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 toward carbon neutrality.
We are also promoting decarbonization throughout our corporate activities by improving the efficiency of our logistics operations and installing renewable energy systems in our offices and dealerships. By developing systems that utilize resources and energy efficiently and sustainably throughout their entire life cycles and incorporating a circular economy perspective, we are also endeavoring to maximize the value we provide to society and our customers. Through these efforts, we are striving to minimize resource and energy usage and emissions.

Efforts toward carbon neutrality

Efforts toward CO_2 emission reduction through efficient energy use

We are 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.

Scope 1 and 2 CO_2 emissions*1

In fiscal year 2024, the total of Scope 1 and 2 emissions*2 of our global corporate activities was 1,519 thousand tons ★ (Scope 1 emissions: 442 thousand tons ★; Scope 2 emissions: 1,077 thousand tons ★), a 12% decrease from 1,731 thousand tons in fiscal year 2023.

CO_2 emissions results (FY)

Scope	Unit	2023	2024
Scope 1	(kt-CO_2)	477	442★
Scope 2	(kt-CO_2)	1,254	1,077★
Scope 1 + 2	(kt-CO_2)	1,731	1,519★
Japan	(kt-CO_2)	984	908
North America	(kt-CO_2)	501	401
Europe	(kt-CO_2)	86	73
Other	(kt-CO_2)	161	137

Greenhouse gas (GHG) emissions other than energy-derived CO_2*3

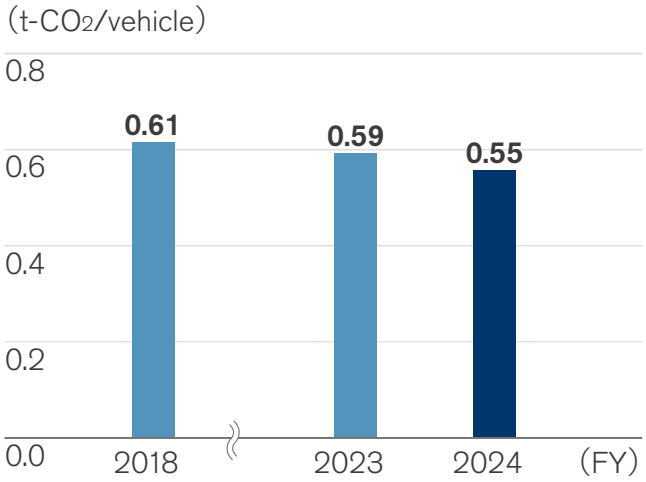
(FY)

By type	Unit	2023	2024
CH_4 (methane)	t-CO_2e	5,705	4,810
N_2O (nitrous oxide)	t-CO_2e	1,801	2,094
HFCs (hydrofluorocarbons)	t-CO_2e	148	121
PFCs (perfluorocarbons)	t-CO_2e	0	0
SF_6 (sulfur hexafluoride)	t-CO_2e	128	117
NF_3 (nitrogen trifluoride)	t-CO_2e	0	0

Manufacturing activities

Manufacturing CO_2 per vehicle produced*4*5

In fiscal year 2024, our manufacturing CO_2 emissions per vehicle produced were 0.55 tons, 10% less than fiscal year 2018.



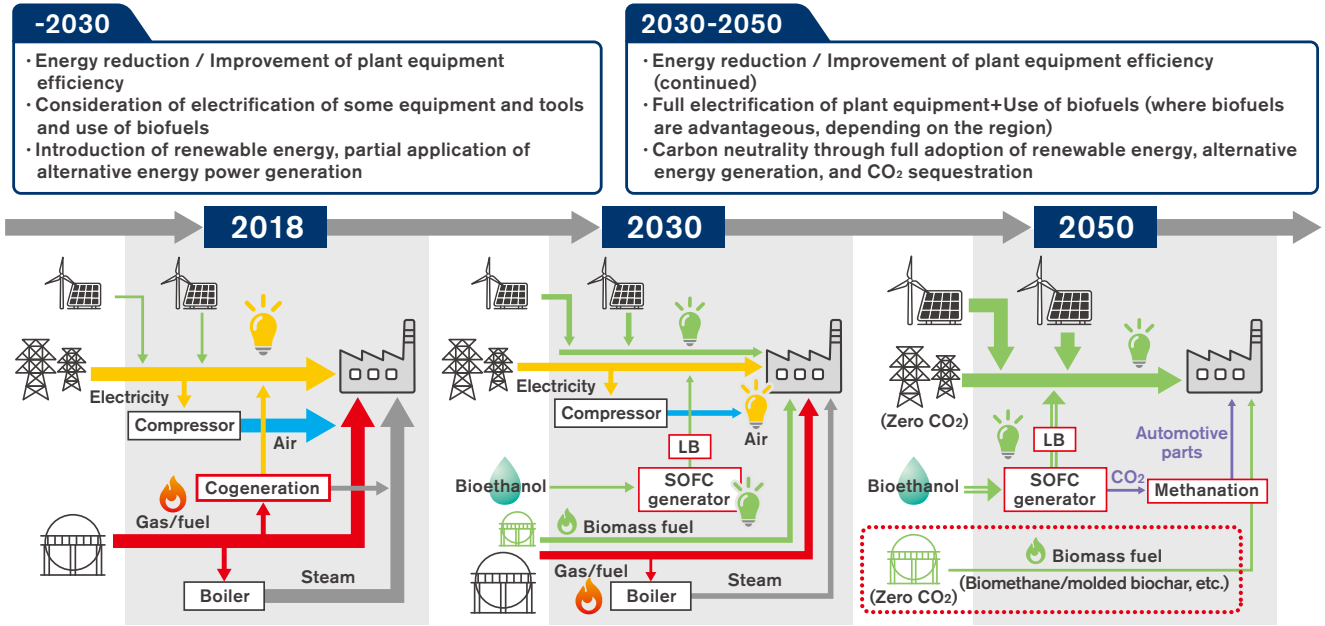
*1 Changed in line with revisions to fiscal year 2023 performance data.
*2 Click here for more information on the data book for the past 5-year historical trends. >>> P146
Click here for more information on details regarding CO_2 calculation methodology. >>> P062
*3 GHG emissions from Nissan bases in Japan, calculated based on the Act on Promotion of Global Warming Countermeasures.
*4 The boundary of data aggregation has been revised to align with the financial consolidated group.
*5 CO_2 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 2050.
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

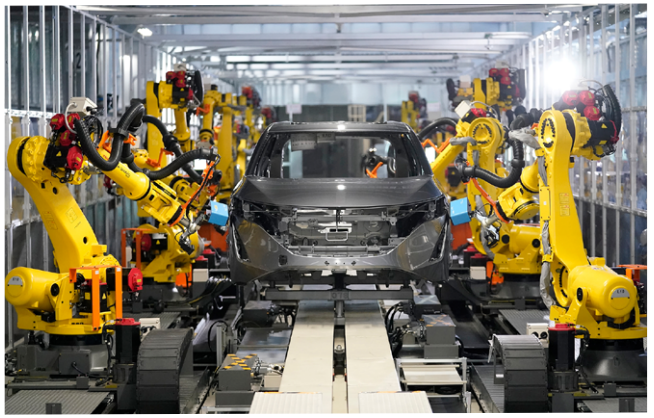
By 2030: We will first promote the introduction of innovative production technologies and electrification while reducing energy consumption in plants. Following this, we plan to introduce renewable energy and expand the application of alternative energy.
2030-2050: We aim to eliminate the use of fossil fuels by utilizing biofuels and fully electrifying plant equipment that currently operates under various forms of power, including gas and steam. At the same time, we are working toward achieving carbon neutrality at our plants through the full use of renewable energy and in-house electricity generation via fuel cells powered by 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 functionality and structures of cars become more complex, further technological innovation will become essential in the production process.
The pillar of the Nissan Intelligent Factory concept, 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-c252360e1167201269852 95f9d7480af-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

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

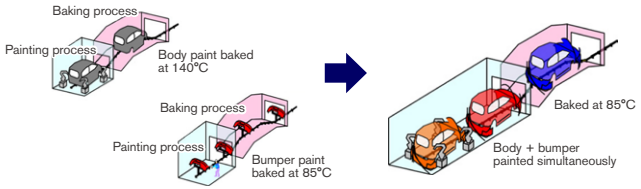
Most CO_2 emissions in the manufacturing process come from the consumption of energy generated by fossil fuels. We engage in a variety of energy-saving activities in the manufacturing process in pursuit of the lowest energy consumption and CO_2 emissions among automakers.

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 CO_2 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 CO_2 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 CO_2 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 is being gradually expanded its roll out as painting facilities become more sophisticated in the future. Also, systems for recycling air expelled from booths 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. (in operation since September 2018).

Simultaneous Painting of Body and Bumpers

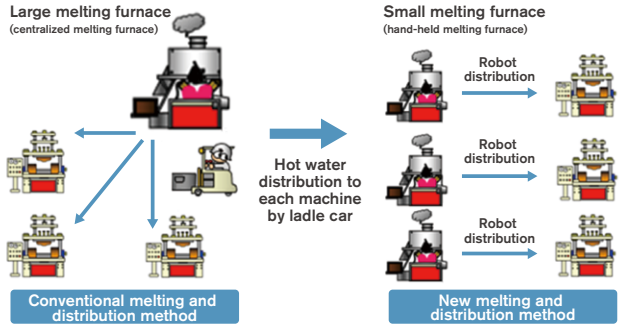


CO_2 emissions have been reduced by simultaneously painting the body and bumpers using a new technology and consolidating them into one process (right) and drying at a low temperature (85℃) instead of the conventional two-step process (left).

Initiatives in the field of powertrain production technology

In the field of powertrain production technology, Nissan is working to reduce CO_2 mainly in aluminum cast melting and heat treatment processes. The conventional melting process involved the use of large furnaces having a melting capacity of three to four tons per hour installed at each factory, with molten aluminum transported and distributed to the holding furnaces of each casting machine using forklifts equipped with ladles. We have adopted a system in which small-scale melting furnaces with the minimum capacity required for each casting machine are installed next to all casting machines, with molten metal distributed to casting machine holding furnaces by robots. This method has eliminated the temperature loss caused by transporting molten metal, and has made it possible to lower the melting temperature by approximately 100℃. This has also enabled us to suspend melting furnace operation in accordance with the operating rate of each casting machine, achieving an overall reduction in CO_2 emissions of approximately 20%. In recognition of these efforts, Nissan was awarded the 2024 GOOD FACTORY Award, sponsored by the Japan Management Association.

Changes in melting and distribution methods



Energy-saving activities at Nissan Energy Saving Collaboration (NESCO)*2

To reach our defined objectives for CO_2 emissions and energy use, we solicit facility proposals from each global site, preferentially allocating investment based on the potential CO_2 emission reductions compared to project costs. In Japan, aging facilities are being transformed into cutting-edge, high-efficiency facilities to improve energy consumption efficiency.

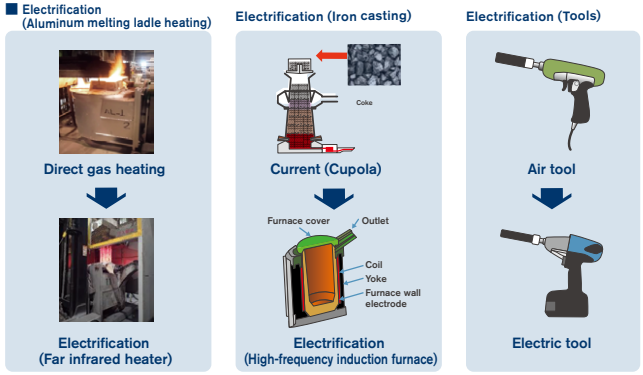
In terms of facility operation, meticulous management of lighting and air-conditioning systems is carried out to ensure thorough energy consumption control and minimize waste during operations. Our plants use finely controlled lighting and air-conditioning for low-energy consumption and low-energy-loss operations. We promote CO_2 emission reduction

*1 Source: Nissan
*2 Established in Japan in 2003, then in Europe, Mexico, and China in 2013

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 CO_2 emissions of some 41,172 tons*1 in fiscal year 2024.
When sourcing energy, we consider the balance of CO_2 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, CO_2 emissions at production plants in fiscal 2024 amounted to 0.55 tons per vehicle, a reduction of 10% from the fiscal year 2018 level.

Expanded electrification of production facilities

The electrification of fossil fuel facilities is indispensable to achieving carbon neutrality. For that reason, 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, to electric furnaces.
Electrification of compressed air, which has low energy efficiency, is also effective in reducing CO_2 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.



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*2 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 facilitates. 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 second-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, solar power, and biomass. In fiscal year 2024, the proportion of renewable energy in the total electricity consumption averaged approximately 82% annually and reached a maximum of 98% on a monthly basis.

Under contract with a PPA*2 provider, Dongfeng Nissan Passenger Vehicle Company (DFL) commenced the operation of solar power generation systems of approximately 20 MW at its Huadu Plant, 3 MW at its Changzhou Plant, and 5 MW at its Zhengzhou Plant in fiscal year 2023. Having also installed solar power generation systems at its global sites, including of 20 MW at both its Sunderland plant in the U.K. and at Tan Chong Motor in Malaysia. Nissan is steadily promoting the use of renewable energy.


Solar power generation at the Sunderland Plant

In-house power generation using alternative fuels

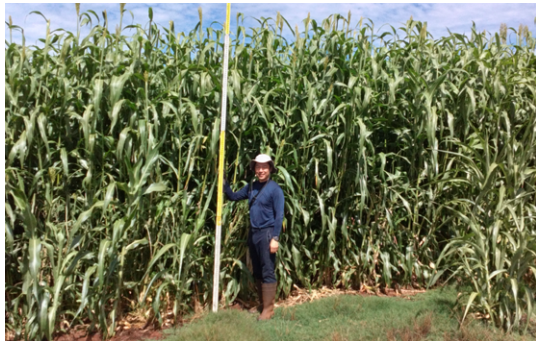
In 2016, Nissan became the first automotive company in the world to incorporate e-Bio Fuel-Cell technology, a fuel cell system that uses solid oxide fuel cells (SOFC*3) as a vehicular propulsion system. Based on its experience in developing SOFCs for automotive applications, Nissan will apply this technology to stationary power generation systems*4.
On March 6, 2024, Nissan announced that it had developed a stationary, bioethanol-fueled system capable of high-efficiency power generation and commenced trials at its Tochigi Plant.

*1 Source: Nissan
*2 Power Purchase Agreement
*3 SOFC (Solid Oxide Fuel Cell)
*4 Click here for more information on stationary power generation systems. https://global.nissannews.com/en/releases/nissan-starts-trial-of-stationary-power-generation-system-fueled-by-bio-ethanol

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

In-house power generation using SOFC

Along with SOFC systems, procuring bioethanol for power generation is also important. Although bioethanol derived from plants releases CO_2 when used in SOFC power generation, this is CO_2 that was absorbed from the atmosphere during the plant growth process, thereby contributing to the realization of a “carbon-neutral cycle” that can reduce CO_2 emissions to near zero. Nissan has turned its attention to sorghum, a member of the grass family, as a raw material for bioethanol and is engaged in R&D ahead of procurement. Sorghum is characterized by its rapid growth, ability to be harvested multiple times a year, and high adaptability to its environment. These characteristics enable



sorghum to be cultivated in a wide range of regions and climate conditions, making it suitable for stable procurement. Sorghum kernels are used as food, while the pulp remaining after the extraction of juice (bagasse) is expected to be used as biomass power generation fuel and livestock feed.

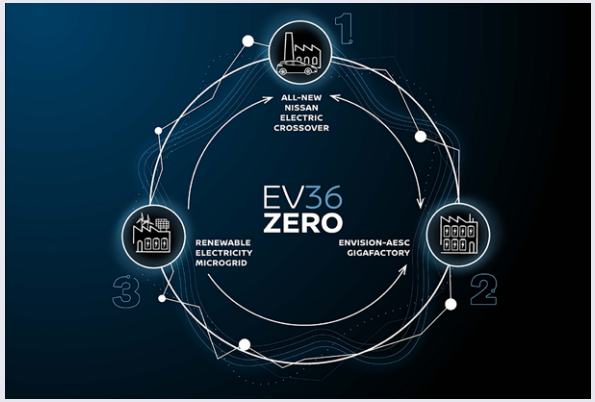
Having been conducting a small-scale trial production of sorghum bioethanol since 2024, we have verified the entire process, from sorghum cultivation to bio-ethanol production. At present, we are working to resolve remaining issues as we prepare for full-scale operations.

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 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 battery giga-factory 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
- Second-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 know-how gained through the project will be shared globally, enhancing Nissan’s global competitiveness.

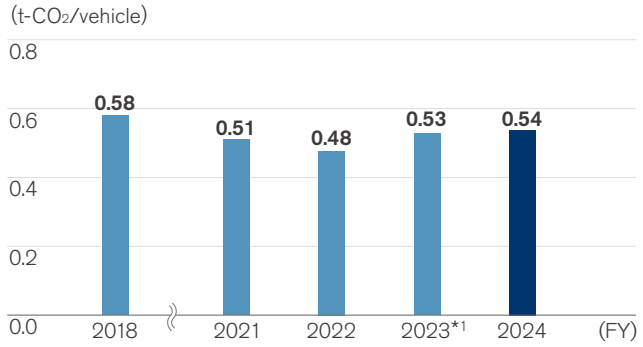


Initiatives in the logistics field

To achieve carbon neutrality across the entire life cycle, Nissan has formulated a clear roadmap toward 2030 in the logistics field and is proactively moving forward. The following specific initiatives are being implemented.
Reduced distances: We minimize transport distances through efficient logistics design.
Improved packing: We reduce transport volume with optimized packing specifications and part shapes.
Improved loading: We increase transport loading efficiency by optimizing routes and frequency.
In 2024, when transporting import parts from the Honmoku Wharf for the Nissan Ariya manufactured at the Nissan Intelligent Factory in Tochigi, which aims to achieve a zero-emission production system, we switched from conventional trucking to rail transport, thereby reducing environmental impacts.
Furthermore, we are strengthening cooperation with logistics partners around the world who are committed to environmental measures. We are promoting modal shifts, utilizing ships that run on environmentally friendly fuel, and introducing electric trucks, particularly as more than 80% of the transport of completed vehicles to Europe is now done by LNG carriers.
In fiscal year 2024, CO_2 emissions from logistics per global vehicle were 0.54 tons, a reduction of -7.9% compared with 2018.

Launch of Nissan Ariya import parts rail transport

CO_2 emissions from logistics (per vehicle produced)



CO_2 emissions from logistics

In fiscal year 2024, CO_2 emissions from logistics were 1,774k-tons.

(FY)

	Unit	2023*1	2024
Total*2	kt-CO_2	1,981	1,774
Inbound*3	kt-CO_2	552	505
Outbound*4	kt-CO_2	1,429	1,269

Sea	%	37.0	38.1
Road	%	57.3	56.1
Rail	%	3.1	3.4
Air	%	2.6	2.5

Office initiatives

Nissan promotes efforts to reduce CO_2 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 CO_2 emissions and costs have been taken into account through Japan's PPS system. Overseas, we are expanding the introduction of renewable energy in offices, with a focus on sites in Europe.
Nissan Energy Saving Collaboration (NESCO) teams contribute to reducing emissions in the Nissan Technical Center in Atsugi.
In addition to CO_2 management, we are encouraging initiatives that show consideration for the environment. These include reducing the number of business trips on a global basis by utilizing online meeting tools.

*1 Changed in line with revisions to fiscal year 2023 performance data.
*2 CO_2 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 five years. >>> P148

Renewable energy initiatives at Nissan Global Headquarters

At our Global Headquarters in the city of Yokohama, Kanagawa Prefecture, we are promoting energy conservation activities through daily improvements that include turning off lights and installing LEDs, as well as reducing CO_2 emissions through the introduction of renewable energy.

In 2011, we installed a solar power generation system providing approximately 40kW. The electricity generated is stored in Nissan LEAF lithium-ion 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.

In fiscal year 2024, the electricity and thermal energy used in our Global Headquarters was entirely replaced by 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 CO_2 emissions; waste and emissions from construction methods; and the use of hazardous materials and other quality control issues.

Furthermore, one of the performance indices for Nissan in Japan is the Comprehensive Assessment System for Built Environment Efficiency (CASBEE), which was developed by the Ministry of Land, Infrastructure, Transport and Tourism. Among our current business facilities, our Global Headquarters 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 also located in Kanagawa 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 use of natural energy sources to reduce the building's energy usage and CO_2 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 CO_2 emissions at dealerships. Our retail outlets also work continually to increase energy efficiency. Many have adopted high efficiency air-conditioning, insulation films, ceilings, fans and LED lighting. During renovation work, some outlets have installed lighting systems that make use of natural daylight, as well as insulated roofs.

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 CO_2 reduction activities as one of our environmental initiatives.

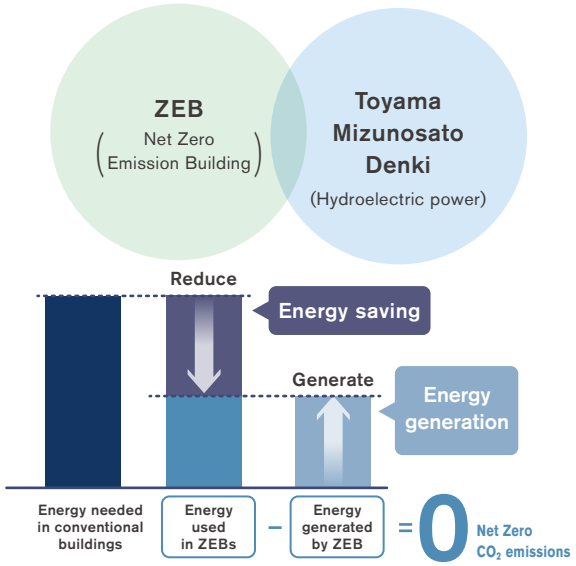
A set of standards has been established enabling CO_2 reduction activities to be conducted in accordance with a unified concept based on the Nissan Green Program 2030 (NGP2030), and specific measures such as reducing electricity consumption and switching to LED lighting have been incorporated into the activity plans of each company.

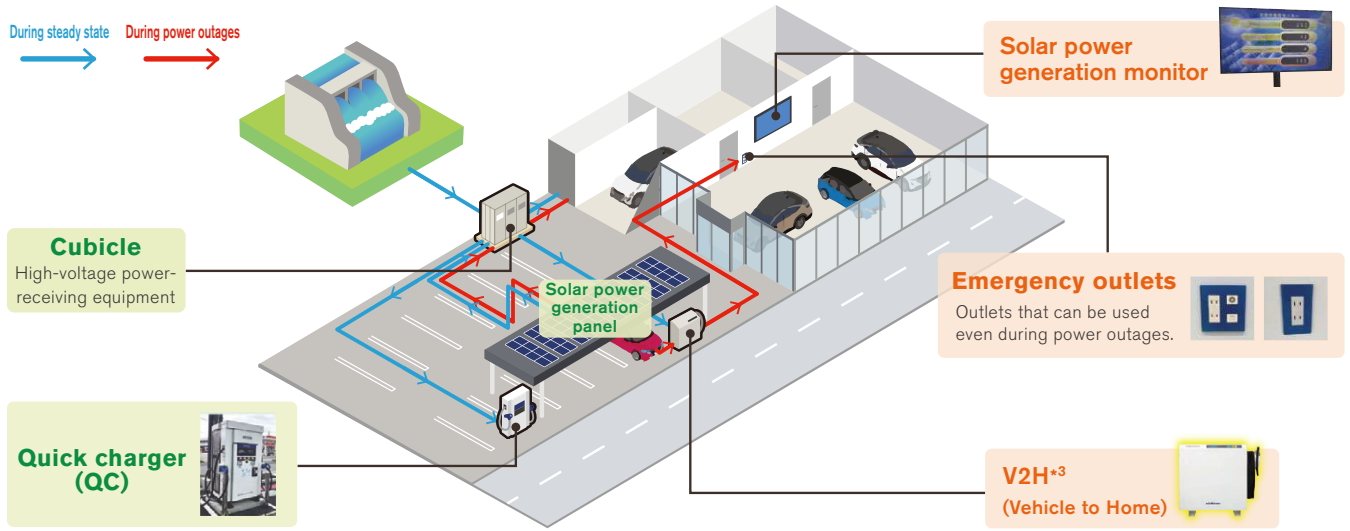
Carbon-neutral activities at local dealerships

In the Hokuriku region, the Takaoka Interchange branch of the Nissan Satio Toyama dealership located in Toyama Prefecture became the 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.

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 promoting the spread of electric vehicles and trains.





*1 ZEB (Net Zero Energy Building) Building design that aims to achieve a balance of zero in the annual primary energy consumption, while providing a comfortable indoor environment.

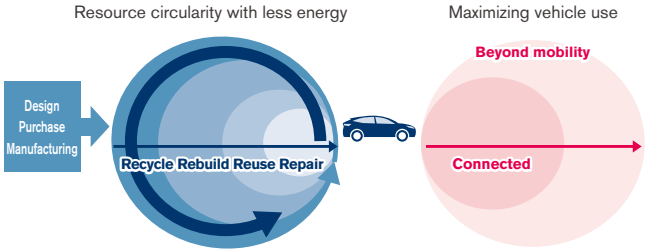
*2 Toyama Mizunogou Denki A menu of renewable electricity that utilizes the electricity generated from the Toyama Prefecture-owned hydroelectric power plants and its environmental value. This electricity has high added value, including not only the environmental value of zero carbon dioxide emissions 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.

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. To achieve resource circularity with less energy, Nissan actively promotes practices such as repair, which involves using vehicles while they are being serviced, as well as reuse and rebuild efforts to repurpose parts and units whenever possible. Additionally, recycling is emphasized to facilitate the circulation of materials. Further, even when we do use new resources, we make efforts to use circulable materials that have a minimal environmental impact.

Nissan's circular economy



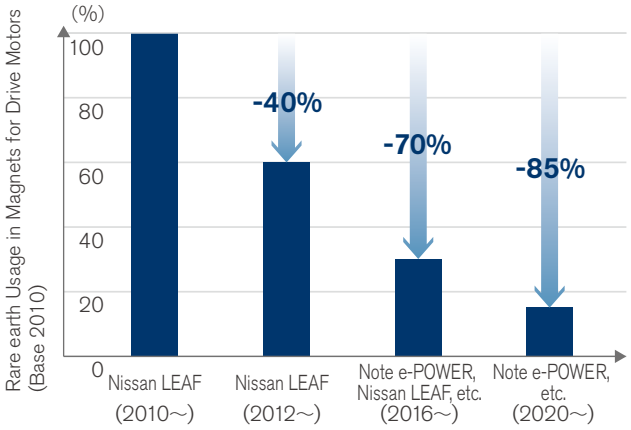
Resource circularity with less energy

Effective use of resources in the design, purchase, and manufacturing phases

Reducing scarce resources

Permanent magnet motors for EVs, HEVs and e-POWER use scarce resources known as rare earth elements. Given concerns about the uneven distribution of rare earth resources and price fluctuations driven by the supply and demand balance, reducing the amount of rare earth metals used is becoming an issue.
Nissan has continuously reduced the use of heavy rare earth, which is the scarcest of all, and in 2020, the Note e-POWER adopted magnets with 85% less heavy rare earth compared with 2010. Furthermore, the 2022 Nissan ARIYA is equipped with an electrically excited synchronous motor that negates the need for magnets. We will also continue to promote R&D aimed at eliminating heavy rare earth elements in motors that require magnets.

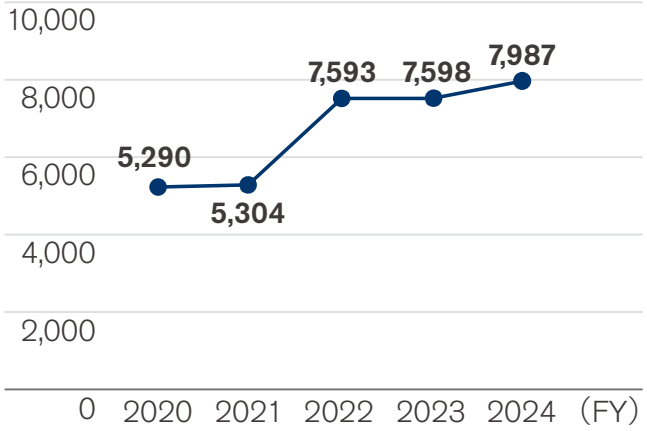
Rare earth Usage in Magnets for Drive Motors



Proper use of regulated chemical substances

Nissan continually reviews its standard for the assessment of hazards and risks related to chemical substances, 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 year 2024 rose to 7,987. These steps are thought to be necessary for future efforts in the repair, reuse, remanufacture, and recycle loop for resources.*1

Number of defined chemical substances



Effective use of resources in repairs, reuse, and rebuilds

Repair initiatives

New technologies such as opposite die-less molding, which allows body panels to be formed without the use of dies, and 3D printers*2 make it possible to keep producing parts required for after-sales service, as well as to repair parts of older models, which require high-mix, low-volume production. This enables us to extend vehicle lifetimes while helping to reduce waste.

*1 Click here for more information on chemical substance governance. >>> P018
*2 Click here for more information on 3D printers. (Japanese only) https://global.nissannews.com/ja-JP/releases/release-abe1d9572c0dbf098bf54c66e927c947-210315-01-j

Promoting the 4RE lithium-ion battery secondary use business

Nissan EV batteries offer high performance even after being used in cars. As the adoption of EVs increases and vehicle replacements progress, it is anticipated that the supply of batteries available for secondary use will significantly rise. Nissan is promoting a business for the secondary use of lithium-ion batteries initially used in EVs.*1

Expansion of remanufactured parts

Parts reclaimed from end-of-life vehicles (ELVs) and those replaced during repairs include potential parts for recycling. In Japan, we collect these parts and conduct thorough 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.
By 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

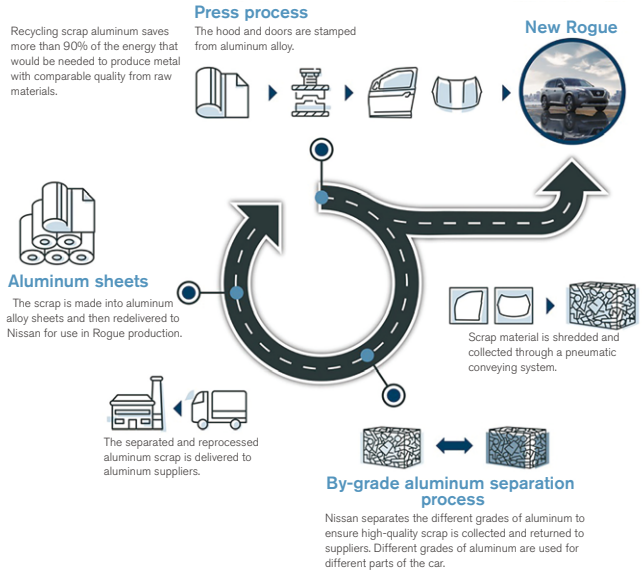

Starter motor

Effective use of resources in recycling

Initiatives to expand use of recycled materials (ferrous and nonferrous metals)

In fiscal year 2024, ferrous metals accounted for 60% of the materials used in our automobiles by weight. Nonferrous metals made up another 11% and resins 19%, with miscellaneous materials making up the final 11%. To reduce our use of natural resources, we are advancing initiatives to expand the use of recycled materials in each of these categories.
Taking steps to reduce the steel and aluminum scrap left over from the manufacturing process, we are 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 ELVs and the market are also used for suspension parts after sorting 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 then control the composition to secure the

Closed-loop recycling of aluminum



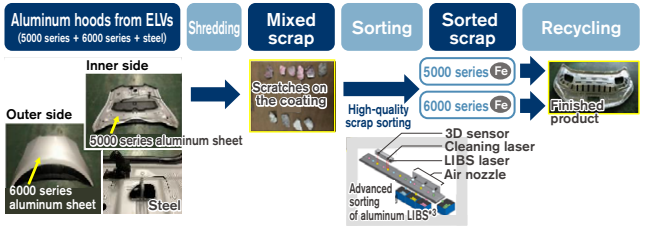
Horizontal recycling of aluminum


Collection and sorting of aluminum wheel scraps

Melting and casting (Yokohama and Tochigi Plant)

Suspension part (Skyline, etc.)

Upgrade recycling of aluminum



*1 Click here for more information for the secondary use of lithium-ion batteries >>> P042
*2 Not available at some retail outlets.
*3 Laser-Induced Breakdown Spectroscopy

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.

Initiatives to expand use of recycled materials (plastics)

In addition to our initiatives to expand the use of recycled steel and aluminum, Nissan also strives to use more recycled plastics. After resin materials are manufactured from crude oil and residue plastic parts are applied to vehicles and scrapped, most plastic parts are collected as automotive shredder residue (ASR) and used as energy in the form of thermal recovery.
Compared with conventional materials, recycled plastics can reduce the amount of CO_2 generated during material production, contributing significantly to effective resource use and waste reduction. Nissan is promoting R&D into material and chemical recycled plastics to establish a circular economy for plastic 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 78,000 bumpers in fiscal year 2024, representing 50% of bumpers removed at Japanese dealerships.
Furthermore, 30% of the ASR processed at dedicated processing plants is made from plastics. Nissan is engaged in R&D aimed at recycling these resins as materials for automobiles.

In addition to recycling used automotive parts, we are also promoting the development of recycled plastics for use in other industries. We are promoting an initiative to recycle splash prevention partitions used within our offices for recycling as automobile parts, the use of acrylic (PMMA) partitions for the inner lenses of headlamps, and polyethylene terephthalate (PET) partitions for roof trim. In promoting these efforts, we aim to increase the use of recycled plastics from the automotive and other industries, targeting a 10% recycled plastics utilization rate in new passenger cars produced and sold in Japan by 2031.

Recycling of plastics materials

Closed-loop recycling of plastics

End-of-life vehicle recycling

Nissan considers the three Rs —reduce, reuse, and recycle —from the design stage for new vehicles. Since fiscal year 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 year 2005. In fiscal year 2024, 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.

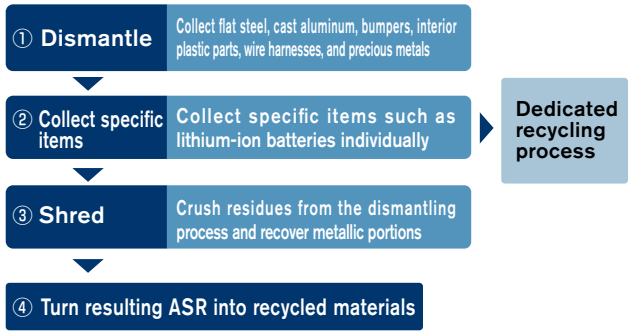
In December 2003, Nissan and twelve other automobile manufacturers launched the Automobile Shredder Residue Recycling Promotion Team (ART), and has since promoted the processing of ASR at ASR recycling facilities.

This initiative complies with Japan's Automobile Recycling Law, and Nissan is playing a central role in ensuring the effective, smooth, and efficient recycling of ASR.

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.

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 year 2018.

ELV processing flow



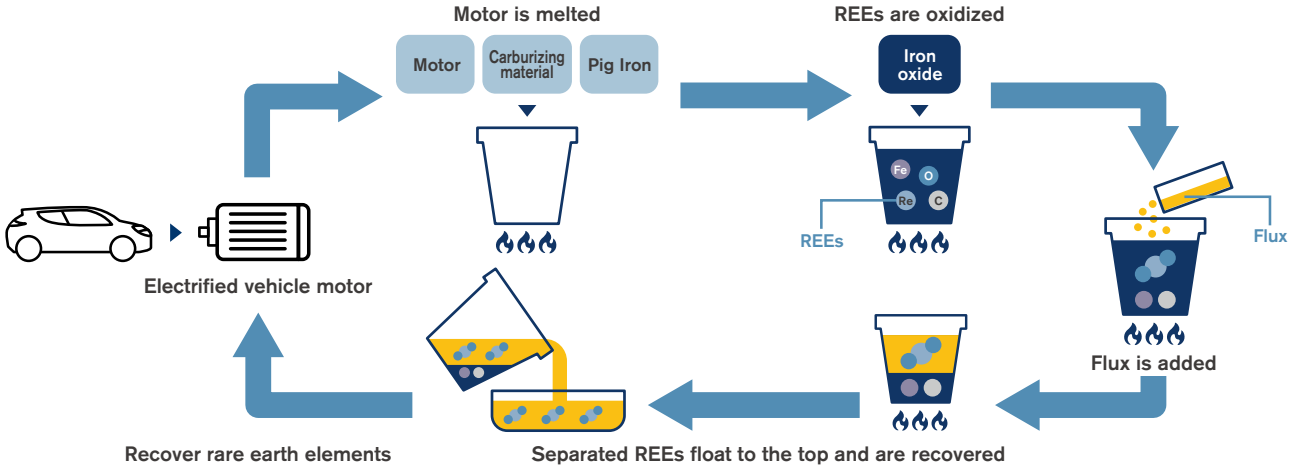
Reuse of rare earth metals

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 rare earth elements (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.

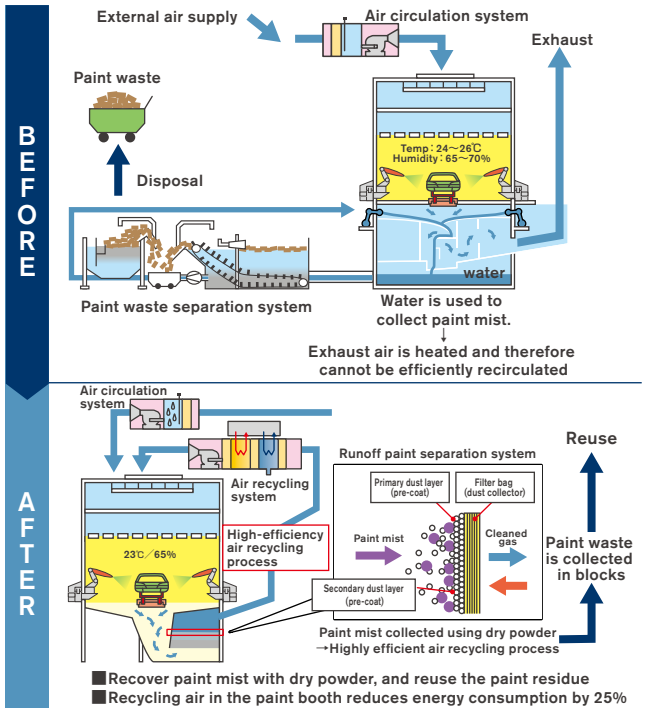
Recycling process for rare earth elements (REEs) used in electrified vehicle motors



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

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.



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 year 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 the shape of parts at the 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).

Waste*2

The volume of regular waste*3*4 generated from global corporate activities in fiscal year 2024 amounted to 150,642 tons, and waste generated from production sites in fiscal year 2024 was 145,678 tons (Non-regular waste*5 from production sites: 10,226 tons).

Regular waste generated from corporate activities*6

(FY)

	2023	2024
Total	155,857	150,642
By region		
Japan	57,646	54,910
North America	50,814	50,856
Europe	44,551	43,142
Other	2,846	1,734
By treatment method		
Recycling	146,332	142,013
Incineration waste	1,997	1,352
Landfill waste	7,528	7,277

(Unit : Tons)

Maximizing use of vehicles as resources: Mobility and connected services

Through electrification and connected car technologies, we are promoting the provision of new mobility services that include ride sharing and the use of vehicles as energy sources. In this way, we are expanding services that utilize vehicles to connect people and society.
We are also considering ways to maximize the use of vehicles through mobility services and connected vehicles.*7

*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 From fiscal year 2023 performance data, the scope of calculations is aligned with the consolidated financial group.
*3 Regular waste generated from production, maintenance, and issue resolution activities, etc.
*4 Click here for more information on resource dependency (Facility waste). >>> P151
*5 Waste generated irregularly from activities such as installing new processes, relocating equipment, and dismantling facilities.
*6 Regular waste generated from production and office sites, excluding*5.
*7 For details, please see here. >>> P040

Impacts on and dependencies on nature within corporate activities (water and air)

Water-related achievements

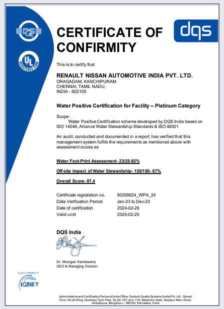
Reducing water used in corporate activities

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. Additionally, all manufacturing plants are working to manage and reduce water usage, and each plant is implementing new water reduction activities through mutual improvements.
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, the Chennai Plant, which is located in a water basin with valuable water resources continues its efforts to reduce water usage and is also engaged in the restoration of nearby ponds and lakes.
In recognition of these efforts, Nissan received consecutive awards from the Confederation of Indian Industry (CII) for outstanding water resource management in fiscal year 2023 and for wastewater management and recycling in fiscal year 2024.
We are also working on the efficient use of water resources at office locations, in addition to our manufacturing sites. For example, we are working to reduce water usage at Nissan's Global Headquarters in Japan, by processing rainwater and wastewater from kitchens and other internal sources and reusing it for purposes other than drinking.
In recognition of these activities, Nissan has been awarded as an A-List company, the highest CDP ranking for the sixth consecutive year in the water security category.

Chennai Plant, honored by the CII.

Water Positive initiatives at the Chennai Plant 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 a reverse osmosis (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 the revitalization of Sitheri Lake in 2020 and committed to revitalizing eleven 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.
In February 2024, Nissan obtained the highest Platinum category certification under the Water Positive initiative, following a rigorous third-party assessment of our comprehensive water strategy, which includes the implementation of water-related positive activities such as reducing water use at plants and revitalizing ponds and lakes around manufacturing facilities.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CERTIFICATE OF CONFIRMITY

This is to certify that

RENAULT NISSAN AUTOMOTIVE INDIA PVT. LTD.
ORAGADAM, KANCHIPURAM
CHENNAI, TAMIL NADU,
INDIA - 602105

Water Positive Certification for Facility – Platinum Category

Scope:
Water Positive Certification scheme developed by DQS India based on ISO 14046, Alliance Water Stewardship Standards & ISO 46001

An audit, conducted and documented in a report, has verified that this management system fulfils the requirements as mentioned above with assessment scores as

Water Foot-Print Assessment- 23/25-92%

Off-site Impact of Water Stewardship- 130/150- 87%

Overall Score- 87.4

Certificate registration no.	50258624_WPA_24
Data Verification Period:	Jan-23 to Dec-23
Date of certification	2024-02-26
Valid until	2025-02-25

DQS India

Dr. Murugan Kandasamy
CEO & Managing Director

IQNET

Administrative and Certification Partner at India Office: Deutsch Quality Systems (India) Pvt. Ltd., Ground Floor, South Wing, Vaishnavi Tech Park, Sy.No.16/1 and 17/2, Bellandur Gate, Sarjapur Main Road, Ambalipura, Bengaluru – 560102, Karnataka, India

Water Positive certificate (Platinum category)

The revitalized Uthukuttai pond

Water intake for corporate activities*1

In fiscal year 2024, water intake for our global corporate activities was 16,873 thousand m³, the same level 17,794 thousand m³ in fiscal year 2023.
In fiscal year 2024, water intake from global production sites was 15,761 thousand m³ , the same level 16,620 thousand m³ in fiscal year 2023.

(FY)

	2023	2024
Total	17,794	16,873
Japan	10,724	10,086
North America	4,409	4,321
Europe	1,380	1,402
Other	1,281	1,064

(Unit : thousand m³)

Water discharge from corporate activities*1

The total amount of water discharged in global corporate activities in fiscal year 2024 was 12,831 thousand m³, the same level 13,405 thousand m³*1 in fiscal year 2023.

(FY)

	2023	2024
Total	13,405	12,831
Japan	9,448	9,132
North America	2,837	2,669
Europe	724	706
Other	396	324

(Unit : thousand m³)

Water quality

Chemical oxygen demand (COD*2)	24,811	22,536

(Unit : kg)

Nissan thoroughly processes wastewater at its various plants. Wastewater from its plants in Mexico and India plants, is used to maintain landscaping on the sites. 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. We will also install water quality sensors in rainwater drainage outlets, and strengthen our water pollution prevention measures to prevent wastewater with abnormal water quality from being externally discharged outside during heavy rain. We are working to secure investment in these systems while also developing technologies for substances that are difficult to detect with sensors using current technologies.

Water consumption in corporate activities*1*3

The total amount of water consumed in global corporate activities in fiscal year 2024 was 4,042 thousand m³, a decrease from 4,390 thousand m³*1 in fiscal year 2023.

(FY)

	2023	2024
Total	4,390	4,042
Japan	1,277	953
North America	1,572	1,653
Europe	656	696
Other	885	740

(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 VOCs from production processes

Volatile organic compounds (VOCs), which readily evaporate to become gaseous in the atmosphere, account for approximately 90% of the chemicals generated from our vehicle production processes. Lowering VOC emissions is a challenge that we are addressing. 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, 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 VOCs at manufacturing sites.

*1 From fiscal year 2023 performance data, the scope of calculations is aligned with the consolidated financial group. Performance data up to and including fiscal year 2022 includes non-consolidated companies.
*2 Four sites of Nissan Motor and Nissan Motor Kyushu
*3 Based on GRI 303, total water consumption is total water withdrawn minus total water discharged as calculated by Nissan.