Value chain activity achievements

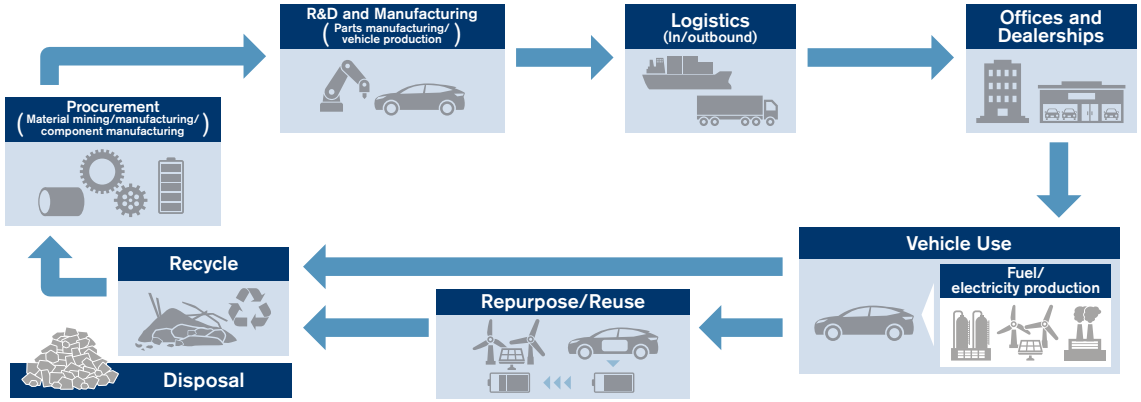
Nissan prioritizes climate change, resource dependency, and air quality and water, which are the key areas related to its business. In minimizing its dependence and impact on ecosystem services, Nissan also provides a range of value to society and the environment to realize its environmental philosophy of "a Symbiosis of People, Vehicles, and Nature." This section introduces environmental initiatives and the value in the three main value chain business areas: Products, Corporate activities, and Collaborations with relevant partners.

Products

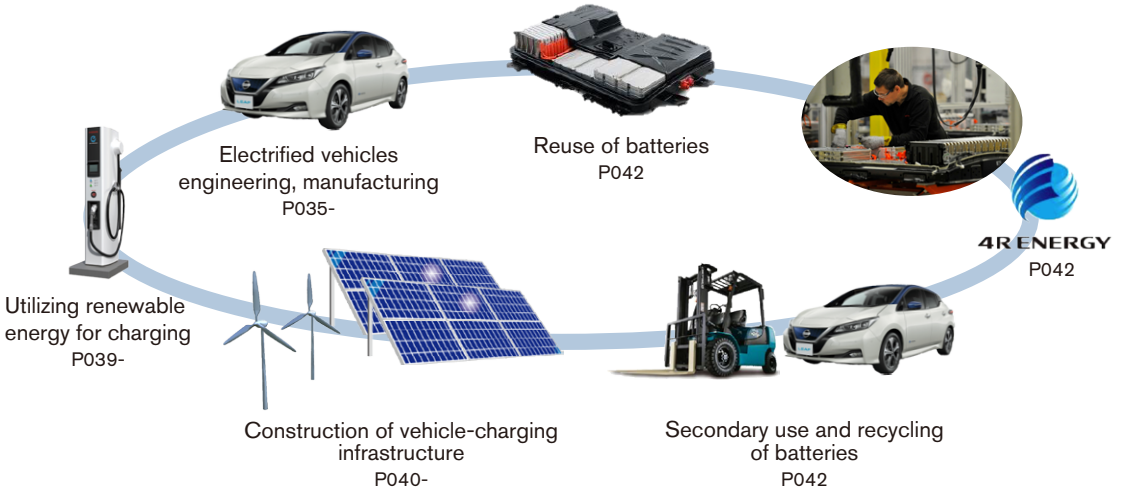
Establishing a sustainable society using electrified vehicles

As a pioneer in mass-produced electric vehicles, Nissan considers the introduction and adoption of electrified vehicles to be one of the pillars of its corporate strategy. We are taking a comprehensive approach along with other activities coordinated with a variety of partners to popularize their use. Considering not only the development and sales stages but also customer use, these initiatives include the promotion of renewable energy use for charging electrified vehicles, cooperation with energy infrastructure beyond the scope of individual vehicles, and the secondary use of batteries after end-of-life. This not only reduces CO_2 emissions during driving, but also creates new value that can only be achieved with electrified vehicles, such as energy management, with the aim of maximizing the use of vehicles as a resource. Through these activities, Nissan will reduce environmental impact throughout the entire vehicle life cycle and contribute to the creation of a sustainable society.

Nissan Value Chain



Initiatives for building a sustainable society using electrified vehicles



Initiatives in development and sales

Nissan's electrification technologies for achieving carbon neutrality by 2050

Nissan is advancing innovations in electrification to achieve carbon neutrality. Our analysis shows that electrified vehicles can reduce CO_2 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 toward renewable energy.
Nissan has been working to advance and promote electrification technologies that can reduce CO_2 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 is committed to promoting the widespread adoption of electrified vehicles by pursuing a driving experience and a comfortable cabin thanks to electrification technologies. 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 innovative electrically driven all-wheel control technology that integrates the control of two high-output motors (front and rear) and the brakes. e-4ORCE enables the flexible control of driving power, enhancing handling in all types of conditions, from daily driving to winding roads and slippery road surfaces.
In addition, EVs are designed to be exceptionally quiet, taking advantage of the absence of engine noise and vibration. Furthermore, the absence of a transmission and exhaust pipes has enabled a flat floor and a spacious, comfortable cabin. With e-POWER, in addition to the quietness inherent to 100% motor-driven systems, electricity generation is intentionally designed to occur in environments where road noise masks engine sounds to enhance the vehicle's overall quietness.

Technological innovations supporting the spread of electrified vehicles

Evolving EV platform

Nissan continues to evolve its dedicated EV platform. The Nissan Ariya, launched in 2022, features a compact motor room, and by moving the air-conditioning unit within it, interior space has expanded and significantly increased legroom in the front seats. In addition, a flat floor and highly rigid body are achieved by the integrated structure of the floor and the thin, high-capacity battery pack. The combination of a highly rigid body and low center of gravity produces superlative handling performance.
The third-generation Nissan LEAF, announced in June 2025, refines these technologies and achieves a larger battery capacity and higher efficiency through more efficient battery placement and a thorough thermal management system.

Electric powertrain

EV and e-POWER, Nissan's two pillars of electrification technology, achieve a high degree of commonality in core components. We are working to reduce costs by increasing commonality in our entire lineup. Each core component has been downsized while improving performance. For example, in the evolution from e-POWER to the second-generation e-POWER, the output density of the inverter has been doubled. Nissan's "X-in-1", its new approach to electric powertrain development, shares further-evolved core components between EVs and e-POWER vehicles and modularizes them to achieve compactness, light weight, and low cost while improving driving performance and quietness.

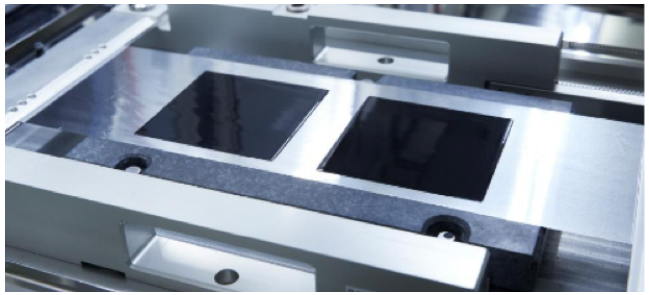
We have developed a 3-in-1 module for EVs comprising three components (motor, inverter, and reducer for traction), which has been adopted in the third-generation Nissan LEAF announced in June 2025. For e-POWER, we plan to adopt a 5-in-1 module consisting of five components: motor, inverter, reducer for traction, generator, and increaser for generation starting in fiscal year 2025. Going forward, we will enhance the competitiveness of EV and e-POWER by expanding the adoption of this electric powertrain technology.

Dedicated engine design for 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.
In contrast, 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%.

Next-generation batteries

Nissan is developing batteries on three fronts: new lithium-ion batteries with significantly improved performance compared with conventional batteries, lithium-ferro-phosphate (LFP) batteries that enable substantial cost reductions, and all-solid-state batteries that are expected to be a game-changing technology. All-solid-state batteries have an energy density approximately twice that of conventional batteries, significantly shorter charging times due to superior charge/discharge performance, and the potential to reduce battery costs by reducing rare metal usage. Nissan may be able to use all-solid-state batteries in a wide range of vehicle segments, including pickup trucks, making its EVs more competitive. This technology is currently in the production prototype stage, and a pilot production line was unveiled in 2024.
Nissan has been developing this technology and aims to bring it to market by 2028.



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-Strength 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-Strength 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. We continued to expand the range of models in which the material is used, and in 2024, we expanded its use to the Patrol, Kicks, Murano, and INFINITI QX80.

Structural optimizations
The e-POWER system, which structure is changed for integration of 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 CO_2 emissions to achieve carbon neutrality.

Global promotion of electrification

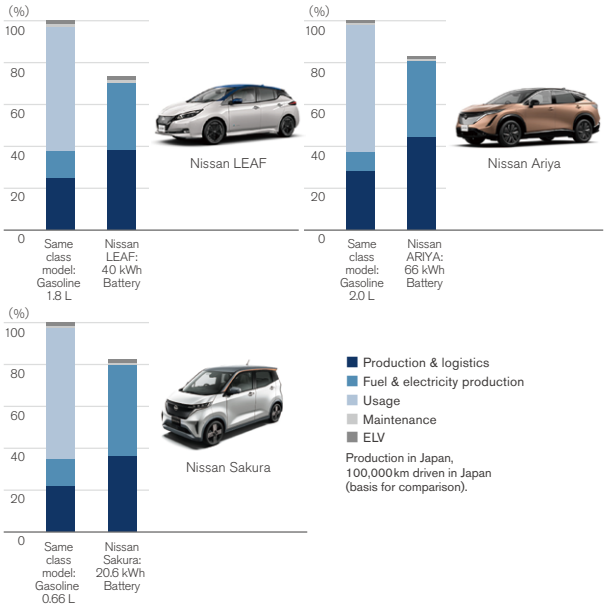
Electrified vehicle performance and assessment

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 launched the Nissan Sakura for the "kei" car segment, which achieved the largest sales volume among EVs in Japan for fiscal year 2024. Furthermore, the Nissan Sakura ranked first as the most attractive model in the Mini-car-Height Wagon segment of J.D. Power's 2024 Japan Automotive Performance, Execution and Layout (APEAL) study.
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 technology forms part of Nissan's global promotion of electrification and reached a cumulative global production of 1.5 million units in 2024. In major overseas markets, to date e-POWER has been installed in the Sylphy, X-Trail, Qashqai, and Kicks in China, Europe, Mexico, and other markets. We also plan to introduce it in the Rogue in the North American market in fiscal year 2026.
Furthermore, the Note and Kicks ranked first as the most attractive models respectively in the Compact Car and Compact SUV segments of J.D. Power's 2024 Japan APEAL (Automotive Performance, Execution and Layout) study.

Life cycle assessments of EV models*1

Nissan conducts life cycle assessment (LCA) to quantitatively evaluate and comprehensively assess environmental impact. The Nissan LEAF's life cycle CO_2 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, improve EV product appeal and reduce environmental impacts. Compared with Japanese gasoline-powered vehicles in the same class, the life cycle CO_2 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 life cycles.

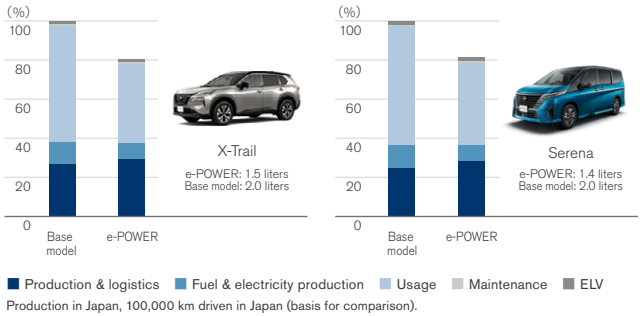
Life cycle CO_2 equivalent emissions



Life cycle assessments 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, X-Trail e-POWER, and Serena e-POWER have achieved approximately 20% reductions in CO_2 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.

Life cycle CO_2 equivalent emissions



Life cycle CO_2 reduction on the Nissan Ariya

In Nissan Ariya production at the Tochigi Plant, we have intensified our efforts to minimize CO_2 emissions at every stage of the vehicle's life cycle. In the production stage, we contributed to the reduction of CO_2 equivalent emissions through ongoing efforts that include improving material yield 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 toward making all of our production plants carbon neutral. To achieve this, we are focusing on promoting innovative practices that enhance production efficiency during vehicle assembly, improving the efficiency of the 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 continuously reducing CO_2 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 cycles of electric vehicles.

*1 Click here for more information on LCA environmental data. >>>P155
*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

Technical developments meeting different needs

Initiatives in 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 CO_2 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.

Initiatives in solid oxide fuel-cell systems

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 on 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 proposed 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

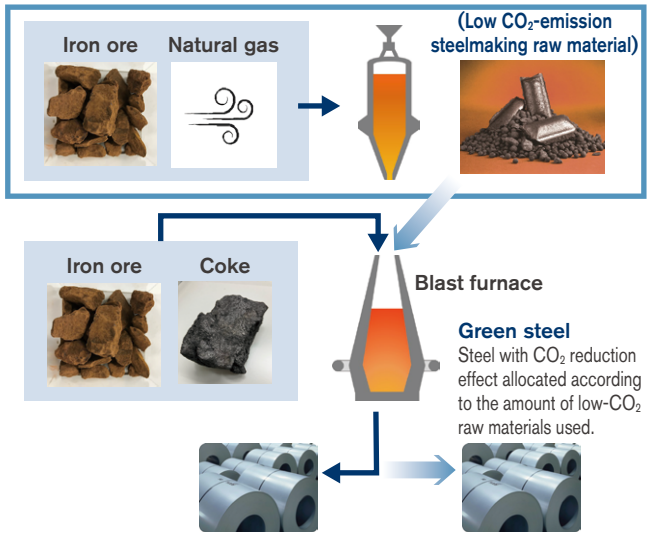
Efforts to reduce CO_2 emissions during manufacturing through use of green steel and green aluminum

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*1 and green aluminum*2 is a highly effective way to reduce CO_2 emissions during parts manufacturing, which is part of the vehicle's life cycle.

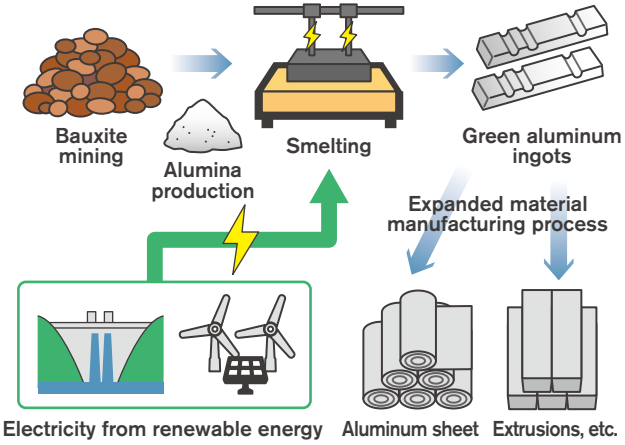
After first partnering with Kobe Steel, Ltd. in January 2023, we have begun progressively expanding the utilization of green steel and green aluminum in our vehicles, which not only contributes to the significant CO_2 emission reductions during manufacturing, but also maintains the same level of high quality as conventional products. For green aluminum, we are working in partnership with Kobe Steel, Ltd. and UACJ Corporation; and for green steel, with Nippon Steel Corporation, JFE Steel Corporation, and POSCO Co., Ltd.

In addition, we will reduce CO_2 emissions during manufacturing by promoting closed-loop recycling*3, which utilizes scrap materials generated at Nissan production sites as recycled inputs.

Green steel: Mass balance approach
(The case of Direct Reduced Iron)*4



Green aluminum: Mass balance approach



Utilization of renewable energy during charging

Launch of 100% renewable energy service for 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 dealerships and other facilities in Japan has come from renewable energy sources since September 2023.*5

Providing virtually 100% renewable electricity to employees

Since 2019, some Nissan dealerships in Japan have been selling virtually 100% renewable electricity on behalf of electric power companies to encourage EV users to charge at home. From the beginning of fiscal year 2022, we began providing Nissan employees residing in the Kanto area with electricity derived from virtually 100% renewable electricity. In addition, in December 2024, we launched Nissan Denki, a

*1 Green steel: Low-CO_2 steel with significantly reduced CO_2 emissions in the steelmaking process
*2 Green aluminum: Aluminum that is electrolytically smelted using only electricity generated by solar power and other renewable energy sources, thereby reducing CO_2 emissions during aluminum ingot production by approximately 50%.
*3 Closed-loop recycling: The reuse of aluminum or steel sheet scraps generated during manufacturing as materials of the same quality for reuse in similar products. Click here for more information on aluminum recycling. >>> P053
*4 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-CO_2 products) and raw materials without said characteristics are mixed, depending on the amount of raw materials with said characteristics. The CO_2 emission reduction effect is concentrated in specific steel materials.
*5 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 the 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

residential electricity service in Kanagawa Prefecture. This service provides virtually 100% renewable energy and can reduce net CO_2 emissions to zero. We plan to expand the service area in the future.
Nissan is also conducting various EV utilization demonstration experiments in collaboration with electric power companies and other organizations, with a view to utilizing energy management centered on future EVs.
This initiative is a step toward decarbonization taken by Nissan as an EV pioneer, not only producing and selling EVs, but also throughout product life cycles. We are committed to work with everyone toward the realization of carbon neutrality through a wide range of activities.

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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. The 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 4Rs for second-life use of lithium batteries

NISSAN ENERGY

Expansion of charging solutions

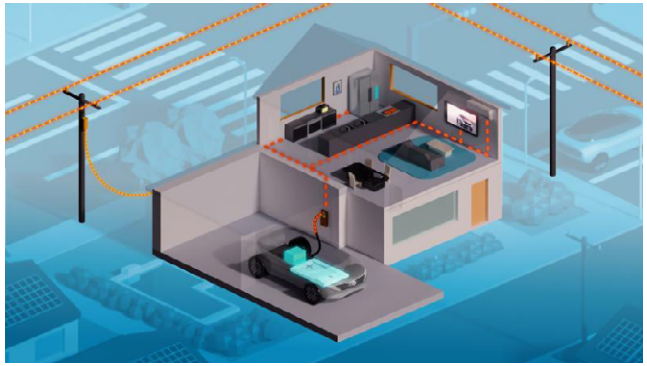
Various electric charging solutions are provided to enable customers to enjoy safe and convenient lifestyles with EVs. Charging at home is the most convenient charging method, as it is completed while the car is parked at home. For safe charging at home, in Japan and some other markets, Nissan selects 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 enjoy their trips to distant places with even more peace of mind by utilizing the expanding network of public charging stations.
The MyNISSAN app provides a convenient and seamless charging experience by offering features such as locating and monitoring the availability of public charging stations, route planning that takes into consideration 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 the targeted EV models in each region.
Beginning in model year 2025, in the U.S.A. we have decided to make 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.
The launch of Nissan's new Nissan ENERGY CHARGE Network will make owning and charging a Nissan EV easier and more seamless. The new network allows Nissan Ariya and future Nissan EV drivers to use their MyNISSAN app to find charging stations, see real-time charger availability and pay for charging.
This enhancement to the MyNISSAN app simplifies EV ownership by consolidating vehicle management and public charging into one app. Users store a default payment method in the MyNISSAN app, then once at a compatible charging station, simply tap an on-screen button to start a charging session within the NISSAN ENERGY Charge Network. This feature has been available to MyNISSAN app users since November 2024.
The NISSAN ENERGY Charge Network partners with leading charging partners such as Tesla and Electrify America. Launching this network is another step by Nissan to improve the customer experience and make EV ownership easier and more convenient.

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 power-grids 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.

Introduction of Vehicle to Grid (V2G) technology in the U.K.

Nissan has announced that it will introduce Vehicle to Grid (V2G) technology in selected EVs in the U.K. from 2026. This initiative aims to promote the use of renewable energy and contribute to the realization of a sustainable society in support of Nissan's long-term vision, Ambition 2030.
V2G technology enables electricity stored in EV batteries to be used to power homes or sold back into the grid, making it possible to efficiently utilize renewable energy sources such as wind and solar. This will reduce dependence on fossil fuels and contribute to reducing greenhouse gas emissions.
Nissan has gained G99 *1 Grid code certification, which is a set of technical standards required for connecting power-generating devices to the U.K.'s electricity grid, for its power exchange system through a successful demonstration project at The University of Nottingham, enabling power supply from EVs. This technology promotes the expansion of clean energy use and contributes to the efficiency of regional power infrastructure.
Going forward, Nissan will roll out V2G technology across markets in Europe, starting with the U.K., introducing systems in alignment with local infrastructure. In addition, we will offer cost-effective AC-bidirectional chargers to help more customers make use of renewable energy. Through these endeavors, Nissan aims to position EVs not just as a means of transportation, but as integral components of a sustainable energy ecosystem.



V2X technology

Nissan's Vehicle-to-X (V2X) is a technology that efficiently utilizes the electrical energy stored in the batteries of EVs by extracting and sharing it with homes, buildings, and society via bidirectional 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. Thus, maintaining a stable supply and demand balance poses a challenge.
By using V2X technology, it becomes possible to absorb fluctuations in renewable energy generation through the charging and discharging of EV batteries. This enables the stable utilization of valuable renewable energy and contributes to the promotion of renewable energy adoption.
Additionally, V2X can be utilized as a backup power source during disasters, expanding its value and potential.

*1 Technical standard that applies to the connection of power-generating assets to the electricity distribution networks in the U.K.

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

Nissan EV batteries offer high performance even after having been 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 reducing the hurdles to ownership for customers will lead to the more widespread use of EVs.

Case study of secondary use of EV batteries

Sumitomo Corporation has completed the construction of the EV Battery Station Chitose in Chitose City, Hokkaido, utilizing EV batteries provided by 4R Energy Corporation. This facility is a battery storage system for the grid with an output of 6 megawatts and a capacity of 23 megawatt-hours, which is equivalent to the electricity used by approximately 2,500 households per day. By utilizing EV batteries in stationary application (commercial electric power), Sumitomo Corporation is not only contributing to the reduction of recycling costs through expanded use and increased demand for reused EV batteries, but also maximizing the use of resources such as rare metals contained in storage batteries and thereby reducing CO_2 emissions in the process of production of storage batteries.

Commercialization of reused batteries

Nissan is promoting the commercialization of used batteries.

Portable storage batteries


Off-grid street lighting

Addressing all forms of emissions

Addressing emissions

Promoting zero-emission vehicles

EVs such as the Nissan LEAF, which has cumulative global sales of approximately 700,000 units (as of the end of March 2024), are an effective solution 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) certification.
- Bluebird Sylphy (released in Japan in August 2000): The first passenger vehicle made in Japan to achieve Ultra-Low Emission Vehicle (U-LEV)*1 certification.

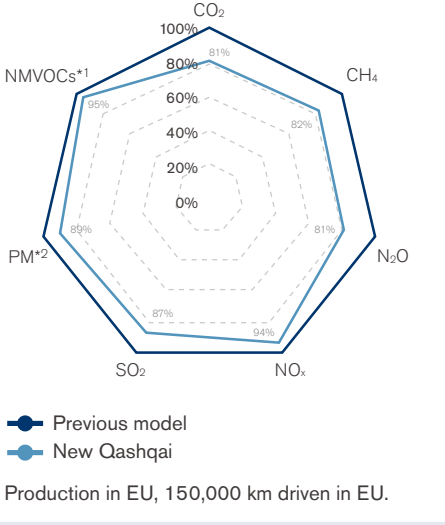
We will continue our efforts to ensure cleaner exhaust emissions from internal combustion engines.

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

Life cycle improvements beyond climate change

Nissan is expanding the scope of its life cycle 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 life cycle assessment (LCA)



Production in EU, 150,000 km driven in EU.

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.
In addition to complying with current regulations, we are also working to meet more advanced and upcoming standards. The status of compliance with regional emission regulations is as follows.

Compliance with exhaust emissions regulations (By region) *3

(FY)

Country/Region	Standard	2024
Japan	50% lower than 2018 standard	87%
Europe	Euro6d/Euro6e	100%
U.S.A.	LEV III ULEV/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 including those from brake wear, 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 is conducting research and development aimed at cleaner vehicle emissions and has made efforts to improve the cabin environment, including better air quality, to enhance comfort. As part of its continued efforts to reduce VOCs such as formaldehyde and toluene, Nissan is carrying out additional reviews of materials for seats, door trims, floor carpets, and other parts as well as adhesives.
Nissan complies with Nissan standards which are in accordance with the laws and guidelines of each country regarding in-cabin VOCs.

*1 NMVOC: Non-Methane Volatile Organic Compounds
*2 PM: Particulate Matter
*3 Passenger cars only.