# WATER SCARCITY

GRI103-1 GRI103-2

## 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.

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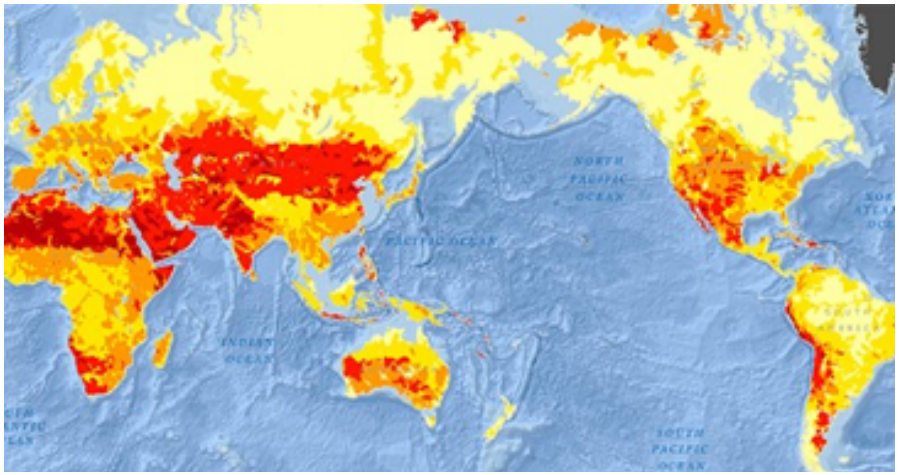
# Water Resource Management

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).

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# Water Resource Achievements

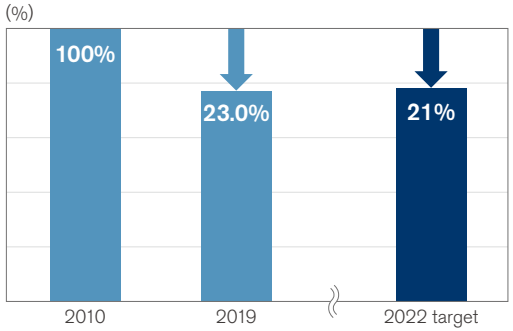
## Water Use Reduction

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%.

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## 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.
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(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. >>> P228