Denka Company Limited
www.denka.co.jp/eng

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The photomontage on the front cover of this report features the athletes of NIIGATA Albirex BB Rabbits, a professional female basketball team that Denka supports.

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Printed in Japan
Published in November 2017 by Denka Company Limited

Denka REPORT 2017

Denka

Denka REPORT 2017

Denka Company Limited

Denka's Corporate Philosophy

Building on a long history dating back to 1915, in 2016 Denka established The Denka Value, thereby identifying a new corporate philosophy that would serve as the foundation for all of its business activities going forward.

Looking ahead, we will continue to take on the challenge of expanding the possibilities of chemistry while fulfilling our responsibilities as a good corporate citizen, thereby living up to society's expectations and trust.

The Denka Value (Corporate Philosophy)

The Denka Value consists of the Denka Mission, which represents our uppermost mission statement, and the Denka Principles, a set of precepts guiding actions taken by every Group employee.

The Denka Mission

Taking on the challenge of expanding the possibilities of chemistry to create new value and contribute to sound social development.

The Denka Principles

We:

1. Boldly confront challenges with determination and sincerity.
2. Think and take action today with the future in mind.
3. Deliver new values, and inspire customers through innovative *monozukuri*.*
4. Respect the environment and create a cheerful workplace that prioritizes safety.
5. Contribute to a better society, whilst taking pride in being a trusted corporate citizen.

* Japanese-style craftsmanship

The Corporate Slogan

"Possibility of chemistry."

We established this slogan to summarize our corporate philosophy and to convey it to the general public more effectively.

CONTENTS

Main Points of the 2017 Edition

1. *Denka Report 2017* features such topics as environmental initiatives, occupational safety, facility security and disaster prevention as well as product safety. The presentation is intended to provide all stakeholders with an overview of the Denka Group's CSR initiatives centered on Responsible Care activities.
2. Along with the title change from *Denka Group CSR Report* to *Denka Report*, we have renewed our commitment to reporting our initiatives to create new value and contribute to society based on The Denka Value, our new corporate philosophy established in May 2016.
3. Our CSR materiality issues, identified in April 2017 to better realize our corporate philosophy, are reflected in the content of this reporting. Moreover, we delineate the relationship between United Nations Sustainable Development Goals (SDGs) and our corporate activities, explaining how our key products and technologies are capable of fulfilling functions that support SDG realization.
4. Allowing those who strive to address Denka's materiality issues to voice their opinions in an easily understandable manner, the Special Feature sections of this report include interviews and dialogues dealing with safety assurance activities (pages 14 to 15), workforce diversity (pages 18 to 19), R&D (pages 28 to 29) and corporate governance (pages 38 to 39).

Coverage

Fiscal 2016 (April 1, 2016, through March 31, 2017) in principle; this report includes additional information on some initiatives undertaken subsequent to the fiscal 2016 year-end while presenting data on numerical targets for and performance statistics from the past several fiscal years.
Date of publication: Nobember 20, 2017 (previous edition: November 30, 2016)

Scope

Unless stated otherwise, performance statistics presented in this report encompass the business sites of Denka and key affiliates listed below.

- Business sites: Six production sites (Omi, Omuta, Chiba, Shibukawa, Ofuna and Isesaki) and four R&D institutes (the Advanced Technologies Research Institute, the Life Innovation Research Institute, the Infrastructure & Solutions Development Research Institute at the Denka Innovation Center and the Polymer & Processing Technology Institute)
- Key affiliates: Denal Silane Co., Ltd. and Denak Co., Ltd. at the Omi Plant as well as TOYO STYRENE Co., Ltd., and Taiyo Vinyl Corporation at the Chiba Plant

Guidelines

- The G4 Sustainability Reporting Guidelines of the Global Reporting Initiative (GRI)
- The Environmental Reporting Guidelines 2012 of Japan's Ministry of the Environment
- The International Integrated Reporting Framework of the International Integrated Reporting Council (IIRC)

Website-Only Content

For CSR reporting, Denka utilizes both printed booklets and online references that are prepared in digital book and PDF formats and posted on its website. While the former present the latest examples of Denka's initiatives aimed at achieving sustainable growth, the latter cover information on its longstanding CSR activities. In addition, the Global Reporting Initiative (GRI) Content Index is attached to the web-based references to *Denka Report 2017*.

Please see also Site Reports (posted on the website in digital book and PDF formats) for detailed information on each business site and affiliate.
http://www.denka.co.jp/eng/sustainability/

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www.denka.co.jp/eng

Aiming to Realize Our Corporate Philosophy as Set Out under "The Denka Value," We Are Contributing to the Sound Development of Society

Shinsuke Yoshitaka
Representative Director, Chairman
Denka Company Limited

Manabu Yamamoto
Representative Director, President & CEO
Denka Company Limited

Our Ongoing Efforts to Help Restore Disaster-Struck Areas

We would like to express our deepest sympathies to those affected by the Kumamoto Earthquake in April 2016, the massive fire that engulfed streets north of Itoigawa City's main train station in December 2016 and the extraordinarily heavy rainfalls in northern Kyushu in July 2017.

Reflecting its commitment to pursuing mutual development with society, the Denka Group believes that maintaining collaboration with members of communities in which it operates is essential to its business activities. Guided by this belief, we are implementing a variety of initiatives to help those residing in areas devastated by these disasters. Moreover, the Group is providing support for employees at the Omuta and Omi plants, both located near areas affected by two of the aforementioned disasters, who volunteer to engage in disaster relief activities. In addition, a number of Denka employees are also assisting as volunteers in the reconstruction of Minami Sanriku-cho, Miyagi Prefecture, which was heavily hit by the Great East Japan Earthquake in 2011.

We sincerely wish for the earliest possible recovery of these devastated areas.

Establishing The Denka Value, a New Corporate Philosophy

Having celebrated its centennial in 2015, Denka is pursuing a number of initiatives to secure further growth over the next 100 years. As part of these initiatives, in May 2016 we established The Denka Value, which identifies "Taking on the challenge of expanding the possibilities of chemistry to create new value and contribute to sound social development" as the Denka Mission. Also, we have laid out the Denka Principles, a set of precepts every employee should refer to when they think about what must be done to fulfill this mission.

Outline of the Upcoming ***Denka Value-Up*** Management Plan

In April 2017, we embarked on the final year of the Denka 100 management plan, under which we are pursuing the realization of our corporate philosophy. Currently, efforts are under way to formulate Denka Value-Up, a new management plan that is slated to begin in April 2018. In May 2017 we disclosed the growth vision that drives the new plan with a focus on three pursuits: 1) Becoming a "Specialty-Fusion Company" boasting a robust business portfolio; 2) maintaining "Sustained Growth" by significantly enhancing productivity; and 3) securing "Sound Growth" through work style reforms.

Furthermore, we have identified specialization and innovative processes as key themes for our growth strategies aimed at realizing the aforementioned vision. We are confident that these pursuits will help us build a stronger operating base that is resilient to change in the management environment, thereby realizing sound and sustainable corporate growth.

Placing the Utmost Priority on Safety and Helping Realize Employee Happiness

In addition to these growth strategies, initiatives aimed at fulfilling our corporate social responsibilities (CSR) have always been a crucial component of our management plans. In this regard, as a chemical manufacturer we consider placing the utmost priority on safety a matter of great importance. Accordingly, in 2015, we established the Basic Policy for Workplace Safety, Health, Security and Disaster Prevention, aimed at helping us decrease the number of major facility disasters and accidents to zero and continuously improve our occupational accident record. Under this policy, we are engaged in safety assurance activities, such as addressing potential points of danger in our worksites and facilities, with all employees working as one to achieve zero-accident and disaster-free status, our final goal.

While we have positioned safety assurance as basic to our operations, we also believe that fostering an open and vibrant corporate culture is essential to the achievement of further growth. We are therefore determined to create an environment in which every employee can stay healthy, feel happy and find their job rewarding and is empowered to freely realize their creativity. To that end, we are promoting operational process reforms that aim to enhance productivity via the use of the cutting edge IT solutions with the intention of reducing the workload and thus affording employees more free time. Simultaneously, we are striving to develop personnel systems that will help workers strike an optimal work-life balance by accommodating various needs based on life stages, including child rearing and nursing care. These systems are also designed to help employees cope with such unexpected life events as contracting long-term illnesses. At the same time, we are promoting workforce diversity, welcoming diverse human resources and encouraging these personnel to vibrantly pursue success as part of our growth strategies.

Our Relationships with Stakeholders

Today, a growing number of businesses around the world are adjusting their business activities to support the objectives of the Paris Agreement signed at COP 21 and the UN Sustainable Development Goals, which set the target year at 2030. As a chemical company that engages in manufacturing operations using resources and energy, the Denka Group recognizes that reducing environment footprints throughout product life cycles and helping resolve issues society is confronting through manufacturing are important tasks. The accomplishment of these tasks is a prerequisite of our continued operations.

Based on this recognition, Denka will focus its management resources on specialty businesses and take on the challenge of expanding the possibilities of chemistry, with the aim of delivering its solutions in such areas as the environment and energy, healthcare and high-value-added infrastructure. We will thus help resolve issues society is confronting in collaboration with all those constituting our value chains, thereby creating new value.

Last Words

On April 1, 2017, Denka adopted a new management structure led by both a chairman and a president. This move is intended to secure our ability to efficiently and swiftly handle an ever broader range of operations and enhance the Company's corporate governance functions amid increasingly globalized business settings. Under The Denka Value, all Group members will work in unison to create new value and, to this end, fully leverage the Group's expertise in chemistry. In these ways, we will help people around the world live happier lives and contribute to the sustainable development of society.

We sincerely ask for your ongoing support for our Group operations.

The Denka Group at a Glance

Corporate Profile (as of March 31, 2017)

Name	Denka Company Limited
Established	May 1, 1915
Paid-in Capital	¥36,998,436,962
Employees	Consolidated: 5,816 Non-consolidated: 2,960

Denka's Business Operations

Elastomers & Performance Plastics
- Chloroprene rubber
- Acetylene black
- Styrene-based synthetic resin
- Styrene monomer
- Acetyl chemicals

Infrastructure & Social Solutions
- Cement
- Special cement additives
- Fertilizers
- Inorganic materials
- Resin processing products for civil engineering and agricultural use

Electronics & Innovative Products
- Electronic packaging materials
- Phosphors
- Functional ceramics
- Electronic circuit substrates
- Thermally conductive materials
- Adhesives

Living & Environment Products
- Resin processing products for construction and industrial use
- Food packaging materials

Life Innovation
- Influenza vaccines
- Diagnostic reagents
- Macromolecular sodium hyaluronate preparation

Business Sites

Head Office
Nihonbashi Mitsui Tower, 1-1, Nihonbashi-Muromachi 2-chome,
Chuo-ku, Tokyo 103-8338, Japan
Tel: +81-3-5290-5055

Branches
Osaka, Nagoya, Fukuoka, Niigata, Hokuriku (Toyama), Sapporo, Tohoku (Sendai)

Sales Offices
Nagano, Gunma (Takasaki), Akita, Hiroshima, Shikoku (Takamatsu)

Research Institutes
Denka Innovation Center [Advanced Technologies Research Institute, Life Innovation Research Institute, Infrastructure & Solutions Development Research Institute] (Machida, Tokyo), Polymer & Processing Technology Institute (Ichihara, Chiba)

Plants
Omi (Itoigawa, Niigata), Omuta, Chiba (Ichihara, Chiba and Bibai, Hokkaido), Shibukawa, Ofuna (Kamakura, Kanagawa), Isesaki (Isesaki and Ota, Gunma)

Major Affiliates
Denka Polymer Co., Ltd. (Koto-ku, Tokyo)
Denka Seiken Co., Ltd. (Chuo-ku, Tokyo)
CRK Corporation (Takasaki, Gunma)
Hinode Kagaku Kogyo (Maizuru, Kyoto)
Denka Azumin Co., Ltd. (Hanamaki, Iwate)

Overseas Subsidiaries & Offices
New York, California, Louisiana, Düsseldorf, Halle (Germany), Singapore, Malaysia, Indonesia, Vietnam, Shanghai, Beijing, Guangzhou, Suzhou, Hong Kong, Tianjin, Dalian, Taiwan, Seoul and Dubai

Overview of Denka's Operations by Region

42 consolidated subsidiaries

(As of April 2017)

Asia
17 companies

Net Sales
¥96.0 billion

Japan
22 companies

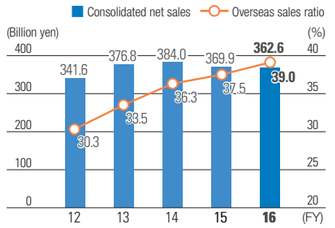
Net Sales
¥221.1 billion

Other
3 companies

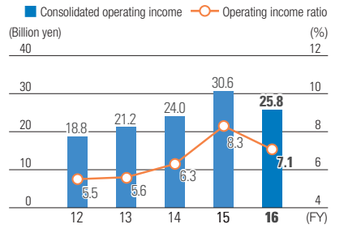
Net Sales
¥45.5 billion

China, Korea, Japan, Taiwan, Vietnam, Malaysia, Singapore, USA, Germany, Dubai

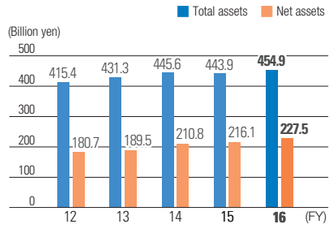
Consolidated Net Sales / Overseas Sales Ratio



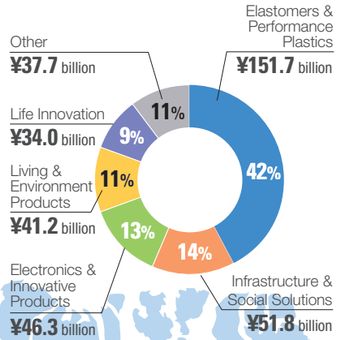
Consolidated Operating Income / Operating Income Ratio



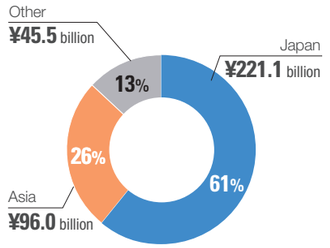
Total Assets / Net Assets



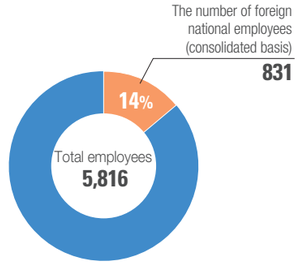
Net Sales by Segment (Fiscal 2016)



Net Sales by Region (Fiscal 2016)



The Ratio of Foreign National Employees (Fiscal 2016)



The Denka Group's Materiality Issues

Dialogue with Society and Partnership

We will maintain active communication with local communities while engaging in social and cultural contribution initiatives.

Overview of the Denka Group's Social Contribution Initiatives

Basic Concepts

The Denka Group is committed to fulfilling its corporate social responsibilities by contributing to the sustainable development of society. This commitment is reinforced by the Denka Group's 10 CSR Guidelines, which include the statement "We will contribute to society as a good corporate citizen." Matching our actions to our ideals, our concrete initiatives in this regard include providing educational support, contributing to culture, art and sports, and preserving the natural environment.

References ▶Page 3: The Denka Group's 10 CSR Guidelines

Examples of Our Social Contribution Initiatives

Item	Content of activities
Social contributions through our business activities	・Donated Ebola virus rapid diagnostic test kits to the Democratic Republic of Congo (announced via a press release dated May 30, 2017) ・Co-sponsored TOYOKALON 3W (Wigs for Wonderful Women) Project ❶
Educational support for the next generation	・Hosted plant tours and experimental chemical classes ・Participated in the Summer Holiday Chemical Experiment Show for Children ❹ ・Sponsored sports events for local youths (Machida City) ・Sponsored football clinics (Singapore) ・Sponsored the DENKA BIG SWAN STADIUM junior football festival ・Provided internship programs ・Maintained a scholarship system
Contributions to culture and art	・Provided assistance to Mitsui Bunko archives and on-demand concerts performed by the Fureai Trio ❸
Preservation of the environment and biodiversity	・Engaged in ongoing cleanup activities covering areas near business bases, including streets, beaches, riverbanks, irrigation channels and roadside ditches ・Maintained hydrangea beds ❷ ・Sponsored J-WAVE Green Casting Day ・Cooperated with Ichihara City's Green Curtain Initiative
Vitalization of local communities	・Renewed our naming rights agreement pertaining to the DENKA BIG SWAN STADIUM ❺ ・Supplied uniforms for the NIIGATA Albirex BB Rabbits and maintained our sponsorship contracts
Initiatives aimed at supporting the restoration of areas affected by major disasters	・Supported the victims of a massive fire that engulfed streets north of Itoigawa City's main station ・Sponsored a charity concert to help people of Itoigawa City ・Engaged in ongoing initiatives aimed at supporting the reconstruction of areas affected by the Great East Japan Earthquake ・Supported the restoration of areas affected by the Kumamoto Earthquake

References ▶Page 27: Initiatives to Provide Educational Support

❶ TOYOKALON 3W Project

Since commencing the export of polyvinyl chloride-based synthetic fiber under the brand name TOYOKALON* more than 30 years ago, Denka has been striving to satisfy needs of people who wear wigs and hairpieces made using this product, especially women in Africa and women of African origin who live in the United States. To facilitate the general public's understanding of TOYOKALON, we co-hosted the "Wigs for Wonderful Women" ("3W") Project on Mother's Day, May 8, 2017, in partnership with Bennett Career Institute (BCI), a cosmetology school based in Washington D.C.

Under the slogan "We Care," the event welcomed a number of people, including around 50 cancer patients undergoing treatment at the MedStar Washington Hospital Center. In addition to presenting the cancer patients with wigs and hairpieces made from TOYOKALON and Luxeena, a new fiber with properties that make it even more like natural human hair, the event featured a hair and style show put on by BCI students. Looking ahead, we will continue to engage in social contribution activities, with the aim of nurturing ties with an even greater number of stakeholders and winning their trust.

* A polyvinyl chloride (PVC) fiber for wigs and hairpieces that has received extremely favorable user reviews on the international stage, particularly for its quality. Denka was the first to commercialize PVC fiber of this kind, and products made using TOYOKALON are exported to a broad range of markets, including in Africa and the United States.

Hair and style show undertaken as part of the "3W" Project

❷ Maintaining Hydrangea Beds

The median strip of route 17 where it passes through Shibukawa City, Gunma Prefecture, has been planted with a number of Annabelle hydrangeas that put on a brilliant seasonal show of blossoms each year. These hydrangeas were first installed by the Nakamura District local community association in 1999 at the request of administrative agencies. Acting in partnership with this association, employees at Denka's Shibukawa Plant took part in the original planting and have ever since been maintaining the hydrangeas. For fiscal 2017, plant employees have scheduled nine rounds of weeding and pruning to maintain the display.

When the approximately 8,000 hydrangeas are in bloom up and down the 2,000 m^2 plot comprising the median strip, it is an astonishing and beautiful sight that some have taken to calling the "white carpet." Moreover, the road alongside the hydrangea beds was branded "Flower Road" by Shibukawa City, which has designated the hydrangea as the official city flower. As such, these hydrangea beds are loved by city residents and popular among pedestrians, having become an integral part of local community.

Members of the local community association and staff at Shibukawa Plant who engaged in the maintenance of hydrangea beds

A Message from Local Association Representative

I'm grateful to the staff of Denka's Shibukawa Plant for their longstanding collaboration with our activities aimed at maintaining the hydrangea beds. These activities also help facilitate communication between us and Denka. I consider the Company's efforts to contribute to our communities invaluable. Because white hydrangeas are planted in front of the Shibukawa-Ikaho Interchange, the exit from the Kan-Etsu Expressway, I believe they play an essential role in conveying a good first impression of Shibukawa City to tourists. Accordingly, we will remain committed to maintaining hydrangea beds as our heritage.

Mr. Mitsuyoshi Tamura
President, Nakamura Community Association, Shibukawa City

❸ The Fureai Trio

Since fiscal 2003, Denka has been sponsoring concerts performed by the Fureai Trio in an effort to help children—the leaders of the tomorrow—nurture a rich aesthetic sense through exposure to music. Over the course of 14 years, the Fureai Trio concerts have been staged on 439 occasions in 184 cities, with a total of approximately 101,000 people attending.

The specific aim of these activities is to communicate the joy of music to those who have little opportunity to listen closely to classical music. In line with this aim, we help the trio organize on-demand music workshops for students as part of in-school cultural education programs. We also sponsor concerts the trio holds at public cultural facilities for community residents, while assisting when the trio puts on special live performances for people with disabilities.

The Fureai Trio concert at Nanbu Public Hall

A music workshop featuring the Fureai Trio (Haguro Elementary School, Inuyama City, Aichi Prefecture)

❹ Summer Holiday Chemical Experiment Show for Children

For five consecutive years since 2012, Denka has participated in the Summer Holiday Chemical Experiment Show for Children, sponsored by the "Dream Chemistry 21" committee. Our participation in the event is intended to help elementary school students understand the wonder and excitement of chemistry and learn about how the chemical industry has contributed to the development of society. In fiscal 2016, our booth attracted more than 200 children who took part in hands-on experiential programs involving various experiments.

Summer Holiday Chemical Experiment Show for Children

❺ Renewing DENKA BIG SWAN STADIUM Naming Rights Agreement (effective through December 31, 2019)

Denka has renewed the agreement pertaining to the naming rights to the DENKA BIG SWAN STADIUM, a top-notch sports facility in Niigata Prefecture. Reflecting the fact that Denka's Omi Plant (Itoigawa City), the subsidiary Denka Seiken Co., Ltd. (Gosen City) and the operations of a number of other Group companies are located in the prefecture, the Company is committed to helping the stadium serve as a key facility that injects vitality into regional communities by promoting sports activities as well as to ensuring the venue's popularity among prefectural residents.

DENKA BIG SWAN STADIUM

Initiatives Aimed at Supporting the Restoration of Areas Affected by Major Disasters

Itoigawa City, Niigata Prefecture

Supporting Victims of a Massive Fire That Engulfed Streets North of Itoigawa City's Main Station

On December 22, 2016, a massive fire erupted at the center of Itoigawa City, rapidly spreading to engulf 147 buildings in a broad area encompassing approximately 40,000 m^2 . To support the victims of this disaster, the Omi Plant, based in Itoigawa City, provided futon mattresses and blankets to evacuation centers while making donations to the city government. Moreover, a number of plant employees participated in volunteer activities involving sorting out debris and helping owners of burnt houses retrieve items that connect them with their cherished memories. A total of 70 employees had taken part on 11 occasions by the end of February 2017, when the removal of debris was completed.

Also in support of the people of Itoigawa, the Denka Group sponsored a charity concert held on March 2, 2017 at SUMIDA TRIPHONY HALL, Kinshicho, Sumida-ku, Tokyo. Following the performance of Ms. Yuko Saito, a marimba player who grew up in Itoigawa, the New Japan Philharmonic, which generously agreed with the objective of the concert, played the suite *From Holberg's Time*—a masterpiece composed by Edvard Grieg—and other selections. At the finale, all the performers sang *Hana* (flower), a song penned by Rentaro Taki. With more than 1,000 people attending the event, we were able to raise ¥3,077,413 from ticket proceeds and audience donations. All the funds raised were donated to Itoigawa City.

The Denka Group is determined to rally its strengths to facilitate restoration now under way in districts affected by the fire.

Denka staff volunteers who helped retrieve mementos

All performers were on stage for the finale of the charity concert in support of the people of Itoigawa

Mashiki-cho, Kumamoto Prefecture

Supporting Restoration of Areas Affected by the Kumamoto Earthquake

Immediately after the Kumamoto Earthquake in April 2016, a number of Denka Group employees began engaging in volunteer activities. To date, a total of 267 volunteers, from the Omuta Plant and its subcontractors, have been dispatched to two heavily-hit areas, Kumamoto City and Mashiki-cho, on 36 occasions. These activities started with five people at a time sent three times a week to a volunteer center in Mashiki-cho. Then, from June 2016 to April 2017, we began dispatching a total of 10 people a month.

Although the initial schedule for these activities was concluded, we provided soup kitchens in May upon the request of residents of Mashiki-cho. As we handed out takoyaki and minced meat croquettes, both fresh off the stove, we were able to hear residents' words of gratitude, such as "Thank you so much for coming from a distant place," and "I've never ate more delicious meals than those you've served to us today."

We will continue to stand by those who were devastated by the earthquake while engaging these volunteer activities.

Soup kitchen

Denka staff who run soup kitchens in Mashiki-cho

New recruits who participated in volunteer activities

Developing farmland

Tohoku Branch staff engaged in the development of the Denka Farm

Planting sweet potato seedlings

Minami Sanriku-cho, Miyagi Prefecture

Our Ongoing Activities to Help Restore Areas Devastated by the Great East Japan Earthquake

Six years have passed since the Great East Japan Earthquake in 2011. Denka launched the Disaster Area Volunteer Support Program in July 2011, initiating organized volunteer activities as a collaboration of the Company and like-minded employees to help restore areas affected by this disaster. A number of program participants engaged in such activities as the removal of debris, mainly in Minami Sanriku-cho, Miyagi Prefecture.

Since fiscal 2016, the program has included new recruits, who undertake these activities as part of their employee training. Attesting to the fact that the program is highly appreciated, on one occasion a resident of Minami Sanriku-cho told Denka employees that "Since our community is facing a serious lack of human resources, your support is really helpful. Without your help, many tasks that would have taken more than a month to complete are finished much sooner."

Also, we were pleased that these activities provided us with valuable opportunities to work side by side with people in local communities and learn about issues they are currently facing.

Local farmers and Denka staff who support them (August 2016)

"Denka Farm" Initiative Undertaken by the Tohoku Branch

Over the six years since the Great East Japan Earthquake, local infrastructure reconstruction has steadily progressed. However, farmland restoration is proving difficult as the misguided land restoration project initially undertaken in the region resulted in a large portion of damaged farmland being filled in with soil containing stones, gravel and clay, making it unsuited for its intended purpose. Because of this, a number of farmers are struggling with bad drainage and poor soil nutrition. To address this issue, Denka has been supplying water piping for agricultural use and fertilizers. Recently, we also opened the Denka Farm, which occupies farmland borrowed from farmers we furnish with the aforementioned supplies. This facility is expected to serve as a place for interaction with residents of local communities.

In June 2017, staff at Denka's Tohoku Branch planted 600 sweet potato seedlings of several species. Plans call for holding a large harvesting and cooking event in autumn that will host people from the surrounding communities as they gather together to enjoy the bounty. Through these activities, we aspire to reach out to as many farmers as possible and help them reclaim hope regarding their farming operations.

Prioritization of Safety

We will strive assiduously to create a lively and sound workplace while placing the utmost priority on safety.

Safety Assurance Activities

Safety Message

"Placing the utmost priority on safety, let us strictly comply with rules and decisively make necessary changes!"

This is our slogan for the annual Safety Promotion Meeting, a one-day event in which attendees check the status of and discuss issues to do with safety assurance activities undertaken at each production and R&D base. In all our endeavors, we diligently work to preserve the essentials while decisively implementing necessary changes. By doing so, we ensure a lively and sound workplace that will support our drive toward future business growth, with all employees working as one to achieve this aim.

Basic Policy for Workplace Safety, Health, Security and Disaster Prevention

We put the utmost priority on worksite safety and health, facility security and disaster prevention in all aspects of our business activities.

To fulfill our social responsibilities as a chemical company, we put the utmost priority on safety as our basic stance for operations, thereby working together to create a lively and sound workplace and becoming a company capable of eliminating accidents and disasters and worthy of society's trust.

Chair of the Safety Measures Headquarters (President & CEO)

Safety Promotion Meeting attendees reciting the safety slogan (July 10, 2017)

Fiscal 2017 Occupational Safety Management Plan Companywide Targets

1. Reduce the number of major accidents and disasters to zero
2. Continually improve the occupational safety record

Priority Initiatives

1. Step up hazard prediction systems aimed at preventing major accidents and facility-related incidents
   - Leverage case studies of accidents at Denka and other companies
   - Utilize systems developed by industrial associations to assist with safety assurance operations
2. Steadily execute facility improvement projects related to safety countermeasures based on our three-year action plan
   - Mitigate the intrinsic dangers of operational processes to prevent major accidents and facility-related incidents
   - Set aside a budget and steadily execute planned facility improvements
3. Create a lively and sound workplace
   - Facilitate worksite communication to ensure the ongoing reduction of potential dangers and eliminate accidents attributable to operator action
   - Promote safety assurance activities in which each worker is able to grasp the worth of their efforts

Points of Attention for Frontline Operators Engaged in Safety Assurance Activities

1. Nurture a sense of unity by proactively exchanging courtesies, telling one another "keep safe!" and wishing colleagues a safe day
2. Practice the 3Ss—*Seiri* (sort), *Seiton* (set in order) and *Seiso* (shine)—as these are the basics of safety
3. Pursue the PDCA cycle to promote priority initiatives and share the outcome of such pursuit in a easily visible manner

Preventing Major Accidents and Facility-Related Incidents

During fiscal 2016, we experienced no major incidents related to our production processes. In July, however, the Shibukawa Plant saw one serious occupational accident in which a worker's hand was pinched by an automated press machine. The accident was attributable to human error, with the veteran employee involved sustaining the injury while trying to fix a machinery failure by inserting his hand into an opening of a machine in operation and touching its internal mechanisms despite the foreseeable danger of his action. This incident served as a strong reminder of the fact that the prevention of accidents of this kind will entail a number of facility improvements. Seriously reflecting on this incident, we are striving to identify specific hazard points with the potential to cause serious injury, with managers taking lead in putting in place measures to mitigate the intrinsic dangers of our operational processes, especially processes that use machinery that poses a risk of workers being caught or pinned down. We are thus rallying our Groupwide strengths to promote thoroughgoing safety assurance activities.

As part of our fiscal 2016 priority initiatives, we have set aside a budget for safety assurance-related investment. Simultaneously, we have reorganized our budget execution system so that upcoming facility improvement projects, which are set forth in our three-year action plan, can be executed more smoothly. Also, we are firmly committed to stepping up risk assessment activities through the utilization of the PDCA cycle, thereby implementing countermeasures against critical risk and improving our working environment in a way that incorporates operator feedback.

Fiscal 2016 Facility-Related Incidents

The number of incidents: Four (two leaks and two breakages)

None of these incidents involved human injury or environmental damage. However, the number of incidents was up by one compared with fiscal 2015.

Among the incidents, one involved the leakage of coolant. This was attributable to a power source-related failure caused by a lightning strike that resulted in the unintended activation of an interlock mechanism designed to prevent the overflow of coolants from their storage containers. This malfunction, in turn, exposed the cooling equipment to excessive liquid pressure that damaged piping and thus led to leakage. Although we quickly identified and rectified the vulnerability in the equipment's control system, future plans call for optimizing the capacity of our coolant storage to prevent overflow even in irregular circumstances.

The causes of the three other incidents included the incorrect handling of valve controls at the start of facility operations (e.g., failure to open a gate valve and other valve-related errors), corrosion and facility deterioration. Because facilities operated by our Omuta Plant, Chiba Plant and Merbau Plant (Denka Singapore Private Limited, Singapore) have many similarities with these aging facilities, we have addressed this issue by launching an across-the-board project team in charge of implementing countermeasures.

Occupational Safety and Health (Creating a Lively and Sound Workplace)

Despite our ongoing efforts to decrease the number of occupational accidents, improvements in our occupational safety record since fiscal 2014 have not been remarkable. In fact, certain subcontractors have actually seen an upturn in the number of occupational accidents. To rectify this situation, Denka representatives are engaged in serious discussions with the departments in charge of occupational safety and health at each subcontractor to ensure that robust countermeasures are in place. For example, the Omi Plant has succeeded in reducing the number of accidents occurring while periodic repairs are being carried out to zero by inviting the relevant subcontractors' safety managers to more frequently join in on the frontlines, where they receive intensive coaching. Currently, the plant intends to step up this coaching system, rolling it out during facility repair periods other than the main annual periodic repair period so that relevant personnel at subcontractors receive proper instructions at frontlines and are constantly overseen.

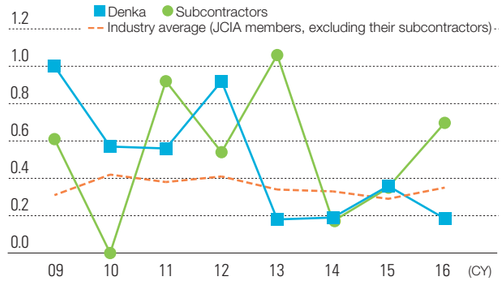
In addition, we recognize that we must ensure that the basics of safe operations are firmly embraced by every worksite to prevent accidents in which operators fall due to carelessness as well as other recurring accidents attributable to unsafe behaviors. In fiscal 2017, we will strive to ensure all workers engage in the exchange of courtesies wishing one another a safe day with a spirit of compassion for their colleagues. Furthermore, we have renewed our commitment to pursuing thoroughgoing 3S initiatives. As part of our new initiatives aimed at mitigating the intrinsic dangers of our operational processes and countering risk factors that may cause incidents in which a worker is caught or pinned down by machinery, we will also engage in serious discussions and work hand in hand with our subcontractors, thereby achieving our occupational safety management plan Companywide targets. We will thus step up our efforts to create a lively and sound workplace, with everyone playing his/her role in and sharing in the fruit of their efforts.

References ▶ Page 20: Occupational Safety and Health Management System

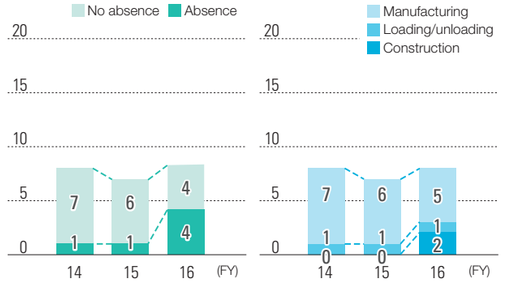
Number of Occupational Accidents*1

	Denka							Affiliates					
	Directly managed sites		Subcontractors		Total			Japan			Overseas		
	Absence	No absence	Absence	No absence	Absence	No absence	Total	Absence	No absence	Total	Absence	No absence	Total
Fiscal 2015	1	7	1	6	2	13	15	4	5	9	1	3	4
Fiscal 2016	2	5	4	4	6	9	15	4	7	11	0	6	6

Accident Frequency Rates*1



Reference: Number of Occupational Accidents at Subcontractors*2



*1 Number is calculated on a fiscal year basis.
*2 Calculated on a calendar year basis in accordance with the instruction of the Labour Standards Inspection Office and JCIA guidelines.

Dialogue on Denka's Safety Assurance Activities

Drawing lessons from two accidents in 2013—a heat blast from the Omi Plant's electrical furnace and a fire during the removal of a non-operational facility at the Chiba Plant—the Denka Group has been hard at work to implement measures to prevent recurrences while stepping up safety assurance activities.

In this Special Feature, we have invited Dr. Masayoshi Nakamura, a professor at Tokyo Institute of Technology (Tokyo Tech) who specializes in occupational safety and regularly serves as Denka's advisor in this field, to engage in dialogue with Mr. Tetsuya Shinmura, a managing executive officer of the Company. Here, we introduce what we have heard from Dr. Nakamura about his evaluation of Denka's safety initiatives and challenges the Company may have to tackle going forward through interaction with Mr. Shinmura.

(Date of dialogue: May 22, 2017)

Tetsuya Shinmura
Managing Executive Officer,
CTO, Denka Company Limited

Dr. Masayoshi Nakamura
Specially appointed professor,
Tokyo Tech

Career summary of Dr. Nakamura:
1968 Joined Lion Fat and Oil Co., Ltd. (now Lion Corporation)
1998 Appointed director of Lion Oleochemical Co., Ltd. and general manager of its Sakaide Plant
2001 Appointed director of Lion Engineering Co., Ltd.
2005 Appointed professor at Tokyo University of Agriculture and Technology, Graduate School Department of Industrial Technology and Innovation (until 2014)
2008 Appointed visiting professor for Tokyo Institute of Technology, Graduate School of Innovation Management
2016 Made a specially appointed professor for Department of Technology and Innovation Management and Innovation Science, Tokyo Institute of Technology (incumbent)
2017 Selected as a winner of the Kitagawa Academic Award by the Japan Society for Safety Engineering

Denka's Safety Record Targets

Shinmura: Having experienced two major accidents in 2013, we are truly committed to preventing recurrences or similar accidents. To this end, we have made placing the utmost priority on safety as basic to all operational activities. With the president acting as an enthusiastic advocate himself and serving as the chair of the Safety Measures Headquarters, we have made steady progress in changing our corporate culture.

Our occupational safety management plan Companywide targets are to "reduce the number of major accidents and disasters to zero" and "continually improve the occupational safety record" through safety assurance activities.

Nakamura: Denka has exercised good judgment in distinguishing between the former and latter targets. Having clarified the types of accident that have to be avoided at all costs, the Company has placed greater emphasis on preventing major accidents and facility-related incidents. Taken at the frontline level, such an approach is far more effective than a simple blanket approach broadly aimed at stamping out all accidents in one fell swoop, and it is also consistent with global standards vis-à-vis the establishment of safety assurance targets.

Shinmura: To achieve the aforementioned targets, we are promoting three priority initiatives, namely: stepping up hazard prediction systems and risk assessments; reinforcing safety assurance-related investment; and creating a lively and sound workplace through communication.

Nakamura: I have visited the Omi Plant three times since 2014 and was once able to observe the diligence Denka employees brought to identifying the causes of an accident involving the plant's electrical furnaces and to formulating safety countermeasures that drew on their expertise in chemical engineering. In the course of these activities, they performed fairly rigorous risk analyses and assessments. In addition, I would like to note that Denka is at the vanguard of the industry as it has set a budget for safety countermeasures that is separate from other budget items and recognizes the expenses entailed in such countermeasures as "investments." In general, frontline operators are well aware of whether or not top management is serious about safety. I therefore think that clarifying the positioning of safety in the context of corporate management is very important.

Shinmura: When it comes to capital expenditure, we have yet to completely break away from conventional tendencies to prioritize investment aimed at enhancing production efficiency.

Nakamura: In reality, you can't eliminate all the risk no matter how much you invest. Furthermore, due to technological reasons, certain types of risk can never be eliminated. When I interviewed frontline operators who have conducted risk assessments to ask them about residual risks they've identified, they gave me pretty well-thought-out explanations of such risks. Although a number of corporations share accident information throughout their organizations, what really matters is, in my opinion, sharing information about residual risk.

During my visits to Denka facilities, I was also impressed to see that worksites were extremely neat and clean thanks to the thoroughgoing practice of 5S activities. This was amazing for a production site that handles powdery substances. Furthermore, every worker I've met with has given me a cheerful greeting. It was such a lively and vibrant workplace. I was convinced that commitment to maintaining safety is shared among all workers, from frontline operators to those in managerial positions.

Shinmura: Thank you for your feedback. However, I suppose some of our worksites are lagging behind those you've visited. It is not easy to raise the safety awareness of all employees equally across the Group, but we will continue to strive to fill gaps in their commitment to safety.

Nurturing Human Resources and Passing Down Our Technologies to Future Generations

Shinmura: We are tackling a number of issues as we promote human resource development aimed at ensuring facility security and safe operations. Among these issues, is a concern voiced by many senior operators who feel the need for more robust operator education programs to prevent accidents involving a worker falling either on the factory floor or from a height, being caught by machinery, or being pinned down by it. Addressing this concern, we are envisioning the establishment of a dedicated facility for safety education. Moreover, we consider nurturing experts in facility security a matter of great importance. We are also aware that we must pass our technologies down to future generations. Therefore, we are developing education curriculums that provide our human resources with opportunities to acquire expertise in chemical engineering and facility design throughout the course of their careers.

Nakamura: To operate a chemical plant safely, a corporation must focus on both "process safety," which pertains to the design of production process itself, and "personal safety," which is related to ensuring that production facilities are handled correctly. You need human resources capable of identifying potential dangers in planned facilities and devising preemptive measures to mitigate such danger. You also need human resources who can correctly handle completed facilities. You need to develop both types of human resources.

In recent years, the number of facility-related incidents decreased significantly thanks to advances in plant automation and the accumulation of expertise in this field. These advances, however, have made it more difficult to provide younger operators with opportunities to acquire practical frontline skills. What should we do? I think providing "on-the-job training" is essential. Attending numerous training sessions makes little sense if situations at a production site you work for are totally different from those presented in such sessions. I therefore forecast that in addition to "off-the-job training," which is undertaken at a dedicated facility, the provision of "on-the-job training" should be a key human resource development issue for Denka.

Challenges Denka Is Now Facing at Its Production Frontlines

Nakamura: Generally, Japan's manufacturers are now facing shortage of key human resources capable of handling or managing production lines. To better adapt to this situation, these corporations must review their operations and focus on what is really essential, with an eye to easing the burden on each worker and allowing them to have some spare capacity.

It is reported that the most time-consuming tasks for a typical manager are documentation and authorization. Time spent in meetings and in coordinating with other departments come next. Therefore, managers may have little time to directly communicate with their frontline staff or to conduct worksite patrols. To ensure they have the time to do these things, operational procedures and rules must be changed. How much e-mail should they be cc'd on? How many e-mails should they be expected to respond to? How many meetings should they attend? I suspect that under currently prevailing operational practices, there is significant excess built into working hour and human resource requirements.

Shinmura: We will execute production process reforms in line with "Denka Value-Up," a new management plan that is slated to commence in April 2018.

Specifically, these reforms will incorporate IoT, AI, robotics and other cutting-edge technologies to promote automation while allocating human resources to more creative jobs. The aim of these reforms is not simply to save labor; rather, we intend to allow frontline operators a degree of spare capacity even as their working styles change.

We are also considering the incorporation of such external methods as "Daicel Production Innovation," which aims to systematically eliminate redundancies by focusing on truly essential operations. I suspect that this method would also help us enhance the content of on-the-job training and smoothly pass down techniques to younger operators.

Nakamura: Daicel's is an excellent method that helps manufacturers review operational flows while preserving the know-how possessed by frontline operators. I've seen many companies that have overcome adversities by adopting similar methods. These reforms are not easy tasks, but I'm convinced that the majority of manufacturers will have to choose to take the same path.

Denka's Safety Assurance Activities in the Future

Nakamura: When I think about what needs to be done to ensure the survival of Japan's chemical companies, I conclude that, from the perspective of a specialist in production safety, envisioning what their future operations look like is essential. After an accident, it is not unusual for a workforce to feel defeated. However, if employees shrink back from executing reforms, they will be stuck in a dead end. Taking that first step forward toward changes will always be key to blazing a path to a successful future. Based on my experience at a chemical company, where I served as a safety manager, I was made to bear in mind these principles. Envisioning the Company's future is crucial to safe operations.

In line with its management policies, Denka has identified creating specialty products as its vision of the future. I suppose clarifying your vision of the future will help frontline operators in charge of manufacturing recognize what skills they must acquire going forward.

Shinmura: Denka has been operating more than a century and I suspect we have become a bit complacent thanks to that long history. We need to become more future-thinking. We will also need to encourage employees to develop their own visions of the future and lead fulfilling lives as these things will directly affect the future of the Company. We are grateful to Dr. Nakamura for his insights and will stay committed to acting on what we've learned from him. Dr. Nakamura, thank you for participating in this interview.

The Denka Group's Materiality Issues

Employee Happiness

We are actively promoting initiatives to create a working environment in which everyone can work in good health and good spirits.

Objectives of Denka's Action Plan* (April 1, 2017 – March 31, 2019)

1. Reduce overtime hours
2. Facilitate the utilization of annual paid leave
3. Provide ongoing workplace experience programs for young people while engaging in community contribution activities
4. Help women pursue lengthy and successful careers
5. Ensure the proportion of women among newly hired specialists (new graduates and those recruited from external companies) is 20% or more

For more details, please visit the website. http://www.denka.co.jp/sustainability/approach/employee/pdf/plan.pdf (Japanese only)

* Based on the Act on Advancement of Measures to Support Raising Next-Generation Children and the Act to Advance Women's Success in Their Working Life; Please visit Denka's website for details.

Ensuring Respect for Diversity and Helping Women Achieve Success

Promoting Diversity

As we believe that Denka's future growth largely depends on the creation of a workplace that allows diverse individuals to realize their full potential, we are proactively embracing workforce diversity.

Also, we are stepping up the recruitment of foreign students, with the aim of securing human resources with international perspectives that will help drive our overseas operations forward. In April 2017, seven foreign nationals joined the Company as specialists. These employees account for 15% of the total number of specialists who have just entered the workforce.

Revisions to Personnel Systems

Along with making it possible for employees to change their job category in the course of their careers, we have incorporated the "Engineers' Skill Improvement Plan" aimed at promoting engineers who proactively strive to acquire more advanced skills and techniques while offering opportunities to study abroad. In addition, we have stepped up employee training for those hired overseas. In these ways, we are promoting revisions to our personnel systems to ensure that every worker finds their job rewarding.

Helping Women Earn Career Success

Every year, we strive to ensure the proportion of women among our newly hired specialists is 20% or more. In April 2017, 12, or 28%, of our newly hired specialists were women.

As our aim is to help women achieve success, we have lengthened the period that those engaged in child rearing may opt for shorter working hours while allowing employees to take half-day leaves for nursing children. In addition to introducing various assistance programs to help women develop lengthy careers, we have prepared and distributed *Life in Denka*, an in-house booklet aimed at facilitating employees' understanding of these programs.

Life in Denka

Optimal Work-Life Balance and Health Promotion

Our Work Style Reforms and Initiatives to Help Strike a Work-Life Balance

We are endeavoring to create an inclusive workplace environment through work style reforms, with the aim of helping each employee strike a balance between their duties and family life. These efforts are intended to assist employees in realizing their potential and pursuing career success in even broader fields. At Denka Company Limited, work style reform initiatives center on reducing excessive overtime hours and facilitating the utilization of annual paid leave, based on a recognition that efficient time management and better working environments are strategically important. In addition to ongoing operational process reforms aimed at improving working practices from the ground up, we introduced staggered work shifts (April 2017), designated recommended leave day(s) (one day for fiscal 2016; two days for fiscal 2017) and began celebrating "Premium Friday." Denka Company Limited also encourages employees to utilize annual paid leave for the purpose of celebrating birthdays and other anniversaries with their families.

Health Promotion (Mental Health Promotion Plan)

In recent years, the number of people suffering from mental health problems has grown. As we are determined not to let this happen in our workforce, we have established the Mental Health Promotion Plan aimed at implementing comprehensive measures to counter mental health issues. Furthermore, we have been implementing employee stress checks based on statutory standards that came into effect in 2015, with our industrial physicians conducting face-to-face interviews with employees in excessively stressful situations. Also, each department analyzes its current status and prepares reports, thereby ensuring that important insights that help improve working environments are shared throughout the Group. In these ways, we are preventing mental health issues from developing into serious problems.

References
▶ Page 24: Reviewing Personnel Systems Aimed at Ensuring Job Fulfillment
▶ Page 25: Relationships with Labor Unions

Nurturing Human Resources and Passing Down Our Technologies to Future Generations

Basic Policies

Denka has positioned human resource development as a key management issue for strengthening its business foundation and facilitating corporate growth. Accordingly, we have adopted an organized and strategic approach, implementing a human resource development program designed to nurture employees who can flexibly adapt to changes and take action with a strong sense of commitment and help them realize their full potential.

Since fiscal 2016, we have been dispatching new recruits to Minami Sanriku-cho, which was heavily hit by the Great East Japan Earthquake, to join in volunteer activities as part of their employee training. We expect these activities to give them opportunities to think about what must be done to fulfill Denka's corporate social responsibilities. We have also introduced new educational programs for trainers and managers, reinforcing our trainer education scheme as part of initiatives to secure a more robust and sophisticated system for training new recruits.

Our Human Resource Development Program

As part of our systematic initiatives to nurture key human resources capable of leading Group operations, we have implemented mandatory job level-based training programs for young, mid-level and senior management employees.

Moreover, we provide overseas training programs aimed at helping Japanese employees adapt to increasingly rapid globalization and acquire an international perspective. Specifically, administrative specialists in their second year and technological specialists in their fifth year participate in these programs undertaken at the Group's production base in Singapore.

Content of Mandatory Job Level-Based Training Programs (Fiscal 2016)

Type of personnel	Content of training
General staff	General staff training
Young and mid-level specialists	Training for new employees, sixth-month employees and 2nd, 3rd and 5th year employees
	Overseas training program (2nd year administrative specialists and 5th year technological specialists)
	Mandatory specialist courses (3rd and 5th year technological specialists)
	Technological networking meetings (3rd and 5th year technological specialists)
	New Class-7 (specialists and engineers)
Managers	New Class-8 (new managers)
	New Class-9 (new general managers)
	External training sessions (open seminars; general managers and managers)
Directors and executive officers	External training sessions (open seminars; executive officers)

Good Company Program Initiatives

Under the leadership of managers, our Good Company Program (GCP) activities aim to identify the issues and challenges each worksite faces, with specific activity themes established to reach solutions through teamwork. In fiscal 2016, a total of 153 departments and teams implemented their own GCP activities.

Denka100 Presentation Meetings (June 2016)

To review overall GCP activities, we hold the biannual Denka100 presentation meetings (June and December). The theme of one such meeting held in June was the "Possibility of Chemistry," our corporate slogan, with 10 selected teams, including some from overseas, giving presentations on a variety of initiatives aimed at ensuring safety, nurturing human resources, realizing team strengths and enhancing work efficiency in new ways. The themes of their initiatives were:

1. Overcoming cultural differences by employing team strength
   Denka Chemicals Hong Kong Co., Ltd.
2. Strengthening our research platform through safety management activities utilizing a PDCA cycle
   Diagnostics Research Dept., Life Innovation Research Institute
3. Overcoming challenges by bringing together the wisdom of all colleagues
   Electronic Materials Dept., Shibukawa Plant
4. Establishing a technology to manufacture ultra-pure acetylene black for LiB applications
   Production Dept. 4 and Production Management Dept., Chiba Plant
5. Reducing facility failures and ensuring safe operations
   Engineering Dept., Omuta Plant
6. Enhancing the competencies of team members and nurturing multi-skilled operators
   Environmental, Safety & Technical Dept., Isesaki Plant
7. Stepping up and rolling out risk assessment initiatives
   Production Dept. 1, Ofuna Plant
8. Passing down our technologies to the next generation
   Electric Power Dept., Omi Plant
9. Ensuring safety, enhancing human relations skills and creating a better workplace
   Fukuoka Branch
10. Denka Cosmetics, uruoi Re-design Project
    Medical Science Dept.

Voices from Commended Individuals and Teams

Winners of GCP Grand Prizes at the 23rd Denka 100 Presentation Meeting

Emi Yamashita and Fumie Ebihara, Medical Science Dept., Head Office

Ms. Emi Yamashita (center) and Ms. Fumie Ebihara (right)

We have been striving to create a new product under the brand name Uruoi (moisturizing),* forming a team of four researchers who are working closely to take advantage of each team member's insights. We have great fun tackling our day-to-day tasks. Since the inception of our project three years ago, we have been overcoming a number of challenges thanks to a number of colleagues who generously supported us. Although our product has yet to become a big business, we are committed to steadily nurturing it into a strong seller. Using this award as a springboard, we will rally the strength of team members and create a pillar for Denka's B to C marketing.

* A series of skincare solutions incorporating Denka Pure Hyaluronic Acid developed using proprietary fermenting technologies

Fostering an Open and Vibrant Corporate Culture That Welcomes Diverse Individuals and Supports Their Pursuit of Success

Currently, more than 800 foreign nationals are serving at the Denka Group's business bases around the world, constituting an active component of its workforce in the United States, China, Southeast Asia and other countries. We believe that allowing diverse human resources to realize their full potential is key to securing sustainable corporate growth over the future. Accordingly, we are stepping up initiatives to promote workforce diversity.

Here, we have invited Group employees from multiple countries and heard from them about their views on the current status of the Group's workforce diversity and their insights on how to better promote it. (Date of dialogue: June 30, 2017)

History of Denka's Overseas Business Network

This year Denka will celebrate its 102nd year since its founding. Denka's venture into markets overseas started very early in its long history. Specifically, the Company began by establishing a calcium carbide plant in 1915 in Fushun, Liaoning Province, China, before moving on to secure multiple overseas production bases in Taiwan and Vietnam. In addition, Denka was striving to secure its overseas sales network, to this end opening its New York representative office (now Denka Corporation) in 1961, the Singapore office in 1980 and thereafter a number of other overseas offices in Germany, China and most recently, Malaysia and Indonesia. Through these business networks, Denka is operating in a broad range of countries and regions encompassing a variety of ethnicities, religions and cultures.

In addition, Denka's TOYOKALON synthetic fiber is a strong seller targeted at customers in Africa and other markets overseas. Interaction with these customers naturally helps Denka foster a corporate culture that embraces diversity.

Workplace Communication

Dialogue attendees shared a variety of tips for maintaining smooth day-to-day workplace communications as well as on overcoming differences in cultures and customs. For example, some attendees said they are always aware of the need to report to and consult with their supervisors in a timely fashion. Others utilize automated translation apps to convert e-documents whenever they face an urgent need to share key information in English. Also, it has turned out that some attendees are actively endeavoring to build family-like relationships with their colleagues by, for example, attending company-hosted parties and joining company trips.

A number of attendees also voiced their need for frequent feedback from supervisors and colleagues, expressing their desire to better meet the expectations of those around them. In particular, this expressed need served as a reminder of the fact that Japanese businesspeople—most of whom have grown up in a high-context culture*—need to make a conscious effort to provide explicit and straightforward explanations to their colleagues of foreign backgrounds.

* A culture in which individuals tend to communicate each other by relying on their common background to explain the situation, rather than words

Striving to Create an Inclusive Workplace

When it comes to Denka's initiatives aimed at creating a workplace in which employees find their jobs rewarding and feel comfortable, some attendees requested that personnel systems aimed at fostering inclusiveness and ensuring consistency be further enhanced to harmonize with not only legal regulations but also local lifestyles and business customs. They also voiced expectations regarding the Company's initiatives to develop relevant programs—for example, those allowing eligible employees to flexibly choose work locations and working hours to accommodate the needs of two-income families and households with young children—backed by a corporate culture that places no barriers before employees seeking to utilize such programs.

Moreover, the attendees agreed that to help Denka create an inclusive workplace, each employee should be aware of need to promote workforce diversity and work style reforms as well as to promote a sense of ownership among employees as they work to push forward changes in the course of their day-to-day operations. To this end, the attendees reconfirmed the importance of proactively serving as advocates of Denka's future vision while implementing concrete action plans and other policies throughout their organizations.

At Denka, diverse human resources maintain an acute awareness of workforce diversity and a sense of pride about the Company as they engage in their duties. Looking ahead, we will remain attentive to employee feedback while planning and implementing a variety of initiatives to promote diversity.

Our Future Dreams; What Careers Do Attendees Envision?

Facilitators: Ayako Kato (Manager, Diversity Promotion Sec., HR Dept., Denka Company Limited) and Haruka Shiratani (Corporate Planning Dept., Denka Company Limited)

I will help create an excellent, highly productive working environment that every employee can be proud of.

Angie Mei
General Manager, Denka Corporation (New York, U.S.A.)

I expect that IoT-driven process reforms will transform entire operations. Accordingly, I will strive to help create a company capable of fully leveraging cutting-edge technologies for future generations.

Joyce Yap
Denka Chemicals Holdings Asia Pacific (Singapore)

As a manager, I'm committed to training my junior colleagues while endeavoring to develop new products.

Hong Longnan
Manager, Denka Chemicals Shanghai Co., Ltd (Shanghai, China)

I will contribute to the chloroprene business as an engineer. For the future, I will strive to become the head of one of Denka's overseas business bases, once I gain experience in a variety of duties.

Mousumi De Sarkar
Technical Manager, Elastomer Dept., Denka Company Limited (now Technical Manager, Denka Corporation)

I will engage in the sale of TOYOKALON to the African market. I will then aim to become an executive.

Choi Jaekun
Social Life Products Dept., Denka Company Limited

I would like to become a manager at a Denka subsidiary in China, taking charge of that Company's operations in the entire Chinese market.

Chen Liyun
Functional Films Dept., Denka Company Limited

Environmental Preservation

We are promoting an environment-friendly management approach aimed at ensuring the sustainable and effective use of resources and energy.

Our Initiatives to Help Preserve the Global Environment

Fiscal 2017 Responsible Care (RC) Activity Policies

In line with Responsible Care Global Charter, we will engage in stakeholder dialogue while appropriately managing the safety and environmental impact of our products throughout their life cycles.

Priority Initiatives

❶ Global warming countermeasures
Promote global warming countermeasures by providing energy-saving technologies and other solutions

❷ Continuously reducing industrial waste
Promote initiatives to improve yield ratios, sell recycling waste and utilize such waste in ways that complement the exhaustive scrutiny of each business base's cost elements

❸ Key themes

Omi Plant:	Promote resource recycling in cement production; reduce BOD and odor through the improvement of facilities treating wastewater from chloroprene production lines; and systematically renew freezers
Chiba Plant:	Systematically reduce VOC emissions
Isesaki Plant:	Step up management of industrial effluent

Sixth Medium-Term Environmental Plan

We are promoting systematic energy-saving initiatives aimed at annually achieving a 1% improvement in both energy consumption and CO_2 emissions intensity indices. Moreover, efforts are now under way to continuously reduce emissions of environmental load substances by improving our production technologies through such measures as the upgrading production process and facilities.

Items	Fiscal 2016		Fiscal 2017	Fiscal 2018
	Targets	Results	Targets	Targets
Energy consumption intensity (fiscal 2015 base)	0.97	0.99	0.96	0.96
CO_2 emissions intensity (from energy sources: fiscal 2015 base)	1.01	1.00	0.97	0.96
Emissions of PRTR substances (tons)	73	83	73	71
Final landfill waste (tons)	151	119	123	111

Notes:
1. CO_2 emissions intensity is calculated based on the converted production volume of benchmark products.
2. Standard calorific value of purchased energy has been modified from 8.81 MJ/kWh to 9.484 MJ/kWh in accordance with Keidanren's Commitment to a Low Carbon Society (from fiscal 2013 onward).

Promoting Climate Change Countermeasures

Our Target for Total GHG Emissions

Achieve a 12 % reduction by 2020 from the 2013 level

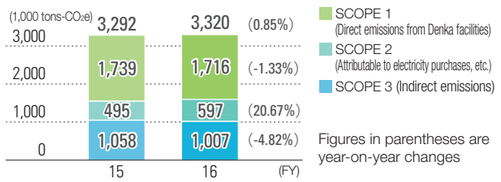
Today, climate change countermeasures are not only essential to ensuring the sustainability of the global environment but also a critical issue for businesses seeking to enhance their corporate value. With this in mind, Denka is systematically implementing measures to address global warming, with the aim of reducing the energy consumption of its business activities and promoting the sustainable use of energy.

In line with its medium-term targets, Denka is striving to reduce CO_2 emissions intensity from energy sources and total GHG emissions from its operations. Furthermore, it has identified a long-term target with regard to the promotion of the use of clean energy. In addition, we began commissioning a third party to verify our GHG emissions data and have thus far received a verification report that covers our fiscal 2015 emissions.

Our Fiscal 2016 GHG Emissions

Despite our ongoing energy-saving initiatives and efforts to expand hydroelectric power generation capacities, we experienced a year-on-year increase in Scope 2 emissions. This was mainly due to one of our U.S. business base being newly included in the scope of emissions reporting.

Greenhouse Gas Emissions



Calculation method: Each GHG item is converted to CO_2 emissions equivalent to its estimated greenhouse gas effect

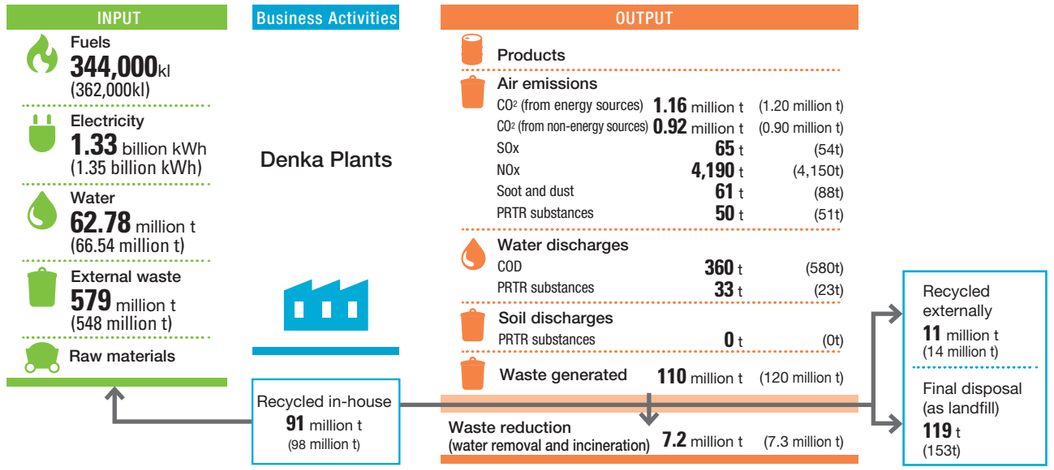
Scope of calculation: Japan: All Denka business sites and main affiliates (Denka Polymer, Denka Seiken, CRK, Denka Azumin and Hinode Kagaku Kogyo); overseas: Production sites in Singapore, China, Vietnam and the United States

Scope 3: Seven categories (excluding processing, use and disposal by customers) for fiscal 2014; all categories are calculated for fiscal 2015 and 2016

Correction: Based on results of the third-party verification, we hereby correct a part of Scope 1 and 2 emissions for fiscal 2015. Having addressed shortfalls attributable to a failure to include some items and errors in emissions coefficient, we upwardly revised Scope 1 emissions from 1,735 thousand t-CO_2e to 1,739 thousand t-CO_2e (an increase of 4 thousand t-CO_2e). We also upwardly revised Scope 2 emissions from 483 thousand t-CO_2e to 495 thousand t-CO_2e (an increase of 12 thousand t-CO_2e). We have thus upwardly revised the total of Scope 1, 2 and 3 emissions from 3,276 thousand t-CO_2e to 3,292 thousand t-CO_2e (an increase of 16 thousand t-CO_2e, or up 0.5% compared with figures prior to correction).
(Note: CO_2e: CO_2 equivalent)

Overview of Environmental Impacts

(totals for all production sites in fiscal 2016; fiscal 2015 figures are provided in parentheses for comparison)



Scope of calculation: Denka's six domestic plants and affiliates that operate inside these plants
Denka plants: Omi, Omuta, Chiba, Shibukawa, Ofuna, Isesaki
The affiliates: Omi Plant: Denal Silane Co., Ltd., Denak Co., Ltd.; Chiba Plant: TOYO STYRENE Co., Ltd., Taiyo Vinyl Corp.
Note: PRTR substances calculation excludes TOYO STYRENE Co., Ltd. and Taiyo Vinyl Corp. inside the Chiba Plant. Waste generated excludes TOYO STYRENE Co., Ltd.

INPUT: Fuels are the sum of all fuels, converted into caloric crude oil equivalents. They include fuels for in-house power plants

OUTPUT:
- CO_2 emissions from energy sources: Figures represent emissions from in-house fuel consumption and from electricity purchases
- CO_2 emissions from non-energy sources: Mainly the portion derived from raw materials
- COD: BOD discharge into rivers converted into COD values
- External waste recycling: Materials utilized externally as resources or as fuel
- Final disposal: Material buried on Company premises or at external landfill sites

Prevention of Environmental Pollution

Substances emitted from the Denka Group's facilities include SOx, NOx, soot and dust from boilers and heating furnaces as well as VOCs and CFC substitutes from production lines. We are committed to maintaining compliance with laws, national and municipal regulations and standards that govern various exhaust gas- and effluent-emitting facilities as well as pollution control agreements with local authorities. We also strive to reduce and minimize emissions of pollutants through the appropriate maintenance and management of our facilities and, to this end, implement facility upgrade and periodic inspections. To see data regarding each emission item, please also see the web-based CSR Report 2017 references. In addition, during fiscal 2016 we experienced no environmental incidents or accidents.

Utilization of the CDP Scheme

The CDP scheme is internationally known as an information disclosure scheme aimed at addressing the issue of climate change. Utilizing this scheme, in fiscal 2015 the Denka Group began disclosing its strategies to address climate change as well as an overview of its business activities, including those undertaken by the entire value chain, from the perspective of their possible impact on this issue.

For fiscal 2016, the Group received the B rating under the CDP scheme. We will continuously strive to identify challenges associated with environment-friendly operations and upgrade our initiatives, with the aim of earning A- or A rating, which is necessary for participating companies to be labeled with Leadership Index.

Note: CDP (formally, Carbon Disclosure Project) is a London-based NPO run by an association of institutional investors from around the world with the aim of encouraging businesses to reduce GHG emissions and mitigate the risk of climate change. Once a year, CDP compiles and publishes a report on participating companies' strategies to counter climate change as well as the volume of their GHG emissions.

Receiving Third-Party Verification

The Denka Group has undergone a third-party verification of its GHG emissions data. This verification was undertaken by Bureau Veritas Japan Co., Ltd. and was intended to enhance the reliability of said GHG emissions data through independent verification as part of initiatives aimed at continuously stepping up the Denka Group's environmental management.

For more details, please see the verification report posted on the Company's website.

Period covered by the verification
April 1, 2015 to March 31, 2016

Scope of the verification
1) Scope 1 and 2 GHG emissions (CO2 emissions from energy and non-energy sources)
2) Categories 1, 6 and 7 of the Scope 3 GHG emissions

Link to the verification report
http://www.denka.co.jp/eng/news/2017/06/greenhouse_gas_emissions_verification_statement.html

Our Response to the Revised Act for Rationalized Use and Proper Management of Fluorocarbons

In accordance with the Act for Rationalized Use and Proper Management of Fluorocarbons (put into force in April 2015), we are stepping up the management of our equipment that uses fluorocarbons as refrigerants. With the revision of this act, business operators are obliged to submit a report to relevant authorities whenever their annual emissions volume exceeds a specified statutory limit.

Even though our fiscal 2015 and 2016 fluorocarbon emissions were below this limit, we will steadily implement facility inspection and maintenance while promoting systematic renewal of such equipment, replacing it with alternatives that use refrigerants with a smaller GWP (global warming potential). In this way, we are working to make fundamental improvements. (Fluorocarbon emissions volume: fiscal 2015: 812t-CO_2e; fiscal 2016: 448t-CO_2e)

References
Page 8 ISO14000 Environmental Management System
Page 9 Environmental Performance Data
Page 13 Our Initiatives to Protect Biodiversity
Page 14 Topics Related to Our Environmental Initiatives (risks and opportunities, employee education, LCA)
Page 18 Our Initiatives to Optimize Logistics Operations
Page 21 The Utilization of Government Subsidies Related to the Environment and Energy
Page 23 Environmental Accounting

Denka's Energy-Saving Technologies and Initiatives to Promote the Use of Clean Energy

Initiatives to Utilize Clean Energy

Since its founding, Denka has been stepping up its use of hydroelectric power and constructing new hydroelectric power plants. Today, our network of hydroelectric power plants includes one location in the Omi river system, five locations in the Himekawa river system and four locations in the Umikawa river system. In addition, Kurobegawa Electric Power Company, a joint venture owned half by Denka and half by Hokuriku Electric Power Company, has facilities in five locations. Together, the maximum output of these plants totals approximately 120,000kW.

We also have thermal power plants, which are being converted to run on natural gas instead of heavy oil with the aim of reducing CO_2 emissions. In addition, the Chiba Plant suspended the operation of one boiler and its attendant power generation system in fiscal 2016 and has since then been receiving steam supply from adjoining facilities run by Maruzen Petrochemical. Meanwhile, the Omi Plant maintains a biomass power generation facility fed by scrap wood and also utilizes waste heat from cement production for power generation.

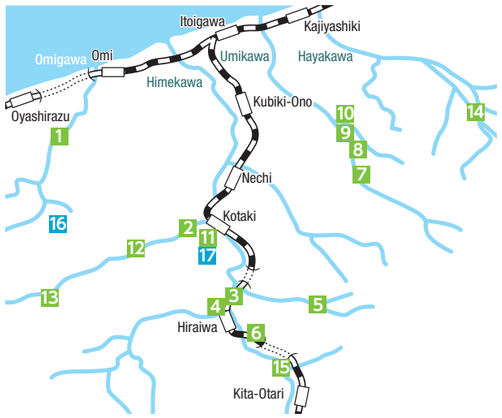
In response to the enactment of the feed-in-tariff (FIT) law for renewable energy, the Shibukawa and Isesaki plants established mega solar power generation facilities, and have been selling electricity to Tokyo Electric Power Company since July 2013. The combined maximum output of the solar power generation facilities at these two locations now amounts to 3,400kW, with estimated annual power generation totaling approximately 4,000,000kWh.

Construction of New Hydroelectric Power Plants

Looking toward our next 100 years of operations, we have been constructing new hydroelectric power plants. For example, in July 2015 we initiated the construction of the New Omigawa Power Plant (maximum output: approximately 8,000 kW) upstream of the Omigawa Power Plant, with operational kickoff scheduled for November 2019. Currently, work is under way to establish water channels and stabilize ground around the planned facility premises. Also, Kurobegawa Electric Power Company has decided on the construction of the New Himekawa Power Plant No. 6, (maximum output: approximately 27,500kW; operational kickoff: 2022). Denka is comprehensively cooperating on this construction project, reflecting its commitment to promoting environmentally friendly operations and contributing to a low-carbon society.

The output from these two new facilities will be sold through the FIT scheme for 20 years after their completion. Once this period expires, plans call for utilizing the facilities as in-house electricity sources, thereby increasing the ratio of clean energy in our overall electricity use by around four percentage points.

The Oami Power Plant concurrently serves as Denka's hydroelectric power generation plant management center



Hydroelectric

1	Omigawa	3,300kW	9	Umikawa No. 3	2,600kW
2	Kotakigawa	5,200kW	10	Umikawa No. 4*1	(990kW)
3	Oami	28,400kW	11	Himekawa No. 6**	26,000kW
4	Otokorogawa	9,800kW	12	Takigami**	15,000kW
5	Yokokawa No. 1	10,000kW	13	Nagatoga**	5,000kW
6	Yokokawa No. 2	16,000kW	14	Sasakura No. 2**	10,200kW
7	Umikawa No. 1	3,800kW	15	Kita-otari**	10,700kW
8	Umikawa No. 2	4,700kW			

** Jointly owned with Hokuriku Electric Power Company

16	New Omigawa*1 (Completion scheduled for 2018)	(8,000kW)	
17	New Himekawa No. 6*1, 2 (Completion scheduled for 2022)	(27,500kW)	
Solar*1	Shibukawa*3	(2,200kW)	
	Isesaki	(1,200kW)	
Thermal	Omi	14,000kW	
	Omi cement	11,100kW	
	Tomi	25,000kW	
Gas turbine (cogeneration)	Tomi	17,760kW	
	Chiba	12,720kW	
	Ofuna	680kW	
Diesel	Shibukawa	1,000kW	

The total maximum output of hydroelectric power generation: 117,250kW

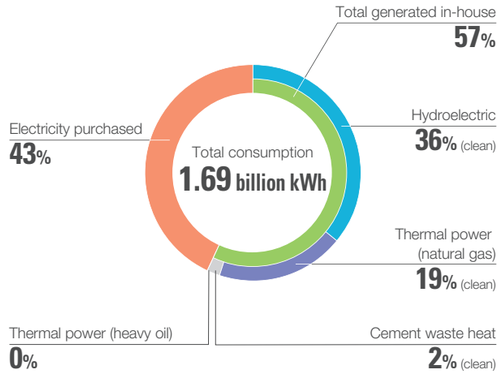
Note: Figures represent the amount of electricity that Denka is entitled to based on its proportion of facility ownership.

Total maximum output of thermal power generation: 82,260kW

Total maximum output of Denka's in-house power generation: 199,510kW

*1 Output from the New Omigawa Power Plant, New Himekawa Power Plant No. 6, Umikawa No. 4 and solar power generation facilities are not included as these facilities' sole purpose is supplying electricity to external companies.
*2 Jointly owned with Hokuriku Electric Power Company
*3 Denka Solar Power Shibukawa

Power Sources in Fiscal 2016



Effectively Utilizing Resources while Reducing Waste

Recycling Business in Cement Production

The cement production facilities at Denka's Omi Plant (Itoigawa City, Niigata Prefecture) accept a large amount of waste and byproducts as fuels and raw materials. Natural minerals have long been used as fuel and raw materials for cement production; however, aware of the potential utility of the chemical and calorie content of many waste and byproducts, Denka has been actively promoting a switchover to these materials.

Raw materials utilized by these facilities include coal ash from thermal power stations; contaminated waste soil and plasterboard waste from construction sites; and foundry sand that has been used for casting molds by automakers and machine parts makers. We also accept sludge from water supply and sewage treatment systems, which are integral to people's daily lives.

For fuel, we accept waste plastic separated from general waste as well as automobile shredder residue, tires recovered after automobile disassembly and waste oil.

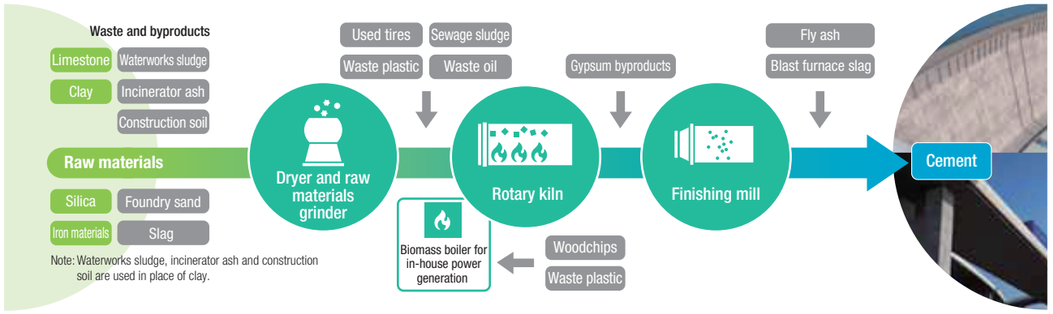
Moreover, the Omi Plant's biomass thermal power facility is fed by scrap wood from the demolition of houses. Also, the plant's cement production process accepts byproducts from on-premises chemical production facilities, helping to minimize overall external emissions.

The plant accepts waste from a broad range of regions. To gather this waste we use ground transport in the surrounding Niigata communities and larger Hokuriku area and have proactively adopted cost-effective marine transport to carry large amounts of waste from regions as far away as the Kyushu area, Hokkaido Prefecture and major cities located on the Pacific side of the Japanese archipelago, including Tokyo, Osaka and Nagoya. As a result of these efforts, in fiscal 2016 Denka used 561 kilograms of waste and byproducts for every metric ton of cement produced.

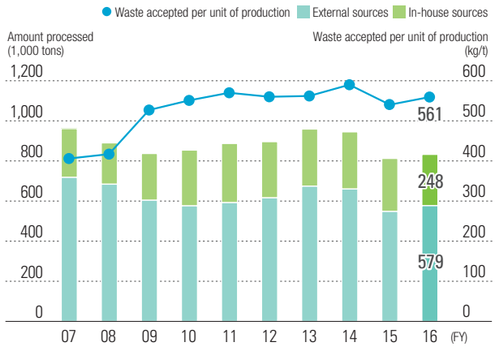
In the wake of a series of natural disasters that recently struck the country, the prompt removal of debris from housing and other structures has become an urgent issue for the affected municipalities. With this in mind, Denka is proactively accepting wooden materials as part of its initiatives to help realize the earliest possible reconstruction of devastated areas. For example, in 2016 Denka accepted wooden materials from houses destroyed by the Kumamoto Earthquake and a massive fire that engulfed streets around Itoigawa City's main station.

Looking ahead, we will continue to proactively accept waste, byproducts and disaster debris for recycling while giving due consideration to the economic efficiency of our cement production operations. In these ways, we will help reduce environmental burdens attributable to human activity with the aim of contributing to the betterment of society.

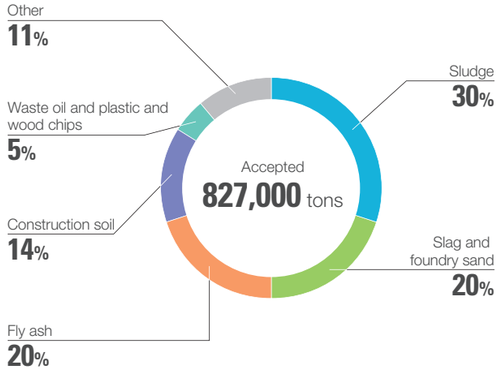
Recycling Process Flowchart



Volume of Waste Accepted (total and per unit of production)



Breakdown of Waste Accepted in Fiscal 2016



Our Products and Technologies

Product Safety

We are stepping up our initiatives to ensure product safety and quality, with the aim of satisfying customers' requirements and living up to their expectations.

Our Initiatives to Ensure Product Safety and Quality

Fiscal 2016 Companywide Quality Policy

1. Place particular emphasis on the importance of product safety and quality assurance
2. Strengthen compliance with laws and regulations and enhance customer satisfaction
3. Improve quality assurance levels Companywide
4. Raise awareness of employees engaged in manufacturing
5. Enhance technologies to ensure built-in quality
6. Utilize quality management technologies and methodologies to enhance our ability to resolve issues

Guided by the fiscal 2016 Companywide quality policy, our domestic and overseas business bases have striven to achieve continuous improvement in their quality assurance systems, paying close attention to customer complaints and requests to ensure product safety and secure even better quality. As a result, we experienced no major quality problems such as those related to product liability. Moreover, the number of complaints decreased from 359 in fiscal 2015 to 326 in fiscal 2016, down approximately 10% year on year, thanks to our intensive efforts.

Management of Chemical Substances and Provision of Sufficient Product Information

Employing our product safety management system, we are engaged in product stewardship initiatives aimed at ensuring that throughout their life cycles our products have no harmful impact on human health and minimal environmental footprints. As part of these initiatives, we provide our stakeholders with sufficient product information through the preparation of Safety Data Sheets while developing organizational structure and in-house rules designed to secure compliance with ever stringent legal regulations.

TOPICS

Establishing Guidelines for Chemical Substance Content of Products

On October 1, 2016, we established guidelines for the management of chemical substances used in our products. These guidelines are intended to be shared throughout our supply chains as we aim to maintain compliance with laws and regulations pertaining to chemical substances used in our products while ensuring the appropriate and efficient management of such substances.

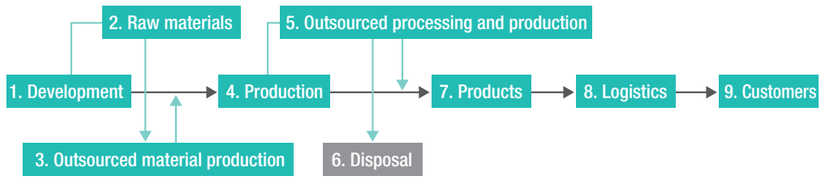
Enhancing the Level of Our Quality Assurance

We have been striving to enhance the level of our quality assurance in preparation for the upgrade of our ISO 9001 certification to the 2015 version while aiming to acquire a quality management system certification for the automotive industry. In fiscal 2016, we began conducting periodic operational audits pertaining to quality management and assurance systems at overseas Group companies. Moreover, we stepped up employee training on and the practical utilization of Statistical Quality Control (SQC) method. We also nurtured employees capable of taking the lead in SQC implementation. Results of these SQC-related initiatives are presented at quality symposia and other meetings. For more details, please also see page 16 of the web-based *CSR Report 2017* references.

References
Page 8: ISO 9001 Quality Management System
Page 15: Product Safety Management System
Page 18: Initiatives to Optimize Our Logistics Operations
Page 20: Our Structure for Managing Changes in Production Process

Flowchart

Please also see page 15 of the web-based *CSR Report 2017* references.



Our Initiatives to Enhance Customer Satisfaction

Since fiscal 2014, we have been utilizing a system to handle customer complaints on a Companywide basis. This centralized database system is designed to ensure the quick sharing of relevant information and prompt response while helping us better analyze the cause of such complaints and implement measures to prevent recurrences and enhance product quality.

Since fiscal 2012, departments handling electronics materials have been conducting customer surveys to continuously improve customer satisfaction. These departments are also engaged in information gathering and the development of the organizational structure necessary to acquire automotive parts-related quality management system certification.

TOPICS

Toyota's Hirose Plant Acknowledges Denka for Its Zero-Defect Track Record

Denka was chosen to receive an Excellent Quality Award by Toyota Motor Corporation's Hirose Plant, which serves as a core facility for producing key driving components used in Toyota's hybrid vehicles. The award was given to Denka at the plant's Supplier Quality Enhancement Committee meeting on April 26, 2016, for the Company's solid track record of supplying HITTPLATE with a zero-defect rate. In addition, Denka previously received a Quality Honor Award from the same client. Looking ahead, we will continue to strive to enhance customer satisfaction.

Mr. Toshio Niimi, General Manager of Toyota's Hirose Plant (left); Mr. Eitaro Fukutaka, General Manager of Environmental, Safety & Technical Dept., Denka's Shibukawa Plant (right)

Our Supply Chain Initiatives and CSR Promotion

Raw materials and fuel used in our production activities include minerals purchased from countries abroad. Due to growing public awareness of human rights issues and the need for environmental preservation, relevant government regulations have become ever harsher in some countries. Because of this, businesses failing to take sufficient compliance measures may be forced to suspend their production operations. With this in mind, Denka undertakes regular on-site inspections to assess the status of its suppliers while providing advice as needed. Aware of the fact that ensuring CSR procurement has become a major factor affecting our raw material and fuel supply chain, we are committed to helping our suppliers take appropriate steps based on our CSR Procurement Policies and Guidelines.

Questionnaires with Regard to CSR Procurement

In fiscal 2016, Denka sent out questionnaires to its top 30% of suppliers (in terms of transaction value) to assess the status of their CSR procurement. Most of the recipients responded and the results suggested that the majority of respondents proactively undertake CSR activities. Going forward, we will expand the scope of our questionnaires and encourage a greater number of suppliers to collaborate in our CSR activities.

Response to the Conflict Minerals Issue

In the United States, listed companies are obliged to report on transactions involving and the use of conflict minerals to the Securities and Exchange Commission (SEC) in accordance with the Dodd-Frank Wall Street Reform and Consumer Protection Act enacted in July 2010 and rules issued by the SEC in August 2012. Although Denka is not subject to this legislation, the Company considers it a social responsibility to follow suit. With this in mind, we undertake tracking surveys when requested by customers to affirm that our products are conflict mineral free.

References
Page 26: CSR Procurement Policies and Guidelines / Customer Satisfaction Surveys

Our Future Initiatives to Ensure Product Safety and Quality

With Denka having positioned product quality as an important issue, the Quality Assurance Department is striving to step up employee education with regard to quality assurance on a Companywide basis while developing the relevant structure. To accommodate ever higher quality requirements from customers, employees on the production frontlines must handle an increasing number of tasks related to quality assurance, such as managing chemical substance content, improving quality management systems, ensuring customer satisfaction and validating that no conflict minerals are used. Reflecting this, securing quality assurance experts has become a matter of importance. We will therefore develop Companywide curriculums by the end of fiscal 2017 and implement systematic quality-themed education, thereby nurturing human resources capable of leading our quality assurance activities.

Also, on April 1, 2017, the Company reorganized the former Quality Control Management Department, a headquarters-based department working under the Technology Division and in charge of quality assurance and management, into the Quality Assurance Department. In addition to managing product quality, this department is developing an even more robust structure encompassing production bases and Group companies to ensure chemical substance management in conformity with domestic and overseas regulations as well as quality assurance that satisfies stakeholder expectations.

We consider satisfying quality requirements and ensuring customer satisfaction essential to our manufacturing operations. Both are as important as maintaining legal compliance. Accordingly, we will rally the overall strengths of the Denka Group to live up to customers' trust in us.

Masato Mitani, General Manager, Quality Assurance Dept.

Our Products and Technologies

Creating Products and Technologies Capable of Contributing to the Sustainable Development of Society

We actively promote
open innovation to accommodate ever
diversifying customer needs.

Denka's R&D Activities

Our R&D Policies

- Having positioned "Open Innovation and Challenge" as our underlying R&D slogan, we focus Groupwide R&D resources on key development themes while efficiently accelerating strategic collaboration involving partnerships between industry, academia and the government at home and abroad.
- To fulfill the Denka Mission, "Taking on the challenge of expanding the possibilities of chemistry to create new value and contribute to sound social development," we have fostered a corporate culture that takes on the challenge of achieving innovation. At the same time, we work to develop specialty businesses and products while strengthening our key operations.
- Looking at things from an end-user perspective, we assess current and future market needs to better align our R&D process innovation efforts. This lets us focus on the commercialization of timely business development themes.

The Denka Innovation Center serves as the core facility for open innovation

Fiscal 2016 R&D Achievements

Here, we introduce some examples of our open innovation initiatives.

NIMS-DENKA Center of Excellence for Next Generation Materials

The NIMS-DENKA Center of Excellence for Next Generation Materials was founded in March 2013 by the National Institute for Materials Science (NIMS) and Denka to promote basic research on and the development of key technologies related to cutting-edge and futuristic materials that contribute to energy saving and the betterment of people's living conditions. Having celebrated its fifth anniversary, this institution is acting in partnership with Denka to create a variety of novel materials, including phosphors, assessing the feasibility of their mass-production while developing and applying state-of-the-art analysis and assay technologies. These activities are focused on realizing innovative materials for the next generation.

The seventh round of lecture meetings

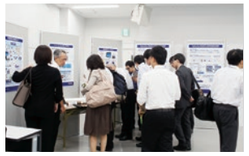
Signing a Partnership Agreement with Niigata University

In July 2016, Denka signed a comprehensive industry-academia partnership agreement with Niigata University, which has long collaborated with the Company in such areas as life science research. Stepping up their collaboration, Denka and the university are poised to accelerate a joint initiative to create next-generation technologies while pursuing cross-disciplinary R&D themes. Ongoing projects under this agreement include research into cancer remedy information services as well as the development of innovative food packaging materials employing the latest findings in food science.

Signing ceremony for the partnership agreement with Niigata University

Comprehensive Research Partnership with Yamagata University Graduate School Marks Its Fourth Year

Denka and the Graduate School of Science and Engineering at Yamagata University marked the fourth year of a comprehensive research partnership agreement signed in October 2013. Under this agreement, the two parties have engaged in a number of R&D projects mainly in the area of polymer materials and their achievements have significantly enhanced product development efficiency, allowing the creation of functional resins, elastomers and polymer processing products at ever faster pace. Looking ahead, we will fully leverage the advantages of basic and applied research conducted under this partnership, thereby creating new technologies and products capable of contributing to sound social development in such areas as environmental countermeasures and energy saving.



Panels presenting research findings at a discussion meeting centered on polymer materials

Exchange of Young Researchers beyond Corporate Boundaries

Denka is collaborating with several external corporations to hold networking meetings for young researchers, with the dual aims of nurturing the human resources who will lead the industry in the future and exploring next-generation R&D themes. These meetings help deepen mutual understanding of differing corporate cultures, products and technologies while allowing the sharing of ideas about novel research themes. In fiscal 2016, we collaborated with five other companies to hold these meetings and the positive feedback from participants included such comments as "The meeting provided me with exposure to different development approaches employed by other companies, thus helping to broaden my perspective. Now I'm able to see our technologies from different angles." This initiative is expected to help the Company leverage young people's flexible mindsets and their tireless enthusiasm to create technologies for future generations.

Researchers who attended a networking meeting held in collaboration with Hitachi Chemical Company, Ltd.

Our Future Initiatives

Developing a Global R&D Network

Success in global operations hinges on understanding diverse cultures, lifestyles and law systems. Moreover, operating abroad requires the ability to quickly adjust one's business approach based on the close observation of local needs. With this in mind, we are striving to develop a more robust overseas R&D network while diversifying the composition of research teams in terms of nationality and ethnicity, thereby fostering a new corporate culture for our research functions.

For example, Denka Life Innovation Research, established in February 2017 (DLIR) in Biopolis, Singapore, is engaged in the development of new vaccines and diagnostic reagents and employs researchers from a variety of countries. Furthermore, plans call for facilitating collaboration between this facility and Icon Genetics GmbH in Germany, the Life Innovation Research Institute in Japan and other Group R&D bases to accelerate the pace and enhance the efficiency of R&D.

In addition, Denka Chemicals Development Suzhou Co., Ltd. and Technical Service Center in Singapore plan to reinforce their structures for research into elastomers, synthetic resins, adhesives and special cement additives by, for example, hiring and nurturing a greater number of local researchers.

Opening ceremony for DLIR

R&D Process Reforms

Denka aims to create new businesses and products and strengthen its key operations through R&D process reforms. To this end, the Company is committed to promoting various initiatives to enhance R&D productivity. For example, we are planning to develop a cutting-edge ICT platform, with the aim of consolidating in-house and external R&D-related information and employing big data analysis to extract valuable insights with regard to how to promote forward-looking R&D activities. In these ways, we will achieve reforms in our processes for exploring research themes, thereby blazing a new trail for the Company over future generations.

Denka Group Solutions Aimed at Addressing Issues Relevant to SDGs

In 2015, the United Nations adopted "Transforming Our World: The 2030 Agenda for Sustainable Development," identifying 17 Sustainable Development Goals (SDGs) and 169 targets. These SDGs are designed to address universal issues confronting society, with all UN members and stakeholders being called to join initiatives to achieve them.

Focusing its management resources on healthcare, the environment and energy, and infrastructure, the Denka Group is aware of the fact that a number of social issues that lie in these fields are also identified by SDGs. Therefore, Denka will maintain acute awareness of what the Company should do to help achieve SDGs, thereby pursuing the possibilities of chemistry to provide solutions to address these goals.

Fields	Denka's key solutions	Primary SDGs
Healthcare	• Vaccines and diagnostic reagents for infectious diseases • Diagnostic reagents for lifestyle-related diseases • Cancer remedy information services employing gene alteration analysis	Goal 3 GOOD HEALTH AND WELL-BEING
The environment and energy	• Heat dissipating circuit substrates supporting energy-saving technologies • Thermally conductive materials and other thermal solution products for electronics components • Acetylene black that is used as a conductive aid in lithium-ion secondary cells to help promote the use of clean energy • Back sheets for solar panels • Cement production involving the recycling of waste	Goal 7 AFFORDABLE AND CLEAN ENERGY Goal 11 SUSTAINABLE CITIES AND COMMUNITIES Goal 13 CLIMATE ACTION
Infrastructure (Various public facilities supporting industries, traffic and communication: rolling stock, roads, ports, waterworks and sewage systems, dams, power and communication infrastructure, etc.)	• Cement and special cement additives that help build robust and environment-friendly infrastructure • Special cement additives and other civil engineering solutions capable of contributing to the effective maintenance and repair of aged structures and buildings • Construction and civil engineering materials, including underground drainpipes	Goal 6 CLEAN WATER AND SANITATION Goal 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Goal 11 SUSTAINABLE CITIES AND COMMUNITIES

Denka's R&D Focused on the Creation of Appealing and Safe Environment-Friendly Vehicles

Today, automotive industries are drastically shifting toward EVs, fuel cell vehicles and other types of eco-friendly vehicles. Meanwhile, initiatives to commercialize autonomous driving systems are actively under way, with some automakers initiating their trial use. Aiming to bolster innovation in these fields, the Denka Group is maintaining in-depth dialogue with its customers to optimize its R&D approach as it looks to create new materials. The Group also seeks to leverage its solid track record in supplying synthetic rubber, acetylene black, electronic circuit substrates and thermally conductive materials in its pursuit of breakthroughs that will, in turn, contribute to the automobile technologies of the future.

In this Special Feature, we invited younger researchers in charge of developing products targeting the automotive industry, including materials for lithium-ion secondary cells, to engage in a dialogue. To showcase the Group's R&D activities aimed at helping resolve various issues society is confronting, including environmental concerns and product safety, we asked the group to discuss challenges they are facing and their commitment to development goals.

(Date of dialogue: July 6, 2017)

Attendees (products handled) (From the left)

Yuki Nako (acetylene black)
Advanced Materials Research Dept., Advanced Technologies Research Institute, Denka Innovation Center

Takuya Narutomi (binders for secondary cells)
Polymer Processing Research Dept., Advanced Technologies Research Institute, Denka Innovation Center

Masahiro Kato (thermally conductive materials)
Electronic Materials Research Dept., Shibukawa Plant

Hiroki Uno (adhesives)
Electronic Materials Research Dept., Shibukawa Plant

Overview of Products Being Developed and R&D Challenges

Please tell us about overview of products you've been developing.

Nako: I'm in charge of developing acetylene black for use in electro-conductive materials for lithium ion batteries. This type of carbon black is electro-conductive and an essential battery ingredient as it secures the path for the electrical current from the chemical reactions between the active materials and electrical circuits. The foreign matter contamination is particularly detrimental to chemical reactions taking place in lithium ion batteries. Since our acetylene black boasts extremely high purity, this product is widely recognized as an excellent electro-conductive material.

One of challenges I'm taking on is the further enhancement of the material's conductivity. To help increase battery capacity, the volume of acetylene black in the mixture must be minimized. This means that we must maximize its conductivity. In general, the finer grained the acetylene black particles, the greater their conductivity. When you try to dissolve fine particles, however, such fine particles don't easily disperse into solvent, often creating a highly viscous slurry that is difficult to use. We are seeking to overcome this issue by, for example, changing the chemical status of particle surfaces and the shape of the particles. Acetylene black is produced using furnaces covered by fire bricks designed to withstand high temperatures of approximately 2,000°C. Because of this, we cannot directly observe the process of acetylene gas decomposition. Thus, our process involves a lot of "trial and error," often requiring hard work.

Narutomi: I develop binders used in lithium-ion secondary cells. These materials support adhesion between the chemically reactive materials and electro-conductive materials, including acetylene black. Such materials are expected to demonstrate superior adhesiveness and possess chemical characteristics that make them able to endure high electrical potentials that would otherwise lead to decomposition. They are thus important materials affecting battery life and reliability.

At Denka, the development of such materials was begun very recently. We had to start by developing candidate materials capable of satisfying such basic requirements as adhesiveness and long-term reliability—the minimal requirements. Hence, my goal is securing superior binding functions while realizing unique characteristics that add greater value to the resulting product. It is not easy to do, but this kind of challenge is also exciting to me.

Uno: I'm charged with the development of structural adhesives. These adhesives are expected to demonstrate strong adhesiveness and realize superior durability that will enable their use in outdoor environments for extended periods. Since we aim to provide adhesives that can replace welding, the particular focus of our research is enhancing durability. Denka boasts a lineup of adhesives encompassing nearly 100 grades designed to meet the diverse adhesion needs of an array of materials with various surface and usage conditions. However, our R&D activities include the upgrading of existing products when necessary. Although we already offer room-temperature hardening adhesives and other products that boast competitive strengths over other adhesion methods, our theme is to further improve product performance to satisfy customer requirements.

When it comes to adhesives for automobile parts, we have a longstanding track record in such applications as vehicle-mount speakers and car electronics motors. The predominance of motor-driven adjustments of car equipment means an increasing number of micro motors are being installed in most every vehicle. Accordingly, we forecast medium- to long-term growth in demand for quick-hardening adhesives.

Moreover, in their pursuit of greater fuel efficiency through weight reduction, a number of automakers are considering adopting aluminum and FRP as vehicle body materials. Since some of these materials are incompatible with the conventional welding methods, we are proactively proposing our technological solutions for high-strength adhesion employing Denka's structural adhesives backed by a track record spanning more than 40 years.

Kato: I develop thermally conductive materials consisting of silicon resin packed with heat-conducting fillers. These materials are typically delivered in sheets or in a form of grease for affixing or applying to heat-generating components. Thermally conductive materials help to efficiently dissipate heat to heat sinks or to spread its release throughout a machine housing. Since temperature rises can directly affect product longevity, our materials are essential to electronics components. In the automotive industry, thermally conductive materials are used in batteries, headlamps, parts surrounding engines, electric power steering systems and other components. They are also used for a variety of other applications, including PCs, home appliances and communication infrastructure.

What distinguishes Denka's thermally conductive materials from competing products is superior thermal conductivity backed by the Company's robust material design technologies. These strengths also support the production of heat-conducting fillers at the Omuta Plant. Currently, we are focusing on achieving even greater thermal conductivity and, to this end, utilizing such materials as alumina while drawing on our ceramics technologies, including boron nitrate and aluminum nitride. As for the automotive parts surrounding the engine, conventional silicon resin alone is insufficient to meet customer requirements. Accordingly, we are engaged in R&D projects aimed at combining various material technologies.

What Makes Your Duties Rewarding?

Please tell us what makes your duties exciting or rewarding.

Nako: Even now, no researcher in the world has succeeded in definitively determining what the surface of acetylene black looks like. Once we succeed in doing so, the findings may serve as a game changer. As a researcher, I feel so excited when I'm taking on a trail-blazing R&D theme that other researchers have perhaps never thought of.

Narutomi: I dream of creating a new material that will within five years be widely used in automobiles. That said, 90% of my experiments fail. I'm usually able to record results that tally with initial estimates one out of ten times despite designing experiments so carefully and logically. This is quite a daunting job. It is just like working on a difficult puzzle and I must rally all my brainpower.

Uno: I'm trying to visit customers as possible to engage with them at their production frontlines. This is I believe, an essential practice in adhesive development. I feel very pleased when I receive such positive feedback as "The new product is easier to use," "It enhanced our working environment" and "It helped our production line decrease the defect rate."

Relationship with Society and Commitment to Social Contributions

What value do you want to create as a researcher who seeks to contribute to a sustainable society? What do you do to develop favorable relationships with external research partners?

Narutomi: It is necessary to acknowledge that there is little, if at all, that can be accomplished by a single company in terms of creating a sustainable society and passing it down to children's generations. We need to collaborate with partners and discover values that can be shared between us. In the course of my R&D activities, I realized the particular importance of listening to my partners and deeply thinking about their standpoints and backgrounds. It is very easy to dismiss the idea of a new material because nobody exactly knows what it does or what it looks like! However, we should try to discover the value of and pay respect to our counterparts' research visions. This is I believe what it takes to become a good researcher.

Kato: To help create a sustainable society, businesses must strive to minimize CO_2 and waste emissions from their operations. Therefore, I believe we need to place stronger focus on contributing to the eco-friendliness of customers' finished products by supplying offerings with superior functionality.

Life Innovation

QuickNavi™-Flu

Accumulating Applied Antigen/Antibody Reaction Technologies over the Course of Our Diagnostic Reagent Business

Social Issues

On the back of growing public concern about influenza pandemics, frontline medical practitioners are called upon to initiate the appropriate treatment of influenza patients at the earlier stages of disease development. Accordingly, they are in need of technologies that help them render quick and accurate diagnosis of influenza virus infection.

The Denka Group's Technological Solutions (source of value and product technologies)

QuickNavi™-Flu provides simultaneous diagnosis of infection with influenza virus type A and B while requiring only a simple procedure. Since diagnosis results are immediately available to medical practitioners, they can promptly initiate the treatment of those diagnosed as being positive.

QuickNavi™-Flu

Examples of Denka Group Solutions That Address SDG-Relevant Social Issues

SDG	Products	Applications	Effects (value created)
3	Macromolecular sodium hyaluronate preparation	Joint function improvement agent	Helping maintain quality of life by improving joint function
	Influenza HA vaccine "Seiken"	Influenza vaccine	Contributing to the prevention of influenza infection
	QuickNavi™-Flu	Quick diagnostic test kit for influenza virus	Providing simultaneous diagnosis of infection with influenza virus type A and B via a simple procedure, thereby helping frontline medical practitioners quickly initiate treatment when necessary
	CRP-Latex X2 "Seiken"	Diagnostic reagent for measuring C-reactive protein (CRP)	Measuring the density of CRP—a type of protein that increases in the blood of a range of inflammatory disease patients, thereby providing a useful marker that suggests the seriousness of diseases or measures the effect of treatment that has been conducted thus far

Macromolecular sodium hyaluronate preparation

CRP-Latex X2 "Seiken"

Influenza HA vaccine "Seiken"

Electronics & Innovative Products

Spherical Alumina and Thermally Conductive Spacer

Contributing to the Development of Batteries for EVs

Social Issues

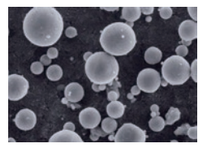
In an effort to reduce emissions of automotive exhaust gas, which has a negative effect on the environment, the use of HEVs, PHEVs and EVs[1] is being actively promoted. At the same time, manufacturers are facing growing demand for solutions that enhance the energy efficiency[2] of these vehicles. Although lithium ion batteries (LiBs) are seen as one of the most promising power sources, these batteries generate heat when they are activated. While heat deteriorates batteries' performance and their energy efficiency, overheating can lead to them erupting into flames. Thus, countermeasures against heating have become essential to producing automotive LiBs for practical use.

1. Hybrid electric vehicles, plug-in hybrid electric vehicles and electric vehicles
2. Driving distance for a specific level of energy consumption

The Denka Group's Technological Solutions (source of value and product technologies)

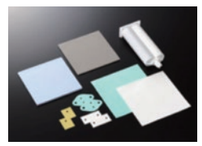
Denka handles a range of composites consisting of SiO_2, Al_2O_3, Si_3N_4, BN and AlN as well as other heat-conducting fillers that support the Company's key thermal conductive technologies and are used in combination of organic materials. Because of this, the Company is well-positioned to supply optimal fillers or composites capable of satisfying customer needs.

Among those products, Denka's spherical alumina, which boasts superior heat conductivity, is used in a variety of heat dissipating products. This strong seller is thanks to the Company's proprietary technologies for shaping alumina into the spherical form and producing composite materials with various diameters.



Spherical alumina

Also, Denka's thermally conductive spacer, made incorporating silicon resin, significantly enhances the cooling efficiency of lithium ion batteries when it is inserted into the gap between a heat-generating battery component and a cooling component. This product has thus become an integral part of lithium ion battery cooling systems.



Thermally conductive sheets and spacers

Examples of Denka Group Solutions That Address SDG-Relevant Social Issues

SDG	Products	Applications	Effects (value created)
7	Thermally conductive sheets and spacers	Automotive parts, smartphones and tablets	Silicon materials packed with ceramic filler that boast high thermal conductivity for use in hybrid and electric vehicles as power semiconductor and LiB heat dissipaters, facilitating the downsizing of automotive parts and enhancing their energy efficiency.
	Silicon nitride	Bearings for wind power turbines, mold-release agents for manufacturing silicon ingots for solar cells	Silicon nitride enhances the durability of high-strength ceramic materials used in the bearings of wind power turbines, thereby significantly reducing the facility maintenance workload. It is also used as a mold-release agent in the manufacture of silicon ingots being processed into solar cells.
9	DENKA AN Plate, DENKA SN Plate and ALSINK	Rolling stock, industrial instruments, electric and hybrid vehicles	Ceramic-based electronic circuit substrates with superior heat dispersion capabilities that, when used in such components as inverters and drive transistors, facilitate downsizing while ensuring greater reliability and superior energy efficiency
	ALONBRIGHT	Phosphor for LEDs	A phosphor for white LEDs used in LCD TV backlights and various types of LED lighting that helps to significantly reduce energy consumption and greenhouse gas emissions .
	HITTPLATE	Electronic circuit substrates for air conditioners and automotive parts	An electronic circuit substrate used in invertors that effectively disperses the heat emitted by drive transistors to protect electronic circuits and facilitates their downsizing while enhancing energy efficiency .
	HITTPLATE	Electronic circuit substrates for LEDs	Electronic circuit substrates that help improve the luminous efficiency of LEDs by effectively dissipating heat generated during use.
	Molded BN products	LED manufacturing equipment	Used in LED chip manufacturing equipment as an excellent, easy to cast insulation material.
	Spherical alumina	LED/ Automotive LiBs	Added to a resin matrix as a heat-conducting filler for the purpose of dissipating heat emitted from automotive LiBs and thus reducing energy loss attributable to electric resistance. It is also used to dissipate heat generated by LED chips and thereby enhances LED's luminous efficiency.
	HARDLOC (SGA)	Metal adhesive (substitute for welding)	A room-temperature hardening adhesive that can be substituted for conventional metal welding, significantly reducing energy consumption. The product also helps eliminate a considerable portion of the workload entailed in reshaping heat-deformed metal. Moreover, it contributes to weight reduction by promoting a switchover from bolt joints to adhesive bonding.
11	Spherical fused silica filler	Semiconductor encapsulant fillers	An incombustible filler with form- and size-modified particles that is mixed into the encapsulant used for semiconductors. Capable of protecting circuits from temperature fluctuations, it can be used to reduce the need for hazardous flame retardants

Infrastructure & Social Solutions

CO_2-SUICOM

Helping to Reduce CO_2 Emissions through the Supply of Low Environmental Footprint Concrete

Social Issues

Emissions from the cement and concrete industry presently account for around 4% of total industrial CO_2 emissions. Cement manufacturers are thus facing an urgent need to develop low environmental footprint products. Accordingly, technological development is focusing on utilizing raw materials with smaller CO_2 emissions intensities (e.g., steel slag, fly ash and special cement additives) during processing.

The Denka Group's Technological Solutions (source of value and product technologies)

An environment-friendly concrete, CO_2-SUICOM contributes to CO_2 reduction in the course of cement manufacturing and throughout its product life cycle. Incorporating a special cement additive made using slaked lime—a byproduct of the acetylene gas generation process—that works to harden concrete through carbonization, this concrete absorbs CO_2 during production, resulting in a product with a zero or even negative lifetime CO_2 emissions intensity.

Road curb blocks made using CO_2-SUICOM (Hamada City, Shimane Prefecture)

PK Kasei

Contributing to a Recycling-Oriented Society

Social Issues

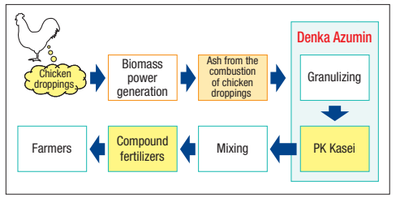
Ash from the combustion of chicken droppings used to feed biomass power generation systems is known to contain phosphoric acid and potassium. These ingredients make it a good candidate for fertilizer but because of its powdery nature, which makes it difficult to handle, and the lack of nitrogen content, fertilizers incorporating it have been slow to gain popularity. To fully utilize this potential resource, fertilizer makers need to develop technologies capable of producing a granulized chemical fertilizer based on this ash to make it possible to mix such fertilizer with other granulized fertilizers.

The Denka Group's Technological Solutions (source of value and product technologies)

Denka Azumin Co., Ltd. (Hanamaki City, Iwate Prefecture), a Group subsidiary, boasts the technologies and facilities needed to produce granulized chemical fertilizer based on ash from the combustion of chicken droppings used to feed biomass power generation systems.

In fact, Denka Azumin processes ash from chicken droppings used to feed biomass power generation facilities run by JUMONJI CHICKEN COMPANY LTD. (Ninohe City, Iwate Prefecture) to produce a granulized chemical fertilizer (PK Kasei). Denka Azumin then supplies PK Kasei to Kumiai Hiryo K.K. (Hanamaki City, Iwate Prefecture), which, in turn, mixes it with nitrogen fertilizers. Thus, these companies are working hand in hand to provide granulized compound fertilizers to farmers engaged in rice cultivation and other farming operations.

This business model is expected to contribute to a recycling-oriented society by supplying energy to communities via eco-friendly biomass power generation, helping reduce waste and assisting in the development of the agricultural sector through the provision of cost-effective fertilizers.



Examples of Denka Group Solutions That Address SDG-Relevant Social Issues

SDG	Products	Applications	Effects (value created)
8	DENKA slurry shot method (NATMIC US-50)	Shotcrete for tunnels	Shotcrete with low dust generation. This product produces less dust and concrete splash during the spraying process for a better workplace environment and decreased material loss.
	Clear shot method (NATMIC LSA, USS, HSS)	Shotcrete for tunnels	Shotcrete with low dust generation. Employing quick-hardening cement with a low alkaline content, the shotcrete method improves tunnel construction work conditions. By reducing dust and concrete splash, it also helps to cut spraying-related material loss.
9	NATMIC	Shotcrete (high strength and low dust generation)	• This product effectively utilizes industrial byproducts emitted from steelworks and thermal power generation plants as raw materials. • NATMIC hardens quickly and thus is used as a shotcrete for tunnel construction. It also performs well with blast furnace cement made with recycled steel slag. When this product is added to blast furnace cement, the resulting concrete's CO_2 emissions intensity is approximately 50% lower than that of other types of concrete supplemented with the product.
	F-DAC, B-FORM	Concrete secondary products	Facilitating the hardening and solidification of concrete, this cement additive shortens curing time, thereby enhancing production efficiency while improving cost effectiveness through a reduction in fuel use.
11	EIEN	Embedded concrete molds, radioactive waste containers	Incorporating special cement additives, EIEN can densify the internal structure of concrete by reacting with carbonate ions. In addition to absorbing CO_2 during production, by helping prolong the lives of buildings it reduces the need for CO_2-emitting demolition and construction processes.
	Electrochemical repair	Countermeasure against concrete deterioration due to neutralization and salt damage, etc.	Desalination (electrochemical repair) is an environment-friendly repair method capable of reducing CO_2 emissions by approximately 30% compared with conventional surface repair methods. Moreover, a surface coating applied after a repair reduces the need for future repairs as well as CO_2 emissions over a structure's useful life.
	Super Cement	Emergency repair of roads, railways and airports	This ultraquick-hardening concrete gains practical strength over a short time period, helping to restore the transportation infrastructure quickly at times of emergency.
12	DENKA Cement	Utilization of industrial waste	With the aim of contributing to a recycling-oriented society, Denka makes cement that uses general waste from nearby municipalities, coal ash from thermal power plants and waste soil from construction sites as well as industrial byproducts from in-house and external sources, as raw materials and fuel. Its production systems also utilize a biomass boiler fed by scrap wood as a power source.
13	SUICOM	Vegetation blocks, foundation blocks	During production, SUICOM absorbs CO_2, working to harden concrete through the carbonization of a special cement additive made using slaked lime, which generates no CO_2 even at the raw material stage. SUICOM thus contributes significantly to CO_2 reduction throughout its life cycle.
	DENKA ∑1000, 2000, 80N	Concrete secondary products, cast-in-place concrete (concrete piles, propulsive pipes, box culverts, high-strength piles, pillars for buildings)	• These products utilize industrial byproducts emitted from steelworks and thermal power generation plants as raw materials. • When supplemented with ∑1000 and 2000, high-strength concrete can be made through steam curing. These products also perform well with blast furnace cement made of recycled steel slag. Concrete made of blast furnace cement supplemented with ∑1000 realizes approximately 40% or lower CO_2 emissions intensity than autoclave cured cement. • ∑80N reduces high-strength concrete's CO_2 emissions intensity by more than 30%. Moreover, the concrete produced boasts superior abrasion resistance and durability and can be recycled multiple times.
	F-DAC Fine CSA	Additive used for vibrating compaction	• F-DAC utilizes the industrial byproducts of steelworks and thermal power generation plants as raw materials. • F-DAC and Fine CSA shorten the time required for the pre-curing and steam curing processes, helping to reduce CO_2 emissions. These products also perform well when used in blast furnace cement made from recycled steel slag. Concrete produced using blast furnace cement and F-DAC has a CO_2 emissions intensity approximately 40% lower than that of steam-cured concrete.

SDG	Products	Applications	Effects (value created)
2	AZUMIN	Fertilizer, soil improver	AZUMIN humic acid fertilizer provides a key solution for improving salt-damaged farmland after desalinization. Mixed into the desalinized soil, AZUMIN enhances agricultural yields, helping restore farmland damaged by tsunami.
6	TOYODRAIN	Corrugated pipes for construction and agricultural use	Used in construction and farmland development, TOYODRAIN contributes to the effective utilization of water resources.
9	SUQCEM	Concrete precast products	An ultrahigh-strength fiber-reinforced concrete that significantly reduces construction expenses and life cycle costs by facilitating the construction of lighter, stronger structures.
	Alumina cement	Steelmaking and refining of non-ferrous metals	Boasting superior heat resistance, this product is used in fire-resistant materials for such equipment as steel ladles, helping enhance their heat insulating properties.
11	DENKA SOIL PACK SP20, SP2000	Soil liquefaction countermeasures	DENKA SOIL PACK is a soil stabilizer to be mixed into sandy or other vulnerable ground, capable of resolving concerns about soil liquefaction.
	ES, ES-L	Terrestrial grouting work and soil liquefaction countermeasures	Boasting high durability, these cement-based quick-hardening materials accelerate the solidification and hardening of cement in terrestrial grouting work performed during construction.
	DENKA Colloidal Super	Terrestrial grouting work and soil liquefaction countermeasures	Boasting high strength and durability as well as excellent permeability, this superfine powder cement additive is used in terrestrial grouting work.
	DENKA S pack	Terrestrial grouting work and soil liquefaction countermeasures	A grout additive used as the primary injection material in the dualtube double packer grouting method aimed at stabilizing ground, preventing water intrusion and countering soil liquefaction.
	CG1000, CG2000 SR-LG method	Backing injection material for tunnel construction	Hardening materials used as cavity sealants in soil improvement work and tunnel construction. Boasting superior plasticity, these materials can be injected into distant spots using a pressure feed.
	Synthetic FLUX COMPOUND	Desulfurizing agent, deoxidizing agent	Product lineup includes Eco FLUX, which contains no fluorine.
	DENKA ALCEN	Automobile parts (catalyst holder), materials for heating furnaces and industrial furnaces	Automotive applications: This product is used to hold ceramic catalysts that purify automobile exhaust. It is also used in support mats that protect exhaust gas filters from high temperatures and vibration. Applications as a fire resistant material: It is used as a thermal insulator for furnaces. Boasting lower density, lighter weight and lower thermal conductivity compared with such materials as firebricks, this product helps reduce the overall weight of furnaces while curbing energy consumption.
12	PK Kasei	Fertilizer	Despite its phosphoric acid and potassium content, ash from the combustion of chicken droppings has yet to gain widespread popularity as a fertilizer because it is inconveniently powdery and lacks nitrogen. Addressing this issue, PK Kasei is a granulized fertilizer made using this ash that is easy to mix with other fertilizers, thus increasing the utility of an underused resource.

Living & Environment Products

DENKA Thermosheet Special BOPS “Mighty Guard”

Contributing to Food Safety and Enhanced User Convenience

Social Issues

On the back of the aging of society and an increase in the number of two-income households, there is a growing demand for hassle-free food products that satisfy the needs of families that rarely eat together. Moreover, take-out food, which is usually microwaved before consumption, has risen in popularity and has come to encompass an increasingly broad range of cuisines. Because of this, makers of food containers are being asked to develop containers with superior heat and oil resistance to help ensure food safety. Furthermore, growing concerns about environmental issues are prompting these producers to place greater emphasis on contributing to resource saving and CO_2 reduction by creating lightweight containers with superior strength.

The Denka Group’s Technological Solutions (source of value and product technologies)

Denka boasts a robust R&D structure enabling the development of highly-functional food packaging sheets even from the raw material stages. This structure allows the Company to employ a variety of ingredients and create high-value-added sheets boasting diverse characteristics.

One example is BOPS, a special heat-resistant sheet that can stand up to heating in an industrial microwave oven. This product is used as a material for food containers supplied to convenience stores, thereby helping to enrich the diets of the growing number of solitary diners.

In addition, Mighty Guard is a new product boasting significantly improved oil resistance. Overcoming the typical weakness of plastic food containers, Mighty Guard helps enhance consumer convenience as it makes it possible to microwave a wide range of food without removing the packaging.

Mighty Guard

Examples of Denka Group Solutions That Address SDG-Relevant Social Issues

SDG	Products	Applications	Effects (value created)
2 ZERO HUNGER	DENKA Thermosheet FB (oxygen barrier sheet)	Food packaging materials	Used in food containers, this sheet helps enhance the containers’ oxygen barrier property and considerably prolongs the shelf life of foodstuffs, thus contributing to reduction in food waste.
	DENKA Thermosheet ES (moisture barrier sheet)	Food packaging materials	Used to make creamer containers, this sheet boasts superior moisture barrier properties and prevents evaporation, thereby prolonging food expiration dates.
	BOPS oil-resistant sheet	Food packaging materials	Used to make food containers, this sheet boasts superior oil resistance, thereby improving the ability of containers to hold high-oil content food and enhancing consumer convenience.
	BOPS heat-resistant sheet	Food packaging materials	Used to make food containers, this sheet boasts superior heat resistance and fitting compatibility. It allows a wider range of foods to be microwaved without removing the packaging, thereby enhancing consumer convenience.
3 GOOD HEALTH AND WELL-BEING	Calalyan Y	Food packaging materials	Using their hands, consumers can easily open packaging made using this product by tearing it across, making it highly convenient.
5 GENDER EQUALITY	TOYOKALON	Material for hairpieces	As a material for wigs and hairpieces, TOYOKALON meets a variety of fashion needs, thereby enhancing the quality of people’s lives.
7 AFFORDABLE AND CLEAN ENERGY	DENKA DX Film	Back sheets for solar panels	A fluorine-based film that boasts superior weather-resistance and thus helps enhance the durability of back sheets for solar panels.
8 DECENT WORK AND ECONOMIC GROWTH	VINI-TAPE	Electrically insulating adhesive tape	Adopting a low VOC content adhesive, VINI-TAPE reduces environmental burdens and the need for hazardous substances that affect working environments.
	Calalyan Tape (Packaging tapes for various purposes)	Packaging	Using a rubber-based hot melt adhesive free of organic solvents, this tape helps reduce the environmental burden while improving the working environment.
11 SUSTAINABLE CITIES AND COMMUNITIES	GUTTERS	Rain gutters for housing and other buildings	Protecting structures from deterioration due to rainfalls while contributing to the effective utilization of rainwater.

Elastomers & Performance Plastics

DENKA COAT

Facilitating the Restoration of Damaged Ground and the Development of Natural Greenery

Social Issues

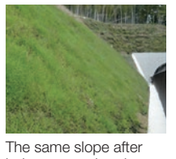
In recent years, businesses engaged in such civil engineering projects as the construction of expressways and dams, the development of housing plots and the establishment of industrial facilities are being called on to ensure that the environment in communities surrounding project areas remains undisturbed. Also, when roads and riverbanks are damaged by heavy rainfalls, earthquakes or other natural disasters, there is often an urgent need to restore these sites to protect a municipality and, in particular, to harden the soil around the sites to prevent catastrophic soil erosion. Moreover, the hardened soil is usually expected to be capable of supporting greenery.

The Denka Group’s Technological Solutions (source of value and product technologies)

DENKA COAT is a soil erosion prevention agent based on a synthetic resin emulsion and is specialized for the development of greenery and the prevention of soil erosion on a slope. With its lineup encompassing liquid and powder types, DENKA COAT boasts superior water-retention and is capable of rapidly forming a layer that is hard yet air permeable. Thanks to these features, this product serves as a key solution to prevent massive soil erosion attributable to rainfalls and earthquakes.

Furthermore, it is completely free of endocrine disruption chemicals and harmful heavy metals, reflecting the due consideration given to environmental concerns from the product design stage.

A slope before being sprayed with DENKA COAT



The same slope after being sprayed and greenery allowed to grow

Examples of Denka Group Solutions That Address SDG-Relevant Social Issues

SDG	Products	Applications	Effects (value created)
2 ZERO HUNGER	AS, MS and other transparent resin	Canteens for cooled drinks, dishes, cutlery	These products are lighter and more damage resistant than glass and when used for as food containers and dishes they help reduce transportation costs and mitigate danger attributable to breakage. They also help users ensure food safety.
3 GOOD HEALTH AND WELL-BEING	Chloroprene latex (CR)	Gloves	Although natural rubber has long been a mainstay raw material for gloves, some people are allergic to the proteins in all-natural rubber-based products. In response, we make chloroprene latex—a protein-free alternative boasting a performance akin to that of natural rubber—for gloves for surgeons, laboratory technicians and industrial operators. This product is becoming popular, especially thanks to technological advances that have significantly enhanced the texture and strength of chloroprene latex.
	Chemical-resistant ABS	Equipment for kitchens bathrooms and restrooms	This product is highly resistant to deterioration caused by detergents and disinfectants, thereby contributing to public hygiene.
7 AFFORDABLE AND CLEAN ENERGY	Acetylene black	Lithium-ion secondary cells (conductive aid, activating agents for electrodes)	Ultra-pure electro-conductive carbon black used as a conductive aid for electrodes to enhance battery performance.
	Acetylene black	High-voltage power cables for long-range transmission	An ultra-pure electro-conductive material used in the interior and external semiconductive layers of wind power generation transmission cables. Acetylene black helps enhance transmission efficiency, thereby contributing to the stable supply of energy and the popularization of clean energy.
	Acetylene black	Tire bladders	Incorporated into bladders* used in the manufacture (vulcanization) of tires to improve heat conductivity and thus shorten vulcanization time and contribute to energy savings. * A balloon-like device that inflates and applies pressure to hold the rubber against the tire mold
	Chloroprene rubber	Gaskets for solar cells, vibration insulation rubber for wind power generation, charging cables for electric vehicles	Due to its flame resistance and ability to control vibrations, this product is used in gaskets for solar cells installed on housing rooftops and charging cables for electric vehicles in addition to as vibration insulation rubber for wind turbine nacelles (covers for power generation components).
11 SUSTAINABLE CITIES AND COMMUNITIES	Chloroprene latex	Aqueous adhesives	This product facilitates the changeover in chloroprene-based adhesive solvents from volatile organic compounds (VOCs) to aqueous solutions, thereby helping reduce environmental burdens and improve the workplace environment.
	Chloroprene rubber (CR)	Rubber bearings for bridges	The ozone-resistivity of CR-based compound rubber is 5,000 times that of its natural rubber-based competitors. Thus, CR-based compound rubber bearings for bridges boast superior weather resistance and product longevity, thereby contributing to the assurance of traffic safety.
	DENKA IP	Automotive applications	DENKA IP helps enhance vehicles’ interior environment as it significantly decreases residual VOCs that may otherwise be released into the internal compartment.
12 RESPONSIBLE CONSUMPTION AND PRODUCTION	CLEAREN	Food packaging materials	An additive that effectively strengthens polystyrene-based material, CLEAREN is particularly useful in the production of crack-resistant containers made from recycled polystyrene materials as it counters shortcomings in the physical properties of these materials. In this way, CLEAREN contributes to safety and reliability of food containers.
15 LIFE ON LAND	DENKA COAT SUPER S	Sand and dust dispersion prevention agent	Used in construction sites, this product helps prevent the dispersion of sand and dust due to wind, thereby reducing their impact on the surrounding natural environment.
	DENKA COAT	Soil erosion prevention agent for greenery development	With superior water-retention and air-permeability, this product prevents soil erosion attributable to harsh weather and is used in such greenery development projects as those involving slope construction.

The Denka Group's Materiality Issues

Corporate Governance
Corporate Conduct Deserving Trust

We endeavor to secure management transparency and soundness, thereby ensuring stable business operations.

Corporate Governance

Corporate Governance Structure

Striving to live up to the expectations and trust of its shareholders and other stakeholders, Denka is building a stronger business foundation while strongly focusing on maintaining corporate conduct worthy of society's respect and support. In these ways, we are endeavoring to enhance our corporate value. Having positioned corporate governance as basic to these pursuits, efforts are currently under way to improve the operations of the Board of Directors, strengthen specialized bodies for auditing, streamline our management structure and step up our compliance systems.

More specifically, we have introduced an executive officer system aimed at ensuring swift decision making, delegating positions and attendant authority for business execution to executive officers. This system has allowed us to secure clear institutional separation between the business execution of these officers and the supervisory and monitoring functions of directors. Furthermore, we have abolished the positions of senior managing and managing directors so that all directors who supervise and monitor business execution engage with each other on equal footing. In addition, the term of office for directors is limited to one year. This limitation is intended to ensure the flexibility to assess the adequacy of each director. In these ways, we are strengthening our corporate governance structure.

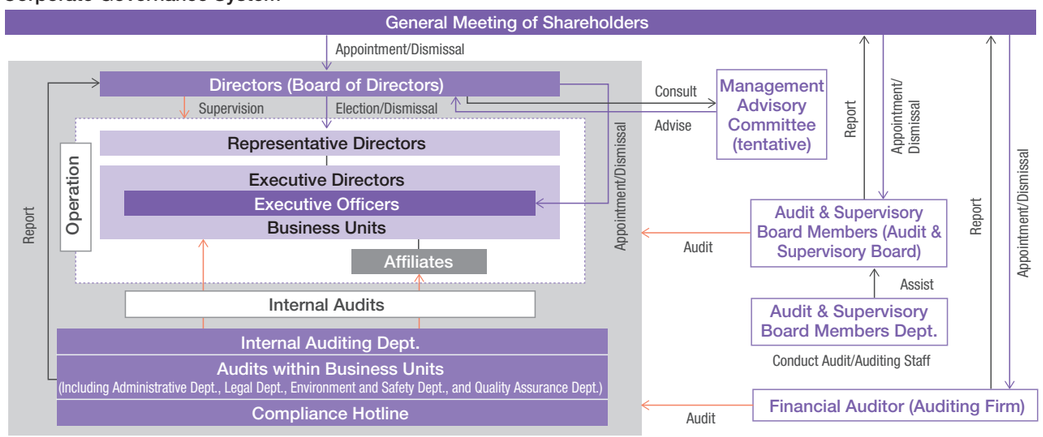
To bring external perspectives into our management supervision structure, we have appointed individuals who are sufficiently independent from management both as outside members of the Audit & Supervisory Board as stipulated by Japan's Companies Act and as outside directors. All of these individuals leverage extensive knowledge in their areas of specialty to ensure stringent supervision of the Company's operations.

In 2015, we increased the number of outside directors (from two to three) while reducing the total number of Board members (from 12 to 10), thus stepping up our governance system and enhancing management transparency and soundness. This move was also aimed at securing a more robust management structure that, in turn, supports our pursuit of the Denka100 management plan objectives.

Moreover, we introduced a self-evaluation scheme in which all directors and Audit & Supervisory Board members are obliged to undertake a periodic evaluation covering more than 20 items, including the number of Board members, the composition of Board of Directors as well as the execution of Board of Directors meetings. Using benchmarking sheets filled in by these individuals, the Board of Directors engages in discussions to analyze and assess the effectiveness of its operations.

Please also visit the "Sustainability" section (http://www.denka.co.jp/eng/sustainability/) of Denka's corporate website to see the Denka Corporate Governance Guidelines and Corporate Governance Report.

Corporate Governance System



References
Page 28 Corporate Officers
Page 29 Career Summaries of Outside Directors and Outside Audit & Supervisory Board Members

Internal Control Reporting System

In accordance with provisions of Japan's Financial Instruments and Exchange Act that pertain to internal control reporting systems, we undertake annual assessments of our internal control systems associated with financial reporting under generally accepted accounting principles. Based on the results of fiscal 2016 assessments and audits, our internal control report declared that the Denka Group's internal control was effective. Moreover, the attached certificate prepared by the independent accounting firm that audited the report (ERNST & YOUNG SHINNIHON LLC) concluded that all significant aspects of disclosure were proper.

Compliance

Compliance is essential for sustainable growth. We accordingly adhere to internal rules and government legislation and refrain from acts that violate moral and ethical norms. The Denka Group Ethics Policy was established to codify Groupwide standards of conduct, while the Ethics Committee, chaired by the president, oversees the overall compliance structure and reports to management, thereby ensuring adherence to this policy.

Moreover, the Internal Auditing, Legal, Environment and Safety, Quality Assurance, Intellectual Property and other departments ensure thorough compliance in their respective areas of specialty. In addition, we have been conducting compliance surveys and operational audits for Group companies since fiscal 2011. Expanding the scope of entities subject to such surveys and audits, Denka's staff at specialist departments conducts on-site auditing to accurately assess the status of compliance and help maintain strict compliance. We also focus on providing employees with compliance education under an initiative promoted by the Human Resource Development Center.

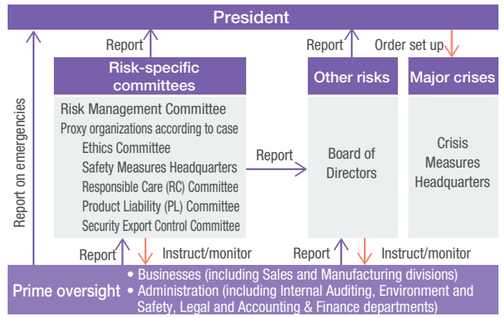
Lawyer Toshiaki Tada, a partner at HIBIYA SOGO LAW OFFICES and a former outside member of Denka's Audit & Supervisory Board, presenting a lecture on anti-monopoly laws (July 2016)

References
Page 4: Compliance
Page 6: Information security and information disclosure

Risk Management

An essential part of corporate governance is understanding the diverse and numerous risks inherent in corporate activities and exerting proper risk control. In general, each business unit is responsible for identifying and managing specific risks. For environmental, safety, product liability and export control issues that affect the entire Company, we have in place special sections and permanent committees to handle matters.

Risk Management Overview



Business Continuity Plans (BCPs)

We have in place BCPs based on the following basic policies.

(1) Place the utmost priority on saving human life whatever the circumstances, whether it be a disaster, crisis or accident, even if it may severely affect our operations.
(2) Prioritize the maintenance and restoration of operations that are essential to the fulfillment of Denka's responsibilities as a supplier before moving on to the restoration of all other operations.
(3) Focus on promoting systematic restoration efforts employing collaboration with Group companies and subcontractors.
(4) Regularly implement training sessions and disaster drills to nurture the mindsets necessary for crisis management, so that employees can calmly respond to emergencies and take action in a swift and flexible manner.
(5) Continuously improve BCPs by assessing and reviewing the Company's business continuity initiatives under the leadership of top management.

Compliance Hotline System

We have set up and operate the Compliance Hotline in keeping with the Denka Group Ethics Policy. This system is intended to address circumstances that may not be spotted by our internal control and compliance systems and to facilitate the self-correction of any organizational problems. The hotline accepts calls on actions that may or do violate the ethics policy and, through relevant education programs, employees are made aware of its availability and purpose. Once a report is submitted, the Ethics Committee, chaired by the president, quickly takes appropriate steps to resolve the situation.

The hotline's mandate is to be fair and swift and designated contacts are in place at the Audit & Supervisory Board Members Department and the labor union, which maintain neutral stances, as well as at the Ethics Committee Administrative Office and general affairs sections within all offices. People can also send reports to an external law firm functioning as a totally independent reporting channel.

Moreover, overseas subsidiaries have set up their own hotlines, reflecting our policy of providing various reporting channels. We also maintain multiple dedicated e-mail addresses within and outside the Group, so that reporters can freely make contact without obstruction.

In addition, with the aim of securing the effectiveness of the system, this policy specifically safeguards whistleblowers from discrimination and mistreatment. During fiscal 2016, we registered two reports submitted to Group companies' hotlines and appropriately addressed the reported issues.

Toshio Kinoshita
Outside Audit & Supervisory Board member, Denka Company Limited
Boasting long experience as a certified public accountant both in Japan and the United States, Mr. Kinoshita was appointed an outside member of Denka's Audit & Supervisory Board in 2015.

Tsunehiro Sasanami
Outside Audit & Supervisory Board member, Denka Company Limited
Long a successful attorney at law, Mr. Sasanami was appointed an outside member of Denka's Audit & Supervisory Board in 2011.

A Robust Corporate Governance Platform Is Essential to Securing Sustainable Growth over the Next 100 Years

Denka boasts a strong contingent of outside members on its Board of Directors and Audit & Supervisory Board, each possessing a wealth of expertise and experience and capable of maintaining an objective standpoint. These people offer valuable advice to the Company's management while providing rigorous oversight.

Having featured a "Dialogue between Outside Directors" in our previous year's report, we decided to include an interview with the Company's two outside members of the Audit & Supervisory Board in the *Denka Group CSR Report 2017*. Mr. Kinoshita and Mr. Sasanami have both enjoyed successful careers, the former as a certified public accountant (CPA) and the latter as a lawyer. Here, they offer their insights on the status of the Denka Group's corporate governance and the challenges it must overcome in order to secure sustainable growth and enhance corporate value over the medium- to long-term.

(Date of interview: June 8, 2017)

Incorporating an External Perspective Is One of the Keys to Securing Corporate Governance

Q. First of all, how would you describe the role outside Audit & Supervisory Board members are expected to fulfill?

Kinoshita: Generally, the role of these individuals is to audit the Company's management and execution of business activities with an eye to ensuring accounting and operational appropriateness. For accounting audits, we examine the methodologies employed by accounting auditors as well as the results of the audits. For operational audits, we look into operations from the perspective of legal compliance.

In addition, outside Audit & Supervisory Board members are expected to bring in an external perspective to management decision making. As a CPA, I hope to draw on my outside perspective to provide effective management supervision. Denka boasts a long history of operations that stretches back more than a century. Such a track record is of extraordinary value in itself. However, the risk with a long history is that it may lead a company to prioritize precedence over fulfilling stakeholder expectations. That's why incorporating an external perspective is important.

Sasanami: Leveraging my specialist knowledge as a lawyer, I've been auditing Denka's management and its directors' business execution.

Shortly after taking office in 2011, I began attending Board of Directors meetings and soon found that the handling of agenda items to be voted for and items to be reported on to board members seemed to lack organization. I then suggested improvements in the way the Board approached these items. The Board acted on these suggestions immediately, instituting changes from the succeeding meeting. This experience heartened me, convincing me that Denka's management is open to new ideas and focused on maintaining effective governance over its operations. Since then, I have come across some shortfalls that have, in turn, been corrected. In any case, I'm convinced that discussions at Denka's Board of Directors and other key meetings have become more vibrant thanks to the inclusion of outside directors and outside Audit & Supervisory Board members who proactively offer their insights.

Kinoshita: In recent years, outside Audit & Supervisory Board members are being called upon to take on ever greater responsibilities due to the enactment of Japan's Corporate Governance Code and the revised Companies Act. I therefore recognize that in addition to fulfilling our conventional role of supporting proper business execution, we also need to step up our monitoring and supervisory functions to reflect these changes in society's expectations.

As Mr. Sasanami mentioned earlier, I think Denka's governance systems, including those related to internal control, are functioning very well. That being said, a number of recent revelations of corporate mishaps suggest that inadequate governance is a widespread problem. Even if a corporation takes on governance reforms and succeeds in developing an ideal governance system, the individuals who handle these systems cannot be absolved from their responsibilities. Naturally, all top management must be held accountable. With this in mind, I would argue that incorporating external inputs is essential to maintaining governance systems that are truly effective.

A Corporate Culture That Embraces Diverse Ways of Thinking and Opinions Strengthens Corporate Governance

Q. What does Denka need to further strengthen its governance systems?

Kinoshita: Amid a rapidly changing external environment, a business may be faced with urgent questions like: "How long should we keep on doing xxx?" "What about next month?" "What about next year?" A failure to decide may expose the business to significant risk. In this light, businesses boasting longstanding histories are often slow to act due to biases and constraints attributable to the internal dynamics of their organizations. People in such organizations may simply conclude "We've been doing okay so far, why should we change now?" As outside Audit & Supervisory Board members, we are responsible for making our views on such matters known, especially as to the validity of managerial decisions.

Sasanami: Long-experienced frontline businesspeople tend to believe they are immune to pitfalls as they think they really know what they are doing. To prevent a possible setback resulting from this kind of complacency, it is necessary to create an organizational culture that embraces diverse ways of thinking. Such a corporate culture is also one of the keys to securing sustainable growth. Although Denka has been promoting the diversity of its workforce, there is much to be done at the management level. In this light, I expect the Company to implement more decisive steps, such as welcoming external human resources as executives.

Kinoshita: A diversity of human resources helps bring a variety of perspectives into discussions. It also helps strengthen corporate governance.

Examining Decision-Making Processes to Assess the Thoroughness of Discussions

Q. Denka is leaning toward further globalization. In this light, what should Denka's governance system look like?

Sasanami: Board of Directors meetings take place within a limited time frame. It is thus impossible to thoroughly examine all the agenda items. Receiving a prior explanation of agenda items and confirmation of the content of discussions thus far is therefore a matter of particular importance for outside Audit & Supervisory Board members and outside directors charged with monitoring and supervising management activities. There have been thoroughgoing discussions regarding Denka's recent overseas investment and expansion projects with board members receiving sufficient prior explanation before casting votes. Based on my observations, I concluded that Denka's Board meetings are carried out appropriately.

At the same time, a corporation cannot maintain its overseas footholds if they fail to contribute to operating results. Because of this, it is important to discuss the ways in which the Japanese chemical industry can prepare itself for the future global business environment. I would therefore urge a broad range of Denka employees—one that transcends segment boundaries—to engage in discussion on this subject.

Kinoshita: M&A involving the acquisition of overseas corporations can lead to stagnation if the parent company fails to provide sufficient strategic guidance and management support. In global business settings, the parent's strategies must be communicated to subsidiaries in a very straightforward manner. Although it may not be easy, Denka must tackle this challenge.

Previously, there were some who argued that governance doesn't matter if business is going well. This is no longer the case. However, it cannot be said that solid governance necessarily guarantees solid business results. We must secure solid governance, and this, in turn, will help us to attain solid business results.

To Create a Company Capable of Thriving over the Next 100 Years

Q. What should Denka do to achieve sustainable growth in its corporate value? Please give your advice.

Sasanami: Currently, efforts are under way to promote across-the-board communication and the exchange of ideas among those in charge of Denka's automotive-related operations. I expect these efforts to lead to the creation of innovative products and technologies.

In furtherance of these efforts, managers must encourage their staff to proactively share their ideas. What should these managers do when those on their staff are hesitant to do so, perhaps even believing that their ideas would not be welcomed? Of course, managers themselves should also be proactive in sharing their opinions. I would suggest implementing training for newly appointed managers to enhance their communication skills. For Denka to secure future growth, fostering a corporate culture that employs a bottom-up approach, rather than a top-down approach, will become essential.

Kinoshita: Corporations must provide products that remain on-trend with changes in society. Sensitively perceiving social changes is at the start of business creation. This is key to securing lasting operations up to the next centennial of Denka.

I would also encourage Denka employees to interact with businesspeople from different sectors so that they can learn things they don't already know. Another piece of advice is get some overseas experience. Especially, I urge young businesspersons to proactively gain such experience to acquire a broader perspective.

References ▶ Page 30: Career Summary of Outside Audit & Supervisory Board Members, Reasons for Appointment and Main Activities

Our Business Strategies

We are actively promoting various initiatives under the Denka100 New Growth Strategy.

(For details on the upcoming “Denka Value-Up” management plan, please see pages 46 to 47.)

Overview of Our Fiscal 2016 Activities

Fiscal 2016 Main Initiatives under the Denka 100 New Growth Strategy

Date	Main initiatives under the Denka100 New Growth Strategy	Main initiatives aimed at fulfilling our corporate social responsibilities
May 2016		Established The Denka Value, a new corporate philosophy for the Group
July 2016	Made PT ESTOP Indonesia, an Indonesia-based construction material maker, a Group subsidiary	
	Established the Automotive Materials & Solutions (AMS) Dept.	
	Signed a comprehensive partnership agreement with Niigata University to promote industry-academia joint R&D	
	Initiated the construction of a production facility for “G47Δ” oncolytic virus at Denka Seiken’s Niigata Plant	
August 2016	Co-developed rubber bearings for bridges based on a new material boasting significantly improved ozone resistance in tandem with Central-NEXCO Technical Marketing Company Limited, Sumitomo Rubber Industries, Ltd. and Kawakin Core-Tech Co., Ltd.	Participated in the Summer Holiday Chemical Experiment Show for Children hosted by the “Dream Chemistry 21” committee
September 2016	Signed a business alliance agreement with the Taiwan-based PlexBio Co., Ltd. with regard to healthcare-related operations	
October 2016		Renewed our naming rights agreement pertaining to the Niigata Stadium (DENKA BIG SWAN STADIUM; effective for three years from January 1, 2017)
November 2016	CO_2-SUICOM, an environment- friendly concrete product co-developed by Denka, The Chugoku Electric Power Company, Incorporated, Kajima Corporation and LANDES Co., Ltd., was chosen to receive the Chairperson’s Award under the 13th Eco-Products Awards program sponsored by Eco-Products Awards Steering Committee	
December 2016		Presented at the 10th Japan-China Energy Conservation and Environment Forum an agreement to license our calcium carbide production technologies
January 2017		Made donations to Itoigawa City to support the victims of a massive fire that engulfed streets north of the city’s main station
February 2017	Opening ceremony of Denka Life Innovation Research (Singapore) (incorporated on July 26, 2016)	
	Kurobegawa Electric Power Company made an official decision to construct the New Himekawa Power Plant No. 6, a hydroelectric power plant	
	Established Denka-KEW Genomics LLC jointly with the U.S.-based KEW, Inc.	
March 2017		Held a charity concert at SUMIDA TRIPHONY HALL in support of the people of Itoigawa
April 2017	Established the Life Innovation Division (Denka’s fifth business division)	Received a verification report on Denka’s GHG emission data from Bureau Veritas Japan Co., Ltd. (scope of verification: CO_2 emissions from the Group’s fiscal 2015 operations)
	Withdrew from the malonic ester business	Specified the Denka Group’s materiality issues with regard to its CSR activities
May 2017		Donated Ebola virus rapid diagnostic test kits to the Democratic Republic of the Congo
	Announced the outline of “Denka Value-Up, the upcoming management plan (the implementation scheduled for five years from fiscal 2018)	
July 2017	Denka Seiken released the QuickNavi™-Mycoplasma antigen test kit	Held “Denka Thanks Day” at the DENKA BIG SWAN STADIUM, inviting citizens of Itoigawa City to participate
August 2017		Made donations to Fukuoka Prefecture to support those affected by extraordinarily heavy rainfalls in northern Kyushu
		Served as an implementation committee member for RELAY FOR LIFE Japan 2017 Niigata, which was sponsored by the Japan Cancer Society

TOPICS

Denka’s Automotive-Related Operations Led by Automotive Materials & Solutions Dept.

Established in July 2016, the Automotive Materials & Solutions Department is collectively pursuing R&D themes centered on the development of technologies aimed at supporting next-generation automobiles. Under the initiative of this department, the Denka Group is rallying its overall strengths to deliver solutions capable of resolving challenges customers are now facing, with the aim of helping create environment-friendly vehicles that are attractive to drivers and capable of ensuring driving safety.

Today, automotive industries around the world are drastically shifting toward EVs, fuel cell vehicles and other types of eco-friendly vehicles. Meanwhile, initiatives to commercialize autonomous driving systems are actively under way, with some automakers initiating their trial use. The Company believes that it can play a significant role in these development efforts and help achieve innovation through the creation of new materials.

Boasting a solid track record in serving the automotive industry, Denka has been supplying elastomers, raw materials for heat-resistant ABS resin, carbon black for secondary cells, electronic circuit substrates, bundling tapes for wire harness and structural adhesives, among other products. Working hand in hand with automakers, automotive parts producers and relevant material manufacturers to create next generation technologies, the newly established Automotive Materials & Solutions Department is striving to achieve breakthroughs in material composite, ceramics synthesis, calcination, sintering, adhesion, polymer design and processing and other core technologies supporting the Company’s automotive-related operations.

Going forward, the Denka Group will endeavor to play an ever greater role to support epoch-making automotive technologies in terms of the pursuit of environmental-friendliness, energy efficiency, and driving safety and comfort as well as user-friendliness.

References
Pages 32-34: Consolidated Financial Statements
Pages 35-37: Non-consolidated Financial Statements

Life Innovation

Business Overview

Having positioned healthcare as its business pillar for the next generation, the Group has been implementing a variety of initiatives to step up relevant operations. For example, Denka Seiken, a core Group company, has engaged in technological development related to illness prevention, health examination and disease diagnosis, leveraging its long-accumulated expertise in these fields. In addition, Denka Seiken has developed a cancer drug manufacturing process based on its vaccine production technologies, expanding the scope of its operations to include creating treatments for illness.

Meanwhile, Denka-KEW Genomics LLC, a newly established company specializing in genomic alteration analysis and cancer treatment information services, initiated operations in April 2017 with the goal of helping enhance people’s quality of life. Aiming to expand its network of overseas R&D facilities, the Group also welcomed Icon Genetics GmbH in Europe while establishing Denka Life Innovation Research Private Limited in Singapore.

To supervise these operations, the Life Innovation Division was thus established in April 2017 and is committed to helping the Group achieve further growth in healthcare-related fields by concentrating management resources on growth drivers and by spearheading business development efforts.

Our Strategic Approach

1 The Market Environment

- A surge in healthcare expenses due to the progressive aging of society and the sophistication of medical technologies
- Growing risk of infectious disease pandemics reflecting the formation of a global traffic network on the back of economic growth in developing countries
- Solutions for illness prevention and early diagnosis have become ever more important

2 Strategies

- Step up key operations (influenza vaccines, diagnostic reagents, macromolecular sodium hyaluronate preparation, etc.)
- Get new businesses smoothly on track (anticancer virus and Denka-KEW Genomics, etc.)
- Promote open innovation to create products and technologies for future generations (Denka Innovation Center, Icon, Denka Life Innovation Research, etc.)

3 Main Achievements in Fiscal 2016

- Denka Seiken signed a business alliance agreement with the Taiwan-based PlexBio, a strategic partner, with regard to the marketing of a protein and gene measurement system
- Established Denka Life Innovation Research in Singapore to promote joint research with the country’s Agency for Science, Technology and Research
- Established Denka-KEW Genomics in tandem with the U.S.-based KEW, Inc. to provide gene alteration analysis and cancer remedy information services

4 Challenges

- Expand the scope of operations by accurately assessing the latest market trend

Electronics & Innovative Products

Business Overview

The Electronics & Innovative Products Division boasts an array of products that are essential to cutting-edge electronics technologies. Its offerings include electronic parts materials, thermal solution components, packaging materials for transporting electronic components, and structural adhesives. Moreover, the Company has established a dedicated organization to capture wide ranging needs for automobile parts-related solutions, thereby promoting the development of next-generation products.

Today, electronics device makers are striving to accommodate ever higher customer requirements in terms of product miniaturization, performance, safety and reliability on the back of advances in information and communications technologies (ICT) and the popularization of such eco-friendly vehicles as EVs.

Leveraging Denka's strengths in thermal control and other technologies that are essential to satisfying such requirements, the division will strive to fully realize its creativity to deliver a variety of cutting-edge technological solutions to serve customers around the world, thereby helping resolve issues society is confronting.

Our Strategic Approach

1 The Market Environment

- Formation of new markets due to the advance of car electronics and the popularization of EVs, HEVs and other eco-friendly vehicles
- Growing presence of new technologies, reflecting breakthroughs in ICT and displays
- Rapid commoditization of electronics devices and resulting impact on product prices

2 Strategies

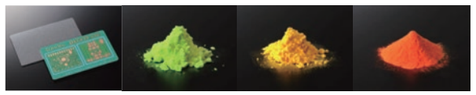
(1) Pursue the expansion of our key operations
- Seize opportunities arising from growing automotive-related demand
- Differentiate ourselves in terms of product performance and quality by continuously improving technologies
- Establish a business portfolio that is resilient to external conditions via specialization

(2) Restructure our operations to maximize profitability
- Leverage our domestic and overseas production networks more efficiently
- Enhance cost competitiveness by establishing a revolutionary production process

(3) Develop new businesses targeting growth markets (automobiles and healthcare)
- Pursue market penetration into automotive-related markets while exploring the possibilities of new business and product creation aimed at serving the medical field
- Push forward with the commercialization of highly functional films (with heat-resistant, decorative or luminescent properties)

3 Main Achievements in Fiscal 2016

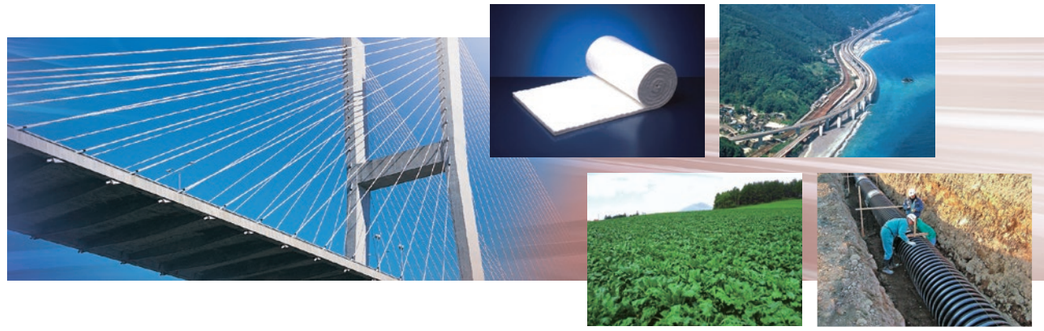
- Expanded sales of various phosphors for TVs and smartphones
- Our metal circuit substrate (HITTPLATE) and phosphor were chosen by automakers for use in LED headlights and LED blinkers, respectively
- Expanded sales of heat-conducting fillers for automotive LiBs; our heat-dissipating pad was chosen for LiB applications



4 Challenges

- Execute multi-faceted business development measures in preparation for the future growth of EV markets
- Achieve sales expansion by focusing our resources on automotive LiB heat dissipaters
- Step up the proposal of technological solutions to develop new applications and markets for adhesives

Infrastructure & Social Solutions



Business Overview

The Infrastructure & Social Solutions Division handles cement and special cement additives, both of which are essential for infrastructure development; corrugated pipes for water catchment and discharge systems used to manage ground and river water; calcium carbide and calcium cyanamide fertilizers—key offerings Denka has been manufacturing for more than a century; fire resistant materials; desulfurizing agents; and other materials for use at such facilities as steelworks.

Among those, our special cement additive business is aimed at serving markets in China and Southeast Asia, where rapid infrastructure development is under way. To that end, the division's manufacturing, sales and R&D sections are working together as one to deliver a range of related offerings and services, from novel materials and innovative construction and repair methods to structural diagnosis.

The source of the division's competitive advantages lies in in-house hydroelectric power generation capabilities backed by access to abundant water resources as well as company-owned limestone mines. Leveraging these strengths, we are endeavoring to provide solutions that accurately satisfy the latest customer needs in agricultural and social infrastructure development industries while focusing on advancing energy and resource saving as well as global warming countermeasures.

Our Strategic Approach

1 The Market Environment

- Growing demand for solutions supporting infrastructure development, maintenance and upgrading (related to post-disaster reconstruction, publicly funded investment in new facilities and countermeasures to the aging of facilities)
- Burgeoning infrastructure development needs in China and Southeast Asia and growing demand for high-performance specialty products in Europe and USA
- In farming, trends are toward labor saving and large-scale operations to shore up Japan's agricultural sector
- Growing need for ecological solutions

2 Strategies

- Develop products that support infrastructure maintenance and cultivate relevant markets
- Facilitate the utilization of recycled waste and thereby help develop a recycling-oriented society
- Step up overseas expansion with a focus on augmenting local production in Asia
- Maximize profitability by optimizing our production system
- Promote the development of novel farming materials, thereby reinforcing our solution business targeting the agricultural sector
- Propose and implement solutions to help create energy-saving, environment-friendly steel and industrial furnaces

3 Main Achievements in Fiscal 2016

Cement:	• Proactively accepted waste and byproducts for resource recycling
Special cement additive:	• Initiated the supply of DENKA NATMIC quick-setting agent for use in tunnel construction for bullet train lines • Commercialized DENKA POWER CSA expansive additive for flooring materials used in factories and logistics facilities
Agri-products:	• Promoted the production of fertilizers employing combustion ash from chicken droppings used to feed biomass power generation facilities
Inorganic products:	• Developed high-value-added products boasting superior heat insulation
Environmental materials:	• Supplied materials for underground drainage being installed as part of the reconstruction of disaster-stricken rice paddies in Miyagi Prefecture • Promoted the use of underground irrigation systems designed to facilitate multi-functional rice paddies

4 Challenges

Cement:	• Develop new recycling technologies
Special cement additive:	• Propose even better solutions for large projects to secure greater market presence • Proactively expand overseas operations to secure sustainable growth
Agri-products:	• Develop new products based on the latest market needs
Inorganic products:	• Develop fire-resistant materials and thermal insulation products to meet customer needs
Environmental materials:	• Promote the adoption of a farmland development model that fully leverages Denka's unique strengths • Consider new product development aimed at gaining entry to business fields Denka has yet to tap into

Living & Environment Products

Business Overview

The Life Science & Environmental Products Division in engaged in wide-ranging businesses that directly affect people's lifestyles and living environments. For example, it handles materials for construction use, such as rain gutters, as well as industrial tapes and food packaging materials. Moreover, the division is stepping up overseas production of TOYOKALON, a material for wigs and hairpieces, VINI-TAPE for such applications as electrical insulation and automotive wire harnesses, and multi-layer food packaging sheets in anticipation of future growth in demand for these offerings in markets abroad.

Employing its strength in fluorine-based films, the division is pushing beyond the scope of its traditional areas of operations related to solar cell back sheets and interior decorating materials as it seeks to expand into automotive and aircraft industries through the provision of surface decorating films. In addition, we are promoting TEFKA film with superior fire retardant properties and transparency with the aim of launching full-scale marketing to supply materials for membrane structures and solar cell front sheets.

Going forward, we will push forward with global expansion targeting such regions as Asia, Europe, the United States and Africa.

Our Strategic Approach

As the division in charge of chemical engineering, we will fully leverage our technological and quality assurance strengths to create value that transcends our traditional materials and business fields, thereby serving an even broader range of customers within and outside the Denka Group.

Technologies: Sheet film manufacturing technologies, adhesive manufacturing and adhesion coating technologies, resin compounding technologies, plastic ejection processing technologies, etc.

Materials: Resin, elastomer, paper, metals, etc.

Business fields: Automobiles, electric and electronic devices, construction and civil engineering, food, aircraft and spacecraft, rolling stock, medical and nursing care, the environment and energy, agriculture, logistics, etc.

1 The Market Environment

- The maturation of the domestic market and intensifying competition
- Growth in market potential reflecting the burgeoning purchasing power of emerging economies
- Growing public awareness of the need for environmental load reduction
- Growing interest in food safety

2 Strategies

- Enhance facility utilization at home and abroad and establish an optimally-balanced production structure
- Scrutinize every cost element to secure an even stronger business structure
- Strategically allocate management resources to growth drivers

3 Main Achievements in Fiscal 2016

(1) Optimized production system
- Initiated the marketing of harness tapes manufactured at our plant in Vietnam

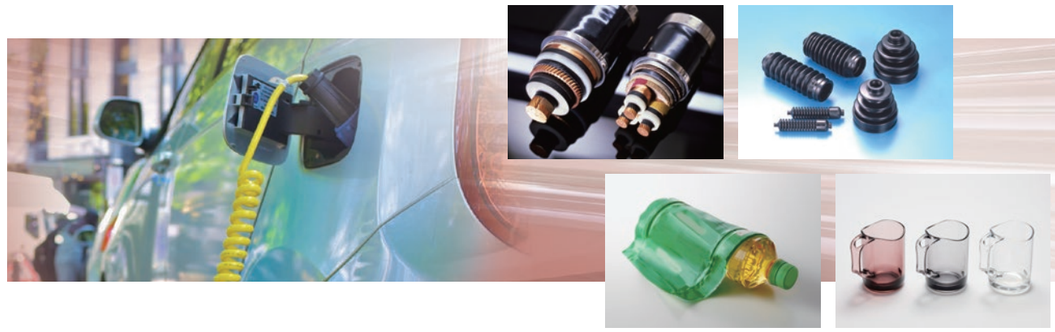
(2) Gained footholds in overseas markets
- Strengthened our sales structure in China

(3) Developed new products
- Initiated production and sale of Mighty Guard, a BOPS with improved heat- and oil-resistant properties
- Developed a new fiber product boasting superior flame and heat resistance for use in high-end hairpieces

4 Challenges

- Promote the optimization of our production system while reorganizing the current business structure
- Create next-generation businesses and cultivate markets for new offerings
- Allocate greater resources to and step up the development of products aimed at helping reduce environmental burdens

Elastomers & Performance Plastics



Business Overview

The Elastomers & Performance Plastic Division is in charge of four product categories consisting of chloroprene rubber—which enjoys the largest market share globally; acetylene black; styrene-based functional resin; and acetyl chemicals. Leveraging a broad range of techniques and experience in synthesizing, compounding and molding polymers, we are bolstering technological innovation in such manufacturing fields as automobiles, home appliances and food packaging.

Currently, the division's overseas sales ratio is holding stable at over 60%. While accommodating ever growing demand for these products in markets around the world, we will pursue an environment-friendly business approach, improve our business structure and streamline all our operations. In these ways, we will help reinforce the Company's business foundation.

Moreover, the division has developed an ultra-pure acetylene black for LiBs, contributing greatly to breakthroughs in this area. Looking ahead, we will remain committed to providing this and other products with superior functionalities capable of satisfying customer needs and thereby helping to resolve issues confronting society.

Our Strategic Approach

1 The Market Environment

- A shift to overseas production in electronics, automotive and other related markets on the back of demand growth in emerging economies
- Burgeoning demand for ecological solutions and growing public awareness about safety and healthcare
- Increasing market presence of commodity manufacturers based in emerging economies

2 Strategies

- Focus further management resources on growth drivers and promote external collaboration to develop new businesses for the next generation
- Develop technologies and materials to help popularize renewable energy and reduce the use of VOCs
- Optimize all processes from production to sales while working to mitigate risks attributable to changes in foreign exchange rates, raw material and fuel prices and other factors in the trade environment by expanding our network of overseas production bases and stepping up their collaboration

3 Main Achievements in Fiscal 2016

- Launched full-scale operations at our U.S. chloroprene rubber business, thereby establishing a two-location production and supply structure optimized to serve markets around the globe
- Enhanced our capacities to supply electrically conductive materials used for transmission cables, thereby supporting highly efficient transmission from wind power generation plants and other renewable energy generating facilities
- Promoted collaboration with external companies housed in the same industrial complex to reduce utility costs and total CO_2 emissions
- Explored new R&D themes through technological networking meetings aimed at achieving open innovation
- Brought a new facility for the semi-commercial production of new styrene-based elastomer on line

4 Challenges

- Step up initiatives to develop new businesses targeting growth fields
- Expand the lineup of high-value-added products to better respond to changes in the trade environment, such as the appreciation of the yen and rising crude oil prices
- Create greater synergies with a two-location production system (Japan and the United States) for chloroprene rubber
- Raise our capacity to produce a special grade of ultra-pure acetylene black with a focus on enhancing battery safety in response to growing demand for conductive materials for use in LiBs
- Increase the global market share of our IP resin, which boasts a competitive advantage attributable to its low VOC content
- Step up our product safety management initiatives

The Upcoming Management Plan

Outline of *"Denka Value-Up"*

In fiscal 2017, we embarked on the final year of the Denka100 management plan, under which we have promoted a variety of initiatives aimed at realizing The Denka Value, a corporate philosophy guiding all Group members. Also, efforts have been under way to establish the details of "Denka Value-Up," a new five-year management plan that will take over from the current management plan and be in force until the end of fiscal 2022. Although we intend to disclose greater details in conjunction with financial results announcements for the second quarter of fiscal 2017 in November 2017, here we would like to introduce an outline of the new plan and its basic underlying concepts.

Growth Vision

We have identified growth vision consisting of the following three key items, with the aim of promoting Denka Value-Up, a new management plan spanning five years from fiscal 2018 to fiscal 2022.

1 Become a *Specialty-Fusion Company* with a Strong Global Presence

Become a company that boasts outstanding global competitiveness backed by a robust portfolio of specialty businesses and products along with its technological strengths and human resource capabilities

2 Maintain *Sustained Growth* by Significantly Enhancing Productivity through Innovative Processes

Strive to achieve a drastic improvement in productivity and, to this end, focus on truly essential operations and introduce innovative processes through the utilization of IoT, AI and other cutting-edge digital technologies, thereby securing the ability to secure sustained growth regardless of external conditions

3 Secure *Sound Growth* through Work Style Reforms

Develop a working environment that is inclusive of diverse working styles, with the aim of better collaborating with employees to pursue stakeholder happiness and to ensure sound corporate growth

Growth Strategies

We have established the following two growth strategies aimed at realizing the aforementioned growth vision.

Growth Strategy 1: Business Portfolio Shift

We aim to raise the ratio of operating income from specialty businesses* to consolidated operating income to 90% and, to this end, will promote the following three measures aimed at transforming our business portfolio.

* Businesses that meet or have the potential to meet the following conditions in the near future: 1) boasting distinctive strengths and product value; 2) possessing resilience to changes in external factors; and 3) commanding an industry-leading market share

(1) Accelerate growth of specialty businesses

We will focus our management resources on three priority fields: healthcare, the environment and energy, and high-value-added infrastructure.

Healthcare	In addition to illness prevention and early diagnosis, we are expanding into cancer remedy and gene alteration analysis to help enhance people's quality of life.
The environment and energy	We employ such core technologies as cutting-edge inorganic materials in product development, with the aim of better satisfying the latest needs for solutions that help achieve zero emissions, support autonomous driving systems and assist in other technological pursuits aimed at creating a clean and safe future society.
High-value-added infrastructure	We strive to meet high-profile infrastructure development needs in countries around the world through the provision of cutting-edge materials and solutions.

(2) Specialize our key operations

As for our key operations, including elastomers, styrene-based chemicals, inorganic and resin-processed materials, we will develop a greater number of specialty grades while stepping up the provision of unique solutions employing these products.

(3) Redefine the positioning of the commodity businesses

We will redefine the positioning of the commodity businesses, thereby executing value chain optimization, operational downsizing and business reorganization.

Growth Strategy 2: Introduction of Innovative Processes

Focusing on truly essential operations, we strive to standardize our processes in all business units, ranging from those in charge of R&D and production to sales departments, while introducing cutting-edge ICT technologies. In these ways, we will drastically improve productivity and accelerate the creation of new businesses. At the same time, we will promote work style reforms and workforce diversity to create an even more lively and vibrant organization.

1. Production process reforms

- Restructure our production facilities into ICT-based next-generation smart factories
- Build a robust, overarching information platform capable of managing all data on a real-time basis
- Realize manufacturing operations with greater productivity and superior stability

2. R&D process reforms

- Identify R&D themes oriented toward specialization
- Develop R&D assistance systems employing ICT
- Nurture diverse human resources by providing them with strategically designed career paths

3. Operational process reforms

- Facilitate active in-house collaboration through the introduction of futuristic office functions
- Enhance operational productivity
- Develop location-free working environment

Work style reforms/Diversity promotion

- Shift our focus from "quantity" to "quality" in terms of working hours
- Help employees enhance their quality of life
- Create an innovation-oriented organization by welcoming diverse human resources and helping them achieve success

Overview of Our Operational Process Reforms

The following is an overview of our operational process reform initiatives undertaken thus far as part of "growth strategy 2: the introduction of innovative processes."

Basic Concepts

- Enhance labor productivity by focusing on truly essential operations.
- Pursue employee happiness by helping our employees realize their creativity in their duties while striking an optimal work-life balance.

Initiatives Undertaken Thus Far

The second half of fiscal 2016
Abolished the use of paper-based meeting materials at Board of Directors and Management Committee meetings

Management Committee

April 2017 Introduced staggered work shifts and began allowing eligible employees to work at home (for those who engage in child rearing or nursing care of their families)

May 2017 Established the Operational Process Reform Dept.

October 2017 Established the Diversity Promotion Sec. and the AI & IoT Promotion Sec.

Four Missions under Operational Process Reforms

1. Review the operations of meetings

- Help decrease the number of meetings with mandatory attendance and improve the efficiency of meetings, including through the use of paperless, simplified meeting materials

2. Review the content of in-house materials

- Closely re-examine standards for information to be shared throughout organization and review rules for document management to streamline labor
- Promote the use of online settlement

3. Promote the sharing of expertise and speedy operations

- Utilize cloud services and upgrade our groupware and customer management systems, with the aim of promoting the sharing of useful expertise
- Employ paperless decision-making processes to speed up authorization and other operational processes

4. Develop a more inclusive office environment

- Introduce non-territorial office spaces as well as a location-free work platform that allows employees to do their task whether they are on the move, on business trips or at home by, for example, developing a more robust IT infrastructure and networks and introducing small PC terminals
- Facilitate communication through the utilization of such technologies as web-conferences

CSR Management

We are promoting CSR activities to realize
The Denka Value,
our corporate philosophy.

Our CSR Activities

In May 2016, the Denka Group established The Denka Value, a new corporate philosophy, and in April 2017 specified its CSR materiality issues to determine its priorities regarding the realization of said corporate philosophy.

In addition to pursuing growth strategies, fulfilling our social responsibilities is an integral part of our corporate activities. We will therefore remain acutely aware of what should be done to fulfill such responsibilities and carry on promoting ongoing CSR activities aimed at better living up to The Denka Value as well as society's expectations and trust.

References ▶ Page 3: Denka Principles and The Denka Group's 10 CSR guidelines

Major CSR Initiatives Undertaken from Fiscal 2016 to the Present

(1) Establishment of "The Denka Value" (May 2016)

With the establishment of "The Denka Value," we have identified "Taking on the challenge of expanding the possibilities of chemistry to create new value and contribute to sound social development" as the Denka Mission. The Denka Principles provide a set of precepts guiding the actions of all employees to realize this mission.

(2) Work Style Reforms and Diversity Initiatives

We promoted work style reforms to help employees strike a balance between duties and family life, realize their potential and achieve success in broader fields. More specifically, we enhanced the content of programs aimed at supporting those engaged in child rearing and nursing care while introducing such systems as staggered work shifts to reduce excessive working hours. In addition, we stepped up initiatives to secure diverse human resources by, for example, recruiting a growing number of female specialists and foreign students.

(3) Activities to Support Areas Affected by Disasters

We engaged in activities to support people affected by the Kumamoto Earthquake that struck in April 2016, a massive fire that engulfed streets north of Itoigawa City's main station in the following December and extraordinarily heavy rainfalls that hit northern Kyushu in July 2017. To this end, the Company's Omuta and Omi plants and other facilities based in regions near disaster-stricken areas, spearheaded these activities. Moreover, a number of employee volunteers continued to assist in farmland restoration and other reconstruction efforts in areas hit by the 2011 Great East Japan Earthquake.

The Selection of Materiality Issues

We have identified our CSR materiality issues to determine our priorities regarding what should be done to realize our corporate philosophy.

These CSR issues were carefully examined and evaluated with an eye to how the Denka Group should help resolve the pressing challenges society is now facing, such as global issues designated as Sustainable Development Goals (SDGs) by the United Nations. Denka then organized such issues into 13 items, each of which represents a matter of critical importance for chemical manufacturers committed to fulfilling their social responsibilities. These items were finalized upon the approval of the Company's Management Committee on April 24, 2017.

Going forward, we will engage in CSR activities and dialogue with our stakeholders based on these materiality issues. In these ways, we will continuously improve our CSR-oriented management approach. (Please also see pages 50 and 51 for more detail.)

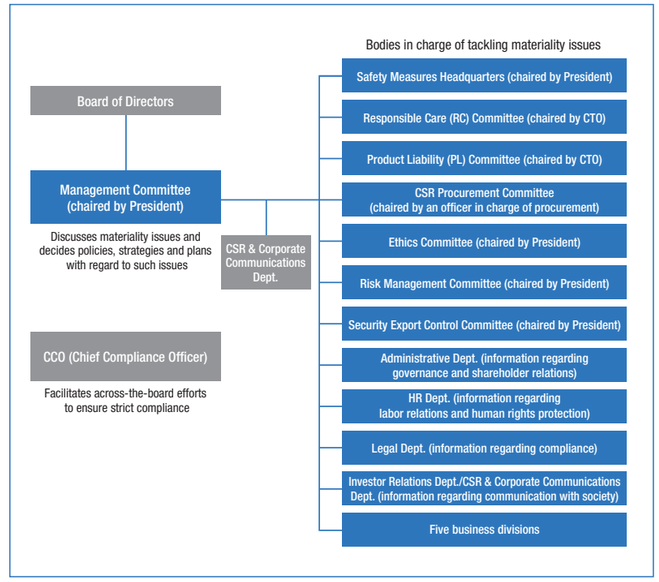
A kick-off meeting of the Materiality Taskforce (January 31, 2017)

Six Categories of the Denka Group's CSR Materiality Issues

Denka's CSR Promotion Structure

To promote its CSR activities, Denka has established a CSR promotion structure in which the CSR & Corporate Communications Department serves as a secretariat and collaborates with other specialized bodies to oversee activities undertaken by all Group members.

CSR materiality issues are discussed by the Management Committee, which is chaired by the president and in charge of deliberating important managerial matters, with the committee's conclusions being reported to the Board of Directors. Each body and department placed under the Management Committee supervises such initiatives as worksite safety and Responsible Care activities and is striving to achieve systematic improvements in their respective areas of responsibility. Meanwhile, the CSR & Corporate Communications Department is charged with raising Group employees' CSR awareness as well as publishing these activities' results in the CSR report with the aim of facilitating stakeholders' understanding of our initiatives.



Our CSR Materiality Issues

In April 2017, the Denka Group specified key CSR issues that are critical to its stakeholders and to the Group itself, identifying them as materiality issues that it will employ in guiding its CSR activities. This move was intended to help us achieve sound and sustainable growth over the future as a corporate group that lives up to society's expectations and deserves its trust.

We carefully selected these materiality issues based on pressing challenges society is now facing and in reference to external inputs, including United Nations SDGs, guidelines compiled by the GRI, ISO26000 and other international standards, as well as prevailing ESG investment criteria and insights we have gained through its involvement in CDP and CSR procurement. Moreover, these items were examined and evaluated with due consideration given to stakeholders' expectations and their impact on our operations and were discussed by Denka's Management Committee, which, in turn, approved on the finalization of each item.

Material Issue Selection Process

STEP 1 Determine issues subject to analysis and evaluation

Established an across-the-board taskforce and identified the issues to be tackled to fulfill society's expectation for chemical companies in reference to international standards as well as important guidelines (GRI guidelines, ISO26000, GC, SDGs, EICC and DJSI).

STEP 2 Analyze stakeholder expectations

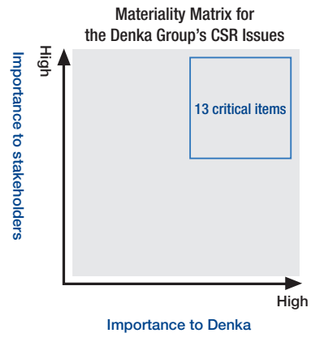
Departments at Denka in charge of each issue evaluated the expectations of stakeholders, including customers, consumers, employees, local communities, shareholders, investors and suppliers, with regard to such issues and their impact on our operations based on its own analysis.

STEP 3 Assess each issue's importance to the Denka Group

Departments in charge of each issue assessed the importance of the issue in light of the implementation of the Denka Value-Up management plan, which aims to realize The Denka Value corporate philosophy and secure sound and sustainable corporate growth, as well as the fulfillment of Denka's social responsibilities, thereby validating said assessment in tandem with the Corporate Planning Department.

STEP 4 Select CSR materiality

Selected 32 CSR issues, applying a material matrix based on the importance of said issues to stakeholders and the Denka Group, with 13 items being identified as particularly critical by the Management Committee, which, in turn, validated and finalized each.



Outlook for Our CSR Materiality Management

Based on the materiality issues thus defined, each business unit in the Group is diligently pursuing ongoing CSR activities. Looking ahead, we will continually strive to improve our corporate activities while engaging with stakeholders to maintain meaningful dialogue.

Well aware of possible changes in the operating environment and society that may affect our management priorities, we will also perform the timely review of these materiality issues based on feedback from our stakeholders.

Relationship between Our Materiality Issues and SDGs

While Denka's CSR materiality issues consist of 13 items that are critical to chemical manufacturers committed to fulfilling their social responsibilities, these are also relevant to United Nations SDGs. The relationship between such materiality issues and SDGs is presented in the chart below. Denka is thus determined to contribute to SDGs in the course of its pursuit of CSR activities.

Relationship between Denka's Materiality Issues and SDGs

Category	CSR Materiality Issues (13 items)	Relevant SDGs	
		Fulfill manufacturers' responsibilities	Provide solutions
Prioritization of safety	Reinforce security and disaster prevention measures	3 GOOD HEALTH AND WELL-BEING, 8 DECENT WORK AND ECONOMIC GROWTH	
	Maintain occupational safety and health while creating a vibrant and comfortable workplace environment		
Products and technologies	Create new products and technologies that contribute to sound social development	7 AFFORDABLE AND CLEAN ENERGY, 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE, 12 RESPONSIBLE CONSUMPTION AND PRODUCTION, 13 CLIMATE ACTION, 14 LIFE BELOW WATER, 17 PARTNERSHIPS FOR THE GOALS	2 ZERO HUNGER, 3 GOOD HEALTH AND WELL-BEING, 5 GENDER EQUALITY, 6 CLEAN WATER AND SANITATION, 7 AFFORDABLE AND CLEAN ENERGY, 8 DECENT WORK AND ECONOMIC GROWTH, 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE, 11 SUSTAINABLE CITIES AND COMMUNITIES, 13 CLIMATE ACTION, 14 LIFE BELOW WATER, 15 LIFE ON LAND, 17 PARTNERSHIPS FOR THE GOALS
	Ensure product safety		
Corporate governance Corporate conduct deserving stakeholder trust	Ensure that our corporate philosophy is embraced by every employee and transform our corporate culture	4 QUALITY EDUCATION, 5 GENDER EQUALITY, 16 PEACE, JUSTICE AND STRONG INSTITUTIONS	
	Improve corporate governance		
	Maintain strict compliance with laws, regulations and corporate ethics		
Employee happiness	Nurture human resources and pass down technological heritage to future generations	3 GOOD HEALTH AND WELL-BEING, 4 QUALITY EDUCATION, 5 GENDER EQUALITY, 8 DECENT WORK AND ECONOMIC GROWTH, 10 REDUCED INEQUALITIES	
	Embrace diversity and offer equal opportunities		
	Help strike a work-life balance and promote employee health		
Environmental preservation	Prevent air, water, soil and other environmental pollution	6 CLEAN WATER AND SANITATION, 11 SUSTAINABLE CITIES AND COMMUNITIES, 12 RESPONSIBLE CONSUMPTION AND PRODUCTION, 13 CLIMATE ACTION, 14 LIFE BELOW WATER, 15 LIFE ON LAND	6 CLEAN WATER AND SANITATION, 11 SUSTAINABLE CITIES AND COMMUNITIES, 13 CLIMATE ACTION, 14 LIFE BELOW WATER, 15 LIFE ON LAND
	Promote climate change countermeasures (curb global warming, reduce GHG emissions and adapt to climate changes)		
Dialogue with society Partnership	Maintain appropriate and timely disclosure of corporate information and establish bidirectional communications	17 PARTNERSHIPS FOR THE GOALS	

References ▶ (Appendix: The Global Reporting Initiative (GRI) Content Index)

CSR Promotion Challenges, Targets and Performance

A: Achieved significant results B: Observed some results C: No results were observed D: The level of activity deteriorated

Category	CSR Materiality Issues	Fiscal 2016 Targets	Fiscal 2016 Results	Pages	Rating	Major challenges and goals in fiscal 2017 and beyond
Prioritization of safety	Reinforce security and disaster prevention measures	● Reduce the number of major accidents and disasters to zero ● Continually improve the occupational safety record ● Step up hazard prediction activities aimed at preventing major accidents and facility-related incidents	● Held a Safety Promotion Meeting in which plant staff and researchers participated Photo 1 ● Held safety networking meetings, with Denka plant employees and those from affiliates attending the events ● Worksite safety record (Denka and subcontractors): 15 occupational accidents (unchanged from the previous fiscal year); one major accident (up one incident year on year); and six accidents involving absence from work (up four incidents year on year). Although the total number of occupational accidents stayed unchanged year on year, there was an increase in accidents with relatively severe consequences or resulting in missed working hours. ● Worksite safety record (domestic and overseas affiliates): 17 occupational accidents (up four incidents year on year); four accidents involving absence from work (down one incident year on year). Despite a year-on-year decrease in the number of incidents involving absence from work, the total number of occupational accidents at affiliates increased for the second consecutive year. ● Facility-related incidents: four incidents, including two leaks and two breakages. We are now undertaking initiatives centered on safety management conferences, stepping up in-house collaboration aimed at assessing the causes of incidents and conducting follow-up inspections to ensure that sufficient countermeasures are in place.	p. 12-15 Ref. p. 20	D Occupational safety record deteriorated	● Companywide targets (1) Reduce the number of major accidents and disasters to zero (2) Continually improve the occupational safety record ● Priority initiatives Step up hazard prediction systems and risk assessments aimed at preventing major accidents and facility-related incidents (leverage case studies of accidents at Denka and other companies and utilize assistance systems developed by industrial associations, etc.)
	Maintain occupational safety and health while creating a vibrant and comfortable workplace environment	● Create a lively and sound workplace	● Developed a safety countermeasure implementation scheme that systematically incorporates employee feedback and clearly announces the outcomes in light of the discrepancy between workplace needs and individuals in terms of their commitment to worksite communication	p. 12-15 Ref. p. 20	C Efforts are now under way to achieve our targets	● Create a lively and sound workplace ● Facilitate worksite communication to ensure the ongoing reduction of potential dangers and eliminate accidents attributable to operator action ● Promote safety assurance activities in which each worker is able to grasp the worth of their efforts
		● Steadily execute facility improvement projects based on robust safety countermeasure planning	● The General Manager of the Environment and Safety Department was appointed to the Facility Investment Committee in April 2016 and charged with managing the progress of safety-related facility improvement projects. ● Systematic assessment of progress in safety countermeasure-related facility improvement projects is under way at each business base	p. 12-15 Ref. p. 20	B Developed systems to support safety assurance activities	● Steadily execute facility improvement projects related to safety countermeasures based on our three-year action plan ● Mitigate the intrinsic dangers of operational processes to prevent major accidents and facility-related incidents; set aside a budget and steadily execute planned facility improvements
		● Ensure transportation safety	● Carried out ongoing logistics safety inspections under collaboration between Head Office (Logistics Dept. and Environment and Safety Dept.) and departments in charge of logistics management at each business base ● Fiscal 2016 logistics safety inspections focused on the Omi Plant and Bibai Subplant, with staff at both business sites voicing their ideas about how to prevent logistics-related accidents and incidents.	Ref. p. 18	B Engaged in systematic initiatives	● Achieve continuous improvement through collaboration between departments in charge of logistics management as well as Environment and Safety departments at Head Office and each business base ● Secure safety of loading and unloading operations ● Enhance our ability to handle transportation accidents
Products and technologies	Create new products and technologies that contribute to sound social development	● Create new products and technologies that contribute to sound social development ● Promote open innovation via in-house and external collaboration	● Established the Automotive Materials & Solutions Dept. ● Initiated the construction of a production facility for the G47Δ oncolytic virus at Denka Seiken's Niigata Plant ● Signed a comprehensive industry-academia partnership agreement with Niigata University Photo 2 ● CO_2-SUICOM, an environment-friendly concrete product was chosen to receive the Chairperson's Award under the 13th Eco-Products Awards program sponsored by Eco-Products Awards Steering Committee Photo 3 ● Denka Seiken released the QuickNavi™-Mycoplasma antigen test kit ● Hosted inter-company networking meetings for younger engineers (collaborated with five external corporations in 2016)	p. 26-35, 40-45	B Actively developed new businesses and products	● Develop next-generation technologies, create new businesses and cultivate markets for new products ● Step up the development and marketing of eco-friendly products ● Develop a global R&D network ● Promote R&D process reforms
	Ensure product safety	● Enhance our quality management and assurance level	● Enhanced our quality assurance level (the number of complaints decreased from 359 in fiscal 2015 to 326 in fiscal 2016, down 10% year on year) ● Established guidelines for the management of chemical substances used in our products ● Began conducting periodic operational audits pertaining to quality management and assurance systems at overseas Group companies	p. 24-25 Ref. p. 8, 15-17, 26	B The number of complaints decreased	● Implement quality assurance education for all Group employees and develop relevant curriculums while reinforcing our organizational structure for quality assurance
Corporate governance/ corporate conduct deserving trust	Ensure that our corporate philosophy is embraced by every employee and transform our corporate culture	● Step up our growth strategies and initiatives to fulfill our social responsibilities	● Established The Denka Value, a new corporate philosophy ● Identified the Denka Principles to help guide employees regarding business conduct while publicly announcing the new corporate slogan "Possibility of Chemistry"	p. 2, 46 Ref. p. 3	B Established the new corporate philosophy	● Established the Denka Value-Up to take over the current management plan
	Improve corporate governance	● Improve corporate governance	● Established Denka Corporate Governance Guidelines ● Featured the results of surveys on and analysis of the Board of Directors' effectiveness on the latest edition of *Corporate Governance Report*	p. 36, 38-39	B Strengthened governance systems	● Improve corporate governance
	Maintain strict compliance with laws, regulations and corporate ethics	● Maintain strict compliance with laws, regulations and corporate ethics	● Provided educational programs (covering corporate ethics, legal matters and CSR activities) to employees at each Group company	p. 37 Ref. p. 4-7	B Strengthened governance systems	● Maintain strict compliance while stepping up compliance education ● Conduct more robust operational audits
Employee happiness	Nurture human resources and pass down technological heritage to future generations	● Secure more foreign student recruits and step up long-term training programs in Japan	● Launched special educational programs for trainers ● Hired seven foreign nationals as specialists (15% of all specialists hired in April 2017) ● Incorporated volunteer activities as part of training curriculums for new recruits Photo 4	p. 16-19	A Engaged in proactive recruitment	● Secure more foreign student recruits and step up long-term training programs in Japan ● Provide ongoing workplace experience programs for young people while engaging in community contribution activities
	Embrace diversity and offer equal opportunities	● Revise the current personnel system while helping women achieve career success (target for the proportion of women among newly hired specialists: 20% or more in fiscal 2017; target for the proportion of female managers across all managerial positions: 5% by fiscal 2025	● Hired 12 women as specialists (28% of all specialists hired in April 2017) ● Introduced various assistance programs to help women develop lengthy careers, allowing eligible employees to work at home and creating region-specific positions	p. 16-17 Ref. p. 24-25	A Developed programs to support employees	● Achieve our target for the proportion of women among newly hired specialists (20% or more in fiscal 2017) as well as our target for the proportion of female managers across all managerial positions (5% by fiscal 2025) ● Offer training programs for female workers to assist in their career development
	Help strike a work-life balance and promote employee health	● Streamline operations to reduce overall working hours ● Implement the Mental Health Promotion Plan	● Introduced staggered work shifts while designating recommended leave day(s) ● Implemented employee stress checks and measures to prevent mental health problems	p. 16-17	C Failed to meet the target	● Facilitate the utilization of annual paid leave ● Implement comprehensive countermeasures to address mental health issues
Environmental preservation	Prevent air, water, soil and other environmental pollution	● Achieve the goals of the Sixth Medium-Term Environmental Plan spanning fiscal 2016 to 2018 (continuous reduction of industrial waste) ● Operate wastewater treatment facilities in a more systematic manner and step up the assessment of water usage status ● Reduce emissions of chlorofluorocarbons	● Implemented the Sixth Medium-Term Environmental Plan (fiscal 2016 results) 1) Failed to achieve the target for emissions of PRTR substances: 83 tons (target: 73 tons) 2) Achieved the target for the volume of final waste disposal: 119 tons (target: 151 tons) Succeed in reducing the volume of waste and effectively recycling and utilizing it ● Stepped up the management of freezers that use fluorocarbons as refrigerants (fluorocarbon emissions volume: fiscal 2015: 812 tons-CO_2e; fiscal 2016: 448 tons-CO_2e) ● Underwent the third-party verification of the Company's GHG emissions data (verification was undertaken by Bureau Veritas Japan Co., Ltd.)	p. 20-21 Ref. p. 8-14, 21-23	C Failed to meet a part of the targets	● Achieve the goals of the Sixth Medium-Term Environmental Plan (the continuous reduction of industrial waste) ● Promote initiatives to improve yield ratios, sell recycling waste and utilize such waste in ways that complement the exhaustive scrutiny of each business base's cost elements ● Operate wastewater treatment facilities in a more systematic manner and step up the assessment of water usage status ● Reduce emissions of chlorofluorocarbons (step up management and renewal of air conditioning, refrigeration and freezing equipment)
	Promote climate change countermeasures (curb global warming, reduce GHG emissions and adapt to climate changes)	● Achieve the goals of the Sixth Medium-Term Environmental Plan spanning fiscal 2016 to 2018 (global warming countermeasures)	● Implemented the Sixth Medium-Term Environmental Plan (fiscal 2016 results) 1) Failed to achieve the target for energy consumption intensity: 0.99 compared with fiscal 2015 level (target: 0.97) Energy consumption intensity was, albeit greater than the target figure, down 1% compared with fiscal 2015 2) Achieved the target for CO_2 emissions intensity: 1.00 compared with fiscal 2015 level (target: 1.01) Achieved the target thanks to efforts undertaken at each plant to improve production process ● The construction of the New Omigawa Power Plant (hydroelectric) has been under way while Kurobegawa Electric Power Company has completed preliminary surveys at the planned site for the New Himekawa Power Plant No. 6 and officially greenlighted its construction	p. 20-24 Ref. p. 8-14, 21-23	C Failed to meet a part of the targets	● Achieve the goals of the Sixth Medium-Term Environmental Plan (global warming countermeasures) ● Promote global warming countermeasures through the provision of energy-saving and other technological solutions while exploring new themes
Dialogue with society / partnership	Maintain appropriate and timely disclosure of corporate information and establish bidirectional communications	● Maintain robust communications with communities around business sites while contributing to the revitalization of local society	● Engaged in interaction and dialogue with local communities by hosting plant tours and participating in community events ● Provided educational support by hosting experimental science classes and raised employee awareness with regard to social contributions ● Helped revitalize local communities through events at DENKA BIG SWAN STADIUM and support for the NIIGATA Albirex BB Rabbits Photo 5 ● Promoted the recycling of industrial waste for use in cement production ● Dispatched employee volunteers to assist in the reconstruction of areas affected by the Great East Japan Earthquake, the Kumamoto Earthquake and a massive fire that engulfed streets north of Itoigawa City's main station ● Assisted students who grew up in the vicinity of Denka business sites in their pursuit of higher education through a scholarship program ● Contributed to youth education and social welfare by sponsoring and assisting the Fureai Trio concerts	p. 8-11 Ref. p. 27	A Engaged in proactive initiatives	● Maintain robust communications with communities around business sites while contributing to the revitalization of local society ● Continuously implement volunteer activities to meet the needs of disaster-stricken area

Photo 1 Safety Promotion Meeting

Photo 2 Signing ceremony for a comprehensive industry-academia partnership agreement with Niigata University

Photo 3 The 13th Eco-Products Awards program's award presenting ceremony

Photo 4 New recruits who participated in volunteer activities

Photo 5 The 2nd DENKA BIG SWAN STADIUM junior football festival

Our Dialogue with a Third-Party Opinion Contributor

With the aim of securing the reliability of our reporting and continuously improving its content, each year since fiscal 2011 we have commissioned a third-party opinion on the *Denka Group CSR Report* from Mr. Tamio Yamaguchi, Japan's leading CSR specialist and a director of Junkan Workers Club.

On August 29, 2017, we invited Mr. Yamaguchi to our Head Office to attend a dialogue between Denka officers in charge of relevant operations and managers of Head Office administrative departments.

Prior to this dialogue, we sent Mr. Yamaguchi the second draft of *Denka Report 2017* and subsequently received from him a total of 49 comments and insights on how to improve the content of said draft. At the dialogue session, Denka attendees provided the Company's responses to Mr. Yamaguchi and then engaged in an exchange of ideas with him, focusing on the following themes.

(1) Denka's response to the growing trend toward integrated reporting and the Company's policies pertaining to the disclosure of non-financial information
(2) Information disclosure with regard to work style reforms and relevant numerical targets
(3) A management approach that integrates the pursuit of SDGs and business activities
(4) Supply chain risk management

We also discussed such matters as Denka's ideals regarding future information disclosure and how to better organize the content of *Denka Report*. Having engaged in meaningful dialogue with Mr. Yamaguchi, we are determined to proactively utilize takeaways from this event to enhance the management and reporting of our CSR activities.

The dialogue session began with an opening speech delivered by Mr. Noriyuki Shimizu, General Manager of CSR & Corporate Communications Dept. (standing figure)

Mr. Masaharu Suzuki, a managing executive officer of Denka, addresses a question posed by Mr. Yamaguchi (second from the right)

Editorial Afterword

First of all, we would like to express our gratitude to the readers of the *Denka Report 2017*. In this edition, we have organized the content of reporting based on CSR materiality issues identified as of April 2017. Also, we included multiple dialogues on the themes of safety assurance, R&D, diversity and corporate governance in the Special Feature sections, with the aim of explaining the concrete initiatives we are taking to address said materiality issues. Moreover, we touched on the roles Denka solutions are expected to fulfill in the pursuit of United Nations Sustainable Development Goals (SDGs), showcasing relationships between each business division's products and the SDGs.

We would also like to thank Mr. Yamaguchi, who has provided us with a number of suggestions. His observations reminded us of the need for established information disclosure strategies as well as a management approach that integrates the pursuit of SDGs and business activities while bringing home the importance of information disclosure regarding diversity and work style reforms. It was also encouraging to hear from him about his expectations regarding our future reporting centered on CSR materiality issues. We are committed to working continuously to act on these valuable inputs, thereby enhancing our CSR activities.

We would like to ask our readers to furnish us with their frank opinions and comments as we aspire to live up to the expectations of and trust placed in us by all our stakeholders. Looking ahead, we sincerely ask for your guidance and encouragement.

Noriyuki Shimizu
General Manager,
CSR & Corporate Communications Dept.

Third-Party Opinion

The Report Conveys Denka's Strong Commitment to Achieving Reforms

Tamio Yamaguchi
Director of Junkan Workers Club*

With this, we mark the seventh anniversary of my contributing a third-party opinion to *Denka Group CSR Report*. To date, I've always been invited to join the Denka officers and heads of relevant departments to engage in dialogues about my observations regarding the first drafts before the content is finalized. I was impressed to see Denka representatives proactively taking part in constructive discussions aimed at improving CSR activities. From the resulting reports, I can see that Denka's open-mindedness and its commitment to achieving reforms is exemplified in these publications, which showcase various aspects of advances in the Company's CSR initiatives.

This edition makes two major departures from the previous approach. First, Denka has significantly enriched the content of its reporting in conjunction with a change in the report's title. It seems to me that this allows the Company to better respond to the latest trends in corporate information disclosure requirements in a timely manner. These days, businesses are expected to not only disclose information on past activities but to provide detailed analyses of their future outlook and to explain their value creation processes. When I asked Denka representatives about whether or not they intend to transition to integrated reporting, they said they had no such intention as Denka's reporting approach centers on Responsible Care (RC) activities, a key CSR initiative for chemical companies. Although this stance can be understood as insightful, especially as it is backed by Denka's century-strong history as a chemical manufacturer, I suspect some readers may disagree.

Second, Denka has organized the report's content based on recently identified CSR materiality issues. In general, a business's CSR activities can span wide-ranging fields. And, although each activity should be judged by its own merits, the focus of a given company's CSR activities can differ largely among business sectors or in accordance with its social relevance. Having clarified its priorities vis-à-vis such activities, Denka's designation of materiality issues will help refine how the Company manages its CSR activities. However, I believe that the process of determining which CSR issues have materiality must take stakeholders into account. As Denka intends to review these materiality issues in a timely manner based on stakeholder feedback, I'm confident that stakeholders' will be asked to participate in the upcoming reviewing process. Based on the GRI guidelines, it is strongly recommended that the Company utilizes the selected CSR materiality issues to enhance the content of its reporting. I also expect the Company to place stronger focus on CSR materiality issues to make the reporting content more concise and to the point.

In addition, I was impressed by the following two features, both of which are reflected in the message from the president and chairman, various dialogues, interviews and elsewhere in this report.

First is Denka's noteworthy determination to promote safety assurance activities. Although its commitment to RC activities unsurprisingly takes up more page space for such activities, Denka's ever stronger focus on safety is reiterated in multiple sections. For example, top message lists safety assurance above all other initiatives aimed at fulfilling corporate social responsibilities. In a dialogue, the industrial safety specialist Dr. Masayoshi Nakamura brings his external viewpoint to bear as he assesses Denka's safety assurance activities, which have been extensively improved since the occurrence of two major accidents in 2013. Corporations that have experienced major accidents typically respond by announcing countermeasures aimed at preventing recurrences. However, very few provide follow-up assessments aimed at verifying the effectiveness of said countermeasures and the implementation of additional measures aimed at stepping up the level of safety assurance. I believe that this dialogue sets a valuable precedent. Moreover, as Dr. Nakamura remarks, Denka is at the vanguard of the industry in its positioning of safety countermeasure-related expenses as "investments." I, too, am impressed by this approach, which I find is akin to the Japan Association of Corporate Executives' proposal that businesses regard CSR costs as investments.

Moreover, Denka's commitment to placing the utmost priority on safety is particularly highlighted in the section dedicated to occupational safety. In fiscal 2017, the Company began practicing the exchange of courtesies wherein employees wish one another "keep safe!" This is a unique initiative and is expected to yield remarkable effects. At first I thought that this initiative was limited to production sites, but the aforementioned dialogue that I attended also began with such an exchange. This helped convince me that Denka's determination to foster a corporate culture that places the utmost priority on safety throughout its organization is firm and true.

The second impressive feature is Denka's work to develop a more robust R&D structure that, in turn, will help the Company fulfill the Denka Mission. An efficient R&D structure that employs cutting-edge methodologies and is capable of ongoing innovation is essential to winning on the global stage. Previously, most Japanese corporations focused on in-house, short-term research projects, lagging behind their European and U.S. counterparts in terms of the number of technological breakthroughs achieved. However, Denka has been part of Japan's open innovation vanguard. In fact, in 2013 the Company announced the Denka100 new growth strategies clarifying its strategic emphasis on open innovation and has since been steadily stepping up relevant initiatives. This report discloses efforts currently under way to take a step further by establishing a global R&D structure and promoting R&D process reforms. Moreover, one of the participants in a dialogue featuring young researchers remarked "It is necessary to acknowledge that there is little … that can be accomplished by a single company… We need to collaborate with partners and discover values that can be shared between us." This statement helped convince me that awareness about the importance of R&D activities involving industry-academia-government partnerships has become widespread throughout Denka organization. I expect the Company to utilize SDGs as an innovation driver to further these efforts.

Concise and to-the-point reporting needs to be supplemented by data that backs up the content of reporting. In this regard, the web-based CSR Report references provide readers with valuable input. These materials also include such sections as "The Utilization of Government Subsidies Related to the Environment and Energy," the kind of articles that I've rarely seen in other reports. To usher a greater number of readers into reading these useful web-based references, I would encourage the Company to change the naming of these materials and better organize their content.

* An NPO dedicated to fostering the harmonious coexistence of society and natural ecosystems through research conducted from a global perspective. It studies and spearheads local community efforts for creating a recycling-oriented society joining citizens, businesses and governments, presenting recommendations through CSR workshops and other means.
URL: http://junkanken.com/ (Japanese only)