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IR & CSR Office, NSK Ltd. Nissei Bldg., 1-6-3 Ohsaki, Shinagawa-ku, Tokyo 141-8560, Japan Tel: +81-3-3779-7400 Fax: +81-3-3779-8906 E-mail: csr-report@nsk.com

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NSK

CSR Report 2011

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NSK CSR Report 2011

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NSK in Daily Life

NSK has contributed to the development of a wide range of industries with its advanced technology and high-quality products ever since it produced the first bearings in Japan in 1916. The NSK Group's products now play a crucial role supporting societies around the world.

NSK Group Businesses and Product Areas

Industrial Machinery Business

Industrial Machinery Bearings

Bearings reduce friction in the rotating parts of machinery and enable smooth rotation. NSK's bearings are used in a range of products and machines, including home appliances such as vacuum cleaners, railway vehicles such as bullet trains, steelmaking equipment, wind turbines for power generation, large industrial

machinery, airplanes, and satellites.





Deep groove ball bearings

Bearings used in steelmaking equipment

Precision Machinery and Parts

The NSK Group's precision machinery and parts are the core components in the machine tools and industrial robots used to manufacture automobiles, personal computers, and other products. They are also found in equipment used to produce semiconductors and in injection molding machines. The NSK Group's precision

machinery and parts play a crucial role on the front-line of manufacturing.



NSK Linear Guide™

Automotive Business

Automotive Bearings

Some 100 to 150 bearings are incorporated into a single automobile. The NSK Group provides numerous products that support the diverse automotive needs of society, including various bearings used in the engine, transmission, and electrical components as well as the hub unit bearings that support the axle.





Hub unit bearings with built-in ABS sensors

Double-Row Angular Contact Ball Bearings for automatic transmissions

Automotive Parts

The NSK Group's automotive parts include many important components that control forward motion, turning, and stopping in automobiles, such as steering systems that transmit the driver's movement of the steering wheel to the vehicle's wheels, and clutch assemblies that are used in automatic transmissions. The

Group's products also contribute to automobile safety, comfort, and environmental performance.



Friction clutch assemblies for automatic transmissions

for Electric power steering system





Overview of the NSK Group

NSK has been expanding its business from Japan throughout the world since the early 1960s. As of 2011, the Group has 206 production, sales, and technology sites in 28 countries and regions worldwide. With this expansive reach, the NSK Group is able to meet the diverse needs of its customers around the globe, both quickly and with precision.

Corporate Information

Company name	NSK Ltd.
Head office	Nissei Bldg., 1-6-3 Ohs Shinagawa-ku, Tokyo 1
Established	November 8, 1916



Americas

Sites: Employees: 32 2,523

Net sales: 85.5 billion yen

A region with huge markets such as the US, the automobile colossus, and Brazil, one of the BRICs nations and a country with booming demand for mining machinery.

Europe

Employees: Sites: Net sales: 29 102.2 billion ven 3,172

A region with high awareness of the

environment and an active clean energy industry, including wind power generators.





Financial Data

Net Sales (Consolidated)



* The figures for FY2008 and earlier are total. The change to accounting segments was made in FY2009

Operating Income (Consolidated)







The NSK Group's CSR

Mission Statement

NSK aims to contribute to the well-being and safety of society and to protect the global environment through its innovative technology integrating MOTION & CONTROL. We are guided by our vision of NSK as a truly international enterprise and are working across national boundaries to improve relationships between people throughout the world.

Management Principles

- 1. To serve our customers through innovative and responsive solutions, taking advantage of our world-leading technologies.
- 2. To provide challenges and opportunities to our employees, channeling their skills and fostering their creativity and individuality.
- 3. To identify the needs of the times and of the future and to use all of NSK's resources to meet those needs by being versatile, responsive and dynamic.
- 4. To work together with our employees and contribute to the communities in which we operate.
- 5. To manage our business from an international perspective and to develop a strong presence throughout the world.

The NSK Group's View of CSR

NSK's Mission Statement makes clear the Group's commitment to contributing to the development of society and to the protection of the global environment, and its Management Principles set the course to realizing these goals.

The NSK Group's products have the special characteristic of aiding the smooth functioning of a wide range of machinery, and they support the reliability, safety, and energy efficiency of the machines into which they are incorporated. The NSK Group regards its fundamental corporate activity as contributing to smoothly-running, safe societies, protection of the global environment, and the realization of sustainable societies through the supply of those products—that is, through the Group's main business. The NSK Group aims to achieve greater corporate value and sustainable growth by ensuring that all directors and employees are firmly aware of the Group's roles and by making sincere efforts to contribute to business growth and society by taking the perspective of customers and other stakeholders.



About the CSR Report 2011

Introduction

The NSK Group interprets corporate social responsibility (CSR) as "activities undertaken to ensure the sustainable growth of society and the NSK Group, while meeting the expectations of a wide array of interested people through corporate activities." This report outlines the NSK Group's daily operations and how they support societies around the world, with a special focus on the work done by individual employees.

Media Used for Information Disclosure Editorial Policy

The aim of this publication is to help as many stakeholders as possible to gain a deeper understanding of the activities of the NSK Group. In editing this report, priority is placed on presenting information which is considered of most interest to stakeholders or which the Group considers important, and an effort has been made to make the content highly accessible. Accordingly, the governance, social report, and environmental report (pages 16 to 47) have each been systematically arranged to present NSK's Approach, Mid-Term Goals, and FY2010 Activities—to give readers an overall picture of the Group's initiatives. The "FY2010 Highlights" section in the report introduces initiatives that the Group has enhanced since the previous fiscal year.

Improvements made from the 2010 version are listed on NSK's website.

Reference Data Published on NSK's Website:

More information and reference data are published on NSK's website. For more information and reference data related to topics on pages with a mark in this report, please visit the following site: www.nsk.com > Sustainability > CSR Reports.

Period of Coverage

April 2010 to March 2011. Activities conducted outside this period are indicated with the inclusion of a date.

Referenced Guidelines

Sustainability Reporting Guidelines (third edition) by the Global Reporting Initiative (GRI) and *Environmental Reporting Guidelines* (2007 edition) by the Ministry of the Environment of Japan.

Scope of Coverage

The report covers all NSK Group sites and plants, both in and outside Japan. For data and information that differs from the scope of coverage above, the scope is separately defined.



Bawal Plant, Rane NSK Steering Systems Ltd.

Sustainable Management (Governance)

Training on compliance and related topics was given at sites worldwide (see pages 16–17).
CSR guidelines for suppliers were published (see page 17).

Together with Stakeholders (Social Report)

- The quality creation structure was reinforced (see page 21).
- Development of a global training system commenced.
- NSK Global Management College (see pages 24 and 27)
- Social Appraisals (see page 50)

Environmental Century (Environmental Report)

- Sixteen new environmentally friendly products and technologies were announced (see page 37).
- The list of chemical substances in products was revised (see pages 46–47).

The NSK Group is determined to fulfill its social responsibilities and to protect the global environment. We pledge to do our part in fostering the well-being and safety of society.



Norio Otsuka President and Chief Executive Officer, NSK Ltd.

Investigation by Japan Fair Trade Commission

In July 2011, the Japan Fair Trade Commission conducted onsite investigations of NSK on suspicion that sales of certain products infringed upon Japan's Antimonopoly Act (Act on Prohibition of Private Monopolization and Maintenance of Fair Trade). I apologize sincerely to our shareholders, investors, and other stakeholders for the concern caused by these developments.

At NSK, we regard the fact that we have become subject to this type of on-site investigation, despite our long-standing initiatives to strengthen compliance—the bedrock of CSR—with the utmost gravity. We intend to cooperate fully with the commission's investigation. In addition, we will reinforce initiatives to ensure rigorous compliance among executives and other employees.

Great East Japan Earthquake

On behalf of the entire NSK Group, I would like to express our sincere condolences to those affected by the Great East Japan Earthquake of March 11 as well as convey our wishes for the rapid recovery of the affected region.

Effects on and Response by the NSK Group The NSK Group set up the Earthquake Task Force immediately after the earthquake struck, ascertained the scale of damage, and implemented recovery measures. The earthquake caused comparatively little direct damage to NSK, although some equipment at the Fukushima Plant and the Saitama Plant—close to the epicenter moved out of position. We were therefore able to resume normal operations within approximately 10 days of the earthquake, thanks in part to the support of our suppliers.

Hoping to be of help in the restoration of the afflicted areas, Group companies as well as friends and supporters in and outside Japan sent monetary donations, and some employees participated in volunteer activities, such as providing meals at evacuation shelters. Additionally, all sites in Japan enhanced their energy-saving measures in response to concerns about possible power shortages. (See page 19 for details).

NSK Group sites that were affected by the earthquake received much warm support from customers and suppliers. I would like to take this opportunity to express my appreciation on behalf of the NSK Group.

Working to Create a Sustainable World

Helping to Build a More Prosperous World and Protecting the Global Environment Supported by the growth of emerging nations, the global economy in fiscal 2010 continued its recovery from the stagnation caused by the financial crisis of 2008. During this period, emerging nations became increasingly important in the global economy as they continued to make the transition from manufacturing bases for global demand into giant markets with massive demand of their own. Countering this relatively favorable economic news, the rapid expansion of markets multiplied concerns over supplies of energy and mineral resources, and the abnormal weather occurring worldwide drove food prices up-both adding to the growing threat of social instability in certain countries. As if in concert with these issues. more attention than ever before was paid to environmentally friendly products. Backed by tax incentives, subsidies, and other measures to encourage their widespread adoption, fuel-efficient hybrid vehicles, electric cars, energy-saving consumer electronics, LED lights, and other environmentally friendly products are rapidly becoming familiar items.

Going forward, the NSK Group will continue to develop products that help protect the environment, while also taking steps to conserve energy and resources across its business operations. Meanwhile, we will keep implementing growth strategies in emerging nations such as China and India. I intend to ensure that these efforts demonstrate our determination to contribute to social progress and protect the global environment, as mandated by the Group's mission statement. At the NSK Group, we recognize that helping to build a society with environmental awareness is the key to our continued growth.

Working toward the Goals of the Mid-term Plan

Responding to a Paradigm Shift

We recognize that the emergence of huge markets in developing countries and the ongoing technical innovation driven by environmental concerns-typified by the electrification of automobiles-will bring about a profound paradigm shift. We expect to see significant changes in industry and socioeconomic structures. The basic strategy of our mid-term plan covering fiscal 2009 to fiscal 2012 is to meet this paradigm shift head-on by building a solid foundation for the sustainable growth of the NSK Group. There are two main thrusts to this effort. We are working to strengthen manufacturing, marketing, and technology development capabilities across our two main businesses: the industrial machinery business and the automotive business. We are also seeking to strengthen the Group's overall business position by giving the business division headquarters that oversee each business segment primary responsibility to implement customer-focused growth strategies. We believe these initiatives will prepare us to make the most of the great changes happening around the world today.

Growing Together with Our Customers and the Broader Society

Our customers in the automobile industry are establishing factories in emerging nations and carrying out production as close to the source of demand as they can. Across their local sites, they are moving to common platforms and sharing of basic parts to keep costs down and make production more efficient. Meanwhile, vehicle makers are also pursuing differentiation, making automobiles tailored to unique local needs to raise the competitiveness of their products in each region. They are intensifying efforts to optimize everything from air conditioners and other equipment to primary functional parts to better suit consumer tastes, road conditions, climatic conditions like temperature and degree of humidity, and other local factors.

To support our customers with these efforts, we are expanding our business globally, producing products with world-leading quality in the locations where they are needed, and delivering them in a timely manner. We are also working to increase the speed of development and provision of products that precisely meet local needs. Each plant is also making tireless efforts to improve production efficiency and quality and to develop the human resources needed for success. We have established technology centers in each region so that NSK engineers can provide close support to our customers to build even greater trust. The centers also strive to gauge future needs accurately and then leverage the technical capabilities NSK has built over the years to accelerate the development of new products that meet them.

In the current fiscal year, at a steering system manufacturing subsidiary in Thailand, we started production of electric power steering (EPS) systems that help improve automobile fuel economy and strengthened our system for global supply of these products. We also developed a hub unit bearing for axles that ensures high reliability by preventing the infiltration of muddy water into the bearings even when driving on unpaved roads, and launched the product in emerging markets in fiscal 2010. (See the special feature section on pages 10 to 15 for details.)

To capitalize on the growth of China, we will start full-scale production this fiscal year of large bearings used in iron and steel production equipment and in construction machinery at a plant in Shenyang, Liaoning Province, which is our 11th production base in China. We also established a new ball bearing manufacturing company —our 12th location in China—in Hefei, Anhui Province. The NSK Group is committed to contributing not only to the development of its customers but also to the growth of industry. By doing so, we believe we can grow together with all the nations and regions where we do business.

Human Resources Development Drives the Growth of the NSK Group

To continue growing sustainably, the NSK Group must make the most of the escalating changes in the global and local business environment. The key to this will be for our business sites around the world to respond swiftly to change and increase their capacity to drive their own growth.

To support them in this, we are taking steps to ensure that NSK is "No. 1 in Total Quality." This commitment encompasses not only product quality but also the quality of information and service provided to customers and the quality of every task from development and design to procurement, manufacturing, marketing, and distribution.

We will also keep pressing forward with development of local management so that employees in locations worldwide with different nationalities and cultural backgrounds can feel part of a truly community-based enterprise. We want our team worldwide to be the best in terms of product and technology knowledge, and to contribute their unique talents to NSK's corporate culture and philosophy. To achieve this, we are currently reinforcing our education and training systems while taking steps to foster communication between employees across differences in language and culture.

Conclusion

At the NSK Group, we are grateful for the support we receive from all of our stakeholders—from customers, suppliers, shareholders and investors, to local communities. I hope that this report transparently conveys our efforts to meet stakeholder expectations, the goals we are working toward, and our progress on meeting them. I believe that the content of this report helps to show how the NSK Group seeks to grow by contributing to the growth of every stakeholder. Finally, I invite your feedback on the report itself, as well as your candid views on the NSK Group's ongoing business activities.

Into the Future Driving Progress Around the Globe to Address pecial **Diverse Needs Worldwide** Feature,

NSK provides a variety of parts that enable your car to move forward, turn, or stop. This Special Feature shows how the NSK Group's business helps people to enjoy life more. Two examples are hub unit bearings, which have evolved to meet the needs of different regions, and electric power steering (EPS) systems, which the NSK Group produces with leading-edge expertise and quality around the world.

NSK and Cars

You know that your car takes you where you need to go, but you may not have imagined that it is made of up to 30,000 parts. Since safety is the top priority in a car, each and every auto part has to have high quality and high reliability.

NSK parts like EPS systems make a big difference in the safety, comfort, and environmental performance of today's cars. Did you know that every car needs about 100 to 150 bearings to operate smoothly?

Electric Power Steering Systems

EPS systems use the power of a motor to help the driver turn the steering wheel. An electric control unit (ECU) watches the status of the car and controls the feel of the steering wheel to maximize comfort and safety. This makes the steering seem light at low speeds and solid at high speeds. EPS systems also have great environmental performance, improving fuel economy by 3-5% over conventional hydraulic power steering.

Hub Unit Bearings

A hub unit bearing is a modular product that includes the bearing that bears the weight of the car while the wheels go around and all the peripheral parts needed.

20

NSK's hub unit bearings are compact and lightweight and feature superior durability and reliability. They also boast advanced functions that help make driving safe and comfortable, such as a built-in sensor that detects wheel rotation.

The Changing Landscape of the Automobile Industry

Cars are essential to modern life. They provide comfortable transportation that allows people to go wherever they want.

In emerging countries with rapid economic growth such as China and India, more and more people are driving cars, and expressways and other transportation infrastructure is being built guickly. China's automobile market overtook the US in 2009 to become the world's largest and is expected to keep growing in the future.

The NSK Group's customers in the auto industry are aggressively building new plants to locate production near demand, seeking to make the most of the growth in emerging nations. Across these new sites, they are moving to common platforms and sharing basic parts to reduce costs and make production more efficient.

Meeting Customer and Social Needs

Since producing the first bearings in Japan in 1916, NSK has developed numerous types of bearings. Applying the technology it developed working with bearings, NSK expanded its business to precision machinery and parts and automotive parts. In this way, NSK has contributed to the growth of industry, improved the well-being and safety of society, and helped to conserve the global environment.

Since the early 1960s, the NSK Group has been expanding its business from Japan throughout the world. Today it has a production, sales, and technology network in 28 countries worldwide and has put in place a system to rapidly develop, locally produce, and deliver products that meet diverse customer and community needs in different parts of the world.

NSK is determined to grow together with its customers and society by continuing to develop its four core technologies and practicing manufacturing that precisely meets the needs of customers and society.

The Foundation of NSK's Engineering Capabilities: Four Core Technologies

Tribology

Tribology is the science and technology concerned with all the phenomena that occur between two surfaces, such as lubrication, friction, and wear. NSK strives to create products with higher performance and reliability by advancing and skillfully applying tribology.



Fields Lubricants (oil, grease, additive agents), function control unctional surface creation

Material Engineering

NSK pursues the creation of materials with a high degree of cleanliness and strives to advance material design, heat treatment, and performance assessment technologies in order to improve product functionality and durability while also achieving productivity and cost performance



Fields High-strength materials (steel, resin, ceramics), heat reatment, material fatique

Meanwhile, they are also striving to differentiate their products and increase competitiveness by tailoring them to local needs. Makers are also actively engaged in differentiation that seeks to make vehicles perfectly suited to the locale, choosing everything from the shape of the automobile such as sedan, hatchback, or wagon to equipment such as air conditioners and functional parts that influence durability according to consumer tastes, road conditions, and the climate, whether hot or cold and dry or humid.

There is also demand for the development of technologies that can help improve fuel economy, both at the level of the automobile and individual parts, in order to help solve global environmental issues such as climate change and the depletion of resources.

Analysis Technology

NSK leverages analysis technology to develop products with high functionality and reliability and to establish efficient production systems. This technology also enables virtual testing using computer simulations.



Fields Motion and friction analysis, macro/nano lubrication analysis, machine system simulation

Mechatronics

NSK creates proprietary mechatronics that combine technologies developed in the field of mechanics, including bearings, and electronic technologies.



Fields Motor, circuit and control technology, sensor technology, biomedical microelectromechanical systems (Bio-MEMS) technoloav



Meeting Local Needs Creating Innovative Solutions

Evolution of the Hub Unit Bearing with NSK's Four Core Technologies

Cars are used around the world under different weather and road conditions. These pages show examples of the development of hub unit bearings, a product that is optimized for local conditions using NSK's strengths in its four core technologies.

Protecting the Coating of Oil— Solving the Challenge of Water and Oil

Development of Water-resistant Grease

Inside a bearing, grease forms an ultra-thin film of oil on the metal balls and in the grooves of the inner and outer rings in which the balls roll, decreasing friction and wear by preventing the metals from touching. However, if water gets in and mixes with the grease, it becomes difficult for the oil film to form, resulting in the metals touching each other directly. This can produce friction and cracks that cause product failure.

NSK developed water-resistant grease to solve this problem. By improving the grease additives, NSK has ensured that any water that may infiltrate the bearing will not break the oil film by keeping the water in large droplets. Also, water is prevented from touching the metal surface by the formation of a protective film on metallic surfaces. This grease extended the life of bearings by 1.7 times that of the conventional product. This achievement is the result of tribology, one of NSK's four core technologies.

Shutting Out Water and Mud and Improving Durability **Development of High-Performance Seals**

Keeping water and mud out of vehicle parts is critical in regions were roads become flooded during the rainy season.

Hub unit bearings are used in the center of wheels, where they come into direct contact with water and mud. They are a vital part that supports the safety of the car. Seals are incorporated in the space between the inner ring and hub shaft, which rotate together with the wheel, and the outer ring, which is fixed to the body. The seal prevents the intrusion of water and mud by covering gaps with a "lip" of thin, flexible rubber. With many years of use, however, the lip gradually becomes worn, making it easy for water and mud to penetrate the unit. Especially in regions with a lot of mud, mud that sticks to the hub shaft causes rust, which makes the surface rough, accelerating the wear of the lip.

To counter this, NSK developed high-performance seals. A cover called a "bill" was integrated with the seal, making it difficult for mud to enter past the lip, which succeeded in reducing wear to provide high durability, even in conditions with mud and water.

This technical development was made possible by applying the analysis technology that is one of NSK's four core technologies.



Even Steel Has Individual Characteristics-Solving the Problem of Variability The Development of a Processing Method

Hub unit bearings must be highly reliable so that they do not fail even when driving for long periods under tremendous force.

The steel used in parts such as the inner and outer rings in hub unit bearings contains minute impurities called inclusions. A high concentration of inclusions can cause trouble known as flaking, in which flakes of metal peel off from the surface where the balls roll (rolling contact surface). Japan-made steel has an extremely low concentration of inclusions and its quality is always stable. Steel made outside Japan, on the other hand, has a large variation, and sometimes steel with a concentration of inclusions is delivered to NSK's plants.

Accordingly, NSK leveraged its analysis technology and material engineering to develop a processing method that does not affect quality, even when using steel with a high concentration of inclusions. When steel rods are formed under strong force into a part shape, the processing conditions are optimized so that the section with the least amount of inclusions comes to the rolling contact surface. This development is contributing to the success of local industry by enabling production using locally procured steel in each region while maintaining durability.

Product development and production methods must be suited to each unique part of the region. NSK is striving to help enrich people's lifestyles by providing safer, more reliable, higher quality products-all based on its four core technologies.



Anywhere, Anyone Producing Identical Quality around the World

High-Quality EPS Systems for More People

NSK has expanded its production of EPS and other steering systems to emerging nations such as Poland, China, Thailand, and India. Using operations at Siam NSK Steering Systems Co. Ltd., in Thailand as an example, these pages describe the NSK Group's efforts to deliver products with outstanding quality and cost performance to customers in a timely manner.

The Challenge of Delivering the Same Quality Everywhere *Creating a Quality Management System*

NSK has created a standardization system so that products of outstanding quality can be made, no matter which country they are produced in. For example, the steering system plant in Thailand, Siam NSK Steering Systems, uses equipment from Japan, developed with NSK's know-how, when it began mass production of EPS systems. In order to master that equipment, Thai technicians learned production technology and production management from NSK's main plants in Japan and established a management system suited to Thai employees. While drawing on Japan as a reference, they put into practice Thai-style standardization, making their own procedure manuals, incorporating the kinds of practices that are performed commonly in Japan, so that Thai employees can carry out precise management with no misunderstanding.

It is also vital to enable local procurement of parts. No matter how talented the technicians and excellent the equipment, it is difficult to maintain high-quality manufacturing without parts that have been produced to NSK's exacting requirements. Accordingly, the Group provides technical support to local Thai suppliers and takes other actions to improve the level of quality.







The Challenge of Local Autonomy Creating a Streamlining System

Cars around the world are moving away from hydraulic power steering to EPS systems. This is because EPS systems match the demands of the times, such as improving fuel economy, safety, and comfort. In addition to meeting strong demand, it is important to continue improving quality, cost, and delivery performance as well as to increase competitiveness to satisfy customers. NSK believes that sustainable growth results when individual plants in each part of the world increase their competitiveness on their own by means of independent









management, completing everything they need to do locally while cooperating with NSK's main plants in Japan.

Siam NSK Steering Systems is aiming to raise the bar at all levels of its organization, from the plant manager, to workers on the production line, to indirect departments, which are all composed of Thai nationals. The company is pursuing more efficient, advanced business operations by increasing the sophistication of its manufacturing throughout the entire plant, while making use of knowledge learned from Japan, and by autonomously developing relationships with customers and local suppliers. nto the Future Driving Progress Around the Globe to Address Diverse Needs Worldwide

The Challenge of Passing Along Manufacturing Skills Human Resources Development

Human resources development is the foundation of manufacturing. NSK is working hard to ensure its manufacturing spirit is deeply rooted in each location. It is developing human resources by encouraging them to discuss challenges and share best practices on the job, and to pursue deep mutual understanding that goes beyond national and organizational boundaries.

Siam NSK Steering Systems has made efforts to deepen the interaction between Thai and Japanese personnel. Key technicians receive training at plants in Japan to learn advanced technology and skills. They bring the skills, quality management, and improvement methods learned in Japan back to Thailand and play active roles as leaders on the production line. In addition, trainers from Japan go to Thailand and conduct training sessions locally for employees in Thailand.

NSK aims for each location to take responsibility for itself, including human resources development. Technicians who received training in Japan then lead other employees at the plant in Thailand, working together to identify issues, seek their causes, and carry out effective improvements. The leaders are making great efforts to firmly establish a manufacturing culture in Thailand.

NSK is undertaking numerous efforts to ensure the delivery of safe and reliable products. NSK is committed to progress in manufacturing, so that it can help people worldwide enjoy richer lifestyles. **Corporate Governance**

Management Structure Supporting Sustainable Growth

Trends

The international community must cooperate to overcome a range of challenges including poverty, conflict, and environmental problems in order to realize a sustainable world. As corporate activities expand globally, companies are expected to do their part to help solve the challenges of their respective countries and regions. They are called upon to contribute to the global community by providing helpful products and services through ethical business activities and by respect for local cultures and customs.

Achieving Sustainable Growth by Increasing Management **NSK's Approach Transparency and Soundness**

The NSK Group has established a corporate governance framework and follows a policy of transparent and sound management in order to achieve sustainable growth as a company while meeting the expectations of society. The NSK Group's governance framework builds internal control organization into the operational structure,

monitoring all operations autonomously. The governance framework also includes independent committees comprised of a supervisory structure that oversees the business execution of the operational structure and ensuring objective oversight.

With the aim of accurately and flexibly meeting the ever-changing needs of customers and responding to the globally expanding market, the NSK Group created a system in which business sites and group companies carry out their tasks under a business division headquarters that controls measures tailored to the industrial fields of customers, and a regional headquarters that oversees measures suited to the characteristics of each country and region. The functional headquarters organizations, including the Quality Assurance Division-Headquarters and Compliance Division-Headquarters. take the lead regarding issues that must be addressed on a group-wide basis, such as the improvement of quality and the strengthening of compliance. These functional headquarters increase cross-sectional cooperation and promote efficient initiatives.

Figure 1: Governance Framework



Enhance Total Quality and Meet the Expectations of Mid-Term Goals Customers and the Broader Society

The NSK Group is continuing the initiatives from its previous mid-term plan aimed at achieving its vision of becoming "No. 1 in Total Quality." This means increasing the guality of not only products but also information and services, and the quality of functions such as development, design, procurement, manufacturing, marketing, and distribution. In this way, the Group will strengthen the foundation that supports its sustainable growth. At the same time, the NSK Group is initiating a paradigm shift that calls for a balance between economic prosperity and environmental protection, thereby working to meet the expectations of its customers and the broader society.

FY2010 Activities

Global Governance Enhanced

Pages 16–19 of this report describe initiatives for increasing management transparency and soundness. Pages 20–47 cover the status of initiatives aimed at ensuring the sustainable growth of the NSK Group.

In fiscal 2010, the NSK Group expanded efforts to strengthen compliance and various other initiatives throughout the Group worldwide. For example, it implemented CSR and compliance training, which had previously been provided mainly in Japan, at Group companies outside Japan. It also made efforts to raise the global level of initiatives relating to internal controls over financial reporting, information security, and export management.

Compliance Training Expanded to Sites Outside Japan

The NSK Group has provided directors and employees in Japan with e-learning and lecture-based training sessions on topics such as CSR, compliance, information security, and internal controls.

In fiscal 2010, these training sessions continued in Japan. In addition, e-learning was provided to directors and employees at the manager level and above at Group companies outside Japan with the objective of raising awareness Group-wide.

NSK Code of Corporate Ethics (extract)

Established:
February 22, 2002
Revised:
January 1, 2009

NSK Code of Conduct Concerning Compliance (by item)

- 1. Compliance with Antitrust Laws
- 2. Compliance with Export-related Laws and Regulations
- 3. Prohibition of Commercial Bribery (handling of entertainment, aifts. etc.)
- 4. Transactions with Public Institutions and Handling of Political Donations
- 5. Accurate Recording and Processing
- 6. Prohibition of Insider Trading
- 7. Handling of Intellectual Property
- 8. Prohibition of Illegal Activities and Anti-social Conduct
- 9. Protection of Corporate Assets
- 10. Handling of Confidential Information
- 11. Relations with Customers
- 12. Relations with Suppliers
- 13. Relations with Competitors
- 14. Prohibition of Discrimination and Cultivation of a Sound Workplace
- 15. Respect of Fundamental Rights at Work
- 16. Global Environmental Protection
- Note: The NSK Code of Corporate Ethics applies to NSK Ltd., its consolidated subsidiaries (unless they have established their own code independently), and NSK-Warner K.K.

FY2010 Highlights

Conducting Unique Compliance Training Programs at Each Business Site

NSK Bearing Manufacturing (Thailand) Co., Ltd. conducts a compliance training program every year. Employees study regulations that must be observed, including various kinds of compliance and information security rules, based on NSK's Code of Corporate Ethics. In addition to the regular training, the company takes every opportunity to raise awareness of compliance issues, including distributing leaflets on the

Code of Corporate Ethics and bringing attention to compliance issues during morning meetinas.

In fiscal 2010, compliance was also covered in the course for new hires held soon after they joined the company.



Photo 1: Training session at NSK Bearing Manufacturing (Thailand)

CSR Guidelines Distributed and Suppliers Asked to Take Action

NSK believes that sharing recognition of the expectations of society throughout the supply chain, instead of only within the Group, and implementing the initiatives required will translate into growth for the entire supply chain.

In fiscal 2010 the Group distributed the NSK Supplier CSR Guidelines to major suppliers in Japan, encouraging them to understand the initiatives and asking them to comply.

The Group also started the same efforts in China. The NSK Group's 11 plants in China have established a supply chain for stably procuring steel and parts in China. The Chinese version of the NSK Supplier CSR Guidelines was shared with major suppliers at a

supplier liaison meeting held in November 2010.

The Group will continue working to ensure the quidelines reach the entire supply chain, worldwide.



Photo 2: Supplier liaison meeting at th headquarters in China

Corporate Governance Framework Record of Compliance Training Sessions ■ NSK Code of Corporate Ethics (full text) ■ NSK Supplier CSR Guidelines Mid-term Plan

Resolving Issues While Protecting Whistle Blowers

The NSK Group operates whistle blower "Hotline" systems, one in-house at the Compliance Division-Headquarters and one staffed by an outside lawyer. Both are available to employees, and the outside system is also available to suppliers. The system allows users to remain anonymous and ensures they suffer no unreasonable loss from using the Hotline. Harassment consultation services for employees have also been established at each business site to provide closer assistance.

In fiscal 2010, the Hotline was used four times and consultation services at business sites were used twice.

Information Security Strengthened

NSK has been streamlining printing equipment and switching to devices that have authentication functions and can log print commands to prevent the leakage of information on paper. In fiscal 2010, these measures were rolled out at the Fujisawa Technology Center and one Group company. In fiscal 2011, they will be implemented at other major facilities.

Additionally, information was shared and problems resolved at an internal global conference of IT personnel from Japan, the US, and Europe and an ASEAN-Oceania IT conference held in fiscal 2010 to raise the level of information security worldwide.

Initiatives Led by the Information Security Committee in Europe

Since fiscal 2009, the European Information Security Committee, in which all departments participate, has been taking the lead in reinforcing information security in the region. In fiscal 2010, the committee met three times to check the progress of planned measures and discuss next steps. Quarterly status reports were also made to the NSK headquarters at global meetings.

In fiscal 2010, the Group in Europe worked to thoroughly manage personal PCs and removable disks, which are often the cause of information leaks. Europe-based information security training programs were also offered to enhance the awareness of each and every employee.

Export Management System Updated at Group Companies

The NSK Group has strengthened its export management system, not only for exports from Japan

but also for exports from sites in other countries. These moves are intended to secure peace and security in the global community by preventing the export of products and technology that could be used to manufacture weapons.

In fiscal 2010, the Group revised its rules on the review of transaction screening for new export projects and implemented them at all locations.

Internal Control Initiatives Expanded

In fiscal 2010, the third year Japan's report system on internal controls over financial reporting (J-SOX) has been in operation, the NSK Group added eight more Group companies to the list of those evaluated, which now stands at 45 companies. As in fiscal 2009, NSK confirmed the effectiveness of the design and operation of internal controls of NSK Group companies in fiscal 2010. The Group also obtained an audit certification (unqualified opinion) from an independent auditor. Additionally, the Group moved ahead with the standard development of internal controls beside J-SOX.

NSK Action

Establishing an Internal Control System in the ASEAN Region

The ASEAN Headquarters began efforts to establish and assess J-SOX-based internal controls in March 2007. Initially four companies were subject to internal controls, with four more added in fiscal 2010 for a total of eight companies today. The region includes Oceania and India as well as the ASEAN area, so languages, cultures, and social systems differ. We periodically visit each company to promote internal control efforts, which helps strengthen internal controls group-wide.



Internal Audit Team, ASEAN Headquarters in Singapore From left: Tan Kok Hwee, Eileen Ho, Apollonia Yung, Evelyn Leong and Francis Tan

NSK's Response to the Great East Japan Earthquake

The NSK Group offers its sincere condolences to all those affected by the Great East Japan Earthquake of March 11, 2011.

The Group would like to reaffirm its heartfelt commitment to assisting in achieving the earliest possible recovery of the afflicted areas.

On March 11, 2011, the largest earthquake ever recorded in Japan struck in the Pacific Ocean off the northeast coast of Japan. The quake and tsunami that followed it caused tremendous damage across an extensive area, mainly in Japan's northeastern Tohoku region. On top of this, Japanese industry has been greatly affected across the board by limited electricity supplies due to the shutdown of several power stations, such as the Fukushima Daiichi Nuclear Power Station.

This page reports on the NSK Group's efforts to respond to the disaster, as of July 2011.

Providing Monetary Assistance

NSK Group companies donated 100 million yen to help with recovery in the afflicted area. In addition, the NSK Welfare Fund, managers at NSK Ltd., and officers and employees of NSK Group companies in and outside Japan also provided donations.

Business Continuity Plan and Measures Taken Before the Earthquake

The NSK Group had prepared a business continuity plan (BCP) in case of a large-scale earthquake and repeatedly taken concrete measures with a view toward the specific challenges at each business site. Opportunities had been provided for all employees to participate in routine evacuation drills and practice using the safety confirmation system in an effort to raise awareness and ensure proper steps could be taken in an emergency.

Effects on the NSK Group

Many pieces of machinery were moved out of position at the Fukushima Plant, which is relatively close to the epicenter, and also at the Saitama Plant. The plants engaged in recovery with the support of suppliers and other plants, quickly achieving a restart of operations and returning to normal production in about 10 days. The Tohoku Branch and Hitachi Branch, which are sales locations, were affected by damage to fixtures and interruption of electricity and water services, but they were able to restart operations within a few days.

From Initial Response to Recovery 1. Initial Response

NSK has a Crisis Management Committee as a permanent organization. Under the direction of the Crisis Management Committee, the Group's initial response was to confirm the safety of employees and their families and to ascertain the effects on each business site.

2. Recovery

After the earthquake occurred, NSK set up the Earthquake Task Force under the direct control of the

president to ensure the safety of NSK Group employees, minimize damage, and rapidly implement recovery measures. Safety, customer service, production, procurement, and other teams were created under the task force and work was pushed forward swiftly with cooperation between departments in an effort to restore to normal operations.

3. Return to Normal Operations

Placing the highest priority on ensuring safety, the Group made comprehensive efforts to supply products with certifiable quality, which is the first and foremost duty of a manufacturer, never more so than in the midst of an emergency.

Addressing Production Issues

In order to cope with scheduled blackouts, some production was shifted to other plants, in-house power generating equipment was installed and used, and work shifts were changed according to the supply of electricity.

Addressing Procurement Issues

Many of the NSK Group's suppliers were affected by the disaster. In addition to providing relief supplies and other needed support, the Group responded by temporarily procuring supplies from alternative sources until suppliers could recover.

Addressing Quality Issues

Unstable electricity supply and alternative supplies of materials and components can result in deviations in the manufacturing process. The development, design, quality assurance, procurement, production, and other departments cooperated in an effort to ensure the supply of products with certifiable quality to customers and the broader society.

Lesson Learned and Future Initiatives

Understanding the Entire Supply Chain

When numerous suppliers are simultaneously affected by the occurrence of a large-scale disaster like this one, ascertaining the status of damage throughout the entire supply chain and smoothly considering the possibilities for procuring alternatives is a key to making progress on recovery. In view of this, it is vital to understand the big picture upstream through the supply chain during normal times and to consider responses to take in a state of emergency.

Addressing Restrictions in Electricity Use

Restrictions in peak electricity use are anticipated to continue for a relatively long time. The NSK Group is responding to the electricity limits by taking thorough energy-saving measures such as reducing the number of fluorescent lights and adjusting air conditioning temperature settings, and by changing days of operation, getting production support from other plants, and making use of in-house power generating equipment.

Making use of the lessons learned from this experience, the NSK Group will re-examine the BCP initiatives it had taken previously and strive to raise their level going forward.

Creating Quality to Earn the Confidence of Society

Trends

Industrial products that support today's affluent lifestyles must perform their prescribed functions safely and reliably. As the advance of technology and globalization simultaneously accelerate, companies are expected to contribute to the growth of their customers and the broader society by providing high-quality products and advanced technologies that meet the specific needs of consumers across a range of countries and regions.

Total Quality No. 1 NSK's Approach

The NSK Group aims to become "No. 1 in Total Quality." In other words, the Group is working to achieve the industry's commitment to quality ensures that its products will satisfy customers all over the world. In order to become "No. 1 in Total Quality," the NSK Group focuses on human resources development by increasing the level of quality built into its products and raising the quality of administrative, sales and distribution functions.

Figure 1: Quality-Building Initiatives



Mid-Term Goals Quality Creation That Ensures Customer Satisfaction

In order to facilitate the creation of quality levels that are indispensable to meeting the NSK Group's mid-term plan, the Group is carrying out activities under the following three programs.

1. NSK Product Development System (NPDS)

In order to quickly transform new orders into reliable, stable production, the NSK Group is promoting initiatives that build quality into each process.

2. NSK Quality No. 1 (NQ1)

The NSK Group is promoting initiatives to realize stable production and ensure near-zero defects.

3. Human Resources Development

The Group is promoting human resources development in order to build a stronger foundation for quality creation.

Quality Control System Restructured for More Direct FY2010 **Management Involvement** Activities

Aiming to further accelerate Group-wide initiatives through the active involvement of management in quality control, the NSK Group established the Quality Board Meeting. Directors in charge of each business headquarters participate in the meeting, which is chaired by the president. The meeting checks the status of quality control and makes management decisions on introducing initiatives. The Group also carried out various measures in accordance with other action plans.

FY2010 Highlights

Strengthening Approach with the **Establishment of the Quality Board Meeting**

In May 2010, the NSK Group established the Quality Board Meeting, chaired by the president and composed of directors in charge of each business headquarters and other relevant members. The aim of the meeting is to strengthen Group-wide initiatives by having management check the status of quality control and direct needed initiatives in a top-down manner.

Additionally, business headquarters quality meetings were established in the automotive and industrial machinery business division headquarters, and a structure was developed to strengthen quality initiatives while deepening collaboration among manufacturing, marketing, and design departments.

Figure 2: Quality Board Meeting



Obtaining Quality Assurance Management System Certification

The NSK Group has obtained one or more of the following certifications in accordance with the products that each plant manufactures: ISO 9001, the international standard for guality management systems, ISO/TS 16949, the quality system for automotive production and relevant service part organizations, and AS 9100 certification, the quality system for the aerospace industry. Maintaining and improving these guality assurance management systems ensures that the NSK Group's products meet the high quality standards required by customers.

As of March 31, 2011, all 54 product manufacturing sites in the NSK Group had obtained one or more of these certifications.



Reference data is available on NSK's website. www.nsk.com > Sustainability > CSR Reports

NPDS: Building Quality into Each Process

The NSK Group deploys its NSK Product Development System (NPDS) globally. The system enables the Group to respond to new orders with speed and reliability, to steadily develop products that meet customer expectations, and to ensure efficient mass production.

When an order is received, the technical, production, and other issues are first discussed from every angle to determine whether the order can be accepted. If it is accepted, at each process—from product planning to development and design, prototype manufacture, and mass production—confirmation is made that all issues are being resolved, thus building quality into the product.

In fiscal 2010, the number of internal specialists with advanced professional skills and expertise was increased, and efforts shifted into full swing to rigorously and objectively conduct confirmation checks during the transition between processes. Initiatives were also strengthened in the development and design departments with the appointment of quality specialists who will introduce and execute new work duties related to quality.



Figure 3: NSK Product Development System (NPDS)

Global Quality Assurance Organization

Status of Quality Management System Certification Acquisition

NQ1 Program for Stable Production with Zero Defects

The NQ1 program is being implemented with the cooperation of manufacturing, design, production technology, quality assurance, and other departments across the NSK Group. The objectives are to bring defects as close as possible to zero, optimize the flow of both information and physical items through all processes from parts and materials procurement to delivery, and to achieve efficient, stable production,

In fiscal 2010, the ball bearing production line at the Otsu Plant succeeded in reducing defects to a level

traditionally believed impossible by implementing a number of detailed measures while deepening cooperation between the grinding process and assembly process. These methods are now being deployed to other lines.



Photo 1: Checking the progress of initiatives next to the line (Otsu Plant)

Human Resources Development That Supports Total Quality No. 1

In order to achieve customer satisfaction, it is vital for all employees to understand their own roles, to strengthen their ability to communicate with one another, and to keep improving the quality of their work.

The NSK Group carries out human resources development by providing employees with education and training, and asking them to participate in work improvement activities.

Moreover, in order to raise the bar for quality-building initiatives worldwide, the NSK Group is working on developing training systems at locations in each

country. In fiscal 2010, the Group trained quality assurance personnel in China and those personnel have started providing instruction on quality knowledge. In fiscal 2011, the Group plans



to train in-house quality Photo 2: Training quality assurance personnel in China instructors in Europe.

Quality Training for the Sales Departments to Improve Customer Satisfaction

NSK has begun sales quality training sessions intended to raise the level of customer satisfaction by increasing awareness of quality in sales departments, which are the point of contact with customers. In fiscal 2010. nearly all the employees in sales departments related to automotive and industrial machinery working in locations around Japan took this training.

The training consists of three stages. In the first stage participants relearn from the beginning the basics of guality control, mainly through classroom lectures. The second stage provides training on more practical customer service through case studies and discussion. Finally, by reconfirming the training content via an e-learning system, participants acquire a wide base of knowledge, ranging from the sales frame of mind to practical know-how.

The Company is planning training sessions at the next level for fiscal 2011. and will continue to increase quality in sales departments to raise customer satisfaction.



The discussion with people

from other departments was

stimulating and deepened

information to improve my

my knowledge of quality.

I will make use of this

work from here on.

Comments from training participants

This training reaffirmed the great responsibility we have in society as a parts manufacturer. Sales is the company's point of contact with society. I will continue to provide responsible service.



Second Sales Department Osaka Branch, NSK Ltd.

Emi Harada Sales Planning Department. Sales and Marke ting Division Headquarters. NSK Ltd.

Global Development of Quality Guidance and Audits

The NSK Group designates heat treatment and other processes that are important to the stable production of high-quality products as special processes and subjects them to rigorous quality control. Since fiscal 2009, the Group has been strengthening its process management structure, and training and certifying auditors who work out the main elements of initiatives, to enable the same level of rigorous management at plants worldwide. Auditors strive to improve processes throughout the entire supply chain by visiting and

auditing suppliers with special processes in addition to their own plants. In fiscal 2010, the Group trained independent auditors in the Americas, Europe, and Asia.



Photo 4: Training independent auditors at Liberty Plant in the USA

Korean-style Quality Improvement Program

Changwon Plant in South Korea takes a three-pronged approach to quality initiatives: programs to increase employee awareness, deployment of programs brought over from Japan, and the plant's own unique training system.

Kakotora activities,*1 zero defect efforts and other programs brought over from Japan are carried out by the plant staff and production managers working together. with the plant manager taking the lead. Employees who received training at the NSK Manufacturing Education and Training Center in Japan are at the core of efforts to

build a training program suited to circumstances in Korea, to enable employees to learn on-site management and manufacturing basics through actual work.



Photo 5: Kakotora activities at Changwon Plan

*1 Kakotora (past trouble): Refers to quality assurance audits done to confirm that measures to correct past quality problems are being implemented continuously. If measures are not being implemented continuously, the plant takes corrective action and makes sure countermeasures are set in place

Working with Suppliers to **Improve Quality**

The NSK Group works closely with suppliers to improve quality.

NSK Action

Pursuing Quality Creation with the Aim of Being No. 1 in India

NSK-ABC Bearing Ltd. is the first Japanese bearing manufacturer in India.

We work hard every day to reduce defects. We use the regular process audits and the NQ1 program we learned from NSK in Japan. Our goal is to be the top manufacturer in the industry in India by producing bearings with a quality that satisfies customers worldwide.



NSK-ABC Bearing Ltd.

Reference data is available on NSK's website.

www.nsk.com > Sustainability > CSR Reports



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In fiscal 2010, the Group set activity targets and made improvements regarding certain materials and products. The Group supported activities including periodic checks on the progress of quality improvement plans and process audits to probe the effectiveness of measures. This resulted in a great reduction in defects due to suppliers' processes and also reduced problems with materials and parts delivered to the NSK Group.

Going forward, the Group will expand the scope of these initiatives to realize further increases in quality.

Expanding Support for Suppliers' Disaster Prevention Measures

Disaster prevention initiatives are essential to maintaining stable production. In 2005, NSK started plant disaster preparedness audits led by NSK headquarters and has since been expanding the audits to Group sites globally. The audits were repeatedly conducted with the participation of outside expert auditors and fire prevention specialists at NSK headquarters and plants. Plants are now capable of conducting their own audits and carrying out improvements independently, which is producing results.

Additionally, NSK Group personnel visit and conduct audits of suppliers as a form of support. The intention is to increase disaster preparedness abilities throughout the supply chain, as the NSK Group and suppliers share case studies and work together. The scope of this initiative was expanded from 46 companies in fiscal 2009 to 80 companies in fiscal 2010.

Procurement: The Starting Point of Production

I am the person in charge of procuring materials used in needle bearings

I recognize that procurement has an important role, as the starting point of production. While ensuring the stable supply of materials, I strive to always procure just the right amount at the right time so that we do not have excess inventories.

I also believe it is important not only to collect the needed materials but also to gather a wide array

of information and reliably deliver it to the production floor. That is why I also keep my eyes open, always looking for more useful information, and why I approach my daily work with an emphasis on internal and external communication.

> Hirotaka Morita Production Management Department NSK Needle Bearing Ltd.



Basic Procurement Policy

Social Report

Creating Dynamic Work Environment

Trends

As globalization advances, there are more and more opportunities for exchange among people of different races and nationalities. It has never been more important to work together to achieve harmony and mutual benefit for all countries and regions, and the basis of this must be deeper mutual understanding. Companies, for their part, must create workplaces where employees respect the diverse cultures and practices of different countries and regions, embrace diversity in the workforce, and can work safely, with vitality, and with sensitivity to the unique characteristics of the local area.

Creating Workplaces Where Employees Feel Job Satisfaction NSK's Approach

The NSK Group's Management Principles clearly state that the Group seeks, "To provide challenges and opportunities to our employees, channeling their skills and fostering their creativity and individuality." The Group sees human resources as the foundation of its business. This is why the Group strives to create work environments where employees can work enthusiastically and enjoy ever-increasing job satisfaction. The Group also works constantly to globally develop human resources who will lead the Group in the future.

- Making the most of diverse human resources Respecting diversity
- Creating environments where employees can work with vitality
- Respect of fundamental rights at work
- Creating safe and healthy workplaces
- Facilitating work-life balance
- Providing opportunities and workplaces that foster the growth of self-motivated employees
- Providing opportunities for growth
- Providing workplaces that foster self development



Develop the Work Environment and Employee Base Needed to Mid-Term Goals Support a Global Management Structure

Global expansion of business activities begins in workplaces where employees with diverse values can play an active role and select from among a variety of working styles. The NSK Group, aiming to make the most of its diverse human resources, strives to develop globally minded human resources, to foster a professional workforce, and to build a personnel system that embraces diversity. The Group is also building a worldwide education system to enable continuity when handing over technology and skills within the development and design, production, and other departments.

FY2010 Activities

Globalized Human Resource Functions

The NSK Group holds a global human resources conference once a year. During the conference, participants strive to globalize human resource functions by discussing issues that are common across regions, such as personnel systems and human resource development programs. In fiscal 2010, the Human Resources Department at NSK's headquarters made arrangements to share information more closely by appointing staff members to look after different regions.

As globalization advances, the Group has been giving consideration to the different cultures and customs of each country. At the same time, it continues working to strictly prohibit discrimination, child labor, forced labor, and other human rights violations, and has expanded training sessions to ensure these principles are known and followed thoroughly.

Furthermore, the Group launched efforts to propel human resources development globally by expanding the NSK Management College, which had been implemented mainly in Japan, and making it available to employees outside Japan.

Respect of Fundamental Rights at Work

Prohibiting Discrimination and Basic Approach **Respecting Fundamental Rights** at Work

The NSK Code of Corporate Ethics clearly states that the NSK Group prohibits discrimination and respects fundamental rights at work. The Group prohibits discrimination on the basis of race, appearance, belief, gender, religion, lineage, ethnicity, nationality, age or physical disability. It also prohibits harassment, forced labor, and child labor. Through awareness building activities, the Group strives to share the same awareness Group-wide and ensure these principles are adhered to. Further, it is the Group's policy to provide equal opportunity in recruitment, job assignment, evaluation, and other employment issues.

Creating Safe and Healthy Workplaces

Basic Approach

Creating Workplaces Where Everyone Feels Secure and Helps Build a Culture of Safety

In order to protect the safety and health of each and every employee, NSK undertakes initiatives with this basic philosophy: "Safety is the first and foremost priority. Workplaces should ensure employees can work safely, no matter the level of output demand."

It is important to raise the awareness of each and every employee in order to ensure safety in the workplace. This is why NSK is fostering a culture of safety awareness where employees watch out for each other and never overlook an unsafe action or condition.

Management Occupational Safety and Health System Management System

NSK and its main Group companies have established their own management system based on standard occupational safety and health management systems (OSHMS*1) and implement a variety of safety and health initiatives using the PDCA cycle.

Under this system, the NSK Central Occupational Health and Safety Council establishes policies and targets, based upon which each business site undertakes actions. The Central Safety and Health Council routinely checks the progress of these actions taken by each site. Based on the results of checks, important issues and an order of priority are clarified and management carried out according to each site's circumstances.

*1 A system intended to contribute to improvement of the level of safety and health in the workplace by reducing risk of accidents at work, promoting employee health, and encouraging the formation of comfortable working conditions.



Reference data is available on NSK's website. www.nsk.com > Sustainability > CSR Reports

Human Rights Training Provided Worldwide

In January 2009 the NSK Group revised its Code of Corporate Ethics in view of social requests, and promoted awareness of it throughout the Group. In this and other ways the Group has worked to raise awareness of human rights.

In fiscal 2010, NSK launched new initiatives to instill the respect of fundamental rights at work (prohibition of discrimination, child labor, forced labor, etc.) that the Group specifies in its Code of Corporate Ethics. It expanded the scope of training sessions that had been provided in Japan and made it available to managers of business sites worldwide through e-learning. In fiscal 2011 and beyond, the Group will continue providing training and building awareness, and also further expand the scope of employees who receive the training.



Figure 2: Occupational Safety and Health Management System Overview

Global Human Resources Strategy

Workplace Health and Safety and Healthcare Measures

FY2010 Group-Wide Health and Safety Efforts In the Americas

NSK Americas Inc. carries out health and safety efforts on a group-wide basis. Every year the different business sites compete in the NSK Americas

Safety Cup Competition. The competition compares the results of year-long efforts in management structure such as health and safety committees, audits and improvements, training programs and

drills, and the reduction of



occupational accidents. Information is then shared at a presentation in order trophy

to improve efforts across the board. In fiscal 2010, each site conducted a variety of activities to create safe workplaces and raise employees' awareness. For example, the Franklin Plant conducted monthly *kakotora* (past trouble)*² audits of safety and fire-fighting drills. Three distribution centers in the US performed self-audits of business sites and were audited by the US headquarters.



Photo 2: Fire-fighting drill at the distribution center in Santa Fe Springs, California

*2 Kakotora (past trouble): Refers to occupational safety audits done to confirm that measures to correct past problems are being implemented continuously. If measures are not being implemented continuously, the plant takes corrective action and makes sure countermeasures are set in place.

Providing Continual Mental Health Support

With the cooperation of professionals such as attending physicians, industrial physicians, and public health nurses, NSK supports employees who take time off work because of mental health problems, helping them to return to the workplace.

Aiming to provide long-term support so that employees can regain their health and return to work, since fiscal 2010 the Company has offered continued counseling even after employees return to work, depending on the personal situation.

NSK Action

OHSAS 18001 Certification Acquired

In November 2010, Amatsuji Steel Ball Mfg. Co., Ltd., acquired OHSAS 18001⁺³ certification. When we first decided to seek certification, we in the secretariat had no idea what to do, but we were determined to work on it on our own and so we started by studying laws and related topics. Eventually, as initiatives proceeded, communication deepened beyond departmental and position boundaries, and initiatives widened to encompass joint effort by the company, union, and secretariat. Gradually each workplace started to undertake efforts independently. I feel that there is now a greater awareness of health and

safety throughout the company. We will continue making efforts with the aim of achieving zero occupational accidents.

Masanori Fujiwara Environment, Safety, and Health Department, Amatsuji Steel Ball Mfg. Co., Ltd.



*3 OHSAS 18001 (Occupational Health and Safety Assessment Series): A guideline standard for occupational health and safety management systems established by the UK's British Standards Institution (BSI).

Providing Opportunities and Workplaces That Foster the Growth of Self-motivated Employees

Basic Approach Developing Human Resources

The NSK Group believes that as the globalization of business advances, it is difficult for employees to show their abilities without a workplace environment in which they can recognize and solve common challenges, spanning national borders and cultural barriers. That is why the Group designs and uses personnel systems that support business, creates training programs that bring out employees' true ability, and creates fair personnel and evaluation systems.

Assigning human resources at each location who know the local region well and creating personnel systems where employees with the ability to support a global management structure can play an active role are urgent Table 1: Personnel Systems and Human Resources Development for Sustainable Business

 Responding to business globalization 	Creating personnel systems	 Assigning local human resources who know the region well Appoint global human resources, regardless of nationality Fair evaluation system
Transmission of manufacturing	Developing human resources	 Develop global human resources Develop professional human resources

tasks for expanding our business sustainably throughout the world. The Group will also enhance training programs which support the growth of individuals, including not only knowledge required for work, but also problem-solving skills, communication abilities, and leadership. In this way the Group aims to create workplaces where employees and organizations grow together.

FY2010 Systematic Development of Global Leaders

Every year the NSK Group implements the NSK Management College invitational advanced training program with the aim of developing the next generation of leaders. In fiscal 2010, the first participant from South Korea joined the program, which is designed to foster management knowledge and leadership skills. In fiscal 2011, the Group will take another step by starting a Global Management College that opens the program to a wide pool of participants from more regions as a new system for continually developing the next generations of global leaders.

Enhanced Globalization of Technical Education

The NSK Group is globalizing educational programs that support craftsmanship in engineering.

Since fiscal 2007, the NSK Institute of Technology (NIT) has been conducting technical education programs in the fields of development and design, based on a common Group-wide curriculum. Up to fiscal 2010, the first year of training had begun at technology bases in Japan, the USA, Europe, China, ASEAN (Thailand), Brazil, and South Korea. New courses have also been opened for sales department employees and others besides engineers.

In Japan training sessions for second-year students and above have begun. At bases outside Japan, NIT is training instructors and preparing to open sessions in the upper year levels.



NSK Headquarters Participates in Conference of Chinese Human Resources Officers

In China, the Conference of Chinese Human Resources Officers, which consists of human resources officers from



Photo 3: Conference of Chinese Human Resources Officers holding a video conference in China



Personnel System the Support Career Advancement
 Human Resources Development

the Group's headquarters and plants in China, meets regularly. The conference discusses a broad range of issues such as personnel systems and training programs and undertakes initiatives aimed at increasing the overall appeal of NSK operations in China.

Beginning in fiscal 2010, personnel from NSK's headquarters have participated in the conference, sharing information between business sites in China and the headquarters in Japan and providing advice as needed.

FY2010 **A** Diversification of English Language Training (Japan)

The NSK Group uses English as its common language in order to conduct operations smoothly through active communication between employees around the world.

In Japan, NSK had thus far supported self-development training and encouraged employees to take the TOEIC test. In fiscal 2010, it started English Conversation Salons with native-English-speaking employees acting as instructors in an effort to improve the participants' self-expression skills, which will lead to smoother operations. In fiscal 2011, the Company is considering introducing a new training system to expand learning opportunities further.



Respecting Diversity

Human Resource Diversity that Basic Approach **Reflects NSK's Global Business**

The NSK Group believes that local communities and the NSK Group can grow together by developing businesses worldwide and creating stable employment. That is why the Group assigns talented human resources with a good understanding of the local region, regardless of nationality, race, or gender. By enhancing educational and training programs that encourage understanding of NSK's corporate culture, the Group is also aiming to enable diverse human resources to share NSK's values, work with enthusiasm, and feel that they are growing personally with the NSK Group.

Furthermore, in response to changing social needs in Japan NSK is creating systems needed to fully utilize the ability of women, older workers, and persons with disabilities.

Utilization of Human Resources Older Workers in an Aging Society (Japan)

Japan's population is aging rapidly. In light of changes in the public pension system it has become a social challenge to enable workers to have access to employment opportunities even after mandatory retirement.

NSK recognizes that the knowledge and skills of experienced senior employees are beneficial in growing business. The Company's basic policy is to provide work opportunities to healthy persons willing to work after retirement. The Company has had a reemployment program since April 2001.

The Company has also started reviewing the program and reevaluating methods for making use of human resources in order to firmly establish the practice of reemployment.

Persons with **Providing Work Opportunities to** Disabilities Persons with Disabilities (Japan)

NSK believes that one role the company should perform is providing suitable work opportunities to persons with disabilities who are willing to work. An NSK special subsidiary called NSK Friendly Services Co., Ltd., in particular, provides employment opportunities where

Facilitating Work-Life Balance

Basic Approach

Developing a Workplace Environment where Employees are Enthusiastic and Active

The NSK Group believes that ensuring that employees sincerely enjoy both their work and their private lives, and can be enthusiastic and active, is the key to making its business even more successful.

That is why the Group's basic policy is to develop an ideal working environment for all employees, regardless of persons with intellectual disabilities can work with enthusiasm.

In fiscal 2010, NSK, its main Group companies, and NSK Friendly Services together employed a total of 109 persons with disabilities, giving the Group an employment rate for persons with disabilities of 1.85%.

Expanding Work Duties for Persons with Disabilities

At the time NSK Friendly Services was established in 2008, duties centered on cleaning. The work that the company's employees can perform gradually expanded through fiscal 2010 to include printing, binding, and shipment preparation of printed matter used within the Group.

The company has also accepted student apprentices 18 times, from a school for students with disabilities, giving the students a chance to see what the working world is like. Employees also had the chance to mentor the students during their time at the company.

NSK Action

NSK's Bridge between China, Europe, and Customers

I was assigned to China from NSK Deutschland in 2008. China is overflowing with energy and has an environment that changes at a bewildering pace every day. I work in the sales department, surrounded by highly motivated colleagues. Our workplace is an intersection of many languages and diverse cultures.

I see myself as a "business bridge," so I do my job with emphasis on communication with customers, working hard for the NSK Group

and for China and striving to make my native Germany proud.



Frank Ziener China Automotive Business Division NSK (China) Investment Co I td

gender or age, in terms of both facilities and support

programs. The Group always strives to be sensitive to

harder than ever to accelerate support for work-life

balance in order to cope with the social challenges

Such efforts include enhancing programs to support

employees' childcare and nursing care obligations and

In Japan, NSK recognizes that it is important to work

presented by a rapidly aging society with a low birth rate.

employee needs and social changes.

healthy time management.

Childcare/Nursing Care Support Programs Above and Beyond Legal Requirements (in Japan)

NSK is creating programs to do its part as a company to address Japan's aging society and low birth rate and is working hard to encourage utilization of those programs. Through fiscal 2010, the Company had established support programs such as those shown in Figure 3 to enable employees engaged in childcare or nursing care to continue working while looking after their families.

Figure 3: Childcare and Nursing Care Support System at NSK Ltd. me launched in fiscal 2011)

Childcare	Japan Iaw	Up to 18 months (non-paid)	Up to 18 months		
leave NSK		Through the end of April when child is 3 years old (the first five days paid)	3 years old		
Shorter	Japan Iaw	Up to 3 years old	3 years old		
working hours for childcare	NSK	Through the end of April when the child enters elementary school	Entering elementary school		
Nursing	Japan Iaw	Up to 90 days	90 days		
care leave	NSK	Up to 1 year	1 year		
Shorter working	Japan Iaw	Up to 90 days	90 days		
hours for nursing care	NSK	Up to 1 year	1 year		
Elimination of half-day holiday restriction	Usually, 12 times per year; but when providing nursing care, unlimited.				

Employment

Employment that Preserves the Basic Approach **Stability of Both Society and NSK**

As a manufacturer that is committed to quality, and as a sustainable company, the NSK Group approaches employment from a long-term perspective. That is why the

Management-Labor Relations

Labor-Management Relations Basic Approach **Based on Dialoque**

The NSK Group regards sound labor-management relations as critical to the sustainable growth of the company. One way in which the Group respects fundamental rights at work, as pledged in the NSK Code of Corporate Ethics, is by guaranteeing employees the right to communicate openly and directly with management without fear of retaliation, intimidation, or harassment.

Employees and managers are becoming better partners as they build trust by working to communicate more deeply, share views on the workplace environment and business conditions, discuss and implement improvement measures. The NSK Group is committed to creating workplaces where employees can work vigorously.



Reference data is available on NSK's website. www.nsk.com > Sustainability > CSR Reports

The Company gathered opinions on childcare support from employees with experience raising children and established programs that go beyond legal requirements and are designed to be user-friendly.

For example, based on input from employees, the Company made available a shortened work hours program for parents through April of the year a child starts elementary school (the school year starts in April in Japan). The legal requirement is a program that lasts only until a child is three years old.

In the area of nursing care support, the Company also offers programs that go far beyond the legal requirements.

NSK Action

A Whole Year of Childcare Leave, with the Understanding of My Workplace

After worrying together with my wife about whether to take childcare leave, I consulted my supervisor and colleagues at work, and they supported me. I was concerned about what would happen at work as a result of my taking leave, but with the understanding and cooperation of those around me, I

was able to take nearly a year of childcare leave after the birth of my child. I am delighted and appreciate the chance I had to share the child-rearing responsibilities with my wife and watch the growth of our child together.

Jun Matsumoto Technology Division Headquarters NSK Precision Co., Ltd.



Group believes it is essential to continually recruit and develop outstanding human resources who can carry the business forward.

The Group also engages in appropriate employment practices in accordance with the laws and ordinances of each country and region where a business site is located.

FY2010 Initiatives Implemented through Highlights Labor-Management Cooperation

At NSK, labor and management have undertaken a number of initiatives in addition to deepening dialogue, including joint implementation of time management and health and safety efforts in the workplace.

In regions outside Japan as well, the Group values good communication between the company and its employees. For example, in the US, Europe, and other locations, the Group engages in activities to improve communication between the company and employees by organizing seasonal get-togethers and encouraging participation in community events, charity activities, etc. For instance, NSK France S.A.S. holds a party every December for employees and their families to thank them for their efforts throughout the year and to strengthen the bonds of friendship.

Diversity and Work-Life Balance

Labor and Management Cooperate to Develop Better Working Environments

Working with Local Communities

Trends

It is widely recognized today that companies—not only government agencies—must play an active role in solving social, environmental, and economic issues to build a sustainable world. Corporations today are expected to contribute to community development not only by providing useful products and services, but also by taking a range of flexible initiatives designed to meet specific local needs.

Being a Company That Is Needed, Trusted, and Admired by **VSK's Approach** Local Communities

With an understanding of the needs of each country and region, the NSK Group fosters the human resources and technological strengths needed to help the communities where it does business to develop. Aiming to be a company that contributes to sustainable development through these initiatives and is needed, trusted, and admired by local communities, the NSK Group focuses its efforts on the following three important areas:

- 1. Promoting science and technology that supports the prosperity of society
- 2. Fostering the development of the next generation
- 3. Engaging in activities designed to build mutual harmony and benefit with communities



Work to Increase the Number of NSK Supporters Mid-Term Goals

The NSK Group will enhance its efforts to earn the positive regard of all stakeholders, by valuing communication with them, ascertaining their needs, conducting awareness building within the Group, and sharing information among business sites.

FY2010 Activities

Enhancing Awareness and Stepping up Initiatives

In fiscal 2010, NSK included articles on the promotion of science and technology, development of the next generation, and community contribution activities in its company newsletter in Japan every month. For areas outside Japan, activity examples were compiled and distributed to share information within the Group.

In October 2010, the Group attempted to raise employee awareness and stimulate action by participating in the "Make a CHANGE Day" event, which aims to increase the social significance and influence of initiatives through concurrent volunteer efforts and civic action.

Promotion of Science and Technology

The NSK Group works to promote science and technology, which contributes to the broad development of sustainable industry, in addition to contributing to the well-being and safety of societies through its own technology development.

In fiscal 2010, the NSK Foundation for the Advancement of Mechatronics (NSK-FAM), a public benefit foundation backed by the NSK Group, conducted a total of 20 subsidized projects, supporting technical exchange and R&D that contributes to the advancement of mechatronics. Meanwhile, NSK continued to sponsor the Science Museum operated by the Japan Science Foundation.

In countries around the world, the NSK Group held free technology courses for engineering students, who are technical specialists in the making. In fiscal 2010, the Group offered courses to teach the basics of machinery parts to students in five countries. In addition. the

Group helped promote technology in communities by holding a range of science and technology events and sponsorship activities.



Photo 1: Course for university students (Mexico)

Fostering the Development of the **Next Generation**

The NSK Group nurtures children and young people by providing educational assistance and contributes to their development as the future leaders of society. The Group puts particular effort into programs that support school attendance and learning activities, such as internships, scholarships, and tours for students. The Group also provides support so that children can enjoy an enriching social life outside of school, including sports, cultural, and welfare activities.

In fiscal 2010, NSK's headquarters and technology

center in China held tours for local elementary school students. NSK's headquarters in Japan continued its tradition of holding science classes for children.



Photo 2: Tour for elementary school students in echnology center in China

Creating Good Relationships with Communities

The NSK Group undertakes a variety of actions as a member of the community and values communication with local communities. Each business site carries out initiatives tailored to local needs, such as charity events to support vulnerable groups and projects in developing countries, tree planting and other nature conservation work, healthcare activities, and support for community festivals.

In fiscal 2010, large-scale natural disasters occurred in Oceania, Asia, and other parts of the globe. NSK's business sites gave significant donations to the afflicted areas. In response to the major earthquake that struck Japan, employees around the world sent monetary donations to the affected area through NSK's

headquarters and took other actions through the Group.

In addition, five of NSK's business sites held a total of 22 community get-togethers during fiscal 2010 in an effort to maintain strong communication with their local communities.



Photo 3: Donating used computers developing countries (UK)

NSK Action

Scholarships for Australian Students

Every year NSK Australia Pty. Ltd. makes donations to fund scholarships.

Australia is a vast country, and many students cannot commute to urban universities from their parents' house. Scholarships help make it possible for more students to devote themselves to their studies at urban centers of learning. We also accept interns looking for on-the-job experience.

We are pleased to provide these forms of support to foster the growth and future prospects of young people,

because we believe their growth can lead to highly significant, broad-ranging social benefits.

> Ian Rice Managing Director NSK Australia Pty. Ltd.



The NSK Group's business sites around the world undertook diverse initiatives. Below are the main initiatives in fiscal 2010.

Poland

partv

Providing environmental education

for secondary school students

child welfare facilities

grazing livestock

Blood donation drives

Wild deer grazing on the plant grounds

hristmas party w

Germany

 Providing a technology course for students Apprenticeship

Together with apprentices

Donating to nursery schools and

• Donating toys to a local Christmas

• Opening meadows on the plant

premises to wildlife and nearby

UK

- Student trainee program
- Establishing an engineering club with a local school
- · Giving a technology lecture and tour for local boy scouts
- Sponsoring a motorcycle safety campaign for young people
- Donating used PCs and other items to schools and hospitals in
- developing countries



Spain -• Providing a technology course for students

France

- Providing a technology course for students
- Sponsoring a team to participate in eco car races
- · Participating in and donating to an event to promote cancer awareness



At the eco car presentation

France NSK France S.A.S.

Participating in an Event on Cancer Awareness

In October 2010, seven NSK France members participated in Odyssea Paris, a 10 km charity fun run. The event donates all proceeds to various European organizations fighting breast cancer.

The day helped raise awareness about disease while running with NSK members and many other participants in a friendly atmosphere.







China Awarding scholarships Company tours for local elementary school students Community clean-ups



India

- Donating for repair of water supply facilities in a school
- Free health checkup for local students
- Tree-planting activities
- Donating food to the elderly
 - Donating to disaster areas (earthquakes)



Donating school supplies on a visit to

 Sponsoring a robotics contest Internship program Dispatching lecturers to a university Donating to a kindergarten and library

(floods, earthquakes)

Singapore

Thailand

- Donating to a charity event for children Blood donation drives
- Tree-planting activities • Donating to disaster areas



a kindergarten



articipating in a walking even



techniques

Asia Pacific Technology Center's Indonesia Jakarta Branch Office

Supporting the Activities of Local Universities

The Asia Pacific Technology Center's Jakarta Branch Office undertakes activities in cooperation with local universities. It sponsored a team from a technical college that entered an eco car race held in June 2010. It also provided bearings used in the eco car





Japan Kuribayashi Seisakusho Co., Ltd.

Offering Workplace Experience for Students

As a community-based company, Kuribayashi Seisakusho Co., Ltd., helps with a variety of local activities. In fiscal 2010, for example, it provided plant tours for university and high school students and accepted junior high school students for workplace experience days. On the workplace experience days, the students

tried their hand at product assembly, organizing paperwork, and machinery maintenance subsidiary work. Students provided impressions such as, "I learned how difficult work is. It was a valuable experience."





JAPAN

- Promoting science and technology through NSK-FAM
- Supporting/sponsoring science and technology events, providing products · Supporting children's science classes
- Dispatching instructors to and giving lectures at universities and high schools
- Offering internships and work experience programs
- Providing relief and donations to disaster areas (e.g. Great East Japan Earthquake)
- Supporting/sponsoring sports, cultural, and international exchange activities
- Supporting/sponsoring community events and lending company facilities
- Donating to health and welfare activities and helping with blood drives
- Supporting/sponsoring welfare events, sports for persons with disabilities,
- Collecting/donating waste products (PET bottle caps, used clothes, used paper, etc.)
- Traffic safety campaigns
- Community cleanups
- Tree planting, greening, community environmental development
- · Donating to environmental protection groups

· Cooperating in science and technology education for students

- Donating to a scholarship
- Sponsoring a car racing team Donating to a cancer prevention
- Sponsoring a charity event
- Donating to disaster areas (floods,



Offering a workshop for experiencing bearings at a science and technology event



USA NSK Latin America, Inc.



NSK Latin America, Inc., is the company's sales base for Central and South America. It implements initiatives suited to the needs of each country by cooperating with distributors in each part of Latin America.



Vork gloves were donated to th

- Sponsoring bicycle races, participating in charity events (Columbia)
- Sponsoring sports events (Venezuela and Guatemala)



Environmental Management

Trends

Concern is mounting over global environmental problems caused by human activity conducted in pursuit of affluence. The depletion of resources, advance of global warming, and human impact on ecosystems are all very serious issues. All of humanity shares the challenge of building sustainable societies that can be prosperous without harming the environment. Today, people expect companies to be proactive about meeting this challenge, for instance by providing eco-friendly products and services and operating in an environmentally responsible manner.

Environmental Management NSK's Approach Forms Basis of NSK's Existence

The NSK Group adheres to the principle that global environmental protection, as outlined in the Group's mission statement, must be an ever-present concern in all business activities. Accordingly, the Group states in its Environmental Policy that environmental management forms the basis of its existence and pursuits. The NSK Group strives to raise the awareness of every single employee while taking action to create environmentally friendly products, implement global warming countermeasures and measures for resource conservation and recycling, and reduce the use of environmentally harmful substances.

Raising the Level of Mid-Term Goals **Environmental Action Group-wide**

The NSK Group has set up an Environmental Voluntary Action Plan with Group-wide targets to increase the efficiency of environmental initiatives across the entire Group. Each business site and Group company uses those targets in its own specific action plans. As a system for carrying out initiatives effectively, production and other sites obtain external certification in ISO 14001-the international standard for environmental management systems—within three years of beginning mass production, and strive to continuously raise the bar on their actions by using the plan, do, check, act (PDCA) cycle.

Figure 1: NSK Group's Environmental Management



Identifying Issues through Environmental Audits FY2010 Activities and Stepping up Efforts

With the NSK headquarters taking the lead, the NSK Group systematically conducts environmental audits on topics such as waste disposal and environmentally harmful substances management and then raises the level of its efforts upon uncovering potential problems in order to reduce its environmental risks, such as legal violations and oil leaks. Regarding the matter of environmentally harmful substances in particular, the Group increased the number of controlled substances ahead of legislative regulations and made efforts to reduce their use, such as by switching to greener alternatives.

As part of the Group's global warming countermeasures, each business site undertook systematic initiatives with the aim of saving energy, converting to clean energies, and improving production efficiency.

Figure 2: Input and Output of Global Business Activities



*2 River discharge

FY2010 Highlights

Steady Progress on Establishing an **Environmental Management System**

The NSK Group's policy is for Group production and distribution companies in which NSK Ltd. holds at least a 50% equity stake, as well as Group companies that manufacture NSK brand products, to acquire ISO 14001 certification. In fiscal 2010, Nomura Tekkosho Co., Ltd., which became a Group company in 2008, and NSK-Yagi Precision Forging (Zhangjiagang) Co., Ltd., which started operations in 2009, acquired certification. A total of 56 sites (23 in Japan and 33 outside Japan) have now acquired certification.

Strengthening Environmental Risk Audits and Oil Leak Countermeasures by Improving Underground Tanks

In addition to audits based on ISO 14001, the NSK headquarters regularly conducts environmental risk audits to ensure that each site in the NSK Group is thoroughly managing oil use during product



Photo 1: Conducting an environmental risk audit



Reference data is available on NSK's website www.nsk.com > Sustainability > CSR Reports

Environmental Policy Environmental Voluntary Action Plan Environmental Education Record NSK Group Environmental Structure ISO 14001 Certification Status Environmental Accounting

manufacturing. In fiscal 2010, environmental risk audits were conducted at 10 sites, focusing on confirming the status of oil leak countermeasures and the system for checking compliance. Systematic improvements were taken if issues were discovered. In the future, underground tanks that have been in place for more than 30 years will be systematically replaced with aboveground tanks and given a double shell structure as a measure to prevent oil leaks and allow early discovery.

NSK Biodiversity Guidelines Prepared

The NSK Biodiversity Guidelines were established to specify precisely how NSK's Environmental Policy applies to biodiversity. Each plant has added biodiversity items to its assessment of environmental impact and started initiatives to improve business activities.

Oil Spill Accident and Recurrence Prevention

In June 2010, an accident occurred at the Otsu Plant, resulting in oil flowing outside the premises and into the Seta River. The accident was caused by a mistake made while cleaning an oily water separating tank set up in the rainwater spillway to prevent oil leaks. Although the amount of oil spilt totaled no more than three liters, the plant changed the structure of the oily water separating tank, revised the cleaning procedure manual, provided training to those involved and took other measures to prevent a recurrence. Inspections and improvements were implemented to prevent a similar accident from occurring at other plants.

Creating Environmentally Friendly Products

Trends

Transforming the structure of society to halt the progress of climate change and the depletion of resources in the future is a common challenge for humanity. Toward that end, companies are expected to make positive contributions through their products and services. This includes the development of new technologies, making those newly developed technologies even more sophisticated to aid in environmental protection and the utilization of natural energies.

Harnessing NSK's Four Core Technologies to Help Reduce **NSK's Approach** the Environmental Impact of Human Societies

The products of the future must perform better than today's in order to help reduce the impact human societies have on the natural environment. In an effort to contribute to the well-being and safety of society and to protect the global environment, as spelled out by its corporate philosophy, NSK is working hard to accurately determine the needs of its customers and the broader society, as well as to develop environmentally friendly products and technologies which, in keeping with its basic policy, make the most of the company's four core technologies (tribology, material engineering, analysis technology, and mechatronics). By delivering these products and technologies to all corners of the globe, the Company aims to contribute to the sophistication of the machinery in which NSK products are incorporated and to the development of environmentally friendly industry as well as to the reduction of environmental impact throughout society.

Basic Policy for the Development of Environmentally Friendly Products

The NSK Group minimizes the environmental impact of its products at every stage-from R&D and design, to production, usage, and disposal—by upholding the following standards: 1. Each product should contribute toward the energy and

- resource conservation of the machine in which it is installed. 2. The amount of energy and resources required during
- product manufacturing should be minimal. 3. Environmentally harmful substances should not be used in
- products or manufacturing processes.
- 4. Products should contribute to the health and safety of end users by having low emissions of vibration, noise, and dust.

Figure 1: Harnessing NSK's Four Core Technologies to Help Reduce the Environmental Impact of Human Societies



*1 See page 11 for more information on NSK's four core technologies.

Promoting the Development of Environmentally Friendly **Mid-Term Goals Products and Technologies**

The NSK Group is creating even more environmentally friendly products and technologies based on the NSK Environmental Policy and the Basic Policy for the Development of Environmentally Friendly Products. Goals include the following: · Increase the environmental friendliness of products.

· Develop products that contribute to wind power generation, solar power generation, and other environmental industries. · Consider methods for assessing the environmental impact arising from product manufacturing.



16 New Environmentally Friendly Products

In fiscal 2010, the NSK Group developed 16 new environmentally friendly products that help conserve energy and resources. The total count for the company's environmentally friendly products dating back to fiscal 2002 now stands at 140.

Environmentally Friendly Products and NSK Eco-efficiency Indicators

NSK products can be considered environmentally friendly because they reduce friction, which helps to save energy and otherwise protect the environment. In an effort to further promote these types of products, the NSK Group formulated the Basic Policy for Environmentally Friendly Products in fiscal 2001 and started registering new products that meet its standards. In fiscal 2008, the Group introduced the NSK Eco-efficiency Indicators (Neco), a yardstick for quantitatively assessing the degree of environmental friendliness possessed by the products it develops. Currently the Group is working to achieve a Neco score of 1.2 or higher.



The Neco score is a comparison between old and new products. It is calculated by dividing product value V, an indicator of a product's lifetime and performance that must be improved, by environmental impact E, an indicator of parameters such as product weight and energy consumption that must be reduced. The better a product's performance and the more environmentally friendly it is, the higher its Neco score will be.

FY2010 Highlights

A few of the new environmentally friendly products that NSK introduced in fiscal 2010 are listed in the following table. Table 1: Environmentally Friendly Products Developed in Fiscal 2010

NSK Products	000	T		S	
	Low-torque, deep groove ball bearings with a highly dust-resistant seal for use in room air ventilation systems	Long-life cage and roller assembly with planetary shaft for swing/travel reduction gear of construction machinery	Extremely long-life pinion shaft for automatic transmissions	Ball screw with X1 seals for machine-tool applications	Megatorque Motor™ Z Series with high environmental resistance
Technology development at NSK	Lowering torque and extending low-noise operation time • Development of low-torque contact seals • Development of advanced dust-resistant non-contact seals	Twice the life of conventional products under conditions of contaminated lubricant • Improvement of shaft and roller raceway surfaces • Improved heat-treatment technologies for the shaft and rollers	2.5 times longer service life than conventional products and compatible with demanding operating environments including high temperatures • Improvement of material/heat treatment technologies	Strong dustproof performance along with both grease-sealing capability and low torque • Improvement of seal shapes and development of X1 seal	World's flattest, most compact direct drive motor with dustproof and waterproof performance • Development of seals for dust and water resistance*2
Environmental benefits for NSK's customers	Energy conservation Low noise and low vibration over a long term	 Extended service life of construction machinery Increased reliability 	 More compact, lighter transmissions Improvements in efficiency and fuel economy 	Prevention of equipment contamination by leaking grease Less grease required Less temperature fluctuation and increased precision due to low seal torque	 Reduce equipment size exposed to water, oil, and other substances Better productivity and quality through high speed and high precision
Neco	1.83	1.58	2.01	3.92	1.40

Reference data is available on NSK's website. www.nsk.com > Sustainability > CSR Reports

Detailed Product Information

Figure 2: Number of Environmentally Friendly Products Developed (Total)

Close Up

Link between NSK's Environmentally Friendly Products and Society

NSK's products contribute to environmentally friendly manufacturing by supporting the advancement of manufacturing equipment.

The wide range of industrial products that support modern lifestyles, including automobiles, household appliances, computers, and mobile phones, are produced by manufacturing equipment such as machine tools and injection molding machines. The NSK Group's products increase the efficiency and precision of such equipment and thereby help the manufacturing industry to conserve energy and resources.

NSK Products Contributing to the Advancement of Machine Tools

The Japanese auto industry experienced rapid growth with the arrival of motorization in the mid-1960s, and today it stands as one of the leading industries in the world. Machine tools supported the industry's dramatic development and have advanced step by step, reducing manpower required and delivering high-precision, high-speed machining.

For instance, the machining center used in making high-precision molds for plastic parts uses a unit known as a spindle to rotate a cutting tool made from a hard metal alloy at high speeds, while moving the mold piece secured to a table up, down, left, and right to carve it out. To ensure a smooth finish on the machining surface, the spindle's shaft must rotate rapidly without any deviation. Furthermore, the table must be highly rigid and move with great precision.

NSK Products Driving the Evolution of Injection Molding Machines

In Japan, mobile phones came into widespread use in the 1990s. Since then, LCD screens have progressed from monochrome to color, and a wide variety of features have been added, including digital photography and Internet browsing. At the same time, mobile phones have been getting smaller, thinner, and more energy efficient. One of the factors that have made these developments possible is the evolution of the injection molding machines that produce the plastic parts that mobile phones are made out of. Injection molding machines form parts by forcing molten plastic at

high pressure into molds created using machine tools, and then cooling them until they harden into the shape of the mold. A high clamping force of several hundred tons is generally required to keep the mold closed during the high-pressure injection of molten plastic. Traditionally, hydraulic cylinders were used to deliver the necessary force, but stating in the 1990s, the use of electrically operated machines that employ motors and ball screws rapidly became widespread.

Thanks to their wide range of control over all movements, including travel distance and speed, electrically operated injection molding machines make it easier to manufacture thin parts and parts with complex shapes, which had been difficult with hydraulically operated machines. This has helped to enable to the increased thinness and advanced functionality of mobile phones. Electrically operated injection molding machines are also much more energy efficient than the hydraulically operated type.

Ball screws are important because they convert the rotational motion of a motor into linear motion. The NSK Group is assisting with the evolution of injection molding machines by increasing the load that ball screws can bear and making them ever smaller.

Fuithermore, the table	0,0			moiu. A mg	in claimpling lorce			
and move with great p The NSK Group is the evolution of these	contributing to machine tools						Injec	tion molding machine
by increasing the func- reducing the size of N Guides and ball screw products that are esse and table operation.	SK Linear vs, both							
Machini	ng center			Proces	sing image			
NSK Products*3				Walk of	00	A A A A	A A	
	Robust Series of ultra- high-speed angular contact ball bearings	High-speed integrated moter spindle	NSK Linear Guides™ High-accuracy linear guides high-accuracy series	HMS Series ball screws for high-speed machine tools	Ball screw support angular contact thrust ball bearings for machine tools for injection molding machines	High-speed, high-load ball screws HTF-SRC Series HTF-SRD Series HTF-SRE Series	High-speed, high-load ball screws with grease- retaining A1 Seals	NSK Roller Guides RA Series RB Series
Technology development at NSK	Stable, high-speed rotation achieved through optimized heat inhibiting design, and heat- and wear-resistant materials	In addition to high speed and high rigidity, also enables lubrication of the bearing with grease, reducing the amount of compressed air used and lowering the noise generated	High rigidity and high load capacity achieved together with high running accuracy and low friction	Improves ball recirculation for high-speed rotation and low noise operation	High rigidity, long life, and compactness achieved through designs optimized for machine tools and injection molding machines	Enables the replacement of hydraulic cylinders by supporting high loads Improves ball circulation for faster rotation	Prevents leakage and splattering of grease by using A1 seals delivering high grease sealing performance, low heat, and low torque	High running accuracy and low friction achieved together with high rigidity and high load capacity by using rollers for rolling elements
Environmental benefits for NSK's customers	 Improved machining efficiency Improved machining precision 	Energy conservation Improved maintainability Improved work environment	 Improved machining precision More compact equipment 	 Improved machining efficiency Improved work environment 	 Improved reliability More compact equipment 	Reduced energy consumption Improved machining efficiency Resource conservation	 Improved working environment Resource conservation 	More compact equipment Reduced frequency of maintenance

*3 Photos represent a portion of the product range.



Global Warming Countermeasures

Trends

Concerns are mounting that the advance of global warming will lead to increasingly serious climate change problems and cause tremendous damage including rising sea levels, droughts, localized torrential rain, and the spread of infectious diseases, as well as having harmful effects on ecosystems. At present, the world is debating how to achieve substantial reductions in emissions of CO₂ and other greenhouse gases. Companies are expected to make aggressive efforts to develop new and more advanced technologies that will lead to energy savings and reduce CO₂ emissions generated by their business operations.

Reducing Energy Use in Operations, and Empowering People NSK's Approach to Save Energy with Environmentally Friendly Products

The NSK Group is striving to reduce CO₂ emissions from its operations through energy-saving efforts and switching to energy sources that emit less CO₂ when used. The NSK Group also contributes to the fight against global warming by creating environmentally friendly products*1 that reduce the CO₂ generated when automobiles and machine tools in which they are incorporated move. *1 See pages 36–39 for more about environmentally friendly products.

Figure 1: Contributing to Global Warming Countermeasures by Reducing Energy Use in Operations and Creating **Environmentally Friendly Products**



Pursuing CO₂ Reductions Across All Areas of Business Mid-Term Goals

The NSK Group is striving to reduce CO₂ emissions generated during business activities through efforts to reduce energy use, switching to cleaner energies that generate fewer CO₂ emissions, and the improvement of production efficiency.

The Group's fiscal 2012 targets are shown to the right.

Table 1: Fiscal 2012 Targets for Global Warming Countermeasures

Plants	In Japan:	$\begin{array}{l} \text{CO}_2 \text{ emissions per production unit:}^{*2} \\ 1\% \text{ annual reduction from FY1999 level} \\ \text{Total CO}_2 \text{ emissions: Reduce CO}_2 \\ \text{emissions for FY2012 to below FY2006} \\ \text{level} \end{array}$
	Outside Japan:	CO ₂ emissions per production unit: 1% annual reduction from FY2008 level
Distribution	In Japan:	Reduce energy consumed per ton-kilometer: 1% annual reduction from FY2006 level

*2 CO2 emissions per production unit are defined as the amount of CO2 emissions per value-added production unit. CO₂ emissions are estimated based on the coefficients provided by the Japanese Ministry of the Environment

Targets for Total CO₂ Emissions and CO₂ Emissions per FY2010 Activities **Production Unit Both Achieved**

At plants in Japan, total CO₂ emissions for fiscal 2010 rose by 60,000 tons to 438,000 tons (97,000 tons in direct emissions and 341,000 tons in indirect emissions) as a result of increased production accompanying economic recovery. Nevertheless, the target for total CO₂ emissions was achieved, as emissions were lower than in fiscal 2006. CO₂ emissions per production unit were 11.2% lower than in fiscal 1999, beating the target of a 10.5% reduction. At plants outside Japan, total CO₂ emissions rose by 63,000 tons from the level in fiscal 2009 to 427,000 tons (32,000 tons in direct emissions and 395,000 tons in indirect emissions). Despite this, CO₂ emissions per production unit were 13.9% less than in fiscal 2008, achieving the target of a 2.0% reduction.

Working groups (focused on heat treatment, spindles, compressors, and large-scale air conditioning) at plants in Japan continued their efforts to save energy. The plants also pressed on with the switch to cleaner energies, moving from heavy oil and kerosene to energy sources that emit less CO₂ when used.

Meanwhile, logistics departments in Japan improved transportation and loading efficiency and pushed forward with the switchover to modes of transport that have a lower impact on the environment. Despite these initiatives, as a result of increased production accompanying economic recovery, total CO₂ emissions increased to about 19,600 tons in fiscal 2010, although the energy consumed per ton-kilometer was down 11.8% compared to fiscal 2006.

Figure 2: CO₂ Emissions at Plants in Japan: Total Volume and per Production Unit



Figure 4: CO₂ Emissions from Distribution in Japan: Total Volume and per Ton-Kilometer





Figure 3: CO₂ Emissions at Plants Outside Japan: Total Volume and per Production Unit



NSK Action

Global Warming Countermeasures at Ishibe Plant

At the Ishibe Plant, we mainly use electricity and municipal gas for production operations, and we have reduced the usage of both. For example, to reduce the usage of electricity and municipal gas we upgraded to energy-saving equipment and installed inverters on pumps. We also reduced energy use by improving the efficiency of air conditioning with a thermal insulation coating applied to the building exterior. Of course, personnel on each line also made efforts to improve production efficiency.

These combined efforts resulted in a yearly reduction in CO₂ emissions of about 370 tons for

fiscal 2010. In the future, all employees at the plant will continue to pursue energy-saving initiatives as the Company continues to value the unique perspective of staff on the production floor.

Shinya Nagata Production Engineering Section, Ishibe Plant, NSK Ltd.



CO₂ Emissions

Development of an Energy-Saving Spindle

A spindle is a unit that rotates a grindstone at a high speed and level of precision to grind parts to very precise measurements. Previously, an oil mist lubricating system that used compressed air to spray a mist of lubricating oil was the mainstream method for preventing the bearings inside a spindle from seizing while rotating at high-speed. However, this method used a large amount of compressed air, and the compressor required a lot of electricity. The use of compressed air can be reduced to less than onefourth by switching from oil mist lubrication to grease.

In fiscal 2010, the NSK Group successfully switched some of its grinding spindles to grease lubrication by making improvements in the grease itself and in the spindle components. In the future the Group will

pursue reductions in Group-wide energy use by improving and rolling out the grease lubrication method more widely.



Energy-saving spindl

Disseminating Newly Developed Energy-Saving Technology Worldwide

The Spindle Working Group, whose members are mainly development engineers in charge of development of new production equipment at NSK and engineers involved in processing technology at plants in Japan, has been active since the end of 2009. Most processing equipment is equipped with a spindle that requires large amounts of compressed air. The Spindle Working Group's mission is to reduce the amount of compressed air that is supplied to spindles. The energy-saving spindle that uses a lubricating method we developed is already in operation on some lines. In coming months and years, we will disseminate this efficient processing

equipment worldwide, thereby contributing to the reduction of CO₂.

Tetsuva Goto Spindle Working Group Leade Technology Development Division-Headquarters Ianufacturing Engineering Center, NSK Lto





Energy Savings in Compressors

The Compressor Working Group's efforts were focused on supplying compressed air used on the plant floor more efficiently, in line with a plan to improve energy savings, which was established based on the results of performance tests of existing equipment. The running pattern of compressors was recalibrated to create the most suitable combination of multiple compressors according to the load, which fluctuates with production volume, and an operating protocol was put in place to prioritize the use of more efficient machinery. Electricity use was also lowered by reducing pressure loss. This was achieved by creating loops in or increasing the size of compressed air piping, depending on the situation in each plant, and by lowering the pressure setting.

Recovering Heat from Compressors

NSK Steering Systems Europe (Polska) sp. z o.o. has reduced its use of natural gas by recovering exhaust heat from a compressor and reusing it to heat water. The

recovery of heat from one compressor can reduce CO₂ emissions by 29 tons per year, and the company is planning to do the same for two more devices in the future.

Plants



Recovered heat from the air compressor is channeled into the plant's heated water equipment

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Solar Power Generating System Installed

The Mihara Plant of Inoue Jikuuke Kogyo Co. Ltd., which manufacturers NSK brand bearings, installed a solar power generating system in January 2011. With a generating capacity of 60 kW, the system's annual output of 62,000 kWh is equivalent to about 1% of the plant's power consumption. The plant expects the system to reduce its CO₂ emissions by about 20 tons per year.



Solar power generating system installed at the Mihara Plant of Inoue Jikuuke Kogy

Modal Shift to Ships for Distribution

The NSK Group is implementing a modal shift in distribution, moving from trucks to ships, which generate fewer CO₂ emissions. In fiscal 2010, the Group expanded transport by ship in response to an increase in distribution from the Kanto region to Kyushu (120% of the amount a year ago). In the future the Group will continue increasing transport efficiency and switching to low-emission transport.

Optimization of Air Conditioning Equipment in Line with a Change in Production Items

The load on air conditioning equipment at the Fukushima Plant changed greatly with a complete transformation of the setup of production lines that accompanied a change in the plant's production items from small bearings to medium-sized bearings. There was a problem with the efficiency of the existing absorption chiller/heater due to functional deterioration with age. Accordingly, the

plant upgraded to a heat pump with a capacity commensurate with the current load and switched the energy source from heavy oil to electricity, thereby reducing its annual CO₂ emissions by about 650 tons.



Heat pump at the Fukushima Pla

Environmental Report

Measures for Resource Conservation and Recycling

Trends

There is growing concern around the world that an economic system based on mass production, mass consumption, and mass disposal will end up depleting a wide range of resources in the future. Against this backdrop, companies are required to help build recycling-oriented societies by ensuring the efficient use of resources throughout the entire product lifecycle-from the extraction of resources through product use, to disposal.

Efficient Use of Resources in All Areas of Business Activity NSK's Approach

The NSK Group is working on reducing, reusing, and recycling (the 3Rs) to do its part in building recycling-oriented societies around the world. The Group's development and design divisions strive to develop products that can be produced without wasting raw materials and that can be easily recycled when disposed after use. At the manufacturing stage, the Group attempts to reduce the generation of waste by reconsidering machining conditions and also works to recycle waste that is generated, aiming to achieve "zero emissions*1" in terms of landfill disposal. (See Global Warming Countermeasures on pages 40-43 for information about NSK's efforts to reduce its use of energy resources.)

Figure 1: 3Rs to Help Build Recycling-oriented Societies



Improving 3R **Mid-Term Goals** Implementation

In fiscal 2011, the NSK Group's plants in Japan aim to maintain zero emissions with a recycling rate*2 for wastes of at least 99%. In the area of distribution, the Group's plants in Japan aim to reduce packaging material waste per production unit by 4% compared to fiscal 2007. Plants outside Japan aim to achieve a recycling rate of at least 91%.

Table 1: Fiscal 2012 Resource Conservation and **Recycling Targets**

design, plants	Reduce raw material waste by changing machining processes		
Plants	In Japan: Outside Japan:	Achieve a recycling rate of at least 99% for waste and maintain zero emissions Achieve a waste recycling rate of at least 92%	
Distribution	In Japan:	Reduce packaging material waste by 5% from fiscal 2007	
*1 The NSK Group has The target was chan		ssions as a landfill disposal rate of no more than 0.5%. .5% in fiscal 2010.	
Landfill disposal rate	a = Landfill disposal amount × 100		
	(Total waste – reduction by water treatment)		
*0 D	Recycle	ed amount	



Maintaining Zero Emissions Activities

The NSK Group's plants in Japan achieved a waste recycling rate of 99.3% and met the Group's target with a landfill disposal rate of 0.2%. With a waste recycling rate of 92.3%, plants outside Japan also achieved their target.

Packaging material waste from distribution in Japan amounted by 250 tons. This was 3% less than in fiscal 2007 on a per production unit basis, achieving the Group's target.

Figure 2: Rate of Recycling and Landfill Volume of Total Waste (Plants in Japan)



FY2010 Highlights

Strengthening Waste Management and Recycling

The NSK Group has provided training to personnel in charge of waste management, conducted regular audits, and performed on-site inspections of treatment contractors. In fiscal 2010, Japan's laws relating to waste were given tougher management requirements and penalties for waste-discharging enterprises. Accordingly, from fiscal 2010, only personnel who take waste management training prescribed by NSK headquarters and pass a test are put in charge of waste management. Thorough compliance is ensured by having at least one qualified person at each business site.

Business sites outside Japan also practice thorough management of waste and recycling. PT. NSK Bearings

Manufacturing Indonesia recycles much of the waste from its plant for use by the cement industry. The person in charge at NSK Bearings has visited a cement company to make sure the waste is being properly treated.



Photo 1: Auditing a cement company, a waste treatment contractor

Recycling and Recovering Rust-Prevention Oil

AKS Precision Ball Ltd. has introduced a new packing bench that helps to conserve rust-prevention oil. This piece of equipment removes excess oil on steel balls using high-powered air jets. It reduces the amount of oil on the balls by about 90%.



Photo 2: Oil recovery equipment



FY2010

Figure 3: Packaging Waste per Production Unit (from distribution in Japan)

Conserving Resources with a Newly Developed Processing Method

NSK was the first in the world to succeed in massproducing hub shafts for hub unit bearings using cold forming in order to meet the need for lighter automobile parts. This method reduced the use of steel by 20–30% compared to the traditional hot forging method. Energy consumption is also reduced by about 70%, since the material is not heated.

Figure 4: Lateral Extrusion Process



Recycling Packaging Tubes

Previously, plastic tubes for packaging small-diameter bearings used to be disposed of as waste when they became unneeded after delivery to a customer. In fiscal 2010, the discharge of waste was reduced by about 12 tons by recycling these tubes as raw materials. Going forward, the Group will keep striving to reduce the volume of waste by thoroughly separating wastes generated by plants and warehouses, such as pallets and waste plastic.

Reducing Use of Environmentally Harmful Substances

Trends

Chemical substances have made modern life much more convenient. However, some chemicals can have adverse effects on human health and the environment. In response, international consensus was reached at the World Summit on Sustainable Development held in Johannesburg in 2002 to "aim by 2020 to use and produce chemicals in ways that do not lead to significant adverse effects on human health and the environment." In addition, SAICM*1 was adopted in 2006, requiring reduction of risks over the entire lifecycle of chemicals, from production through consumption to disposal.

*1 SAICM: Strategic Approach on International Chemicals Management, a policy framework adopted at by the 1st International Conference on Chemicals Management held in Dubai

Staying Ahead of Regulatory Progress NSK's Approach

The NSK Group is striving to create products that use no environmentally harmful substances, in anticipation of tougher laws and regulations around the world and stricter voluntary standards from its customers. The Group tightly controls environmentally harmful substances through each stage of development and design, procurement, and manufacturing to ensure that safe products are delivered to customers.



Build a More Sophisticated Management System Mid-Term Goals

To ensure the provision of safe products, the NSK Group is building a system that reliably guarantees that products contain no environmentally harmful substances. The goals the Group expects to attain for fiscal 2012 are shown to the right.

In fiscal 2011, the Group is focusing on implementing green procurement at plants in Asia that make bearings and on updating its database by conducting surveys to identify the inclusion of environmentally harmful substances in parts and raw materials based on NSK's latest List of Environmentally Harmful Substances.

Figure1:	Fiscal 2012 Targets for Reducing Use of Environmentally
	Harmful Substances

Development and design	Reduce four types of environmentally harmful substances contained in products
Development and design, and plants	Manage the use of chemical substances for the products of all plants using the Chemical Substance Management System
Procurement	Complete the extension of green procurement to suppliers in Japan, China, and the ASEAN region
Manufacturing	Complete a chemical substance quality assurance system for products, then eliminate machining fluids containing chlorine additives

Staying Ahead of Regulatory Progress in the Management of FY2010 Activities **Environmentally Harmful Substances**

In fiscal 2010, NSK expanded its List of Environmentally Harmful Substances, which is NSK's own ranking of environmentally harmful substances (prohibited substances, reduced substances, and controlled substances), from 173 to 339 substances. Regarding reduced substances, the Group encouraged the reduction of machining fluids containing chlorine additives and the switchover to other plasticizers in place of DEHP,*2 which is used in the manufacturer of nitrile rubber seals. Plants in Japan achieved the fiscal 2010 target for the reduction of machining fluids containing chlorine while plants outside Japan made reductions in two out of the target of six products. Preparations were completed to make the switchover for about 5% of total DEHP.

Plants in and outside Japan responded to maintain compliance with regulations regarding chemical products, grease, anti-rust oil, and machining oil used at the plants following regulatory reforms in each country. The Group also started a survey of the current situation at plants outside Japan in preparation for the establishment of a global assurance program for managing environmentally harmful substances.

*2 DEHP: Bis(2-ethylhexyl) phthalate. A plasticizer added to materials such as rubber and plastic to make them easy to process. This substance has been reported as a potential endocrine disruptor

NSK's List of Environmentally Harmful Substances Revised Ahead of Regulations

NSK established a List of Environmentally Harmful Substances to manage chemical substances included in products and used in production processes. In fiscal 2010, the Group revised the list for the first time in two years in view of laws pertaining to chemical substances in Japan and Europe as well as chemical substance guidelines in the electrical/electronic devices and automobile industries and the voluntary regulations of the Group's main customers.

Substances that are designated under the EU's CLP Regulation*³ as chemical substances for which carcinogenicity and reproductive toxicity are a concern are expected to be regulated in the future as Substances of Very High Concern (SVHC) under the REACH Regulation.*4 This is why the NSK Group added these substances when it revised its List of Environmentally Harmful Substances, thereby staying ahead of regulations.

*3 CLP Regulation: A European Union (EU) regulation on Classification, Labeling and Packaging of chemical substances and mixtures. *4 REACH Regulation: A European Union (EU) regulation on Registration,

Evaluation, Authorization and Restriction of Chemical substances.

Complying with Japan's New PRTR Law

In fiscal 2010, NSK made aggregate calculations based on the PRTR Law*5 that was revised in fiscal 2008. The results were that it handled 573 tons of 16 PRTRdesignated substances and released or transferred 107 tons. Of these, four substances (1,2,4-trimethylbenzene, xylene, toluene, and methylnaphthalene) accounted for 59%. These substances are mainly included in fuels and wash oil.

Addressing the revision of the law, the Group will change its management index from the number of products containing PRTR-designated substances to the volume handled, which will lead to a higher level of initiatives.

*5 PRTR Law: Japan's law intended to facilitate improvement of chemical substance management by ascertaining the amounts released into the environment

FY2010 Highlights

Enhancing Management of the Import/Export Import and Export of Chemical **Products**

The NSK Group is moving ahead with the establishment of a chemical substances management system in compliance with the regulations of each country and region in order to provide safe products worldwide. Eleven countries and regions have regulations on the management of chemical substances to eliminate adverse effects on human health and the environment. In fiscal 2010, the Group registered, confirmed, and submitted reports regarding chemical substances in accordance with legal changes in Japan, China, and Taiwan.

The Group also finished submitting reports on the classification and labeling of chemical substances it imports into Europe by the submission deadline of January 3, 2011 in order to comply with the EU's CLP Regulation. From here on it will move ahead to prepare for compliance with labeling requirements expected in 2015.

Table 2: Status of Compliance with Revised Laws (Fiscal 2010)

Country/ region	Regulation	NSK's compliance
Japan	Revised Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.	1
China	Revised Measures on Environmental Management of New Chemical Substances	1
Taiwan	Guidelines for Existing Chemical Substance Notification	✓

NSK Action

Aiming to Be a Unit Specialized in Export **That Protects the Global Environment**

The international department at NSK-Chugai Ltd. where I work handles the export of equipment, repair parts, and chemical substances to NSK's plants outside Japan. Of course, we try to reuse shipping boxes and to reduce CO₂ emissions by increasing the load efficiency during export distribution. When exporting chemical substances, we pay especially careful attention to matters such as making sure to get prior confirmation of export advisability for greases and oils in order to comply with the chemical substance

regulations of the export destinations. I hope we will remain the best partner in export services by doing our part in the NSK Group's initiatives for the global environment.

> Maki Fujita International Department NSK Procurement Services Division, NSK-Chugai Ltd.



Green Procurement

Air Pollutant Measurement Results Water Pollutant Measurement Results

Volume of PRTR-designated Substances Released Number of Machining Fluids Containing Chlorine Additives

Fiscal 2010 CSR Activity Performance and Fiscal 2011 Targets

Below is a report on the performance in achieving targets set in the CSR Report 2010, as well as fiscal 2011 targets established as priority issues or new challenges.

FY 2010 target	Performance in FY 2010	Evaluatio	FY 2011 target	Page	
Management Structure Supporting	g Sustainable Growth				
Accelerate the development, improvement, and rollout of the NSK Group Business Standards	Carried out per plan based on development and improvement plan	0	Continue to accelerate rollout of NSK Group Business Standards		
Further standardize and streamline internal controls and expand their application to business sites newly covered by internal controls	Streamlined internal controls with cooperation of teams outside Japan and auditing firms; eight more companies made subject to evaluation	0	Strengthen internal control implementation structure in Asia and expand scope of evaluation	_	
Enhance education and training on topics such as CSR, compliance, and information security	Provided training on topics such as CSR, compliance, and information security to officers and managers of Group companies outside Japan	0	Expand training on topics such as CSR and compliance to general employees of companies outside Japan	p.16	
Roll out NSK Supplier CSR Guidelines to suppliers	Rolled out NSK Supplier CSR Guidelines to main suppliers in Japan and China		Roll out <i>NSK Supplier CSR</i> <i>Guidelines</i> to suppliers in ASEAN, Europe and Americas	p.19	
Further strengthen the BCP	Clarified issues and persons in charge, particularly at plants, and took action	•	Reexamine and strengthen BCP, focusing on lessons learned from Great East Japan Earthquake		
Strengthen transaction screening for Security Export Management at bases outside Japan.	Revised export transaction screening procedures, rolled them out at sites and started their operations.	9	Globally roll out a system for classification methods based on assigning code to individual products.		
Creating Quality to Earn the Confi	dence of Society				
Train special process auditors outside Japan	Trained auditor candidates in Europe, Americas, China and Asia	\bigcirc	Certify special process auditors outside Japan	p. 20	
Create educational tools for users in multiple languages	Undertook preparatory work for multiple languages (two additional languages)	$\overline{\mathbf{C}}$	Create educational tools for users in multiple languages	p. 23	
Creating Dynamic Work Environm	ent				
Roll out risk assessment to all NSK plants	Implemented risk assessment training at NSK and main Group companies	0	 Establish model line and introduce risk management in concrete way Develop common worldwide 	p. 24	
Develop an educational system for global human resources	Established NSK Global Management College program (started in fiscal 2011)	0	 Develop common worldwide basic training Expand training sessions on human rights 	p. 29	
Working with Local Communities					
Expand implementation of children's science class program	Implemented program at one more Group company	0	Create system for giving momentum to each business site's efforts	p. 30	
Share information on initiatives among business sites	Shared information via monthly newsletter in Japan and, for regions outside Japan, by preparing and distributing case studies of initiatives at different business sites	0	 Continued to share information on initiatives among business sites 	– p. 33	

		Achieve	d 😐 Partially achieved 🔀 Not a	achieve
FY 2010 target	Performance in FY 2010	Evaluation	FY 2011 target	Ра
Communication with Shareholders	and Investors			
Promote investor understanding of NSK's mid-term plan and its progress	Fostered broader investor understanding via briefings for investors, IR visits outside Japan, individual interviews, etc.	e	Enhance services for individual investors	_
Environmental Management				
Maintain zero oil-leak accidents to outside company premises	Two oil-leak accidents occurred	××	Zero oil-leak accidents outside company premises	р. р.
Creating Environmentally Friendly	Products			
Create environmentally friendly products and technologies	Created 16 environmentally friendly products and technologies	9	Continue to create environmentally friendly products and technologies	р. р.
Global Warming Countermeasure	s			
Reduce CO ₂ emissions in Japan per production unit by 10.5% (base year: FY99)	Reduced CO ₂ emissions in Japan per production unit by 11.2% (base year: FY99)		Reduce CO ₂ emissions in Japan per production unit by 11.4% (base year: FY99)	p. 40 p. 43
Maintain CO2 emissions in Japan at level below FY06	Reduced CO ₂ emissions in Japan by 5.8% from the FY06 level		Maintain CO ₂ emissions in Japan at level below FY06	
Measures for Resource Conservati	on and Recycling	· · · · · · ·		
Continue to maintain zero emissions	Maintained zero emissions in Japan		Continue to maintain zero emissions	p.
Maintain waste recycling rate of: 98% or more in Japan 90% or more outside Japan	Achieved waste recycling rate of: 99.3% in Japan 92.3% outside Japan		Maintain waste recycling rate of: 99% or more in Japan 91% or more outside Japan	p.
Reducing Use of Environmentally	Harmful Substances			
In Japan: Switch to an alternative plasticizer for 20% of nitrile rubber seals containing DEHP	Made preparations to switch to an alternative plasticizer for 5% of nitrile rubber seals containing DEHP		Switch to an alternative plasticizer for 20% of nitrile rubber seals containing DEHP	p.
Outside Japan: Ascertain supply chain	Ascertained the supply chain (outside Japan)		Conduct self-audits at key suppliers	p.

Social Appraisals of the NSK Group

This page shows some of the accolades the NSK Group received in fiscal 2010.

Major SRI Indexes

Mechanisms such as socially responsible investment (SRI) by institutional investors have come to be regarded highly as an indication that a company can be counted on to provide long-term sustainable growth. The NSK Group is included in such major worldwide SRI indexes as the Dow Jones Sustainability Asia Pacific Index and the FTSE4Good Index Series.

Dow Jones Sustainability Indexes http://www.sustainability-indexes.com	Dow Jones Sustainability In Newser 2010/11	dexes
FTSE4Good Sustainability Indexes http://www.ftse.com/Indices/FTSE4Goc	d_Index_Series/index.jsp	FTSE4Good
Ethibel Investment Register http://www.ethibel.org/index.html	Ì	rtiedes. Executives
Morningstar Socially Responsible In http://www.morningstar.co.jp/sri/index.h		S-SRI

(As of March 31, 2011)

Main Accolades in the Area of Research



May 27 2010 The Society of Materials Science, Japan (JSMS) 2009 Paper Award

"Hydrogen-Induced Microstructural Change under Mode II Fatigue for a Tempered Bearing Steel"

(Joint research with Kyushu University)



Main Accolades from Customers

Award	Grantor	Product	Date	Reason for Award
Technical Development Cooperation Award	Aisin AW Co., Ltd.	Automotive parts	April 20, 2010	Awarded for contributing to reduced friction loss by developing friction plates for ATs
Grand Partner Award	Komatsu Ltd.	Industrial machinery bearings	May 7, 2010	Awarded to outstanding suppliers for contribution to quality, delivery performance, and customer service
Fiscal 2010 Technology Development Award	Daihatsu Motor Co., Ltd.	Automotive bearings	April 15, 2011	Awarded for contribution to improved fuel economy through development of a cold forming hub unit bearing (page 45)
Fiscal 2010 Development Award	Jatco Ltd.	Automotive parts	June 1, 2011	Awarded for contributing to reduced friction loss by developing products such as friction plates for ATs

(Awards listed are some of those received in fiscal 2010 or for initiatives undertaken in fiscal 2010.)



Reference data is available on NSK's website. www.nsk.com > Sustainability > CSR Reports

■ 60th Outstanding Technical Paper Award from the Society of Automotive

Engineers of Japar

The Society of Materials Science, Japan (JSMS) 2009 Paper Award

Third-Party Opinion

As last year, NSK asked Mr. Eiichiro Adachi of the Japan Research Institute, Limited to provide a thirdparty opinion of this report.



Eiichiro Adachi Counselor, The Japan Research Institute. Limited

Profile: Mr. Adachi graduated from Hitotsubashi University's Department of Economics and is currently a counselor and the head of the ESG Research Center at the Japan Research Institute, where he conducts industrial research and corporate evaluations from the perspective of corporate social responsibility, with a focus on countermeasures to environmental concerns. His published works include Introduction to Environmental Management (in Japanese, published by Nikkei Publishing Inc.), Mr. Adachi is a member of the Japan Standards Association's ISO 26000 JIS Compatibility Committee and was a Japanese expert on the ISO 26000 Working Group until May 2009

As I have given financial institutions information on companies so that they can create socially responsible investment products, I am providing a third-party opinion of the NSK Group's CSR activities, based on the understanding I have gained from this report.

Last year, I asked for enhanced disclosure on initiatives taken in regions outside Japan, a report on progress over time for environmentally friendly products, and systematization of contributions to local communities. I am pleased to see that these issues were addressed to a certain degree.

The special articles in this report make clear that the NSK Group is fully committed to quality manufacturing as part of its social responsibility. I was also impressed with the fact that the Group implemented compliance and other training programs at Group companies outside Japan and that it made efforts to raise the level of its initiatives on a global basis in regard to internal controls, information security, and export management. Furthermore, the Group's efforts to globalize its human resources functions seem to hold great promise for producing results in the future.

Looking over each year's report for the last four years, it appears that the NSK Group's CSR initiatives have nearly reached a first stage of maturity. I would therefore like to suggest that NSK progress to the second stage. The second stage is when the NSK Group broadens its scope to truly address global concerns. On the last page of the report, employees freely describe what CSR means to them. One message that caught my eye said "CSR is low friction." This is an example of a message the NSK Group could speak to the whole world: we are reducing greenhouse gas emissions by making sure the whole world has low-friction bearings. On reflection, however,

Response to Mr. Adachi's Third-Party Opinion



Corporate Planning Division HQ-Head Responsible for IR & CSR Office

Senior Vice President

Thank you for your valuable opinion again this year.

After receiving your suggestion pertaining to last year's report to make our efforts and the contents of this report more global, we strengthened our export management and environmental conservation initiatives at each business site and enhanced information about those endeavors in this report. I appreciate your evaluation that the NSK

Group's CSR initiatives have "nearly reached

Responses to Mr. Adachi's main opinions of the NSK CSR Report 2010

-	-
NSK's response	Page
Effort was made to introduce initiatives and achievements for regions outside Japan in each section throughout the entire report. Targets and results for regions outside Japan were disclosed especially in terms of environmental matters.	pp. 48–49
Introduced progress by generation for products used in machine tools as an example.	pp. 38–39
After considering the matter, it turned out to be difficult to set targets. The goal will remain Neco 1.2 or better, achieved by improving product life, weight, and torque, which are related to energy consumption.	pp. 36–39
Clarified policies and will strive from here on to raise the level of awareness and efforts within the Group.	pp. 30–33
	Effort was made to introduce initiatives and achievements for regions outside Japan in each section throughout the entire report. Targets and results for regions outside Japan were disclosed especially in terms of environmental matters. Introduced progress by generation for products used in machine tools as an example. After considering the matter, it turned out to be difficult to set targets. The goal will remain Neco 1.2 or better, achieved by improving product life, weight, and torque, which are related to energy consumption. Clarified policies and will strive from here on to raise the level of awareness and efforts within the

the world today is currently overflowing with friction. Racial clashes, conflicts, poverty and disparities are the maior examples. In the future, friction will likely become increasingly intense, driven by an ever tighter supply of energy and mineral resources.

Companies whose strength is manufacturing and whose primary sales channels are B-to-B are not always good at describing their vision for the future world. However, instead of only increasing the satisfaction of its own stakeholders, I think that a company which takes the initiative to lead the world to a better future is the ultimate example of CSR. As an example, the vision of "reducing friction in the world" can be achieved not only with products such as low-friction bearings, but also through various initiatives—building workplaces that respect diversity, seeking mutual harmony and benefit with local communities, and helping to raise the next generation. Engaging in the development of alternative materials with the purpose of avoiding a crunch in the supply of mineral resources would also likely lead to "reduction of friction." I am certain that the articulation of a message like this that addresses the whole world—in other words, a statement of CSR that includes the Company's vision of the future world—would create a unifying force and energy within the Company.

Finally, just before I had finalized this document, the news broke that NSK was under investigation by the Japan Fair Trade Commission. I will keep my eye on this situation.

These comments do not offer any conclusion as to whether the data in this report was accurately ascertained and calculated in accordance with generally recognized criteria for preparing environmental reports, or whether all important issues have been addressed without omission.

a first stage of maturity." As for your suggestion to "progress to the second stage," we will pursue further discussions within the Company about what kind of CSR initiatives are possible for us as a manufacturing company—and moreover one that is a maker of component parts and functional parts-with the aim of carrying out proactive, not passive, CSR initiatives.

