

## Five-Year Environmental Action Plan

The NGK Group has established the Fourth Five-Year Environmental Action Plan (2016-2020). To achieve the goals of the Plan, we are promoting environmental activities, setting annual targets.

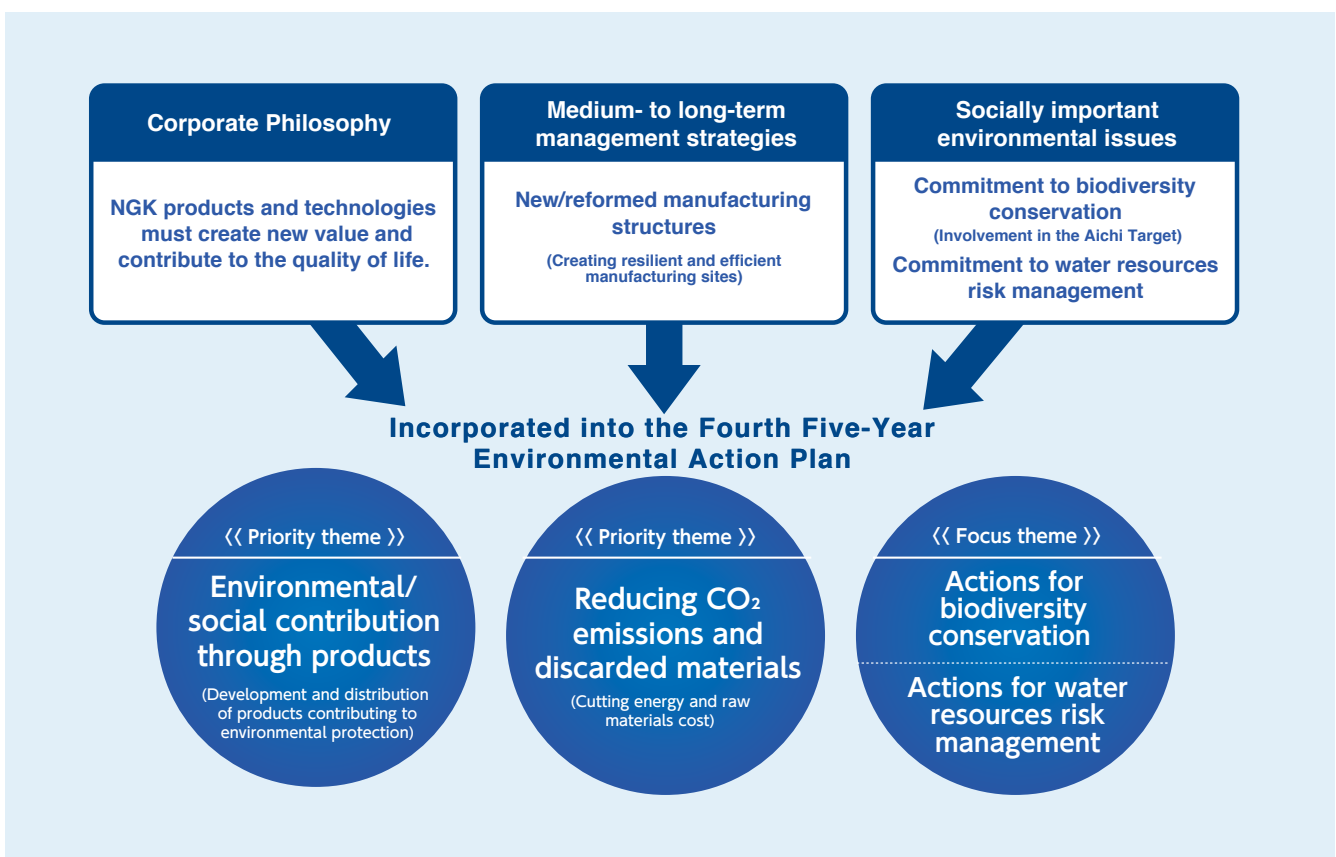
### Results of the Fourth Five-Year Environmental Action Plan (2016-2020)

The NGK Group organizes environmental initiatives by creating five-year action plans. The Fourth Five-Year Environmental Action Plan, initiated in fiscal 2016, has been formulated to broadly encompass major global environmental challenges that businesses are expected to take responsible actions to address, and to select two key issues each for two groups of themes, namely, priority themes and focus themes. The two priority themes are: environmental/social contribution through products; and reducing CO<sub>2</sub> emissions and discarded materials. The first priority theme directly reflects the core concept of the corporate philosophy, while the other theme closely relates to NGK's medium- to long-term initiative of new/reformed manufacturing structures for increasing competitiveness. For focus themes, we have also set two issues: biodiversity conservation and water resources risk management/response, both being major challenges for which socially responsible corporate action is required with greater urgency.

[Base year, target year, control scope]

**Base year: fiscal 2013; target year: fiscal 2020**






The new Five-Year Environmental Action Plan has been designed to correspond with the business initiative of New/Reformed Manufacturing Structures. Accordingly, the base year and target year of the Plan have been set to coincide with the initiative. In principle, activities will be managed on a consolidated basis, embracing those based in and outside of Japan, in place of the previous method of managing domestic and overseas activities separately. The consolidation method has been adopted to improve management efficiency and effectiveness in response to the recent changes in our global production output structure, particularly increased amounts from overseas manufacturing sites as well as from production chains through multiple global locations.



## FY2016 Progress of Initiatives within the Fourth Five-Year Environmental Action Plan

The initiatives planned under the Fourth Action Plan and their progress (targets and results for fiscal 2016; targets for fiscal 2017 and 2020, the final year) are summarized in the table below.

For the fiscal 2016 initiatives, almost all yearly numerical targets have been achieved, and for non-numerical targets steady progress was made as initially planned, indicating that we have made a successful start to the Five-Year Plan. In particular, a distinctive achievement was recorded in the area of reduction in discarded materials, where we considerably exceeded the initial target, as a result of persistent efforts of business divisions. We will continue promoting environmental activities across the Group to achieve the targets for fiscal 2017 and onward.

Category	Item	KPI	Fiscal 2016			Fiscal 2017	Fiscal 2020	
			Target	Result	Self-evaluation <sup>1</sup>	Target	Target	
Environmental/social contribution	 Environmental/social contribution through products	Develop and distribute products contributing to environmental protection	Sales growth (%)	Increase by 25% from fiscal 2013 (consolidated)	Increased by 26% from fiscal 2013 (consolidated)	○	Increase by 30% from fiscal 2013 (consolidated)	Reduce by at least 60% from fiscal 2013 (consolidated)
		Promote green procurement	Plan progress (%)	At least 99% of NGK's suppliers in Japan agree to comply with the CSR Procurement Guidelines	99.4% agreed (100% including suppliers who partially agreed)	○	Maintain the level for Japanese suppliers, conduct research on approaches for overseas suppliers (study other companies, etc.)	Maintain in Japan, expand overseas
	 Promotion of environmental communication	Contribute to local community	Plan progress (%)	Send instructors to guest lecture programs	Sent instructors to local children's centers	○	Send instructors to guest lecture programs	Continually enhance actions partnering with communities
		Raise environmental awareness	Plan progress (%)	Provide environmental education for employees, establish employee communication on environmental themes, encourage participation in environmental events	Provided training programs by job grade, organized CSR Talk Live, installed "green curtains"	○	Provide environmental education for employees, establish employee communication on environmental themes, encourage participation in environmental events	Continually enhance environmental training and information disclosure
	 Conservation of biodiversity	Promote actions based on biodiversity conservation guidelines	Plan progress (%)	Explore and implement new approaches/initiatives	Conducted biodiversity surveys at company-owned sites, requested partner companies to conduct similar surveys	○	Continue biodiversity survey at company-owned sites, promote an action commitment declaration project for employees	Expand and enhance the content of Aichi Target actions
Environmental impact reduction	 Prevention of global warming	Reduce CO <sub>2</sub> emitted from manufacturing	Basic unit per net sales	Reduce by 9% from fiscal 2013 (consolidated)	Reduced by 10% from fiscal 2013 (consolidated)	○	Reduce by 11% from fiscal 2013 (consolidated)	Reduce by 20% from fiscal 2013 (consolidated)
			Reduction rate against BAU (%)* <sup>2</sup>	Reduce by at least 12.3% from fiscal 2013 (consolidated)	Reduced by 15% from fiscal 2013 (consolidated)	○	Reduce by 15% from fiscal 2013 (consolidated)	Reduce by 15% from fiscal 2013 (consolidated)
		Reduce CO <sub>2</sub> emitted from supply chains	Basic unit per transport volume* <sup>3</sup>	Reduce by 1% per year on five-year average (unconsolidated)* <sup>4</sup>	Increased 2% on average per year (unconsolidated)* <sup>4</sup>	×	Reduce by 1% per year on five-year average (unconsolidated)* <sup>4</sup>	Reduce by 1% per year on five-year average (unconsolidated)* <sup>4</sup>
	 Effective use of resources	Reduce discarded materials emitted from manufacturing	Basic unit per net sales	Reduce by 13% from fiscal 2013 (consolidated)	Reduced by 19% from fiscal 2013 (consolidated)	○	Reduce by 17% from fiscal 2013 (consolidated)	Reduce by 30% from fiscal 2013 (consolidated)
			Reduction rate against BAU (%)* <sup>2</sup>	Reduce by at least 11.6% from fiscal 2013 (consolidated)	Reduced by 18% from fiscal 2013 (consolidated)	○	Reduce by 19% from fiscal 2013 (consolidated)	Reduce by 20% from fiscal 2013 (consolidated)
		Promote resource recycling	Recycling rate	Maintain at over 99% (in Japan)	Maintained at 99.2% (in Japan)	○	Maintain at over 99% (in Japan)	Maintain at over 99% in Japan
Manage and respond to water resources risks	Plan progress (%)	Conduct a third-party water risk survey	Conducted surveys at five sites	○	Continue water risk surveys	Strengthen actions by production base for evaluating risks and streamlining water use		

### Notes:

1. Self-evaluation standards for achievement level: ○: Target achieved ×: Target not achieved
2. Reduction rate against BAU (business as usual) indicates the percentage rate of emissions reduction resulting from implemented actions against a computed value for the hypothetical absence of the actions. By not incorporating the influence of foreign exchange movements and other factors, this indicator allows a direct grasp of the efforts by each site.
3. NGK basic unit per transport volume expresses in metric ton-kilometers the amount of crude oil equivalent fuel used.
4. Based on the computation criteria stipulated in the Act on the Rational Use of Energy