

## Responsible Care Management

Responsible Care (RC) activities aim to secure environment, health and safety (EHS) performance on a voluntary basis throughout the entire process, from the development of chemical substances to manufacture, distribution, use, final consumption and disposal / recycling. These activities also serve as a form of communication with society through the announcement of their results. Chemical companies in more than 60 countries and regions are working on RC activities. In Japan, the Japan Responsible Care Council (JRCC) was established by the Japan Chemical Industry Association (JCIA) in 1995. We are one of the original members of JRCC. We have also signed the Responsible Care Global Charter, which was revised in 2014, and we are enhancing our efforts in RC activities.

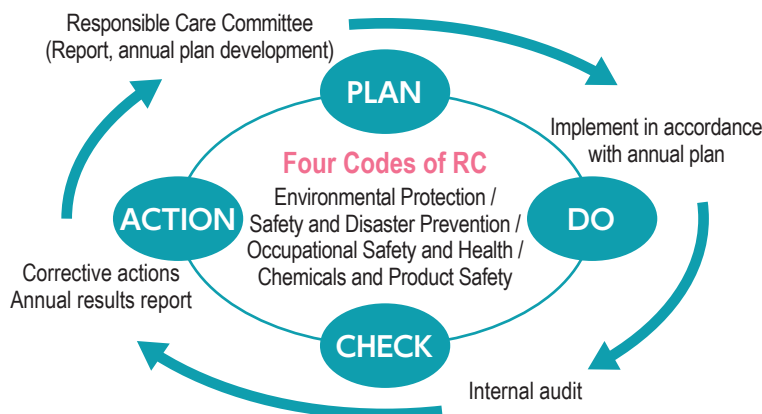
### Nissan Chemical RC Management System

To achieve our RC mid-term plan, we have established RC management system based on ISO14001\*, and we carry out target management and continuous improvements based on PDCA.

We have established the RC Committee, which is chaired by the head of the Environment, Safety & Quality Assurance Department, as the organization in charge of promoting these activities. The committee holds annual meetings, at which its members discuss the results of activities at each laboratory / plant in each fiscal year, review all the activities of the company, and discuss the RC targets for the next fiscal year.

The results of the discussions are reported and approved at board meeting and the management meeting before the RC targets for the next fiscal year are determined.

\* International standard for environmental management system. All of our plants have acquired ISO 14001 third party certification.



▲ RC Committee: Officer in charge of the Environment, Safety & Quality Assurance Department and the heads of the Production Technology Department, Personnel Department, Purchasing Department, business divisions, and all plants and laboratories. Meetings are held annually. (Chairman: Head of Environment, Safety & Quality Assurance Department)

## Responsible Care Basic Policies

We have set priority matters related to the EHS in all stages of our business activities as our basic policies on RC. We have fully shared these basic policies with all group companies.

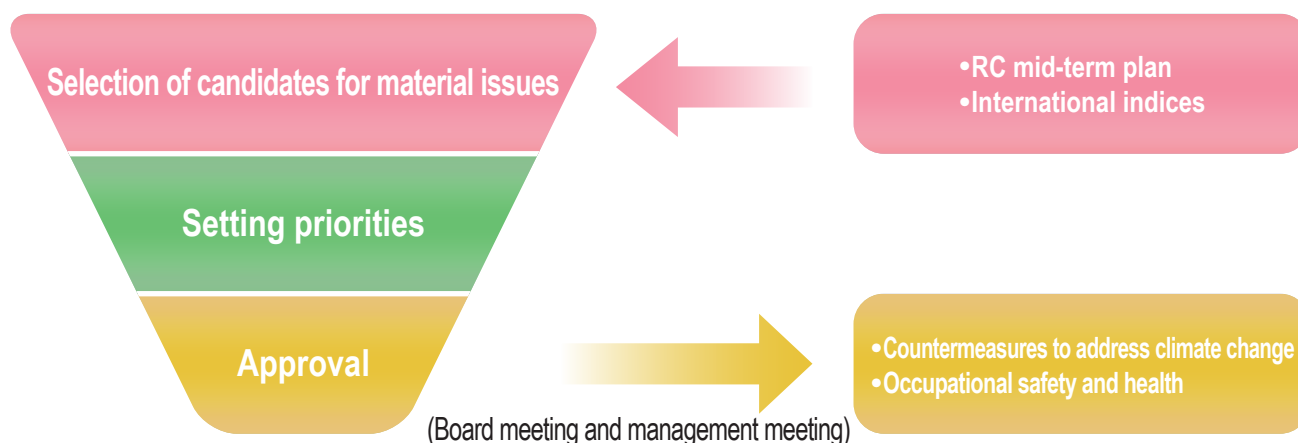
- (1) Strive to ensure the continuous improvement of the EHS throughout the entire product lifecycle, from development all the way to the final disposal.
- (2) Manage business activities and prevent them from affecting people and the environment, giving consideration to the EHS when transporting, storing and disposing products.
- (3) Strive to develop products and technologies with a smaller environmental impact by considering the EHS aspects from R&D phase.
- (4) Promote greater resource conservation and energy conservation to reduce the amount of waste and effectively use of the waste.
- (5) Take note of the interest of administrative authorities and public interest concerning the impact of our products and operations on EHS, and strive to communicate with them to ensure their correct and full understanding by disclosing sufficient information.
- (6) Further enhance risk assessment and risk management based on scientific knowledge and strengthen proper management of chemical substances.
- (7) Observe laws and standards and promote voluntary initiatives to further improve the EHS performance.
- (8) Fulfill accountability to further meet the expectations of stakeholders in Japan and overseas concerning our activities related to EHS.

## Selection of Material Issues in RC

To enhance our EHS initiatives, we have selected “countermeasures to address climate change” and “occupational safety and health” as material issues that we should work on intensively in our RC activities.

We have selected material issues in light of our RC mid-term plan and international indices such as ISO 26000, the Ten Principles of the UN Global Compact, SDGs, and the Global Risks Report 2017. We set their priorities based on the priorities of our stakeholders and their materiality for us, thereby narrowing down to the above two issues, and obtained approval at the board meeting and the management meeting.

Moving forward, we will carry out target management and evaluation based on PDCA and review the material issues in response to our business activities or social change or when otherwise necessary.



## Promotion of the RC Mid-Term Plan (FY2016 – 2021)

Responsible Care Code	Mid-term plan (FY2016 - 2021)	FY2016 plan
Environmental protection and countermeasures to address climate change	<ul style="list-style-type: none"> <li>Reducing the energy consumption rate*<sup>1</sup> (achieving a 20% reduction from the year 2011 level by 2021)</li> <li>Reducing GHG emissions and improving the GHG emission rate*<sup>2</sup> Reducing the total amount of emissions during the period of the mid-term plan (2016 to 2021) by 100,000 tons compared to the period of the previous mid-term plan (2010 to 2015) Improving the emission rate by 20% from the FY2011 level by FY2021</li> </ul> <small>*1 Amount of energy consumption / sales *2 Emissions / sales</small>	<ul style="list-style-type: none"> <li>Energy saving through the renewal of aging facilities</li> <li>Promoting the conversion of waste solvents into forms of fuel</li> <li>Switching from naphtha to liquefied natural gas as the feedstock for ammonia (Reducing GHG emissions by 10,000 tons)</li> </ul>
	<ul style="list-style-type: none"> <li>Reducing industrial waste</li> </ul>	<ul style="list-style-type: none"> <li>Promoting the reuse and recycling of waste</li> </ul>
	<ul style="list-style-type: none"> <li>Establishing a CSR supply chain management (green procurement) system</li> </ul>	<ul style="list-style-type: none"> <li>Conducting EHS audits of important business partners</li> </ul>
	<ul style="list-style-type: none"> <li>Strengthening measures for protecting biodiversity</li> </ul>	<ul style="list-style-type: none"> <li>Continuing activities based on biodiversity action guidelines</li> </ul>
	<ul style="list-style-type: none"> <li>Promoting the development and sales of environmentally friendly products</li> </ul>	<ul style="list-style-type: none"> <li>Promoting the sale of environmentally friendly products</li> </ul>
Safety and disaster prevention	<ul style="list-style-type: none"> <li>Creating a safety culture and improving the safety capabilities</li> <li>Improving the effectiveness of the prior assessment systems for manufacturing, construction work and improving the effectiveness of research</li> </ul>	<ul style="list-style-type: none"> <li>Optimizing the method for evaluating the safety culture</li> <li>Enhancing the risk assessment performed in prior assessment</li> </ul>
Occupational safety and health	<ul style="list-style-type: none"> <li>Establishing an occupational safety and health management system based on ISO45001</li> <li>Achieving zero accidents that require staff time off from work</li> </ul>	<ul style="list-style-type: none"> <li>Improving occupational safety through equipment improvement</li> <li>Publishing an occupational safety newspaper</li> <li>Strengthening inspections for occupational safety and health in RC audits</li> </ul>
Chemicals and product safety	<ul style="list-style-type: none"> <li>Promoting risk-based management throughout the lifecycle of chemical substances</li> <li>Contributing to advanced research that examines the impact of chemical substances on human health and the environment</li> </ul>	<ul style="list-style-type: none"> <li>Creating internal standards for the risk assessment of chemical substances and safety measures based on safety data</li> <li>Promoting the disclosure of safety summaries of chemical substances</li> <li>Participating in LRI*<sup>3</sup> activities organized by the Japan Chemical Industry Association</li> </ul>

\*3 Long-range Research Initiative: an international initiative to provide long-term support for research on the impact of chemicals on human health and the environment

## RC Audits

RC audits are activities for checking RC activities at each plant, laboratory, and affiliate. They are carried out by the Environment, Safety & Quality Assurance Department in accordance with the RC audit guidelines. In these audits, it is checked whether RC activities, as well as internal audits and patrols, are carried out appropriately at each location and the PDCA cycle is implemented without fail. In the RC audits, the Environment, Safety & Quality Assurance Department clarifies visible or potential problems related to the EHS and promotes improvements in response after clarifying the problems, if any. In FY2016, a total of 43 audits were conducted.

### TOPICS

#### Safety Audits

In safety audits, the Environment, Safety & Quality Assurance Department identifies unsafe places and unsafe behaviors in a preventive manner by monitoring works on site. These audits were conducted at five selected locations, including those with frequent accidents and where a serious accident has occurred. We will continue to conduct audits that are aimed exclusively at checking worker safety.

Achievement assessment ☆☆☆ = 100 - 70%, ☆☆☆ = 70 - 30%, ☆ = 30% or below		FY2017 plan
	<ul style="list-style-type: none"> <li>• Energy consumption (crude oil equivalent) increased slightly (up 600 kiloliters year on year to 99,400 kiloliters). The energy consumption rate was reduced by 16.9% from the year 2011 level.</li> <li>• The conversion of waste solvents into forms of fuel has progressed as planned.</li> <li>• GHG emissions were reduced by 30,000 tons (equivalent to around 6% of the total emissions) due to the switching of the feedstock for ammonia.</li> <li>• The Eco Track System, a system for managing environmental data, was introduced (and began to be operated in FY2017).</li> </ul>	<ul style="list-style-type: none"> <li>• Energy saving through the improvement of equipment capacity and the renewal of aging facilities, etc.</li> <li>• Reducing GHG emissions further through fuel conversion for melamine, etc.</li> <li>• Reducing N<sub>2</sub>O generated from nitric acid plants</li> </ul>
	<ul style="list-style-type: none"> <li>• Data on the amount of industrial emissions and valuables of all plants were checked. The recycling rate was defined and preparations for its improvement were made.</li> </ul>	<ul style="list-style-type: none"> <li>• Setting a recycling rate target</li> </ul>
☆☆☆	<ul style="list-style-type: none"> <li>• EHS audits of important raw material suppliers were conducted.</li> <li>• The purchase policy was revised in line with CSR promotion.</li> </ul>	<ul style="list-style-type: none"> <li>• Continuously conducting EHS audits</li> <li>• Checking CSR measures taken in the supply chain</li> </ul>
	<ul style="list-style-type: none"> <li>• Support for a NPO named "Kurohama-numa Shuhen no Shizen wo Taisetsu ni Suru Kai (Society for Cherishing the Natural Environment around Kurohamanuma Pond)", and information sharing with it (Biological Research Laboratories)</li> <li>• Participation in cleanup activities for the Fujimae-Higata tidal flat (Nagoya Plant)</li> <li>• Management of Bio-park (Toyama Plant)</li> <li>• Support for the conservation of Pinus pentaphylla (Sodegaura Plant), etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Continuous activities based on biodiversity action guidelines</li> </ul>
	<ul style="list-style-type: none"> <li>• Increased production bases of AdBlue® for processing exhaust gas from diesel vehicles</li> <li>Update of JIS mark certification</li> </ul>	<ul style="list-style-type: none"> <li>• Promoting the sale of environmentally friendly products</li> </ul>
☆☆☆	<ul style="list-style-type: none"> <li>• Safety culture evaluation was expanded to affiliates. Departments with problems and identified problems were set as improvement themes through evaluative analysis.</li> <li>• Risk assessment of chemicals was carried out.</li> </ul>	<ul style="list-style-type: none"> <li>• Review of prior assessment guideline and its revision</li> </ul>
☆☆	<ul style="list-style-type: none"> <li>• Fall accidents decreased due to the renewal of facilities and other measures.</li> <li>• Occupational safety newspaper was published.</li> <li>• There was one case of an accident requiring staff time off from work. There were two cases of accidents involving employees of subcontractors including temporary staff.</li> </ul>	<ul style="list-style-type: none"> <li>• Capital investment for safety (350 million yen for three years)</li> <li>• Checking the status of occupational safety at affiliates and giving them directions on occupational safety</li> </ul>
☆☆☆	<ul style="list-style-type: none"> <li>• Internal standards for the risk assessment and safety measures were created.</li> <li>• Safety summary of urea was disclosed.</li> <li>• We participated in activities with non-animal methods, etc. We participated in the International Council of Chemical Associations' Long-Range Research Initiative (ICCA-LRI) Workshop.</li> </ul>	<ul style="list-style-type: none"> <li>• Confirming risk assessment management</li> <li>• Continuing the disclosure of safety summaries of chemical substances</li> </ul>

