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Strengthening Our Business Foundations to Address Environmental Issues

Environmental Governance

* Click here for more information on our Environmental Governance. >>> P052

Enhancing Environmental Management Based on ISO 14001

As of January 2011, the Nissan Global Headquarters and all other main Nissan facilities in Japan have acquired ISO 14001 certification for environmental management systems. We have appointed an environmental management officer to oversee our environmental activities. Through steady application of the PDCA cycle, we are improving our environmental performance worldwide. The coordinated goals set by the environmental management officer for the Companywide management system are cascaded down to the employees working in all facilities through local offices.

Nissan's ISO secretariat oversees companywide efforts, while local offices in Japan are responsible for 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 made toward established goals, to share best practices, to improve management systems, to develop plans for the next fiscal year, and to communicate requests from local facilities and divisions. The items discussed are reported to the environmental management officer twice a year (once in the management review conference) so that Nissan can decide on needed improvements.

To confirm that management is functioning properly with respect to environmental management, we periodically retain third-party organizations to conduct audits. Additionally, to strengthen compliance, we conduct internal audits with respect to areas covered by third-party audits as well as all other environmental activities, prioritizing adherence to government reporting requirements and identifying risks. These third-party and internal audit initiatives are aimed at establishing a system capable of detecting human error, however small, and pursuing improved operations. Nissan's overseas production plants have also acquired ISO 14001 certification. Nissan's policy is to establish environmental management systems in all regions where we operate in accordance with the same standards.

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Nissan's Voluntary Operational Standards

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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) has launched a voluntary program to help minimize the potential release of formaldehyde, toluene, and other volatile organic compounds (VOCs)*1 in vehicle cabins. This program utilizes the VOC guidance value established by the Ministry of Health, Labor 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. Nissan is strengthening its management of environment-impacting

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 by NGOs as dangerous. 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 (excluding OEM vehicles) 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. For the 2017 revision, the members of the Renault-Nissan Alliance implemented shared standards based on a reassessment of select criteria for hazards and risks that go beyond the level of compliance, strengthening Alliance activities. We build and maintain communication and management systems throughout the supply chain. 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.

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

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Sanctions and Government Guidance at Nissan Production Facilities

During fiscal 2021, in relation to the environmental management system, none of Nissan's production facilities received notifications or sanctions from the government regarding significant violations of environmental laws or regulations.

Raising Employee Awareness

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Nissan's environmental activities are enabled by the knowledge, awareness, and competency of its employees. Based on ISO 14001 standards, we will conduct employee education rooted in the Nissan Green Program 2022 (NGP2022) regarding CO₂ emission reductions, energy, water consumption, and waste. In addition, education regarding environmental accident prevention and the management of hazardous materials is provided every year to all employees, including those from affiliated companies working in our production facilities. Training programs with quantitative evaluation are deployed to improve the skills and knowledge of each employee on how to reduce environmental impact in their activities. The content of these training programs is updated every year.

In Japan, we have original educational curriculums to deepen their understanding of NGP2022 and environmental issues surrounding the auto industry through an orientation for new employees, seminars for middle managers and town hall meetings between managements and employees. Employees can stay up to date on our latest environmental attempts through features in the intranet, internal newsletters, and in-house video broadcasts. Overseas, we provide information and education to employees through the intranet, videos, events, and various other communication approaches suited to each region.

Employee-Initiated Activities and Evaluation System

In fiscal 2008, we added "environment" to the range of kaizen issues addressed by quality control (QC) circles. This offered opportunities for employees to think proactively and propose ideas to improve environmental aspects of our business. Managers encourage the active participation of employees by communicating how these activities of QC circles are linked to the achievement of our midterm business plan. The ideas proposed by employees are evaluated by managers and QC circle secretariats for their potential contribution to environmental improvement, among other factors, after which we may implement those with the highest potential. The knowledge and skills of the frontline employees on CO₂ emission reduction, energy management, water conservation, and waste and landfill reduction have been compiled in a best-practices manual and shared among global facilities. We hold contests in some facilities during officially designated months in Japan to keep employees motivated about participating in environmental activities. These include the Energy Use Reduction Idea Contest in February (energy-efficiency month), the Water Usage Reduction Idea Contest in June (environment month), and the Waste Reduction Idea Contest in October (3R promotion month).

We also use various methods to reward employees for their contributions to environmental improvement activities. These activities are included in the annual performance goals used at some Japanese and overseas locations. This system assesses employees' achievement of goals, reflecting this in performance-related elements of employee bonuses.

Employees are also recognized for environmental improvement through Nissan prizes presented by the CEO or other executives, awards given by plant heads, and "THANKS CARD" recognition from managers for excellent work or achievements.

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Life Cycle Assessment to Reduce Environmental Impact

Nissan conducts environmental risk management based on solid environmental policy by assignment personnel in each facilities, validation by supervisors and regularly inspections. We also identify potential risks by conducting life cycle assessments (LCAs). The LCA method is used to quantitatively evaluate and comprehensively assess environmental impact, not just when vehicles are in use, but at all stages of their life cycle, from resource extraction, manufacturing, and transport to disposal. During the period of NGP2022, we are applying the LCA method to ensure steadfast implementation of our environmental activities, such as by identifying their progress and examining ways to further reduce our environmental impact. We are also carrying out LCAs for new technologies to develop environmentally friendlier vehicles.

Our LCA methods have been certified by the Japan Environmental Management Association for Industry since 2010 and since 2013 by third party TÜV Rheinland in Germany (renewal on of November 2021). The latter certification is based on ISO 14040 / 14044 standards and validates the environmental impact calculations in our product LCAs.

We will use the calculations above during the NGP2022 period to conduct LCAs of new vehicles and technologies and enhance efficiency during both the manufacture and operation of vehicles with the aim of further reducing environmental impact during the life cycle of Nissan vehicles.



60

40

20

0

Previous

model

Current

model

Rogue (X-Trail)*1

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Global Top-Selling Model's Life Cycle Improvements

We have been expanding the application of the LCA method and enhancing the understanding of the environmental impact of our products in quantitative terms, especially our best-selling models worldwide. Coverage on a unit basis has reached approximately 80% of models globally and approximately 90% in Europe.

With the Rogue (X-trail) and Qashqai, for example, improvements in internal combustion engine efficiency and vehicle weight reduction have led to both enhanced safety features and lower CO₂ emissions.

Lifecycle CO₂ Equivalent Emissions (CO₂, CH₄, N₂O, etc.)



LCA Comparison for e-POWER Models

*1 Production in the U.S., 120,000 miles driven in the U.S. (basis for comparison).

Current model

1.5 liters, CVT

2.5 liters, CVT

*2 Production in EU, 150,000 km driven in EU (basis for comparison).

Previous model:

Nissan introduced its new e-POWER powertrain in 2016, marking another significant milestone in the electrification strategy with life cycle emission improvements.

Production & logistics Fuel & electricity production Usage Maintenance ELV

Compared to their gasoline-powered counterpart models, the Note e-POWER and Serena e-POWER have achieved a 19% and 27% reduction in CO₂ emissions, respectively.

Electrified e-POWER vehicles use a system in which a gasoline engine operates only under certain circumstances and is used to generate electricity. As a result, e-POWER vehicles achieve lower exhaust emissions and better fuel efficiency for driving than conventional gasoline engines. Also, since an e-POWER vehicle only requires a small battery (unlike one that is 100% electric), emissions from the manufacture of dedicated EV parts such as batteries can be kept at a level only slightly above that for parts for conventional vehicles.

There is future potential for further reductions in CO₂ emissions through additional weight reductions and the optimization of "running energy management by e-POWER".

Lifecycle CO₂ Equivalent Emissions (CO₂, CH₄, N₂O, etc.)



Production a logistics a rule a electricity production a logistics waintenar Production in Japan, 100,000 km driven in Japan (basis for comparison).

60

40

20

0

Previous

model

Current

model

Qashqai*2

Current model:

1.3 liters, 6MT

2.0 liters, CVT

Previous model:

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LCA Comparison of EV Models

The Nissan LEAF reduces its lifecycle CO₂ emissions by approximately 32% compared to conventional vehicles of the same class in Japan. The Nissan Ariya launched in 2022 achieves both further improvement of EV product performance and reduction of environmental impact. It extends EV driving range and reduces lifecycle CO₂ emissions by approximately 18% compared to same segment gasoline-powered models in Japan.

Nissan has enhanced carbon reduction attempt through Nissan Ariya's vehicle life cycle.

Nissan keeps continuously to reduce CO₂ emission from EV production process by improving the yield ratio of materials and increasing the use of recycled materials. On top, by introducing the Nissan Intelligent Factory to our Tochigi-plant, Nissan accelerate carbon neutrality in manufacturing with improving productivity in vehicle assembly, energy efficiency and electrification with uses of electricity generated from renewable energy sources.

To reduce environmental load in vehicle use, Nissan continually reducing CO₂ emissions by improving efficiency of electric powertrains including battery, power savings on accessories and increasing renewable energy usage.

Nissan is also promoting vehicle battery reusing to realize the decarbonization of whole society as a stationary battery for distributed power supply to storage various renewable energies.

Nissan will keep reducing the environmental impact from the entire life cycle of electric vehicles.

Lifecycle CO₂ Equivalent Emissions (CO₂, CH₄, N₂O, etc.)



Production & logistics
 Fuel & electricity production
 Usage
 Maintenance
 ELV
 Production in Japan, 100,000 km driven in Japan (basis for comparison).

Life Cycle Improvements beyond Climate Change

Nissan is expanding the scope of LCAs to include not just greenhouse gases but also a variety of chemicals amid growing societal concerns over air quality and ocean acidification and eutrophication. Our calculations show that, compared to conventional gasoline engines, the Serena e-POWER is significantly more environmentally friendly, achieving 11% and 27% emission reductions for all targeted chemical substances and achieving environmental benefits throughout its life cycle.

Emissions Improvement in the New Serena e-POWER over Its Lifecycle



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Stakeholder Engagement

Working with Suppliers

As part of NGP2022, we are working to improve suppliers' environmental performance via the following three initiatives:

• We encourage all our global suppliers to manage parts and materials with a shared environmental philosophy in alignment with the Nissan Green Purchasing Guidelines. These guidelines are based on The Renault-Nissan Purchasing Way and the Renault-Nissan Supplier CSR Guidelines and provide detailed information regarding environmental matters. In August 2018, based on NGP2022, we revised the content of the guidelines, adding requests that suppliers undertake their own environmental activities. In May 2019, in order to strengthen the management of environment-impacting substances, we added rules that include supplier self-diagnoses pertaining to the management of environment-impacting substances. To realize carbon neutrality in 2050, we clarified the Nissan Green Purchasing Guidelines in May 2022, requesting that suppliers systematically promote autonomous activities while Nissan works with suppliers on issues related to plan execution.

• We also participate in the supply-chain program of CDP, an international nonprofit, through which we request information on climate change and water from suppliers and conduct comprehensive performance reviews. During fiscal 2021, we asked our large contract suppliers to take part in the supply-chain program to provide responses on their environmental activities; 80% of them participated in the CDP program on climate change data and 72% in the CDP program on water security. Based on the results from these surveys, we engaged with a number of suppliers in order to incentivize work on the ongoing improvement of their environmental initiatives.

• We are promoting THANKS (Trusty and Harmonious Alliance Network Kaizen activity with Suppliers) activities, a joint improvement program that emphasizes trust and cooperation with suppliers. Regarding energy use (electricity and gas) and CO₂ emission reduction in particular, we are taking the lead in cooperating with our main suppliers as part of the energy-efficient THANKS activities, based on the initiatives of our internal production facilities.

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. Meetings with major consolidated production companies in Japan are held to exchange views on cooperation toward the goals outlined in NGP2022. The meetings lead to a deeper shared understanding of the details of NGP2022 and the initiatives undertaken by each company.

Working with Dealerships

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 2022, the system has certified approximately 2,700 dealerships of 151 dealers, including parts dealers, as Nissan Green Shops.

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Working with Future Generations

Today's youths are the future leaders of our society. We are working to share information on environmental issues with the younger generation, and to raise awareness among tomorrow's leaders.

We have been conducting environmental programs for students in school visits in Japan since 2008 in which more than 112,400 students had participated as of March 2022. In NGP2022, we will further expand the program in Japan and in other countries.

Key Activities in NGP2022

Youth education programs, such as Nissan Waku-Waku Eco School, an interactive program delivered by Nissan employees to schoolchildren, will be expanded globally to:

- Share knowledge of global environmental issues
- Introduce our environmental initiatives, such as the Nissan LEAF EV and our other green technologies

Through environmental education, the program encourages participants to adopt eco-friendly activities in their daily lives.



Working with NGOs

Nissan believes that environmental activities are critical in social contribution activities, thus we are engaged in various activities to realize a low carbon society, including implementing educational programs to deepen understanding of global environmental issues. At the same time, in order to respond to the increasing complexity of environmental issues, we believe that it is effective to collaborate with NGOs, NPOs, governments, and various other stakeholders to enhance these activities while making the most of our mutual strengths.

Our Corporate Philanthropy Goal is to realize a cleaner, safer, and more inclusive society. NGP2022 seeks to support local communities through various projects by collaborating globally with NGOs to respond to issues such as climate change and water scarcity.

Key Activities in NGP2022

- Fostering employees environmental awareness through participation in World Wide Fund for Nature Japan (WWF Japan) campaigns
- Continue participation in WWF Japan's worldwide Earth Hour environmental awareness-raising campaign toward greenhouse gas emission reduction
- Support the "Walk in Her Shoes" campaign organized by Care International Japan to build awareness of water scarcity and human rights issues in developing countries, and promote employees to participate in the campaign.

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Further Alignment with Governments and Partner Companies

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Since 2006, Nissan has estimated long-term CO2 reductions based on the latest Intergovernmental Panel on Climate Change (IPCC) reports, set retroactive medium-term goals in the Nissan Green Program, and made efforts to realize a society that is "a Symbiosis of People, Vehicles and Nature" by ensuring these goals are achieved every year.

The Paris Agreement was adopted at COP21 in 2015, at which 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 support 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.

With regard to coordination with governments, Nissan made the decision to participate in the GX League* in order to expand opportunities for collaborations. As one of 440 member companies participating in the GX League, Nissan strives to enhance the efficacy of its climate change initiatives.

We also reviewed the stances of our industry associations on climate change and were able to confirm 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 neutral together with our partners.

* Click here for more information on "GX League" in Japanese Only. https://gx-league.go.jp/

Results of Reviews of Stances at Industry Organizations to Which Nissan is a Member

Group	Paris Agreement Stance * Following text is translated by Nissan.	Nissan stance alignment with Paris Agreement
Japan Automobile Manufacturers Association (JAMA)	 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 (21.04.08: Probing deeper into energy conservation, issues and requests targeting CN in 2050) 	 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)	 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 (20.12.15: Toward CN by 2050 ("Society 5.0 with CN") Determination and Actions of the Business Community) 	 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)	• Auto industry is poised to target a 40–50% EV ratio by the end of this decade (21.10.12: President and CEO John Bozzella)	 AAI's ambitious EV ratio of 40-50% consistent with Nissan's goal for a 40% EV ratio in U.S. by 2030 Nissan and AAI aligned and will continue to cooperate to achieve these goals