

Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

# TRAFFIC SAFETY

GRI103-1 GRI103-2

## Traffic Safety Policies and Philosophy

The automobile has transformed people's lives, bringing mobility, convenience and the pleasure of driving. In recent years, the automotive industry has made significant advances, particularly in autonomous driving technologies and driver-support solutions. The world is also undergoing major structural shifts due to aging populations and the rapid progression of urbanization. Technological innovation in the automotive sector is expected to help realize societies with less urban traffic congestion and more ways for senior citizens to move about safely.

Nissan designs and engineers cars that embody the pleasure and richness of driving while prioritizing a high level of safety. More than 90% of traffic accidents are caused by human error. Our goal is "zero fatalities": reducing the number of deaths from accidents involving Nissan vehicles to virtually zero. To this end, we continue working to enhance the safety of our vehicles, partly through the development and adoption of autonomous driving technologies. We also conduct a wide range of other activities to help build a safer and more pleasant mobility society, including educational initiatives to raise safety awareness among drivers, pedestrians and others in the community.

GRI103-2

## Traffic Safety Management

Nissan's goal of "zero fatalities" means aiming for virtually no fatalities due to traffic accidents involving Nissan vehicles. Since 2004, our R&D department has been striving to develop technologies based on our unique Safety Shield concept of "vehicles that help protect people". Many different types of Nissan vehicles are already equipped with the results of this work, including technologies to help prevent collisions or reduce the damage when a collision is unavoidable. Today, we are working toward the implementation of autonomous driving as the next advancement among our preventative safety and driver-assist technologies.

To help people gain a better understanding of traffic safety, we are committed to educational activities to boost safety awareness and support activities to improve drivers' skills.

We are working alongside government and municipal authorities, universities and other companies to realize a safer and more pleasant mobility society.

Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

## Goal of Nissan's Activities to Improve Traffic Safety

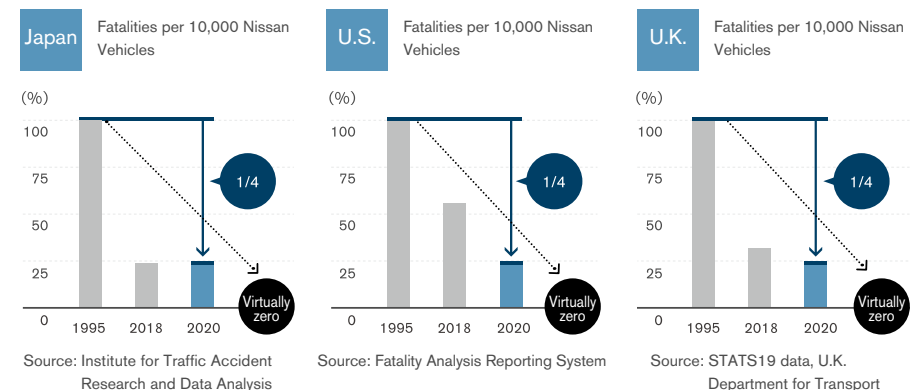
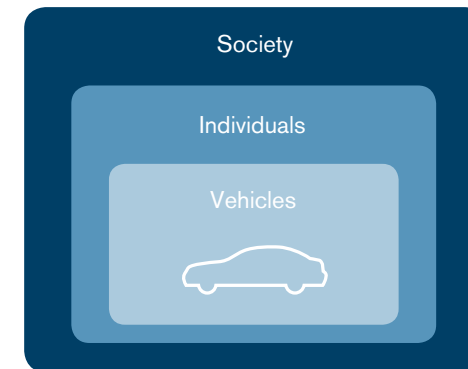
Nissan's approach to safety is focused on the real world and aims to help create a society with virtually zero avoidable traffic accidents. In 2019, there were 3,215 fatalities in Japan caused by traffic accidents. While this is 317 less than in 2018, there are still more than 3,000 deaths per year due to traffic accidents. According to the World Health Organization (WHO), approximately 1.35 million people die each year in traffic accidents globally. Unless urgent steps are taken, traffic accidents could become the seventh leading cause of death worldwide by 2030.

We set the target of reducing the number of fatalities involving Nissan vehicles to half their 1995 level by 2015, and reached this target in Japan, the United States and the United Kingdom. Today, we are striving to halve this number once again in these markets by 2020. Our ultimate goal is a world with virtually no fatalities resulting from traffic accidents.

To reduce traffic accidents and achieve this zero-fatality goal, it will be necessary to develop and deploy effective safety technologies in as many vehicles as possible. Comprehensive efforts are needed, encompassing individuals and the driving environment as well. We take a triple-layered approach, targeting vehicles, individuals and society to contribute to the creation of a truly safe automobile society.

## Nissan's ultimate goal: Virtually zero fatalities involving Nissan vehicles

Nissan's approach:  
A triple-layered approach,  
targeting vehicles, individuals and society



Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

GRI103-3 GRI416-1 GRI417-1

## Traffic Safety Achievements

### Vehicles: Developing Safety Technologies

To promote safe and enjoyable driving, as well as ensuring that all our brands comply with laws and regulations addressing automobile safety, Nissan is working to develop automotive technologies that can help minimize risk to vehicle occupants to the extent possible based on its unique Safety Shield concept.

Our Safety Shield concept divides the conditions surrounding a vehicle into the six phases of “risk has not yet appeared”, “risk has appeared”, “crash may occur”, “crash is unavoidable”, “crash”, and “post-crash,” and guides the development of various technologies in which the vehicle can help protect people in each phase. This concept is the basis of our efforts to develop safety technologies.

### Enhancements to Nissan’s Safety Technology and External Ratings Received

In January 2015, we expanded Intelligent Emergency Braking to more models. By the end of fiscal 2015, the technology was available on nearly all vehicle categories sold in Japan, including electric vehicles and commercial vehicles, and standard on all major models. In North America, it is now standard on several models including the Pathfinder, Altima and Rogue. In Europe, it is available on the Juke, X-Trail, Qashqai, Micra and other key models.

Our vehicles have earned high safety ratings on many public and governmental tests held in various regions. In particular in Japan, the Serena minivan received a perfect score and the Nissan Dayz received the

highest score for a “kei” minicar in JNCAP’s Active Safety Assessment for fiscal 2019. The assessment has added a rigorous test of the autonomous emergency braking system for pedestrians at night to simulate driving on roads without streetlights. In addition, through fiscal 2019, 13 major models featuring Intelligent Emergency Braking were approved under the Advanced Emergency Braking System certification launched by the Ministry of Land, Infrastructure, Transport and Tourism in fiscal 2018.

### Major External Safety Ratings (Based on 2019 Assessments)

Regions	External Assessments		Models	Rating
Japan	JNCAP*1	Collision Safety Performance Assessment	Nissan Dayz	5★ (Highest rating)
		Preventive Safety Performance Assessment	Nissan Dayz (highest score for a “kei” minicar) Serena (perfect score)	ASV+++ (Highest rating)
		Automatic Accident Emergency Call System Assessment	Nissan Dayz	SOS+ (on-board type)
U.S.	NCAP*2	INFINITI QX60, INFINITI QX50, Murano, Altima, Pathfinder, Maxima, Sentra		5★ Overall Rating (2020 model year)
		INFINITI QX80, Armada, Frontier (Crew Cab), Rogue		4★ Overall Rating (2020 model year)
	IIHS*3	Maxima		2020 Top Safety Pick+
		Altima		2020 Top Safety Pick
Europe	Euro NCAP	Juke	5★	
China	C-NCAP	Sylphy	5★	

\*1 JNCAP: The Japan New Car Assessment Program. An automobile assessment program run by the Ministry of Land, Infrastructure, Transport and Tourism and the National Agency for Automotive Safety and Victims’ Aid (NASVA).

\*2 NCAP: The U.S. National Highway Traffic Safety Administration’s New Car Assessment Program.

\*3 IIHS: The U.S. Insurance Institute for Highway Safety.

Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

## Aiming for Virtually Collision-Free Cars

Our Safety Shield concept supports the safety of vehicle occupants in a variety of scenarios from a comprehensive perspective, from danger prevention and avoidance to protecting occupants.

For example, during normal driving or parking, sensors and cameras can monitor vehicles and pedestrians that may be difficult for drivers to see; this supports drivers and allows them to drive with peace of mind. In times of potential danger, the vehicle can judge in an instant how to help avoid or lessen the danger.

We have set ourselves the goal of providing optimal mobility worldwide. We are committed as an automobile manufacturer to swift and widespread popularization of our safety technologies.

Risk has not yet appeared ■ ProPILOT assist ■ Intelligent Distance Control ■ Navigation-enabled Intelligent Cruise Control with full-speed range following capability ■ Adaptive Front-Lighting System (AFS) ■ Intelligent Around View Monitor ■ Intelligent Rear View Mirror	Helps the driver drive with peace of mind
Risk has appeared ■ Intelligent Forward Collision Warning ■ Lane Departure Warning ■ Intelligent Lane Intervention ■ Blind Spot Warning ■ Intelligent Blind Spot Intervention ■ Intelligent Back-up Intervention ■ Intelligent Driver Alertness ■ Rear Cross Traffic Alert	Helps the driver avoid or mitigate dangerous situations
Crash may occur ■ Intelligent Emergency Braking ■ Anti-lock Braking System (ABS) ■ Vehicle Dynamics Control (VDC) ■ Emergency Brake for Pedal Misapplication	
Crash is unavoidable ■ Front Pre-Crash Seatbelts	
Crash ■ Zone Body Construction ■ SRS Airbag Systems ■ Pop Up Engine Hood	Helps minimize injuries when a collision is unavoidable
Post-crash ■ Automated Airbag-Linked Hazard Lamps ■ SOS call (HELPNET)	



Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

## Latest Safety Technologies\*

\*All terminology and functionality as seen in the Japan market.

### Intelligent Emergency Braking

When the front-mounted camera detects a vehicle or pedestrian ahead and the risk of collision increases, visual warnings appear in the meter display and an audible signal warns the driver to take appropriate action. If the driver does not reduce speed appropriately, braking is applied to help avoid or reduce the severity of a frontal collision.

### Emergency Assist for Pedal Misapplication

This technology uses sonar to detect walls and other obstacles in the direction of travel. When the accelerator pedal is depressed too strongly or the system determines that there is a risk of collision, audio and visual warnings alert the driver as the system reduces engine or motor output and brakes to prevent or reduce the severity of a collision. According to our accident analysis, pedal misapplication is not restricted to parking lots and similar spaces but also often occurs on the road. Our latest system supports the driver in a wider range of situations in that it can detect vehicles and pedestrians with a front-mounted camera installed in the upper portion of the windshield when traveling at speeds of up to 25 km/h.



### Lane Departure Warning/Intelligent Lane Intervention

The Lane Departure Warning system alerts the driver when the car appears to drift out of its travel lane with a visual warning in the meter display and an audible signal. The Intelligent Lane Intervention system can also automatically help the driver return to the travel lane by redirecting the vehicle toward it.

### Intelligent Driver Alertness

When the Intelligent Driver Alertness system detects via the driver's steering activity that driver alertness may be reduced, a visual warning in the meter display and an audible signal urge the driver to take a break.

### Intelligent Rear View Mirror

When the switch is flipped on, the Intelligent Rear View Mirror shows the view through a rear-mounted camera, helping provide clear rearward visibility. Any cargo or vehicle occupants inside the vehicle do not impede the mirror's rearward view. Additionally, the sensitivity of the camera can be increased at night or in other low-light conditions, providing the driver with a clear rearward view in a variety of circumstances.

Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

### Intelligent Around View Monitor

Images showing the vehicle from a virtual bird's eye view clearly convey the relationship between car and parking space, assisting the driver in parking. If the system detects moving objects around the car, the monitor alerts the driver. The system also supports the driver with safety checks when entering a garage or exiting a parking space.

### Rear Cross Traffic Alert



The Rear Cross Traffic Alert warns drivers backing out of a space when a risk is detected of vehicles approaching behind them from either side.

### Blind Spot Warning



When the Blind Spot Warning system detects a vehicle diagonally behind the vehicle, it indicates the presence of this vehicle to the driver. When the driver has the turn signal indicator on, visual and audible warnings are provided.

## Dissemination of Advanced Driver Assistance Technologies: ProPILOT

Brought to market in 2016, ProPILOT is a driver assistance system that can provide speed control, lane centering and brake assist functionalities. ProPILOT 2.0 is the world's first advanced driver assistance technology that offers a wide range of support for drivers traveling on a multi-lane highway by setting their destination in the navigation system to set a predefined travel route, such as hands-off driving while cruising in a given lane and lane changes for passing and branching off. In September 2019, ProPILOT2.0 was equipped as standard in the all-new Nissan Skyline hybrid. The technology is highly acclaimed, winning Best Innovation Award in the 2019-2020 Japan Car of the Year awards and the RJC Technology of the Year at the RJC Car of the Year awards.

We are progressively deploying ProPILOT globally in a wider range of vehicle types. So far, in Japan, has been available in the Serena, Nissan LEAF and X-Trail. In the United States, ProPILOT is available in the INFINITI QX50, Rogue, Rogue sports, Altima, and Nissan LEAF. In Europe, it is available in the Nissan LEAF, Qashqai, X-Trail and Nissan Juke. And in China, it is offered on the Altima, X-Trail, and INFINITI QX50. The new Nissan Dayz, was the first "kei" vehicle to offer this feature and its now also offered in the Nissan ROOX, and in total, more than 660,000 vehicles equipped with ProPILOT have been sold as of the end of March 2020. We intend to deploy the technology in 20 models for sale in 20 markets by the end of fiscal 2023, when the number of ProPILOT-equipped vehicles sold annually is expected to reach 1.5 million.

Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

## From Preventive Safety to Autonomous Driving

We are enhancing our preventive safety technologies to support the four basic steps in avoiding accidents: sensing, cognition, judgment and action. Today we are developing autonomous driving technologies as the next step in our approach to driving safety. We believe that autonomous driving



A Nissan autonomous driving test vehicle.

could help reduce traffic accidents—more than 90% of which have human error as a contributing factor—and help realize a society with virtually no traffic accidents.

Autonomous driving vehicles equipped with

millimeter-wave radar, laser scanners and cameras continually monitor their surroundings in every direction. If they approach other vehicles or objects, artificial intelligence selects the appropriate action based on the information stored in its knowledge database. The goal is an autonomous driving vehicle that can correctly assess the situation, make decisions and drive safely even in complex traffic environments, such as crossroads with no traffic lights or when passing parked vehicles.

Nissan implements field-testing of autonomous driving on a global basis. In 2019 the U.K. Human Drive Project, an autonomous driving vehicle ran for 370km over the wide-ranging and unique driving environment in the United Kingdom, including suburban roads, highways and city streets.

In a society facing issues including aging populations and urban congestion,

autonomous driving technologies may one day be able to help reduce traffic accidents, providing peace of mind to drivers and increased mobility to the rapidly growing number of senior citizens. We believe that autonomous driving technologies are a major breakthrough offering new mobility value. We are proactively developing these technologies and working to bring them to market.

Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

GRI103-3 GRI416-1 GRI417-1

## Nissan's Traffic Safety Activities: Involving People

To create a better mobility society, it is important for as many people as possible to share an understanding of traffic safety, from drivers and vehicle occupants to pedestrians. We take part in educational activities to help boost this safety awareness, including measures to improve driving skills and a range of other safety promotions.

### Initiatives in Japan

Traffic accidents are statistically more likely to occur during the dusk hours from 4:00 to 6:00 p.m. As part of the Hello Safety Campaign, Nissan's Omoiyari Light Promotion urges drivers to turn on their headlights earlier in the evening. We have been involved in this campaign since 2010 and promote civic activities with two-way communication to raise public awareness of traffic safety.

Furthermore, we launched a traffic safety project \* in 2018 together with a research department in Niigata University. They specialize in kinesiology, and they have been promoting traffic safety through the involvement of the local community. We are engaged in a wide range of activities that traverse industry sectors, regions, and generations with the aim of realizing a mobile society with zero traffic fatalities, that embraces diversity and leaves no one behind. We stand by the members of society who are at a social disadvantage including in the area of transportation, such as small children, the elderly, foreign visitors and those cut off from public transportation because of depopulation. One of the outcomes from these efforts is the

"Wheel Spinning (Guru-Guru) Exercise", developed in March 2020, which promotes and encourages safe driving among senior drivers.

\* Traffic Safety Project

ToLiTon (Town, Life and Transportation) Safety Initiative

This project was named to promote proposals to town, life, and transportation that are not bound by past conventions

### Omoiyari Light Promotion

On November 10, designated "Day of Good Lighting", we hold various interesting and fun activities around Japan to remind drivers of the importance of turning on



their headlights early in the evening. In 2019, approximately 540 people participated in an on-street campaign to encourage drivers to turn on their headlights before dark at 14 locations across Japan: Obihiro in Hokkaido prefecture; Yamagata in Yamagata prefecture; Sagami-hara in Kanagawa prefecture; Niigata in Niigata prefecture; Asahi (Nyuzen) in Toyama prefecture; Tsuruga and Echizen (Sabae) in Fukui prefecture; Higashikagawa in Kagawa prefecture; Aki district in Kochi prefecture; Nagasaki, Matsuura, Hirado and Emukae in Nagasaki prefecture; and Iriki in Kagoshima prefecture. These volunteers were subsequently invited to attend a Traffic Safety Roundtable. The participants shared information on initiatives under way in various regions and issues they faced, which enabled all to foster strong exchanges.



Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

Throughout the year, Global Headquarters Gallery hosted daily presentations at dusk by Nissan's "Miss Fairlady" PR staff members about the Omoiari Light Promotion. From 2019 they have been holding up signboards that encourage turning on headlights while they explain. By urging greater awareness of, and action on, safety among corporations, nonprofit organizations, car-lovers and other stakeholders, these activities have helped our Omoiari Light Promotion steadily gain broad acceptance among the public.



Volunteers in Obihiro, Hokkaido calling for drivers to turn on their headlights



Regions participating in the campaign to turn on headlights

### Wheel Spinning (Guru-Guru) Exercise for Senior Citizens' Traffic Safety

This exercise was developed to support safe driving primarily by senior citizens by improving their muscle strength and enhancing their cognitive abilities.

Senior citizens tend to lose motor function due to a lack of exercise.

Research by the Niigata University (kinesiology) has shown that when motor

function declines, it has various negative impacts on the ability to drive a vehicle.

The exercise has three main benefits: improving circulation to help refresh the body, building strength through a somewhat strenuous motion, and stimulating the brain to enhance cognitive abilities. So they are easy to remember, all the moves are completed in four beats over three seconds and the movements are repeated in a rhythmical manner. The exercise can be performed before operating a vehicle or any time one has some time to spare. It can also be done without the steering wheel prop and it is also effective to a degree, even if it is done while sitting and watching television or listening to music. A video showing senior citizens, pre-school children and university students performing Wheel Spinning (Guru-Guru) Exercise and participants enjoying a workshop to make their own one-of-a-kind steering wheels to be used in the exercise was posted to Facebook, YouTube, and Twitter.



Wheel Spinning (Guru-Guru) Exercise



Workshop to make steering wheels for the exercise

Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

GRI103-3 GRI416-1

## Partnership with the FIA for Traffic Safety

In 2014, Nissan and the Fédération Internationale de l'Automobile (FIA) formed a partnership to make the world's roads safer through the FIA Action for Road Safety campaign. We were an official supporter of the FIA's innovative awareness-raising campaign, launched to bolster the United Nations Decade of Action for Road Safety.

As part of this partnership, we worked worldwide to promote the FIA Golden Rules which aim to reduce the number of deaths from traffic accidents. By signing the FIA Online Pledge, campaign supporters publicly commit to driving safely.

We leveraged events like the Nissan Safety Driving Forum and other outreach efforts to educate drivers about the FIA Golden Rules and FIA Online Pledge.

## Society: Working Together with Society

We believe we can help create an even safer mobility society by using information from the traffic environment surrounding vehicles on the road. In collaboration with a wide range of governmental agencies, universities and companies, we are participating in various projects aimed at realizing a safer, more pleasant mobility society.

### Helping Reduce Wrong-Direction Accidents

Recently, Japan has seen an increased number of incidents involving vehicles traveling in the wrong direction on expressways. Working together with West Nippon Expressway Co., Ltd., we have developed a navigation program that uses GPS to notify expressway drivers of vehicles driving the wrong way. The system detects these vehicles based on GPS coordinates, maps, vehicle speeds and other data, and their drivers receive audible and visual warnings. It first appeared in the Nissan Fuga Hybrid released in October 2010 and is now available as an option on every type of vehicle we sell in Japan, including commercial vehicles. Now that the technology has been licensed to Pioneer Corp., this function is available to customers who use Pioneer car navigation systems as well.

### Our Initiatives for the Future

#### Applying NASA Technology to Develop AI for Autonomous Vehicles

To realize fully autonomous city driving, we are developing the Seamless Autonomous Mobility system (SAM). SAM will be able help cars safely navigate unforeseen situations like accidents, road construction and other obstacles. When autonomous decision-making is difficult, a remote operator

Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

draws up an ideal route to manage the situation and sends it to the vehicle for execution.

### Field Testing Commercial Mobility Services Using Driverless Vehicles

Nissan and the Japanese Internet firm DeNA Co., Ltd. are jointly developing a new mobility service called Easy Ride using driverless vehicles. In March 2018, field tests of the Easy Ride service were conducted in the Minatomirai district of Yokohama in Kanagawa prefecture. The field tests used monitors in test cars equipped with autonomous driving technology to assess and check the service. In February 2019, we conducted tests under more realistic circumstances by expanding the test field and randomly choosing starting points and destinations. In February 2020, we held a test drive event for representatives of National government agencies, regional and municipal authorities, transportation operators, local companies, and other stakeholders.

Nissan and DeNA will work together to develop service designs for driverless environments, expand service routes, optimize distribution logic for when vehicles share congested roads with driver-operated vehicles, establish pick-up/drop-off processes, and explore the possibility of multilingual support. We aim to launch the full service in the early 2020s.