ENVIRONMENTAL POLICIES AND PHILOSOPHY

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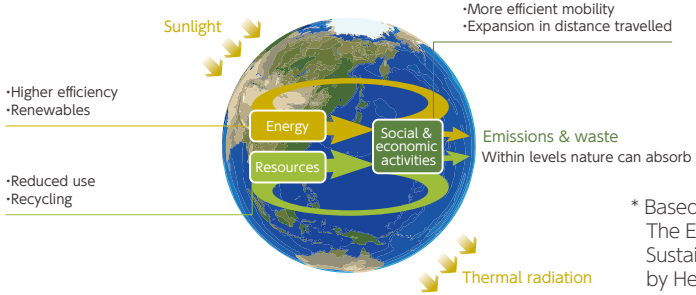
Environmental Principles

Nissan' s Corporate Environmental Principles were established to realize its Corporate Vision: "Enriching People' s Lives."
We provide customers with innovative products and promote the effective use of energy and resources by diversifying our sources and making active use of renewable energy and recycled materials. These are just some of the ways in which Nissan is striving to achieve "a Symbiosis of People, Vehicles and Nature."
To this end, we have clearly defined our environmental principles and vision, including our ultimate goal: "To reduce the environmental impact and resource consumption of our corporate operations and vehicles throughout their lifecycle to a level that can be absorbed naturally by the Earth." This means endeavoring to leave as small an ecological footprint as possible.

Nissan' s Environmental Philosophy: A Symbiosis of People, Vehicles and Nature



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

Nissan' s Environmental Philosophy: A Symbiosis of People, Vehicles and Nature

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

Ultimate Goal

We will manage the environmental impact caused by our operations and products to a level that can be absorbed by nature and pass on rich natural capital to future generations.

What We Want to Be: A Sincere Eco-Innovator

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

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Nissan' s Understanding of Environmental Issues

Environmental and social issues are attracting more and more attention in recent years. With the world' s population expected to reach 9 billion by 2050, society faces problems in areas such as poverty and hunger, energy, climate change and various conflicts. To address these issues, the United Nations adopted a resolution in September 2015 titled "Transforming Our World: the 2030 Agenda for Sustainable Development." The Agenda contains 17 Sustainable Development Goals (SDGs) and 169 targets, and there are high expectations that corporations as well as nations will play a major role in realizing the SDGs. Nissan supports the SDGs, as it recognizes the growing importance of delivering safe, secure and sustainable mobility for all and providing value to society.

The auto industry is dependent on the global environment in complex and diverse ways, while also having significant impact on the environment. Nissan is tackling a range of issues to promote sustainability by advancing measures to mitigate climate change and conserve energy, preserve air quality and other natural capital, use mineral resources efficiently, properly manage chemical substances, efficiently allocate scarce resources and promote good health. We are also improving our business to reduce our dependence on fossil fuels.

As a global automaker, we take active steps to identify the direct and indirect environmental impacts of our activities, working with business partners and society to minimize the negative impacts of our products and services throughout their lifecycle. We acknowledge that our activities and efforts must be continuously improved and advanced; we seek to provide greater value to society by delivering sustainable mobility for all while alleviating environmental impacts associated with climate change, natural resource dependency, water use and other issues.

We decide which environmental priorities we address and our level of engagement based materiality assessments in light of social trends and consultations with various stakeholders.

* Click here for more information on how Nissan supports the SDGs.
https://www.nissan-global.com/EN/ENVIRONMENT/GREENPROGRAM/FRAMEWORK/

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Nissan' s Strategic Approach to Environmental Issues

To positively contribute to the resolution of global environmental issues, Nissan believes in the importance of listening to various voice from society and undertaking an assessment process to identify priority issues. These materiality assessments involve analyzing latent opportunities and risks, determining material issues that are of mutual relevance to Nissan and our stakeholders and drafting mid and long term environmental strategies.

In assessing environmental materiality, we applied the methods of the Corporate Ecosystem Services Review (ESR),* developed by the World Resources Institute (WRI) in cooperation with the World Business Council for Sustainable Development (WBCSD) and the Meridian Institute based on the U.N. Millennium Ecosystem Assessment (MA). As a result, we specified three priority areas on which we should focus as an automaker: Procurement of Energy, Procurement of Material Resources and Usage of Water Resources. A fourth area that is linked directly to people' s health—Air Quality—was cited as being within the scope of consideration, as the swelling of

urban populations and economic development are often accompanied by deteriorating air quality.
These were analyzed internally in terms of opportunities and risks for Nissan with reference to the 2030 Agenda for Sustainable Development, centered on the SDGs, as well as the discussions at the World Economic Forum, the Paris Agreement adopted at the 21st Conference of the Parties (COP21) and other global agendas. Through direct discussions with international environmental experts, investors and NGOs/NPOs, as well as through separate dialogues with our Alliance partners, we subsequently identified environmental materiality for Nissan. Moreover, Comparison between this environmental materiality and the objectives of the SDGs showed that Nissan's approach contributes to the realization of the SDGs.

* Click here to read "Ecosystem Services and the Automotive Sector," a report outlining the conclusions of the Corporate Ecosystem Services Review conducted by Nissan.
https://www.nissan-global.com/EN/DOCUMENT/PDF/ENVIRONMENT/SOCIAL/ecosystem_services_and_the_automotive_sector.pdf

Materiality Analysis (Environment) and SDGs Comparison

Materiality	SDGs	Nissan Principal Approach
Fuel economy	3	Lower vehicle emissions, improve in-cabin air quality
Transition and physical risks induced by climate change	6	Reduce water consumption and manage water quality
Electrification	7	Reduce CO_2 emissions from vehicles and corporate activities
Introduction of renewable energy at facilities	9	Vehicle-to-Grid (V2X) electric power management
Promotion and development of MaaS (Mobility as a Service)*	11	Expand autonomous drive and other technologies
Energy efficiency at facilities	12	Effective use of resources
Reduce, reuse, recycle	13	Reduce CO_2 emissions from vehicles and corporate activities Appropriate management of chemical substances
Resource efficiency	14	Reduce water consumption and manage water quality
Chemical substance management	15	
Material sourcing	17	Collaborations with stakeholders such as local governments and NGOs
Emissions from products, in-cabin air quality		
Human health		
Emissions from facilities		
Water use at facilities		
Wastewater and landfill management		
Ecosystem services and biodiversity		
Stakeholder engagement		
Occupational health and safety		

* MaaS: Car sharing and other mobility services that do not require actual car ownership.

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Scenario Analysis to Strategies for 2050 Society

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

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

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

As a global automobile company, the production facilities and market for our products will be 170 markets globally, and the effects of climate change will not be limited to Japan. When taking a comprehensive perspective of this scenario analysis, even the market infrastructure, regulations and actual usage are different, Nissan's electrification technologies have the potential to create opportunities for effective capabilities in scenarios other than 2°C. Nissan has come to recognize once again the importance of further accelerating efforts toward this realization as well as the fact that activities integrated with the supply chain are essential for responding to risks.

In particular, the expansion of zero-emission vehicles is not only a major step towards the shift to a carbon-free society as an automobile sector, it is also a technology that contributes to the resilience of society in power management and disaster mitigation and prevention. Nissan believes that it will be possible to strike a balance between value creation for society and business.

However, if the societal response to climate change is delayed, transition risks such as additional policies and regulations for a decarbonized society, increases in R&D efforts and changes in market demand or corporate reputation, and physical risks such as an increase in abnormal weather and rising sea levels may lead to cost increases and declines in vehicle sales that

have the potential to substantially influence on our financial situation. To avoid risks such as these to the extent possible and create future opportunities, Nissan is leveraging knowledge gained from scenario analysis for use in actual activities and reviewing strategies for expanding resilience. We will continue to implement these initiatives by embodying our vision for 2030, further enhancing the disclosure of information and placing importance on dialogues with our stakeholders.

Envisioned scenarios and associated opportunities and risks

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

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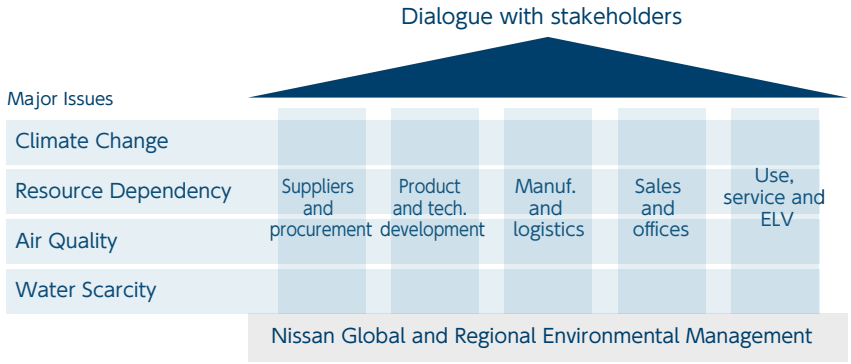
Global Environmental Management Framework and Governance System

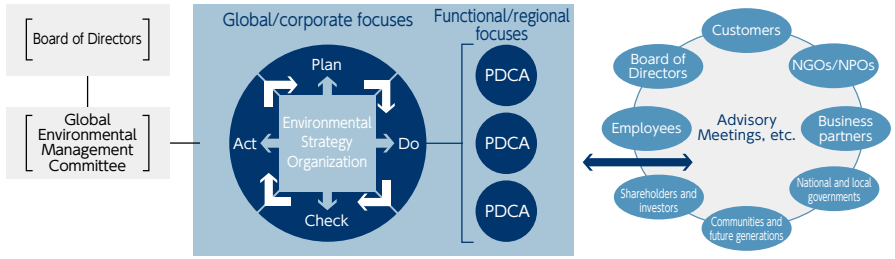
To promote comprehensive environmental management as a global company while responding to a diverse array of environmental issues, Nissan has a governance system built on dialogue and partnership with each region and many corporate functions, as well as with a variety of stakeholders. The Global Environmental Management Committee (G-EMC), co-chaired by a board member, determines overall policies and the content of reports put before the Board of Directors. Its meetings are attended by corporate officers chosen based on the issues to be discussed. Executives also clarify the risks and opportunities before the company and determine the specific programs to be undertaken by each division, using the PDCA cycle to manage and operate the environmental programs efficiently. In addition, environmental risks are regularly reported in the Internal Control Committee meetings to strengthen corporate governance.

Corporations today are expected to disclose their environmental initiatives and related decisions in a reliable and transparent manner. We actively communicate with a broad range of stakeholders through our Sustainability Report and by answering inquiries from various environmental rating agencies.

Global Environmental Management Framework



Environmental Management Organization

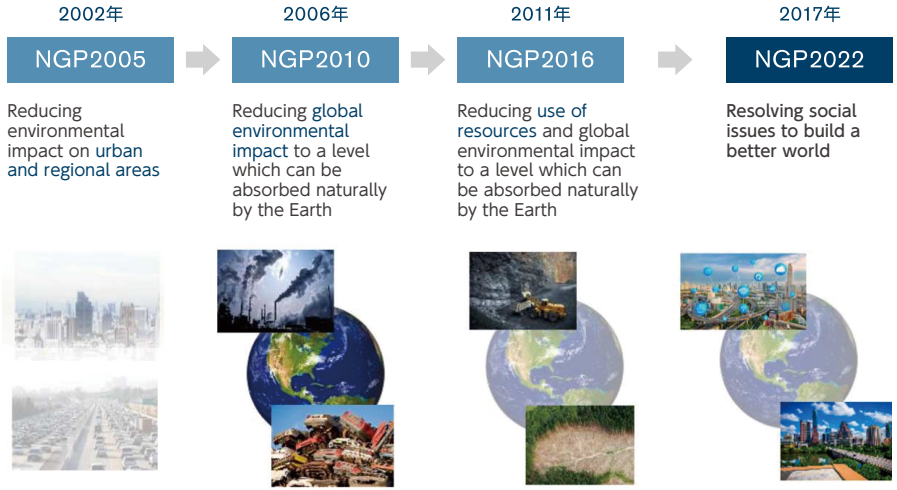


Environmental Action Plan: Nissan Green Program (NGP)

We first announced the Nissan Green Program (NGP) midterm environmental action plan in 2002 to achieve our environmental philosophy of “A Symbiosis of People, Vehicles and Nature” and to ultimately reduce our environmental dependence and impact to levels that nature can absorb. Under NGP2016, launched in fiscal 2011, we fully achieved our targets for the four key initiatives of zero-emission vehicle penetration, fuel-efficient vehicle expansion, corporate carbon footprint minimization and natural resource use minimization. New plan NGP2022 was launched in fiscal 2017.

* Click here for more information on NGP2022.
https://www.nissan-global.com/EN/ENVIRONMENT/GREENPROGRAM/FRAMEWORK/

Evolution of NGP



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NGP2022 Key Issues and Challenges

Based on environmental materiality analysis, Nissan has identified “climate change,” “air quality,” “resource dependency” and “water scarcity ” as important issues under NGP2022. Furthermore, in order to contribute to the resolution of these four important issues and create new value, we are also working to strengthen the business foundation related to environmental issues through stakeholder engagement aimed at understanding the needs of stakeholders.

NGP2022 discloses indicators and progress on initiatives related to the four identified material issues every year. In addition to the development and production departments involved in car manufacturing, the sales and service departments and Nissan as a whole are also accelerating efforts related to environmental issues while strengthening our business foundation and working to create social value.

Under NGP2022, we will take on the challenge of addressing the following key issues, striving not just to attain compliance but also to meet society’ s expectations and to realize our long-term vision.

- Climate Change: We aim for carbon neutrality
  Promote society’ s decarbonization through vehicle electrification/ intelligence and innovative future monozukuri
- Resource Dependency: We aim to eliminate the use of new material resources
  Create systems that use resources efficiently and sustainably, and create services able to use vehicles more effectively (circular economy)
- Air Quality: We aim for zero impact
  Ensure cleaner exhaust emissions and create a comfortable in-cabin environment to protect human health and reduce the impact on ecosystems
- Water Scarcity: We aim for zero stress
  Reduce water consumption and manage water quality with monozukuri that is considerate of impact and dependency on ecosystems

NGP2022 Action Plan

	Activities	NGP2022 Objectives	FY2019 Results
Climate change (Product)			
Long-term vision: Achieve 90% reduction of CO_2 emissions from new vehicles by 2050 (vs. 2000)			
1	Product CO_2 emission reduction	40% reduction of CO_2 emissions from new cars (vs. FY2000; Japan, U.S., Europe and China)	Reduced by 35%*
2	Solid EV leadership	—	Global sales increase of Nissan LEAF e+. Nissan LEAF is the first mass market EV and accumulated sales over 470,000 units. Release the concept of new EV[ARIYA] with advanced technologies.
3	Support driver's behavior	Pilot program with connected cars	Activities underway
4	Expansion of vehicle usage	Global expansion of V2X for energy management (Japan, U.S. and Europe)	Promoted expansion of usage
Climate change (Corporate)			
Long-term vision: Achieve 80% reduction of CO_2 emissions from corporate activities by 2050 (vs. 2005)			
5	Overall reduction of CO_2 emissions from corporate activities	30% reduction of CO_2 emissions per vehicle sold (vs. FY2005; global)	Reduced by 34.0%
6	Reduction of CO_2 emissions at manufacturing sites	36% reduction of CO_2 emissions per vehicle produced (vs. FY2005; global)	Reduced by 30.1%
7	Reduction of CO_2 emissions of logistics	12% reduction of CO_2 emissions per production (vs. FY2005; Japan, North America, Europe and China)	Reduced by 11.5%
8	Reduction of CO_2 emissions at offices (including R&D sites)	12% reduction of CO_2 emissions per floor area (vs. FY2010)	Reduced by 14.3%
9	Reduction of CO_2 emissions at dealers	12% reduction of CO_2 emissions per floor area (vs. FY2010; Japan)	Reduced by 17.8%
10	Expansion of renewable energy use	Expansion of renewable energy introduction	consumption rate of renewable energy at manufacturing plants 10.2%
Air quality			
11	Cabin air quality improvement	Promotion of research on technical solutions	Activities underway
12	Reduction of VOC emissions at manufacturing sites	Promotion of VOC emission reduction per paint area (vs. FY2010)	Reduced by 27.5%
Resource dependency			
Long-term vision: Reduce dependency on new materials by 70%			
13	Development of biomaterials	Promotion of research on technical solution	Development underway

	Activities	NGP2022 Objectives	FY2019 Results
14	Proper use of chemical substances	Implementation of the Alliance policy on chemical substance management	Strengthened Alliance policy and continued steady implementation
15	New resource usage minimization	30% reduction of new natural resource usage per vehicle	Promoted activities toward NGP2022 target
16	Expansion of remanufactured parts	Duplation of remanufactured item coverage (vs. FY2016)	Promoted activities toward NGP2022 target
17	Expansion of battery reuse	Expansion of the EV battery reuse business	Promoted EV battery reuse
18	Adoption of die-less forming	Plan and implement technical development	Start adoption to heritage parts
19	Waste reduction (manufacturing)	BAU 2% (Japan) and BAU 1% (overseas) reduction of waste	Reduced by 5.8%(Japan) Reduced by 4.3%(overseas)
20	Waste to landfill reduction (manufacturing)	Landfill ratio reduction	Reduced waste to landfill ratio to 3.2% (global)
	Water scarcity		
21	Water withdrawal reduction (manufacturing)	21% reduction of water withdrawal per global production (vs. FY2010)	Reduced by 23.0%
	Business foundations		
22	Governance enhancement	Implementation of our environmental compliance policy	Adhered to environmental compliance policy
23	Further application of LCA	Measure lifecycle environmental impact of vehicle and new technology	Continue to measure lifecycle environmental impact for new launched products in 2019.
24	Engagement with suppliers	Implementation of environment data survey to promote engagement and reduce environmental impact	Expand the supplier engagement opportunity through CDP survey
25	THANKS activities promotion	Further promotion of Supplier THANKS activities	Continued to promote THANKS activities
26	Nissan Green Purchasing Guidelines	Adoption of updated policy	Strengthen the Nissan Green Purchasing Guidelines and its adoption
27	Education program for the next generation	Global expansion of Nissan Waku-Waku Eco school program	Training of instructor among domestic sales staff and conduct education program on site. Start education program at elementary school near Nissan plant in Brazil
28	Collaboration with NGOs for ecosystem conservation	Enhancement of collaboration and partnerships with NGOs	Continued joint projects with WWF and Conservation International

* Calculations for Europe are based on estimates as the acquisition of fiscal 2019 data has been delayed.

CLIMATE CHANGE

GRI103-1 GRI103-2

Toward a Carbon-Neutral Society

In 2015, the United Nations Climate Change Conference (COP21) adopted the historic Paris Agreement to keep the increase in global temperature to "well below" 2 degrees Celsius.
At COP24, held in 2018, parties agreed on concrete guidelines to achieve the goals of the Paris Agreement, namely, to peak-out global greenhouse gas (GHG) emissions as early as possible and to strike a balance between GHG emissions from human activity and carbon absorption by nature by the second half of this century.
One of the United Nations' Sustainable Development Goals (SDGs), announced in 2015 as part of its 2030 Sustainable Development Agenda, set goal for climate actions. Nissan is responding to these developments by focusing on electrification and other innovative technologies and by promoting decarbonization through reductions in CO_2 emissions throughout the value chain, including by suppliers.

Nissan's Steps to Reduce CO_2 Emissions

The business structure of the automobile industry is changing greatly in the face of demands to reduce CO_2 emissions and dependence on fossil fuels. As a global automaker, Nissan considers emissions across the entire value chain it shares with its suppliers, from procurement of raw materials to transportation and operation of vehicles. We understand how important it is to balance environmental initiatives with business activities, and strive to reduce emissions through new technology development, renewable energy use and other measures.

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Efforts at Every Link in the Value Chain

The Nissan Green Program 2022 (NGP2022) aims to achieve carbon neutrality by reducing emissions from our corporate activities, products and services.

CO_2 Emissions in the Value Chain*

Reducing CO_2 emissions from corporate activities

Reducing CO_2 emissions from products and service

* Actual emissions in 2018.

Building a Resilient Climate Change Strategy

The incremental move toward decarbonization could generate major new risks for businesses. In addition to transition risks resulting from changes in policies and regulations, technologies, markets and reputation, there are also growing physical risks, as climate change raises the frequency of extreme weather conditions. Recognizing climate change as a risk for the financial system, the G20 Financial Stability Board established the Task Force on Climate-related Financial Disclosures (TCFD) to encourage disclosures that would enable investors to make informed decisions. In its June 2017 final report, the Task Force proposed a recommendations framework for information disclosure.

Nissan considers climate change to be an issue that goes to the heart of its operations. The Global Environmental Management Committee (G-EMC), co-chaired by a board member, identifies trends in climate-related risks and business opportunities and adopts strategies accordingly. Climate change and other environmental risks comprise a category of risks for corporate management and are regularly monitored by the Internal Control Committee to strengthen corporate governance.

We analyze climate-related risks on an ongoing basis, and have specified as major risks tighter regulations on fuel economy and CO_2 emissions, intensifying competition in the EV market and physical damage due to extreme weather conditions. We determine specific measures to be taken by each division after clarifying the risks and opportunities—including those relating to climate change—for our company.

Additionally, climate change also greatly heightens customer needs for energy-efficient mobility. We are meeting those needs by clearing stringent CO_2 emissions regulations, as outlined in the Nissan NEXT*1 midterm plan

calling for annual aggregate sales of 1 million 100% EV and e-POWER vehicles by fiscal 2022. In our corporate activities, we are actively advancing energy-saving measures, shifting to climate-efficient logistics and introducing renewable energy sources.
In the light of these climate-related risks and opportunities, we established a long-term vision for climate change*2 objective of reducing CO_2 emissions from new vehicles in the year 2050 by 90% compared to emissions in fiscal 2000, while at the same time engaging in corporate activities aimed at achieving the target of reducing CO_2 emissions in the year 2050 by 80% compared to emissions in fiscal 2005.

In addition to establishing the Nissan Green Program 2022 (NGP2022)*3 midterm environmental action plan, we will formulate various future climate change scenarios to reinforce the resilience of our climate change strategy. We also seek to disclose information in line with the TCFD framework in order to facilitate further awaness of our actions among investors and other stakeholders.

*1 Click here for more information on Nissan NEXT
https://global.nissannews.com/en/releases/release-293ce8d1ca9dbfc2922d2297c900ebc5-200528-03-e
*2 Long-term vision for climate change:
・Products: Reduce CO_2 emissions from new vehicles by 90% compared to 2000 levels by 2050.
For more information on Policies and Philosophy for Product Initiatives.
>>> P.014
・Corporate activity: Reduce overall corporate CO_2 emissions by 80% compared with 2005 levels by 2050.
For more information on Policies and Philosophy for Corporate Activity Initiatives.
>>> P.027

・Climate change indices, targets and achievements, along with Scope 1, 2 and 3 emissions are contained in this report under "NGP2022 Framework and Action Plan," "Product Initiative: Achievements" and "Environmental Data."

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Policies and Philosophy for Product Initiatives

Reduction of Emissions from Products and Services

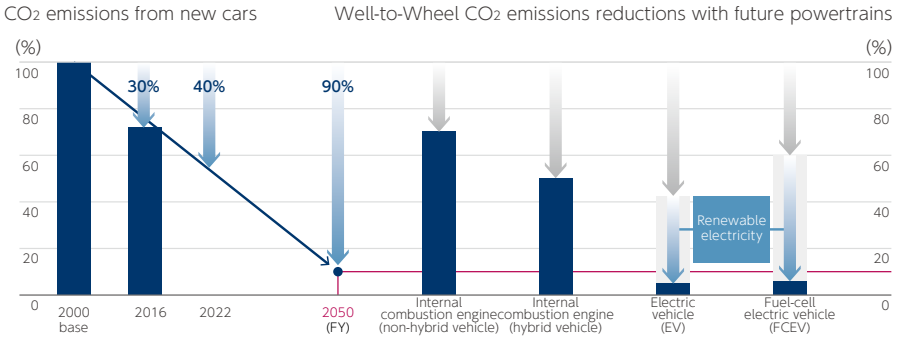
According to a 2014 report from the Intergovernmental Panel on Climate Change (IPCC), the transport sector was responsible for 14% of anthropogenic greenhouse gas emissions from all economic sectors in 2010. As a business in this sector with continued growth in both unit sales and amount of passenger activity, Nissan is aiming to decouple emissions from company growth.

Our Long-Term Vision

In 2006, based on calculations incorporating the findings of the IPCC' s Third Assessment Report and the goal of keeping global temperatures from rising more than 2 degrees Celsius, we set a scientifically grounded target for 2050 of reducing product CO_2 emissions from new vehicles by 90% compared to 2000 levels.
Recognizing that this would require drastic reduction of "well-to-wheel" CO_2 emissions from new vehicles, we set about developing a new scenario for powertrain technologies.
Under the Nissan Green Program 2022 (NGP2022), to remain on track with this target, we are aiming to reduce CO_2 emissions from new vehicles by 40% compared to fiscal 2000 by 2022 (in Japan, the U.S., Europe and China) throughout the value chain as a whole.
As a global leader in technological advancements through the electrification of our products, we believe we can substantially contribute to the global efforts to keep the temperature increase "well below" 2 degrees Celsius. These initiatives also reinforce the sustainability of our own business.
We are driving the evolution of new technologies and businesses. Under the umbrella of Nissan Intelligent Mobility,* we take a unified approach to introducing, marketing and deploying new technologies, functions, businesses and services.

* Click here for more information on Nissan Intelligent Mobility.
https://www.nissan-global.com/EN/TECHNOLOGY/OVERVIEW/nim.html

CO_2 Reduction Scenario

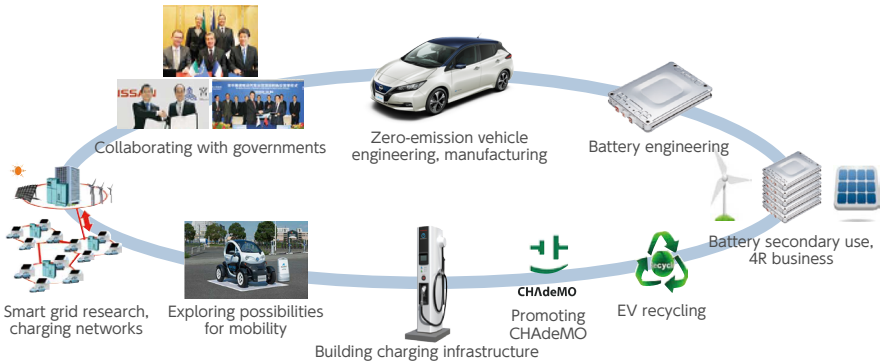


Pursuing a Zero-Emission Society

Electric vehicles (EVs) demonstrate that what is good for drivers and the planet is also good for business. Widespread use of zero-emission vehicles, which produce no CO_2 emissions during operation, is an effective way of moving toward a sustainable society. The auto industry must go beyond simply producing and selling these vehicles to help establish the infrastructure necessary to make them economical to use. No company can achieve this on its own. We consider the introduction and adoption of zero-emission vehicles one of the pillars of our corporate strategy. We are taking a comprehensive approach that involves boosting production and sales of zero-emission vehicles along with other activities coordinated with a variety of partners to popularize their use. We are committed to becoming a leader in the field of zero-emission vehicles. Not only are we increasing our development and production of zero-emission vehicles, we are forging numerous zero-emission partnerships with national and local governments, electric power companies and other industries to promote zero-emission mobility and explore how the necessary infrastructure can be built.

We participate in a comprehensive range of vehicle-related initiatives, including the development of lithium-ion batteries, secondary use and recycling of batteries, construction of vehicle-charging infrastructure, helping to make smart grids a reality and standardization of charging methods with other manufacturers.
Increasing uptake of zero-emission vehicles will bring lifestyle changes that lay the groundwork for a new mobility society. We provide more than just EVs themselves—we also embrace the new values that they represent.

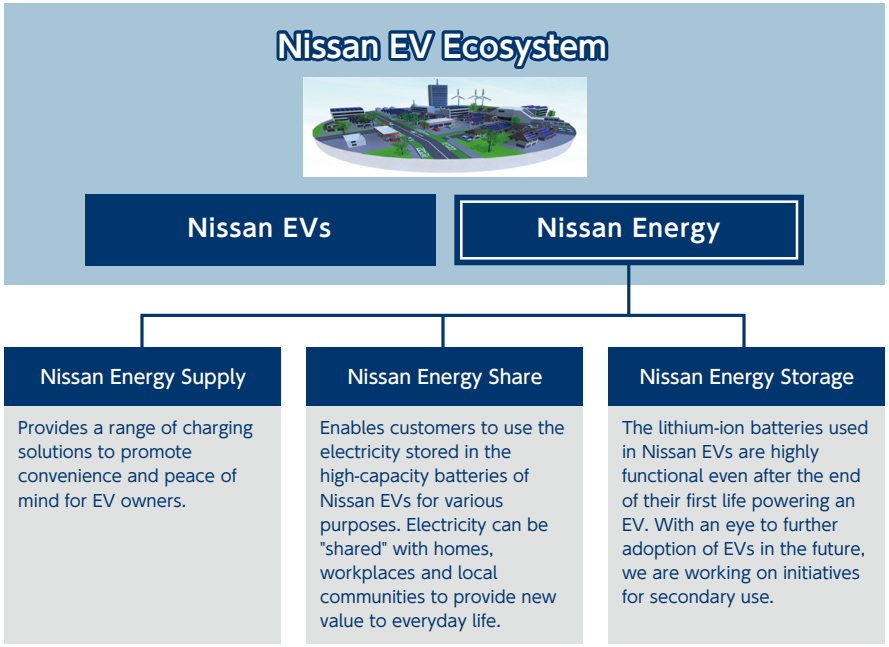
Building a Zero-Emission Society with EVs



Establishing Leadership in the EV Sector

Our commitment to sustainable mobility addresses concerns over climate change and supports the sustainable growth of the company.
Our 2010 launch of the first Nissan LEAF made us pioneers of mass-produced EVs. Since then, we have sold more than 620,000 EVs (including joint venture sales) around the world in total, and our transformation plan, NISSAN NEXT, calls for even more Nissan EVs, designed to appeal to customers with an ever-wider range of needs.
Furthermore, our history with EVs goes deeper than simply manufacturing and selling the vehicles themselves. We helped to establish an environment allowing EVs to become part of our customers' lifestyles, and developed the Nissan Energy solution for enjoying life with an EV to the fullest. Together, these initiatives created what we call the Nissan EV Ecosystem.
As we continue to strive for a zero-emission society, we will expand and develop the Nissan EV Ecosystem even further.

Nissan EV Ecosystem



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Management of Product Initiatives

Key Activities in NGP2022

The CO_2 emissions of a vehicle in use are influenced not only by engine performance and fuel type but also by traffic conditions and driving skills. Decarbonizing society will require new vehicle usage patterns. Nissan takes a threefold approach to mitigating real-world CO_2 emissions that addresses vehicle, driver and new mobility value.

1. Adopt cleaner energy to reduce vehicle CO_2 emissions

Extend electrification across all brands under the Nissan Intelligent Mobility strategy.*1 Expand electric vehicle (EV) lineup and deploy e-POWER technology in core Nissan products.

2. Promote technology-based driver assistance and accelerate connected car development and commercialization

In consideration of environmental performance, Nissan developed the ECO Pedal to control excess fuel consumption during vehicle start and acceleration in an effort to promote technologies that support eco-driving.

3. Provide new mobility value

Provide new mobility services and expand the value of vehicle use. Pursue global expansion of V2X*2 energy management solutions (commercialization in the United States and Europe, and expansion of LEAF to Home in Japan) and engage with stakeholders to support V2X device commercialization.

*1 Click here for more information on Nissan Intelligent Mobility.
https://www.nissan-global.com/EN/TECHNOLOGY/OVERVIEW/nim.html

*2 V2X: Abbreviation for Vehicle to Everything, a term describing technology and systems for handling communication in vehicles. One example of V2X technology is Vehicle-to-Grid (V2G), which allows smart optimization of electricity supply according to demand.

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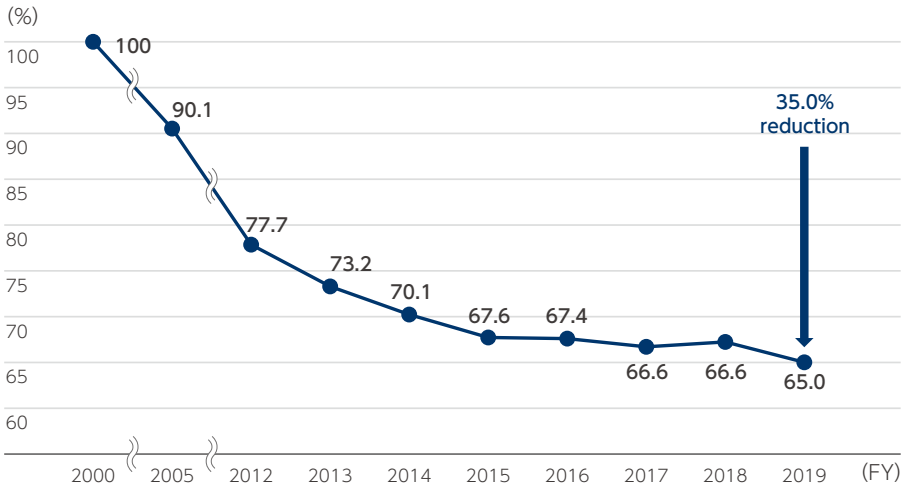
Product Initiatives: Achievements

Toward a 40% Reduction in New Vehicle CO_2 Emissions

Nissan strives to develop technologies that maximize the overall energy efficiency of conventional internal combustion engines and improve transmission performance. We are also working to boost the efficiency of electrification systems that capture and reuse kinetic energy from braking. Electrification is just one of our concrete monozukuri initiatives in technical innovation. We select the optimal fuel economy technologies for particular vehicles, taking into consideration factors like space within the vehicle, usage and economics, and bring them to market. Our goal is to reduce fuel consumption and CO_2 emissions without sacrificing the pleasure and ease of driving.
By fiscal 2022, we aim to achieve a 40% reduction in CO_2 emissions* compared to fiscal 2000 levels.

* From new vehicles in the Japanese, U.S., European and Chinese markets.

CO_2 Emissions from New Vehicles (Global)*



In fiscal 2019, CO_2 emissions in Nissan' s main markets of Japan, the U.S., Europe, and China were 35.0% lower than fiscal 2000 levels, as measured by Corporate Average Fuel Economy (CAFE). Especially, improved in China from 2018 due to EV expansion and fuel consumption improvement.

Reduction in CO_2 emissions calculated by Nissan.

GRI302-5

Electrification and Internal Combustion Engine Initiatives

Nissan LEAF Sales Exceed 470,000, Further Reducing Environmental Burden

The Nissan LEAF emits no CO_2 or other exhaust during operation. Since its launch in 2010, it has earned high praise for the smooth, strong acceleration and quiet operation of its electric motor powered by a lithium-ion battery. As part of our midterm plan, NISSAN NEXT,, we are aiming for annual aggregate sales of 1 million 100% electric vehicles (EVs) and e-POWER vehicles by fiscal 2022. Total cumulative sales of the Nissan LEAF worldwide exceeded 470,000 vehicles as of March 2020. In China, we manufacture the Nissan Sylphy Zero Emission model, which inherits the core technologies of the Nissan LEAF, for the local market. While the low environmental impact of Nissan' s EVs is attractive, these figures were likely driven at least in part by consumer awareness of other factors, such as low fuel and maintenance costs and superior acceleration and steering performance.
Nissan calculations show that the Nissan LEAF and other EVs can produce fewer CO_2 emissions over their entire lifecycle compared to gasoline-powered vehicles of the same class—from the extraction of raw materials, manufacturing, logistics and use, to end-of-life disposal. By contributing to the shift to renewable energy, EVs play an essential role beyond transportation in helping to achieve a low-carbon society.

For more information on Nissan LEAF lifecycle assessment.
>>> P.060

Launched in October 2017, the new Nissan LEAF is a zero-emission vehicle equipped with innovative semi-autonomous drive technologies like ProPILOT, ProPILOT Park and e-Pedal. It offers greater power output, a longer driving range and more convenience than ever.

Nissan LEAF

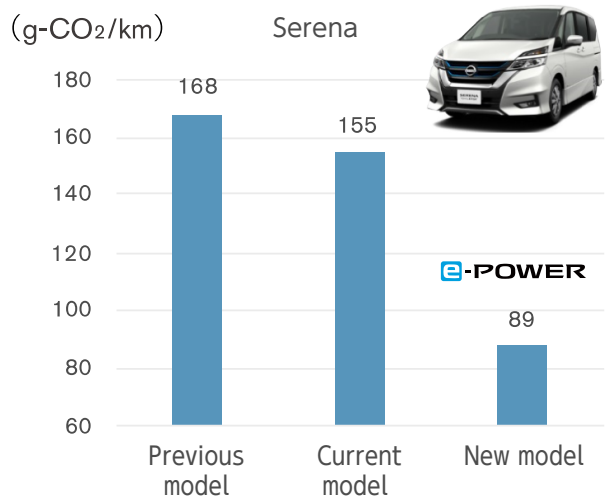
The Nissan LEAF rated highly throughout the world, in Japan, it won the Japan Automotive Hall of Fame (JAHFA) "Car Technology of the Year" award. In the United States, at the 2018 CES®, it was among the "Best of Innovation Award" winners for 2018; at the 2018 New York International Auto Show, it was recognized as the "2018 World Green Car" and it also received the "J.D. Power Engineering Award for Highest-Rated Vehicle Redesign" at the 2019 SAE International World Congress Experience. In Europe, it received the "Best Electric Car" award at the 2018 What Car? Awards.
This significant improvement in power output and driving range is made possible by a lighter and more compact high-capacity lithium-ion battery. By adopting a new material*1 capable of storing energy at a higher density, Nissan is able to decrease the battery' s size while increasing its capacity. This innovation made it possible to expand the Nissan LEAF' s driving range from 200 kilometers (JC08 mode) to 400 kilometers*2 for the new Nissan LEAF, while at the same time improving electricity consumption.
In January 2019, Nissan introduced the Nissan LEAF e+, equipped with a newly developed electric powertrain

that further enhances its acceleration capabilities during high speed operation and increases its maximum speed by about 10%.*3

*1 Our newly adopted layered structure for cathode material contributes to larger battery capacity by helping to store lithium ions at high density.
*2 322km in WLTC mode, 150 miles under U.S. EPA standards.
*3 458 km in WLTC mode. The maximum range is 226 miles under U.S. EPA standards and 385 km in European WLTP (combined cycle).

Enhancing Our 100% Electric-Motor-Powered e-POWER Drivetrain

In November 2016, in Japan, we launched the first vehicle to feature our innovative new e-POWER drive system: the new compact Note e-POWER. In March 2018, the e-POWER system was further expanded to the Serena, also for the Japanese market. Both the Note e-POWER and the Serena e-POWER have received high praise from customers, achieving No. 1 sales rankings in their respective segments again in 2019 as in the previous year. Favorable evaluations also included receiving the 2019 annual "RJC Technology of the Year" award, the Global NEV Top Innovation Technology Award at the first 2019 World New Energy Vehicles Congress (WNEVC) sponsored by the China Association for Science and Technology and other organizations, and "The Ichimura Prize in Industry for Distinguished Achievement" by the Ichimura Foundation for New Technology.



*CO_2 emissions calculated from the fuel consumption rate in JC08 mode (measurement method of Japan's Ministry of Land, Infrastructure, Transport and Tourism).

The e-POWER system combines an electric motor, which drives the wheels, with a gasoline engine that charges the vehicle's battery. e-POWER is a technology that balances smoothness and the strength of a 100% motor drive with the highest level of fuel efficiency. In addition, because the actual drive comes from an electric motor, it offers driving comfort similar to that of an EV, making e-POWER a new powertrain completely different from the hybrid systems commonly used in previous compact cars.
As the gasoline engine does not directly drive the wheels, it can be run under optimal conditions (RPM, load) at all times to generate electricity. In city driving, where it is expected to see frequent use, the Serena e-POWER achieves top-class fuel economy* compared with standard hybrid vehicle types.

In e-POWER Drive mode, the driver can accelerate or decelerate simply by using the accelerator pedal, while the regenerative brake system also helps improve fuel economy by charging the battery.

*As of when the model first went on sale, as measured in JC08 mode: Serena e-POWER, 26.2 km/L.

The e-NV200: A Practical, Sustainable City Delivery Vehicle

Based on the Nissan NV200, a multipurpose commercial van, the e-NV200 retains the roominess and versatility of the NV200 and adds the acceleration performance and refinement of an EV. It has been produced at our Barcelona Plant in Spain since June 2014 and is sold mainly in Europe as well as Japan. The e-NV200 is used by taxi services in Barcelona and Amsterdam. In Japan, it has been adopted by a wide range of customers, from urban delivery businesses to local authorities.
Compared to commercial vehicles using internal combustion engines, the e-NV200 reduces operating costs and excels in environmental performance with reduced noise pollution and other features. Equipped with two power outlets that can draw a maximum of 1,500 watts of power from the battery, the vehicle provides a convenient and safe electrical power source that comes in handy for offsite jobs and outdoor events as well as emergencies. At construction sites, the e-NV200 contributes to reducing noise levels by providing electricity in place of engine generators.


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

Progress in Plug-in Hybrid Vehicles

Plug-in hybrid electric vehicles (PHEVs) are hybrid cars that can run on electricity charged from an external source as well as fuel. With this combination of engines and electric motors, they provide motor operation equivalent to EVs. We are actively developing PHEVs, leveraging Alliance technologies with a view to launching them in the future.

Fuel-Cell Electric Vehicles

Powered by electricity generated from hydrogen and oxygen, fuel-cell electric vehicles (FCEVs) are another type of zero-emission vehicle that does 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 Corp., Honda Motor Co. 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.

New e-Bio Fuel-Cell Technology Announcement

In June 2016, Nissan unveiled an e-Bio Fuel-Cell system that runs on bio-ethanol electric power. The new system—a world first for automotive use—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.
Infrastructure to support e-Bio Fuel-Cell usage is relatively easy to deploy, and vehicles using this technology feature running costs as low as those of EVs, promising a smooth introduction to the market. Because our technology combines the efficient electricity generation of SOFC with the high energy density of liquid fuels, it can enable driving ranges on a 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.

VC-Turbo : World' s first variable compression ratio engine in the market

The VC-Turbo is the world' s first mass produced variable compression ratio engine, first deployed in November 2017 in the new QX50, part of our INFINITI brand' s premium vehicle lineup. The VC-Turbo has also been deployed in the United States and China, in the new Altima. This technology, which realizes a significant improvement in fuel efficiency, has received high praise and several awards, which in Japan include the Society of Automotive Engineers of Japan, Inc., "Technological Development Award," the 54th Japan Society for the Promotion of Machinery Industry "Chairman' s Award," and in the United States, the 2020 Wards "Wards 10 Best Engines."
The engine swiftly selects the optimum compression ratio between 8:1 (for high performance) and 14:1 (for high efficiency) based on driving conditions and driver input. In addition to being lighter and more compact than comparable non-turbocharged engines, the VC-Turbo delivers reduced fuel consumption and emissions, lower noise levels and reduced vibration.

Development and Introduction of New Powertrains

Nissan is working to enhance fuel economy by improving gasoline-powered engines, the engines that are still the most widely used in the automobile market.
In Europe, we adopted a new 1.0-liter, three-cylinder turbo gasoline engine in the Nissan Juke. The new engine features gasoline particulate filters to reduce air pollution, and improves fuel economy by 11% compared to the previous model equipped with a diesel engine through reduced wear loss and optimized designs for the combustion chamber and turbo system.
The new "kei" minicar Nissan Roox released in Japan in March 2020 provides significantly improved fuel efficiency through the adoption of a new 0.66 liter gasoline engine and a newly designed powertrain that combines a new CVT with a smart and simple hybrid system.

Initiatives for Lighter Vehicles

Toward Lighter Vehicles

Making vehicles lighter is an important part of improving fuel economy. Nissan promotes three methods to achieve this aim: substituting materials, developing better forming and joining techniques and optimizing vehicle body structure. In terms of materials, we are rapidly expanding the adoption of ultra-high tensile strength steel facilitating both high strength and formability, and in recent years, we have adopted this material for use in body frame parts in a wide range of vehicle models, including "kei" vehicles such as the Nissan Dayz and Nissan Roox.
Further, in 2018, we adopted highly processible 980 megapascal (MPa) Ultra High Tensile Strength Steel for the INFINITI QX50 that can be processed using conventional methods making it applicable for a wide range of parts. This results in the realization of enhanced driving performance and weight reductions, and achievement that was recognized in 2019 with the SAE/ AISI Sydney H. Melbourne Award for Excellence in the Advancement of Automotive Steel Sheet. It also contributes to a reduction in total costs by reducing the amount of steel used and utilizing existing production lines.
In addition to technological advances in materials and production methods, platform improvements, high-efficiency three-cylinder engines and other advances were adopted for the 2019 Nissan Juke and it realized to reduce vehicle weight by more than 20 kg while improving vehicle size and performance.
Nissan will proactively promote the development of weight reduction technologies to reduce CO_2 emissions and dependence on newly extracted natural resources.

GRI103-1 GRI103-2

Initiatives for Partnerships with Society

Nissan Energy: Solutions that Enrich Life and Society with EVs

As part of our efforts to help build the EV ecosystem, we launched a group of solutions we call Nissan Energy. Nissan Energy has three main components, each of which is designed to support our customers' lifestyles with EVs in a different way.

Nissan Energy Supply

Nissan Energy Supply includes various electric charging solutions that bring ease and convenience to the lifestyles of our EV customers.
The majority of our EV customers find it convenient to charge their EVs at home. To help ensure that our vehicles can be safely charged, we guide customers to use suitable charging equipment and engage qualified installers to install electrical outlets dedicated to EVs.
The Nissan LEAF, which offers an ample driving range for daily use, utilizes a fast-growing charging network, providing drivers with confidence during longer distance drives and short outings.
Our dedicated EV app lets customers find and check the real-time status of charging stations. This not only makes charging easier and more convenient but also provides a seamless charging experience. As of the end of fiscal 2019, approximately 32,300 quick chargers conforming to the CHAdeMO protocol have been installed worldwide.

Nissan Energy Share

The electricity stored in the Nissan EV' s battery can do more than just power the vehicle; it can be shared with homes, buildings and local communities through power conditioning systems.
Using inexpensive electricity during off-peak periods and excess electricity generated by solar panels during daytime reduces electricity bill and helps promote a model of local generation of electricity for local-consumption.
Furthermore, Nissan Energy Share makes it possible for EVs to provide backup power during blackouts or emergencies.
Local communities can connect multiple EVs to regional power grids to store or discharge electricity in accordance with power supply and demand balance, which contributes to the stability of the entire community' s power supply and promotes renewable energy use. EV' s high capacity batteries are highly expected as usage as social infrastructure, which enables to store renewable energy like solar power of which generation is difficult to control.

Local Energy Production and Consumption and EVs

Since 2018, Nissan along with Nippon Telegraph and Telephone West Corporation and NTT Smile Energy has verified the efficacy and business potential of Vehicle-to-Building (V2B) by conducting projects combining remote control EV charging and discharging with solar power generation systems in an attempt to simultaneously reduce both electric power consumption and CO_2 by reducing office building peak energy consumption.
Also, since 2018, Nissan, the Tohoku Electric Power Co., Ltd., and other companies have participated in the Ministry of Economy, Trade and Industry Agency for Natural Resources and Energy "Virtual Power Plant Construction

Demonstration Project That Utilizes Demand-side Energy Resources." In anticipation of the introduction of wind power and other energy sources of which generation varies at any time, we are conducting technical verifications to understand how EVs are effective in adjusting supply and demand aiming for Vehicle to Grid (V2G), by remotely controlling the charging and discharging of multiple EVs.

Nissan Energy Storage

The life of an EV battery is not over when it has finished its first life of powering a car. 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 Corp. to establish 4R Energy Corp., which specializes in repurposing lithium-ion batteries. The intention is to fully utilize resources by promoting the four Rs of lithium-ion batteries—reuse, resell, refabricate and recycle—with the aim of building an efficient cycle of battery use.

Reuse system realized using EV batteries

In conjunction with 4R Energy Corp., Nissan aims to create secondary usage method business models compatible with the capacity changes of individual Nissan EVs and batteries that will be fully utilized (cascade reuse) throughout the electric vehicle lifecycle.
In September 2019, Nissan and 4R Energy announced the establishment of a new solution for fixed storage batteries built with used batteries from the Nissan LEAF. To get started, we launched a proof-of-concept demonstration of "procuring electric power from renewable energy " at 7-Eleven stores in 10 locations across Kanagawa Prefecture. Under this scheme, 7-Eleven will introduce a package consisting of the Nissan LEAF electric vehicle and fixed storage batteries built with used batteries from the Nissan LEAF. The Nissan LEAF, which will be introduced as a commercial vehicle, will become a stationary storage battery after its use as a car has ended. The introduction of a package like this facilitates the creation of a circular system that takes into account the reuse of batteries.

Launched Testing to Expanding EV Usage in California

California' s active promotion of five million zero-emission vehicles by 2030 has helped make it the U.S. state with the largest volume of private EV sales. Even so, drivers still tend to use EVs for short-distance travel such as shopping or commuting. At the request of NEDO, and with the California government' s cooperation, Nissan Motor Co., Ltd. (NML) and Kanematsu Corp. started a project in November 2016 in partnership with U.S. charging infrastructure service provider EVgo to install over 55 fast chargers in more than 25 new locations along one of California' s most important travel arteries. Additionally, the project has created information service systems to guide EV users to the most appropriate fast charger. These initiatives are part of a pilot business to demonstrate the efficacy of expanding the driving range of EVs. The project is designed to expand the driving range of EVs to include intercity travel, and will run until September 2020, collecting and analyzing a

range of EV data to establish models for further expansion of EV usage.

The Nissan New Mobility Concept

The Nissan New Mobility Concept is an ultracompact 100% electric vehicle that was developed in response to social trends like rising numbers of senior citizens, single-member households and the increasing use of automobiles for short-distance trips by just one or two people. Even smaller than a “kei” minicar, the Nissan New Mobility Concept offers the driver excellent visibility and a good feel for the dimensions of the vehicle, making it an ideal choice for use in residential neighborhoods and other areas with narrow streets and poor visibility, as well as regional cities and islands pursuing compact-city policies.

Since fiscal 2011, with cooperation from Japan’ s Ministry of Land, Infrastructure, Transport and Tourism (MLIT), we have conducted tests and surveys through driving trials held together with corporations and local governments. Based on MLIT’ s January 2013 announcement of an authorization system for use of ultracompact vehicles on public roads, we are currently testing vehicles in 25 areas, including the area covered by Choimobi Yokohama, a round-trip urban ride-sharing service that we operate together with the city of Yokohama. To date, the vehicles have mainly been used for tourist purposes as part of regional revitalization, but, in preparation for the 2020 Tokyo Olympics and Paralympics, we have been testing ultracompacts as rental cars for sightseeing on the island of Shikine-jima, Tokyo, since May 2018. This is a trial business aimed at expanding the use of EVs on small islets, an idea promoted by the Tokyo metropolitan government.

We make full use of the knowledge and information acquired from all of our nationwide projects, offering advice on new uses for EVs and ways to improve traffic flow and implement smart mobility for the next generation.

For more information on Climate Change (Products)
>>> P.064

The Choimobi Yokohama round-trip ride-sharing service using the Nissan New Mobility Concept.

GRI103-1 GRI103-2

Policies and Philosophy for Corporate Activity Initiatives

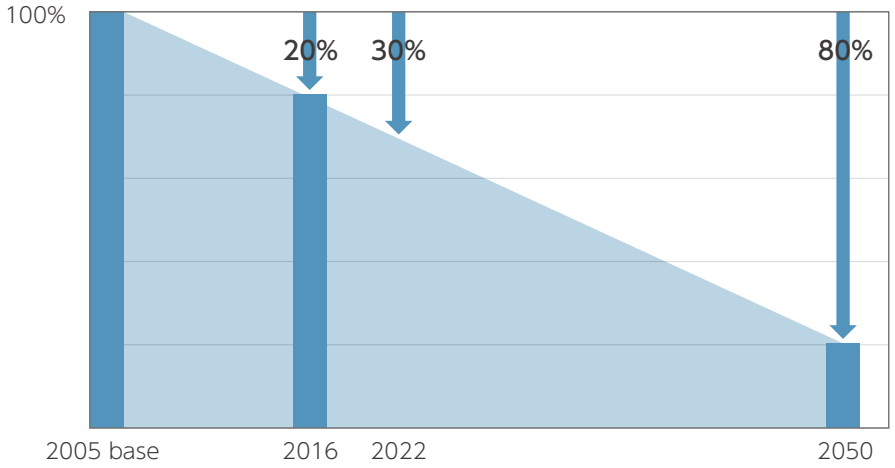
Reducing CO_2 Emissions from Corporate Activities

Nissan is taking steps to reduce its greenhouse gas emissions from corporate activities by promoting energy efficiency measures and also the use of renewable energy.
Based on calculations incorporating the findings of the Fourth Assessment Report from the Intergovernmental Panel on Climate Change (IPCC), Nissan established the goal of reducing its overall corporate CO_2 emissions by 80% compared with 2005 levels by 2050. As part of the Nissan Green Program 2022 (NGP2022), we set the midterm goal of a 30% reduction in overall corporate CO_2 emissions by 2022. Manufacturing is our largest emissions source, but we are also aiming to reduce greenhouse gas emissions from logistics, offices and dealerships, setting targets and taking action in each area.

Long-Term Vision and Road Map

Long-Term Vision of Reducing CO_2 Emissions from Corporate Activities
As a long-term vision for climate change, we aim to realize an 80% reduction in CO_2 emissions per vehicle from corporate activities by 2050 (vs. 2005).

NGP2022 Long-Term Vision



* CO_2 emission per vehicle

GRI103-2

Management of Corporate Activity Initiatives

NGP2022 Objectives

Targets for each link in the value chain under the Nissan Green Program 2022 (NGP2022) aimed at achieving our long-term goals in 2050 are as follows:
Overall: 30% reduction in CO_2 emissions from global corporate activities by 2022 (vs. 2005/per vehicle sold)

Manufacturing

36% reduction in CO_2 emissions from global manufacturing sites by 2022 (vs. 2005/per vehicle manufactured)

Logistics

12% reduction in CO_2 emissions from logistics in Japan, North America, Europe and China by 2022 (vs. 2005/per vehicle manufactured)

Offices

12% reduction in CO_2 emissions from global offices by 2022 (vs. 2010/per floor area)

Dealerships

12% reduction in CO_2 emissions from dealerships in Japan by 2022 (vs. 2010/per floor area)

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Corporate Activity Initiatives: Achievements

30% Reduction in Emissions from Corporate Activities

In fiscal 2011, Nissan broadened the scope of its CO_2 reduction objectives to include logistics, offices and sales companies, as well as production sites. We expanded our emission-related initiatives, introducing high-efficiency equipment, energy-saving measures and the use of renewable energy, and also strengthened our management of these initiatives. Our objective is to reduce CO_2 emissions associated with corporate activities by 30% globally by fiscal 2022 compared to fiscal 2005 levels, as measured by the index of CO_2 emissions per vehicle (total emissions generated from Nissan global corporate activities divided by total Nissan vehicles sales volume). In fiscal 2019, we achieved a 34.0% reduction from the fiscal 2005 t-CO_2/vehicle level.

* Global CO_2 emissions per vehicle: The total volume of CO_2 emissions produced through Nissan' s corporate activities globally divided by the number of Nissan vehicles sold globally.

Next-Generation Vehicle Manufacturing Concept: Nissan Intelligent Factory

In line with the acceleration of vehicle electrification, intelligence and the Nissan Intelligent Mobility concept promoted by Nissan, vehicle functions and construction are becoming increasingly complex. As further technological innovations will be essential in the production process, we announced the Nissan Intelligent Factory vehicle manufacturing concept.
These innovations include Nissan' s development of a new water-based paint that successfully controls the viscosity of body paint, which had been difficult to control at low temperatures, realizing a low-temperature body paint. This enables the simultaneous painting of the body and bumpers, reducing CO_2 emissions by 25%. In the past, residual airborne paint was mixed with water and disposed of as waste. However, the adoption of dry booths do not use any water at all and enable to collect 100% of the residual airborne paint, which is reused as an alternative to auxiliary agents to remove impurities in the iron casting process.

Click here for more information on Nissan Intelligent Factory
https://global.nissannews.com/en/releases/release-ca298f94d2418782118342f5fd0448b6-191128-02-e

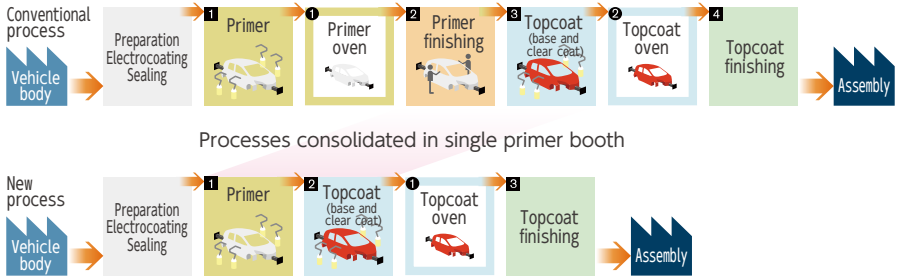
GRI302-1 GRI302-4

Saving Energy in Global Production

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 of any automaker.
In the realm of automotive production technology, we are introducing highly efficient equipment, improving manufacturing techniques and using energy-saving lighting in our assembly plants. Another key approach is our three-wet paint process. Vehicle painting is responsible for approximately 30% of all CO_2 emissions from plants; and shortening or eliminating baking stages substantially reduces emissions.
The three-wet paint process adopted by Nissan removes the need to bake between the primer and the topcoat layers. Instead, layers are applied successively before baking, reducing CO_2 emissions by more than 30%*1, according to our calculations. Starting in 2013, we introduced this process at Nissan Motor Kyushu (NMK), the Smyrna Plant in the United States, the second Aguascalientes Plant in Mexico (operational since November 2013), the Resende Plant in Brazil (operational since February 2014) and the COMPAS (Cooperation Manufacturing Plant Aguascalientes) manufacturing complex, a joint venture with Daimler México that started operations in December 2017, as well as the Sunderland Plant in the United Kingdom (operational since September 2018). At NMK, we were able to adopt the three-wet process with no shutdown of production lines, and as a result successfully shortened total production time. We also adopted dry paint booths at our Sunderland Plant in the United Kingdom. Previously, systems for recycling air expelled from booths for reuse needed dehumidifying processing to ensure that the air was at the humidity required. Dry paint booths can reuse air without dehumidifying it, reducing energy consumption to less than half its previous levels.

*1 Source: Nissan

Three-Wet Paint Process (Combined Primer and Topcoat Application)

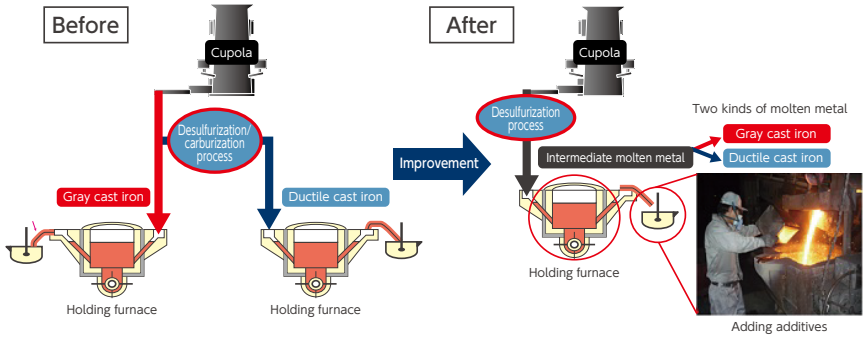


Oven process
Reduces CO_2 emissions by applying primer and topcoat (base coat and clear coat) layers in succession, combining two processes (① and ② in the upper diagram) into one (① in the lower diagram).

At the same time, in the powertrain production technology area, Nissan is working to reduce holding furnace energy usage in cast iron melting processes conducted by the Casting Division. Traditionally, in the melting process, two holding furnaces were used to store two types of cast iron melts with adjusted carbon and sulfur component contents. Now, intermediate molten metal with a low carbon and sulfur content is stored in one holding furnace. When transporting from the holding furnace to another process, the ingredients are adjusted by adding additive materials, creating two types of molten metal and making it possible to eliminate one holding furnace. As a

result, power consumption was reduced by approximately 3,600 MWh per year (CO_2 conversion: Approximately 1,700 tons per year; oil conversion amount: Approximately 900 kiloliters per year). This corresponds to about 11% of the power consumed in the melting processes conducted by the cast iron factory located onsite at the Tochigi Plant. In light of this achievement, Nissan won the Agency for Natural Resources and Energy Award in the Small Group Activities category at the Energy Conservation Grand Prize Awards for fiscal 2019, sponsored by The Energy Conservation Center, Japan (ECCJ).

Cast iron melting process



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 reduction compared to project costs. Making the value of carbon a key factor in internal evaluations lets us invest more efficiently and be more competitive. In Japan, we converted outdated facilities into cutting-edge high-efficiency facilities with investments to improve energy efficiency, including energy-saving roof insulation upgrades.

Our plants use finely controlled lighting and air conditioning for low-energy-use and low-energy-loss operations. We promote CO_2 emission reduction activities and introduced cutting-edge energy-conservation technology from Japan in our plants worldwide. Around the globe, our plants learn and share best practices with each other, while Nissan Energy Saving Collaboration (NESCO)*2 diagnoses energy loss at plants in regions where it is active and proposes new energy-saving countermeasures. These proposals amount to a potential reduction in CO_2 emissions of some 53,000 tons*3 in fiscal 2019, according to our calculations.

When sourcing energy, we consider the balance of CO_2 emissions for the entire company alongside renewable energy usage rate and cost, choosing suppliers best suited for achieving each goal. Through such activities, CO_2 emissions per vehicle produced in fiscal 2019 were brought down to approximately 0.51 tons, a reduction of 30.1% from the fiscal 2005 level.

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

Energy Input

(FY)

	Unit	2015	2016	2017	2018	2019
Total	MWh	9,683,528	10,189,082	9,532,840	9,252,737	8,481,499
By region						
Japan	MWh	4,115,353	4,497,562	4,084,912	3,700,532	3,560,316
North America	MWh	2,583,613	2,643,303	2,452,299	2,570,438	2,269,797
Europe	MWh	1,107,279	1,093,103	1,126,186	1,048,201	838,714
Other	MWh	1,877,283	1,955,115	1,869,443	1,933,566	1,812,673
By energy source						
Primary						
Natural gas	MWh	3,346,141	3,537,674	3,701,640	3,579,998	3,126,933
LPG	MWh	303,826	249,426	179,945	191,405	175,996
Coke	MWh	206,307	217,431	218,618	200,527	172,500
Heating oil	MWh	188,943	209,232	147,522	113,200	91,315
Gasoline	MWh	302,564	303,040	299,000	259,045	241,010
Diesel	MWh	55,099	57,488	48,259	53,074	23,044
Heavy oil	MWh	34,289	43,853	27,652	15,995	16,287

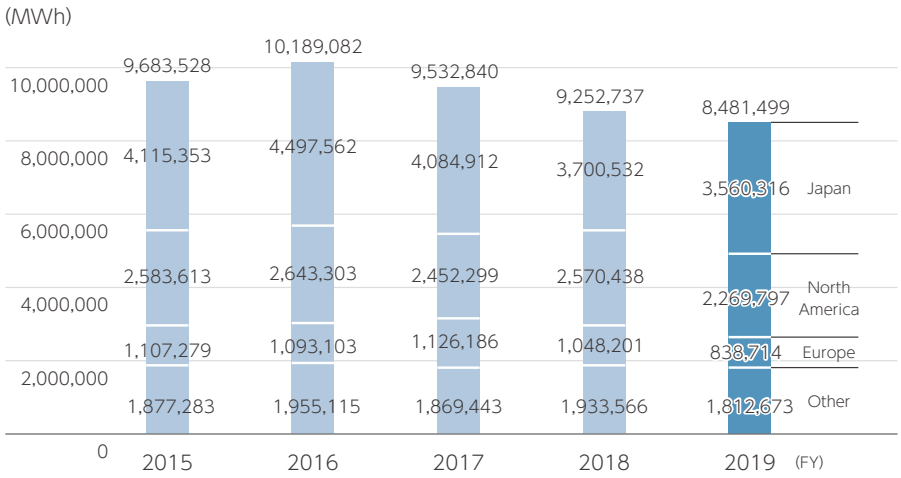
(FY)

	Unit	2015	2016	2017	2018	2019
External						
Electricity (purchased)	MWh	4,979,114	5,247,663	4,755,897	4,711,467	4,433,686
Renewable energy*1	MWh	141,076	157,226	133,212	135,574	153,773
Chilled water	MWh	12,116	12,919	6,661	7,487	7,025
Heated water	MWh	4,630	4,690	5,000	5,000	5,000
Steam	MWh	100,000	136,593	128,038	102,324	126,811
Internal						
Electricity (in-house generation)	MWh	9,423	11,847	14,609	13,214	12,164
Renewable energy*2	MWh	9,423	11,847	14,609	13,214	12,164
Total renewable energy	MWh	150,499	169,073	147,821	148,788	165,937

*1 Volume of renewable energy in electricity purchased by Nissan.
*2 Volume of renewable energy generated by Nissan at its facilities and consumed for its own purposes.

Energy Inputs and Energy Consumption

The total energy consumption of our global corporate activities during fiscal 2019 was about 8.481 million MWh, a 8% decrease from fiscal 2018. This reduction was primarily due to the promotion of energy-saving activities at facilities and a decline in total production volume. Production sites globally accounted for 7.486million MWh of total energy consumption.



Carbon Footprint of Corporate Activities

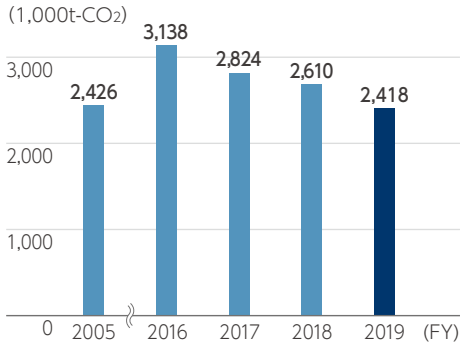
(FY)

	単位	2015	2016	2017	2018	2019
Scope 1	t-CO_2	926,790	963,661	912,476	889,444	765,370
Scope 2	t-CO_2	2,547,951	2,614,028	2,394,109	2,339,883	2,197,034
Scope 1+2	t-CO_2	3,474,741	3,577,689	3,306,584	3,229,327	2,962,403
Japan	t-CO_2	1,479,572	1,579,089	1,333,335	1,208,303	1,133,007
North America	t-CO_2	800,724	823,340	683,332	738,234	599,894
Europe	t-CO_2	208,088	176,285	228,998	221,692	182,973
Other	t-CO_2	986,359	998,976	1,060,920	1,061,098	1,047,213
Scope 3	t-CO_2	144,145,000	150,462,000	213,715,000	203,106,900	173,138,601

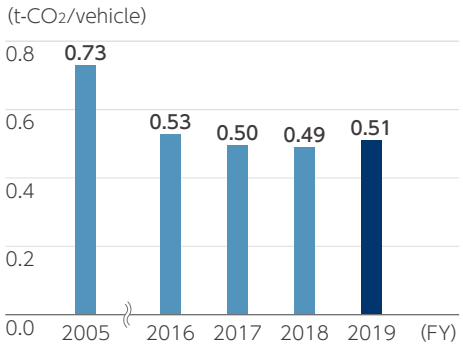
In fiscal 2019, the total of Scope 1 and 2 emissions was 2.962 million tons. Total CO_2 emissions from manufacturing processes were 2.408million tons (Scope 1 emissions: 0.670million tons; Scope 2 emissions: 1.738million tons).

GRI302-1 GRI302-4

Carbon Footprint of Manufacturing Activities



Manufacturing CO_2 per Vehicle Produced



In fiscal 2019, our manufacturing CO_2 emissions per vehicle produced were 0.51 tons, 30.1% less than fiscal 2005.

Promoting Renewable Energy

Nissan takes three approaches toward promoting the adoption and integration of renewable energy in line with the characteristics of each region: (1) generating our own power in company facilities; (2) sourcing energy with a higher proportion of renewables; and (3) leasing land, facilities and other assets to power companies.

As an example of the first approach, our Sunderland Plant in the United Kingdom introduced 10 wind turbines supplying up to 6.6 MW of power. The plant also has a 4.75-MW solar farm, installed in 2016, and together these renewable sources account for about 8% of the power it uses. At our Iwaki Plant, the guest hall for plant visitors is powered by solar energy. By storing surplus electricity in secondhand Nissan LEAF batteries, the plant both stabilizes the energy supply and uses resources more effectively. At the Huadu Plant of Dongfeng Nissan Passenger Vehicle (DFL-PV) in China, solar panels with a total capacity of 30 MW have been in operation since 2017, providing roughly 8% of the electricity used at the plant

Regarding the second approach, our first Aguascalientes Plant in Mexico actively uses energy generated from biomass gas and wind power and has achieved a renewable energy usage rate of 50% since 2013.

Finally, we leased approximately 350,000 square meters of unused land in Oita Prefecture for solar power generation in May 2013, and the roof of group company Nissan Kohki's Samukawa Plant was leased for the same purpose in January 2014.

Through these efforts, we have enhanced the renewable energy usage rate at our production plants as part of reducing CO_2 emissions. In fiscal 2019, our renewable energy usage rate reached 10%.

*In addition, we installed a solar farm (with an output of approximately 200 kW) at a plant in Spain.

More Efficient Logistics and Modal Shifts

In 2000, Nissan began sending chartered trucks for pickup and delivery of parts. This approach—adopted widely across the company, including at overseas manufacturing sites—has increased global operational efficiency. We work together with suppliers to optimize the frequency of deliveries and transport routes and improve packaging specifications for better loading ratios so fewer trucks are required. We are also pursuing a modal shift from trucks to rail for transport.

Through a 2014 expansion of this approach to include cooperative transport of production parts with other original equipment manufacturers (OEMs), in addition to complete vehicles and service parts, we are seeking further efficiency in this area. We work from the design stage of new vehicles to reduce transportation distances by sourcing necessary production components for plants through localization as much as possible.

Our engineers devise efficient packaging for the huge number of parts of different shapes and materials that go into automobiles. Through simultaneous-engineering logistics, we work from the design stage to create parts and develop new vehicles that enhance transportation efficiency, as well as reduce parts shipments per vehicle.

In container transport, we have taken a range of measures to improve container filling rates for parts transport, from 40-foot “high cube” containers to software simulations that reduce wasted container space.

We constantly review transport methods and are currently undertaking a modal shift to rail and maritime transport. Some 80% of completed vehicles in Japan are now transported by sea. Parts shipments to NMK from the Kanto area in and around Tokyo are nearly all conducted by rail and ship. The Japanese Ministry of Land, Infrastructure, Transport and Tourism (MLIT) has recognized Nissan as an outstanding enterprise for this modal shift to sea transport.

At Nissan sites outside Japan, transport methods are selected to best match the local geographical conditions. Transport of completed vehicles is increasingly shifting from truck to rail or ship, depending on the destination. In China, we are increasing the proportion of completed vehicles that are transported domestically by ship or rail.

Since 2010, we have also been promoting the use of energy-efficient vessels for sea shipments of our vehicles. Today, our fleet has grown to include seven energy-efficient car carriers.*1

As we expand our global logistics operations, we will continue to increase efficiency and effect a modal shift in transportation, targeting a 12% reduction in CO_2 emissions by fiscal 2022 compared to fiscal 2005 levels, as measured by the index of CO_2 emissions per vehicle.*2 In fiscal 2019, CO_2 emissions per global vehicle were approximately 0.38 tons—a reduction of about 11.5%.

*1 More information can be accessed on Nissan’ s energy-efficient car carriers’ page.
*2 Total emissions generated from transportation to Nissan manufacturing sites and retail outlets in Japan, North America, Europe and China divided by the total number of vehicles transported.

Data related to climate change (initiatives through corporate activities) is also available here.
>>> P.068

CO_2 Emissions from Logistics

(FY)

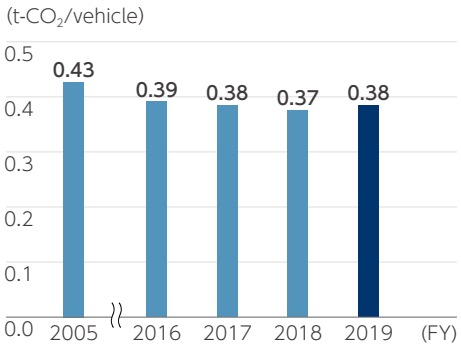
	Unit	2015	2016	2017	2018	2019
Total	t-CO_2	1,598,891	1,926,477	1,567,248	1,482,982	1,144,338
Inbound*	t-CO_2	797,034	809,088	739,610	762,314	582,957
Outbound*	t-CO_2	801,857	1,117,389	827,638	720,667	561,381

Sea	%	18.3	17.8	20.0	19.9	21.1
Road	%	65.7	62.1	64.6	60.3	64.1
Rail	%	5.4	5.6	7.0	6.7	5.9
Air	%	10.6	14.5	8.4	13.1	8.9

* "Inbound" includes parts procurement from suppliers and transportation of knockdown parts; "Outbound" includes transportation of complete vehicles and service parts.
* Value in 2016 were corrected after recalculation.

In fiscal 2019, CO_2 emissions from logistics were 1,144,338 tons, down approximately 23% from the previous fiscal year. Emissions from transportation of parts and completed vehicles declined due to air freight reduction and production volume reduction in China and North America decreasing our overall CO_2 emissions.

CO_2 Emissions per Vehicle Transported



In fiscal 2019, CO_2 emissions per vehicle transported were 0.38 tons.

Office Initiatives

We promote 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. In 2019, approximately 26,657 MWh of clean energy was supplied to five Japanese business locations.*
NESCO teams have also expanded the scope of their activities beyond production plants to contribute to reducing emissions in the Nissan Technical Center in Atsugi.
Our efforts go beyond just CO_2 management. We are pursuing other environmentally-friendly policies, such as improving our video and telephone conference facilities and using software to bring participants in multiple locations together when they need to share documents. This reduces the

number of business trips required worldwide, improves workplace efficiency and reduces costs.

* Global Headquarters, Sagamihara Parts Center, Nissan Education Center, Customer Service Center and Honmoku Wharf (all in Kanagawa Prefecture).

GRI103-1 GRI103-2

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 use of hazardous materials and other quality control issues. Furthermore, one performance index for Nissan in Japan is MLIT' s Comprehensive Assessment System for Built Environment Efficiency (CASBEE)*.

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

Global Headquarters gained a Built Environment Efficiency Rating of 5.6, the highest CASBEE rating for a new structure, making it one of Japan' s greenest office buildings. The building' s use of natural energy sources to reduce its energy usage and its CO_2 emissions were evaluated highly, as were its methods of water recycling and its significant reduction in waste produced.

* Comprehensive Assessment System for Built Environment Efficiency

Dealership Initiatives

Nissan promotes CO_2 management at dealerships with the aim of reducing total emissions per floor area by 1% each year. Our retail outlets also work continually to increase energy efficiency. Many have adopted high-efficiency air conditioning, insulation films, ceiling fans and LED lighting. During renovation work, some outlets have installed lighting systems that make use of natural daylight, as well as insulated roofs. In addition, to source electricity with low environmental load, we have broadened supply from PPS systems, including our own, to provide 123,115 MWh of power (equivalent to an annual reduction of some 1,045 tons in CO_2 emissions) to 760 retail outlets in the Kanto, Chubu, Tohoku, Kansai, Chugoku and Kyushu regions.

Since April 2000, we have run a unique environmental facility certification system based on ISO 14001 for dealerships called "Nissan Green Shop." Our environmental policy requires all dealerships in Japan to meet certain standards and undergo annual audits performed by our teams. The dedicated evaluation sheet has a total of 84 key performance indicators (KPIs) and is regularly revised to reflect the requirements of national legislation, local communities and the Nissan Green Program (NGP).

Solar panels installed on the roof of a Kanagawa Nissan dealership. Power from the panels is supplied to dealerships through the Nissan PPS system.

AIR QUALITY

GRI103-1 GRI103-2

Air Quality Policies and Philosophy

Nissan approaches air quality by focusing on two points: greener exhaust emissions and providing a pleasant in-cabin environment to customers. In this way, we will strive to consider ecosystems while pursuing mobility that provides more comfort and security to customers. According to the State of Global Air 2018 report issued by the U.S.-based Health Effects Institute (HEI), 95% of the world' s population currently lives in regions where particulate matter smaller than 2.5 μm (PM2.5) exceeds the 10 $\mu g/m^3$ basic level specified by World Health Organization (WHO) Air Quality Guidelines. Furthermore, the Organization for Economic Cooperation and Development (OECD) predicts that the global population will exceed 9 billion by 2050, with around 70% of people concentrated in cities, making air pollution in urban areas an even more pressing issue.
For an automaker, air pollution stands alongside climate change and congestion as an issue for cities in particular that must be remedied. Nissan is advancing its efforts to improve air quality with two approaches:

1. Promoting Zero-Emission Vehicles

Electric vehicles (EVs), such as the Nissan LEAF, which has cumulative global sales of more than 470,000 units as of March 2020, are an effective tool for reducing air pollution in urban areas. As a leader in this field, we are promoting zero-emission mobility and infrastructure construction in partnership with national and local governments, electric power companies and other industries.

2. Enhancing Internal Combustion Engines

We have proactively set voluntary standards and emission-reduction targets for conventional 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. We will continue our efforts to ensure cleaner exhaust emissions from internal combustion engines, which remain the most commonly used in the automotive market.

- Sentra CA (released in the United States 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)* certification.

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

Improving In-Cabin Air Quality

With autonomous drive technologies currently in development and projected to be in practical use from 2020, drivers are expected to spend more time in their vehicles, making it even more important for that space to be pleasant and safe. The Nissan Green Program 2022 (NGP2022) is calling for research and development not just to make exhaust emissions cleaner but also to improve in-cabin air quality as well.

As part of our continued efforts concerning volatile organic compounds (VOCs)* such as formaldehyde and toluene, Nissan is further reviewing and reducing materials for seats, door trim, floor carpet and other parts as well as adhesives. We voluntarily set more stringent standards than those of the Japanese government and automotive industry body regulations, and have applied them to all new vehicles introduced to the market from July 2007 onward.

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

Reducing VOC Emissions from Production

Nitrogen oxide (NOx), sulfur oxide (SOx) and VOCs are recognized as common forms of emissions created by vehicle manufacturing facilities. We are taking firm measures to ensure that management standards and systems for atmospheric emissions are thoroughly followed; and working to reduce both VOC exhaust volumes and the use of VOC-emitting substances to levels lower than required by national regulations.

We are actively working to increase the recovery of cleaning solvents and other chemicals in order to reduce the amounts of these substances emitted from our plants ahead of the implementation of new regulations in each country where we operate. Also, we are systematically introducing water-based paint lines that emit fewer VOCs and improving thinner-solvent recycling rates to reduce our use of VOC-emitting substances.

As one example, the water-based paint line in the Nissan Motor Kyushu Plant has VOC emissions of less than 20 grams per square meter of painted surface, which is top-class in the industry. These lines have also been adopted at two Aguascalientes plants in Mexico, the Resende Plant in Brazil, the Smyrna Plant in the United States, the Huadu Plant in China and other plants.

Additionally, we have adopted low-NOx burners as the heat source for the ovens and boiler equipment used in the car painting process and promote the switch from heavy oil and kerosene to fuels with low SOx emissions to reduce the emission and concentration of NOx and SOx.

GRI103-3 GRI305-7 GRI305-5

Air Quality: Achievements

Compliance with Emissions Regulations (Passenger Cars Only)

Nissan not only works to develop and promote zero emission electric vehicles (EVs) but continues to promote cleaner exhaust emissions from all of our engines. For example, the Qashqai released in Europe in October 2018 has a new fuel-efficient 1.3-liter turbo gasoline engine fitted with a particulate filter that meets the Euro 6d-Temp* emissions standard. In Japan, our e-POWER electrification technology has resulted in a significant lowering of fuel consumption while achieving 75% reductions in exhaust emissions from 2005 standards. As part of these efforts, our compliance with emissions regulations goes far beyond current legal requirements to meet more stringent specifications. Due to differences in regulations, there is no direct way to compare by region or country, but the table below shows the percentage of Nissan vehicles in each location produced to the strictest local standards.

* Euro 6d-Temp: All Euro 6 standards and the initial Real-Driving Emissions (RDE) limit for new car models.

Compliance with Emissions Regulations (By Region)

(FY)

		unit	2019
Japan	75% lower than 2005 standard and 50% lower than 2018 standard	%	92.1
Europe	Euro 6b/c	%	(TBD)*
U.S.	U-LEV/SULEV/ZEV	%	99.8
China	National 5	%	100

* Passenger cars and light commercial vehicles only.
To be updated in WEB site after EUR result is available.

Plant Emission Management

We thoroughly implement systems and control standards at our production plants to reduce the amount of air pollutants emitted during operation. Our air pollution control targets are more stringent than those mandated by the countries in which we operate.
In Japan, we have adopted strict measures for emissions of NOx and SOx pollutants from our factories, reducing the amount of these emissions to one quarter of the levels emitted in the 1970s. 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.

Lower VOC Emissions

Volatile organic compounds (VOCs), which readily evaporate to become gaseous in the atmosphere, account for approximately 90% of the chemicals released as the result of our vehicle production processes. Lowering VOC emissions is a challenge that we are working to address. We strive to increase our recovery of cleaning solvents and other chemicals in order to limit the amounts of these substances emitted from our plants ahead of 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 Nissan Motor Kyushu as well as at two plants in Aguascalientes in Mexico, the Resende Plant in Brazil, the Smyrna Plant in the United States, the Huadu Plant in China and the Sunderland Plant in the United Kingdom. We achieved a reduction of 27.2% in fiscal 2019 in VOC emissions per painted surface area compared with fiscal 2010 levels.

For more information on Air Quality.
>>> P.074

RESOURCE DEPENDENCY

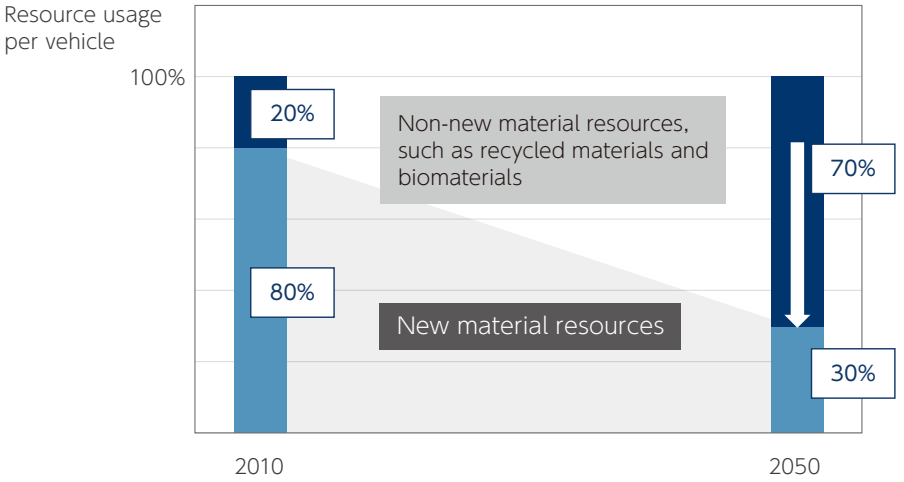
GRI103-1 GRI103-2

Resource Dependency Policies and Philosophy

With the world' s population forecast to exceed 9 billion by 2050, demand for natural resources like minerals and fossil fuels is set to rise. This makes it even more important to maximize the value obtained from these resources. The Sustainable Development Goals (SDGs) adopted by the United Nations in 2015 also emphasize the importance of managing resources sustainably and using them efficiently.

Automobiles are made of many components, incorporating a diverse range of resources. The combination of these resources creates new value. In addition to using resources as efficiently as possible, Nissan has increased its resource diversification and improved the proportion of renewable resources and recycled materials among them. Giving due consideration to ecosystems, we must become more competitive as we pursue green growth. Working toward the long-term vision of reducing dependency on new materials by 70% by 2050, we are striving to minimize our use of natural resources in order to maintain our new resource usage at 2010 levels.

Long-Term Vision for Reducing Resource Dependency



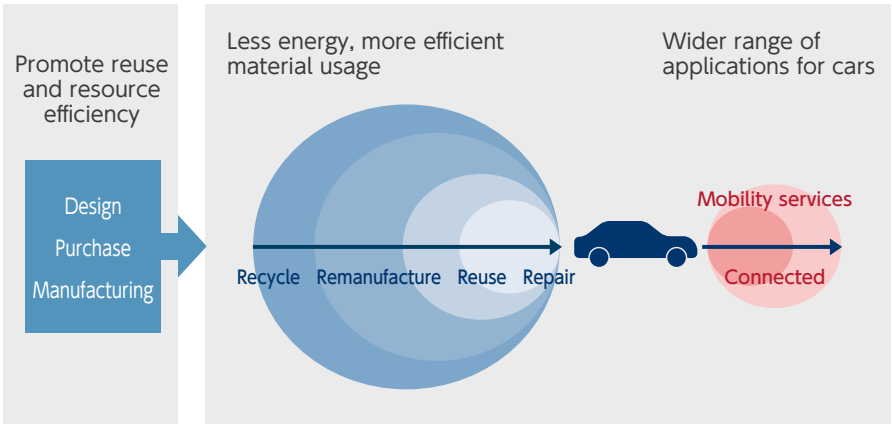
GRI103-2 GRI103-3

Resource Dependency Management

In order to use the Earth' s precious and limited resources efficiently, the environmental impact when extracting these resources must be kept to a minimum. At the same time, waste generated during vehicle production and scrap from end-of-life parts must be recycled as extensively as possible without compromising quality, producing materials that can be used in the same types of products. Based on this approach, known as closed-loop

recycling, we have focused our efforts on recycling steel, aluminum and resin—three kinds of material which account for a large proportion of vehicle content yet also have a major impact on the environment.
As part of the Nissan Green Program 2022 (NGP2022), Nissan is developing systems for using resources efficiently and sustainably across their entire lifecycle, and has adopted the concept of the "Circular Economy" to maximize the value it provides to customers and society. In an attempt to use resources efficiently with less energy, we will promote the use of recycled materials and recycling end-of-life vehicles, and strive to incorporate reusable resources in our activities at the design, purchasing and manufacturing stages. We are using fewer resources overall, both through appropriate use of chemical substances and making vehicles more lightweight. We will continue to promote the efficient use of resources with further reduced energy requirements and the expanded use of repaired and remanufactured parts as well as the secondary use of electric vehicle (EV) batteries in the vehicle use stage, and foster the development of biomaterials and dieless forming technology for practical use. We will also increase the value cars provide to society and ensure that cars can be put to best use by promoting electrification and autonomous drive in our products, pursuing connectedness and providing mobility services such as ride sharing.

Nissan' s Circular Economy Concept



GRI103-3 GRI301-2 GRI301-3

Resource Dependency: Achievements

Reducing Dependence on Newly Extracted Resources to 70%

Demand for mineral and fossil resources is rising rapidly with the growth of emerging economies. According to forecasts, if growth in extraction volumes continues, all currently known mineral resources will have been extracted by 2050. There are some existing mining sites and others under exploration that are located in areas with vulnerable local ecosystems, generating concern about the environmental effects of topsoil excavation, deforestation and wastewater.

To address these issues, Nissan has implemented a policy of minimizing the use of newly extracted natural resources and maximizing the use of recyclable materials from the early development stage while also making structural improvements to facilitate recycling. We are also reducing the use of resources in the manufacturing process and making more efficient use of resources.

In the Nissan Green Program 2022 (NGP2022), our goal is to cut the use of newly extracted resources by 30% per vehicle in fiscal 2022. We intend to increase the use of recycled materials in our vehicles on a global scale, including Japan, Europe and North America, in cooperation with our suppliers.

Initiatives to Expand Use of Recycled Materials (Ferrous and Nonferrous Metals)

In 2018, ferrous metals accounted for 61% of the materials used in our automobiles by weight. Nonferrous metals made up another 15% and resins 14%, with miscellaneous materials making up the final 10%. To further reduce our use of natural resources, we are advancing initiatives to expand the use of recycled materials in each of these categories.

We are taking steps to reduce the steel and aluminum scrap left over in the manufacturing process, and working globally with business partners to collect and reuse this scrap as material for new vehicles through closed-loop recycling initiatives. For example, we use electric-furnace sheet steel made from steel scraps in the Rogue, Murano and other vehicles produced in North America. End-of-life aluminum wheel rims are also collected for recycling to be used in new wheel and chassis components. In fiscal 2019, we collected about 3,000 tons of used wheel rims.

Initiatives to Expand Use of Recycled Materials (Resins)

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

As a closed-loop recycling initiative, we are collecting finished bumper scrap generated at our plants and sending it to our Oppama Plant, where we process it by removing the paint film and recycling it. These recycled resins have been given new life as bumpers in the Nissan LEAF and many other new vehicles. This initiative was expanded to Dongfeng Motor Co. (DFL), our

Research on optimization of ASR recovered resin recycling process. Left photo is ASR, right photo is resin recovered from ASR

joint venture in China, where they have been used to produce replacement bumpers since 2014.
Additionally, exchanged bumpers collected from dealerships are being recycled as materials used in under covers and for other components. An enhanced bumper return program allowed us to collect and recycle about 122,000 bumpers in fiscal 2019, representing 67.9% of bumpers removed at Japanese dealerships.
Furthermore, 30% of the automotive shredder residue (ASR) processed at dedicated processing plants is made up of resins. In order to use these resins in automobiles, we are running a number of R&D projects on topics like optimizing the recycling process for resins recovered from ASR, liquidation of auto waste plastic and recycling polypropylene with microbes.*

*These R&D projects are undertaken as part of our recycling optimization support business using surplus money from recycling fees deposited for three specified components (refrigerant, airbags, ASR) based on Japan's End-of-Life Vehicle Recycling Law.

End-of-Life Vehicle (ELV) Recycling

Nissan considers the three Rs—reduce, reuse and recycle—from the design stage for new vehicles. Since fiscal 2005, all new models launched in the Japanese and European markets have achieved a 95% or greater recyclability rate.*1
We have also joined forces with other automotive companies to promote the recycling of end-of-life vehicles (ELVs*2) 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 2006. In fiscal 2019, we achieved a final recovery ratio for ELVs of 99.2%*3 in Japan, greatly exceeding the target effective recycling rate of 95% set by the Japanese government.
ELV processing consists of four phases. First, Nissan ELVs entering the dismantling process are recycled, including flat steel, cast aluminum, bumpers, interior plastic parts, wire harnesses and precious rare earth metals. Second, specific items like lithium-ion batteries are collected individually and directed to a dedicated recycling process. Third, residues from the dismantling process are crushed and the metallic portions recovered. Fourth, the resulting ASR is turned into recycled materials.
Since 2004, Nissan and 12 other Japanese auto manufacturers have supported ASR recycling facilities, as called for in Japan's End-of-Life Vehicle Recycling Law, as an integral part of a system to recycle ASR effectively, smoothly and efficiently. Nissan is taking an important role in this joint undertaking.
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, the Japan Automobile Manufacturers Association, Inc. established a common scheme for recovering used lithium-ion batteries along with a system for processing these batteries appropriately, and put both into operation in fiscal 2018.

*1. Calculated based on 1998 Japan Automobile Manufacturers Association definition and calculation guidelines (in Japan) and ISO 22628 (in Europe).
*2. ELV is an acronym for end-of-life vehicle.
*3. Based on Nissan research

Developing Biomaterials

Seat coverings made from biomaterials in the new Nissan LEAF.

Nissan is promoting technical research to replace plastics and other resin materials used in automobiles with biomaterials derived from plants. NGP2022 contains concrete goals for biomaterials development, and these materials are already being used in cars. For example, the coverings on the seats in the new Nissan LEAF are made using biomaterials.

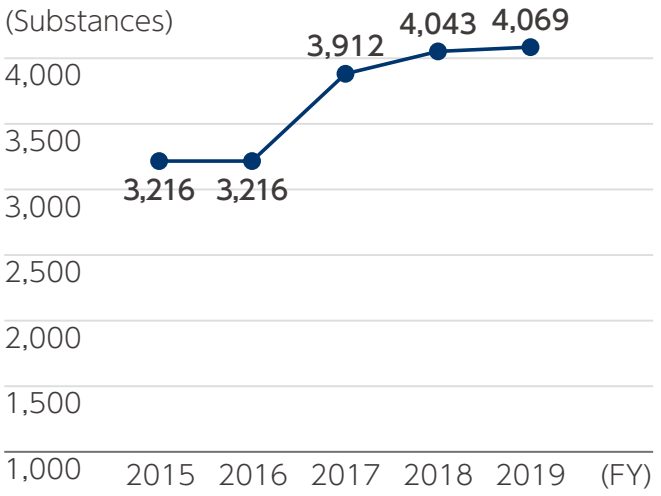
GRI305-7

Proper Use of Regulated Chemical Substances

Nissan revised its standard for the assessment of hazards and risks in the Renault-Nissan Alliance, actively applying restrictions to substances more stringent than existing regulations in areas of growing concern around the world. As a result, the number of substances covered by the Nissan Engineering Standard in fiscal 2019 rose to 4,069. These steps are thought to be necessary for future efforts in the repair, reuse, remanufacture and recycle loop for resources.

* Please click below for further details related to our governance system for chemical substances.
>>> P.055

Defined Chemical Substance



Expansion of Remanufactured Parts

Parts with the potential for recycling include those reclaimed from end-of-life vehicles, as well as those replaced during repairs. In Japan, we collect and thoroughly check the quality of these secondhand parts. Those that receive a passing grade are sold through our retail outlets as Nissan Green Parts. We sell these parts in two categories: remanufactured parts, which are disassembled and have components replaced as needed, and reusable parts, which are cleaned and tested for quality before sale.
In NGP2022, we are enhancing the deployment of Nissan Green Parts in

Alternator

Air conditioning compressor

Starter motor

Japan, and we' re also strengthening management to deploy similar kinds of activities in Europe and North America, aiming for twice the parts coverage in 2022 compared to 2016. This initiative provides customers who seek to use cars for a long period of time with the new option of using remanufactured parts.

Joint Venture to Promote Second-Life Use for Batteries

Lithium-ion batteries used in Nissan' s electric vehicles (EVs) retain capacity well beyond the useful life of the vehicles themselves. The "4R" business model—which reuses, refabricates, resells and recycles lithium-ion batteries—allows for their effective use as energy storage solutions in a range of applications, thus creating a much more efficient energy cycle of battery use.

As the EV market expands, we anticipate a need to utilize reusable lithium-ion batteries more effectively. In 2010, we launched 4R Energy Corp., a joint venture with Sumitomo Corp., that is engaged in establishing EV battery reuse and refabrication technologies. With the establishment of these technologies and an increase in the number of used batteries collected, in March 2018, operations commenced at Japan' s first base and plant for the reuse and refabrication of used lithium ion-batteries located in the town of Namie, Fukushima Prefecture.

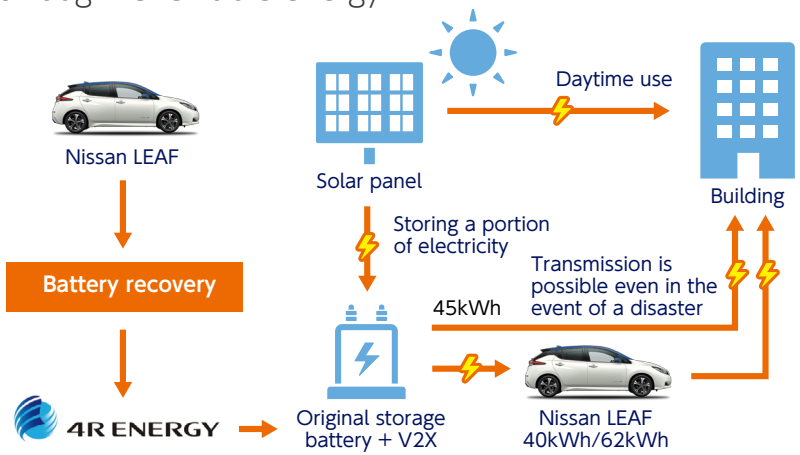
4R Energy is actively engaged in the development and production of various battery storage systems built with used Nissan LEAF batteries at the Namie facility. One example of these efforts is the development of stationary power storage systems that reuse 40 kWh batteries used in the Nissan LEAF for the purpose of enhancing resiliency. Since September 2019, this reuse stationary power storage system has been used in trials for procuring electricity using renewable energy at ten 7-11 convenience stores in Kanagawa Prefecture.

Additionally, in conjunction with IKS Japan Co., Ltd., we are developing new models with vehicle-to-everything (V2X) functions that can also utilize electric power from EVs, sales of which are scheduled to launch by the end of fiscal 2020.

At the same time, 4R Energy acquired the world' s first UL1974*1 certification in June 2019, which is an international evaluation standard for evaluating repurposing batteries, and 4R Energy has been certified by a third-

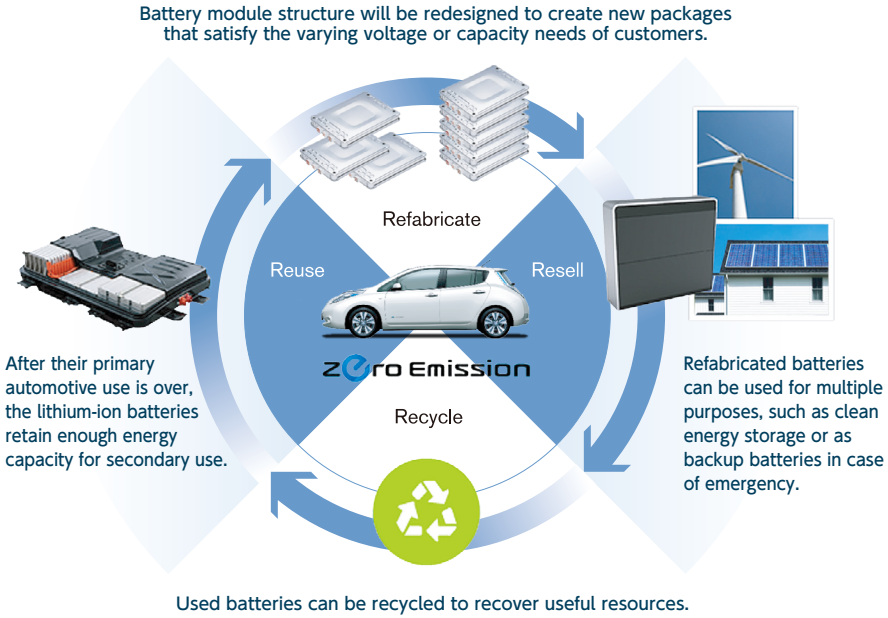
party organization for reusage and refabricating processes and product manufacturing with an emphasis on safety. Furthermore, in recognition of these activities, in October 2019 4R Energy was presented with the Frost & Sullivan*2 "2019 Strategy Innovation and Leadership Award," and in March 2020, in conjunction with Nissan, 4R Energy and Nissan won the "Sixth Annual Japan Resilience Award 2020,' sponsored by the Association for Resilience Japan*3.
We are extensively involved with 4R activities globally as well.

Overview of proof of concept for procuring electricity through renewable energy



*1. The UL1974 Standard for Evaluation for Repurposing Batteries defines the process for determining and classifying the suitability of usage when battery packs, modules or cells used to drive EVs have finished their intended period of use. Evaluating reused batteries in accordance with this process enables the provision of reused batteries that are safe and give a clear understanding of remaining capacity to meet a variety of demands.
*2. Frost & Sullivan provides research and consulting services in 80 countries and over 300 major markets through a global network of more than 40 locations.
*3. In light of the results of the National Resilience Minister' s Private Advisory Committee "National Resilience Roundtable," to ensure the "Fundamental Plan for National Resilience" is executed smoothly, the Council aims to build a resilient nation with cooperation among industry, academia, government and the private sector.

4R Concept



Reducing Use of Scarce Resources

Rare earth elements are scarce resources that are necessary components of EV and hybrid electric vehicle (HEV) motors. Reducing their usage is important because of procurement challenges, as rare earth elements are unevenly distributed around the globe, and the shifting balance of supply and demand leads to price fluctuations.
Nissan is expanding its use of an electric motor developed in 2012 that requires 40% less dysprosium (Dy) compared to conventional EV motors. The motor was first adopted in the Nissan LEAF, and reduced-dysprosium motors are now seeing increased use in hybrid vehicles as well. The 2016 Note e-POWER achieves a 70% reduction in Dy in its motor magnets, and these were also adopted for the new Nissan LEAF in 2017 and the Serena e-POWER in 2018. We are conducting technical research on further reductions in the future.

As a new initiative, Nissan is also promoting the development of rare earth metal recovery technologies from drive motor magnets. Up to now, in order to recycle magnets used in motors, multiple processes including manual disassembly and removal of the magnets have been required, making economic efficiency an issue. Nissan and Waseda University collaborated to establish technologies for recovering rare earth metals in highly pure states through direct dissolution using borate as a flux, eliminating the need to dismantle the motor rotors. Going forward, we will conduct trial testing aimed at practical implementation.
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 rare earth metals used to reuse after use, that utilize resources efficiently and sustainably.

GRI103-3

Resource Dependency: Achievements in Waste Reduction

Thorough Measures for Waste Materials

Nissan actively promotes measures based on the 3R approach in its production processes whenever possible, striving to minimize the waste generated and maximize recycling efficiency by thoroughly sorting waste.
At the end of fiscal 2010, we achieved a 100% recovery rate at all of our production sites in Japan, including five manufacturing plants, two operation centers and five affiliates. Overseas, we have reached 100% rates at plants in Mexico and elsewhere. We are striving to bring rates to industry-leading levels in each global region.
We have been making great efforts to reduce the number of wooden pallets and cardboard boxes used in import and export parts shipping. We began replacing them with units made from steel more than 30 years ago, and we rolled out plastic substitutes over 20 years ago that are foldable and can be reused. We have also been working with our Alliance partner Renault to expand use of globally standardized, returnable containers. Through design activities carried out concurrently with logistics operations, we have recently considered ways to optimize the shape of parts from the development stage, thus helping to reduce the packaging materials required.
Through such efforts, we plan to reduce waste from our production factories by 2% annually in Japan and by 1% annually worldwide—as compared to business as usual (BAU), that is, waste levels expected if no special steps had been taken.

GRI306-2

Waste

Waste generated globally in fiscal 2019 amounted to 188,556 tons, a slight decrease from 206,645 tons in fiscal 2018.
Waste generated globally from production sites in fiscal 2019 was 184,573 tons.

(FY)

	単位	2015	2016	2017	2018	2019
Total	ton	159,345	158,939	152,674	206,645	188,556
By region						
Japan	ton	63,630	61,115	61,327	69,829	63,315
North America	ton	49,129	45,459	35,177	64,514	57,762
Europe	ton	37,204	41,110	45,268	49,662	48,187
Other	ton	9,382	11,255	10,903	22,639	19,291
By treatment method						
Waste for disposal	ton	11,355	8,707	8,041	7,231	6,414
Recycled	ton	147,990	150,231	144,633	199,414	182,141

* For more information on Resource Dependency (Facility Waste).
>>> P.077

WATER SCARCITY

GRI103-1

Policies and Philosophy for Water Resource Management

Demand for water is expected to continue to increase globally, driven by rising populations and economic development. With rain patterns also changing due to extreme weather events, the stability of water supplies is likely to become a more pressing social concern with every passing year. Forecasts suggest that the world will face a 40% shortfall in water supplies by 2030, and extreme weather events, natural disasters, water crises and other water-related risks rank highly in the annual Global Risks Report issued by the World Economic Forum. “Clean Water and Sanitation” is also one of the Sustainable Development Goals (SDGs) adopted by the United Nations in 2015. The 1.5℃ Special Report* released by the Intergovernmental Panel on Climate Change (IPCC) in 2018 reported that risks and effects from extreme weather events, such as heavy rain and drought, would increase if temperatures rose by 1.5℃, and that such risks and effects would be even more severe and become widespread if temperatures rose by 2℃. Water resource management to mitigate water shortages, flooding and many other challenges is a key factor in promoting sustainable development.

Globally, the agricultural sector accounts for the largest share of water consumption at roughly 70%. The industrial sector comes second, consuming around 20% of water globally, and the municipal sector accounts for the remaining 10%. Automakers are not considered to face particularly high water risks within the industrial sector. However, we believe that reducing dependence on water resources is important to being a sustainable company and are taking steps to improve water quality management and reduce water usage across our production sites.

* Full title: An IPCC Special Report on the Impacts of Global Warming of 1.5℃ Above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty.

GRI103-2

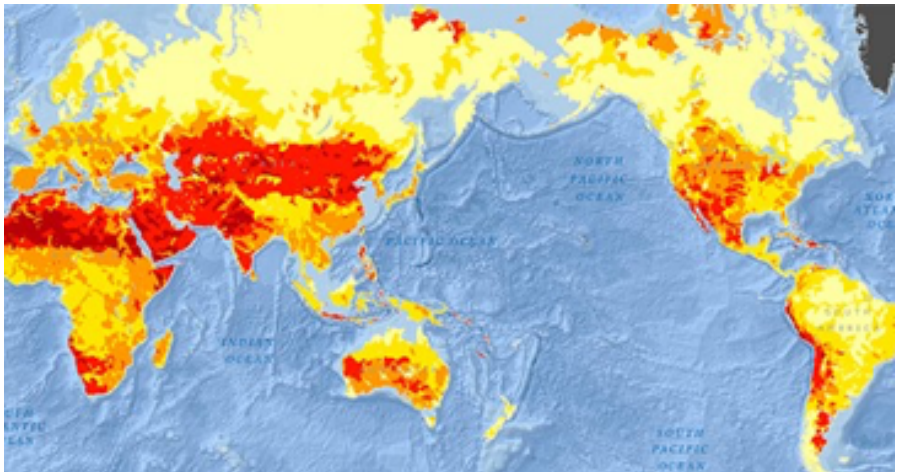
Water Resource Management

Nissan manages wastewater quality to even stricter standards than required by local regulations at each of its production sites. At sites in Japan, we have further strengthened measures against water pollution by attaching water quality sensors to the discharge points of our wastewater treatment facilities to automatically suspend water discharge if water quality problems are detected. Processing recycled water using reverse osmosis (RO) systems has allowed some sites to achieve zero wastewater discharge.

Under the Nissan Green Program 2022 (NGP2022), we aim to reduce water intake at global production sites by 21% by 2022. In order to achieve this, we are taking steps to reduce water usage, such as sharing best practices among plants, investing in equipment and expanding the Nissan Energy Saving Collaboration (NESCO) team into “r NESCO” (r[esource] NESCO).

Additionally, since the water resource situation varies considerably from region to region, we assess water risk using our own methods for each of our production sites throughout the world. At sites where a high level of risk is found, we prioritize measures to expand dedicated water sources by building reservoirs to collect rainwater, improving wastewater recycling efficiency and reducing external water intake.

Global Water Risks



Created based on the World Resources Institute’s Aqueduct Water Risk Atlas (aqueduct.wri.org).

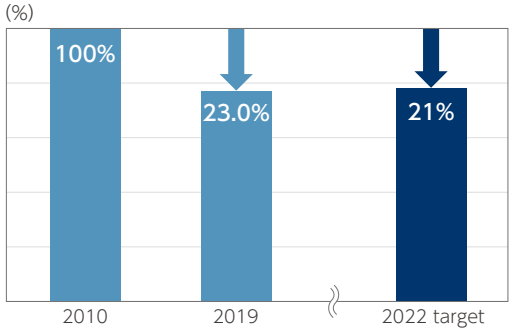
GRI103-2 GRI103-3 GRI306-1

Water Resource Achievements

Water Use Reduction

Plants producing Nissan vehicles and parts are located throughout the world, and they all use water as part of the production process. Nissan strives to manage and reduce water usage at every plant, aiming to achieve a 21% reduction per vehicle produced by fiscal 2022 from 2010 levels. As of fiscal 2019, we had already reduced water usage by 23%, when compared to 2010. To help achieve this goal, 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. Our efforts at the Chennai Plant, in particular, were recognized as an excellent example of water resource management by the Confederation of Indian Industry (CII). At Nissan North America (NNA), plants are competing among themselves to find new ideas for reducing water usage, such as by filtering wastewater from pre-painting processes and thus improving water quality.
We are also working to reduce water usage at Nissan' s Global Headquarters in Yokohama, Japan by processing rainwater and wastewater from kitchens and other internal sources to be reused for flushing toilets and watering some plants.

Water Usage per Vehicle Produced (Global)



Innovative Car Wash Technique Introduced at Service Centers in India

Since 2014, the service centers of Nissan Motor India (NMIPL) have offered customers car washes that utilize an advanced foam washing technique.
A traditional car wash requires about 160 liters of water for one car, but NMIPL' s new service cuts consumption to approximately 90 liters—a 45% reduction in water use. Three years after the introduction of the foam wash technique, the total amount of water saved across Nissan service centers in India reached roughly 6,100 kiloliters—equivalent to the daily water consumption of 25,000 Indian households.
Along with reducing water consumption, the foam wash service is environmentally friendly due to the non-use of hard chemicals, shortens washing time, and even enhances the gloss of cars by roughly 40%.

GRI303-1

Water Input for Corporate Activities

In fiscal 2019, water input for corporate activities was 23,714 km³, a 10% decrease compared with the fiscal 2018 level. Water input from production sites was 22,613,338 m³.

(FY)

	Unit	2015	2016	2017	2018	2019
Total	1,000m³	28,570	29,118	26,197	26,420	23,714
Japan	1,000m³	14,990	15,563	13,115	13,022	11,932
North America	1,000m³	5,427	5,483	4,905	4,930	4,776
Europe	1,000m³	2,330	2,299	2,155	2,093	1,798
Other	1,000m³	5,823	5,774	6,023	6,376	5,207

Cleaner Effluent Through Wastewater Treatment

Nissan thoroughly processes wastewater at its various plants. Wastewater from two Nissan plants in Aguascalientes, Mexico, is used to maintain landscaping on the sites, with no offsite discharge.
We also are strengthening water pollution prevention measures in our Japanese plants. In preparation for unexpected occurrences, such as the discharge of oil, we have attached water quality sensors to the discharge points of wastewater treatment facilities. Discharge of water outside the grounds is automatically suspended if water quality problems are detected.

(FY)

	Unit	2015	2016	2017	2018	2019
Total	1,000m³	20,680	20,516	17,410	17,345	15,512
Japan	1,000m³	12,976	12,681	10,376	10,472	9,438
North America	1,000m³	3,916	4,028	3,382	3,190	2,752
Europe	1,000m³	1,740	1,767	1,564	1,539	1,528
Other	1,000m³	2,048	2,040	2,088	2,143	1,794

Quality

Chemical oxygen demand (COD) Japan only	kg	28,042	29,730	26,451	21,149	18,795

* Click here for more information on Water Resource Management. >>> P.079

STRENGTHENING OUR BUSINESS FOUNDATIONS TO ADDRESS ENVIRONMENTAL ISSUES

GRI103-2 GRI103-3

Environmental Governance

For more information on our Environmental Governance >>> P.006

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 (plan, do, check, act) cycle, we are improving our environmental performance worldwide. The coordinated goals set by the environmental management officer for the Company-wide 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 during 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 production plants outside Japan 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.

Nissan' s Voluntary Operational Standards

Stricter controls on environment-impacting substances are being implemented in countries around the world. Examples include the European ELV Directive, the European Union' s Registration, Evaluation, Authorization 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 has launched a voluntary program to help minimize the potential

release of formaldehyde, toluene and other volatile organic compounds (VOCs)* 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 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 the Japan Automobile Manufacturers Association 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 United States). We also comply with Classification, Labeling and Packaging of Substances and Mixtures regulations.

* VOCs: Organic chemicals that readily evaporate and become gaseous in the atmosphere.

GRI306-3 GRI307-1

Sanctions and Government Guidance at Nissan Production Facilities

During fiscal 2019, 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

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 CO_2 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 implement a curriculum to educate new employees during orientation and organize seminars for middle managers to deepen their understanding of NGP2022 and environmental issues surrounding the auto industry. We also hold "town hall" meetings to promote dialogue between executives and employees. Employees can stay up to date on our latest environmental initiatives through features in the intranet, internal newsletters and in-house video broadcasts. In addition, all employees receive an Environmental Policy Card with a pledge to pursue personal environmental activities, which they carry at all times.

Overseas, we share information and provide 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 has created 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 CO_2 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 "commitment and target" 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.

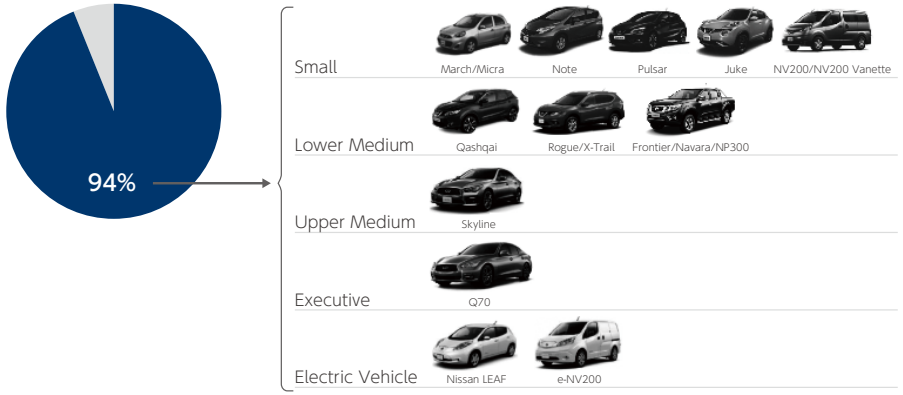
Lifecycle Assessment to Reduce Environmental Impact

Nissan ensures solid environmental management policy by routinely assigning personnel to conduct risk management and having supervisors confirm their suitability and periodically conducting inspections. We also identify potential risks by conducting lifecycle assessments (LCAs). The LCA method is used to quantitatively evaluate and comprehensively assess environmental impact, not just while vehicles are in use, but at all stages of their lifecycle, 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 (ongoing as of November 2019). The latter certification is based on ISO 14040/14044 standards and validates the environmental impact calculations in our product LCAs.
We will use the above-certified calculations 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 lifecycle of Nissan vehicles.

Global Top Selling Model's Lifecycle Improvements

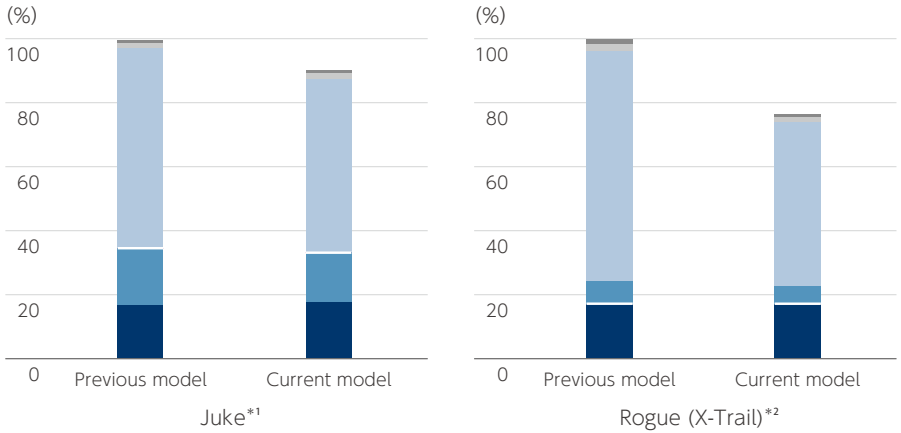
We have been expanding the application of the LCA method and enhancing the understanding of the environmental impact of our products in quantitative terms, especially our best-selling models worldwide. LCAs have been conducted for over 90% of these models.

LCA Conducted Product Ratio in Sales Volume (EU Market)



With the Altima and Rogue, for example, improvements in internal combustion engine efficiency and vehicle weight reduction have led to both enhanced safety features and lower CO_2 emissions.

Lifecycle CO_2 Equivalent Emissions (CO_2, CH_4, N_2O, etc.)

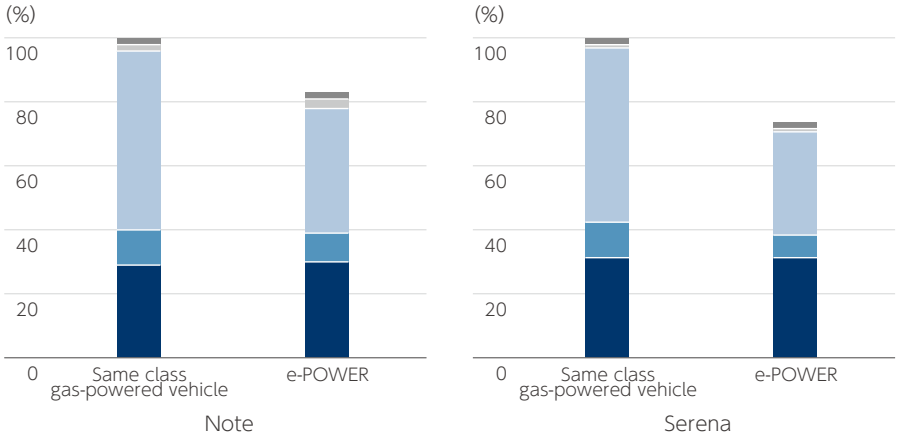


*1 Production in EU, 150,000 km driven in EU (basis for comparison).
*2 Production in EU, 150,000 km driven in EU (basis for comparison).

LCA Comparison for e-POWER Models

Nissan introduced its new e-POWER powertrain in 2016, marking another significant milestone in the electrification strategy with lifecycle emission improvements.
Compared to their gasoline-powered counterpart models, the Note e-POWER and Serena e-POWER have achieved an 18%—27% reduction in CO_2 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 CO_2 emissions through additional weight reductions and the optimization of e-POWER energy management.

Lifecycle CO_2 Equivalent Emissions (CO_2, CH_4, N_2O, etc.)

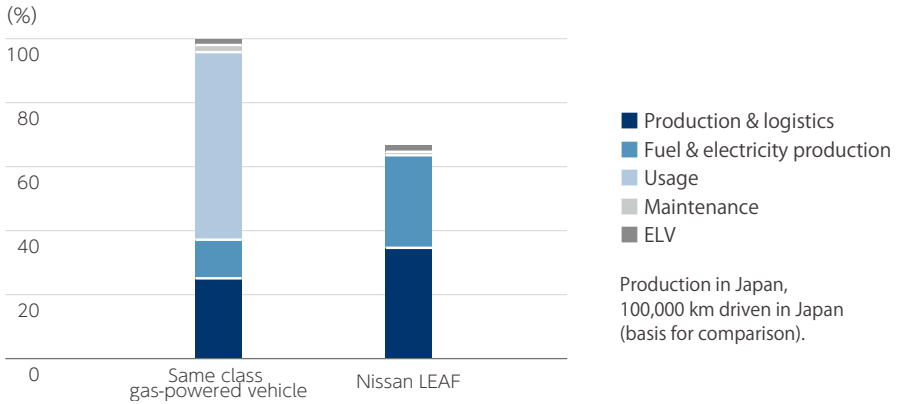


Production in Japan, 100,000 km driven in Japan (basis for comparison).

LCA Comparison for the New Nissan LEAF

Compared to conventional vehicles of the same class in Japan, the Nissan LEAF results in approximately 32% lower CO_2 emissions during its lifecycle.
We are making efforts to reduce CO_2 emissions during EV production by improving the yield ratio of materials, using more efficient manufacturing processes and increasing the use of recycled materials.
We are also continuing to pursue technology development for electric powertrains, power savings on ancillary devices and the use of renewable energy to reduce CO_2 emissions over the entire lifecycle of EVs.
Also, at the end-of-life stage, used batteries can be utilized for energy storage in various ways, contributing to reduced CO_2 emissions in society.

Lifecycle CO_2 Equivalent Emissions (CO_2, CH_4, N_2O, etc.)

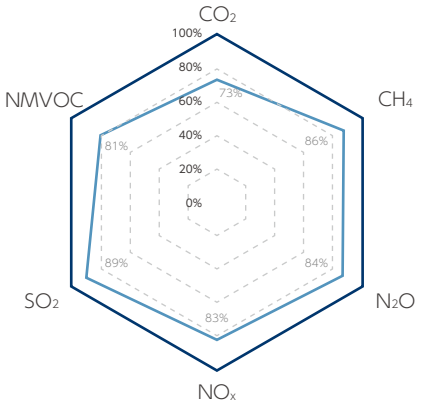


Production in Japan,
100,000 km driven in Japan
(basis for comparison).

Lifecycle 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%—27% emission reductions for all targeted chemical substances and achieving environmental benefits throughout its lifecycle.

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



Production in Japan,
100,000 km driven in Japan.

GRI308-1 GRI308-2

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. Additionally, in May 2019, in order to strengthen management of environment-impacting substances, we added requirements dealing with supplier self-diagnosis of environment-impacting substance management and related topics, and asked all suppliers to follow them.

•We also participate in the supply-chain program of CDP (previously known as the Carbon Disclosure Project), an international nonprofit, through which we request information on climate change and water from suppliers and conduct comprehensive performance reviews. During fiscal 2019, we asked our large contract suppliers to take part in the supply-chain program to provide responses on their environmental activities. 83% of them participated in the CDP program on climate change data and 77% 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 CO_2 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.

China' s environmental regulations have become more stringent in recent years, forcing many companies to discontinue their business, temporarily suspend operations or to relocate their factories. Under the circumstances, we conducted an independent survey in fiscal 2019 of suppliers' compliance with environmental regulations. The results will be utilized to build a more resilient supply chain.

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 2019, the system has certified approximately 2,700 dealerships of 156 dealers, including parts dealers, as Nissan Green Shops.

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 100,000 students had participated as of March 2020. 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 electric vehicle 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

・Collaboration with the World Wide Fund for Nature Japan (WWF Japan) on climate change mitigation
Support for WWF Japan' s climate & energy project
Continue participation in WWF' s worldwide Earth Hour environmental enlightenment campaign for greenhouse gas emission reduction

・Collaboration with Conservation International on protection of a critical watershed area
Support for a forest restoration project through a Ridge to Reef approach in Bali, Indonesia.
Create jobs and build capacity* by developing community-based environmental conservation projects.

* Build and improve capacities that groups, organizations and society need to achieve their goals

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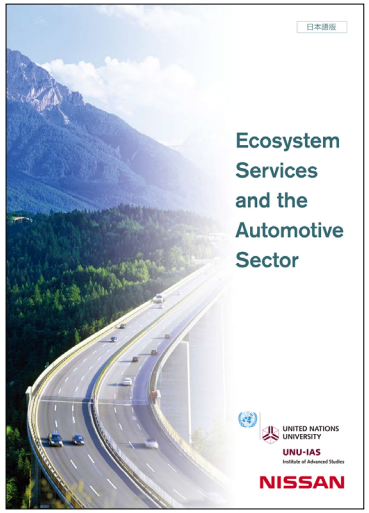
Priority Issues for Automobile Manufacturers Regarding the Protection of Air, Water, Soil and Biodiversity



The United Nations Millennium Ecosystem Assessment report issued in 2005 concluded that ecosystem services had degraded over the past 50 years more rapidly and extensively than in any comparable period in history. Humankind depends on a number of ecosystem services, including the provision of food and fresh water, climate regulation and protection from natural disasters. The automotive industry must recognize both its impact on ecosystems and its dependence on these services. Companies today face the pressing need to balance environmental preservation and economic progress as they pursue their business activities.
Using methods identified in the Corporate Ecosystem Services Review, we have evaluated the value chain from the extraction of material resources to vehicle production and operation. We have identified three response priority areas as an automobile manufacturer: energy sourcing, mineral material sourcing and water usage. We published a report titled "Ecosystem Services and the Automotive Sector"*2 in 2010 collating the outcome of this work. Our calculations in June 2013 showed that more than 20 times as much water was used upstream in the supply chain than by Nissan itself.
We are following up by re-evaluating and further developing our existing environmental initiatives and ecosystem conservation efforts from the viewpoint of business risks and opportunities.

*1 Developed by the World Resources Institute in cooperation with the World Business Council for Sustainable Development and Meridian Institute, based on the U.N. Millennium Ecosystem Assessment.
*2 Click here for more information on " Ecosystem Services and the Automotive Sector. "
https://www.nissan-global.com/EN/DOCUMENT/PDF/ENVIRONMENT/SOCIAL/ecosystem_services_and_the_automotive_sector.pdf
For more information on how we are strengthening our business foundation to address environmental issues. >>> P.080

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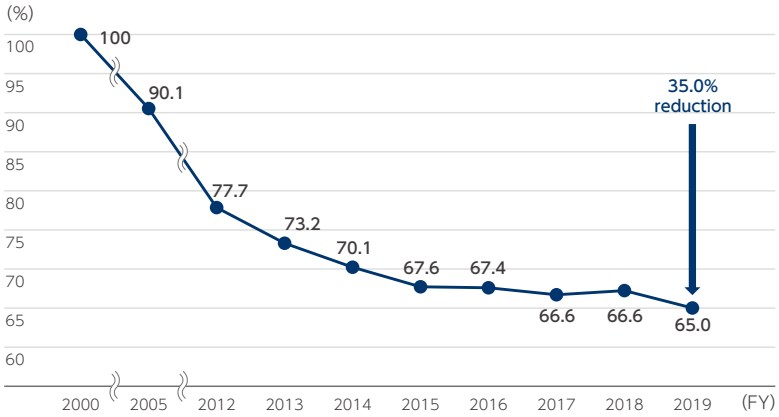
Environmental Data

Estimates (as of July 2020) have been used for the FY2019 actuals for CO_2, VOC, industrial waste, and water at European facilities.

Climate Change (Products)

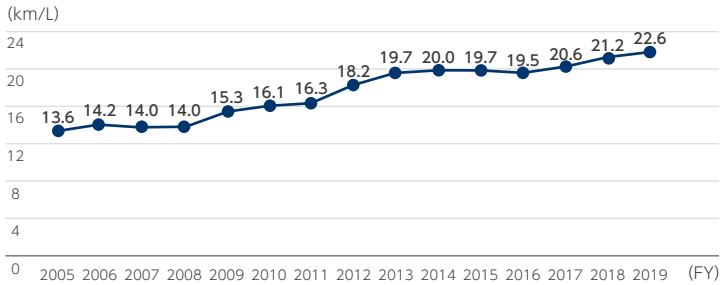
CO_2 Emissions from New Vehicles (Global)*



In fiscal 2019, CO_2 emissions in Nissan' s main markets of Japan, the U.S., Europe, and China were 35.0% lower than fiscal 2000 levels, as measured by Corporate Average Fuel Economy (CAFE). Especially, improved in China from 2018 due to EV expansion and fuel consumption improvement.

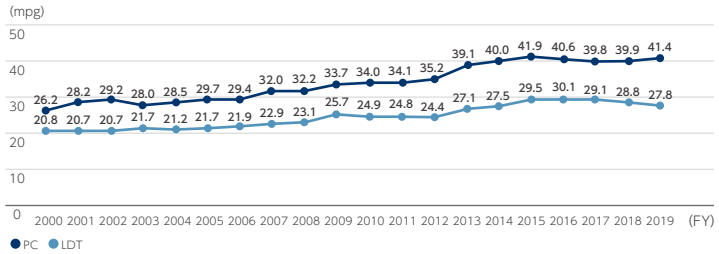
* Reduction in CO_2 emissions calculated by Nissan.

Corporate Average Fuel Economy (CAFE, JC08 Mode) in Japan



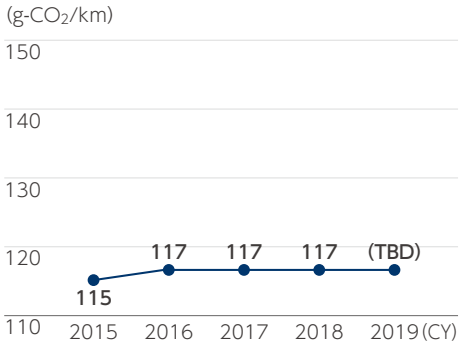
In fiscal 2019, mainly due to strong sales of the Serena e-POWER and new DAYZ, the average fuel economy improved to 22.6 km/L. This represents an improvement of 7% compared to fiscal 2018. Provisional values determined by Nissan are used.

Corporate Average Fuel Economy (CAFE) in the United States



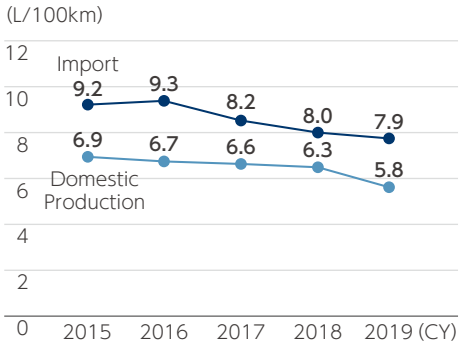
In fiscal 2019, sales resulted in a CAFE of 41.4 mpg for passenger cars, the same performance observed for fiscal 2018. In the light-duty truck segment, comparatively heavier models have received more market acceptance which decreases the CAFE from 28.8 mpg to 27.8 mpg.
Updated 2018 results on PC to 39.9 from 39.8mpg and LDT to 28.8 from 28.5 due to revision in the official report.

CO_2 Emission Index from Nissan Vehicles in Europe



*For 2019 results, to be updated on the WEB site after the official EU report is available.

Corporate Average Fuel Consumption in China



In 2019, fuel economy for domestically produced and imported vehicles improved approximately 8% and 1%, respectively. The incremental introduction of EVs and fuel consumption improvement for ICEs are the main factor for domestic production models.

Revenue, Global Sales Volume and Production Volume Data

(¥ billion)

	FY2018	FY2019
Revenue*1	129,687	112,176

(k unit)

	FY2018	FY2019
Global Sales Volume*2	5,516	4,930
Japan	596	534
North America	1,897	1,620
Europe	643	521
Asia	1,888	1,821
Other	492	434

(k unit)

	FY2018	FY2019
Global Production Volume*2	5,362	4,757
Japan	901	758
North America*3	1,587	1,340
Europe*4	661	508
Asia*5	2,046	1,991
Other*6	167	160

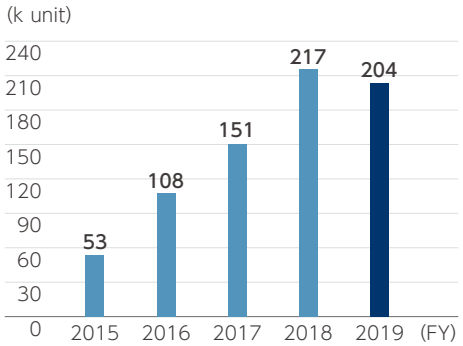
*1 Management pro-forma basis (includes Chinese joint ventures in proportionate consolidation).
*2 Global sales volume and global production volume for China and Taiwan consider values from January to December.
*3 Production in the U.S. and Mexico.
*4 Production in the U.K., Spain, Russia and France.
*5 Production in Taiwan, Thailand, Philippines, Indonesia, China, India and South Korea.
*6 Production in South Africa, Brazil, Egypt and Argentina.

Powertrain Type Ratios (Shipment-Based)

	Unit	Gasoline-powered vehicles	Diesel-powered vehicles	e-POWER vehicles	Electric vehicles	Hybrid drive vehicles	Natural-gas drive vehicles
Japan	%	63.7	2.4	21.5	3.2	9.2	0.1
North America	%	98.7	0.4	0	0.9	0.1	0
Europe	%	67.7	24.1	0	8.2	0	0
Other	%	91.3	7.4	0	0.8	0.5	0
Global	%	87.8	6.4	2.5	1.9	1.3	0

EVs

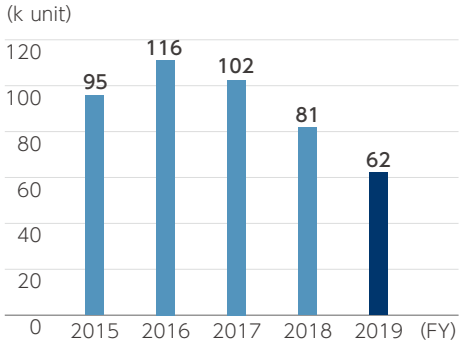
EV and e-POWER Vehicle Sales



*Includes the sale of EVs by joint ventures in China.

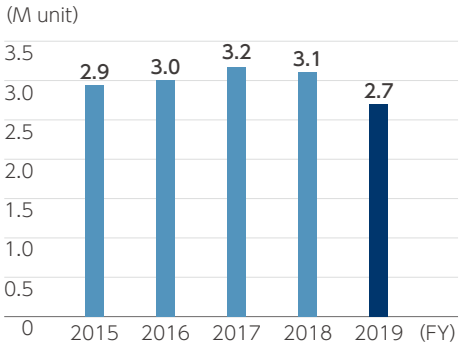
Hybrids

Hybrid Units Shipped



The Xtronic Transmission

ICE with CVT* Sales



*CVT: Continuously Variable Transmission

In fiscal 2019, we sold 2.7 million additional Xtronic CVT vehicles, bringing the cumulative total to 29.7 million.

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Climate Change (Corporate Activities)

Energy Input

(FY)

	Unit	2015	2016	2017	2018	2019
Total	MWh	9,683,528	10,189,082	9,532,840	9,252,737	8,481,499
By region						
Japan	MWh	4,115,353	4,497,562	4,084,912	3,700,532	3,560,316
North America	MWh	2,583,613	2,643,303	2,452,299	2,570,438	2,269,797
Europe	MWh	1,107,279	1,093,103	1,126,186	1,048,201	838,714
Other	MWh	1,877,283	1,955,115	1,869,443	1,933,566	1,812,673
By energy source						
Primary						
Natural gas	MWh	3,346,141	3,537,674	3,701,640	3,579,998	3,126,933
LPG	MWh	303,826	249,426	179,945	191,405	175,996
Coke	MWh	206,307	217,431	218,618	200,527	172,500
Heating oil	MWh	188,943	209,232	147,522	113,200	91,315
Gasoline	MWh	302,564	303,040	299,000	259,045	241,010
Diesel	MWh	55,099	57,488	48,259	53,074	23,044
Heavy oil	MWh	34,289	43,853	27,652	15,995	16,287

(FY)

	Unit	2015	2016	2017	2018	2019
External						
Electricity (purchased)	MWh	4,979,114	5,247,663	4,755,897	4,711,467	4,433,686
Renewable energy*1	MWh	141,076	157,226	133,212	135,574	153,773
Chilled water	MWh	12,116	12,919	6,661	7,487	7,025
Heated water	MWh	4,630	4,690	5,000	5,000	5,000
Steam	MWh	100,000	136,593	128,038	102,324	126,811
Internal						
Electricity (in-house generation)	MWh	9,423	11,847	14,609	13,214	12,164
Renewable energy*2	MWh	9,423	11,847	14,609	13,214	12,164
Total renewable energy	MWh	150,499	169,073	147,821	148,788	165,937

*1 Volume of renewable energy in electricity purchased by Nissan.
*2 Volume of renewable energy generated by Nissan at its facilities and consumed for its own purposes.

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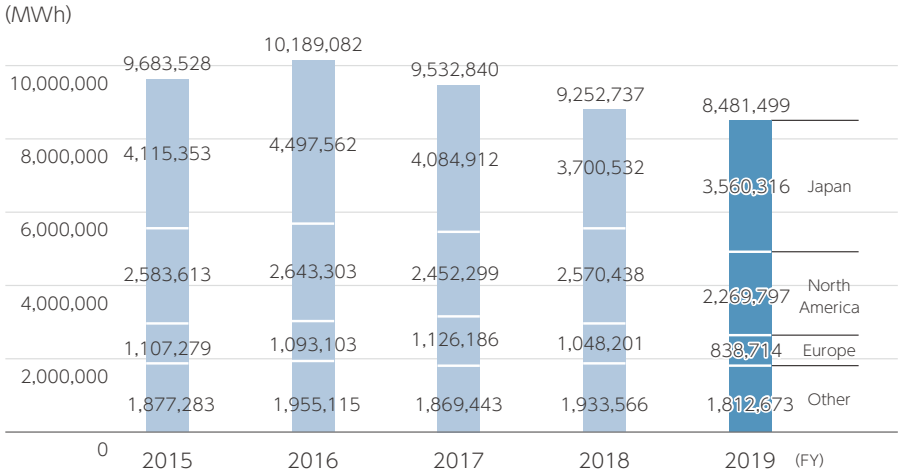
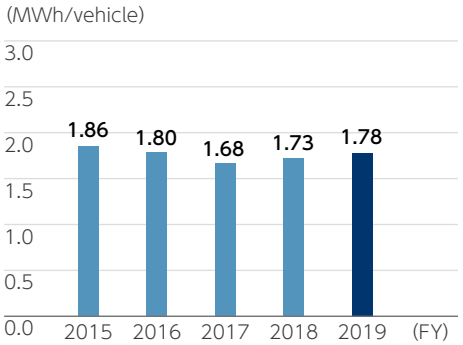
Global Energy Consumption



The total energy consumption of our global corporate activities during fiscal 2019 was about 8.481 million MWh, a 8% decrease from fiscal 2018. This reduction was primarily due to the promotion of energy-saving activities at facilities and a decline in total production volume. Production sites globally accounted for 7.486million MWh* of total energy consumption.

* This figure is subject to assurance by KPMG AZSA Sustainability Co., Ltd. For details, please see here.
>>> P.084
* The figures of energy consumption and CO_2 emission at Nissan global manufacturing sites were certified by third-party assurance.

Energy per Vehicle Produced



In fiscal 2019, energy per vehicle produced was 1.78MWh increased by 3.3% compared to fiscal 2018.

Data for the Japan region includes the manufacture of powertrains and other components for overseas assembly. Since the denominator is vehicles produced in the region, this tends to result in higher values for Japan.

By region	Unit	2019
Japan	MWh/vehicle	4.70
North America	MWh/vehicle	1.69
Europe	MWh/vehicle	1.65
Other	MWh/vehicle	0.84

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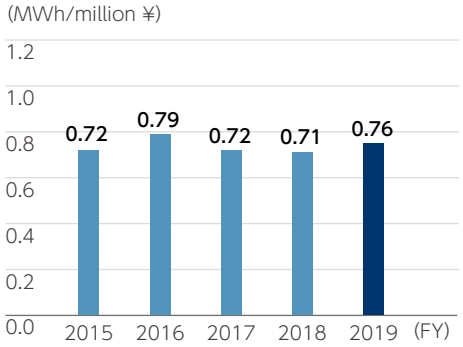
Energy per Revenue



In fiscal 2019, global Nissan facilities saw energy per revenue result of 0.76 MWh, increased by 20% from 2018.. We are taking ongoing steps toward decoupling financial capital generation from energy use.

Carbon Footprint

(FY)

	Unit	2015	2016	2017	2018	2019
Scope 1	t-CO_2	926,790	963,661	912,476	889,444	765,370
Scope 2	t-CO_2	2,547,951	2,614,028	2,394,109	2,339,883	2,197,034
Scope 1+2	t-CO_2	3,474,741	3,577,689	3,306,584	3,229,327	2,962,403
Japan	t-CO_2	1,479,572	1,579,089	1,333,335	1,208,303	1,133,007
North America	t-CO_2	800,724	823,340	683,332	738,234	599,894
Europe	t-CO_2	208,088	176,285	228,998	221,692	182,973
Other	t-CO_2	986,359	998,976	1,060,920	1,061,098	1,047,213
Scope 3	t-CO_2	144,145,000	150,462,000	213,715,000	203,106,900	173,138,601

In fiscal 2019, the total of Scope 1 and 2 emissions was 2.962 million tons. Total CO_2 emissions from manufacturing processes were 2.408million tons (Scope 1 emissions: 0.670 million tons; Scope 2 emissions: 1.738million tons).*

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

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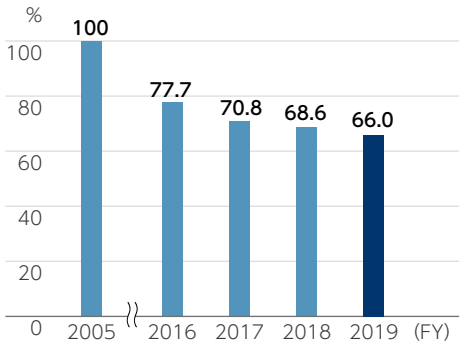
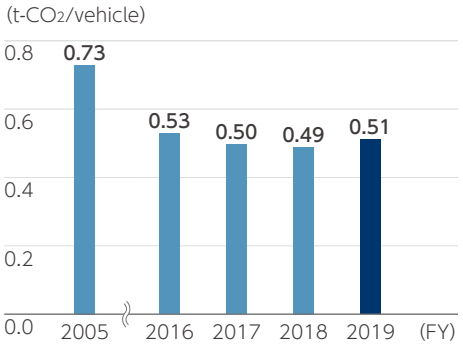
Corporate Carbon Footprint per Vehicle Sold



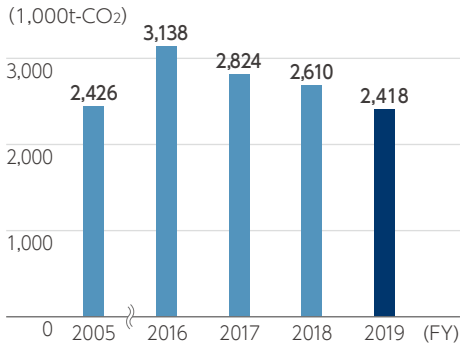
In fiscal 2019, overall corporate emissions were reduced by 34.0% compared to fiscal 2005, representing steady progress toward our fiscal 2022 goal.

Manufacturing CO_2 per Vehicle Produced

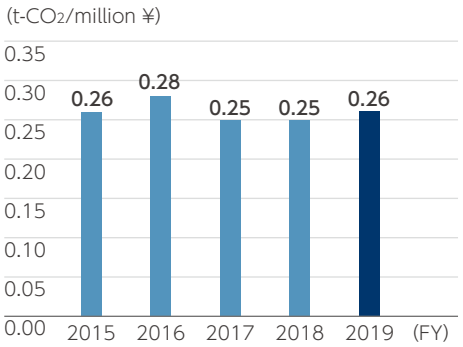


In fiscal 2019, our manufacturing CO_2 emissions per vehicle produced were 0.51 tons, 30.1% less than fiscal 2005.

Carbon Footprint of Manufacturing Activities



Scope 1 and 2 Emissions per Revenue



In fiscal 2019, CO_2 emissions from our global operations were 0.26 ton per ¥1 million of revenue.

* Value in 2018 was corrected.

Logistics Volume

(FY)

	Unit	2015	2016	2017	2018	2019
Total	mil ton-km	35,546	39,930	35,635	34,903	28,288
Inbound	mil ton-km	11,221	10,634	9,699	10,164	8,083
Outbound	mil ton-km	24,325	29,296	25,935	24,739	20,205

Sea	%	60.1	60.9	57.6	60.9	63.8
Road	%	26.5	24.8	25.9	23.3	23.0
Rail	%	13.0	14.0	16.1	14.9	12.7
Air	%	0.3	0.4	0.4	0.9	0.6

In fiscal 2019, global shipping decreased by around 19% compared to the previous fiscal year, to 28,288 million ton-km. We continue to strengthen our efforts to reduce shipping by upsizing trucks, improving truck loading rates, improving the fuel economy of car-transporting ships and shifting to rail and sea shipping.

CO_2 Emissions from Logistics

(FY)

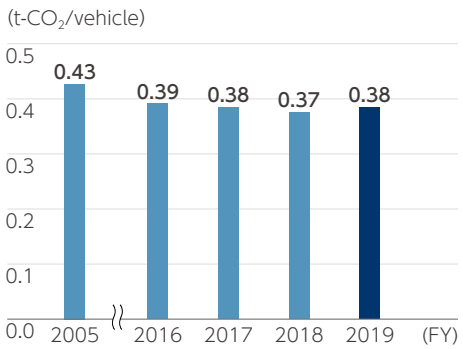
	Unit	2015	2016	2017	2018	2019
Total	t-CO_2	1,598,891	1,926,477	1,567,248	1,482,982	1,144,338
Inbound*	t-CO_2	797,034	809,088	739,610	762,314	582,957
Outbound*	t-CO_2	801,857	1,117,389	827,638	720,667	561,381

Sea	%	18.3	17.8	20.0	19.9	21.1
Road	%	65.7	62.1	64.6	60.3	64.1
Rail	%	5.4	5.6	7.0	6.7	5.9
Air	%	10.6	14.5	8.4	13.1	8.9

* "Inbound" includes parts procurement from suppliers and transportation of knockdown parts; "Outbound" includes transportation of complete vehicles and service parts.
* Value in 2016 were corrected after recalculation.

In fiscal 2019, CO_2 emissions from logistics were 1,144,338 tons, down approximately23% from the previous fiscal year. A substantial contribution to the reduction of overall CO_2 emissions was made by production volume decrease and reduction of air shipping.

CO_2 Emissions per Vehicle Transported



In fiscal 2019, CO_2 emissions per vehicle transported were 0.38 tons,

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Scope 3 Emissions by Category

We conducted a study based on the Corporate Value Chain (Scope 3) Accounting and Reporting Standard from the GHG Protocol and found that about 90% of Scope 3 emissions were from the use of sold products.

(FY)

Category	Unit	2019
1.Purchased goods & services	kt-CO_2	15,620
2.Capital goods	kt-CO_2	994
3.Fuel- and energy-related activities	kt-CO_2	358
4.Upstream transportation & distribution	kt-CO_2	583
5.Waste generated in operations	kt-CO_2	171
6.Business travel	kt-CO_2	221
7.Employee commuting	kt-CO_2	238*
8.Upstream leased assets	kt-CO_2	0
9.Downstream transportation & distribution	kt-CO_2	760
10.Processing of sold products	kt-CO_2	8
11.Use of sold products	kt-CO_2	153,428*
12.End-of-life treatment of sold products	kt-CO_2	369
13.Downstream leased assets	kt-CO_2	389
14.Franchises	kt-CO_2	0
15.Investments	kt-CO_2	0
Total		173,139

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

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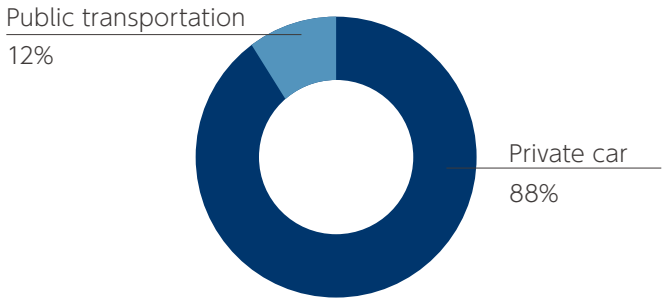
Carbon Credit

Nissan Motor Iberica, S.A. in Barcelona and Cantabria, Spain, entered EU-ETS, and the verified allowance earned for fiscal 2019 was 38,845 tons.

Employee Commuting CO_2 Emissions



In fiscal 2013, Nissan introduced a companywide CO_2 reduction plan for car commuting employees in Japan. This plan encourages car commuters to shift from internal combustion engine vehicles to electric vehicles. For fiscal 2019, CO_2 emissions from car commuting in Japan were approximately 28 kton*, or 2.6 ton-CO_2/vehicle annually.

*Calculated by using the parameters below together with vehicle homologation data:
- Average car commuting range (Japan): 9,227 km/vehicle-year
- CO_2 emission factor for gasoline-powered vehicles (National Greenhouse Gas Inventory Report of Japan [2009]): 0.33 kg-CO_2e/km
- CO_2 emission factor for electricity (Tokyo Electric Power Company [FY2018]): 0.000455 t-CO_2/kWh
- Employees of Nissan offices and manufacturing plants in Japan, fiscal 2018

Air Quality

Emissions

In fiscal 2019, NOx and SOx emissions from Nissan facilities in Japan were 380 tons and 14 tons respectively. both NOx and SOx reduced due to production volume decrease in 2019.

(FY)

	Unit	2015	2016	2017	2018	2019
NOx	ton	450	430	619	418	380
SOx	ton	37	31	36	34	14

Volatile Organic Compounds (VOCs)

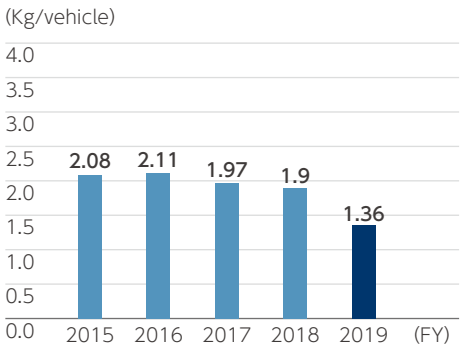
In fiscal 2019, VOCs from manufacturing plants were 6,465 tons globally, a reduction from fiscal 2018. We actively continue to promote activities to reduce VOCs, such as switching to materials including water-based paints.

(FY)

	Unit	2015	2016	2017	2018	2019
Total	ton	10,820	11,933	10,564	8,433	6,465
Japan	ton	2,850	3,580	3,232	2,188	2,016
North America	ton	5,309	4,851	4,284	3,847	3,135
Europe	ton	2,661	3,502	3,048	2,397	1,315

* Value in 2017 and in 2018 were corrected after recalculation.

VOCs per Vehicle Produced



In fiscal 2019, VOCs per vehicle produced were 1.36 kg.

(FY)

By region	Unit	2019
Japan	kg/vehicle	2.66
North America	kg/vehicle	2.34
Europe	kg/vehicle	2.59

Released Substances Designated by PRTR Law (Japan)*

In fiscal 2018, released substances designated by the PRTR (Pollutant Release and Transfer Register) Law in Japan were 3,914 tons, decrease from fiscal 2017.

(FY)

	Unit	2014	2015	2016	2017	2018
Japan site total	ton	3,879	4,129	4,472	4,422	3,920
Oppama	ton	402	488	872	796	715
Tochigi	ton	1,317	1,435	1,179	920	655
Kyushu	ton	1,152	1,173	1,406	1,697	1,573
Yokohama	ton	547	531	545	559	539
Iwaki	ton	114	132	144	62	54
NTC	ton	347	370	325	388	378

*The table shows chemical substance emissions calculated based on the Japanese government PRTR guidelines. PRTR emissions show total volume excluding substances adherent to the product.

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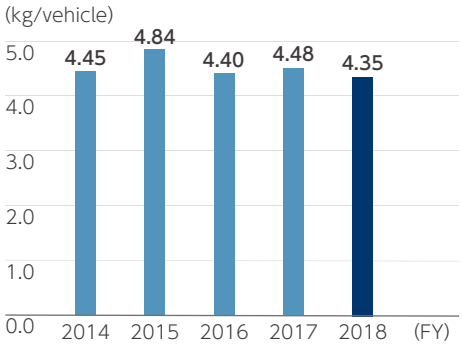
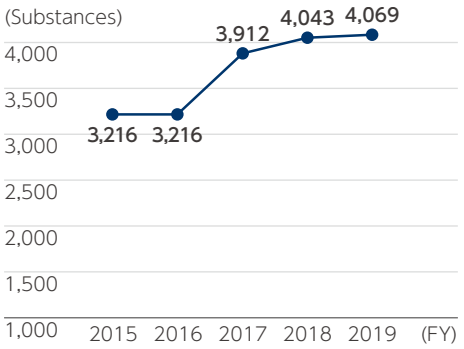
PRTR Emissions per Vehicle Produced (Japan)



In fiscal 2018, PRTR emissions per vehicle produced in Japan were 4.35 kg, a decrease from fiscal 2017.

Resource Dependency: Achievements in Reuse

Proper Use of Regulated Chemical Substances



Nissan revised its standard for the assessment of hazards and risks in the Renault-Nissan Alliance, actively applying restrictions to substances not yet covered by regulations but increasingly subject to consideration around the world. As a result, the number of substances covered by the Nissan Engineering Standard in fiscal 2019 rose to 4,069. These steps are thought to be necessary for future efforts in the repair, reuse, remanufacture and recycle loop for resources.

For more information on chemical substances governance.
>>> P.055

Recycled Plastic Usage in Vehicle

We are making efforts to expand the use of recycled plastic in our vehicles, as well as developing technologies for this. Recycled plastic use in fiscal 2019 was 11%, based on the rate achieved by our best-selling model in Europe.

GRI306-2

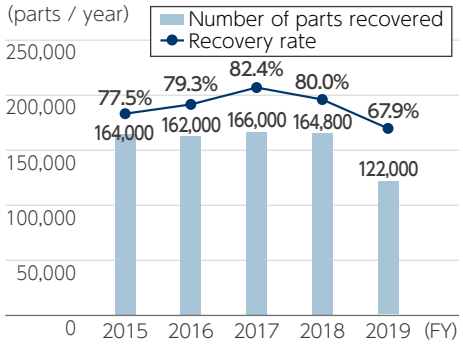
Automotive Shredder Residue to Landfill Ratio

After removing ferrous and nonferrous metals from ELVs, in accordance with the End-of-Life Vehicle Recycling Law in Japan, the ratio of ASR taken to landfills for final disposal was zero in fiscal 2019 as same as 2018' s result. This was achieved by enhancing recycling capability through the acquisition of additional facilities that comply with the law.

Material Ratio

In 2018, ferrous metals accounted for 61% of the materials used in our automobiles by weight. Nonferrous metals made up another 12% and resins 15%, with miscellaneous materials making up the final 13%. To further reduce our use of natural resources, we are advancing initiatives to expand the use of recycled materials in each of these categories.

Recovered Bumpers



Resource Dependency (Facility Waste)

Waste

Waste generated globally in fiscal 2019 amounted to 188,556 tons, a slight decrease from 206,645 tons in fiscal 2018. Waste generated globally from production sites in fiscal 2019 was 184,573 tons.*

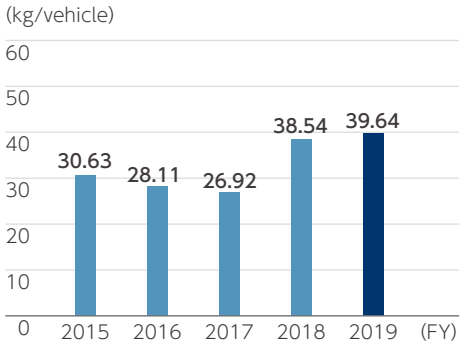
* This figure is subject to assurance by KPMG AZSA Sustainability Co., Ltd. For details, please see here.

>>> P.084

(FY)

	Unit	2015	2016	2017	2018	2019
Total	ton	159,345	158,939	152,674	206,645	188,556
By region						
Japan	ton	63,630	61,115	61,327	69,829	63,315
North America	ton	49,129	45,459	35,177	64,514	57,762
Europe	ton	37,204	41,110	45,268	49,662	48,187
Other	ton	9,382	11,255	10,903	22,639	19,291
By treatment method						
Waste for disposal	ton	11,355	8,707	8,041	7,231	6,414
Recycled	ton	147,990	150,231	144,633	199,414	182,141

Waste per Vehicle Produced

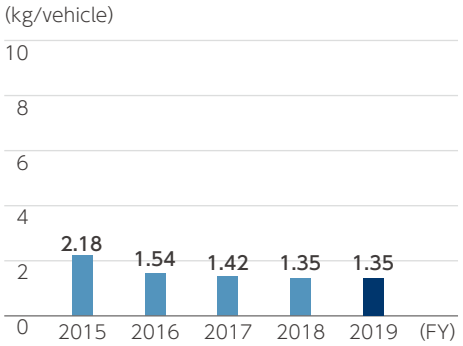


In fiscal 2019, waste per vehicle produced slightly increased to 39.64kg.

(FY)

地域別	Unit	2019
Japan	kg/vehicle	83.53
North America	kg/vehicle	43.11
Europe	kg/vehicle	94.86
Other	kg/vehicle	8.97

Waste for Disposal per Vehicle Produced



In fiscal 2019, we reduced the volume of waste for disposal to a total of 1.35 kg per vehicle produced as same level of 2018' s.

GRI303-1

Water Resource Management

Water Input for Corporate Activities

In fiscal 2019, water input for corporate activities was 23,714 km³, a 10% decrease compared with the fiscal 2018 level. Water input from production sites was 22,613,338 m³.*

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

>>> P.084

(FY)

	Unit	2015	2016	2017	2018	2019
Total	1,000m³	28,570	29,118	26,197	26,420	23,714
Japan	1,000m³	14,990	15,563	13,115	13,022	11,932
North America	1,000m³	5,427	5,483	4,905	4,930	4,776
Europe	1,000m³	2,330	2,299	2,155	2,093	1,798
Other	1,000m³	5,823	5,774	6,023	6,376	5,207

Cleaner Effluent Through Wastewater Treatment

Nissan thoroughly processes and is promoting activities to reduce wastewater at its various plants.

(FY)

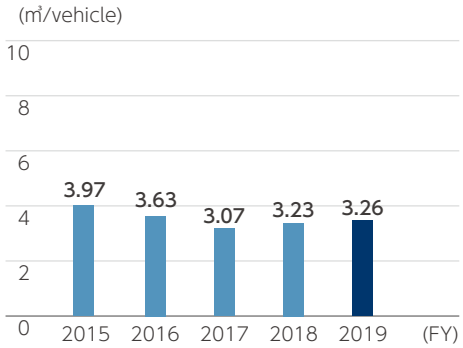
	単位	2015	2016	2017	2018	2019
Total	1,000m³	20,680	20,516	17,410	17,345	15,512
Japan	1,000m³	12,976	12,681	10,376	10,472	9,438
North America	1,000m³	3,916	4,028	3,382	3,190	2,752
Europe	1,000m³	1,740	1,767	1,564	1,539	1,528
Other	1,000m³	2,048	2,040	2,088	2,143	1,794

Quality

Chemical oxygen demand (COD) Japan only	kg	28,042	29,730	26,451	21,149	18,795

GRI306-1

Water Discharge from Corporate Activities (Per Vehicle Produced)



In fiscal 2019, water discharge per vehicle produced was 3.26 m³, which was a 1% increase compared to fiscal 2018.

(FY)

By region	Unit	2019
Japan	m³/vehicle	12.45
North America	m³/vehicle	2.05
Europe	m³/vehicle	3.01
Other	m³/vehicle	0.83

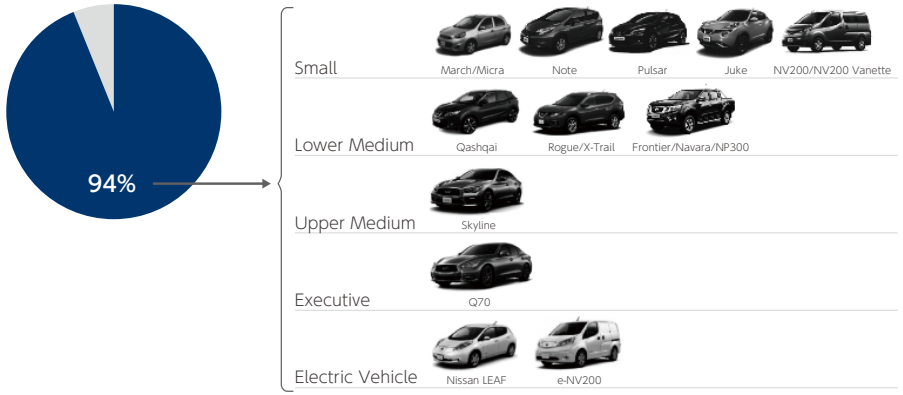
Data for the Japan region includes the manufacture of powertrains and other components for overseas assembly. Since the denominator is vehicles produced in the region, this tends to result in higher values for Japan.

Strengthening Our Business Foundations to Address Environmental Issues

Global Top Selling Model's Lifecycle Improvements

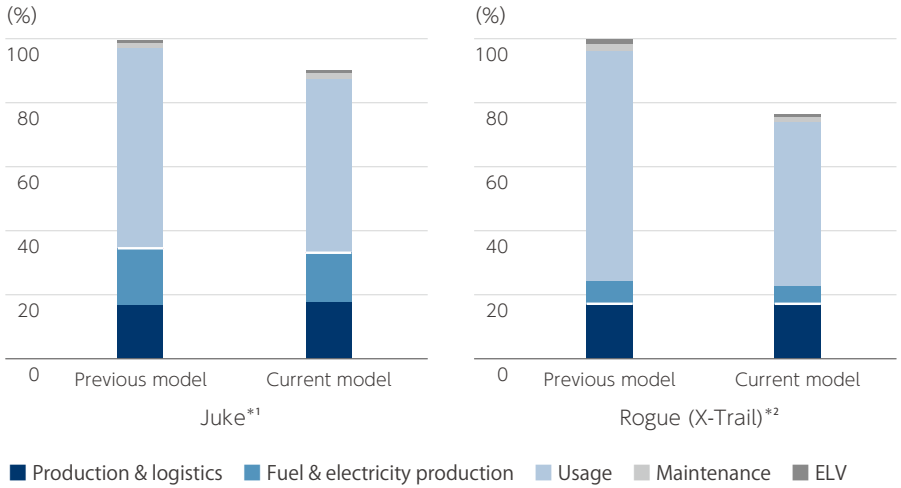
We have been expanding the application of the LCA method and enhancing the understanding of the environmental impact of our products in quantitative terms, especially our best-selling models worldwide. LCAs have been conducted for over 90% of these models.

LCA Conducted Product Ratio in Sales Volume (EU Market)



With the Altima and Rogue, for example, improvements in internal combustion engine efficiency and vehicle weight reduction have led to both enhanced safety features and lower CO_2 emissions.

Lifecycle CO_2 Equivalent Emissions (CO_2, CH_4, N_2O, etc.)



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

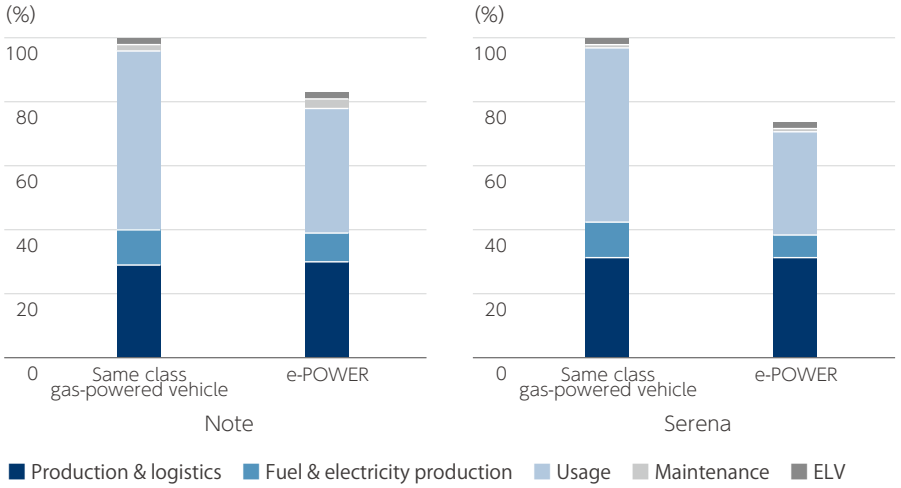
*2 Production in EU, 150,000 km driven in EU (basis for comparison).

LCA Comparison for e-POWER Models

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

Compared to their gasoline-powered counterpart models, the Note e-POWER and Serena e-POWER have achieved 18%—27% reductions in CO_2 emissions.

Lifecycle CO_2 Equivalent Emissions (CO_2, CH_4, N_2O, etc.)

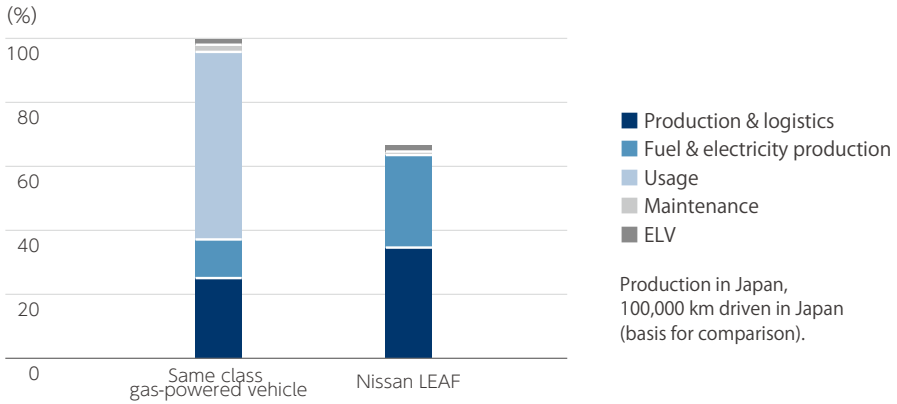


Production in Japan, 100,000 km driven in Japan (basis for comparison).

LCA Comparison for the New Nissan LEAF

Compared to conventional vehicles of the same class in Japan, the Nissan LEAF results in approximately 32% lower CO_2 emissions during its lifecycle. We are making efforts to reduce CO_2 emissions during EV production by improving the yield ratio of materials, using more efficient manufacturing processes and increasing the use of recycled materials.

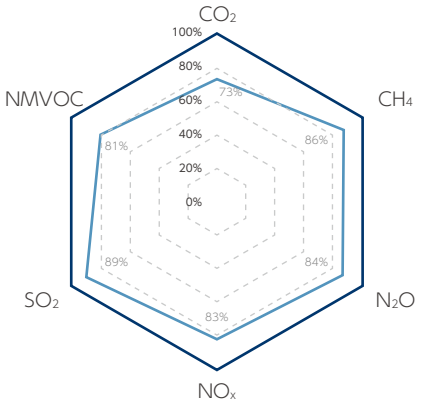
Lifecycle CO_2 Equivalent Emissions (CO_2, CH_4, N_2O, etc.)



Production in Japan,
100,000 km driven in Japan
(basis for comparison).

Lifecycle Improvements Beyond Climate Change

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



Production in Japan,
100,000 km driven in Japan.

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%—27% emission reductions for all targeted chemical substances and achieving environmental benefits throughout its lifecycle.

Material Balance

Input

(FY)

	Unit	2019
Raw materials	ton	5,818,699
Energy	MWh	8,481,499
Renewable energy	MWh	154,606
Water withdrawal	1,000m³	23,714

Output

(FY)

	Unit	2019
Vehicles produced		
Global production volume	k unit	4,757
CO_2 emissions	t-CO_2	2,962,403
Water discharge	1,000m³	15,512
Emissions		
NOx	ton	380
SOx	ton	14
VOC	ton	6,465
Waste		
For recycling	ton	193,229
For final disposal	ton	6,914

Environmental Conservation Cost

(FY)

		2018		2019	
	Unit	Investment	Cost	Investment	Cost
Total	mil ¥	3,790	171,245	2,538	183,578
Business area	mil ¥	20	1,775	15	1,790
Upstream/ downstream	mil ¥	0	706	0	639
Management	mil ¥	0	8,041	0	8,973
R&D	mil ¥	3,770	160,263	2,523	172,011
Social activities	mil ¥	0	308	0	146
Damage repairs	mil ¥	0	153	0	19

(FY)

	Unit	2018	2019
Total	mil ¥	8,262	6,207
Cost reduction	mil ¥	372	540
Profit	mil ¥	7,890	5,667

* All environmental costs are based on the guidelines provided by Japan' s Ministry of the Environment, and calculated for activities in Japan only.

THIRD-PARTY ASSURANCE

GRI102-56

KPMG

Independent Assurance Report

To the Representative executive officer, president and CEO of Nissan Motor Co., Ltd.

We were engaged by Nissan Motor Co., Ltd. (the "Company") to undertake a limited assurance engagement of the environmental performance indicators in the table below (the "Indicators") for the period from April 1, 2019 to March 31, 2020 included in its Environmental Data (the "Environmental Data") for the fiscal year ended March 31, 2020.

- Energy consumption in manufacturing processes
- CO_2 emissions from manufacturing processes
- CO_2 emissions from the commuting of employees and the use of sold products
- Water input from production sites
- Waste generated from production sites

The Company's Responsibility

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

Our Responsibility

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

- Interviewing the Company's responsible personnel to obtain an understanding of its policy for preparing the Environmental Data and reviewing the Company's reporting criteria.
- Inquiring about the design of the systems and methods used to collect and process the Indicators.
- Performing analytical procedures on the Indicators.
- Examining, on a test basis, evidence supporting the generation, aggregation and reporting of the Indicators in conformity with the Company's reporting criteria, and recalculating the Indicators.
- Visiting the Company's Iwaki Plant selected on the basis of a risk analysis.
- Evaluating the overall presentation of the Indicators.

Conclusion

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

KPMG

Our Independence and Quality Control

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

KPMG AZSA Sustainability Co., Ltd.

KPMG AZSA Sustainability Co., Ltd.
Tokyo, Japan
July 14, 2020

[Remarks] Basis of calculation for CO_2 emissions, waste generated and water input subject to third-party assurance

- CO_2 emissions from production sites: Calculated based on Nissan internal standards. The energy use data of each site is based on invoices from suppliers, which are multiplied by a CO_2 emissions coefficient publicly available for each production site.
- CO_2 emissions resulting from employees' commutes: Calculated based on the GHG Protocol Scope 3 Standard. Specifically, the annual CO_2 emissions resulting from each employee's commute are calculated using a standard unit of measurement announced by Japan's Ministry of Economy, Trade and Industry, Ministry of the Environment, and Ministry of Land, Infrastructure, Transport and Tourism. This figure is calculated on the basis that employees working at Global Headquarters commute by train and other employees use cars that are average vehicles designated by Nissan. This is multiplied by the number of employees at each facility or office.
- CO_2 emissions from the use of sold products: Calculated using the average regional CO_2 emissions per vehicle multiplied by the regional estimated average lifecycle mileage and multiplied by fiscal 2019 sales volumes. The average CO_2 emissions for the use phase (including direct emissions only) per unit are calculated for each of our main regions (Japan, U.S., EU and China) and extrapolated from average emissions of these markets for other markets. The Sustainable Mobility Project (SMP) model issued by the International Energy Agency was used to determine estimated average lifecycle mileages.
- Scope 3 emissions figures are estimates subject to varying inherent uncertainties.
- Waste generated from production sites: Calculated based on Nissan internal standards. The discharged waste is based on data from truck scales at the sites or data reported by disposal contractors. All discharged waste within the sites concerned is targeted. However, non-steady and irregular generated waste, waste generated in canteens, waste from permanently stationed companies at the sites, waste generated by external vendors and waste from construction are excluded. In addition, materials recycled in-house, used in reproduction (reused by Nissan) or recycled (as salable, valuable materials) are not categorized as generated waste.
- Water input from production sites: Calculated based on Nissan internal standards. Water input is the water withdrawal amount according to billing meters or company meters installed on site. The water withdrawal amount includes drinking water (tap water) , industrial-use water, underground water (spring/well water) and rainwater or the like.