

Environmental Management

Fiscal 2011 Topics

- We commenced inaugural year activities for Eco Vision 2015.

Basic Philosophy

Environmental issues are a common challenge for all mankind. Every member of the NGK SPARK PLUG Group will work towards reducing the environmental burdens of our business activities as far as possible and developing and providing products and technologies that contribute to improving the environment. We will also endeavor to communicate in greater depth with our stakeholders including our local communities so that we may all work together to contribute to creating a sustainable society.

VOICE

Eco Vision 2015 was formulated last year in order to envision the ideal state of environmental affairs in 2015. Fiscal 2011 saw many drastic changes, but climate change (global warming) remains a global issue, and therefore this Group places emphasis on reducing CO₂ emissions.

In the future, the entire Group will continue its reduction efforts while considering CO₂ emission management that incorporates the supply chain, in the hope of contributing to establishing a sustainable society.

Takafumi Oshima
Member of the Board, Senior Executive Officer,
and Central Environment Committee Chairman



Environmental Policy

We positively promote actions for environmental conservation through all business activities to contribute to construction of a sustainable society with the participation of everyone concerned.

Action Guidelines

- **Environmental management:** We will abide by all laws, regulations, protocols, and voluntary standards relating to environmental conservation to prevent environmental pollution. We also aim to manage both environmental conservation and business growth by continually trying to enhance our environment management system (EMS) and environmental performance from a global point of view.
- **Business operation:** We will promote environmentally friendly business activity to contribute to prevention of global warming, resource recycling, and biodiversity conservation throughout the entire life cycle of our products from procurement of the materials to disposal.
- **Cooperation with society:** We will try to disclose information and to enhance communication for improving the trust of our stakeholders and deepening cooperation with society. We also try to enhance environmental consciousness by positively enforcing participation of all the employees in environmental conservation activities.

Environmental Action Plan

	Item	Fiscal 2015 Target	Fiscal 2012 Target
Environmental Management	Promotion of globally united actions	Formulation of global ecological vision.	Analysis of EMS operational state in overseas factories Drawing out standard for collecting reliable environmental data
	Promotion of environmental activities relating to corporate management	Transparentization of energy and waste cost and construction of system to promote actions for reducing the costs	Application method examination of material flow cost accounting
Business Activities	Reduction of CO ₂ emissions	Emissions: down 10% from 2007 Per unit production: down 8% from 2007	Emissions: 187,935 tons (down 10% from 2007) Per unit production: 0.748 tons/ million yen (down 5.6% from 2007)
	Reduction of disposal of wastes and valuable materials	Per unit production: down 30% from 2007	Per unit production: 0.070 tons/ million yen (down 28.6% from 2007)
	Reduction of water use	Per unit production: down 8% from 2007	Per unit production: 8.30 m ³ / million yen (up 9.5% from 2007)
	Reduction in PRTR emissions	Emissions: down 80% from 2007	Reexamination of recycling equipment of VOC
	Development of environmentally friendly products	Expansion of LCA to all the company's operation sites	Implementation of LCA to model products
	Enhancement of the management of chemical materials	Construction of a management system on chemical materials including supply chains	Introduction of chemical management software
	Promotion of green procurement	Expansion of the green supplier system	•Investigation / certificate audit implementation of original suppliers of domestic affiliates. •Renewal audit implementation of the suppliers certified in 2009
	Recycling of post-consumer products	Establishment of recycling technology for products and packaging materials	Examination of products recycling technology Implementation of package materials reuse
	Reduction of CO ₂ emissions in physical distribution	Domestic distribution energy per unit production: down 8% from 2007	Per unit production 0.422 kL/ 100 million yen (down 5% from 2007)
	Environmentally friendly sales activities	Promotion of environmentally friendly sales activities	Proposal of environmentally friendly sales strategies Enrichment of PR relating to environmental efficiency of products Disclosure of state of law abidance in overseas factories
Social Cooperation	Improvement of disclosing information	Improvement of disclosing global environmental information	•Acquisition of material data (procurement amount of raw materials and parts) in overseas factories •Disclosure of global material balance
	Enhancement of communication	Enhancement of communication with communities	Continual implementation of the environmental conferences Acceptance of plant tours of stakeholders Continual participation in EPOC international exchange subcommittee meetings
	Enhancement of social contribution	Enhancement of social contribution to communities	•Continual implementation of the clean-up activities •Enhancement of beautification activities around plants •Participation in a variety of environmental activities
	Enhancement of actions for biodiversity preservation	Enhancement of actions for biodiversity preservation	Examination of activities for Satoyama (planted/managed natural woodlots) preservation activities and cooperation with NPO/NGO and governments
	Enhancement of environmental consciousness	Enhancement of environmental education	Enhancement of level-specific training in the domestic Group Drawing out educational materials for overseas factories

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Fiscal 2011 Targets and Results

The NGK SPARK PLUG Group Eco Vision 2015 is a vision established in 2011 indicating the ideal state of environmental activities by this Group in 2015. We set targets for every year in our environmental activities in order to achieve Eco Vision 2015. The following table indicates the targets and results for fiscal 2011, the inaugural year of the Vision.

During fiscal 2011, the Environmental Policy was shared globally. The CO₂ emission reduction goal was achieved in total, but remained unachieved in terms of per unit production. We will continue our efforts into fiscal 2012 so as to achieve the targets.

Fiscal 2011 Targets and Results

	Item	Fiscal 2011 Target	Result	Evaluation
Environmental Management	Promotion of globally united actions	Sharing of environmental declarations and policies of the domestic Group with overseas factories	Requested overseas factories to place the environmental declarations and policies of the domestic Group on top of their respective environmental policies.	○
		Understanding of the current state of EMS in overseas factories	Conducted surveys targeting overseas factories.	○
		Implementation of the new environmental management information system in domestic Group	Commenced operation of the new environmental management information system.	○
	Promotion of environmental activities relating to corporate management	Conversion of environmental loads, such as CO ₂ and wastes, to cost in domestic Group	Cost conversion was conducted for CO ₂ , but not for waste.	×
Business Activities	Reduction of CO ₂ emissions	Emissions: 186,725 tons (down 11% from 2007) Per unit production: 0.780 tons/ million yen (down 10% from 2007)	Emissions: 177,435 tons (down 15% from 2007) Per unit production: 0.789 tons/ million yen (up 11% from 2007)	×
	Reduction of disposal of wastes and valuable materials	Per unit production: 0.072 tons/ million yen (down 26% from 2007)	Per unit production: 0.067 tons/ million yen (down 32% from 2007)	○
	Reduction of water use	Per unit production: 7.77 m ³ / million yen (up 2.5% from with 2007)	Per unit production: 7.52 m ³ / million yen (down 0.8% from 2007)	○
	Reduction in PRTR emissions	Reexamination of recycling equipment	It was deliberated, but no implementation was made due to present issues such as capacity.	×
	Development of environmentally friendly products	Determination of the range of data collection Acquisition of required data	The range of data collection has been decided and collection has commenced for all divisions.	○
	Enhancement of the management of chemical materials	Examination of the management system of chemical materials	A working group was established in which necessary matters for the management system were deliberated.	○
		Investigation of the status of chemical materials and storage of the data	It has been decided to use commercial software, and pre-implementation collection of data has been suspended.	○
	Promotion of green procurement	Expansion of the green supplier system to the domestic affiliates	·Briefed seven companies of the green supplier system. ·Revised the Green Procurement Guidelines as a policy for the entire Group.	○
	Recycling of post-consumer products	Examination of recycling technology of products	Could not establish the technology.	×
		Examination of the reuse of package materials	Deliberated on the systemization of packaging collection.	○
	Reduction of CO ₂ emissions in physical distribution	0.426 kL/ 100 million yen (down 4% from 2007)	0.459 kL/ 100 million yen (down 3.4% from 2007)	×
	Environmentally friendly sales activities	Proposal of environmentally friendly sales strategies	Expanded sales of environmentally friendly products.	○
		Enrichment of PR relating to the environmental efficiency of our products	PR for environmentally friendly products was conducted at exhibitions and through catalogues.	○
	Social Cooperation	Improvement of disclosing information	Disclosure of the state of law abidance in overseas factories	Investigated the law abidance status of overseas factories, but the delay in verification prevented the disclosure.
Acquisition of material data (procurement amount of raw materials and parts) in oversea factories			Obtained material data from overseas factories, but some survey items were lacking, and tallying was not achieved.	×
Enhancement of communication		Continual implementation of the environmental conferences	Held at eight sites.	○
		Acceptance of plant tours of stakeholders	Accepted plant tours of stakeholders at five sites.	○
Enhancement of social contribution		Continual participation in EPOC international exchange subcommittee meetings	Continued participation in EPOC international exchange subcommittee meetings.	○
		Continual implementation of the clean-up activities	Each plant/ affiliate participated in environmental activities, cleaning activities, etc., hosted by local municipalities.	○
Enhancement of actions for biodiversity preservation		Participation in a variety of environmental activities	Formulated the Group's Biodiversity Action Guidelines.	○
		Planning of guidelines relating to biodiversity	Prioritized biodiversity education to employees. Will continue investigation of activities for Satoyama conservancy.	×
Enhancement of environmental consciousness		Examination of activities for Satoyama (planted/ managed natural woodlots) conservancy and cooperation with NPO/NGO and governments		
		Enhancement of level-specific training in the domestic Group	Investigated the needs for and systematized level-specific training.	○
	Understanding of the implementation status of environmental education in oversea factories	Understood the implementation status of environmental education in overseas factories through questionnaire surveys.	○	

Environmental Management

Promotion System

To conduct systematic and effective environmental preservation activities, we have established an environmental management system following the environmental policy shared by the entire Group, and every member of the Group is striving to achieve our Eco Vision.

The status of system operation is confirmed through internal audits, and at the same time, the central and regional environment committees check progress towards achieving our goals and endorse challenges for each group/ division/ region/ department to facilitate continuous improvement.

The organization was reviewed in fiscal 2011; the Chemical Substance Subcommittee and the Green Procurement Subcommittee were consolidated into the Chemical Substance Management Subcommittee so as to ensure proper compliance with chemical substance regulations that are becoming more and more stringent. Also, the Logistics Subcommittee has been newly established to enhance environmental efforts in the logistics field.

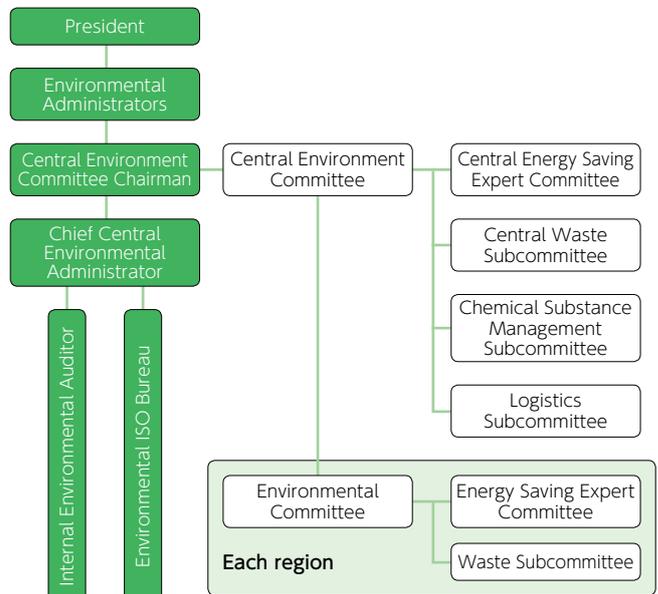


Internal environmental audit



Central Environment Committee meeting

Environmental Activity Promotion Organization



*"Each region" refers to the Headquarters Region, the Komaki Region, the Miyanojo Region, the Ise Region, and affiliates.

The Establishment Status of our Environmental Management System

Details

We received ISO 14001 consolidated certification for NGK SPARK PLUG CO., LTD. and 10 domestic affiliates.

Overseas corporations are currently being encouraged to seek individual ISO 14001 certification; as of the end of fiscal 2011, there are 13 overseas corporations with ISO 14001 certification.

Certification for the entire employee body of the Group, including both domestic and overseas sites, has reached 98%. We are further promoting certification in overseas corporations.

Environmental Education

Details

We conduct environmental level-specific education for each rank to increase the environmental awareness and knowledge of our employees.

In addition, we familiarize people with our environmental policy using the Environment Card, provide environmental information via company newsletters, and present case examples on the Environment/ Safety/ Health website. The annual Health, Safety and Environment Conference held in fiscal 2011 in each region presented panel and sample exhibits, which were participated in by many employees.



Environment Card



Health, Safety and Environment Conference

Environmental Management

Environmental Accounting

Details

What is important in promoting environmental management is to gain a grasp of the costs and effectiveness of environmental preservation activities. We have been adopting environmental accounting since 1999, and in 2003 the accounting scope was expanded to include the entire Group.

Environmental preservation costs for fiscal 2011 totaled 9,226 million yen on a non-consolidated basis, and 10,019 million yen for the Group. This was an increase of 14% compared to fiscal 2010. The effect of environment preservation measures was 331 million yen on a non-consolidated basis.

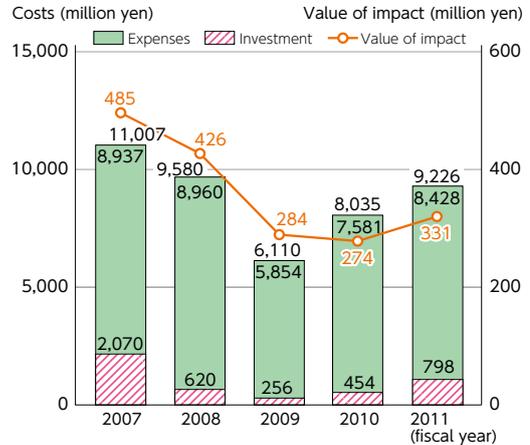
Calculation Method

Environmental preservation costs are proportionally calculated by categorizing items in conformity with the guidelines issued by the Ministry of the Environment of Japan, then prorating them in accordance with the rules of the NGK SPARK PLUG Group, created based on actual direct investment and expenses. Since fiscal 2011, the data tabulation method has been changed from the conventional twelve-month reduction method to net method to improve accuracy.

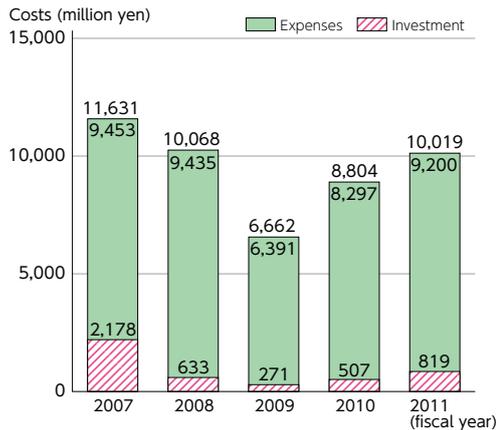
Value of Environmental Preservation Impact (non-consolidated) (million yen)

Content of impact		Amount
Earnings	Business earnings from recycling waste generated during business activities, used products, etc.	203
Cost reduction	Cut in energy costs by conserving energy	116
	Cut in water costs by conserving water	4
	Cut in waste disposal costs by conserving resources and recycling	8
Total		331

Environmental Preservation Costs and Value of Preservation Impact (non-consolidated)



Environmental Preservation Costs (Group)



Eco-efficiency

We calculate eco-efficiency by determining net sales per unit of CO₂ emissions and generated waste, and endeavor to improve it. Fiscal 2011 saw an increase in both the CO₂ index and the waste index compared to the previous fiscal year. Summertime energy conservation measures improved CO₂ efficiency.

$$\text{CO}_2 \text{ Index} = \frac{\text{Net sales}}{\text{CO}_2 \text{ emission volume by production}}$$

$$\text{Waste Index} = \frac{\text{Net sales}}{\text{Volume of waste}}$$

Eco-efficiency (Group)

