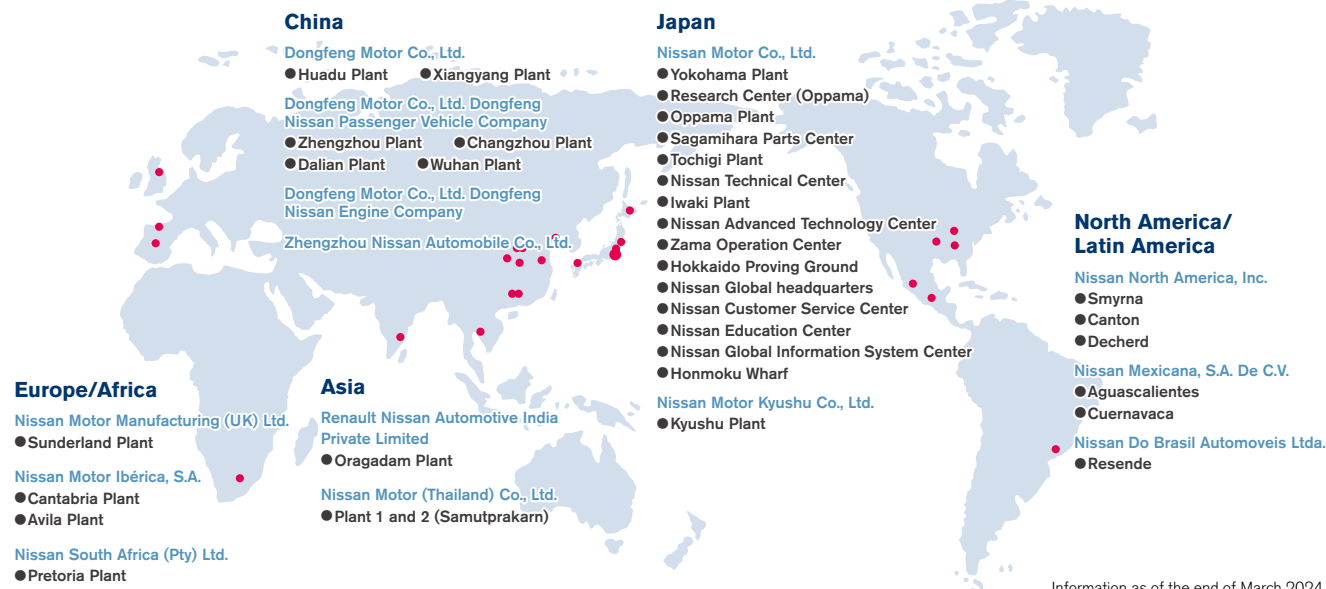
We periodically conduct third-party audits to confirm that management is functioning appropriately. We also conduct internal audits of areas covered by third-party audits and all other environmental activities, prioritizing compliance with regulatory reporting requirements and identifying and assessing risks.

Working with consolidated production companies

We encourage our consolidated production companies in a variety of markets to acquire ISO 14001 certification and to undertake other environmental initiatives based on their respective policies.

Working with dealerships

We believe that concern for the environment at our dealerships is essential to earning the trust and appreciation of our customers for Nissan's environmental activities.



Information as of the end of March 2024.

*1 Click here for the social indicator. >>>P011

Environmental principles and policies

Understanding of environmental issues

Strategic approach to environmental issues

Global environmental management framework and governance system

Nissan Green Program

Value chain activity achievements

Third-party assurance

Our dealerships in Japan have introduced an original approach to environmental management based on ISO 14001 certification called the “Nissan Green Shop” certification system. This program is managed through internal audits conducted by the dealerships every six months, in addition to annual reviews and certification renewal audits carried out every three years by Nissan Motor Co., Ltd. (NML). As of the end of March 2024, the system has certified approximately 2,800 dealerships of 149 dealers, including parts dealers, as Nissan Green Shops. Certified dealers introduce and proactively communicate their environmental initiatives to customers.

Raising environmental awareness among employees

Nissan’s environmental activities are supported by the environmental knowledge, awareness, and competence of each and every employee. As part of our ISO 14001 activities, we provide Nissan employees and the employees of partner companies working in our offices and plants with education aimed at reducing CO₂ emissions, energy and water consumption, and waste, as well as preventing environmental accidents, based on the Nissan Green Program 2030 (NGP2030). We also provide annual training for the purpose of preventing environmental accidents. In addition to education and training, quantitative evaluations of all employees are conducted at plants to develop human resources able to continuously improve their competence and reduce environmental impacts. The training curriculum is reviewed annually to ensure that employees always acquire the necessary competencies.

In Japan, we provide orientation for new employees and compliance education for new supervisors and executives to promote an understanding of NGP2030 and the environmental issues surrounding the automotive industry. We also share new information on environmental initiatives with our employees through our intranet, internal newsletters, and internal cable television broadcasts.

Outside Japan, we share information through our intranet, as well as through videos, events, and other locally appropriate tools and opportunities aimed at raising awareness and sharing information with all our employees.

Nissan’s voluntary operational standards

Stricter controls on environment-impacting substances are being implemented in countries around the world. Examples include the European ELV directive, the European Union’s Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) Regulation, which went into effect in June 2007, and Japan’s Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture. The Japan Automobile Manufacturers Association (JAMA) launched a voluntary program to help minimize the potential release of formaldehyde, toluene, and other volatile organic compounds (VOCs)*¹ in values cabins. This program utilized the VOC guidance value established by the Ministry of Health, Labour and Welfare for specific substances in January 2002 to be met for all new models manufactured or sold by Nissan in Japan after April 2007. In accordance with the Ministry’s guidance value revision in January 2019, new guideline values have been met for new models released in 2022 or later.

Nissan is strengthening its management of chemical substances, adhering to a planned schedule for their reduction and advancing the use of alternative substances. In 2005, we drew up policies regarding the use of substances scientifically recognized as being hazardous or carrying high hazard risks, as well as those identified as dangerous by NGOs. In 2007, these policies, which restrict environment-impacting substances even more than the domestic laws of the countries where we operate, were rolled out globally. Based on the above-referenced policies, Nissan developed a specific Nissan Engineering Standard (NES) for the Restricted Use of Substances, which identifies the

chemical substances whose use is either prohibited or controlled. The NES is applied in material selection and also in the components and parts used in our vehicles from initial development onward. For example, four heavy metal compounds (mercury, lead, cadmium, and hexavalent chromium) and the polybrominated diphenyl ether (PBDE) flame retardant have been either prohibited or restricted in models*² launched globally since July 2007. To control VOC use in car interiors, Nissan adopted the voluntary targets of JAMA as our own standards for global operations, and we are reviewing and reducing the use of prohibited and controlled chemical substances in materials and adhesives for seats, door trim, floor carpet and other parts. Every year, we revise the Restricted Use of Substances standards to reflect changes in international laws and regulations and to add new substances covered by our voluntary internal standards. In the revision for fiscal 2017, we established criteria for proactively reevaluating hazards and risks related to regulations to enhance compliance levels. For example, we disclose information to users and submit REACH reports to the relevant authorities about the vehicles and parts produced in or exported to Europe from Japan and other countries (including some from the U.S.). We also comply with Classification, Labeling and Packaging of Substances and Mixtures regulations.

Sanctions and government guidance at Nissan production facilities

During fiscal 2023, in relation to the environmental management system, none of Nissan’s production facilities government notifications or sanctions regarding significant violations of environmental laws or regulations. However, there were two cases where the agreed-upon limit was exceeded. We coordinated with the administration to take the necessary measures and conduct discussions.

*1 VOCs : Organic chemicals that readily evaporate and become gaseous at normal temperature and pressure conditions.

*2 Excluding vehicles manufactured outside of Nissan

Nissan Green Program

Key issues and challenges of Nissan Green Program (NGP) medium-term environmental action plan

We first formulated the Nissan Green Program (NGP) medium-term environmental action plan in 2002 to achieve our environmental philosophy of “a Symbiosis of People, Vehicles, and Nature”.

This plan aim to ultimately reduce our environmental dependence and impact to levels that nature can absorb. The fifth-generation NGP2030 plan, formulated in fiscal 2023, is strengthening and promoting activities towards the realization of a sustainable and harmonious society with nature. Based on Nissan’s environmental materiality analysis, Climate change, Resource dependency and Air quality and Water have been identified as important issues under NGP2030. We are committed to addressing these three key issues from a long-term perspective, taking into account both compliance and social demands. To contribute to the resolution of these important issues and create new value, we are working to ascertain needs through stakeholder engagement and strengthening our foundations related to environmental issues.

Nissan will accelerate efforts to address environmental issues across the entire company, including development and manufacturing departments involved in vehicle manufacturing, as well as sales and service departments. Simultaneously, we will strengthen our foundations and create value for society. We will make efforts to co-create a sustainable society both through our own internal environmental activities, as well as by encouraging business partners and other external stakeholders to take actions. The indicators and progress of initiatives related to key issues will be disclosed annually.

Evolution of NGP



NGP2030 key issues

Climate change

Carbon neutral

Toward the goal of carbon neutrality by 2050, strive for electrification potential and *Monozukuri* innovation.

Resource dependency

No new material resource use

Drive circular economy by efficient and sustainable use of resources, and by creating a system that maximizes the use of mobility

Air quality and Water

Zero impact / zero risk

Reduce water usage and manage water quality in response to the regional issues, and reduce the impact on air quality by minimizing emissions from cars and corporate activities.

Climate change

Nissan's initiatives towards achieving a carbon neutral society

The business structure of the automobile industry is undergoing significant changes in response to the demands for reducing CO₂ emissions and transitioning away from dependence on fossil fuels.

Nissan has declared the goal of carbon neutrality by 2050 and is focusing on the electrification of products and innovation in corporate activities, working in collaboration with suppliers to promote activities towards achieving this goal. As renewable energy and charging infrastructure expand, we will continue to promote the electrification of products and pursue the sustainability of our business activities to realize a carbon neutral future.

NGP2030 involves actively working towards achieving the 1.5°C scenario by accelerating efforts to address climate change. The plan focuses on reducing CO₂ emissions, implementing electrification technologies, and creating environmental responsiveness and social value.

Efforts to reduce CO₂ emissions across entire product life cycles

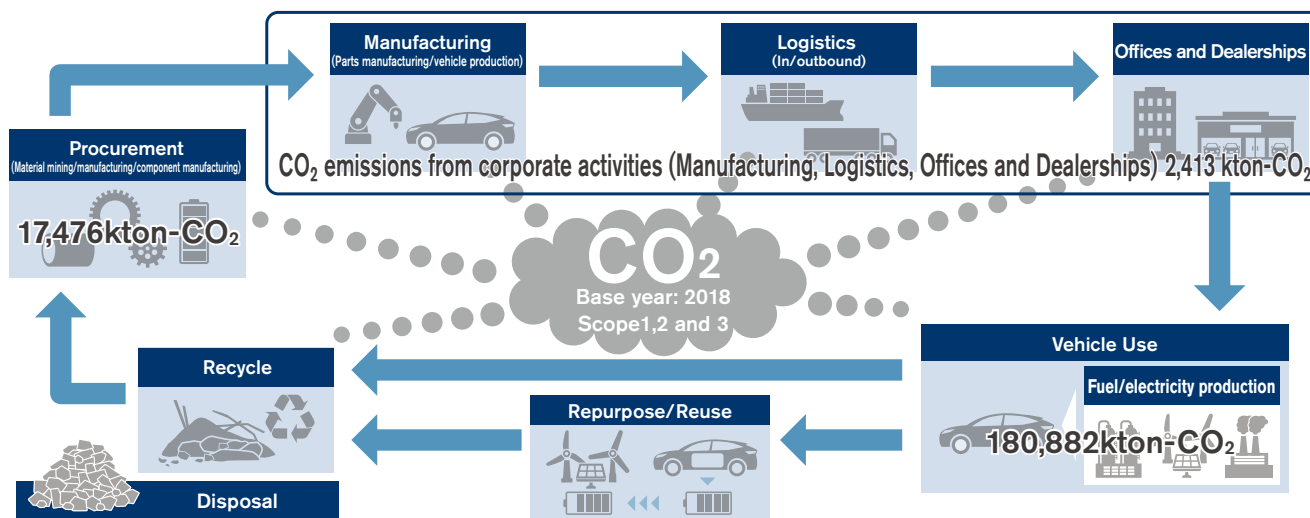
Nissan is actively working on reducing CO₂ emissions across the entire life cycles of its vehicles. We are promoting the development of new technologies and the introduction of renewable energy in the entire value chain, including suppliers, to achieve CO₂ reduction at every stage, from raw material extraction to manufacturing, transportation, product use, and disposal.

We are working to achieve a balance between these efforts

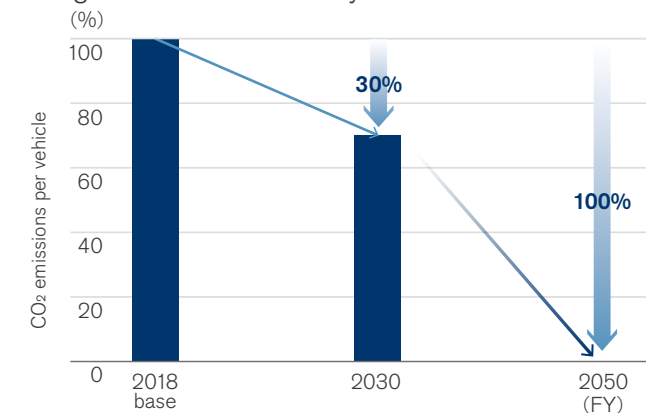
and our corporate activities. Nissan promotes CO₂ reductions in all areas of business activity, including procurement, manufacturing, logistics, offices, and dealerships and products. Under NGP2030, we set the target of a 30% reduction in CO₂ emissions by 2030 across entire product life cycles.

CO₂ emissions over the life cycles in fiscal 2023 were reduced by 11% compared with fiscal 2018.

Life cycles CO₂ emissions



Long-term vision for life cycles

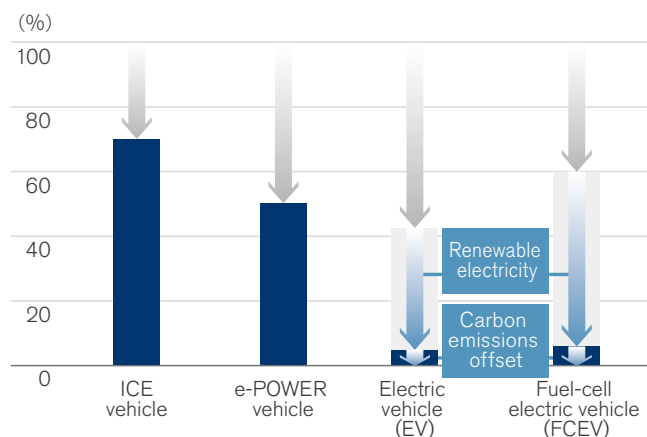


Initiatives through products

Approach to product initiatives

CO₂ emissions from new vehicles (use stage) accounted for more than 80% of total lifecycle emissions as of 2023. To reduce CO₂ emissions from new vehicles (use stage), Nissan will develop and provide vehicle with lower CO₂ emissions to customers. Nissan is working on improving fuel efficiency of ICE*¹ vehicles and expanding its lineup of electrified vehicles.

CO₂ emissions comparison by power train (WtW*²)

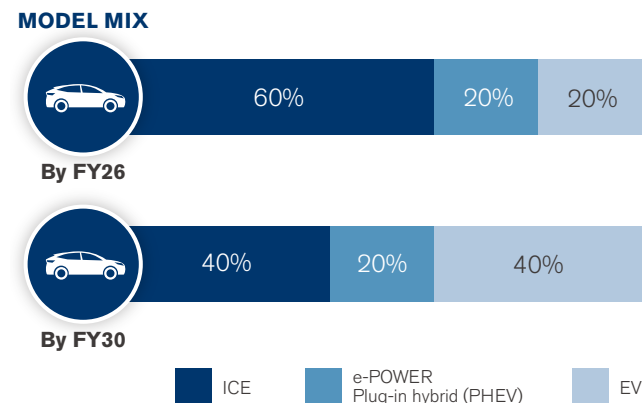


After implementing maximum CO₂ emission reduction initiatives, Nissan will consider applying offsets to mitigate the unavoidable CO₂ emissions, aiming to achieve our lifecycle CO₂ emission target.

Product launch plans

Under our medium-term business plan, The Arc, we announced that a total of 34 electrified vehicles will be introduced to cover all segments globally between fiscal 2024 and fiscal 2030 and that the electrified vehicle model mix will be 40% by fiscal 2026 and 60% by fiscal 2030. We plan to launch 30 new models by fiscal 2026, including 16 electrified vehicles.

Electrification plan



Product CO₂ emission reduction scenarios

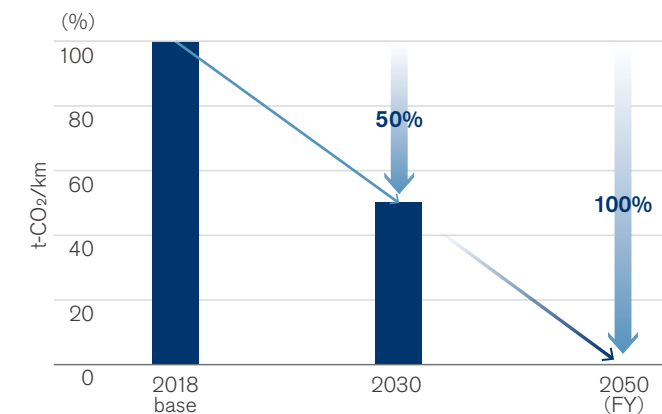
Long-term vision

We aim to achieve carbon neutrality in the vehicle life cycle and all business activities by 2050.

NGP2030 target

By 2030, we aim to reduce CO₂ emissions from new vehicles by 32.5% globally and 50% in the four regions, compared with 2018 levels.

CO₂ emissions from new vehicles (Four regions: Japan, U.S.A., Europe and China)



*1 ICE: Internal combustion engine

*2 Nissan is aiming to reduce WtW (well to wheel) CO₂ emissions which are from the mining of fuel to driving on tires.

Initiatives through corporate activity

Approach to corporate activity initiatives

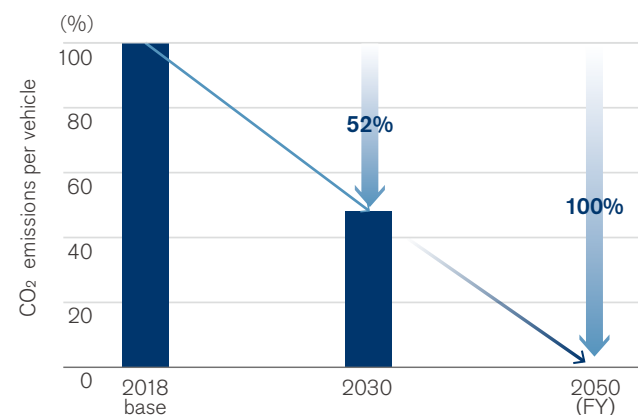
Reducing CO₂ emissions from corporate activities

Nissan is actively working to reduce CO₂ emissions by promoting energy-saving initiatives and the introduction of renewable energy. In the corporate activities under NGP2030, we have set targets for reducing CO₂ emissions in various areas including, manufacturing activities, logistics, offices, and dealerships, aiming to reduce emissions throughout the entire value chain.

In manufacturing activities, we aim to achieve 52% reduction in CO₂ emissions from our global production sites by 2030, accelerating efforts towards achieving the 1.5°C scenario (per vehicle, compared with 2018).

Regarding activities leading to carbon neutrality, Nissan will first minimize energy consumption through the measurement and management of energy use and energy-saving activities and promote electrification. Nissan promotes the electrification and substitution of fossil fuels with carbon-free energy for our production facilities. We will also promote technological development to create further opportunities.

Long-term vision for manufacturing activities

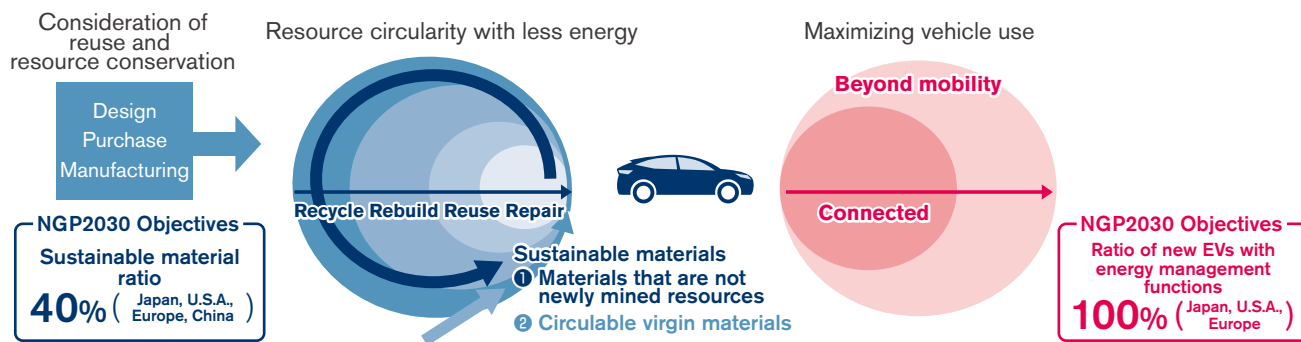


Resource dependency

Approach to resource dependency

Nissan aims to incorporate the circular economy, efficiently and sustainably utilizing resources throughout a vehicle's entire lifecycle, while maximizing the value provided to customers and society.

Nissan's circular economy

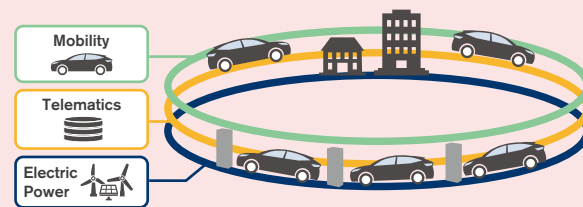


Resource circularity with less energy

Nissan promotes reuse and the saving of resources from the design, purchase, and manufacturing phases. We continuously work on using recycled materials, the proper management of chemical substances, and the reductions of vehicle weight. To use resources effectively with less energy, we continue to expand the application of recycled materials to new vehicles, the use of recycled parts for customer repairs and replacements, and EV batteries in secondary applications. Furthermore, we will promote the adoption of circulable materials for cases using new materials as well, toward future sustainable resource circularity.

Maximizing vehicle use

Nissan aims to maximize vehicle usage as mobility through new services such as ride-sharing when driving, and as energy sources sharing battery power with homes and society when parking.



Approach to sustainable materials

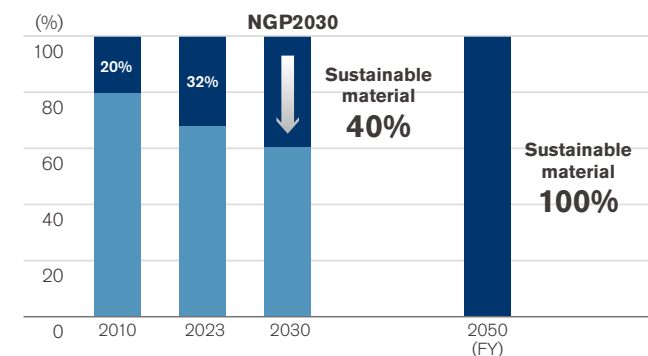
As basic requirements for sustainable materials, the following (1*) and (2) are set; (1) materials that are not newly mined resources, (2) virgin materials that can be continuously circulable. Nissan defines sustainable materials that meet (1) or (2) and additional sustainability requirements.

By promoting their use in new vehicles and replacement parts, we aim to ensure and expand the use of sustainable materials going forward.

Sustainability requirements

- De-carbonized materials
- Non-toxic materials
- Ethically sourced materials
- Certified materials

Sustainable material long-term vision



Approach to energy management

By sharing the electricity of EV batteries with homes and society during parking, EVs can contribute to society as well as utilize the potential of resources in electricity bill savings, the local generation and consumption of renewable energy, providing emergency backup power and so on. To share electricity, EVs need energy management functions such as bidirectional charging and telematics communication. Nissan aims to equip all new EVs with energy management functions by 2030.

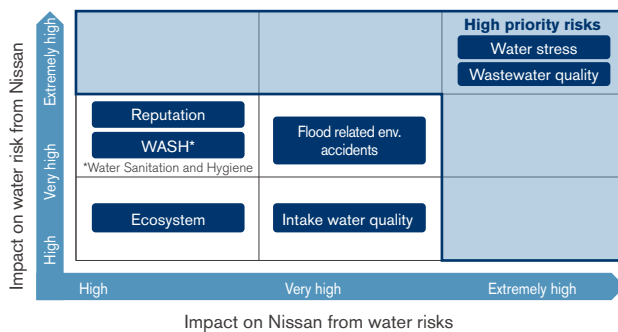
*1 Recycled materials, biomaterials, etc.

Water

Approach to water management

Driven by rising populations and economic development, demand for water will continue to increase globally. With rain patterns also changing due to extreme weather events, the stability of water supplies is likely to become a more pressing social concern with every passing year.

Nissan needs to use water especially for painting and cleaning processes, and for cooling purposes. We analyzed the materiality of water risks that Nissan should address from two aspects, "Impact on water risk from Nissan" and the "Impact on Nissan from water risk", identifying "water stress (drought)" and "wastewater quality" as key priorities. Nissan will continue reducing its dependence and impact on water environments in local business operations, while regularly reviewing water risk assessments.



Water is an unevenly distributed resource, and we perceive it as a highly localized issue. Nissan prioritizes activities to reduce water usage, such as recycling wastewater and making effective use of rainwater, in areas with high water stress, while also contributing to the addressing of local water initiatives.

Long-term vision

Reduce the number of manufacturing sites with water risks to zero by 2050.

NGP2030 objectives

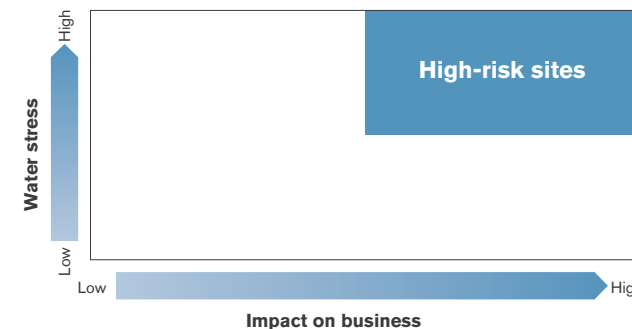
Reduce the number of manufacturing sites with high water risks (high-risk sites) to zero.

- Reduce water usage at manufacturing sites
- Manage wastewater quality at manufacturing sites

Managing water usage

Water stress analysis

As the amount of usable water varies greatly depending on the basin where our manufacturing sites are located, we assess water stress at all global manufacturing sites. NGP2030 also prioritizes efforts to reduce water usage by designating sites with high water stress having a significant impact on our business as High-risk sites. Additionally, we continue water usage reduction at all sites, not just those with high water risks.



- Water stress on all global manufacturing sites is assessed based on water stress indicators from the Aqueduct Water Risk Atlas provided by the World Research Institute.
- Impacts on business are assessed based on production volumes

Wastewater quality management

The quality of wastewater can affect the amount of water available for use, especially in areas with limited water resources, which further increases its significance. At Nissan's main manufacturing sites, we implement wastewater treatment in accordance with stricter standards than local regulations to ensure compliance with wastewater quality management laws.

Example of water quality management initiatives

- At manufacturing sites in Japan, we have installed water quality sensors in the drains of wastewater treatment facilities and introduced systems that automatically stop discharging wastewater outside the sites if any problems are detected, thereby augmenting the prevention of water pollution.
- Processing recycled water using reverse osmosis (RO) membranes has allowed some manufacturing sites to achieve zero wastewater discharge.

Air quality

Approach to air quality

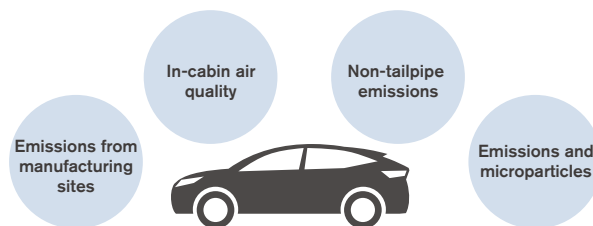
Nissan approaches air quality by focusing on two points: lower emissions from vehicle tailpipes and manufacturing activities, and providing a pleasant in-cabin environment to customers.

In this way, we will strive to show consideration for ecosystems while pursuing mobility that provides more comfort and security to customers. According to the State of Global Air 2018 report issued by the U.S.A.-based Health Effects Institute (HEI), 95% of the world's population was at that time living in regions where particulate matter smaller than 2.5 μm (PM2.5) exceeds the 10 μg/ m³ basic level specified by World Health Organization (WHO) Air Quality Guidelines.

In addition, the Euro 7 emission regulation planned for enforcement in Europe will include vehicle tailpipe emissions, as well as the reduction of particulate matter emissions from brakes, tires, and other components.

Nissan will expand the scope of its responsibility for air quality to align with global regulatory trends, and by reducing all emissions from vehicles and manufacturing Nissan aims to minimize impacts on local nature and human health.

Nissan air quality initiatives



Long-term vision

Minimize impact on air quality from vehicles and manufacturing

NGP2030 objectives

Activities	Objectives
Enhance management of vehicle emissions, including non-tailpipe emissions	Technology development and adoption
Manage in-cabin air quality	Comply with Nissan standard on in-cabin VOCs
Manage VOC at manufacturing sites	Continue current activities (paint shops)

Reduction of emissions from vehicles

To reduce emissions within and outside vehicles, Nissan is engaged in the following activities.

Managing and improving out-cabin air quality

- Promoting Zero-emissions vehicles (EVs)*1
- Enhancing internal combustion engines*1
- Reduction of non-tailpipe emissions and particulates
Nissan has begun exploring technologies to comply with the next proposed European emission regulation, Euro 7, in terms of particulate emission from brake wear etc..

Managing and improving in-cabin air quality

In addition to cleaner vehicle emissions, we are also conducting research and development on improving the in-cabin environment, including air quality, to make it more comfortable for passengers. Under NGP2030, we will comply with Nissan's standards, which are stricter than the laws and regulations of each country regarding in-cabin VOCs.

Reduction of emissions from manufacturing activities

Typical emissions from vehicle manufacturing plants include nitrogen oxides (NOx), sulfur oxides (SOx), and VOCs, and Nissan has continued to employ strict measures to address the emission of these substances.

·NOx, SOx : Since NOx and SOx are released into the air when fossil fuels are combusted, we have been promoting the adoption of low-NOx burners, change to low-SOx fuels, and so on. Going forward, we expect to reduce emissions from manufacturing even further by electrifying facilities that use fossil fuels.

·VOC: To reduce VOC emissions, we collect and recycle cleaning thinners and promote the use of water-based coating lines in painting processes.

Nissan is working to ensure thorough compliance with management standards and mechanisms relating to substances released into the atmosphere, and will engage in activities to reduce both the usage and emission of causal substances.

*1 Click here for information. >>>P042

Foundations

Under NGP2030, Nissan will work to ascertain needs through stakeholder engagement and strengthen its business foundations that relate to environmental issues to create new value and contribute to resolving the critical issues of climate change, resource dependency and air quality & water.

As a global company, we have a responsibility to address various environmental issues and to be accountable in all aspects of the value chain. We are committed to achieving a sustainable mobility society and sustainable business operations, as well as to contributing to regional communities through the following initiatives Identifying risks throughout vehicle life cycles using life cycle assessment; working with suppliers to improve environmental performance; establishing systems to realize information management throughout the value chain; and continuous efforts to raise environmental awareness among employees.

Secure responsible sourcing

Nissan must comply with EU battery regulations, the CSRD*¹ and other environmental due diligence amid the rising importance of reducing environmental risks throughout the entire value chain. Further, given regulations relating to corporate social responsibility (CSR) and information disclosure frameworks such as TCFD*² and TNFD*³, companies are required to promote and disclose not only their own environmental/social activities but also those throughout their supply chains.

Nissan clearly positions suppliers as important partners in its CSR policy. We have shared our basic philosophy and procurement policies on environmental and social issues with suppliers. Also, we promote collaborations on environmental activities through the formulation and publication of several

of our policies (Nissan Human Rights Policy Statement, Nissan Global Guideline on Human Rights, Nissan CSR Guidelines for Suppliers, Nissan Green Purchasing Guidelines) and engage with suppliers by holding annual environmental activity briefing meetings. In response to external trends, including legal requirements for information disclosure under NGP2030, we are incorporating the requirements for responsible procurement into our guidelines and actively managing supply chain risks. This includes expanding the use of materials that meet Nissan's sustainability requirements.

Secure and integrate value-chain information (traceability)

To prepare for the trend toward regulation and expanded disclosure throughout the value chain, we are considering the establishment of a system to collect and manage supply chain information across the industry. Further, the disclosure of non-financial information, including CO₂ emissions from corporate activities, is also required in addition to the disclosure of financial information.

To respond to these external trends, we aim to realize the integrated information management of environmental impacts throughout the value chain and secure accountability (traceability). To understand and manage climate change, as well as human rights issues in the supply chain, impacts on water, air and the natural environment, we have started to introduce a digital platform for integrated information management. Specifically, we aim to provide timely and appropriate information by ensuring transparency to stakeholders with internal monitoring tools to record and manage our own CO₂ emissions, water and waste. In addition, we aim to further accelerate collaboration with suppliers

to reduce environmental risks through information management and inter-company data linkage across the entire Nissan supply chain.

Enhance environment governance

It is important that all employees act with integrity and in accordance with high ethical standards to reduce environmental impact. In all regions where Nissan operates, we have established internal standards to ensure compliance with environmental laws, regulations and the demands of society. In aiming for thorough legal compliance with regard to the environment, under NGP2030 we are promoting the understanding of environmental laws through educational activities for employees and other initiatives on a worldwide basis.

*1 Corporate Sustainability Reporting Directive

*2 Task Force on Climate-related Financial Disclosures

*3 Task Force on Nature-related Financial Disclosures

Contents	Corporate direction	Environmental	Social	Governance	Data	032
Environmental principles and policies	Understanding of environmental issues	Strategic approach to environmental issues	Global environmental management framework and governance system	Nissan Green Program	Value chain activity achievements	Third-party assurance

NGP2030 action plan

Activities		NGP2030 Objectives	FY2023 result
Climate change			
Long-term vision: Realize carbon neutrality by 2050			
1	Reduce CO ₂ emissions (Base year 2018)	Life cycles (t-CO ₂ /vehicle)	-30% (Global) -11% Through the promotion of CO ₂ reduction activities in various areas, reduced CO ₂ emissions per vehicle.
2		Product (g-CO ₂ /km)	-32.5% (Global), -50% (4Majors: Japan, U.S.A., Europe and China) Global : -12%, 4Regions (Japan, U.S.A., Europe and China) : -15% CO ₂ emission reduction by promoting electrification, especially 4Regions.
3		MFG (t-CO ₂ /vehicle)	-52% (Global) -0.5% In addition to continuing energy conservation activities, promoted the introduction of renewable energy.
4		Suppliers	Promoted reduction of CO ₂ emissions during manufacturing by expanding the application of green aluminum and green steel.
5		Logistics (t-CO ₂ /vehicle)	-6.4% CO ₂ emissions per vehicle reduced by promoting modal shift in China and air freight reduction.
6		R&D facility (t-CO ₂ /development cost)	Promoted reduction of CO ₂ emissions by implementing activities such as energy conservation at global R&D sites.
7		Offices (t-CO ₂ /floor area)	-36% Implemented energy-saving activities, such as LED conversion and operational improvements, starting from FY2023, the electricity of global headquarters is derived from 100% renewable energy sources.
8		Dealerships (t-CO ₂ /floor area)	-16% In addition to continuing energy-saving activities such as switching to LED, considered further improvement plans at specific stores and implemented them at stores nationwide in Japan from FY2024.
Resource dependency			
Long-term vision: No new material resource use			
9	Materials	Expand sustainable material (weight basis)	40% (Japan, U.S.A., Europe and China) 32% Expanded the use of sustainable materials through the active adoption of recycled materials and green materials.
10		Manage waste / Landfill	Promoted waste reduction such as the use of returnable containers. Continued zero landfill at all factories in Japan as well as factories in Brazil and India etc.
11	Vehicles	Expand energy management function	Equipped rate to EV: 100% (Japan, U.S.A. and Europe) Developed charging and connected technologies to achieve energy management.

Environmental principles and policies

Understanding of environmental issues

Strategic approach to environmental issues

Global environmental management framework and governance system

Nissan Green Program

Value chain activity achievements

Third-party assurance

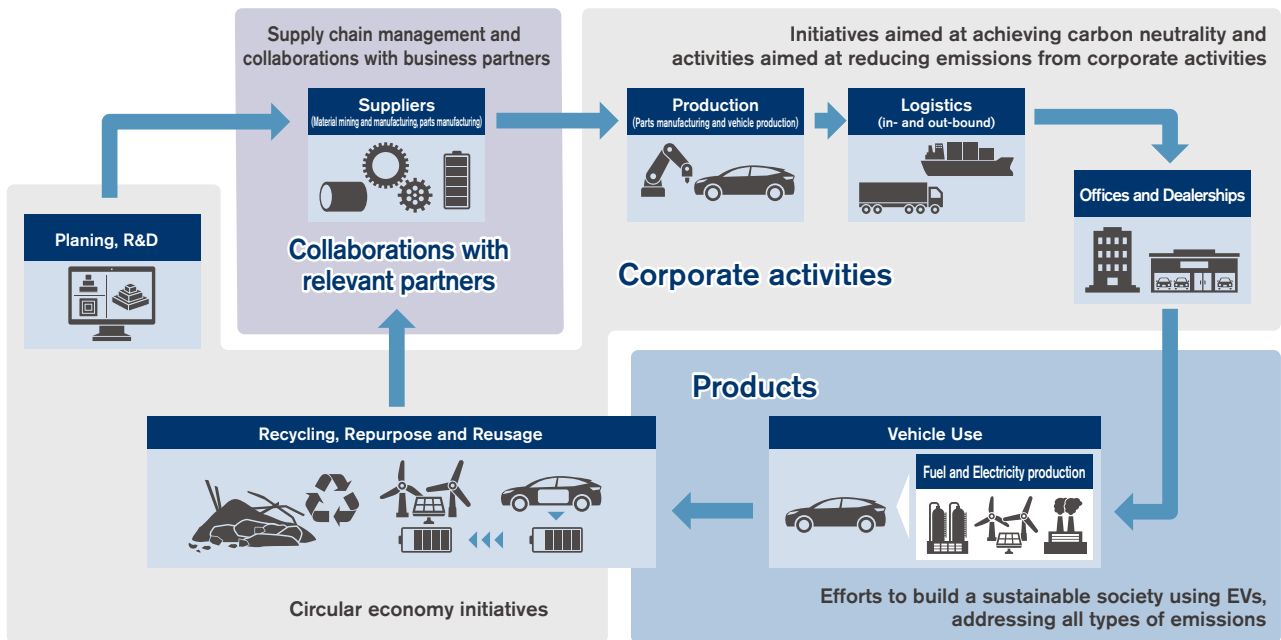
Activities		NGP2030 Objectives		FY2023 result
Air quality and water				
Long-term vision: Zero impact / Zero risk				
12	Water	Enhance water risk management at manufacturing sites	Zero high-risk sites	Promoted activities at sites to achieve zero high-risk sites.
13		Reduce water usage at manufacturing sites		Promoted water reduction at sites with high water usage, such as reducing the amount of cooling water at the Tochigi Plant.
14		Manage wastewater quality at manufacturing sites		Continued wastewater quality management at manufacturing sites.
15	Air quality	Enhance management of vehicle emissions, including non-tailpipe emissions	Technology development and adoption	Started exploring technologies to reduce brake wear dust to comply with stricter regulations.
16		Manage VOC at manufacturing sites	Continue current activities (paint shops)	Promoted transition to water-based paint and improved recovery rate of waste thinners.
17		Manage in-cabin air quality	Comply with Nissan standard on In-Cabin VOC	All models designated for FY2023 complied with Nissan standard on In-Cabin VOC.
Foundation				
18	Secure responsible sourcing		Secure supply chain risk management	Updated the Nissan CSR Guidelines for Suppliers and Nissan Green Purchasing Guidelines and ensured thorough compliance.
19	Assure and integrate value-chain information (traceability)		<ul style="list-style-type: none"> Build and operate carbon footprint management system for corporate activities and parts production Secure supply chain data reliability 	Started studying corporate carbon footprint information management to realize integrated data management.
20	Enhance environmental governance			Updated the Global Environmental Policy reflecting NGP2030. Continued activities in each region, such as environmental compliance training for employees in ASEAN.

Value chain activity achievements

Nissan prioritizes climate change, resource dependency, and air quality and water, which are the key areas related to Nissan’s business, to minimize dependence and impact on ecosystem services, Nissan also provides a range of value to society and provide a variety of value to society and the environment that realizes “a Symbiosis of People, Vehicles, and Nature.”

This section introduces environmental initiatives and the value they create in the three main value chain business areas: Products, Corporate activities, and Collaborations with relevant partners.

Nissan Value Chain



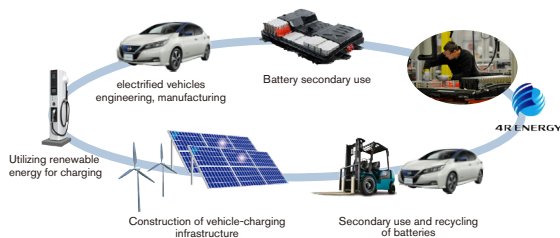
Products

Establishing a sustainable society using electrified vehicles

We consider the introduction and adoption of zero-emission vehicles to be one of the pillars of our corporate strategy. We are taking a comprehensive approach that involves boosting production and sales of zero-emission vehicles along with other activities coordinated with a variety of partners to popularize their use.

We believe electrified vehicles*1 can create a wide range of value and address various issues related to nature, such as climate change, resource dependency, and biodiversity. Furthermore, as lifestyles change and the potential for a new mobility society is emerging, Nissan is proposing both the value of mobility as a means of transportation, as well as the new value that electrified vehicles provide. We believe in these possibilities because Nissan is a pioneer in mass-produced electrified vehicles, having delivered more than 1.1 million*2 EVs (including joint ventures) to customers worldwide since the launch of the first-generation Nissan LEAF in 2010.

Initiatives for building a sustainable society using electrified vehicles



1. Initiatives in development and sales

Nissan's electrification technologies for achieving carbon neutrality by 2050

Accelerating the advancement and promotion of electrification technologies

Nissan is advancing innovations in electrification to achieve carbon neutrality. Our calculations show that electrified vehicles can reduce CO₂ emissions over their entire life cycle compared with gasoline-powered vehicles of the same class. Electrified vehicles play an essential role beyond transportation in helping to achieve a low-carbon society by contributing to the shift towards renewable energy. Nissan has been working to advance and promote electrification technologies that can reduce CO₂ emissions by focusing on EVs and e-POWER, which have the common feature of being 100% motor-driven.

Value delivered by Nissan electrified vehicles

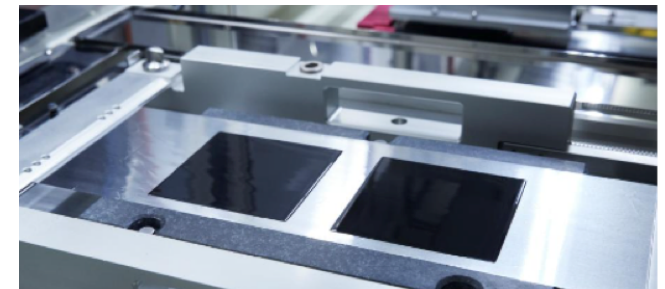
Nissan wants to deliver the ultimate driving experience that only electrified vehicles can offer. We aim to create exciting driving experiences that can only be realized with 100% motor-driven vehicles, eliminating the potential stress that accumulates unnoticed in daily driving. For example, e-Pedal Step provides responsive acceleration when the accelerator is depressed and smooth deceleration via motor regeneration when the accelerator pedal is released. In addition, e-4ORCE is an unprecedented electrically-driven all-wheel control technology that integrates the control of two high-output motors (front and rear) and brakes. It allows for the flexible control of driving power, enhancing handling in all types of conditions, from daily driving to winding roads and slippery road surfaces.

We are also actively working on technical developments to make electrified vehicles more affordable, aiming to achieve prices that are comparable with those of conventional engine-powered vehicles as soon as possible.

Technological innovations supporting the spread of electrified vehicles

EV battery development initiatives

All-solid-state batteries are expected to be a game-changing technology for accelerating the popularity of EVs. They have an energy density approximately twice that of conventional lithium-ion batteries, significantly shorter charging times due to superior charge/discharge performance, and the potential to reduce battery costs by reducing rare metal usage. With these benefits, Nissan expects to use all-solid-state batteries in a wide range of vehicle segments, including pickup trucks, making its EVs more competitive. Nissan has been developing this technology and aims to bring it to market by 2028.



*1 Electrified vehicles: Electrified vehicles including e-POWER, EVs: Electric vehicles (excluding e-POWER)

*2 As of March 31, 2024.

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Next-generation powertrain X-in-1

In March 2023 Nissan unveiled its new approach to electrified powertrain development, which it calls X-in-1.*1 Under the approach, core EV and e-POWER powertrain components will be shared and modularized, resulting in a 30% reduction, compared with 2019, in development and manufacturing costs by 2026.

We are currently developing a 3-in-1 module for EVs comprising three components (motor, inverter, and reducer). We are also working on a 5-in-1 module that expands upon the components of the 3-in-1 module. In addition to the motor, inverter and reducer for e-POWER vehicles, 5-in-1 includes a generator and an increaser.

Common use of components and elemental technologies

As EV and e-POWER, the two pillars of Nissan electrification, have many similar specifications required for motors and other core components, we have achieved a high degree of commonality by promoting designs based on the assumption of common usage.

For example, the internal components of the inverter have been standardized between the Nissan LEAF and Note e-POWER (2016), and this standardization has now been expanded to the Nissan Ariya, Nissan Sakura and other e-POWER models.

We implemented common motors between the Nissan LEAF and Note e-POWER (2016) and now we are expanding the use of common motors across the entire lineup, including e-POWER rear motors and Nissan Sakura front motors, while also working to reduce costs.

Technologies for downsizing of key components in electrified vehicles

In terms of the advances from the first- to second-generation

e-POWER in Note e-POWER, we doubled output density by both downsizing the inverter and increasing its output. This was made possible by the technologies that Nissan has cultivated over many years of in-house inverter production. While ensuring the high quality required for vehicles, these technologies also take into account trade-offs in terms of heat and insulation, achieving space savings in terms of millimeter units. Going forward, we will work to further improve the power density of inverters by combining ongoing advances in the miniaturization of power semiconductors with the miniaturization of substrates supported by in-house production, as well as through the use of silicon carbide (SiC).

Dedicated engine design efforts focused on power generation

Nissan is also working on the development of engines focused on power generation based on its Strong Tumble and Appropriately stretched Robust ignition Channel (STARC) concept. In conventional driving power transmissions, thermal efficiency is limited to approximately 40% to accommodate output characteristics that cover a wide range of driving loads. On the other hand, engines focused on power generation, such as the e-POWER, enable the engine usage range to be limited to the most efficient point. This breakthrough uses the engine in full fixed-point operation, enabling a dramatic improvement in thermal efficiency, leading to the development of a technology realizing thermal efficiencies of up to 50%.

Light weight technology

Along with improving the efficiency of batteries, engines, and electric powertrains, reducing the weight of vehicles is important for carbon neutrality.

Nissan is working on weight reduction from three points of view: Materials, structural optimizations and manufacturing

processes.

Materials

Nissan is rapidly expanding the use of Ultra-High-Tensile Steel, which realizes high strength and formability while also reducing weight. This material is used for the body frame components on a wide range of vehicle models, from “kei” cars to the INFINITI. In 2018, we adopted 980 megapascal (MPa) Ultra-High-Tensile Steel with High Formability, which features further improvements in collision energy absorption performance, for the INFINITI QX50, and in 2019 SAE International presented Nissan with the “SAE/AISI Sydney H. Melbourne Award for Excellence in the Advancement of Automotive Steel Sheet,” among other accolades. In 2020, we expanded the application of this material to the Rogue, Qashqai, and Note, then to the Nissan Ariya in 2022 and Serena in 2023.

Structural optimizations

The e-POWER system, which integrates motors and inverters, was adopted in the 2020 Note, achieving a 6% increase in output while reducing the weight of the motor by 15% and the inverter by 30%. The same technology was used in the Nissan Sakura in 2022 and Serena in 2023.

Manufacturing processes

Nissan is engaged in the practical application of a new casting method called the vacuum low-pressure die cast process (V-LPDC). This method was applied to the 1.5-liter, 3-cylinder turbo engine cylinder head of the Rogue and Qashqai, contributing to a 4% weight reduction.

Nissan will continue proactively developing lightweight technologies to reduce CO₂ emissions to achieve carbon neutrality.

*1 Click here for more information on “X-in-1”. <https://globalnissannews.com/en/releases/nissan-e-power-tech-x-in-1>

Global promotion of electrification

Electrified vehicle performance and assessment

Since the launch of the Nissan LEAF in 2010, Nissan has been expanding and promulgating its battery EV and e-POWER models. In 2022, Nissan developed the Nissan Sakura for the “kei” car segment, achieving powerful, smooth acceleration and quietness that surpass the traditional boundaries of “kei” cars and winning the 2022-2023 Japan Car of the Year award, 2023 RJC Car and Technology of the Year awards, and 2022-2023 Japan Automotive Hall of Fame Car of the Year.

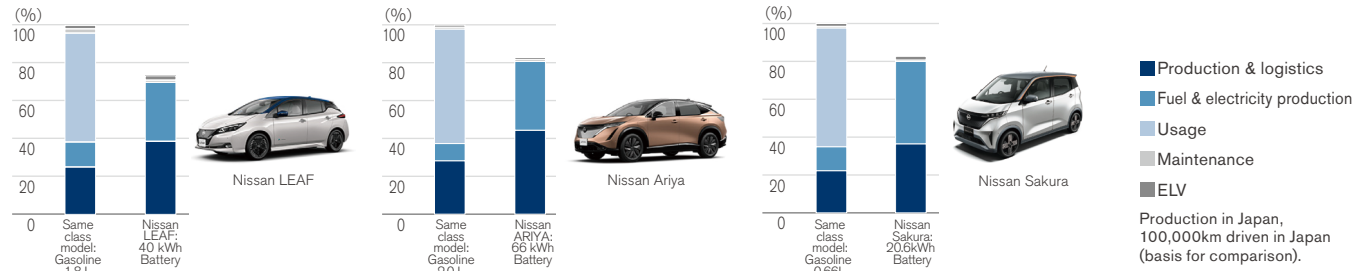
e-POWER, an electrified vehicle realizing low carbon emissions through the utilization of existing infrastructure that provides a driving experience not unlike that of an EV, e-POWER forms part of Nissan’s global promotion of electrification. It has been installed in the Sylphy and X-Trail in China, the Qashqai and X-Trail in Europe, and the Kicks and X-Trail in Mexico. In Mexico, it is classified by the government as an EV and is eligible for various preferential EV policies. Equipped with the newly developed, exclusively designed e-POWER engine, the Serena received the 2023-2024 Japan Technology Car of the Year award in 2023 and the 2024 RJC Car and Technology of the Year awards for improved combustion efficiency, smooth and powerful acceleration, and outstanding quietness.

LCA*1 of EV models

Nissan conducts life cycle assessment (LCA) to quantitatively evaluate and comprehensively assess environmental impact. The Nissan LEAF’s lifecycle CO₂ equivalent emissions have been reduced by approximately 30% compared with conventional vehicles of the same class in Japan. The Nissan Ariya and Nissan Sakura, launched in 2022, further improve EV product appeal and reduce

environmental impacts. Compared with Japanese gasoline-powered vehicles in the same class, the lifecycle CO₂ equivalent emissions of the Nissan Ariya and Nissan Sakura have been reduced by approximately 20%. Nissan will continue to pursue the potential for further reducing the environmental impact of EVs throughout their lifecycle.

Lifecycle CO₂ equivalent emissions



Lifecycle CO₂ reduction on the Nissan Ariya

In Nissan Ariya production at the Tochigi Plant, we have intensified our efforts to minimize CO₂ emissions at every stage of the vehicle’s lifecycle.

In the production stage, we contributed to the reduction of CO₂ equivalent emissions through ongoing efforts that included increasing the yield of materials and utilizing recycled raw materials. Following the introduction of the Nissan Intelligent Factory*2 method at the Tochigi Plant in 2021, we are actively working towards making all of our production plants carbon neutrality. To achieve this, we are focusing on promoting innovative practices that enhance production efficiency during vehicle assembly, improving the efficiency of energy and materials utilized in our plants, electrifying plant equipment, and utilizing renewable energy sources. These efforts are aimed at reducing carbon emissions and creating a more sustainable manufacturing process for Nissan vehicles.

To reduce environmental impact in vehicle use, Nissan is continually reducing CO₂ emissions by improving the efficiency of electric powertrains, including batteries, saving power on accessories and increasing renewable energy usage.

Nissan is actively promoting the reuse of vehicle batteries*3 as a stationary battery for distributed power supply, enabling the storage of renewable energy and contributing to the decarbonization of society.

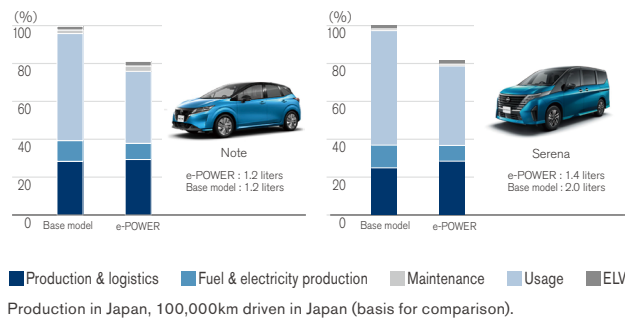
Nissan will keep working to reduce the environmental impact from the entire life cycle of electric vehicles.

*1 Click here for more information on environmental data of LCA. >>>P157
 *2 Click here for more information on the Nissan Intelligent Factory. >>> P045
 *3 Click here for more information on the reuse of vehicle batteries. >>> P042

LCA of e-POWER models

Nissan introduced its new e-POWER powertrain in 2016, marking another significant milestone in the electrification strategy with life cycle emission improvements. For example, the Note e-POWER, Nissan Kicks e-POWER, X-Trail e-POWER, and Serena e-POWER have achieved approximately 20% reductions in CO₂ emissions compared with their gasoline-powered counterpart models. e-Power models use a system in which the gasoline engine operates only for generating electricity under specific conditions. As a result, e-POWER models achieve better fuel efficiency for driving than conventional gasoline engines with less engine displacement.

Lifecycle CO₂ equivalent emissions



Technical developments meeting different needs

Fuel-cell electric vehicles

Powered by electricity generated from hydrogen and oxygen, fuel-cell electric vehicles (FCEVs) are zero emission vehicles that do not produce CO₂ or other harmful emissions. We believe that, as part of building a sustainable mobility society, both FCEVs and EVs are viable options from an energy diversity perspective.

In alignment with Japanese government policies, we joined forces with Toyota Motor Corporation, Honda Motor Co., Ltd., and other companies to establish Japan H2 Mobility, LLC (JHyM), targeting the full-fledged development of hydrogen stations for FCEVs in Japan. Addressing the key issues raised during the initial stage of FCEV promotion, JHyM will ensure that infrastructure developers, automakers, and investors all do their part to support the successful strategic deployment of hydrogen stations and effective operation of the hydrogen station business in Japan.

In June 2016, Nissan unveiled its e-Bio Fuel-Cell system that runs on bioethanol electric power. The new system features a solid oxide fuel-cell (SOFC) power generator. SOFC technology can produce electricity with high efficiency using the reaction of oxygen with multiple fuels, including ethanol and natural gas. SOFCs can run on a variety of fuels, enabling the use of existing fuel infrastructure, and have the advantage of presenting relatively low hurdles in terms of infrastructure adoption.

Because our technology combines the efficient electricity generation of SOFC with the high energy density of liquid fuels, it can enable driving ranges on par with gasoline-powered vehicles.

Commercial users that require higher uptime for their vehicles should increasingly be able to take advantage of this solution thanks to the short refueling times it offers.

Commercial vehicle electrification

We are also advancing the electrification of commercial vehicles to achieve carbon neutrality.

History of commercial electric vehicles at Nissan

In June 2014, Nissan launched the EV multipurpose commercial van e-NV200 in European countries and Japan. The e-NV200 has power outlets in two locations drawing up to a total of 1,500 W of electricity from the onboard engine for electrical generation, which can be used to secure power on the road during normal operation, on the go in business, for leisure activities, as well as a power source in the event of a disaster. On construction sites, noise problems can be alleviated as there is no need to use an engine-powered generator. In Europe, Nissan is proposing a concept combining comfort and practicality to enhance outdoor activities in winter with the e-NV200 Winter Camper concept making it possible to charge the 220-volt battery using solar panels mounted on the roof.

In 2020, the Tokyo Fire Department began using a zero emission EV ambulance based on the NV400. Nissan thinks quiet, low-vibration EV ambulances have strong merits. As this vehicle is also equipped with two lithium-ion batteries providing 33 kWh and 8 kWh, it is possible to operate electrical equipment and air conditioners for longer periods of time. It also enables these ambulances to be used as mobile power sources in the event of a power outage or disaster.

In 2022, Nissan pursued quality and functionality with the launch of the Townstar, based on the Renault-Nissan-Mitsubishi Alliance CMF-C platform. The Townstar can flexibly handle delivery operations in urban areas.

In 2024, Nissan launched the Clipper EV in Japan. This light commercial van ensures the necessary cargo space and load capacity. It delivers powerful performance unique to electric motor-driven EVs, enabling swift transportation of heavy cargo.

Nissan will continue to expand its lineup of electric commercial vehicles and promote the manufacture of commercial vehicles with Zero emissions.



As a mobile power source, the e-NV200 has a range of business applications. (Production of the e-NV200 has ended.)



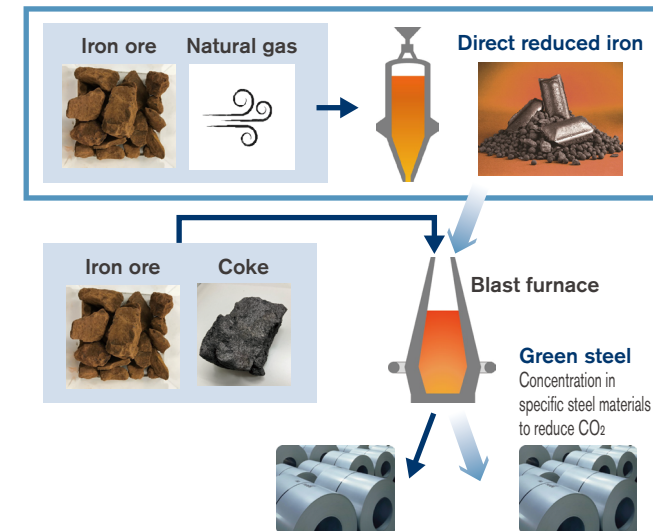
Zero-emission EV ambulance based on the NV400

Efforts to reduce CO₂ emissions during parts manufacturing through use of green steel and green aluminum

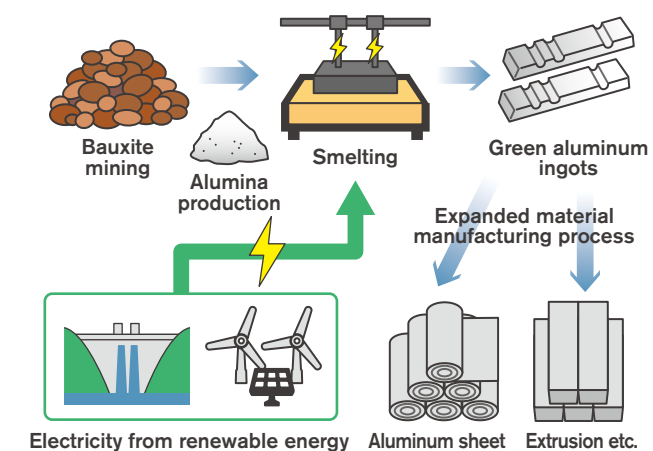
Since approximately 60% of a vehicle's weight is made up of steel parts and around 10% of its weight is made up of aluminum parts, the use of green steel and green aluminum is a very effective way to reduce CO₂ emissions during parts manufacturing, which is part of the vehicle's life cycle. In collaboration with Kobe Steel, Ltd., Nissan has been utilizing green steel*¹ and green aluminum*² for Nissan vehicles since January 2023, which not only contributes to the significant CO₂ emission reductions during manufacturing, but also maintains the same level of high quality as conventional products. The adoption of steel materials that achieve a 100% reduction in CO₂ emissions during the manufacturing process using the mass balance approach*³ is a first for mass-produced vehicles and will be gradually implemented across Nissan's lineup.

In addition, we will further reduce CO₂ emissions during manufacturing by promoting closed-loop recycling*⁴, which also utilizes recycled materials generated at Nissan production sites.

Green steel : Mass balance approach



Green aluminum



*1 Green steel: Low-CO₂ blast furnace steel with significantly reduced CO₂ emissions in the blast furnace process
 *2 Green aluminum: Aluminum that is electrolytically smelted using only electricity generated by solar power and other renewable energy sources, thereby reducing CO₂ emissions during aluminum ingot production by approximately 50%.
 *3 Mass balance approach: Within the product manufacturing process, this is a method for assigning characteristics to parts of a product when raw materials with certain characteristics (e.g. low-CO₂ products) and raw materials without said characteristics are mixed, depending on the amount of raw materials with said characteristics. The CO₂ emission reduction effect is concentrated in specific steel materials.
 *4 Closed-loop recycling: The reuse of aluminum or steel sheet scraps generated during manufacturing as materials with same quality and reuse in similar products. Click here for more information on aluminum recycling. >>> P052

Environmental principles and policies

Understanding of environmental issues

Strategic approach to environmental issues

Global environmental management framework and governance system

Nissan Green Program

Value chain activity achievements

Third-party assurance

2. Utilizes reusable energy during charging

Launch of 100% renewable energy EV charging service at Nissan dealerships and other facilities

As part of our efforts to create a zero-emissions society utilizing EVs, 100% of the electricity used for quick charging at Nissan dealers in Japan and Nissan facilities has come from renewable energy sources since September 2023.*1



Providing virtually 100% renewable electricity to employees

Since 2019, some Nissan dealers in Japan have been selling virtually 100% renewable electricity on behalf of electric power companies to encourage EV users to charge at home. We are actively engaged in conducting various demonstration experiments for the utilization of EVs in collaboration with electric power companies. This includes exploring the potential use of EVs in social energy management, such as establishing a business model that leverages the large-capacity batteries installed in vehicles to maximize the utilization of renewable energy resources. From the beginning of fiscal 2022, we began providing Nissan employees residing in the Kanto area with electricity derived from virtually 100% renewable electricity. This initiative is a step to decarbonization taken by Nissan as an EV pioneer, not only producing and selling EVs, but also throughout product lifecycle. We are committed to work with everyone toward the realization of carbon neutrality through a wide range of activities.



3. Collaboration with energy infrastructure

Energy ecosystem utilizing EVs

Nissan energy: Renewal of solutions that enrich life and society with EVs

In addition to manufacturing and selling EVs, Nissan is promoting the development of Nissan Energy, a solution that provides customers a more fulfilling life with EVs. Nissan EV ecosystem was established by combining these two activities.

Nissan Energy is offered in the following three areas:

- Expansion of charging solutions
- Energy management utilizing electric vehicles
- Promotion of 4R for second-life use for lithium batteries

NISSAN ENERGY

*1 When quick charging using the Nissan Zero Emission Support Program 3 (ZESP3), a charging support program for owners of electric vehicles (Evs). Click here for more information on 100% renewable energy EV charging service at Nissan dealerships and other facilities. (Japanese only) https://www.nissan.co.jp/EV/CHARGE_SUPPORT/ZESP3/renewable_energy.html

Expansion of charging solutions

Various electric charging solutions are provided to enable customers to enjoy safe and convenient lifestyles with EVs. Charging at home is the most convenient charging method, as it is completed while the car is parked at home. For safe charging at home, Nissan selects and mediates companies that install dedicated EV outlets and chargers for charging at home.

For both the Nissan LEAF, which has a cruising range sufficient for everyday use, and the Nissan Ariya, in which occupants can enjoy long-distance trips, drivers can further enjoy their trips to distant places with peace of mind by utilizing the expanding network of public charging stations. Nissan app provides a convenient and seamless charging experience by offering features such as locating and monitoring the availability of public charging stations, route planning with consideration of charging locations, and the payments of charging fees.

Further, we have adopted more user-friendly standards for public charging stations in consideration of both customer charging behaviors and targeted EV models in each region. In the United States, beginning in model year 2025, we have made the Nissan Ariya compatible with NACS, which is the Tesla charging standard and has the highest number of quick-charging stations in the network.

We also offer charging experiences tailored to the needs of customers in Europe and Japan.

Energy management utilizing electric vehicles

The electricity stored in a Nissan EV's battery can do more than just power a vehicle; it can be shared with homes, buildings, and local communities through bi-directional chargers.

Using inexpensive electricity in the evening during off-peak periods and excess electricity generated by solar panels during daytime reduces electricity costs and helps promote a model of local generation of electricity for local consumption. In Japan, EVs also provide backup power during blackouts or emergencies.

Local communities can connect multiple EVs to regional powergrids to charge or discharge electricity in accordance with power supply and demand balance, which contributes to the stability of a community's power supply and promotes renewable energy use. EVs with high-capacity batteries are expected to play a significant social infrastructure role by storing renewable energy such as solar power which power generation is difficult to control.

Nissan Energy Share x Hiroshima University

Hiroshima University and Nissan will begin a large-scale energy management program on the Hiroshima University campus utilizing Nissan EVs. The program will support Hiroshima University in realizing a carbon neutral smart campus through the adoption of 100% EVs and the local production and consumption of 100% renewable electricity through energy management. The introduction of Nissan Energy Share is the first case study conducted by the Hiroshima University Smart City Co-Creation Consortium. Each party will continue to work together closely to expand the Hiroshima University model across Japan and achieve true carbon neutrality.

V2X

Nissan's Vehicle-to-X (V2X) is a technology that efficiently utilizes the electrical energy stored in the batteries of electric vehicles by extracting and sharing it with homes, buildings, and society via bi-directional chargers.

Renewable energy sources, such as solar and wind power, are essential to realize carbon neutrality. However, power generation from these sources fluctuates depending on weather conditions, which can lead to surplus or shortage of electricity supply in relation to demand. Maintaining a stable supply and demand balance thus presents a challenge.

V2X technology enables the absorption of power fluctuations generated from renewable energy sources by charging and discharging them to EV batteries. The value and potential of V2X is expanding through the stable utilization of valuable renewable energy, the promotion of renewable energy introduction, and usage as a backup power source during disasters, etc..

Promotion of 4R for second-life use for lithium batteries

Nissan EV batteries offer high performance even after being used in cars. As more and more customers switch to EVs, the supply of batteries capable of secondary use is expected to increase significantly.

In 2010, Nissan, as an EV pioneer, joined forces with Sumitomo Corporation and established 4R Energy Corporation, which specializes in secondary use of lithium-ion batteries. The intention is to promote the four Rs of lithium-ion batteries — reuse, resell, refabricate, and recycle — and establish a battery circular system which will enable the efficient use of resources.

Circular system realized with used EV batteries

The market for used batteries will expand with the spread of EVs and their utilization will become an issue in the future. To solve this issue, 4R Energy Corporation has promoted the development of technologies for the reuse of used batteries at its plant in the town of Namie, Fukushima Prefecture. Used batteries collected from the market are sorted according to their condition and performance and supplied to various secondary users. Through these activities, we are building a business model to return value to customers, such as increasing the residual values of EVs based on the value of reused batteries. Expanding this model into a business and further reducing the hurdles to EV ownership for customers will lead to the further spread of electric vehicles.

4. Addressing all forms of emissions

Addressing emissions

Promoting zero-emission vehicles

EVs such as the Nissan LEAF, which has cumulative global sales of approximately 680,000 units (as of the end of March 2024), are an effective tool for reducing air pollution in urban areas. As a leader in this field, we are promoting zero-emission mobility and infrastructure construction in partnership with national and local governments, electric power companies, and other industries.

Enhancing internal combustion engines

We have proactively set voluntary standards and emission reduction targets for internal combustion engines. With the ultimate goal of making automotive emissions as clean as the atmosphere itself, we have developed a wide range of technologies and achieved the results listed below through cleaner combustion technologies, catalysts for purifying emissions, and countermeasures against gas vapors from gasoline tanks.

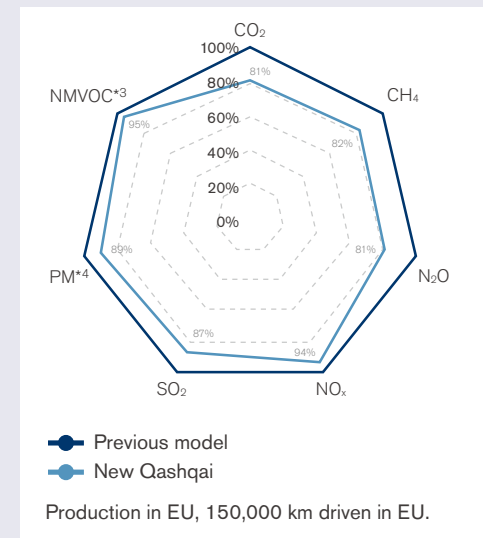
- Sentra CA (released in the U.S.A. in January 2000): The world's first gasoline-powered vehicle that satisfied all the exhaust gas requirements set by the California Air Resources Board to receive Partial Zero Emissions Vehicle (PZEV)*1 certification.
- Bluebird Sylphy (released in Japan in August 2000): The first passenger vehicle made in Japan to achieve Ultra-Low Emission Vehicle (U-LEV)*2 certification.

We will continue our efforts to ensure cleaner exhaust emissions from internal combustion engines.

Lifecycle improvements beyond climate change

Nissan is expanding the scope of lifecycle assessment (LCA) to not only greenhouse gases but also a variety of chemicals. Our calculations show that the new Qashqai achieves emission reductions of 5-20% for all targeted chemical substances and reduces environmental impacts throughout its life cycle compared with the previous model.

New Qashqai lifecycle assessment (LCA)



*1 PZEV: Certification set by the California Air Resources Board

*2 U-LEV: Vehicle that produces 75% less nitrogen oxide (NOx) and nonmethane hydrocarbon (NMHC) than the 2000 emission standards level in Japan.

*3 NMVOC: Non-Methane Volatile Organic Compounds

*4 PM: Particulate Matter

Compliance with air quality emissions regulations (Passenger cars only)

Nissan not only works to develop and promote zero-emission EVs but continues to promote cleaner exhaust emissions from all of its engines.

For example, the Qashqai released in Europe in October 2018 has a fuel-efficient 1.3-liter turbo gasoline engine fitted with a particulate filter that meets the Euro 6d-Temp emissions standard. In Japan, our product with electrification technology, e-POWER has achieved a 75% reduction in exhaust emissions from 2018 standards and improved fuel economy. As part of these efforts, our compliance with air quality emissions regulations goes far beyond current legal requirements to meet more stringent specifications. The following table shows the status of compliance with emissions regulations by region.

Compliance with exhaust emissions regulations (By region) *1

(FY)

Country/Region	Standard	2023
Japan	50% lower than 2018 standard	89%
Europe	Euro 6d	100%
U.S.A.	U-LEV / SULEV / ZEV	100%
China	National 6	100%

Addressing emissions other than vehicle exhaust

In consideration of impacts on people and nature, Nissan is broadening its efforts to address vehicle emissions beyond exhaust emissions to include wear from brakes, tires, and various other sources.

EVs use regenerative braking to charge their battery with electricity generated, thereby reducing wasted energy and improving electricity efficiency. This also reduces brake wear, contributing to improved air quality as well as climate change mitigation.

As the next proposed European exhaust emission regulation, Euro 7, will regulate particulate emissions from brake wear etc.. Nissan has begun exploring technologies to address this issue.

Improving in-cabin air quality

Under the circumstances of widespread advanced driver assistance systems and the development of fully autonomous driving technologies, it is expected that drivers will spend more time in their vehicles, making it even more important for that space to be pleasant and safe. Nissan conducted research and development aimed at cleaner vehicle emissions and made efforts to improve the cabin environment, including better air quality, to enhance comfort. As part of these efforts, starting with specification enhancements in April 2021 for the Nissan LEAF, several vehicle model interiors are equipped with materials providing verified*2 antibacterial properties. As part of our continued efforts to reduce volatile organic compounds (VOCs)*3 such as formaldehyde and toluene, Nissan is further reviewing materials for seats, door trims, floor carpets, and other parts as well as adhesives.

Having voluntarily set more stringent standards globally than those of any country's government and automotive industry body regulations, we have applied them to all new vehicles introduced to the market from July 2007 onward.

*1 Passenger cars only.

*2 Results were verified using specific bacteria and usage environments, and are not guaranteed to be effective against all bacteria.

*3 VOCs: Organic chemicals that readily evaporate and become gaseous under normal temperature and pressure conditions.

Corporate activities

In our corporate activities, including production, logistics, offices, and dealerships, we promote various activities. In terms of manufacturing, we have announced the concept Nissan Intelligent Factory for the next generation of vehicle manufacturing and are making progress in our efforts towards carbon neutrality.

Furthermore, we are promoting initiatives throughout our corporate activities, such as optimizing logistics, promoting the use of renewable energy in offices and dealerships, and striving for overall efficiency.

Nissan is also developing a system to efficiently and sustainably utilize resources and energy throughout entire life cycles, embracing the perspective of a circular economy. Through initiatives involving the circular economy and energy conservation, we strive to efficiently and sustainably utilize resources and energy while minimizing usage and emissions. In fiscal 2008, we added "environment" to the range kaizen issues addressed by quality control (QC) circles.*1 In addition, Nissan incorporates environmental improvement activities into employees' annual goals and evaluates them based on the degree of achievement. To ensure that every employee takes proactive actions towards environmental issues, evaluation systems are implemented for employees at global sites. This encourages and incentivizes employees to actively contribute to environmental initiatives.

Efforts toward carbon neutrality

Efforts toward CO₂ emission reduction through efficient energy use

We is promoting activities aimed at achieving carbon neutrality by 2050 in our corporate activities. Nissan's first priority will be the minimization of energy consumption through energy measurement and energy conservation activities.

In addition, we will make maximum efforts to transition to electrification, and replace them with carbon-free energy. We will also promote technological development to create further opportunities.

Carbon footprint of corporate activities*2

In fiscal 2023, the total of Scope 1 and 2 emissions of our global corporate activities was 1,727 thousand tons ★(Scope 1 emissions: 462 thousand tons ★; Scope 2 emissions: 1,266 thousand tons ★), a 3% decrease from 1,772 thousand tons in fiscal 2022.*3

Scope	2022	2023*4
Scope 1	585	462★
Scope 2	1,187	1,266★
Scope 1 + 2	1,772	1,727★
Japan	994	980
North America	502	501
Europe	81	86
Other	195	161

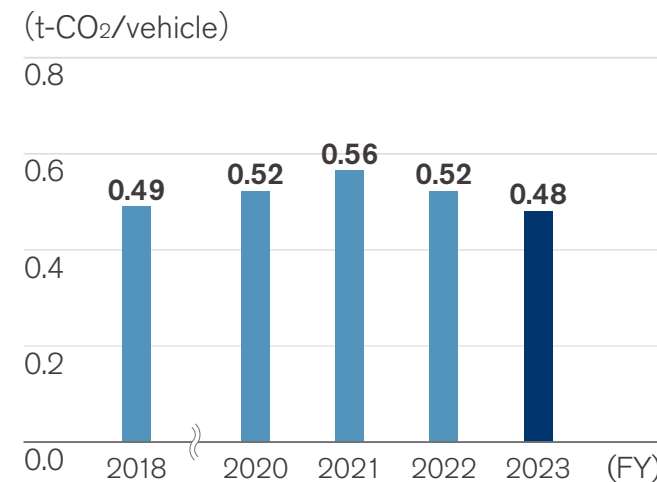
Greenhouse gas (GHG) emissions other than energy-derived CO₂*5

By type	Unit	2022	2023
CH ₄ (methane)	t-CO ₂ eq	5,054	5,705
N ₂ O (nitrous oxide)	t-CO ₂ eq	1,071	1,801
HFCs (hydrofluorocarbons)	t-CO ₂ eq	1,878	148
PFCs (perfluorocarbons)	t-CO ₂ eq	0	0
SF ₆ (sulfur hexafluoride)	t-CO ₂ eq	43	128
NF ₃ (nitrogen trifluoride)	t-CO ₂ eq	0	0

Manufacturing activities

Manufacturing CO₂ per vehicle produced*6

In fiscal 2023, our manufacturing CO₂ emissions per vehicle produced were 0.48 tons, 0.5% less than fiscal 2018.



*1 Quality control (QC) circle: Improvement activities to enhance quality control

*2 The boundary has been changed to align with the financial consolidation group. The figures for fiscal 2022 have been retroactively revised to reflect this change. (Previous boundary: Nissan Motor Co., Ltd., consolidated subsidiaries and some of its affiliates accounted for by the equity method. Revised boundary: Nissan Motor Co., Ltd. and consolidated subsidiaries)

*3 Please refer to the data book for the past 5-year historical trends >>> P148

*4 Due to some differences in the categorization from previous fiscal years, changes have been made starting from the fiscal 2023 by reclassifying a portion of Scope1 to Scope2. The impact of this change for the fiscal 2023 resulted in a decrease of 78 thousand tons of CO₂ emissions in Scope1 and an increase of 78 thousand tons of CO₂ in Scope2.

*5 GHG emissions from Nissan bases in Japan, calculated based on the Act on Promotion of Global Warming Countermeasures.

*6 CO₂ emissions per vehicle produced in the NGP management scope

★ This figure is subject to assurance by KPMG AZSA Sustainability Co., Ltd. For details, please see here. >>> P061

Carbon neutrality roadmap at production plants

Nissan is promoting activities aimed at achieving carbon neutrality at its plants, with the goal of achieving this by the 2050 life cycle. In October 2021, we announced a roadmap to achieve carbon neutrality in 2050 at our plants to steadily promote initiatives to achieve this goal.*1

By 2030: We will first promote the introduction of innovative production technologies and electrification while reducing energy consumption in plants. Following this, we plan to introduce renewable energy and expand the application of alternative energy.

2030-2050: Toward 2050, our goal is to fully electrify plant equipment that operate under various forms of power, including gas and steam.

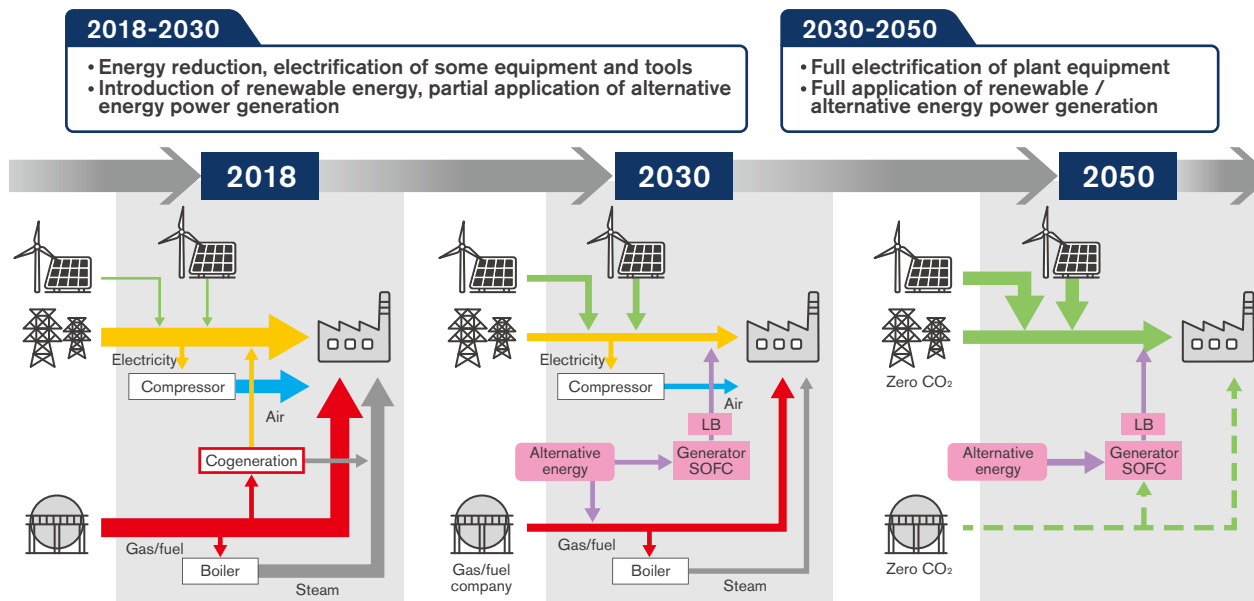
At the same adopting time, we are striving to achieve carbon neutrality at our plants by fully adopting electricity generated in-house by fuel cells that use renewable energy and alternative fuels.

Aiming to achieve carbon neutrality by 2050 through innovation in production technology

Nissan Intelligent Factory, our next-generation vehicle manufacturing concept*2

Nissan announced its Nissan Intelligent Factory concept for the next generation of vehicle manufacturing as the advancement of Nissan Intelligent Mobility such as electrification and intelligence accelerates. As the functions and structures of cars become more complex, and further technological innovation becomes essential in the production process.

The pillar of Nissan Intelligent Factory, the Zero Emission Production System, promotes activities based on the carbon neutrality roadmap at production plants.



*1 Click here for more information on our roadmap for carbon neutrality at production plants. <https://global.nissannews.com/en/releases/release-c252360e116720126985295f9d7480af-new-nissan-intelligent-factory-opens-in-tochigi>
 *2 Click here for more information on the Nissan Intelligent Factory. <https://www.nissan-global.com/EN/INNOVATION/TECHNOLOGY/ARCHIVE/NIF/>
 Click here for more information on a next-generation vehicle manufacturing concept. (Japanese only) <https://global.nissannews.com/ja-JP/releases/191128-02-j>

Key initiatives toward carbon neutrality by 2050 at production plants

1. Global energy-saving activities (adoption of new technologies, improved processes)

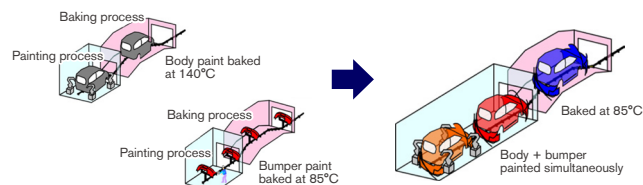
Most CO₂ emissions in the manufacturing process come from the consumption of energy generated by fossil fuels. We engage in a variety of energy-saving activities in the manufacturing process in pursuit of the lowest energy consumption and CO₂ emissions among automakers.

Initiatives in automotive production technology

In the realm of automotive production technology, we are introducing highly efficient equipment and improving manufacturing techniques. Other key approaches are the three-wet paint process and low-temperature baking technology used for vehicle painting, which enable the body and bumpers to be painted at the same time. Approximately 30% of CO₂ emitted from manufacturing plants comes from the painting process, thus shortening or eliminating processes and lowering temperatures during the process will lead to a reduction in CO₂ emissions. The low-temperature three-wet painting technology introduced by Nissan enables the body and bumpers, which were previously painted separately, to be painted at the same time, reducing CO₂ emissions from the painting process by 25% or more.*¹ Nissan has implemented this technology in the new production line at the Tochigi Plant in the Nissan Intelligent Factory (launched in 2021) and will gradually expand its roll out as painting facilities become more sophisticated in the future. Also, systems for recycling air expelled from booths for reuse needed dehumidifying processing to ensure that the air was at the humidity required. Dry paint booths can reuse air without dehumidifying it, reducing energy consumption to less than half its previous levels.

This technology was adopted for the dry paint booths at our Sunderland Plant in the U.K. (operating since September 2018).

Simultaneous Painting of Body and Bumpers



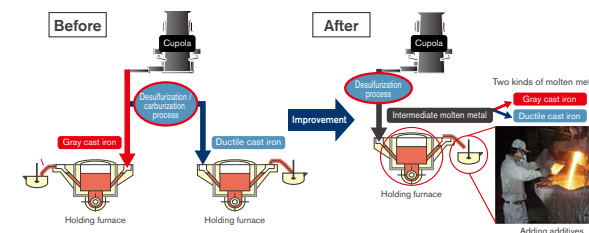
CO₂ emissions have been reduced by simultaneously painting the body and bumpers using a new technology and consolidating them into one process (right) and drying at a low temperature (85°C) instead of the conventional two-step process (left).



Initiatives in the field of powertrain production technology

In powertrain production technology, Nissan is working to reduce energy usage in holding furnaces during the cast iron melting processes carried out by the Casting Division. In the conventional melting process, two holding furnaces were used to store two types of cast iron melts with adjusted carbon and sulfur component content. Now, intermediate molten metal with a low carbon and sulfur content is stored in one holding furnace. When transporting from the holding furnace to another process, the ingredients are adjusted by adding additive materials, creating two types of molten metal and making it possible to eliminate one holding furnace. As a result, power consumption was reduced by approximately 3,600 MWh per year (CO₂ conversion: Approximately 1,700 tons per year; oil conversion amount: Approximately 900 kiloliters per year). This change in the melting process has reduced power consumption at the cast iron factory in the Tochigi Plant by approximately 11%. In light of this achievement, Nissan won the Agency for Natural Resources and Energy Award in the Small Group Activities category at the Energy Conservation Grand Prize Awards for fiscal 2019, sponsored by The Energy Conservation Center, Japan (ECCJ).

Cast iron melting process



*1 Source: Nissan

Energy-saving activities at Nissan Energy Saving Collaboration (NESCO)*1

To reach our defined objectives for CO₂ emissions and energy use, we solicit facility proposals from each global site, preferentially allocating investment based on the potential CO₂ emission reductions compared to project costs. In Japan, aging facilities are being transformed into cutting-edge, high-efficiency facilities to improve energy consumption efficiency. In terms of facility operation, meticulous management of lighting and air conditioning systems is carried out to ensure thorough energy consumption control and minimize waste during operations. Our plants use finely controlled lighting and air conditioning for low-energy consumption and low-energy-loss operations. We promote CO₂ emission reduction activities and introduced cutting-edge, energy-conserving technology from Japan to our plants worldwide. Our plants globally engage in learning and sharing best practices with each other, while NESCO diagnoses energy loss at plants in the regions where we operate and proposes new energy-saving countermeasures. These proposals amounted to a potential reduction in CO₂ emissions of some 42,599 tons*2 in fiscal 2023.

When sourcing energy, we consider the balance of CO₂ emissions for the entire company alongside renewable energy usage rate and cost, choosing the suppliers best suited for achieving each goal.

As a result of these activities, CO₂ emissions at production plants in fiscal 2023 amounted to 0.48 tons per vehicle, a reduction of 1.4% from the fiscal 2018 level.

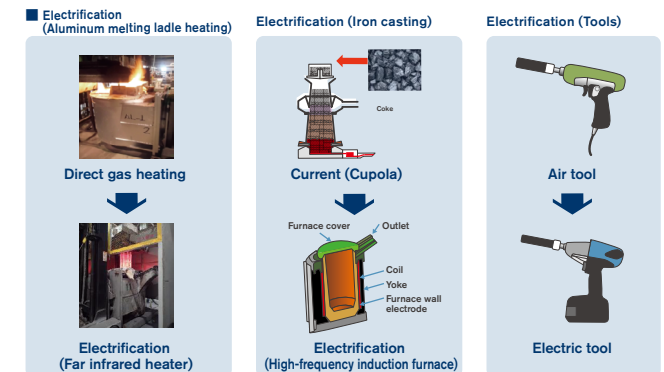
Nissan North America receives its 15th ENERGY STAR® Partner of the Year award

Nissan North America was selected as ENERGY STAR® Partner of the Year by the U.S.A. Environmental Protection Agency (EPA) for its significant contributions to energy efficiency and the transition to a clean energy economy. Additionally, Nissan's ongoing efforts to improve energy efficiency were recognized with the ENERGY STAR® Sustained Excellence Award, the highest award given, for the 13th consecutive year.



2. Expanded electrification of production facilities

Electrification of fossil fuel facilities is indispensable to achieving carbon neutrality. We have initiated the electrification of aluminum melting furnaces and gas heating equipment used for casting. Additionally, we have plans to convert various heat treatment furnaces and cupolas, which currently use coke as fuel, into electric furnaces. These efforts aim to minimize emissions and promote the use of cleaner energy sources in our manufacturing processes. Electrification of compressed air, which has low energy efficiency, is also effective in reducing CO₂ emissions. For this reason, we are reducing our compressed air usage by converting air tools in the assembly process to electric tools and migrating from water removal by air blowing to vacuum drying in the machining process. We will continue to expand production facility electrification in these and other ways.



*1 Established in Japan in 2003, then in Europe, Mexico, and China in 2013

*2 Source: Nissan

Environmental principles and policies

Understanding of environmental issues

Strategic approach to environmental issues

Global environmental management framework and governance system

Nissan Green Program

Value chain activity achievements

Third-party assurance

3. Promoting renewable energy

Nissan takes three approaches to promote the adoption and integration of renewable energy in line with the characteristics of each region: (1) Generating our own renewable energy in company facilities; (2) sourcing clean energy and (3) promoting the introduction of renewable energy through contracts with PPA*1 providers.

As an example of the first approach, our Sunderland Plant in the U.K. introduced 10 wind turbines supplying 6.6 MW of power. In fiscal 2023, we updated the wind turbine facilities. We are continuously exploring ways to enhance power generation efficiency. At our Iwaki Plant, the guest hall for plant visitors is powered by solar energy. By storing surplus electricity in 2nd life Nissan LEAF batteries, the plant both stabilizes the energy supply and uses resources more effectively.

Regarding the second approach, Renault Nissan Automotive India Private Limited in India actively uses energy generated from wind power and biomass. In fiscal year 2023, the proportion of renewable energy in the total electricity consumption averaged approximately 73% annually and reached a maximum of 100% on a monthly basis. Under contract with a PPA provider, Dongfeng Nissan Passenger Vehicle Company (DFL) commenced the operation of solar power generation systems at three of its plants in fiscal 2023. The generation capacity of the system at the company's Huadu Plant is approximately 20MW and those at the Changzhou and Zhengzhou Plants 3MW and 5MW, respectively. Having also accelerated the introduction of solar power generation at its global sites for example, the Sunderland plant in the U.K. and the Tan Chong Motor in Malaysia are both operating 20MW systems. Nissan has steadily installed renewable energy systems.



Solar power generation at the Thailand Plant



Solar power generation at the Tan Chong Motor

4. In-house power generation using alternative fuels

In 2016, Nissan became the first automotive company in the world to incorporate e-Bio Fuel-Cell technology, a fuel cell system that uses solid oxide fuel cells (SOFC*2) as a vehicular propulsion system. Based on its experience in developing SOFCs for automotive applications, Nissan will apply this technology to stationary power generation systems*3.

On March 6, 2024, Nissan announced that it had developed a stationary, bio-ethanol-fueled system capable of high-efficiency power generation and commenced trials at its Tochigi Plant.

Moving forward, Nissan aims to improve its power generation capacity through trial operations and work towards full-scale operations starting from 2030.



In-house power generation using SOFC and other methods

*1 Power Purchase Agreement

*2 SOFC (Solid Oxide Fuel Cell)

*3 Click here for more information on stationary power generation systems.

EV36Zero, an electric vehicle (EV) hub to achieve carbon neutrality

Nissan is a pioneer in not only the development and production of EVs, but also in comprehensive efforts to utilize the onboard battery as a storage battery and for secondary use, with the aim of achieving carbon neutrality throughout the entire life cycle of a vehicle. In July 2021, we unveiled EV36Zero as the world's first hub to create an ecosystem for electric vehicle (EV) manufacturing in order to advance the next phase of the automotive industry together with our partners and achieve carbon neutrality in Europe.

- New-generation Nissan electric crossover to be manufactured at the Nissan Sunderland, U.K. Plant
 - AESC will build a new giga-factory for battery with an annual production capacity of 9GWh adjacent to the Nissan Sunderland Plant
 - Renewable energy 'Microgrid' to deliver 100% clean electricity for the Sunderland Plant
 - 2nd life EV batteries used as energy storage for ultimate sustainability
 - This comprehensive project represents 6,200 jobs at Nissan and at its U.K. suppliers
- Centered around the plant in Sunderland, U.K.,

Nissan EV36Zero will supercharge the company's drive to carbon neutrality and establish a new 360-degree solution for zero-emission mobility. The transformational project has been launched with an initial £1 billion investment by Nissan and its partners AESC and the Sunderland City Council. Comprised of three interconnected initiatives, Nissan EV36Zero brings together EVs, renewable energy and battery production, setting a blueprint for the future of the automotive industry. The experience and knowhow gained through the project will be shared globally, enhancing Nissan's global competitiveness.



Initiatives in the logistics field

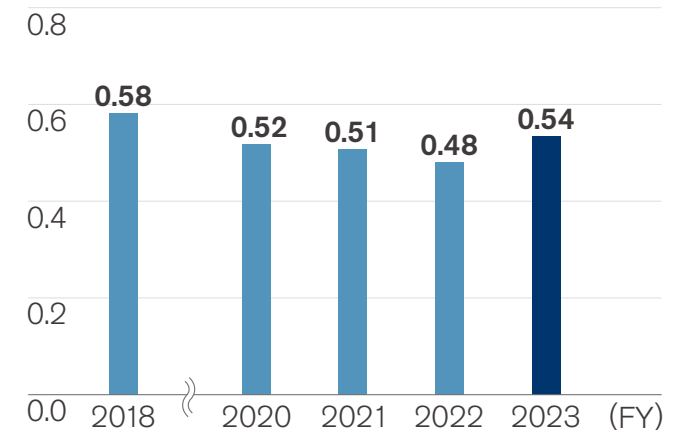
Nissan endeavors to achieve carbon neutrality within the 2050 life cycle, with a firm commitment to exploring initiatives in the logistics field. To begin with, we have formulated a roadmap for 2030, laying the foundation for our ongoing activities.

To optimize transportation efficiency, we have implemented several measures. These include shortening transportation distances, improving load configurations to reduce volume, and enhancing transportation loading efficiency.

We proactively pursue sourcing components as close to our manufacturing plants as feasible, aiming to minimize transportation distances. Additionally, we prioritize the design of parts to enhance transportation efficiency, thereby reducing the number of parts procured per vehicle and subsequently decreasing transportation volume. Collaborative transport partnerships with other companies further promote improved loading ratios. In response to social trends in workstyles, such as driver shortages and shorter working hours, we are constantly reviewing our logistics methods and proactively promoting a modal shift to rail and marine transport. Our company is committed to reducing CO₂ emissions in our logistics operations by strengthening collaboration with carriers dedicated to environmental measures, and by introducing environmentally friendly solutions such as LNG-powered vessels, biofuel ships, and electric trucks. In fiscal 2023, CO₂ emissions per global vehicle were 0.54 tons, a reduction of 6.4% compared with 2018.

CO₂ emissions per vehicle transported

(t-CO₂/vehicle)



Environmental principles and policies

Understanding of environmental issues

Strategic approach to environmental issues

Global environmental management framework and governance system

Nissan Green Program

Value chain activity achievements

Third-party assurance

CO₂ emissions from Logistics

In fiscal 2023, CO₂ emissions from logistics were 1,981k-tons.

(FY)

	Unit	2022	2023
Total*1,2	t-CO ₂	1,590,741	1,981,139
Inbound*3	t-CO ₂	408,443	552,112
Outbound*4	t-CO ₂	1,182,298	1,429,027

Sea	%	35.1	37.0
Road	%	58.3	57.3
Rail	%	3.4	3.1
Air	%	3.1	2.6

Office initiatives

Nissan promotes efforts to reduce CO₂ emissions at Nissan offices in Japan, North America, Europe, and China. In Japan, through Nissan Trading, we operate the Nissan Power Producers and Suppliers (PPS) scheme, sourcing clean energy for which CO₂ emissions and costs have been taken into account through Japan's PPS system.

Nissan Energy Saving Collaboration (NESCO) teams contribute to reducing emissions in the Nissan Technical Center in Atsugi.

Our efforts for environment go beyond just CO₂ management. Employees are encouraged to use online meeting tools as much as possible to reduce the number of business trips required.

Renewable energy initiatives at Nissan Global Headquarters

At our Global Headquarters, we are promoting energy conservation activities through daily improvements that include turning off lights and installing LEDs, as well as reducing CO₂ emissions through the introduction of renewable energy.

In 2011, we installed a solar power generation system providing approximately 40kW and Nissan LEAF lithium-ion batteries. The electricity generated is stored in batteries housed in the Global Headquarters building, then used for electric vehicle charging systems installed onsite. Surplus power generated is effectively used as electricity for the building.

From 2023, approximately 7,000MWh/year of the electricity used at the Global Headquarters has been 100% renewable energy.



Green building policy

Based on ISO 14001 management processes to evaluate environmental impact, we make it a key task to optimize our buildings during construction or refurbishing to make all our structures greener. Evaluation metrics in this area include environmental footprint, such as CO₂ emissions; waste and emissions from construction methods; and the use of hazardous materials and other quality control issues. Furthermore, one performance index for Nissan in Japan is MLIT's Comprehensive Assessment System for Built Environment Efficiency (CASBEE).

Among our current business facilities, our Global Headquarters in the city of Yokohama, Kanagawa Prefecture, has earned CASBEE's highest "S" ranking, making it the second Nissan building to do so following the Nissan Advanced Technology Center (NATC) in Atsugi, which is located in the same prefecture.

Our Global Headquarters gained a Built Environment Efficiency Rating of 5.6, the highest CASBEE rating for a new structure, making it one of Japan's greenest office buildings. The building's use of natural energy sources to reduce its energy usage and its CO₂ emissions were evaluated highly, as were its methods of water recycling and its significant reduction in waste produced.

Dealership initiatives

Nissan promotes efforts to reduce CO₂ emissions at dealerships. Our retail outlets also work continually to increase energy efficiency. Many have adopted high efficiency air conditioning, insulation films, ceiling, fans and LED lighting.

During renovation work, some outlets have installed lighting systems that make use of natural daylight, as well as insulated roofs.

*1 Due to the change in global emission factors based on GHG Protocol, changes have occurred in the figures since the fiscal year 2018.

*2 CO₂ emissions include those from transportation of parts to our manufacturing bases and transportation of vehicles from our manufacturing bases to dealerships.

*3 "Inbound" includes parts procurement from suppliers and transportation of knockdown parts.

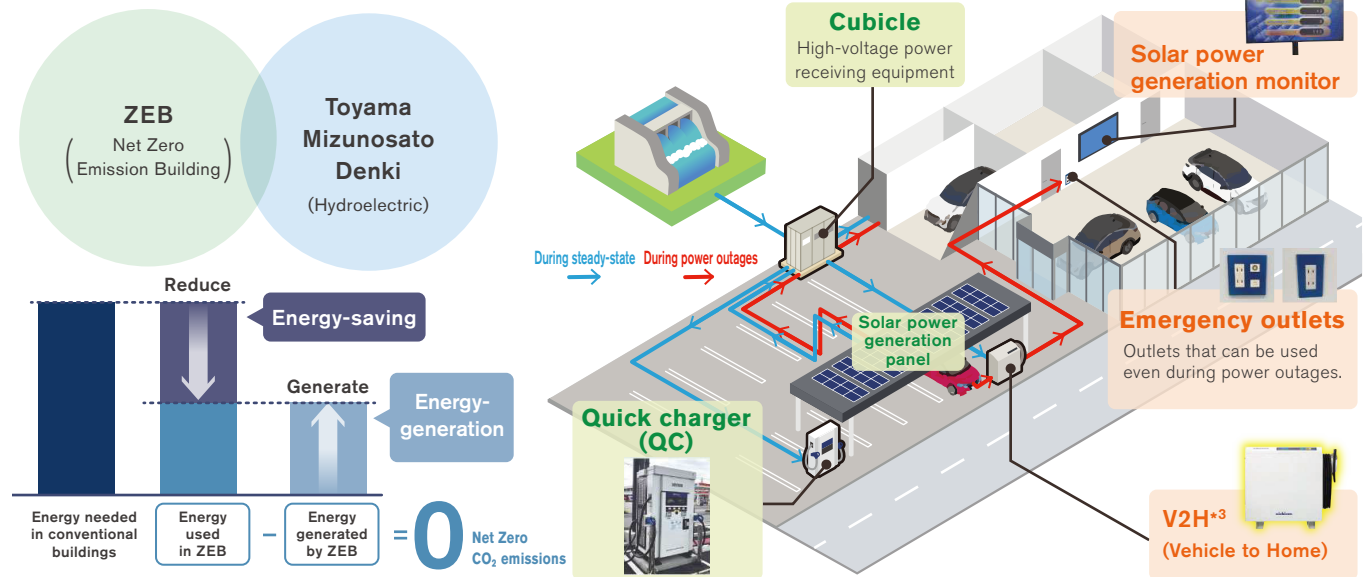
*4 "Outbound" includes transportation of complete vehicles and service parts. Click here for more information on the data for the past 5 years. >>>P150

In April 2000, we introduced the "Nissan Green Shop" certification system, a proprietary environmental management system based on ISO 14001 certification, to promote energy conservation and other CO₂ reduction activities as one of our environmental initiatives. A set of standards has been established enabling CO₂ reduction activities to be conducted in accordance with a unified concept based on the Nissan Green Program 2030 (NGP 2030), and specific measures such as reducing electricity consumption and switching to LED lighting have been incorporated into the activity plans of each company.

Through these efforts, we are realizing carbon neutral dealerships that both conserve and create energy. Nissan Satio Toyama will promote Electrify Japan Blue Switch Program activities to resolve local issues using electric vehicles and V2H,^{*3} contribute to the realization of carbon neutrality in Toyama Prefecture centered on these key dealerships, while further promoting the spread of electric vehicles and trains.

Carbon neutral activities at local dealerships

In the Hokuriku region, the Takaoka Interchange branch of the Nissan Satio Toyama dealership located in Toyama Prefecture became first in the region to be designated as a carbon neutral dealership in December 2022, followed by the Toyama Higashi branch in July 2023. In addition to the building's high thermal insulation, the incorporation of high-efficiency air conditioning and sensor-based lighting controls have enabled the building to achieve a 63% reduction in standard primary energy consumption and obtain ZEB-Ready^{*1} certification. In addition, solar panels are installed on the roof of an outdoor showroom to generate electricity on-site, and for additional electricity needs, the dealership utilizes the Toyama Mizunosato Denki^{*2} renewable energy menu from a hydroelectric dam located in Toyama Prefecture, leveraging the value of locally sourcing renewable energy.



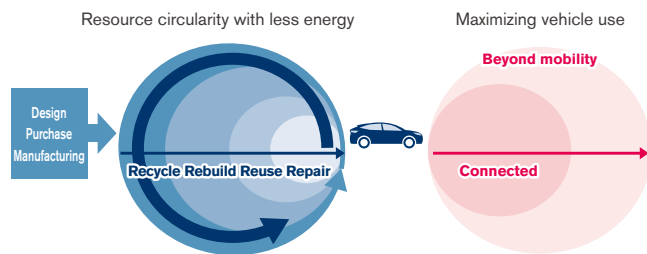
^{*1} ZEB (Net Zero Energy Building) A building that aims to achieve a balance of zero in the annual primary energy consumption, while providing a comfortable indoor environment.
^{*2} Toyama Mizunogou Denki A menu of renewable electricity that utilizes the electricity generated from the Toyama Prefecture-owned hydroelectric power plants and its environmental value. This electricity has high added value, including not only the environmental value of zero carbon dioxide emissions associated with electricity usage but also the specified power source value derived from hydroelectric power plants and the local value of being produced in Toyama Prefecture.
^{*3} V2H (Vehicle-to-Home) A system that allows EVs to supply electricity to buildings by drawing power from them. During power outages caused by disasters or other events, this system enables the use of lighting, outlets, and other electrical devices in offices, conference rooms, and other locations by supplying power from EVs.

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Environmental principles and policies	Understanding of environmental issues	Strategic approach to environmental issues	Global environmental management framework and governance system	Nissan Green Program	Value chain activity achievements	Third-party assurance

The Nissan circular economy (resource circularity and mobility usage)

Nissan promotes the efficient and sustainable use of resources for vehicles as well as their maximum utilization.

Circular economy



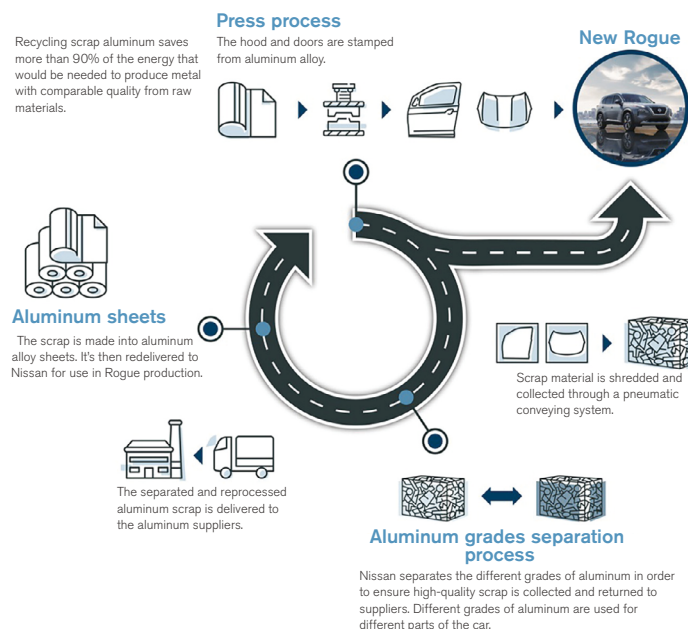
Resource circularity with less energy Initiatives to expand use of recycled materials (ferrous and nonferrous metals)

In fiscal 2023, ferrous metals accounted for 61% of the materials used in our automobiles by weight. Nonferrous metals made up another 15% and resins 13%, with miscellaneous materials making up the final 11%. To further reduce our use of natural resources, we are advancing initiatives to expand the use of recycled materials in each of these categories.

We are taking steps to reduce the steel and aluminum scrap left over in the manufacturing process, and working globally with business partners to collect and reuse this scrap as material for new vehicles through closed-loop recycling initiatives.

Currently, at Nissan Motor Kyushu and plants in North America and Europe, where X-Trail, Rogue and Qashqai are manufactured, we are collaborating with aluminum manufacturers to adopt a closed-loop recycling process that recycles aluminum scraps generated during manufacturing into aluminum alloy sheets for automobiles. The sorting and collecting of scrap in this process control impurities, realizing horizontal recycling without quality deterioration, which contributes to reductions in the amount of newly mined resources (aluminum ingots) used. Aluminum road wheel scrap generated from end-of-life vehicles (ELVs) and the market are also used for suspension parts after sorting

Closed-loop recycling of aluminum

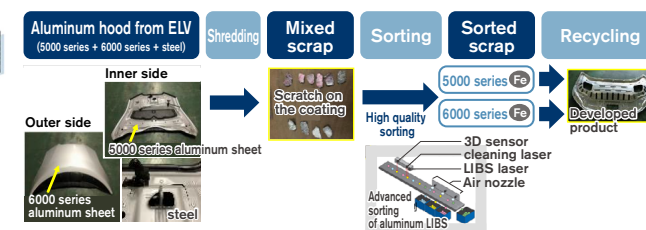


and removing impurities and making them compliant with Nissan's quality standards. We aim to achieve closed-loop recycling for ELV aluminum doors and the like, which are being promoted to reduce weight. We aim to improve the accuracy of aluminum sorting through research and development as "advanced sorting of automotive aluminum panels".*1 We then control the composition to secure the necessary formability for aluminum panels, after innovating the shredding method to improve the accuracy of aluminum sorting, and aim to achieve closed-loop recycling rather than the conventional cascade recycling method.

Horizontal recycling of aluminum



Upgrade recycling of Aluminum



*1 These R&D projects are undertaken as part of our recycling optimization support business, using surplus money from recycling fees deposited for three specified components (refrigerant, airbags, ASR) based on Japan's End-of-Life Vehicle Recycling Law. Click here for more information on the implementation of Nissan's project to advance recycling (Japanese only). https://www.nissan-global.com/JP/SUSTAINABILITY/ENVIRONMENT/A_RECYCLE/R_FEE/SAISHIGEN

Initiatives to expand use of recycled materials (resins)

In addition to our initiatives to expand the use of recycled steel and aluminum, Nissan also strives to use more recycled resins.

After resin materials are manufactured from crude oil and residue resin parts are applied to vehicles and scrapped, most resin parts are collected as automotive shredder (ASR) and used as energy in the form of thermal recovery. Compared with conventional materials, recycled resin can reduce the amount of CO₂ generated during material production, contributing significantly to effective resource use and waste reduction.

Nissan is promoting R&D into material and chemical recycled resins to establish a circular economy for resin materials. As a material recycling initiative, our Oppama Plant and Dongfeng Motor Co., Ltd. (DFL), our joint venture in China, are recycling painted bumpers generated at the plants. These are utilized as materials for new car bumpers or after-sales service bumpers. Additionally, replaced bumpers collected from dealerships are being recycled as materials used in undercovers and for other components. We collected and recycled approximately 89,000 bumpers in fiscal 2023, representing 56% of bumpers removed at Japanese dealerships.

Furthermore, 30% of the ASR processed at dedicated processing plants is made from resins. To utilize these resins in automobiles, we are running a number of R&D projects on topics, such as optimizing the recycling process for resins recovered from ASR, and the chemical recycling of auto waste plastic.*1

Closed-loop recycling of resins



Recycling of resin materials

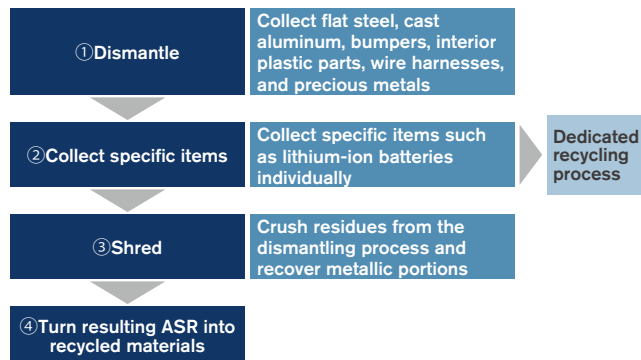


*1 These R&D projects are undertaken as part of our recycling optimization support using surplus money from recycling fees deposited for three specified components (refrigerant, airbags, ASR) based on Japan's End-of-Life Vehicle Recycling Law. Click here for more information on the implementation of Nissan's project to advance recycling (Japanese only). https://www.nissan-global.com/JP/SUSTAINABILITY/ENVIRONMENT/A_RECYCLE/R_FEE/SAISHIGEN

End-of-life vehicle recycling

Nissan considers the three Rs —reduce, reuse, and recycle—from the design stage for new vehicles. Since fiscal 2005, all new models launched in the Japanese and European markets have achieved a 95% or greater recyclability rate.*¹ We have also joined forces with other automotive companies to promote the recycling of ELVs through dismantling and shredding. Based on Japan's End-of-Life Vehicle Recycling Law, Nissan has achieved at least 95% effective recycling rate of ELVs in Japan since fiscal 2005. In fiscal 2023, we achieved a final recovery ratio for ELVs of 99.4%*² in Japan, greatly exceeding the target effective recycling rate of 95% set by the Japanese government.

ELV processing flow

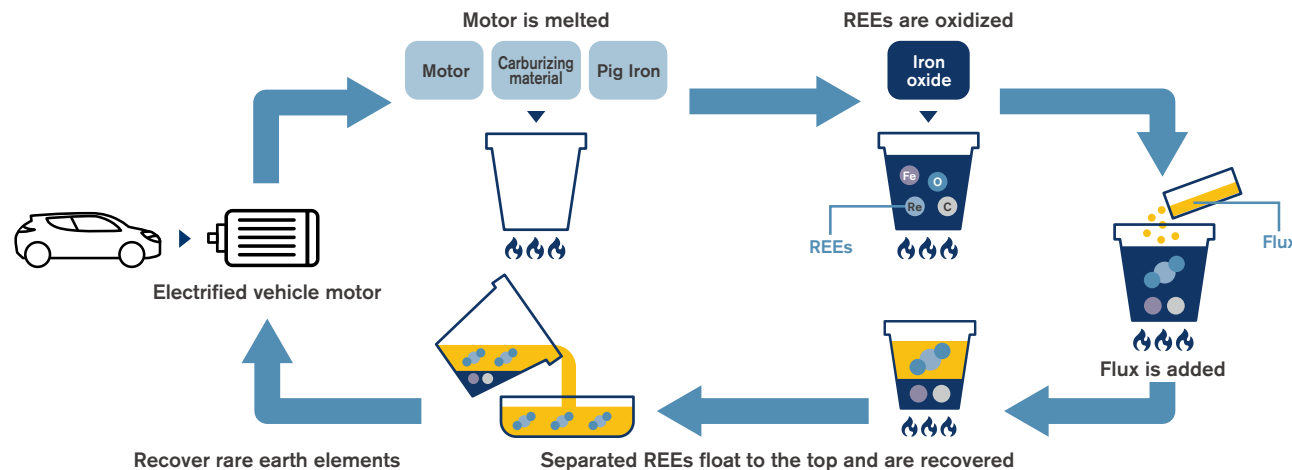


Since 2004, Nissan and 12 other Japanese auto manufacturers have supported ASR recycling facilities, as called for in Japan's End-of-Life Vehicle Recycling Law, as an integral part of a system to recycle ASR effectively, smoothly, and efficiently. Nissan is taking an important role in this joint undertaking. Additionally, Japan Automobile Manufacturers Association, Inc. (JAMA) established a common scheme for recovering used lithium-ion batteries along with a system for processing these batteries appropriately, and put both into operation in fiscal 2018. We have also established a take-back system for ELVs in Europe. This network of Authorized Treatment Facilities was developed for individual countries in collaboration with contracted dismantlers, contracted service providers, and governments in alignment with a European ELV directive.

Reducing use of scarce resources

Permanent magnet motors for EVs, HEVs, and e-POWER use scarce resources called rare earth elements (REEs). Reducing their usage is important because REEs are unevenly distributed around the globe, and the shifting balance of supply and demand leads to price fluctuations. Nissan has continuously reduced the use of heavy REEs, which are the rarest, and in 2020, the Note e-POWER adopted magnets with 85% less heavy REEs compared with 2010. Furthermore, the 2022 Nissan Ariya uses an electrically excited synchronous motor without permanent magnets. For motors that use magnets, we will continue our R&D aimed at eliminating heavy REEs.

Recycling process for rare earth elements (REEs) used in electrified vehicle motors

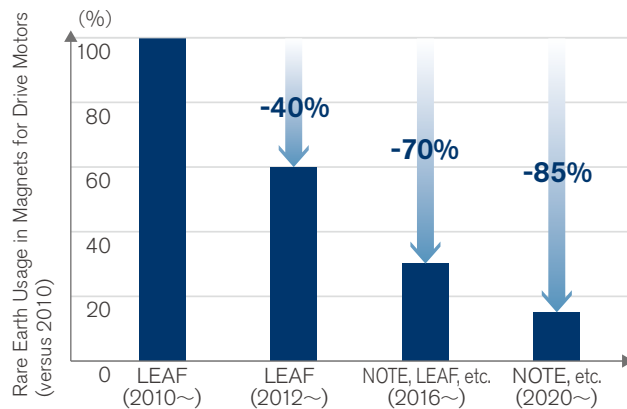


*1 Calculated based on 1998 JAMA definition and calculation guidelines (in Japan) and ISO 22628 (in Europe).

*2 Based on Nissan research

As a new initiative, Nissan is also promoting the development of rare earth metal recovery technologies from drive motor magnets. Previously, the recycling of the magnets used in motors had required multiple processes that included the manual disassembly and removal of the magnets making economic efficiency an issue. Nissan and Waseda University collaborated to establish technologies for recovering REEs in highly pure states through direct dissolution using borate as a flux, eliminating the need to dismantle the motor rotors. Currently, we are conducting trial testing using motors that did not meet our shipping standards to put the new technologies into practical use around 2030. In these ways, with respect to motors, which are a key technology, Nissan is engaged in developments corresponding to the circular economy concept, from reducing the amount of REEs used to utilizing resources efficiently and sustainably.

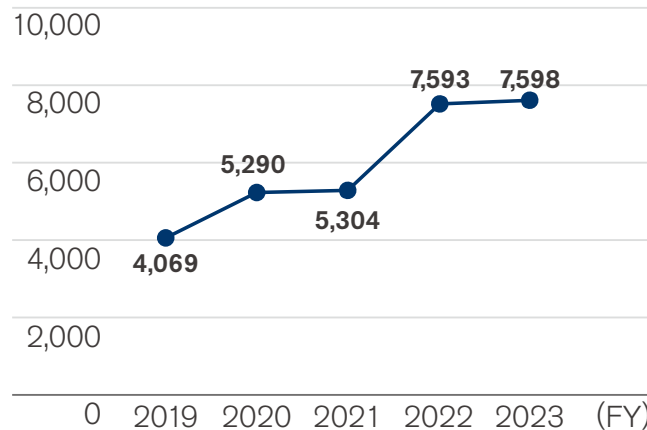
Rare Earth Usage in Magnets for Drive Motors



Proper use of regulated chemical substances

Nissan revised its standard for the assessment of hazards and risks, actively applying restrictions to substances not yet covered by regulations but increasingly subject to consideration around the world. As a result, the number of defined chemical substances covered in fiscal 2023 rose to 7,598. These steps are thought to be necessary for future efforts in the repair, reuse, remanufacture, and recycle loop for resources.*1

The number of defined chemical substances



Expansion of remanufactured parts

Parts reclaimed from ELVs and those replaced during repairs include potential parts for recycling. In Japan, we collect these parts and go through quality checks to sell them under the Nissan Green Parts initiative. Nissan Green Parts have two categories: remanufactured parts, which are disassembled and have components replaced as needed,

and reusable parts,*2 which are cleaned and tested for quality.

By further accelerating such Nissan Green Parts initiatives, particularly in Japan, Europe, and North America, Nissan aims to supply parts to customers stably while effectively using limited resources.

Example of Nissan Green Parts in Japan



Alternator | Air conditioning compressor | Starter motor

Maximizing vehicle use: Mobility and connected services

We are also exploring the maximization of vehicle use by employing mobility and connected services.*3

*1 Click here for more information on chemical substances governance. >>> P023

*2 Not available at some retail outlets.

*3 Click here for more information. >>> P040

Impacts and dependencies on nature in corporate activities (resources, water and air)

Resource dependency: Achievements in waste reduction

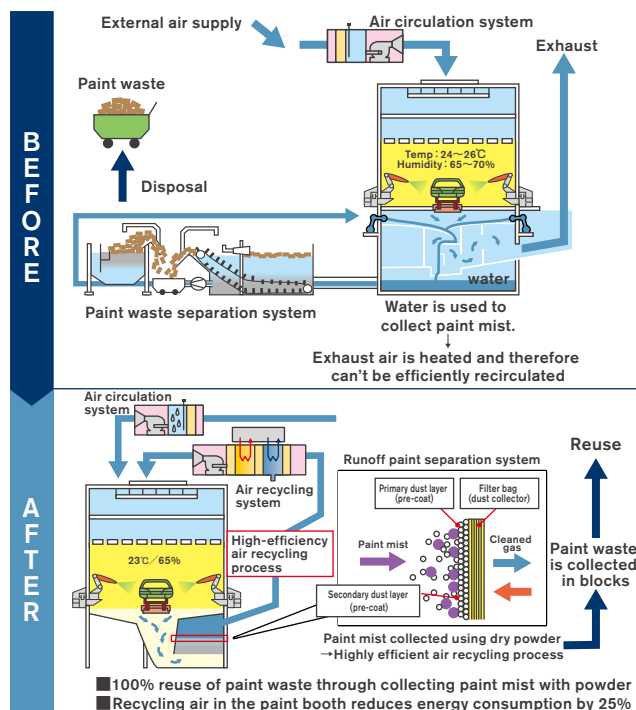
Thorough measures for waste materials

Nissan actively promotes measures based on the 3R (Reduce, Reuse, Recycle) approach in its production processes whenever possible, striving to minimize the waste generated and maximize recycling efficiency by thorough waste sorting. At the end of fiscal 2010, we achieved a 100% recycling rate at all of our manufacturing sites in Japan, including five manufacturing plants, two operation centers, and seven affiliates. Overseas, we have reached 100% recycling rates at plants in India, Brazil, and elsewhere. We are also working to reduce waste at global production factories, including Japan, by reducing packaging materials for imported and exported parts, distributing parts between overseas bases, and repeatedly using plastic and returnable containers.*1

Furthermore, we have optimized parts shape at parts design stage which is called logistics simultaneous activities to reduce the volume of packaging materials used. We also contribute to waste reduction by selecting recyclable materials at the packaging material selection stage and are actively engaged in the development of recycling technologies for carbon fiber-reinforced plastics (CFRP).

Promoting recycling with dry paint booths

Recycling is also being promoted at the Nissan Intelligent Factory, which began operations in 2021. Conventionally, residual paint in the air during the painting process has been mixed with water and disposed of as waste. By employing dry booths that do not use any water, 100% of the paint mist is collected in the plant and recycled as a substitute for the auxiliary agent used to remove impurities in the iron casting process.



Waste

Global regular waste generated from corporate activities in fiscal 2023 amounted to 170,491 tons, waste generated globally from production sites in fiscal 2023 was 171,598 tons *(regular waste*2 : 164,947 tons, non-regular waste*3 : 6,651 tons).

Regular waste generated from corporate activities

	(FY)	
	2022	2023
Total*4,5	157,982	170,491

By region		
Japan	51,069	57,638
North America	52,007	53,802
Europe	36,577	43,037
Other	18,329	16,015

By treatment method		
Waste for disposal	8,688	7,746
Recycled	149,293	162,746

(Unit : Tons)

*1 Returnable containers: Containers for packing parts that can be returned to the sender after parts delivery and used repeatedly. Nissan has adopted a folding structure in consideration of transportation efficiency at the time of return.

*2 Regular waste generated from production, maintenance, and issue resolution activities.

*3 Waste generated irregularly from activities such as installing new processes, relocating equipment, and dismantling facilities.

*4 The total disclosed amount since 2019 is the total amount of regular waste generated from production sites and office sites, excluding *3.

*5 Click here for more information on Resource dependency (Facility waste). >>> P153

* This figure is subject to assurance by KPMG AZSA Sustainability Co., Ltd. For details, please see here. >>> P061

Water-related achievements

Reducing water used in corporate activities

Nissan views water as a contextual issue, and in areas with a high risk of water stress, Nissan prioritizes efforts aimed at reducing water usage, including wastewater recycling and the effective use of rainwater, while also contributing to the resolution of local water issues. Nissan also strives to manage and reduce water usage at every plant. To reduce water usage, we built reservoirs to collect rainwater at the Chennai Plant in India and the second Aguascalientes Plant in Mexico, and installed wastewater recycling equipment at the Chennai Plant, the Huadu Plant in China, and the Oppama Plant in Japan. In particular, Chennai Plant, which is located in a water basin with valuable water resource, continues its efforts to reduce

water usage and is also engaged in the restoration of nearby ponds and lakes. The Plant's efforts have been recognized as an excellent example of water resource management by the Confederation of Indian Industry (CII). Furthermore, as a result of a rigorous audit by a third-party, the plant obtained the prestigious "Water Positive Certification (Platinum Category)" in February 2024, for its comprehensive water strategy, which includes reducing water usage at the plant and the restoration of nearby ponds and lakes. Our plants are competing among themselves to find new activities for reducing water usage, such as by filtering wastewater from pre-painting processes at Nissan North America (NNA) which improves water quality. We are also working to reduce water usage at Nissan's Global Headquarters in Yokohama, Japan, by processing rainwater and wastewater from kitchens and other internal

sources to be reused for flushing toilets and watering some plants.



Chennai Plant, honored by the CII.



Water Positive Certification (Platinum Category)

Examples of efforts to reduce water usage at manufacturing plants and offices in India

In India, where the handling of water resources has a significant impact on people's lives, our manufacturing plant has installed water treatment facilities using an RO membrane to reduce water usage. After treating domestic wastewater, it is reused as cooling for the manufacturing process and cooling towers. As a result, we are able to reduce consumption by approximately 78,000 kiloliters of water per year, which is equivalent to the amount of water used by about 320,000 households a day. In addition, India is working to revitalize lakes and ponds around its plants with consideration of the use of water in the local communities regarded as important. India completed revitalization of Sitheri Lake in 2020 and committed to revitalizing ten lakes and ponds, including Oragadam lake which is the primary source of water for six villages, in 2023. Dredging and increasing the capacity of lakes and ponds contributes to securing drinking water and sustains biodiversity. Moreover, Nissan Motor India's service centers provide customers with car wash services using the latest foam car wash technology. This reduces the amount of water used by 45%, from approximately 160 liters to approximately 90 liters per car washed. As well as saving water, the foam car wash service reduces wash time as it does not use strong chemical detergents and improves a car's gloss by approximately 40%.



Water intake for corporate activities

In fiscal 2023, water intake for our global corporate activities was 20,034 thousand m³, same level as 20,208 thousand m³ in fiscal 2022.

In fiscal 2023, water intake from global production sites was 18,939 thousand m³ ★, the same level as 19,065 thousand m³ in fiscal 2022.

(FY)

	2022	2023
Total	20,208	20,034
Japan	10,472	10,564
North America	4,235	4,382
Europe	1,270	1,288
Other	4,231	3,799

(Unit : thousand m³)

Water discharge from corporate activities

The total amount of water discharged in global corporate activities in fiscal 2023 was 13,929 thousand m³, same level as 13,319 thousand m³*1 in fiscal 2022.

(FY)

	2022	2023
Total	13,319*1	13,929
Japan	8,902	9,376
North America	2,610	2,753
Europe	596	613
Other	1,210*1	1,186

(Unit : thousand m³)

Quality

Chemical oxygen demand (COD) Japan only	24,884	24,811
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(Unit : kg)

Nissan thoroughly processes wastewater at its various plants. Wastewater from Mexico plant, is used to maintain landscaping on the sites, with no off-site discharge. We are also strengthening water pollution prevention measures at our Japanese plants. In preparation for unexpected occurrences, such as a discharge of oil, we have attached water quality sensors to the discharge points of wastewater treatment facilities. The discharge of water outside the sites is automatically suspended if water quality problems are detected. In addition, we installed water quality sensors on rainwater drainage outlets which automatically close floodgates in the event of heavy rain.

Water consumption in corporate activities

The total amount of water consumed in global corporate activities in fiscal 2023 was 6,105 thousand m³, *2 a decrease from 6,889 thousand m³ *1 in fiscal 2022.

(FY)

	2022	2023
Total	6,889*1	6,105
Japan	1,570	1,188
North America	1,625	1,629
Europe	674	675
Other	3,021*1	2,613

(Unit : thousand m³)

Air quality: Achievements

Plant emission management

In Japan, we have promoted strict countermeasures for emissions of nitrogen oxides (NOx) and sulfur oxides (SOx) as air pollutants. We have lowered NOx and SOx emissions by introducing low-NOx burners in the ovens and boilers that provide heat for painting lines, and by switching the fuel used by those burners from heavy oil and kerosene to alternatives with low SOx emissions.

From a carbon-neutral perspective, facilities that use fuel will be increasingly electrified. As a result, emissions from production plants are expected to be further reduced. We will continue to implement appropriate management on an ongoing basis.

Reducing VOC from production processes

Volatile organic compounds (VOCs),*3 which readily evaporate to become gaseous in the atmosphere, account for approximately 90% of the chemicals generated as the result of our vehicle production processes. Lowering VOC emissions is a challenge that we are working to address. We strive to increase our recovery of cleaning solvents and other chemicals to limit the amounts of these substances emitted from our plants ahead of the implementation of new regulations in each country where we operate, while also advancing planned measures to increase the recycling rate for waste solvents. We are also introducing water-based paint lines that limit VOC emissions to less than 20 grams per square meter of painted surface. We have adopted these lines in the Nissan Motor Kyushu Plant as well as the two plants in Aguascalientes in Mexico, the Resende Plant in Brazil, the Smyrna Plant in the U.S.A., the Huadu Plant in China, and the Sunderland Plant in the U.K. Nissan will continue to manage VOC at manufacturing sites.

*1 The figures for fiscal year 2022 have been changed due to an error in calculating the previous fiscal year's figures.

*2 Based on GRI 303, total water consumption is total water withdrawn minus total water discharged as calculated by Nissan.

*3 VOCs: Organic chemicals that readily evaporate and become gaseous under normal temperature and pressure conditions. Click here for more information on air quality. >>> P156

★ This figure is subject to assurance by KPMG AZSA Sustainability Co., Ltd. For details, please see here. >>> P061

Collaborations with relevant partners

Nissan faces multifaceted risks in continuing its operations, including climate change, the depletion of material and energy resources, and loss of biodiversity. To properly ascertain such environmental risks, it is important to build trust and dialogue with both direct and indirect partners, such as suppliers and other companies, government agencies, and investors, as well as NGO and NPOs. Nissan will reflect the risks identified and opportunities uncovered through such dialogue with its partners in its own business activities. This is aimed at minimizing Nissan's negative impact on the environment while maximizing its positive impact, thereby achieving a sustainable society and business continuity.

Collaborations with suppliers

Supplier engagement

Nissan promotes environmental impact reduction through engagement with suppliers, such as environmental briefings and the Nissan Green Purchasing Guidelines, in order to make common understandings of Nissan's supplier environmental philosophy.

Furthermore, we initiated environmental data surveys in 2012 to promote activities to reduce environmental impact throughout the value chain.

To further strengthen our activities, we have participated in the supply chain program of CDP, an international NPO, since 2014. Through CDP, Nissan requests that selected suppliers, based on factors such as their business volume with Nissan and company size, answer questions about climate change and water. We encourage some suppliers to improve their environmental initiatives based on the surveys.



Suppliers' environmental performance improvement initiatives

Nissan Green Purchasing Guidelines	
2008	Newly published Nissan Green Purchasing Guidelines as globalized edition
2010	Document edited according to the revised EU regulations for environment-impacting substances (EU REACH Regulation, MSDS report requests) Document edited according to the publication of the Renault-Nissan CSR Guidelines for Suppliers
2011	Document edited, brought into line with NGP2016
2016	Unification of Engineering Standards of Renault and Nissan (RNESB-00027)
2018	Alignment with NGP2022
2019	Mandatory self-diagnostic assessment requirement added
2021	Revised corporate purpose, data submission for LCA, description of CDP survey
2022	Revision of CO ₂ emission reduction through value chain, technical standard and regulation revision
2024	Alignment with NGP2030
Global supplier environmental data surveys	
2012-13	Conducted Nissan's original survey (CO ₂ , water, waste)
From 2014	Participation in the CDP supply chain program (FY2023 response rate Climate change: 82%, Water security: 74%)

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Environmental principles and policies	Understanding of environmental issues	Strategic approach to environmental issues	Global environmental management framework and governance system	Nissan Green Program	Value chain activity achievements	Third-party assurance

Further alignment with governments and partner companies

Since 2006, Nissan has been estimating long-term CO₂ reductions based on the latest Intergovernmental Panel on Climate Change (IPCC) reports, setting retroactive medium-term goals in the Nissan Green Program, and making efforts to realize a society that is “a Symbiosis of People, Vehicles and Nature” by ensuring these goals are achieved. The Paris Agreement was adopted at COP21 in 2015. At that time, Nissan recognized the importance of the common goals of “holding the increase in the global average temperature to well below 2°C and pursuing efforts to limit the temperature increase to 1.5°C above preindustrial levels,” and reaffirmed the consistency between these goals and Nissan’s long-term vision.

In addition to its support for and endorsement of the Paris Agreement, from the IPCC special report Nissan recognized the need to further enhance its vision. In January 2021, Nissan declared the goal of carbon neutrality in 2050 across the product life cycle, including business operations. Nissan announced Nissan Ambition 2030 in November 2021, which includes promoting electrification initiatives that combine ambitious actions. Activities included the creation of an EV ecosystem require collaborations with governments, and a wide range of partners including companies in other industries.

In March 2024, under The Arc business plan we announced the global expansion of initiatives such as EV36Zero. As an example of collaboration with the government, Nissan has been participating in the GX League*¹ since the beginning of 2022 to expand opportunities for cooperation and enhance the effectiveness of climate change initiatives.

We also reviewed the stances of our industry associations on climate change and confirmed that they are in alignment with the direction Nissan should be heading. We will continue to collaborate within the automotive industry through the activities of our industry associations and take on the challenge of becoming carbon neutrality together with our partners.

Results of reviews of stances at industry organizations of which Nissan is a member

Group	Paris Agreement Stance (the source) *2	Nissan Stance Aligned with Paris Agreement
Japan Automobile Manufacturers Association (JAMA)	<ul style="list-style-type: none"> All out to achieve carbon neutrality (CN) in 2050 CN by 2050 is not achievable without breakthrough technologies, premised on inexpensive and stable CN electricity and requiring strong support incl. policy and financial measures (April 8, 2021: Probing deeper into energy conservation, issues and requests targeting CN in 2050) 	<ul style="list-style-type: none"> JAMA’s goal of CN in 2050 aligned with Paris Agreement goals and Nissan’s vision CEO Uchida is the JAMA vice chair, Nissan executive officers are subcommittee chairs Developing fair and equitable LCA evaluations for autos focused on CN, promoting LCA international standardization through its subcommittee Nissan and JAMA aligned and will continue to cooperate toward CN in 2050
Japanese Business Federation (Keidanren)	<ul style="list-style-type: none"> Environment is the foundation of business activities and daily life; a sustainable society is the business community’s top concern Keidanren works with the government toward “CN by 2050” with unwavering determination (December 15, 2020: Toward CN by 2050 (“Society 5.0 with CN”) Determination and Actions of the Business Community) 	<ul style="list-style-type: none"> Confirmed Keidanren’s goal of CN in 2050 is consistent with Paris Agreement and Nissan’s vision Nissan and Keidanren aligned and will continue to cooperate toward CN in 2050
Alliance for Automotive Innovation (AAI)	<ul style="list-style-type: none"> Auto industry is poised to target a 40–50% EV ratio by the end of this decade (October 12, 2021: President and CEO John Bozzella) 	<ul style="list-style-type: none"> AAI’s ambitious EV ratio of 40-50% consistent with Nissan’s goal for a 40% EV ratio in U.S.A. by 2030 Nissan and AAI aligned and will continue to cooperate to achieve these goals

*1 Click here for more information on “GX League”. <https://gx-league.go.jp/en/>

*2 The following text is interpreted and summarized by Nissan

Third-party assurance

Independent Assurance Report

To the Representative Executive Officer, President and CEO of Nissan Motor Co., Ltd.

We were engaged by Nissan Motor Co., Ltd. (the "Company") to undertake a limited assurance engagement of the environmental performance indicators marked with a star ★ (the "Indicators") for the period from April 1, 2023 to March 31, 2024 included in its Sustainability data book 2024 (the "Sustainability data book") for the fiscal year ended March 31, 2024.

The Company's Responsibility

The Company is responsible for the preparation of the Indicators in accordance with its own reporting criteria (the "Company's reporting criteria"), as described in the Sustainability data book.

Our Responsibility

Our responsibility is to express a limited assurance conclusion on the Indicators based on the procedures we have performed. We conducted our engagement in accordance with the 'International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements other than Audits or Reviews of Historical Financial Information' and the 'ISAE 3410, Assurance Engagements on Greenhouse Gas Statements' issued by the International Auditing and Assurance Standards Board. The limited assurance engagement consisted of making inquiries, primarily of persons responsible for the preparation of information presented in the Sustainability data book, and applying analytical and other procedures, and the procedures performed vary in nature from, and are less in extent than for, a reasonable assurance engagement. The level of assurance provided is thus not as high as that provided by a reasonable assurance engagement. Our assurance procedures included:

- Interviewing the Company's responsible personnel to obtain an understanding of its policy for preparing the Sustainability data book and reviewing the Company's reporting criteria.
- Inquiring about the design of the systems and methods used to collect and process the Indicators.
- Performing analytical procedures on the Indicators.
- Examining, on a test basis, evidence supporting the generation, aggregation and reporting of the Indicators in conformity with the Company's reporting criteria, and recalculating the Indicators.

- Visiting Smyrna Vehicle Assembly Plant of Nissan North America, Inc. selected on the basis of a risk analysis.
- Evaluating the overall presentation of the Indicators.

Conclusion

Based on the procedures performed, as described above, nothing has come to our attention that causes us to believe that the Indicators in the Sustainability data book are not prepared, in all material respects, in accordance with the Company's reporting criteria as described in the Sustainability data book.

Our Independence and Quality Management

We have complied with the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which includes independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. In accordance with International Standard on Quality Management 1, we design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

/s/ Kenichiro Sato
Kenichiro Sato, Partner
KPMG AZSA Sustainability Co., Ltd.
Tokyo, Japan
July 16, 2024

Notes to the Reader of Independent Assurance Report:

This is a copy of the Independent Assurance Report and the original copies are kept separately by the Company and KPMG AZSA Sustainability Co., Ltd.

[Remarks] Basis of calculation for CO₂ emissions, waste generated and water input subject to third-party assurance

- CO₂ emissions from Nissan Motor Co., Ltd. and consolidated subsidiaries: Calculated based on Nissan internal standards. The energy use data of each site is based on invoices from suppliers, which are multiplied by a CO₂ emissions coefficient publicly available for each Nissan Motor Co., Ltd. and consolidated subsidiaries.
- CO₂ emissions from purchased goods & services: Calculated by multiplying the amount of CO₂ emissions per vehicle by the annual global production volume in fiscal 2023, covering raw materials purchased in conjunction with automobile production. CO₂ emissions per vehicle are calculated by applying the Database on GHG Emission Factors (ver.3.0) for Carbon Footprint of Products Pilot Project to the amount of raw material input per typical vehicle as of 2010.
- CO₂ emissions from the use of sold products: Calculated using the average regional CO₂ emissions per vehicle multiplied by the regional estimated average lifecycle mileage and multiplied by fiscal 2023 sales volumes. The average CO₂ emissions for the use phase (including direct emissions only) per unit are calculated for each of our main regions (Japan, U.S.A., EU and China) and extrapolated from average emissions of these markets for other markets. Estimated average lifetime mileages are set based on published country-by-country market average lifetime mileage data.
- Scope 3 emissions figures are estimates subject to varying inherent uncertainties.
- Waste generated from production sites (Nissan Motor Co., Ltd., consolidated subsidiaries and part of its affiliates accounted for by the equity method): Calculated based on Nissan internal standards. The discharged waste within production sites is based on data from truck scales at the sites or data reported by disposal contractors. However, materials recycled in-house, used in reproduction (reused

by Nissan) or recycled (as salable, valuable materials) are not categorized as generated waste.

- Water input from production sites (Nissan Motor Co., Ltd., consolidated subsidiaries and part of its affiliates accounted for by the equity method): Calculated based on Nissan internal standards. Water input is the water withdrawal amount according to billing meters or company meters installed on site. The water withdrawal amount includes drinking water (tap water), industrial-use water, underground water (spring/well water) and rainwater or the like.