

Giving shape to our vision
Through and Through Nikkeikin



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Editorial policy

Introduction

The aim of this CSR Report 2018 of the Nippon Light Metal (NLM) Group is to ensure that the NLM Group's CSR-related approach and initiatives are understood by our stakeholders by reporting them in a way that it is easy to understand.

The NLM Group recognizes the social issues that are based on the core subjects of ISO 26000. We are also aware of the increase in ESG investments as a recent trend and global initiatives including SDGs. We pursue CSR initiatives that help to solve these issues. We would appreciate it if you would read about the initiatives we take to address each of the issues and provide us with opinions and comments.

Reference guidelines

This report was created by referring to the Environmental Reporting Guidelines 2012 (Ministry of the Environment) and the Global Reporting Initiative (GRI) Standards.

Period covered

Data for the report were collected between April 2017 and March 2018.

*Data collected before or after this period are also used in some sections of this report.

Scope of the report

This report describes the activities of and facts about Nippon Light Metal Holdings Co., Ltd. and its 76 consolidated subsidiaries (a total of 77 companies) unless otherwise specified.

Period of issuance

October 2018 (Next report: To be issued in October 2019; Previous report: Issued in October 2017)

Independent assurance

A ★ symbol indicates that a third party, KPMG AZSA Sustainability Co., Ltd., has provided independent assurance regarding the reliability of the data.

Reporting media of CSR information

This report describes the CSR initiatives that we took in FY2017. More details about our CSR initiatives, past initiatives, financial information, and further information are available on our official website.

Non-financial information

●CSR Report (Brochure/PDF)

●Website
<http://www.nikkeikinholdings.com/csr/>



Financial information

●Website
<http://www.nikkeikinholdings.co.jp/ir-data/>

●Annual Report ●Fact Book ●Shareholders Report



Initiatives for sustainable development

In the CSR Report 2017 issued last year, the NLM Group expressed its determination to work on SDGs.

We identify and evaluate the NLM Group's CSR activities from the viewpoint of SDGs and accelerate discussions on issues we should address and those we have already begun to address. In FY2017, we held discussions at CSR Committee meetings (two times) and carried out awareness-raising activities via our internal newsletters (three times). We also had lively discussions at (monthly) meetings of CSR-related segments. Our CSR initiatives in business domains are described on the Special Features pages of this report.



A CSR Committee meeting



Internal newsletter pages showing a serial article for raising awareness of SDGs (excerpt)



A corporate group that continues to create new value for customers

To those who were affected by the Heavy Rain Event of July 2018

We would like to express our deepest sympathy for those who were affected by the Heavy Rain Event of July 2018. We sincerely hope for the earliest possible restoration of the areas affected by the disaster.

At the NLM Group, we have decided to make monetary donations and engage in activities including the provision of relief supplies. In addition, as described in a special feature in this report, the NLM Group addresses issues on water and infrastructure through its business. We will continue striving to improve our products and services so that they will be as helpful as possible for customers' disaster prevention and disaster control.

Q1: How is the environment surrounding the company? How are you responding to changes?

The world today is fraught with issues. There exist political and geopolitical risks attributed to changes in the external environment that we cannot change by ourselves, such as the escalation of trade friction that was triggered by the trade policy of the Trump administration of the United States, rapid fluctuations in aluminum prices on a global level, and the rising crude oil prices attributed to the worsening situation in the Middle East. However, we never use such changes in the external environment as an excuse. At the NLM Group, we think about how to deal with the situation on our own by mobilizing the capacities of Team NLM to achieve growth, and then we put the ideas into practice.

Seen from a different perspective, trade friction brings out the importance of aluminum. The importance of aluminum will never be reduced.

We will continue to execute the measures for building a firm business foundation, on which we have been *working, aiming to achieve further growth as a corporate group that continues to create new value for customers*. I believe that the future is not something we wait for, but something we create on our own.

Q2: What are your initiatives for SDGs? Above all, what initiatives do you take for reducing greenhouse gas emissions?

Our company survives thanks to society. We are surviving thanks to the support of our stakeholders and partners, including our employees and their families, not to mention our shareholders, customers, and people from local communities in areas where our offices and factories are located. We must never forget this. For the benefit of these people, we contribute to solving social issues, including

environmental problems and issues in considerations for human rights and diversity that are included in the SDGs, from medium- and long-term perspectives, aspiring to build a sustainable society. We believe that these activities are included in important CSR activities that the NLM Group is required to implement.

SDGs cover a wide range of global and social issues. Among them, one urgent and important goal is to build a so-called low-carbon society. At the NLM Group, we have been executing a voluntary action plan to reduce greenhouse gas emissions, setting FY2020 as the target year. Because achieving this target seems likely now, we have decided to launch an initiative to further reduce greenhouse gases by setting new goals and specifying FY2030 as the target year, based primarily on the Paris Agreement that was adopted at COP21 in 2015. We will continue our efforts to help build a sustainable society that coexists in harmony with the global environment.

Reference P.16

Q3. You always start by talking about safety when you give a speech in front of employees, such as the New Year's greeting. Could you tell us your thoughts about safety once again, including the meaning of talking about safety at the onset?

I keep telling them again and again that safety is our top priority. A company consists of people. People are assets, or what we might call "human assets." Our ultimate goal is to allow our employees as *human assets* to have job satisfaction and achieve happiness for employees and their families. This goal can never be achieved without a safe environment where employees can work with a sense of security. We aim to achieve zero accidents to enable every single employee of the group to return home uninjured. Each employee should work with a strong belief that "We can and we must definitely achieve zero accidents." I think this is more important than anything else.

Reference P.23

Q4. It is the final year of the current mid-term management plan (mid-term plan). Could you tell us about its progress? Please also tell us what lies ahead of the plan.

I believe that we made steady achievements last year as the second year of the mid-term plan, while facing increasingly fierce price competition in addition to the rising raw fuel prices.

To "create new products and business models by strengthening cooperation within the Group," which is the first basic policy under the mid-term plan, we created a large number of



new products with high added value in fields where innovation is making progress, by exploring the strengths of cooperation within the Group from a customers' perspective and making proposals by anticipating customer needs. For example, we focused on the fact that heat release, as well as weight reduction, is an important issue for electric vehicles, and began to sell a battery cooling plate that combines the Group's technologies, including those in design, alloy development, and processing.

For "business development through strategies by region and by sector," which is the second basic policy under the mid-term plan, we sought to maximize the profitability of investment by selecting fields as destinations of management resources investment based on a combination of region and market. A specific example in Japan is the addition of production lines for non-CFC, heat-insulating, non-flammable panels reflecting the tendency to place more emphasis on environmental considerations and the fireproof performance of structures. Overseas, we set up a marketing base in North America, thereby establishing a foothold for business expansion. In India, the joint venture that we established in the previous year began manufacturing aluminum paste for coating materials.

Moreover, as an example of our measure "strengthening of corporate culture (strengthening of business foundations)," the third basic policy under the mid-term plan, Toyo Rikagaku Kenkyusho Co., Ltd., which engages in plate processing, sought to improve the yield rate, further streamline its production system, and take other steps with support from the overall Group, which resulted in a significant increase in its earnings. In the final year of the mid-term

plan, we are making group-wide efforts to achieve the targets.

Reference P.30

The next year will be our milestone year, when Nippon Light Metal Co., Ltd. will celebrate its 80th anniversary. I expect that the business environment surrounding the Group will be increasingly difficult, with fluctuations in raw fuel prices and other events. In this environment, the NLM Group will identify its strengths based on the criterion of *what customers need* and cultivate fields where the Group's strengths and customer needs intersect, even more deeply. We will thus seek to operate new businesses with higher added value and build the foundation of our growth. It is the power of the working generation -- above all, the power of the young generation including this year's new employees -- that will push forward the above initiative beyond the 80th anniversary. I believe that the sustainable growth of the NLM Group, which is unaffected by the external environment, will be achieved by combining the power of the human assets of Team NLM and the power of young human assets, who will open the door to the future.

August 2018
Nippon Light Metal Holdings Company, Ltd.
President and Chief Executive Officer

I. Okamoto

Giving shape to our vision Through and Through Nikkeikin

At Team NLM, we engage in businesses from upstream to downstream, manufacturing and selling products ranging from aluminum alloys to finished products in everyday use.

We believe that the CSR of the NLM Group is about giving shape to our vision of contributing to achieving a sustainable society and improving people's lives, as well as taking responsibility for the business activities described above. The phrase "Through and Through" means "thoroughly" or "completely." It also means "just like someone." It reflects our vision to *work* for the good of our customers in all phases of manufacturing, from upstream to downstream.

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A vision of delivering reliable drinking water



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A vision of reducing food loss with cold chains



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Vision of stopping global warming with a new form of recycling



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Vision of creating safe, secure infrastructure for the future generations



A vision of delivering reliable drinking water



There are regions in the world that do not have good access to hygienic drinking water, with 2.1 billion people lacking safely managed drinking water services*.

Conditions become even worse after a disaster. A disaster disrupts water supply even in Japan, where people normally have easy access to drinking water. With our aluminum products, the NLM Group will create societies where people can drink water with a sense of security at any time, anywhere in the world.

*Source: Progress on Drinking Water, Sanitation, and Hygiene: 2017 Update and Sustainable Development Goal Baselines (UNICEF and WHO)

A vision of delivering clean water

Making water cleaner with the power of chlorine

The water we drink every day is sterilized and disinfected. Nippon Light Metal Co., Ltd. manufactures and sells sodium hypochlorite aqueous solution, which is intended for the sterilization and disinfection of drinking water. Recent years have seen growing needs for drinking water that is safer and that tastes better. Reducing impurities in the germicides or disinfectants themselves, which are used at water purification plants, is necessary to meet these needs. Nippon Light Metal Co., Ltd. has responded by developing and establishing a method for manufacturing high-purity sodium



Yoshikawa water purification plant (Shiga Prefecture)

hypochlorite and by delivering Nikkei Ziaso® S, which features reduced impurities.

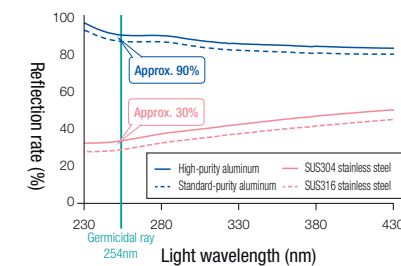
Making water cleaner with the power of ultraviolet

At a water purification plant, water is sterilized with ultraviolet light, in addition to being disinfected with chlorine. With ultraviolet sterilization, water flowing in a tube is irradiated with ultraviolet light to kill any bacteria. Nippon Light Metal Co., Ltd. succeeded in increasing the sterilizing effect of ultraviolet sterilizer by using an aluminum tube that has high ultraviolet light reflectivity, instead of the stainless-steel tube that is used in a conventional unit.

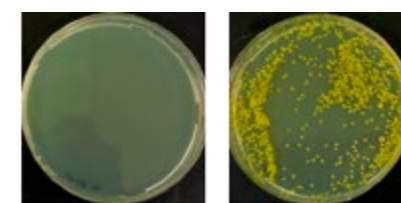
This ultraviolet reflecting tube remains resistant to corrosion due to a special surface treatment, permitting a 1.6-fold increase in sterilization efficiency compared to conventional sterilizers that use stainless-steel tubes. (Data from Nippon Light Metal Co., Ltd.) With this development, we will contribute to providing

even more reliable drinking water.

● Figure 1. Comparison of reflection rate between aluminum and stainless steel



● Figure 2. Comparison of sterilizing effect between aluminum and stainless-steel reflecting tubes*



A sample irradiated with ultraviolet using an aluminum reflecting container (left) and a stainless-steel reflecting container (right).
*Data from the Department of Preventive Environment and Nutrition, Faculty of Medicine, Tokushima University

Voice of development personnel



Development Division of Kambara Chemical Plant
Chemicals Division, Nippon Light Metal Co., Ltd.
Tomohide Okada

Opening up further possibilities

The active ingredient concentration of liquid sodium hypochlorite is only about 12%, which means low production efficiency. Accordingly, it was rarely used for purposes other than sterilization. Nippon Light Metal Co., Ltd. has developed Nikkei Ziaso® 5-hydrate (SHC5)*, which is extracted from liquid sodium hypochlorite as a high-purity solid and whose active ingredient concentration has more than tripled from conventional products. In a world first, the company also succeeded in industrial production of this product and began manufacturing and marketing it in 2013.

Development of this product has expanded the applicability to a field other than water treatment agents; that is, the field of organic synthesis. Moving forward, we will strive to establish an application of this product as an oxidizing agent, which can be used for manufacturing processes in pharmaceuticals, agrochemicals, and fine chemicals.

*This product was granted the award for excellence by the Japan Society for Process Chemistry (JSPC) in 2014, a technology award from the Japan Society of Ion Exchange in 2015, and the Synthetic Organic Chemistry Award, Japan (for technological achievement) in 2018.

A vision of delivering safe water

A water purification plant is a major facility, where water goes through several devices to be purified. These devices need to be covered with lids to prevent dust, fallen leaves, and other flying objects from being mixed into the water and to counteract terrorism, such as the injection of

poisonous substances.

Sumikei-Nikkei Engineering Co., Ltd. manufactures, sells, and installs aluminum lids featuring both high corrosion resistance and beautiful appearance, which have been adopted in 31 of 47 prefectures in Japan.



A covering lid of Sagami-hara water purification plant, which was installed by Sumikei-Nikkei Engineering Co., Ltd.

A vision of delivering reliable water even in the event of a disaster

In the event of a natural disaster, such as an earthquake, typhoon, and torrential rain, the most urgent task is securing drinking water. A system for continuing emergency water supply until the recovery of affected water utilities must be established in all stricken areas.

Nikkeikin Aluminium Core Technology Co., Ltd. manufactures and sells water supply tanks and water supply containers. Made of aluminum, the water supply tank is resistant to corrosion and keeps water clean. A cumulative total of 2,361 tanks from the company

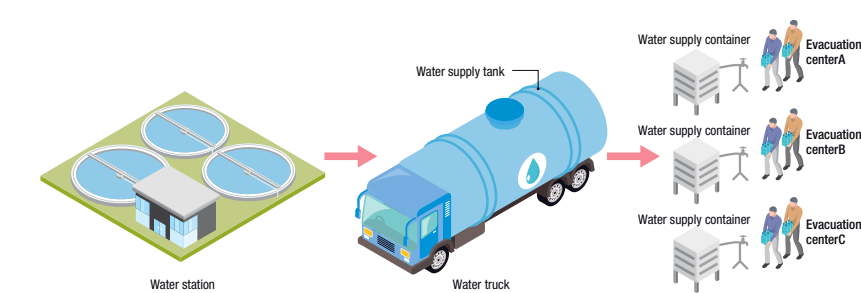
have been introduced in various parts of Japan, ready to provide safe water efficiently in the event of a disaster.

The water supply container is collapsible and made of aluminum. It can therefore be assembled, transported, and installed by a single person. It can be disassembled and stored in a compact space after use.

In addition, the combined use of the water supply tank and the containers makes it possible to establish an efficient water supply system. Many water supply points can be created, and

the quick delivery of water to a large population becomes possible by setting up water supply containers at evacuation centers to receive water from the water station, which is delivered in the water supply tank.

● An efficient water supply system built by combining a water supply tank and water supply containers (For illustration purposes only)



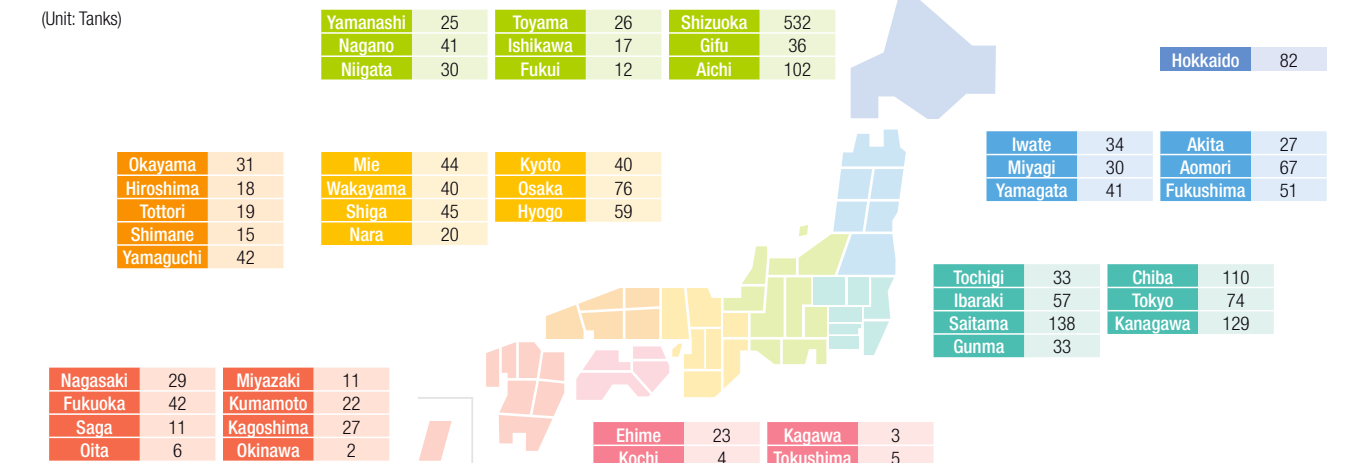
● Water supply tank from Nikkeikin Aluminium Core Technology



● Water supply container from Nikkeikin Aluminium Core Technology



● Number of water supply tanks from Nikkeikin Aluminium Core Technology adopted in each prefecture (1960 to 2017)



A vision of reducing food loss* with cold chains



One out of every nine people in the world (approx. 800 million people) suffer from poor nutrition. The global population is forecast to reach 9.8 billion in 2050, and the issue of food shortages is expected to grow more serious. On the other hand, as much as nearly 1.3 billion tons of food, or roughly one-third of all produced food, is disposed of every year.

*Food loss refers to food which is disposed of, even though it is still edible.
Source: Japan Association for International Collaboration of Agriculture and Forestry, *World's Agriculture, Forestry And Fisheries* (No. 835)

How can we reduce food loss?

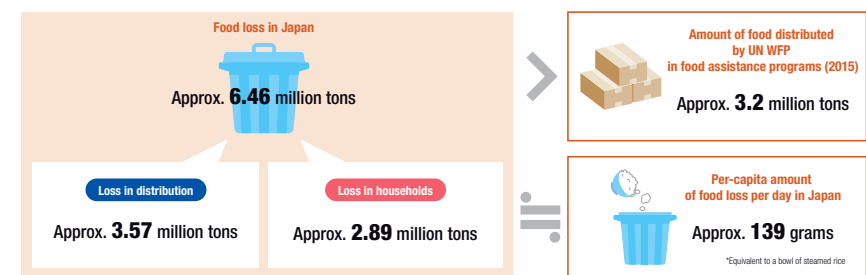
There are two types of food loss. One is the loss that occurs due to disposal by households (loss in households) and the other is the loss of food that is spoiled or disposed of during the phases of harvesting, transportation, and storage (loss in distribution). In Japan, the annual amount of food loss in households is 2.89 million tons and that in distribution is 3.57 million tons.

The NLM Group is involved in these processes as a manufacturer and distributor of truck bodies, warehouses, refrigerators and

freezers, and other related products. Switching the means of perishable food transportation from normal-temperature distribution to chilled distribution (cold chain) prevents the food items

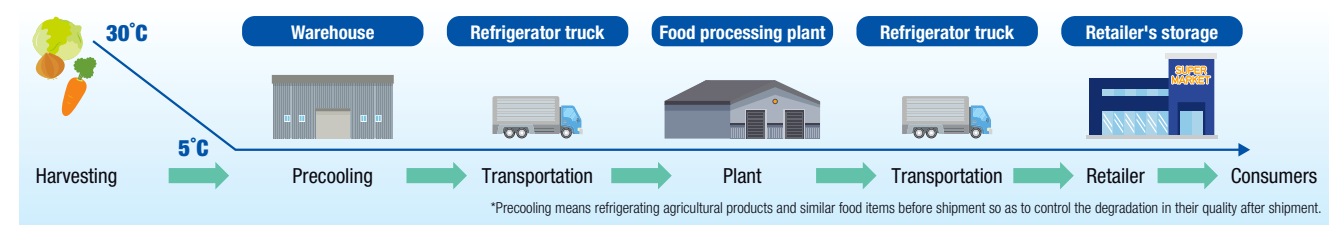
from becoming spoiled or going bad and therefore keeps them fresh longer. We will reduce food loss by building a seamless cold chain from production area to table.

● Status of food loss in Japan



Source: Ministry of Agriculture, Forestry and Fisheries of Japan, *Reducing Food Loss and Waste & Promoting Recycling*

● Cold chain



A vision of protecting food from deterioration

Convenience stores and supermarkets, which are indispensable elements of everyday life, are supported by cold chains. Above all, cold chains in Japan are highly developed, boasting rigorous temperature control.

Nippon Fruehauf Co., Ltd. manufactures and sells refrigerator trucks. The company has developed a truck that can transport goods simultaneously in multiple temperatures. This truck controls the temperature to transport

frozen and chilled goods together with goods kept at a normal temperature. It thus supports cold chains in Japan, where great emphasis is placed on freshness and temperature control.

Nikkei Panel System Co., Ltd. manufactures, sells, and installs thermal insulation panels, which are used for food processing plants, low temperature logistics warehouses, and freezing and refrigerating warehouses in the backyards of convenience stores and other retailers.

Our thermal insulation panels have been adopted for many freezers and refrigerators, wholesale areas, and other sections of the Toyosu market instead of Tsukiji market in Tokyo, which is scheduled to open in October 2018.



Refrigerator truck

Voice of sales personnel



Manager, Sales Section,
Tokyo Branch No.2, Nikkei Panel System Co., Ltd.

Noriyuki Taniguchi (Right)

In the Toyosu market project, I was in charge of the property as the sales leader.

The Tokyo Metropolitan Government has made "environmentally friendly products" a requirement in the construction of the Toyosu market. In response, we have proposed the use of Genesta Incombustible Type, a non-HFC incombustible insulation panel, as a product which conforms to that requirement.

In addition, Toyosu market has set a policy of "ensuring food safety and security," so we paid careful attention to the hygiene of the property during installation, by taking preventive measures against mold, corrosion and condensation under the roof. Because we had never worked on such a large property before, we faced many challenges, including production, labor shortages, and logistics problems. We launched a project internally and I believe we were able to fulfill the customer's requirements with the "cooperation of 5 divisions + 1" (sales, design, procurement, production, and installation + logistics).

Taking advantage of this experience, we will further strengthen our expertise and engineering capability for large properties and work proactively on overseas properties, as well as those in Japan. We will thus continue to provide support for the creation of better spaces that help give shape to customers' visions.

Insulation panel which helps prevent global warming

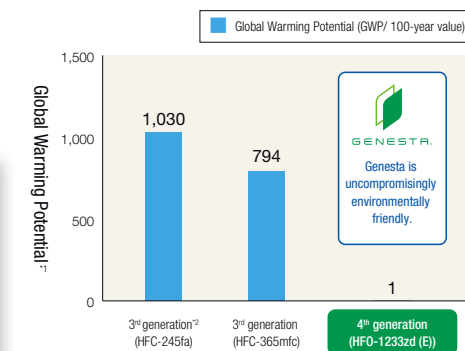
The insulation panel manufactured and sold by Nikkei Panel System Co., Ltd. is the Genesta® non-HFC incombustible insulation panel. This is the industry's first panel* that does not use HFC. The company succeeded in developing this panel by using a blowing agent containing hydrofluoroolefin (HFO) instead of one containing hydrofluorocarbon (HFC), which is used in the manufacture of conventional insulation panels. Moreover, the company completed the task of making all

of its factories HFC-free in April 2016. This enables not only a reduction in greenhouse gas emissions from the factories but also reduces emissions from the supply chain by approximately 300,000 tons in CO₂ equivalent every year. In recognition of this achievement, the company was granted the Japan Business Federation (Keidanren) Chairman award in the 27th Global Environment Awards (hosted by the Fuji-Sankei Group) in April 2018.



Award presentation ceremony of the Global Environment Awards

*Data from by Nikkei Panel System Co., Ltd.



*1: GWP is the value for the greenhouse effect of each greenhouse gas relative to the effect of CO₂, which is calculated by taking into account the duration of the effect as well.

*2: The graph shows two types of 3rd-generation HFC that we were actually using.

A panel that demonstrates its strength in a disaster

Nikkei Panel System Co., Ltd. found that the Great East Japan Earthquake, which occurred in March 2011, brought down warehouse ceilings and hampered the delivery of food items that were needed by affected people. To overcome this problem, the company developed NEQRES, an earthquake-resistant ceiling. No NEQRES panel fell during the Kumamoto Earthquake, which struck in April 2016. We will contribute to creating disaster-resistant cold chains.



NEQRES earthquake-resistant ceiling

A vision of expanding continually evolving cold chains to the world

In Thailand, a broader range of food items have begun to be distributed in step with the economic development of the country. As a result, demand for cold chains has been growing. Nippon Fruehauf Co., Ltd. and Nikkei Panel System Co., Ltd. own the panel business of Fruehauf Mahajak Co., Ltd. and Nikkei Siam

Aluminum Ltd., respectively, and collaborate in the development of cold chains in Thailand. We will continue to contribute to the creation of cold chains in Southeast Asia and the world.



Staff of Fruehauf Mahajak Co., Ltd.



Vision of stopping global warming with a new form of recycling

The world is confronted with issues such as global warming, the destruction of nature in various parts of the world, and the depletion of fossil fuels and other natural resources. The NLM Group helps solve these problems by operating its aluminum recycling business globally.

Achieving a reduction in CO₂ emissions equivalent to the amount absorbed by a forest as large as Tokyo

In producing aluminum from bauxite, 12.7 tons of CO₂ is emitted per 1 ton of produced aluminum. This is because a large amount of electric power is consumed during a manufacturing method called electrolysis, which is part of the aluminum production process. On the other hand, where aluminum is produced from recycled materials (scrap), the amount of CO₂ emitted per 1 ton of produced aluminum is 0.35 tons.

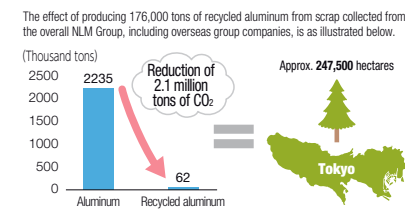
Nikkei MC Aluminium Co., Ltd. produces 176,000 tons of recycled aluminum every year from scrap purchased from customers, the NLM Group, and other entities in 22 countries. This is equivalent to an annual reduction in CO₂ emissions of 2.1 million tons compared to producing aluminum from bauxite. That in turn equates to the annual amount of CO₂ absorbed by a forest as large as Tokyo.

In addition, approximately 4 tons of bauxite is mined to produce 1 ton of aluminum. This

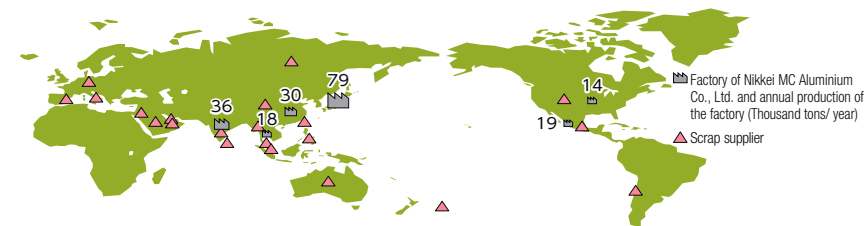
means that rich natural environments tend to be exploited because bauxite exists in large quantities in the wilderness and mountains. For example, at least 1 square meter of land must be mined to produce 1 ton of aluminum. Consequently, 4.0 million square meters of land needs to be mined to produce the amount of aluminum consumed in Japan in a year (4.0 million tons). The recycling of aluminum helps to protect nature.

*All figures are from Nikkei MC Aluminium Co., Ltd.

Conceptual rendering of the CO₂ reduction effect of aluminum recycling



Factories of Nikkei MC Aluminium Co., Ltd. and its scrap suppliers



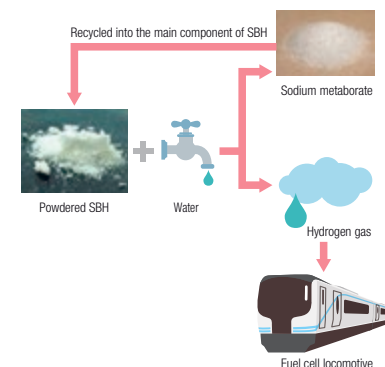
A vision for a hydrogen society. An alternative to fossil fuels?

Hydrogen is attracting attention as an alternative energy source to fossil fuels. To realize a hydrogen society, however, we need to overcome a number of challenges. For example, hydrogen is lower in transport efficiency than other fuels. It also requires robust storage and transportation facilities because of the risk of explosion. In a world first, the NLM Group has developed the Powdered SBH*, a new hydrogen carrier, by new process. Every 1 kilogram of Powdered SBH is capable of storing 2.4 cubic

meters of hydrogen. It also eliminates the risk of explosion. Further, the powder that remains after hydrogen is extracted from SBH (sodium metaborate) can be recycled into SBH.

We aim to realize a hydrogen society, where the Powdered SBH powers vehicles as the alternative to fossil fuels.

*SBH stands for sodium borohydride.



New-generation ingot

Nikkei MC Aluminium Co., Ltd. developed a new-generation ingot jointly with Denso Corporation. This new-generation ingot weighs 100 grams per piece, which is 2% the weight of a conventional ingot. With this ingot, we have provided many benefits to Denso Corporation as the

customer. For instance, it enabled an 80% reduction in the space for equipment, including buildings, partly reflecting the fact that a large melting furnace is no longer needed on the customer's production line. Moreover, thanks to the shorter production line, the new ingot also contributed to

50% reduction in energy cost and a 33% reduction in production costs by shortening the line.

The new-generation ingot is also applied at customer facilities in Thailand, Spain, Hungary, and Mexico. It is also scheduled to be introduced in India.

Voice of development personnel

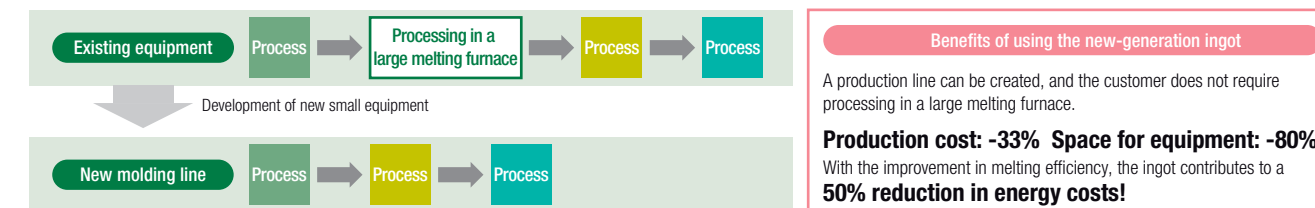
I was greatly attracted to the concept of the new-generation ingot, that is, "an energy-efficient, space-saving, low-noise, high-quality, low-cost ingot," when the customer explained it to us. I remember that, after we started development, we had difficulty obtaining consent in-house because of the great burden on our company, including the need to reduce the scale of production and to make a large capital investment. However, we made patient efforts to respond to the customer's request faithfully. As a result, both our colleagues and the customer said that they were glad it was introduced. I am very proud of that. It was fate that I was assigned to Thailand and introduced a production line for the new-generation ingot to our new factory in Thailand. We deliver the product to Denso Corporation's base in Thailand as well. I couldn't be happier.



Mr. Takashi Shindo (center), Director and General Manager of Sales Department, Purchasing & Procurement Department, Nikkei MC Aluminum (Thailand) Co., Ltd., having a conventional ingot (5kg), and Ms. Netchanok (left) and Ms. Kancharot (right) having new-generation ingots in their hands.



New-generation ingots



Customer voice



Manager, Die Casting & Cutting Parts Prod. Eng. Sect., Parts Production Engineering Dept., Nishio Plant, Denso Corporation
Mr. Koji Baba

The new-generation ingot has provided us with many benefits, including the downsizing of equipment, cost savings, higher thermal efficiency, reduced workloads for on-site workers, and a reduction in the cost of furnace repair.

At present, we have introduced 35 dedicated production lines for the new-generation ingot in Japan and 24 such lines overseas. We hope that, in the future, we can apply automated transport based on the Kanban Method to the material (new-generation ingot), just as it was applied to components, thereby achieving logistics reform. I think it is a new-generation ingot that will enable this. I am most grateful to Nikkei MC Aluminium for their cooperation. I hope we can continue to work together to expand our businesses globally.

Vision of creating safe, secure infrastructure for the future generations



In Japan, a country susceptible to disaster, architectural and construction standards have been revised each time a disaster has struck. With these revisions, technological progress has been made. However, the infrastructure that was developed rapidly in the years around the previous Tokyo Olympics (held in 1964) is now more than 50 years old, and as such requires large-scale and wide-ranging repair. The NLM Group will address these issues with its broad range of technologies and products, which take advantage of the features of aluminum.

Protecting traffic safety of people

Japan has roughly 700,000 road bridges. At present, approximately 30% of these bridges are 50 years old or older, and that percentage will exceed 50% around 2030. It is said that a bridge needs to be replaced once it is 50 years old. The proportion of river management facilities, quay walls, and similar facilities that are 50 years old or older also tops 50%. There are also numerous road bridges deemed to be too dangerous for people and vehicles to cross and whose use is therefore prohibited (source: Road Bureau, Ministry of Land, Infrastructure and Transport).

While the rapidly increasing number of aging bridges need to be replaced, the cost is astronomical. In response, the government has developed a plan to repair bridges to extend their effective life, aiming to ensure the safety and reliability of the road network while extending the service life of bridges and cutting repair costs.

Sumikei-Nikkei Engineering Co., Ltd. manufactures, sells, and installs bridge safety barriers. Aluminium safety barriers feature corrosion resistance and light weight. If corroded steel safety barriers are replaced with aluminium ones, the service life of a bridge can be extended, because the load on the bridge will be reduced and corrosion-induced deterioration will be inhibited. Further, aluminium safety barriers also boast superior recyclability and design quality. They can be recycled easily after replacement, and they are highly acclaimed for the design flexibility that caters to diverse local needs.

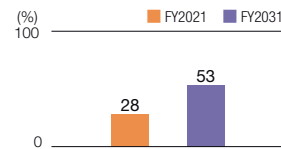


Tokyo Gate Bridge

Aluminium safety barrier

Members of the team in charge of designing safety barriers from Sumikei-Nikkei Engineering Co., Ltd. are discussing the design of a safety barrier prop.

Percentage of bridges 50 years old or older

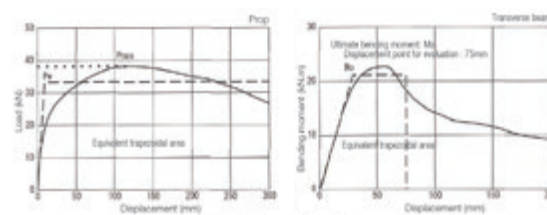


Source: Material for a meeting on deterioration of social capital (Ministry of Land, Infrastructure and Transport of Japan) that was held on January 21, 2013

A static load test of a prop



Static load test data



* We conduct internal tests of our safety barriers by following specified procedures, thereby ensuring the safety of vehicles and pedestrians.

Voice of designer



Road Facility Team, Design and Engineering Department, Sumikei-Nikkei Engineering Co., Ltd.
Tomohisa Kajita

Safety barriers keep passengers and pedestrians safe in the event of a vehicle collision. Therefore, we design products with constant care. We evaluate the safety of barriers in new structures by conducting our own performance tests, so we have full confidence in the safety of our safety barriers. We will continue to help build safe infrastructure.

Vision of being useful in the event of a disaster as well as in counter-measures against deterioration

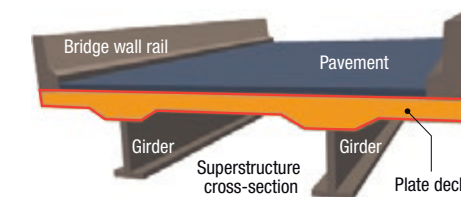
Bridges are essential for our life and the economy. However, they are not only aging but also subject to increasing load due in part to the increasing traffic volume and larger size vehicles. In 2011, Nikkeikin Aluminium Core Technology Co., Ltd. built the first bridge in Japan that uses aluminum plate deck in a project for repairing, and extending the service life of, an aging bridge on the premises of the Kambara Complex of Nippon Light Metal Co., Ltd. In 2015, the company's

aluminum plate deck for driveways was adopted for the first time for a temporary bridge of the Ministry of Land, Infrastructure and Transport, which is used in the event of an emergency. This temporary bridge is a variable bridge with maximum length of 60 meters and is used in places where a bridge has been washed out due to an earthquake, flooding, or other disaster. It can be installed within three days, compared with the one or two months required for the installation

of a conventional temporary bridge. Members of the aluminum plate deck are unitized, so they can be brought in and assembled without using large heavy equipment. Accordingly, bridges can be set up in mountainous areas or in locations with limited space.



Bridge with aluminum plate deck (in the premises of Kambara Complex of Nippon Light Metal Co., Ltd.) Many large vehicles cross this bridge for shipments and deliveries.



Cross-section of the bridge



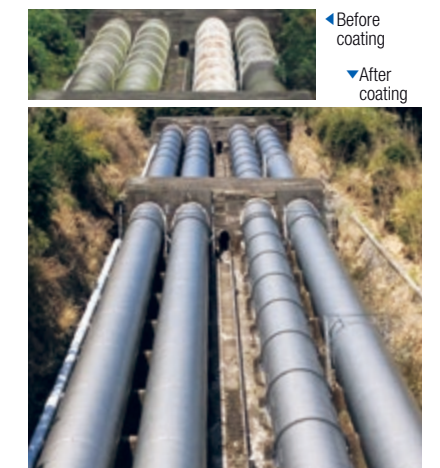
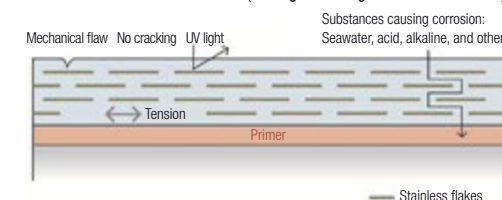
Temporary bridge for use in emergencies (Kinki Regional Development Bureau, Ministry of Land, Infrastructure and Tourism)

Vision of protecting infrastructure from rust with coatings

Steel structures installed along the coast deteriorate quickly due to rust. Accordingly, they are required to have structures and a quality that allow them to endure the harsh conditions. Toyo Aluminium K.K. has developed a coating containing stainless-steel flakes, inspired by the

laminated structure seen in objects such as abalone shells, which remain unbroken even when they are beaten with a hammer. This coating creates a hard membrane, which is enabled by the fine stainless-steel flakes it contains. The membrane makes the coated surface resistant to cracking. It is capable of preventing infrastructure from deteriorating due to seawater, weather, and the like. Used for the iron pipes of bridges and hydropower plants, exterior walls of buildings, and other structures, this product is helping to extend the maintenance cycle of these structures.

Illustration of structure's surface (coating containing stainless-steel flakes)



Penstocks of the second power plant of the Kambara Complex of Nippon Light Metal Co., Ltd., which were repaired using the coating containing stainless-steel flakes. The penstocks are unusually close to the coastline, being only 750 meters away. In addition, there is no building or any other structure to shield the penstocks from sea breezes. This had made them prone to corrosion and maintenance was a challenge.

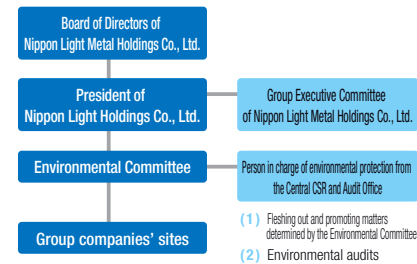
Aiming to realize a sustainable society by co-existing in harmony with the global environment

Environmental management system

The NLM Group Environmental Committee deliberates and decides upon basic measures such as action plans related to the Group's environmental management. The committee consists of officers of Nippon Light Metal Holdings Co., Ltd., presidents of NLM Group companies, and other members. Matters determined by the Environmental Committee are fleshed out by the environmental control segment, which serves as the secretariat of the committee, made known at meetings of environmental practitioners, and implemented at factories and offices (sites*) through internal coordination of the group.

*Sites: Scope of application of the environmental management system

Environmental management system



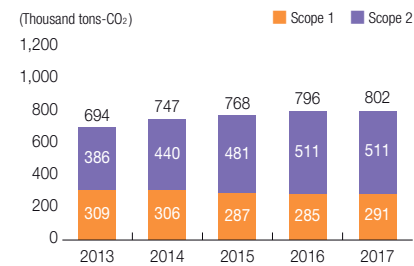
* 46 sites of 24 companies in total (scope of environmental management in Japan) (As of July 31, 2018)

Greenhouse gas emissions (Japan)

Greenhouse gas emissions from the NLM Group's sites in Japan in FY2017 increased 0.7% year on year to 802 thousand tons. Although we worked on energy-saving activities, the emissions increased slightly because the amount of required energy increased due to an increase in production.

We will continue striving to reduce greenhouse gas emissions through such initiatives as equipment efficiency improvement, reduction of energy loss, and productivity improvement.

Greenhouse gas emissions (Japan)



*Boundary: 24 consolidated subsidiaries in Japan

*The following CO₂ emission factors were used for the calculations.

Electricity: The CO₂ emission factor with T&D losses of each previous fiscal year announced by the Federation of Electric Power Companies of Japan and the Electric Power Council for a Low Carbon Society

Fuel: CO₂ emissions as per heat value and calorific value for each fuel, which are set forth in the Ministerial Ordinance for Calculation of Greenhouse Gas Emissions Associated with Business Activities of Specified Emitters

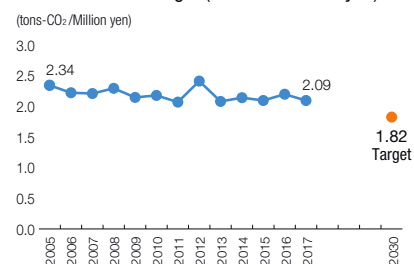
*CO₂ emissions associated with the hydroelectric power generated at the Kambara Complex of Nippon Light Metal Co., Ltd. are calculated with the above CO₂ emission factor for electricity for each year.

*The target and actual values do not include emissions caused by chlorofluorocarbons and their alternative.

New voluntary action plan

The NLM Group developed a new voluntary action plan to reduce the greenhouse gas emission intensity per unit of sales to 1.82 tons-CO₂/million yen by FY2030. We will evaluate the effect of our energy-saving activities appropriately by setting a target greenhouse gas emission intensity. We will continue working to reduce greenhouse gas emissions.

Greenhouse gas emission intensity per unit of sales and new target



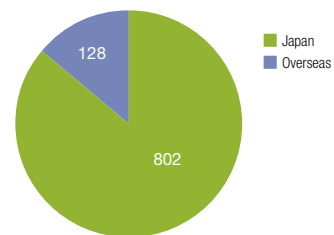
Greenhouse gas emissions including those from our overseas sites

At the NLM Group, we strive to collect data

on the greenhouse gas emissions from our overseas production activities. In FY2016, we started collecting data on the emissions from all our overseas sites. In FY2017, the emissions were found to have decreased 7.2% from the previous fiscal year, to 128 thousand tons.

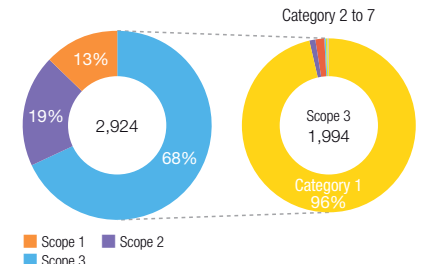
In addition, in FY2017, we began to calculate greenhouse gas emissions by obtaining the latest CO₂ emission factors that are appropriate for the conditions of each country, aiming to improve the precision of measurement of our overseas greenhouse gas emissions.

Greenhouse gas emissions including those from our overseas sites [ktons-CO₂]



*For calculating CO₂ emissions related to electric power purchased overseas, we use the latest CO₂ emission factor of each country that is shown in CO₂ Emissions from Fuel Combustion 2017, which was published by the International Energy Agency (IEA).

Greenhouse gas emissions including Scope 3 emissions (FY2017 emissions including those from our overseas sites) [ktons-CO₂]



Scope 1: Direct greenhouse gas emissions by a company
 Scope 2: Indirect greenhouse gas emissions by a company attributed to the use of energy including electricity
 Scope 3: Indirect greenhouse gas emissions by a company in its supply chain

Achievement of zero environmental accident

For environmental incidents and emergency



On-site checks



On-site audits

responses to such incidents, the NLM Group has developed and operates a quick reporting system in Japan and overseas.

We have received ten environmental complaints* (four in Japan and six overseas).

We respond to complaints with action that includes measures for preventing recurrence, with cooperation among people from the responsible site and the environmental control segment. We also extend the countermeasures to other sites in Japan and other countries that have equipment similar to that involved in the complaint.

In addition, we regularly hold briefings for local residents at each site to disclose the results of the measurement of water, atmosphere, and the similar elements, explain our environmental

measures, and give them a factory tour. We take these and other measures in our efforts to communicate with the local community.

In FY2017, there was no lawsuit, penal charge, or forfeit related to the environment. Further, the number of accidents* related to the environment was 0 for the first time since we began keeping statistics in 2005.

Environmental audits

At the NLM Group, we conduct regular environmental audits of 46 sites in Japan, separately from the audits under ISO 14001, in accordance with our environmental management rules, with the leading roles played by the environmental segment of the group. The environmental audits consist of two initiatives, a paper-based audit

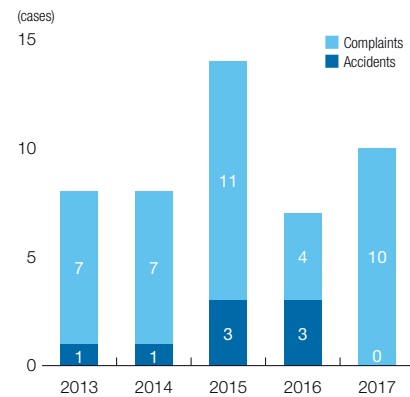
conducted by using a dedicated survey slip and an on-site audit. In FY2017, we conduct on-site audits of 18 sites. Through these audits, we strive to improve the level of environmental management in our production activities.

We also conduct audits of our overseas business locations as well as those in Japan. In FY2017, we conducted environmental audits at two overseas sites.

Development of environmental human assets

At the NLM Group, we believe that developing and securing human assets for the group's environmental segment is important for preventing environmental accidents and complying with environmental laws and regulations. Consequently, we run various environmental training programs that are appropriate given the nature of the work at each site. With respect to environmental practices, we hold a meeting of environmental practitioners twice each year. Through this meeting, we share improvement information about environmental management among companies and factories and extend excellent initiatives at particular sites to other sites, to improve the efficiency of our environmental protection activities. We also hold training sessions on laws and regulations twice each year, thereby supporting compliance with laws and regulations. We also have environmental practitioners from other sites participate in on-site environmental audits to acquire knowledge, in an effort to improve the level of our environmental management. In FY2017, a total of 44 environmental practitioners participated in on-site audits of other sites.

Number of environmental troubles that occurred



* Complaints: Number of complaints (about odor, noise, or the similar event) lodged by external parties

* Accidents: Environmental issues that have an impact outside the site (such as leakage of oil or chemicals)



Meeting of environmental practitioners

Environmental initiatives in the Kingdom of Thailand

As a result of the overseas expansion of the NLM Group, environmental initiatives are taken locally in various countries and regions. Among them, we pursue advanced environmental initiatives in the Kingdom of Thailand.

Thailand has rules related to the atmosphere, water, soil, waste, and other elements that are as strict as, or stricter than, the relevant laws and regulations of Japan. Each site in Thailand has introduced environmental management based on ISO 14001 to comply with laws and regulations and to systematically address environmental protection. In addition, we hold a meeting of environmental practitioners in Thailand each year and share information about important matters and case examples of accident and environmental improvement, so as to reconfirm and follow the environmental policy and other policies of the NLM Group.

Meeting of environmental practitioners in Thailand

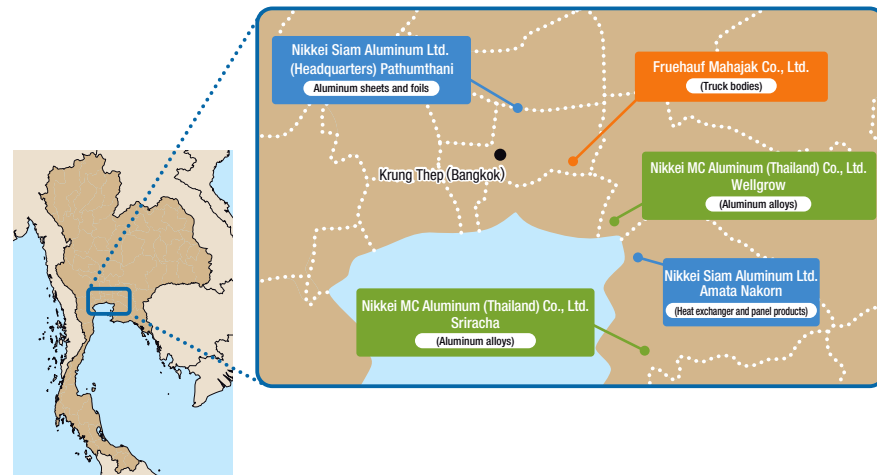
In FY2017, the meeting was held in November, with participation of environmental practitioners from five sites of three companies.

At the meeting, participants introduced environmental protection activities at each factory and shared information about Thailand's environmental laws and regulations. This time in particular, participants had lively Q&A and discussions about energy-saving activities, soil and groundwater contamination, and wastewater management, which are priority themes of each site, thereby sharing information about activities at each site and expanding the activities to other



Meeting of environmental practitioners in Thailand

Map of Thailand and locations of our factories



sites. We will continue to hold this meeting in Thailand and strive to reduce environmental risks in the country.

Environmental protection activities at Nikkei Siam Aluminum Ltd.

Nikkei Siam Aluminum Ltd. has factories in Pathumthani and Amata Nakorn, where it manufactures and sells aluminum sheets as well as foils and heat exchangers. The company also designs, manufactures, and sells panels for pre-fabricated refrigerators and freezers and clean rooms at these factories.

The following are part of the environmental protection activities at Nikkei Siam Aluminum Ltd.



Amata Nakorn factory

(1) Amata Children Day

Employees of the Amata Nakorn factory participate in the Amata Children Day with

employees of other companies on the industrial estate. At this event, they teach children the importance of the environment through an activity of making plates using banana leaves. They also interact with residents and other companies in the local area.



Plates made of banana leaves



Booth of Nikkei Siam Aluminum Ltd. at the Children Day

(2) Use of waste wood

At our factories, we make tables and benches for cafeteria by using waste wood from wooden boxes generated after parts to be used at the factories are carried in. We donate the tables and benches to a neighborhood elementary school. In FY2017, we donated eight tables and 16 benches.



The elementary school to which we make donations



Tables and benches made by using waste wood



Tables and benches being made at the factory

(3) Use of FSC-certified products

We have replaced wiping paper and tissue paper used in our factories with FSC-certified products, thereby contributing to protecting the world's forests.

* FSC certification: A certification granted to wood products which are produced with consideration for the protection of forest environments and in a way that is profitable for local communities and economically sustainable.

(4) Interactions with the government and local communities

At the Pathumthani factory, we invite government officials and local residents to tours of the factory and hearings about our environmental initiatives, in an effort to communicate better with the local community and government.



A tour around the factory

Voice of a person in charge



Manager, Human Resource and General Affairs Division, Nikkei Siam Aluminum Ltd.
Pairin Srirajak

At the Amata Nakorn factory of Nikkei Siam Aluminum Ltd., where I work, we manufacture energy-efficient all-aluminum heat exchangers and non-HFC insulation panels. I am in charge of personnel affairs, environmental management systems, and the promotion of CSR. I have been working at this factory for seven years.

At our workplace, we engage in various activities with the aim of establishing a green culture. We will continue to share the environmental policy of the NLM Group and engage in environmental protection activities and other CSR activities, always with consideration given to the natural environment.

Environmental protection activities at other sites

Nikkei MC Aluminum (Thailand) Co., Ltd.

The company carries out a coral-reef planting activity, which is aimed at maintaining environmental resources and communicating with local residents.

In FY2017, approximately 40 people took part in this activity.



Coral-reef planting activity

Mourning over the demise of Rama IX, we planted marigold and other plants on the industrial estate together with employees of other companies in the industrial estate.



Flowers of the planted marigold

Tree-planting activity for protecting mangroves



Employees who participated in the mangrove-planting activity

Fruehauf Mahajak Co., Ltd.

Planting of banana trees



Banana trees that were planted

Waste segregation activity

This activity began by following an example at another site, which was introduced at the meeting of environmental practitioners. This activity has raised awareness of the need for waste segregation.



Dust bins for waste segregation

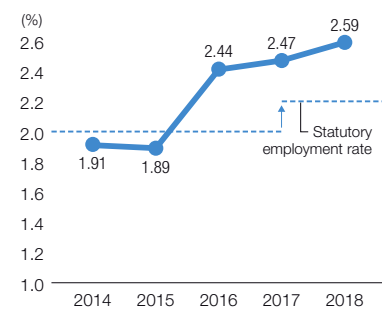
Building an inclusive society



At the NLM Group, we established Nikkeikin OhLis Co., Ltd. in October 2015 to enable more people with disabilities to work at more workplaces. Nikkeikin OhLis Co., Ltd. is actively recruiting people with disabilities and expanding the categories of jobs for disabled workers via special needs schools in Shizuoka and Tokyo, where its offices are located.

This article reports a recent discussion featuring Mr. Hiroki Watanabe, the principal of the central prefectural special needs school of Shizuoka (*Shizuoka-ken-ritsu Chuo Tokubetsu Shien Gakko*), President Ichikawa of Nikkeikin OhLis Co., Ltd., and Mr. Oshima, who is the vice president of operations and a founding member of Nikkeikin OhLis Co., Ltd. They talked about employment and jobs of people with disabilities and what they aim to achieve through the employment and jobs.

● Employment rate of persons with disabilities (Nippon Light Metal Co., Ltd.)



* Data as of June 1 in each year

The idea of an inclusive society that is common to education at special needs schools and corporate social responsibility (CSR)

Oshima: First of all, could you tell us about the education provided at special needs schools?

Watanabe: The educational activities of special needs schools in Shizuoka Prefecture are based on the idea of an *inclusive society*. Therefore, we want our students to grow into people who can participate in society voluntarily and provide

◆ Discussion Participants



Mr. Hiroki Watanabe

Principal of the central prefectural Special Needs Education school of Shizuoka (*Shizuoka-ken-ritsu Chuo Tokubetsu Shien Gakko*)
He cooperated with Nikkeikin OhLis Co., Ltd. in its recruitment activities. Since then, he has been our advisor in diversity education as well as employment.



Masakazu Ichikawa

President, Nikkeikin OhLis Co., Ltd.
Corporate Officer Central CSR and Audit Office, Nippon Light Metal Holdings Co., Ltd.



Akitsugu Oshima (Moderator)

Vice president of operations, Nikkeikin OhLis Co., Ltd.
Manager of Labor Section, Kambara Complex of Nippon Light Metal Co., Ltd.
He has been involved with Nikkeikin OhLis Co., Ltd. since its founding.

them with the support needed to grow in that way. We want them to find the significance of jobs given to them and attach importance to the process of mastering those jobs. I believe that the significance of the job that you have found will be the driving force for doing the job proactively and enrich your work life and private life.

Ichikawa: I am in charge of promoting CSR for the NLM Group. In thinking about promoting CSR, I face the issue of how companies and employees should be related to society as they live. It is said that CSR originates from the problem of high youth unemployment in Europe in the 1990s. Companies cooperated with governments, which called on them to employ high-priced young people of their own countries instead of cheap skilled workers flowing in from Eastern Europe. I think the idea of CSR is identical to that of an inclusive society itself in that corporate activities are promoted without excluding diverse people but with mutual support with them.

Nikkeikin OhLis Co., Ltd. inspires us and changes our corporate climate

Oshima: What roles does Nikkeikin OhLis Co.,

Ltd. play from the viewpoint of an inclusive society?

Ichikawa: Employees of Nikkeikin OhLis Co., Ltd. work together with those of Nippon Light Metal Co., Ltd. I think that, in the early days, some employees wondered how to communicate with those from Nikkeikin OhLis Co., Ltd. However, they integrated with each other naturally by greeting with each other when they arrived at work, playing football and participating in internal events during break time, and otherwise interacting. And the work of the employees of Nikkeikin OhLis Co., Ltd. has earned high marks. The scope of their work and workplaces expanded gradually, and now they are essential to the company. As for myself, I am encouraged when I see them work. I think that like me, many employees are inspired by those of Nikkeikin OhLis Co., Ltd.

Watanabe: When I saw graduates of special needs schools working, I felt that they were working with initiative, and not passively.

Ichikawa: At Nippon Light Metal Co., Ltd., we ask a special needs school to accept our new employees every year for practical training, which is included in our new employee training.

A new employee who participated in the practical training found that "I didn't know how I should interact with them and talk to them before I came to the school. When I actually interacted with them, however, I found that I don't have to be overly careful. Rather, I could move forward by treating them normally."

Watanabe: Those who have difficulty engaging with people with disabilities just don't know how to do so. They simply don't know how to talk to them and how to help them. They will gradually learn how to do it through experience. I think it is important that more people learn that in this way.

Ichikawa: Another new employee reviewed the training and said that "The boundary between people with disabilities and those without disabilities is not discrete but is rather gradational." The practical training seems to have led the new employee to feel that there is no clear boundary between the presence and absence of a disability, but people with disabilities and those without disabilities are on a continuous scale. The employee also seems to have found the basic attitude in communication, with which one tries to understand the other person. I feel that interactions with people with disabilities lead them to find the significance of demonstrating capabilities as a team of diverse people.

Let's find the strengths and weaknesses.

Oshima: Could you tell us your thoughts about issues surrounding employment of the disabled, including complaints of schools about companies, if any?

Watanabe: The concept of "disability" has been changing recently. In the past, all dysfunctions were treated as disabilities. However, we can say that those of us who wear glasses, for example, *have vision disability* when not wearing glasses. But they are not disabled as long as they wear glasses. People with disabilities only need different types of support. They can demonstrate their capabilities by receiving the types of support that they need. We call them "appropriate guidance and necessary support." If this point is applied to a company, just employing people with disabilities is not enough. The important point is how to make use of them after employing them, or how to bring out their capabilities after giving them physical and mental support. I think it is important to discover their useful points. Everyone has their strengths and weaknesses. We teachers say that we should try to find these strengths

and weaknesses.

Ichikawa: You mean that companies should also develop their employees and support them from this perspective, don't you?

Watanabe: However, people with disabilities must not be passive. They must not wait until people around them find those points. They must find the points on their own. The same applies to support. They must not think that they can do nothing without the support from people around them.

Sustainability brought about by diversity

Ichikawa: A keyword in corporate activities is *sustainability*. I think that, in sustainable business activities, the intention to make discoveries on one's own, set targets, and think about how to achieve the targets serves as the driving force of the company and leads to sustainability.

Watanabe: It think it is a mission of us as teachers to develop students into such persons, who can work hard at such companies. We therefore value *learning how to learn*.

Oshima: In business activities, the homogeneity of members tends to be required. I think it is also important to blend different people into members to prevent homogeneity from becoming entrenched. This requires the idea that people who are different from us are on an equal footing with us. The employment of people with disabilities involves impure motives. For example, they initially accept disabled people for a kind of welfare purpose or for the purpose of improving the rate of employment of persons with disabilities. Actually, however, we find that the organizational climate becomes softer when people with disabilities join our workplace.

Ichikawa: I felt that it is beneficial for us to create an environment where accepting graduates of special needs schools leads the company to make new discoveries, gives us a positive impact, and teaches us how a company should operate.

Oshima: Not only new employees but various other employees need to experience it, don't they?

Watanabe: School education is provided in a group setting, and education is the same as business in this respect. I think that an organization works effectively when each member is respected, not when all of its members are made to face the same direction.

Ichikawa: We call it "Team NLM."

Watanabe: At the school, we call it "Team School." That's something we have in common, isn't it?

Aiming to create a workplace where the capabilities of all members are used effectively

Watanabe: To educate children and students, special needs schools provide each one of them with the support they need. As for companies, employing people is not enough. I think companies need to think how to make effective use of the people they have employed. While they have mostly provided physical support, such as eliminating differences in level, psychological support will also be important going forward. I would like companies to discover how to make effective use of their employees and how to develop them.

Oshima: Concerning employment, we would like to increase substantial jobs to make Nikkeikin OhLis Co., Ltd. a larger company. I hope that the people involved will change through work, leading the company, and the world, to be friendlier than ever.

Ichikawa: We would like to recognize our distinct personalities, take responsibility and pride in our work, and establish a culture that permits each employee to demonstrate their capabilities without constraints. By doing so, we would like to help create an inclusive society where diverse people can demonstrate their capabilities. I would appreciate your continued support and cooperation.

Meaning of the name "Nikkeikin OhLis Co., Ltd."

The name "Nikkeikin OhLis Co., Ltd." was determined through an exchange of ideas among members of the company at the time of its founding. The name "OhLis" reflects our desire to make it a company where employees work with **One Heart**, in a **Lively** manner, and with **Smiles**.

The symbol mark of Nikkeikin OhLis Co., Ltd.



The NLM Group supports working mothers.



The first interviewee is Ms. Miki Toriumi from the Chemicals Division of Nippon Light Metal Co., Ltd.

At present, Ms. Toriumi is in charge of assisting overseas sales and importing and exporting operations.

-- What tips do you have for balancing childcare and work?

I often have to take leave suddenly, such as when my child has developed a fever. Therefore, I prioritize the tasks to do and try to handle them by counting time backwards. I have learned how tough it is to go through rapid changes in daily life, such as pregnancy, childbirth, and childcare. My values have also changed, and now I can enjoy my life, including the tough parts.

-- Could you give advice to future mothers?

You may feel uneasy about getting married and giving birth while continuing to work. This way of working does actually have some tough elements but also has twice as many enjoyable parts. There are diverse lifestyles to choose

We consider women to be key human assets, who support the Team NLM. We want our female members who have become mothers to be able to raise their children with a sense of security while continuing to work. For this purpose, we are improving our workplaces and establishing programs that allow mothers to work with peace of mind. We are also working to encourage male employees to participate in childcare proactively, creating relevant programs with the labor union and other entities. We recently interviewed two working mothers.

from. Please don't hesitate to try the one that suits you.



The next working mother is Ms. Mami Shirai from Nikkei Research and Development Center.

Ms. Shirai engages in research and development related to

chemical conversion technologies for anode foils

-- Which program do you use most frequently?

I often use the flexible time program. I use it when my child develops a fever suddenly and I'm contacted by the nursery. They often call me at 15:00 after nap time and around 16:00, but I don't have to take half-day paid leave thanks to the program. It therefore allows me to take paid leave when I need it, without worrying about how many days I have left.

-- What challenges do you face as a research staff member?

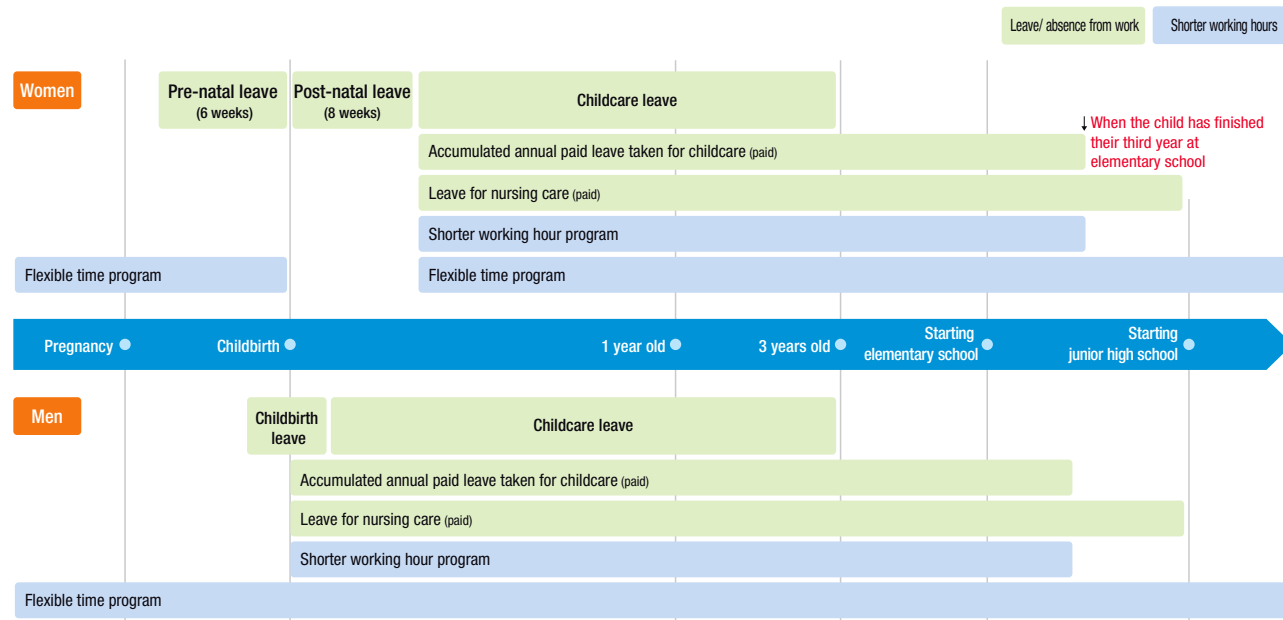
The work I do includes experiments. It takes



A luncheon of mothers working at the Tennozu district, which was also attended by mothers on childcare leave and their babies

about two to three hours to finish one experiment. Before I gave birth to my child, I could conduct an experiment without worrying about time, even after a meeting, for example. This is impossible now because I have to leave work at a scheduled time to pick up my child. In addition, the number of experiments I can conduct in a day is limited. Therefore, when I plan an experiment, I try to think harder than before about what experiment conditions will allow me to obtain effective data efficiently.

●Key programs that help employees to balance work and childcare, etc. (excerpt)



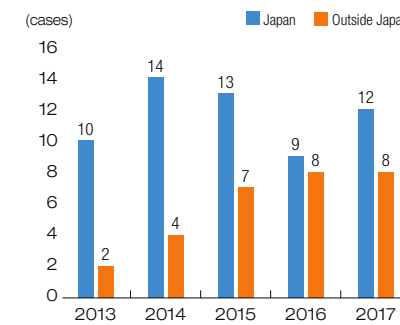
Aiming for complete zero accidents



● Workplace injury trends

In 2017 (calendar year), the number of cases of lost time injuries increased in Japan. The number remained unchanged outside Japan.

●Workplace injury trends (lost time injuries)



● The fourth mid-term course of action for safety and health

Based on the idea that safety comes before anything else, the NLM Group has developed the fourth mid-term course of action for safety and health and is taking steps that are appropriate for the conditions at each business location. Under this course of action, we have categorized tasks to do into those related to *field capability*, *management capability*, *technical capability*, and *health capability*, as well as *comprehensive*

capability which combines the four capabilities. We are aiming to improve each one of these capabilities to prevent workplace injuries.

For supporting priority business locations

At the NLM Group, we provide intensive support for specific business locations to improve the safety level of all business locations. Representatives from the Safety and Health Control Department of Nippon Light Metal Holdings Co., Ltd. visit these business locations once or twice each month to provide safety education and training, including training on risk assessment, together with employees. Safety education is varied in its content, and includes for instance instruction how to promote and operate daily activities for safety and health, laws and regulations related to labor safety and health, and safety measures for equipment. The education is intended for managers, supervisors, workplace leaders, and other personnel and is provided separately for each job class.

In the event of a lost time injury or a serious injury, representatives from the Safety and Health Control Department visit the business location where the injury occurred and conduct an onsite investigation and casualty analysis before formulating a measure for preventing its recurrence. They check the progress of the

measure a month later and visit the business location again six months later to confirm that the measure continues to be implemented. They also check if the measure needs to be expanded across the overall group, giving guidance to each business location as necessary.

For raising awareness of safety

At the NLM Group, we send a Prompt Injury Report when a workplace injury has occurred or nearly occurred in a business location of the group. The Prompt Injury Report is sent to all group companies. At each business location, the contents of the received report are reported to persons in charge in the field to prevent the occurrence of a similar injury. In addition, the details of measures for preventing the recurrence of the injury are subsequently introduced throughout the group in the same way as the Prompt Injury Report.

For enhancing activities for preventing accidents

At the NLM Group, we provide risk assessment training as an initiative to prevent workplace injuries. The training session, which consists of a lecture and practical training, was held 15 times in 2017 with participation of 324 employees.

The training also includes case studies of workplace injuries that actually occurred. We repeat training to imagine situations where workplace injuries will soon occur and thereby identifying potential risks, in an effort to develop the sensitivity to discover risks before an injury occurs.

●The fourth mid-term course of action for safety and health of the NLM Group

Mid-term course of action	2017	2018	2019
Enhance comprehensive capability	Raising awareness of safety and strengthening activities for preventing accidents		
	Support for priority business locations		
Enhance field capability	Activities for improving risk sensitivity and uncompromising actions for not overlooking risks		
	Promoting safety activities that are created in the field		
Enhance management capability	Conducting audits (of all business locations) and expanding the Safety Management System (SMS) certification to the overall group		
	Developing SMS promoters and safety managers internally and providing internal training		
Enhance technical capability	Expansion of equipment safety standards throughout the group		
	Reducing risks by means of risk assessment (training and support for practices)		
Enhance health capability	Continuing to take countermeasures against back pain and heat stroke and measures for preventing passive smoking		
	Continuing to take mental health measures and infection control measures		

Safety activities based on teamwork



Risk assessment training

Tireless efforts to maintain and foster high quality



Quality management system

In recent years, Japanese manufacturers have been responsible for a spate of problems that have seriously undermined confidence in the industry.

At the NLM Group, we conducted a comprehensive check to see if any similar problem has occurred in the group, and we confirmed that none have.

It was found in January 2008 that the NLM Group had sold a product with specifications that differed from the certified specifications of fireproof materials. We renovated all of the properties to which the product was delivered, thereby replacing the product with a new one. Deeply regretting this incident, we have thoroughly reviewed the quality assurance system of the entire group, so as not to repeat the same mistake.

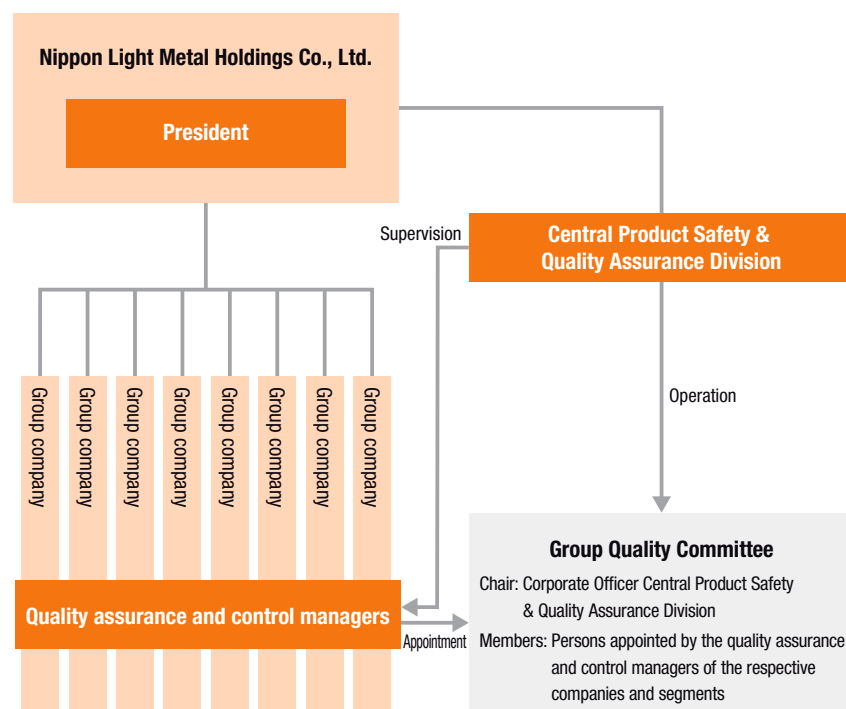
The six key points of the review are as follows:

- (1) Ensure the independence of quality assurance departments.
- (2) Where a problem has occurred, report it to the relevant people promptly and deal with it.
- (3) Examine each product and service from multiple perspectives before selling it.
- (4) Comply with laws, regulations, and standards related to products and services.
- (5) Strengthen cooperation between quality assurance departments in the group.
- (6) Check that the initiatives (1) to (5) above are implemented properly.

(1) Ensuring the independence of quality assurance departments

To ensure the independence of quality assurance departments, we established the Central Product Safety & Quality Assurance Division under the direct control of the president, as an organization that oversees the quality assurance departments of all companies and segments.

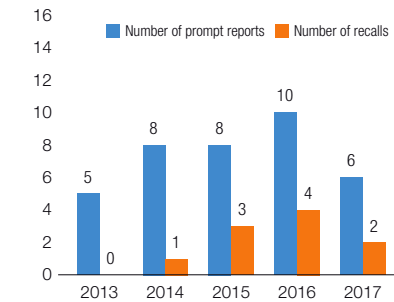
Organizational structure for quality assurance and control activities



(2) Where a problem has occurred, report it to the relevant people promptly and deal with it

We have established a rule requiring that, when a quality problem has occurred, information about the problem is provided promptly to the overall group regardless of who is responsible for the problem. In FY2017, six problems were reported.

Number of serious quality-related matters that were reported



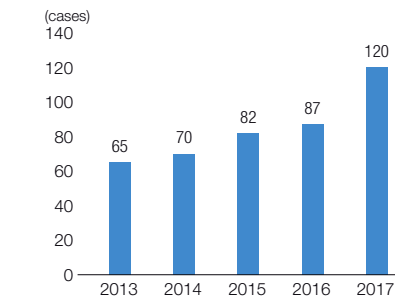
(3) Screening Committee Meeting Examine each product and service from multiple perspectives before selling it

The Screening Committee Meeting meets whenever a product is launched or there is an important change, such as a change in the material or manufacturing process of a mass-produced product. Reviews are conducted again and again until the new product, material, process, or any other subject is deemed acceptable.

This initiative was introduced in 2008 and has now been entrenched in the overall group.

The Screening Committee Meeting examines the subject from multiple perspectives to ensure compliance with laws and regulations, product safety, and conformity to quality requirements. By applying their specialized knowledge, members of the council check such points as whether the adopted purchase/ production system, process, cost, and inspection method enable the specifications promised to customers. If impossible specifications are detected, we must improve the process, negotiate with the customer to change the specifications, and complete other tasks. Members of the Central Product Safety & Quality Assurance Division participate in

Number of Screening Committee Meeting meetings



meetings of the Screening Committee Meeting as necessary to check whether the council is operating appropriately, for example.

(4) Comply with laws, regulations, and standards related to products and services

November is quality month, and each year we conduct full quality checks within the NLM Group. We also conduct special full checks of the compliance of our systems and management programs when a quality accident has occurred at a non-NLM Group company or in a similar case, taking it as a warning to us.

In FY2017, we conducted full quality checks based on the following three themes:

1. The legality of our products and services
2. The conformity of our products and services to customers' specifications
3. Appropriate handling of inspection data

Focusing mainly on the mechanism of our production, we conducted full checks of rules related to the production process at all facilities, from production instruction to shipment, and the status of operation of the rules. As a result, we confirmed that there is no problem with respect to the above themes.

(5) Strengthen cooperation between quality assurance departments in the group

To continue to implement these measures, we needed to establish a quality assurance system that applies to all business departments in the group in a cross-sectoral manner. We therefore set up the Group Quality Committee chaired by the director in charge of quality. This committee meets twice a year.

At the meetings, the participants receive information about the group's quality policies, approve the quality management promotion plan, share information about quality problems that have occurred in the group and the results of quality audits, discuss the problems and the result, and engage in other activities. In FY2017 the participants held a group discussion under the topic "importance of customers' specifications and things that quality assurance



A Quality Committee meeting

departments should do."

(6) Check that the initiatives (1) to (5) above are implemented properly

We conduct quality audits of all of our domestic and overseas facilities every year to check if measures (1) to (5) continue to be implemented. In these audits, we share points needing improvement related to quality with the audited departments in question with the aim of improving the level of their quality assurance. In FY2017, 93 problems were pointed out and 123 suggestions were given at 66 facilities. In addition to the existing audit items, we checked the conformity of our products to specifications



A quality audit

Voice of a person who was assigned to the Central Product Safety & Quality Assurance Division



The NLM Group has plants engaging in various operations and I feel that there are diverse views on quality assurance. I would like to be a quality assurance person who can always think from customers' perspective, by obtaining knowledge through interactions with quality assurance officers from those plants.

Assigned from: Nagoya Plant, Nippon Light Metal Co., Ltd.
Mikio Tanaka

Voice of a person who was assigned to the Central Product Safety & Quality Assurance Division



Before I was assigned to this division, I was in a position to receive quality audits. I would like to use this human resource exchange as an opportunity to acquire the perspective of those who conduct quality audits and to be capable of finding things that I couldn't find before and making improvements.

Assigned from: Nikkei Extrusions Co., Ltd.
Kenichi Kitazoe

required by customers and confirmed that none of the audited facilities have any problems.

Quality Assurance Guidelines

The aluminum industry is not immune from the quality problems that surfaced in the Japanese manufacturing industry last year. Recognizing this, the Japan Aluminium Association has developed the Quality Assurance Guidelines. These guidelines are aimed at "preventing the occurrence of inappropriate conduct and maintaining the status without such conduct." The NLM Group participated in the development of the guidelines as a working member of the association.

Currently, we have identified our issues within the group and are taking measures to conform to the guidelines.

Fostering human assets for quality assurance

The Central Product Safety & Quality Assurance Division provides quality training, which is aimed at improving the level of quality assurance of the overall group. In FY2018, we started an exchange of personnel in charge of quality within the group as a new initiative, in addition to continuing the existing group training and voluntary quality training.

In this program, the Central Product Safety & Quality Assurance Division accepts employees dispatched from group companies and has them engage in practical work at the division, aiming to equip them to play a role in the quality assurance of the group.

Initiatives we take in local communities to support human resource development

At the NLM Group, we apply our professional knowledge, skills, and experience to support local governments, schools, and other entities in their efforts to develop the human resources needed in each local community.

Lecture and science experiment class

At the NLM Group, we provide local children as the future leaders of each community with opportunities to develop a career perspective through interactions with professionals. We also hold activities to help them understand the relationship between companies and the local community.

The Shimizu Plant of Nippon Light Metal Co., Ltd. dispatch its employee to a local junior high school as a lecturer, who told students how a chemical plant works and what workers do at the plant. In addition, at the lifelong learning project hosted by the local government, the Shimizu Plant gave a science experiment class, which allowed elementary school students to enjoy learning science.



Employee visiting a junior high school as a lecturer

Promoting employment of people with disabilities

Nikkeikin OhLis Co., Ltd. is a special subsidiary* of the NLM Group, which was established to promote the employment of people with disabilities. This company dispatches its employees to the special needs schools from which they graduated, to explain about their work and the mental attitude they have as working members of society. They also tell students about the importance of working. The company also accepts student apprentices from special needs schools on a regular basis. In FY2017, the

company accepted 15 apprentices, who experienced work such as cleaning in the Nikkei Research and Development Center, for a two-week training period.

* A special subsidiary is established to promote and stabilize the employment of people with disabilities.



An employee explaining about his work at a special needs school

Support for acquisition of job skills

We contribute to the creation of employment and job assistance in local communities through activities that we carry out using the various skills of our employees.

At the Nagoya Plant of Nippon Light Metal Co., Ltd., we dispatch lecturers to special training sessions on arc welding, which are organized by the Ichinomiya Labor Standards Association. We also offer venues for practical training and provide simulation training using the equipment of the Nagoya Plant.

At Nikkei New Business Co., Ltd., which manages the business establishments of the NLM Group, certified specialists in building cleaning, who handle building maintenance operations, serve as lecturers at classes for trainers of sanitary workers, which are hosted by the Niigata Building Maintenance Association, and classes for building cleaning workers that are given at



A lecture class

the Niigata Prefectural Silver Human Resources Centers Association.

Cooperation in fire prevention and disaster control events

In Shizuoka City, a fire extinguishing competition is held by the local disaster prevention association each year to raise citizens' awareness of fire prevention and disaster control. Participants compete over their operation skills in categories including small pump, indoor fire hydrant, and water extinguisher.

Selected members from the Kambara Complex and Shimizu Plant of Nippon Light Metal Co., Ltd. take part in this competition each year and fully demonstrate the skills they have developed through daily training. These facilities also cooperate in the operation of the event by dispatching their members as judges and officials.

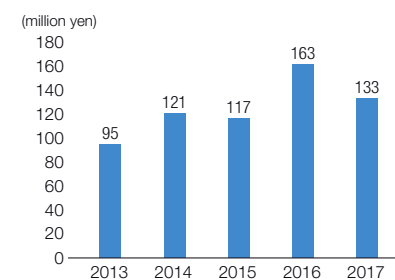


The fire extinguishing competition

Social contribution accounting

In FY2017, we took part in 282 local programs including the above, and expenses for social contribution totaled approximately 133 million yen.

Expenses for social contribution



Aiming for trusted governance and cooperation within the group



NLM Group

Nippon Light Metal NLM HD Co., Ltd. (the NLM HD) is the holding company that is listed on the First Section Market of Tokyo Stock Exchange, Inc. We have formed the NLM Group, which consists of 76 consolidated subsidiaries including Nippon Light Metal Co., Ltd. and Toyo Aluminium K.K. as the core operating companies, and 15 affiliates accounted for by the equity method (as of March 31, 2018). At the NLM Group, we operate businesses with a focus on the manufacture and sales of aluminum products and related products.

The group's governance structure

The NLM Group's basic approach to management is systematized as the Group Management Policy, which consists of three pillars and 13 basic policies.

"Nippon Light Metal Holdings" "management policy" Search

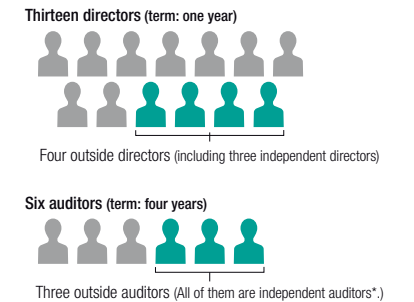
Matters concerning the NLM Group's governance are managed based mainly on rules on the group stipulated by the NLM HD, while

the autonomy of each company is respected. In addition, decisions on matters that affect the overall group are made after they are examined from multiple perspectives by the Group Executive Committee, which consists mainly of directors of the NLM HD. Among these matters, those that are especially important are discussed and determined by the Board of Directors of the NLM HD.

The Board of Directors of the NLM HD consists of 13 members including four outside directors (including three independent directors*). They met 12 times in FY2017. To operate the Board of Directors flexibly and ensure fruitful discussions at its meetings, the NLM HD has separated management supervision from business execution by introducing an executive officer system.

In addition, the NLM HD has set up a Board of Auditors to maintain the institutional independence of the auditing function. The Board of Auditors consists of six members including three outside auditors and met 11 times in FY2017. In addition, it has one full-time employee who is in

charge of assisting in auditing operations. (All of these figures are as of June 30, 2018).



* Defined by of Tokyo Stock Exchange, Inc. as "an outside director/auditor who is unlikely to have conflicts of interest with general shareholders"

Communication with stakeholders

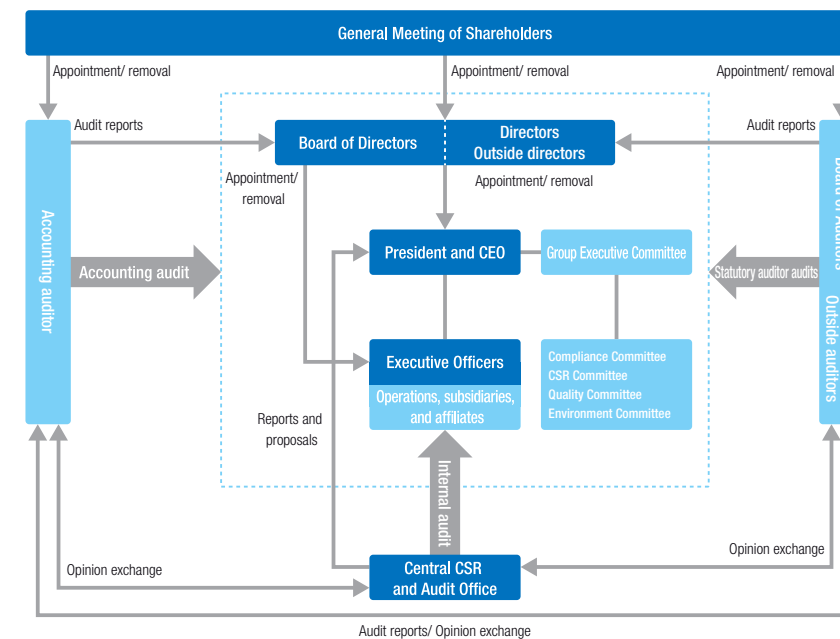
At the NLM Group, we value the sharing of information and exchange of opinions with our stakeholders, which we do by communicating with them. We respond to the opinions we receive by reporting them to the persons responsible for the relevant business and to management, so that they will be reflected in business management.

We share issues and exchange opinions with our employees via the labor union and other entities. We also communicate daily with individual employees through interviews, meetings, and events.

With regard to customers, salespersons and those responsible for each business share issues and exchange opinions with customers through daily business communication. With business partners, purchasing officers and those responsible for each business share issues and exchange opinions with them through daily business communication, briefings for business partners, and other opportunities.

We communicate with local communities by participating in various local events and inviting local residents to events held at each business facility, for example. In areas where we have a relatively large environmental or other impact, we share issues and exchange opinions with local residents by holding regular and irregular briefing sessions and creating other opportunities.


Governance structure chart



We share issues and exchange opinions with our shareholders and investors through general meetings of shareholders, earnings presentations, tours of our facilities, individual meetings, and other opportunities.

In addition, we disclose our CSR Report, Annual Report, and various other communication tools on our website and via other media and share issues and exchange opinions via telephone, e-mail, and other means. We also revise our communication tools constantly. For example, we improve the accessibility of our official website and provide information in languages other than Japanese.

● Website
<http://www.nikkeihinholdings.com/csr/> (English)



Internal control

The Board of Directors of the NLM HD has determined the Basic Policy on the Development of the Internal Control System and is striving to apply the policy uncompromisingly. In addition, the Board of Directors receives a report about the status of internal control every two quarters and provides appropriate supervision and instructions.

Risk management

Under the risk management system of the NLM Group, risks are classified into strategic risks¹, operational risks², and hazard risks³. Above all, we specify priority risks mainly among operational risks, and we have set up a supervisory department at the NLM HD to respond flexibly to individual risks. The supervisory department handles risks by cooperating with business departments.

The Board of Directors of the NLM HD receives a report on the overall risk management situations twice a year and evaluates the contents of the report before giving the necessary instructions.

In FY2017, we focused our efforts on such activities as strengthening the information management system of the overall group, developing group rules on personal information protection

associated with changes to the law, and developing a business continuity plan.

¹ Business strategies, market, economic fluctuation, legal system reform, and others
² Defective product or service, environmental accident, and others
³ Natural disasters, accidents, and others

Priority risks



Internal control over financial reporting

To ensure appropriate financial reporting, we have established and operate an internal control system over financial reporting. For this purpose, we have appointed an internal control executive and an internal control promoter at each group company and segment and promote appropriate establishment and operation of internal control system. The evaluation is undertaken by auditing departments that have a certain level of auditing capabilities and whose independence is secured. The status of the establishment, operation, and evaluation is reported to auditors, accounting auditor, and the Board of Directors of the NLM HD and corrections are made as needed.

Compliance Committee

The NLM Group has set up a Compliance Committee, which is chaired by the president and CEO and consists of the members of the Board of Directors of the NLM HD. The Compliance Committee prepares a compliance promotion plan every year and checks the status of implementation of the plan on a quarterly basis.

Compliance Codes

The codes of conduct of the NLM Group are summarized in the Group Compliance Codes, which require all officers and employees of the group, including those outside Japan, to comply with laws and regulations, corporate ethics, and business etiquette, act sensibly, and

communicate with stakeholders proactively, for example. To inform officers and employees thoroughly of these codes, a handbook containing them is distributed to all of them so that they can carry it around.

Moreover, to promote understanding of, and inform employees thoroughly of, the codes of conduct, a compliance meeting is held at each workplace twice a year for repetitive learning. At the meetings, participants discuss problems faced in the workplace, case examples of compliance violations that occurred at other departments, and other subjects. In FY2017, a total of 2,102 workplace meetings were held, with 20,237 participants in total (participation rate: 92%).

Group Compliance Codes

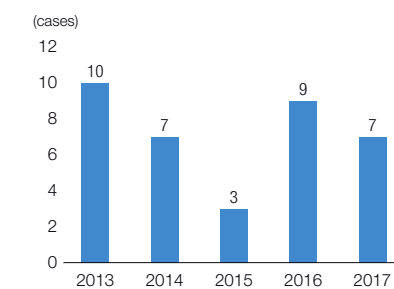
- Chapter 1. Promotion of compliance
- Chapter 2. Responsibilities for employees
- Chapter 3. Basic internal rules
- Chapter 4. Responsibilities for customers and business partners
- Chapter 5. Responsibilities for society
- Chapter 6. Responsibilities for shareholders and investors

Whistleblowing system

A whistleblowing system has been introduced to major group companies. In addition, the *NIKKEI HOTLINE* has been set up as the group's common contact office for whistleblowers. *NIKKEI HOTLINE* provides consultation or handles whistleblowing in about 20 cases every year.

A hotline (opinion box system) has been introduced to major overseas group companies as well. The status of operation of the system is reported to the secretariat of the Compliance Committee every two quarters.

● Number of cases that were reported to *NIKKEI HOTLINE* and where investigations were conducted in response



Activating communication in Team NLM!

We recently spoke with Mr. Masato Ono, who has been involved in the management of Nippon Light Metal Co., Ltd. as an outside director since prior to the establishment of the NLM HD. We asked him for his opinions about corporate governance of the NLM Group and other issues.



What are your feelings about the management structure of the NLM Group?

I think it was a good move to disperse the risk of the wide range of business fields by adopting the holding company structure. I think the system, under which the NLM HD develops strategies and group companies execute businesses under the umbrella of governance by NLM HD, is working.

Could you tell us what problems you see in our modality of governance?

While the NLM Group has a range of segments and fields as a manufacturer, I have the impression that communication between segments is somewhat insufficient. If the heads of the different companies and business departments are those who have moved up through the risks in the same field or segment, it is difficult for them to express their opinions to other segments partly because they are responsible for the earnings of each. To overcome these problems, you are making improvements through initiatives such as cross-functional collaboration. However, I don't think they are enough. Moving forward, you will need further interactions between human assets from different fields.

Could you tell us your opinions about our initiatives for improving the effectiveness of governance?

These initiatives include inspections of production sites, interactions between outside directors, and free discussions. It is very good to have opportunities to inspect work sites.



Interactions with the other outside directors are very meaningful because they have experience in diverse fields. I think it is also very good that those people have opportunities to express their opinions proactively, separately from meetings of the Board of Directors. We look forward to exchanging opinions and having discussions from a standpoint and viewpoint that are different from those of board members who are in charge of specific work sites.

Could you tell us what you keep in mind as an outside director?

I think my duty is to give opinions concerning the modality of governance based on my experience as a business manager. By rights, internal directors need to be more proactive in discussing not only issues in their own segments but also their impact on the overall company and other segments, something that I think is difficult in practice. I believe, however, that if this issue is overcome, discussions at the Board of Directors' meetings will be even more effective and the role of the meetings as a forum for business management will be more significant.

Please give a message to employees.

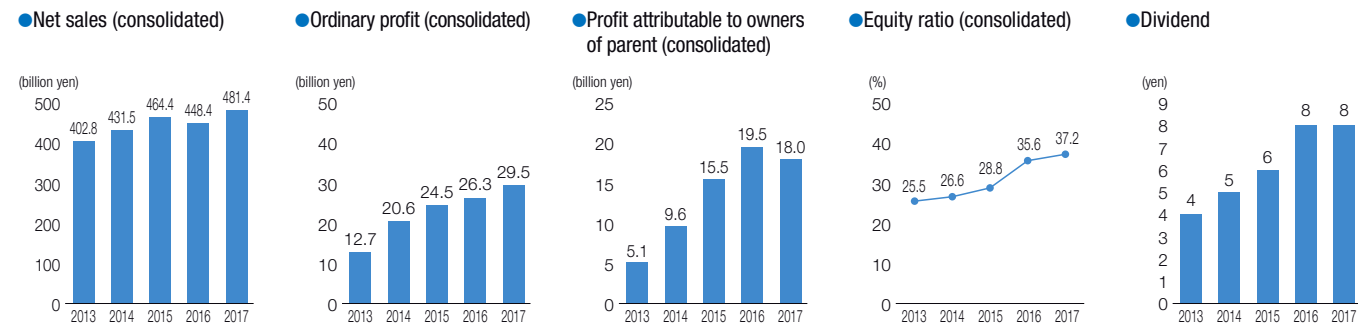
Please try to think what the vision set by the president, "groundbreaking innovator of aluminum and beyond as Team NLM," means to you. You are young and flexible with dreams for the future. As such, I ask you to think about the future of Team NLM, with the pride of being a member of a comprehensive aluminum manufacturer. This requires not only internal communication at each company but also communication within the overall group. I believe that the first step to realize the president's vision is taken only when each member of Team NLM communicate more actively with others.

Interviewer: Kaori Kusunoki (Legal Dept., Nippon Light Metal Co., Ltd.)

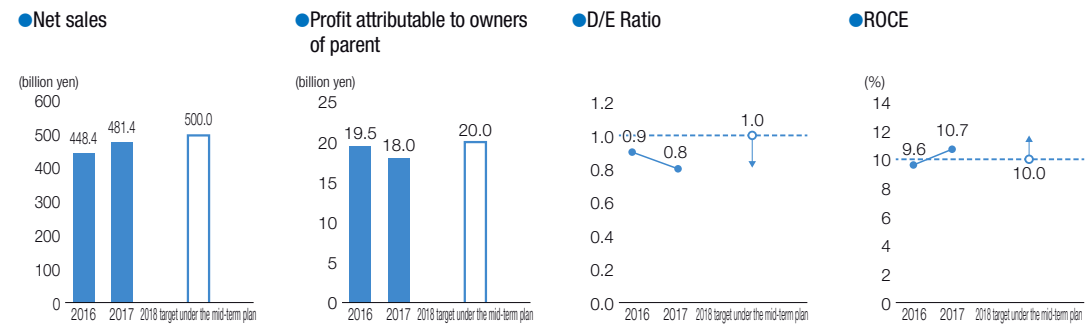
Corporate overview

Trade name:	Nippon Light Metal Holdings Company, Ltd. (Abbreviated to "NLM HD")	Established:	October 1, 2012
Securities code:	5703	Paid-in-capital:	46,525 million yen
Head office location:	Nippon Light Metal Holdings Company, Ltd. 2-2-20 Higashi Shinagawa, Shinagawa-ku, Tokyo	Sales:	481,439 million yen (consolidated)
		Number of employees:	12,855 (consolidated)

*All data are in FY2017 or as of March 31, 2018.



Targets for key indicators of the mid-term management plan and actual achievements



Global network

Alumina, Chemicals, and Ingot Business | Sheet and Extruded Products Business | Fabricated Products and Other Businesses | Foil and Powder Products Business

Toyol Europe

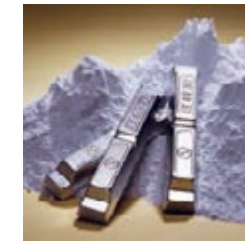
- Nikkei MC Aluminum (Kunshan)
- Nikkei MC Aluminum (Thailand)
- Nikkei Singapore Aluminium
- CMR Nikkei India
- Guangxi Zhengrun Nikkei High Purity Aluminum Technol
- NI Nikkei Shenzhen
- Nikkei (Shanghai) Body Parts
- Nikkei Siam Aluminium
- Nikkei (Shanghai) International Trading
- Shandong Nikkei Conglin Automobile Parts
- Nonfermet International (China-Canada-Japan) Aluminium Co., Ltd.
- Changchun Nikkei Railway Vehicle Equipment
- Toyo Precision Appliance (Kunshan)

- PT. Nikkei Trading Indonesia
- Nikkei Panel System Vietnam
- Fruehauf Mahajak
- Shandong Conglin Fruehauf Automobile
- Suzhou Toyo Aluminium Ekco Household Products
- Toyol Zhaoqing
- Toyo Tokai Aluminium Hanbai (Shanghai)
- Hunan Ningxiang JiWeiXin Metal Powder
- Toyo Aluminium Ekco Trading (Suzhou)
- Toyol MMP India
- Toyol (Thailand)
- Sam-A Aluminium

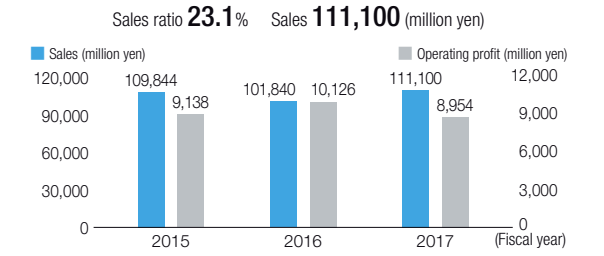
- Nippon Light Metal Holdings
- Nippon Light Metal
- Nikkei Sangyo
- Shizuoka Kosan
- Kinki Kenmazai Kogyo
- Aluminium Wire Rod
- Nikkei MC Aluminium
- Iharanikkei Chemical Industry
- Tamai Steamship
- Nikkeikin Kakoh Kaihatsu Holdings

Business summary

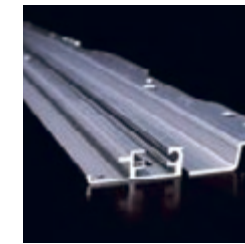
Alumina, Chemicals, and Ingot Business



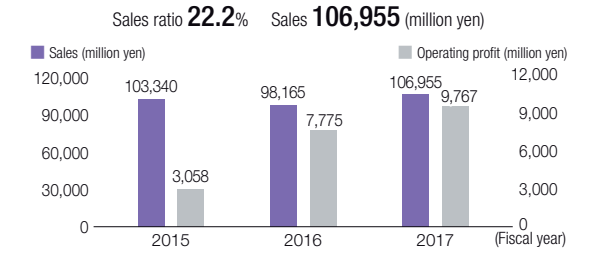
The alumina and chemicals segment manufactures aluminum hydroxide, alumina, and various other chemicals. These products are used in a range of fields, including as fire retardants, raw materials for ceramics, and industrial materials for the manufacture of pulp and paper. The ingot segment manufactures a variety of aluminum ingots and is highly evaluated for the development of highly-functional ingots that cater to customers' needs.



Sheet and Extruded Products Business



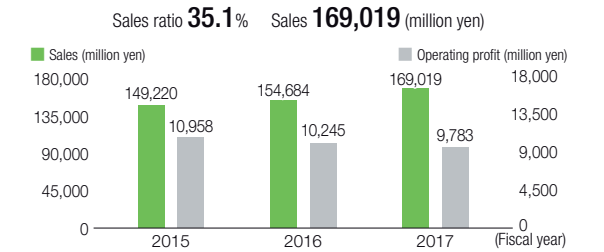
Aluminum sheets and extrusion products are used in a wide range of fields, such as for automotive parts and railway cars in the transport industry and for semiconductor/liquid-crystal manufacturing equipment and photosensitive drums in the electrical and electronics industry. The NLM Group makes use of its technologies and expertise cultivated over many years to proactively develop products that meet customers' needs and to supply highly functional sheets and extrusion products.



Fabricated Products and Other Businesses



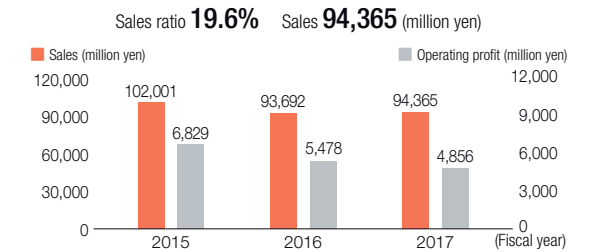
The NLM Group has many group companies that deal with distinctive fabricated products. Among them, truck bodies from Nippon Fruehauf Co., Ltd. and commercial refrigerators and freezer panels from Nikkei Panel System Co., Ltd. are highly valued for their quality and thereby enjoy the top share in each industry. We also supply other aluminum fabricated products that are closely related to our everyday lives, including anodized aluminum foil for aluminum electrolytic capacitors, automotive parts, and carbon products.



Foil and Powder Products Business



Toyo Aluminium K.K. plays the leading role in these businesses. We have established our position as a leading manufacturer by developing a wide range of products that incorporate aluminum's special characteristics and that are useful in society, industry and everyday life. They include packaging materials for food and pharmaceuticals, products for electronics, aluminum paste, and solar cell materials. We develop new fields by utilizing our own technologies as the foundation and provide a range of highly functional materials and products in markets at home and abroad.



- Nikkei MC Aluminum America
- INMOBILIARIA WTV
- T.S.T. Nikkei Metales
- Nippon Light Metal North America
- Toyol America

- Nikkei Inazawa
- Nikkei Metal
- Nikkei Extrusions
- Chugoku Nikkei Katahan
- Riken Light Metal Industry
- Nisshin
- Nikkeikin Aluminium Core Technology
- Nikkei Technology Center
- Nikkei Niigata
- Nikkei Kambara
- Toyo Rikagaku Kenkyusho
- Nikkei Kenzai Kogyo
- Nippon Fruehauf
- Nikkan
- NKS
- Nikkei Matsuo
- Nikkei Hokkaido
- Nippon Electrode

- Fuji Trading
- Shimizu Seibi
- Nikkei New Business
- NLM ECAL
- Nikkei Panel System
- Shiga Nikkei
- Shimonoseki Nikkei
- Arumi Reinetso
- Nikkei Information Systems
- Nikkeikin OhLis

- Nikkei Logistics
- Keinara
- Nikkei Fujoka
- Fruehauf Industries
- Fruehauf Hokkaido
- Fruehauf Okayama
- Fruehauf Kyushu
- Fruehauf Shiga
- Fruehauf Service
- Seiko Electric

- Arakawa Hydro Electric Power
- Sumikei-Nikkei Engineering
- Nikkei Heat Exchanger
- Toho Earthtech
- Toyo Aluminium
- Toyo Aluminium Ekco Products
- Toyo Tokai Aluminium Hanbai
- ALP
- Toyo Aluminium Kosan
- ALPHAMIC

Third-party opinions

Our responses to previous third-party opinions

The following are opinions (from Mr. Toshihiko Fujii) about the CSR Report 2017 of the NLM Group and the responses of the group to the opinions.

Major opinions	Responses of the NLM Group	Applicable page
I would like to recognize the expansion of the scope of the disclosed information to cover overseas sites. Starting from the fiscal year under review, data about overseas sites are included in the actual results of greenhouse gas emissions. Needless to say, it is important to share information and goals by involving overseas plants and offices.	Thank you very much for your comments. In FY2017 again, we expanded the scope of information related to safety and personnel affairs, including greenhouse gas emissions.	P16, 17 34, 35
I also commend the steady implementation of human rights due diligence in the supply chain. This issue will be increasingly important from a global perspective, and I hope that the group will enhance the range of information it discloses in addition to continuing to take this initiative.	We continue activities in the supply chain.	P27
Greenhouse gas emissions from the group's sites in Japan have increased. However, what I am concerned about is not the increase in emissions itself. It is essential that the increase in emissions should not be a psychological barrier to formulating an ambitious new plan. The group must avoid being excessively preoccupied with immediate issues.	As you pointed out, greenhouse gas emissions have continued to increase with rising production, and we have yet to develop a plan to reduce overall emissions. On the other hand, discussions about this initiative have triggered ongoing discussions about climate change, and we have set an emissions intensity target. We will continue to discuss all possibilities.	P16
The group needs to implement CSR activities that are more closely related to SDGs. The beginning of Step 1 activities in the fiscal year was an important first step. I hope that the group will ensure that its CSR activities appeal to a wider range of stakeholders by associating them closely with SDGs. I expect the group to take initiatives for tackling global common issues that are unique to a groundbreaking innovator of aluminum and beyond with a unique set of values.	At present, our activities include mapping, awareness-raising activities, and discussions at CSR Committee meetings and meetings of relevant personnel. Moving forward, we would like to discuss initiatives to be linked with activities expected of NLM while following the procedures described in the SDGs Compass.	P3 and others

The NLM Group has established an internal system for promoting CSR and has been proceeding with initiatives under this system. It is important that, based on these fundamental CSR activities, the group clarify its operations leading to the creation of corporate value related to environmental and social elements in the form of a *sustainability strategy*. Possible initiatives under the strategy include the development of products that reduce the impact on the environment with the properties of aluminum, as well as efficient, advanced recycling that achieves carbon reductions in overall society and innovation throughout the value chain. All of these initiatives are already being implemented at present, and they will strengthen cooperation with the development and sales departments. I would like to suggest here that the group also discuss SDG-related issues. Introduction of the group's distinctive initiatives along with specific explanations of yearly progress related to each issue will facilitate understanding by both internal and external stakeholders.

Based on the above, I would like to point out the following concerning the group's CSR activities in the fiscal year under review.

First, concerning environmental activities, I would like to make a suggestion about the issue on greenhouse gases, which was pointed out last year. In the fiscal year under review, the group clarified its future direction by setting an emissions intensity target to achieve by 2030. However, overall emissions will increase if the group's production activities continue to intensify, which means that the efforts of people on the frontlines will not be enough. Some other companies have declared that they will only use electricity from renewable energy sources. Since its founding, NLM has been generating power using in-house hydropower generation equipment that it developed on its own. I think that one possible measure the group can take is to conduct a comprehensive examination of the energy used for its power generation.

Recycling is another major environmental issue. An index for the level of achievement made each year will facilitate understanding, and the group will need to evaluate the achievements of its activities in chronological order based on the index.

With regard to the social aspect, the report shows that initiatives focused on human resources, such as those on inclusive society and the active participation and development of female employees, have remained well ingrained. As for activities related to people with disabilities, I commend the fact that the activities have extended to reforming the awareness of general employees instead of simply meeting statutory requirements. I ask the group to continue its activities for labor safety and quality control with a comprehensive approach, by separating them from activities for contributing to local communities and by maintaining awareness of compliance, regarding them as responsible activities that support the group's business foundation.

With regard to governance, the Corporate Governance Code has been established and corporate governance reports should have been developed. Therefore, it is important that the overall group have a common understanding of the meaning and contents of governance. Governance means a structure for management and supervision. Therefore, even if communication with stakeholders is also included in governance, the group should emphasize initiatives that serve as risk handling, that is, initiatives related to how to face and resolve stakeholders' concerns and issues.

Managing Director,
So-Tech Consulting, Inc.

Mizue Unno



Independent Assurance Report



Independent Assurance Report

To the President and CEO of Nippon Light Metal Holdings Company, Ltd.

We were engaged by Nippon Light Metal Holdings Company, Ltd. (the "Company") to undertake a limited assurance engagement of the environmental performance indicators marked with ★ (the "Indicators") for the period from April 1, 2017 to March 31, 2018 included in its CSR Report 2018 (the "Report") for the fiscal year ended March 31, 2018.

The Company's Responsibility

The Company is responsible for the preparation of the Indicators in accordance with its own reporting criteria (the "Company's reporting criteria"), as described in the Report.

Our Responsibility

Our responsibility is to express a limited assurance conclusion on the Indicators based on the procedures we have performed. We conducted our engagement in accordance with the 'International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements other than Audits or Reviews of Historical Financial Information' and the 'ISAE 3410, Assurance Engagements on Greenhouse Gas Statements' issued by the International Auditing and Assurance Standards Board. The limited assurance engagement consisted of making inquiries, primarily of persons responsible for the preparation of information presented in the Report, and applying analytical and other procedures, and the procedures performed vary in nature from, and are less in extent than for, a reasonable assurance engagement. The level of assurance provided is thus not as high as that provided by a reasonable assurance engagement. Our assurance procedures included:

- Interviewing the Company's responsible personnel to obtain an understanding of its policy for preparing the Report and reviewing the Company's reporting criteria.
- Inquiring about the design of the systems and methods used to collect and process the Indicators.
- Performing analytical procedures on the Indicators.
- Examining, on a test basis, evidence supporting the generation, aggregation and reporting of the Indicators in conformity with the Company's reporting criteria, and recalculating the Indicators.
- Visiting Nikkei Niigata Company Ltd. selected on the basis of a risk analysis.
- Evaluating the overall presentation of the Indicators.

Conclusion

Based on the procedures performed, as described above, nothing has come to our attention that causes us to believe that the Indicators in the Report are not prepared, in all material respects, in accordance with the Company's reporting criteria as described in the Report.

Our Independence and Quality Control

We have complied with the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which includes independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. In accordance with International Standard on Quality Control 1, we maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

KPMG AZSA Sustainability Co., Ltd.

KPMG AZSA Sustainability Co., Ltd.

Tokyo, Japan

October 26, 2018

Data

		Coverage	2015	2016	2017	Unit	
The Environment							
Greenhouse gas emissions (Scope 1, Scope 2)		Consolidated (Japan only)	768	796	★ 802	kilo tons-CO ₂	
		Consolidated (besides Japan) ¹	-	138	128	kilo tons-CO ₂	
Greenhouse gas emission intensity per unit of sales		Consolidated (Japan only)	2.09	2.19	2.09	tons-CO ₂ / Million yen	
Breakdown of Scope 3 emissions ²	Category 1: Purchased goods and services ³	Consolidated	1,858	1,962	★ 1,926	kilo tons-CO ₂	
	Category 2: Capital goods	Consolidated	17	21	22	kilo tons-CO ₂	
	Category 3: Fuel and energy not included in Scope 1 or 2	Consolidated	34	33	28	kilo tons-CO ₂	
	Category 4: Upstream transportation and distribution	Consolidated	11	11	11	kilo tons-CO ₂	
	Category 5: Waste generated in operation	Consolidated	3	4	4	kilo tons-CO ₂	
	Category 6: Business travel	Consolidated	0	0	0	kilo tons-CO ₂	
	Category 7: Employee commuting	Consolidated	3	3	3	kilo tons-CO ₂	
Energy consumption	Electricity	Consolidated (Japan only)	8.5	9.5	9.8	PJ	
	Fuels	Consolidated (Japan only)	4.9	4.9	5.0	PJ	
Energy consumption intensity per unit of sales		Consolidated (Japan only)	36.5	39.6	38.4	GJ/ Million yen	
Weight of raw materials used in production		Consolidated (Japan only)	678	618	576	kilo tons	
SOx emissions		Consolidated (Japan only)	312	339	389	tons	
NOx emissions		Consolidated (Japan only)	437	388	375	tons	
Quantity of water intake ⁴		Consolidated (Japan only)	22.6	23.7	23.0	million m ³	
Total amount of discharged water		Consolidated (Japan only)	26.1	30.5	28.2	million m ³	
COD emissions		Consolidated (Japan only)	92	109	89	tons	
Emissions and disposal of waste and waste byproducts	Recycled/Reduced	Consolidated (Japan only)	33.2	33.5	32.4	kilo tons	
	Disposed (landfill)	Consolidated (Japan only)	2.4	2.9	2.2	kilo tons	
Environmental accounting	Environmental conservation expenditure: Investment	Consolidated (Japan only)	1,612	2,009	1,983	million yen	
	Environmental conservation expenditure: Expenditure	Consolidated (Japan only)	5,517	5,847	5,247	million yen	
	Economic effect of environmental conservation activities: Earnings	Consolidated (Japan only)	383	397	486	million yen	
	Economic effect of environmental conservation activities: Changes in expenditure ^{5,6}	Consolidated (Japan only)	3,174	2,770	-1,440	million yen	
Number of cases of lawsuits, penalties, or forfeitures related to the environment		Consolidated	0	0	0	cases	
Number of accidents related to the environment ⁷		Consolidated	2	3	0	cases	
Number of complaints related to the environment ⁸		Consolidated	11	4	10	cases	
Employees⁹							
Number of employees	Full-time directors	Consolidated	Male	170	187	190	number
		Consolidated	Female	0	0	0	number
	Employees (managerial employees)	Consolidated	Male	1,506	1,529	1,540	number
		Consolidated	Female	67	73	90	number
	Employees (regular employees)	Consolidated	Male	8,258	8,385	8,295	number
		Consolidated	Female	2,270	2,278	2,083	number
	Employees	Consolidated	Total	12,101	12,265	12,008	number
Number of employees by country/region	Japan	Consolidated	Male	7,109	7,173	7,361	number
		Consolidated	Female	961	980	1,048	number
	Asia	Consolidated	Male	2,419	2,506	2,243	number
		Consolidated	Female	1,337	1,331	1,089	number
	U.S. and Europe	Consolidated	Male	236	235	231	number
		Consolidated	Female	39	40	36	number
Number of new hires ¹⁰	Total	Consolidated (Japan only)	-	-	596	number	
	Percentage to employees	Consolidated (Japan only)	-	-	7.1	%	
Number of new graduates who were recruited ¹⁰		Consolidated (Japan only)	-	-	197	number	
Number of employees who left ¹⁰	Total	Consolidated (Japan only)	-	-	401	number	
	Percentage to employees	Consolidated (Japan only)	-	-	3.5	%	
Three-year retention rate ^{10,11}		Consolidated (Japan only)	-	-	88.4	%	
Number of those who were re-employed after retirement		Non-consolidated (Nippon Light Metal Co., Ltd.)		17	26	8	number
Labor Union participation rate		Non-consolidated (Nippon Light Metal Co., Ltd.)		100	100	100	%
Average age ¹⁰		Consolidated	Male	-	-	39.1	years old
		Consolidated	Female	-	-	36.9	years old
Average duration of service ¹⁰		Consolidated	Male	-	-	11.5	years
		Consolidated	Female	-	-	7.7	years
Average annual hours worked ¹⁰		Consolidated (Japan only)	Male	-	-	2,146	hours/ person
		Consolidated (Japan only)	Female	-	-	1,974	hours/ person

		Coverage	2015	2016	2017	Unit	
Average annual overtime work hours ¹⁰		Consolidated (Japan only)	Male	-	-	324	hours/ person
		Consolidated (Japan only)	Female	-	-	161	hours/ person
Average number of days of annual paid leave taken ¹⁰		Consolidated	Male	-	-	9.9	days
		Consolidated	Female	-	-	9.7	days
Average rate of acquisition of annual paid leave ¹⁰		Consolidated	Male	-	-	52.5	%
		Consolidated	Female	-	-	71.6	%
Number of employees who newly took childcare leave ¹⁰		Consolidated (Japan only)	Male	-	-	1	number
		Consolidated (Japan only)	Female	-	-	55	number
Number of employees who newly took nursing care leave ¹⁰		Consolidated (Japan only)	Male	-	-	2	number
		Consolidated (Japan only)	Female	-	-	1	number
Number of users of the shorter working hour program ¹⁰		Consolidated (Japan only)	Male	-	-	0	number
		Consolidated (Japan only)	Female	-	-	61	number
Number of employees who were absent from work due to mental health problems ¹⁰		Consolidated (Japan only)	Male	-	-	34	number
		Consolidated (Japan only)	Female	-	-	2	number
Average annual amount of expenditure for education/ training ¹⁰		Consolidated	-	-	29.2	thousand yen/ person	
Employment rate of people with disabilities ^{12,13}		Non-consolidated (Nippon Light Metal Co., Ltd.)	2.41	2.47	2.59	%	
		Non-consolidated (Toyo Aluminium K.K.)	2.12	2.05	2.03	%	
Safety							
Number of workplace injuries ¹⁴	Lost-time injuries	Consolidated (Japan only)	13	9	12	cases	
		Consolidated (besides Japan)	7	8	8	cases	
	Non-lost-time injuries	Consolidated (Japan only)	56	43	65	cases	
		Consolidated (besides Japan)	4	9	5	cases	
Frequency rate of lost-time injuries ^{14,15}		Consolidated	0.70	0.46	0.56	%	
		Non-consolidated (Nippon Light Metal Co., Ltd.)	0.59	0.00	0.27	%	
Compliance							
Number of cases that were reported to NIKKEI HOTLINE and resulted in investigations		Consolidated	3	9	7	cases	
Compliance meeting	Number of times the meeting was held	Consolidated	2,038	2,230	2,102	times	
	Number of participants	Consolidated	19,600	19,991	20,237	total number	
Number of patent publications ¹⁴		Consolidated	180	126	182	cases	
Number of patent registrations ¹⁴		Consolidated	93	143	107	cases	
Quality assurance							
Number of violations of laws or regulations in the provision of products/services		Consolidated	0	0	0	cases	
Number of prompt reports		Consolidated	8	10	6	cases	
Number of recalls		Consolidated	3	4	2	cases	
Community							
Expenditure related to social contribution		Consolidated	117	163	133	million yen	
Governance							
Interim and year-end dividend per share		Consolidated	6	8	8	yen	

★: We have received independent assurance by KPMG AZSA Sustainability Co., Ltd. regarding the reliability of the data.

*1: For calculating CO₂ emissions related to electric power, we use the latest CO₂ emission factor of each country that is shown in *CO₂ emissions from fuel combustion 2017*, which was published by the International Energy Agency (IEA). For calculating CO₂ emissions related to fuels, we use the CO₂ emission factor of Japan. In relation to the above, values for FY2016 were corrected.

*2: The emissions are calculated by multiplying the activity amount by the CO₂ emission factor published by the Ministry of Economy, Trade and Industry and the Ministry of the Environment.

*3: The Scope 3 Category 1 emissions are calculated based on the volume of purchase of the top three items in terms of purchase volume. Of the items, the aluminum ingots are those purchased by Nippon Light Metal Co., Ltd.

*4: The seawater intake quantity is not included.

*5: Changes in expenditure are calculated using the following formula:
Changes in expenditure = expenditure incurred during a base period (FY2016) – expenditure incurred during the current year (FY2017)

*6: - (minus) indicates an increase in expenditure.

*7: Environmental problems that affect external parties (such as the leakage of oil or chemicals)

*8: Number of petitions from external parties (such as those regarding smell and noise)

*9: Fixed-term (full-time) employees are not included.

*10: Consolidated values began to be reported in FY2017.

*11: Percentage of employees who are still at the company as of April 1 in the year that is three years after they joined the company

*12: As of June 1 immediately after the end of each fiscal year. The statutory employment rate is 2.2% (was 2.0% until March 31, 2018).

*13: Fixed-term (full-time) employees are included.

*14: The subject period is calendar year (January to December).

*15: Injuries that resulted in one or more days' absence from work (excluding commuting injuries)