Company Profile
Our Business
To support our life and society, the Sumitomo Electric Group provides products and technologies in five segments.

Automotive
Responding to safety, amenity and environmental needs of future motorized society

Electronics
Supporting advancement in the functions and performance of electronics

Industrial Materials
Using a wide range of technologies for the prosperity of industrial society

Our Future
Taking advantage of our strengths in these five segments, we are now taking a step forward towards a completely new field.

Responding to New Social Needs
Creating essential products and technologies for the future

Infocommunications
Supporting communications

Environment & Energy
Supporting a stable energy supply
To become a “Glorious Excellent Company”

Under the Sumitomo Spirit and the Sumitomo Electric Group Corporate Principles, which have guided us at the Sumitomo Electric Group for 400 years, we unceasingly uphold the basic policy of contributing to society through fair business activities. Since our foundation in 1897, based on electric wire and cable manufacturing technologies, we have conducted our original research and development and strenuously strived for the establishment of new businesses. These efforts have allowed us to create new products and new technologies, as well as diversify our business fields. Currently, we operate our businesses on a global basis in the following five segments: Automotive; Infocommunications; Electronics; Environment & Energy; and Industrial Materials.

“Glorious Excellent Company” – this is the ideal future state of the Sumitomo Electric Group. While sticking to our abiding principles of the Sumitomo Spirit and the Sumitomo Electric Group Corporate Principles, we strive to secure sustainable growth and development.

With the progress of globalization, dynamic paradigm shifts are currently underway in many aspects of international society. The Sumitomo Electric Group will accommodate new needs to be generated by such social changes, through the innovation and combination of our technological capabilities accumulated so far and our wide variety of products. Additionally, by so doing, we will diversify our businesses into new fields to ensure our future growth.

To transform ourselves into a “Glorious Excellent Company,” all the members of our group intend to continue our steadfast efforts to earn trust and confidence widely from not only stakeholders but also other members of society, and to contribute to the establishment of a rich society for everyone in the future.

We hope that we will continue receiving your kind support and encouragement.

President and COO

The Sumitomo Spirit

Business Principles

Article 1 Sumitomo shall achieve prosperity based on solid foundation by placing prime importance on integrity and sound management in the conduct of its business.

Article 2 Sumitomo’s business interest must always be in harmony with public interest; Sumitomo shall adapt to good times and bad times but will not pursue immoral business.

Banji-nissei

Banji-nissei means “do your sincere best, not only in business, but also in every aspect of your life.” Originating from the preamble of Monjuin Shigaki, it speaks of the importance of sincerity in all human endeavors. Banji-nissei is a pivotal teaching in the Sumitomo Spirit. Accordingly, Sumitomo personnel are expected to work not only to make money, but also to cultivate their character and grow into better human beings.

Shinya-kakujitsu

The Business Principles Article 1 emphasizes the importance of integrity; that is, being worthy of the trust of others.

Fusu-furi

In its first part, Article 2 speaks of the importance of working proactively, pursuing profit by quickly and appropriately responding to changes in society and not being content with the status quo. At the same time, Article 2 emphasizes the importance of harmonizing business gains with the public interest and scorns reckless or careless actions in pursuit of easy gain. While furi means easy, temporary or short-term gain, the term also implies unfair profit obtained through dishonest means.

In addition to the above, other various principles have been steadfastly handed down to the present. “attaching importance to technology,” “respect for human resources,” “long-range planning” and “mutual prosperity, respect for the public good”

The Sumitomo Electric Group Corporate Principles

Each company of the Sumitomo Electric Group shall

■ Offer the very best goods and services to satisfy customer needs.
■ Build technical expertise, realize changes and strive for consistent growth.
■ Contribute to creating a better society and environment, with a firm awareness of our social responsibility.
■ Maintain high corporate ethics and strive to become a company worthy of society’s trust.
■ Nurture a lively corporate culture that enables employee self-improvement.
Company Profile

Name: Sumitomo Electric Industries, Ltd.
Head Office: 5-33, Kitahama 4-chome, Chuo-ku, Osaka, Japan
Established: April 1897
Capital Stock: 99,737 million yen
President: Osamu Inoue
Employees: 248,330 (As of March 31, 2017)

Management
Chairman & CEO: Masayoshi Matsumoto
President & COO: Osamu Inoue
Executive Vice Presidents: Fumikiyo Uchioke, Mitsuo Nishida
Senior Managing Directors:
Nozomi Ushijima, Makoto Tani
Managing Directors:
Junji Itoh, Yoshitomo Kasui, Takahiro Nakano, Akira Nishimura, Hideo Hato, Masaki Shirayama
Directors (Outside):
Kazuo Hiramatsu, Hiroshi Sato
Audit & Supervisory Board Members:
Satoru Ogura, Akira Hayashi, Kan Hayashi, Katsuki Watanabe, Michiko Uehara
(As of June, 2017)

Note: Kazuo Hiramatsu and Hiroshi Sato are outside Directors.
Kan Hayashi, Katsuki Watanabe and Michiko Uehara are Outside Corporate Auditors.

Consolidated Business Results
(Our fiscal year begins on April 1 of each year and ends on March 31 of the following year.)

Net Sales:
- FY2012: 2,104,242
- FY2013: 2,164,773
- FY2014: 2,202,811
- FY2015: 2,321,081
- FY2016: 2,399,462

Operating Income:
- FY2012: 76,790
- FY2013: 126,038
- FY2014: 124,467
- FY2015: 143,476
- FY2016: 150,502

Ordinary Income:
- FY2012: 94,196
- FY2013: 146,334
- FY2014: 162,597
- FY2015: 165,838
- FY2016: 172,872

Profit Attributable to Owners of the Parent:
- FY2012: 37,955
- FY2013: 66,746
- FY2014: 119,771
- FY2015: 143,476
- FY2016: 150,502

Net Sales by Business Segment:

- Automotive
- Infocommunications
- Electronics
- Environment & Energy
- Industrial Materials & Others

Above data includes intersegment sales and so their total differs from net sales data.
Since the Company’s foundation, the Sumitomo Electric Group has strived to extend its expertise in copper wire production, which had evolved from the Sumitomo copper business, to the development of proprietary technologies and new businesses. Expertise in copper wire production technology was extended to the development of a wide array of products including power and communication cables and electronic wires. Deep understanding of the technologies was used for drawing these wires and in-house manufacturing of wire-drawing dies led to the development of other products such as special steel wires and cemented carbide tools. Later on, using knowledge gained in powder metallurgy, we started making sintered parts and diamond products.

Meanwhile, exploring the technology of copper wire conductors, we made breakthroughs with compound semiconductors and superconducting wires. What we learned from wire insulation technology was applied in the development of rubber and plastic products (presently called hybrid products) and electron-beam irradiation products. Bringing together the control and transmission technologies acquired through the manufacturing of power cables and electric wires, we eventually extended our business into the fields of systems and electronics.

Today, standing on the firm foundation of these creative technologies, we are ready to leap into new business fields. At the Sumitomo Electric Group, we remain committed to vigorously carrying out our responsibility of “supporting society,” which we have been fulfilling since the day of our foundation.

1871: Sumitomo Copper Rolling Works was founded.
1872: Started production of coated wires.
1873: Started production of power cables.
1875: Established Sumitomo Electric Wire & Cable Works. (In the present address in Chūō Ward)
1877: Opened a new factory (now the Osaka Works). Started production of enamelled wires.
1879: Sumitomo Electric Wire & Cable Works incorporated as a limited company.
1896: Sumitomo Electric Industries, Ltd. was established.
1897: Started production of cemented carbide tools.
1900: Sumitomo started production of special steel wires.
1902: Sumitomo Electric Industries, Ltd. changed its name to Sumitomo Electric Industries, Ltd.
1908: Opened the Ami Works.
1911: Started production of vibration-proof rubber and fuel tanks.
1912: Opened a branch office in Tokyo (now the Tokyo Head Office).
1916: Laid first Japan-made high-voltage underground cables.
1917: Copper wires were supplied for the first time. 1917: Copper wires were supplied for the first time.
1920: Started production of enamel wires.
1931: Started production of coated wires.
1932: Started production of power cables.
1933: Opened the Kanto Works.
1941: Started production of enamel wires.
1943: Opened a branch office in Tokyo (now the Tokyo Head Office). (Special subsidiary)
1946: Sumitomo Copper Business was founded.
1950: Sumitomo Electric Industries, Ltd. changed its name to Sumitomo Electric Industries, Ltd.
1954: Sumitomo Electric Industries, Ltd. changed its name to Sumitomo Electric Industries, Ltd.
1958: Opened the Osaka Works.
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Overall Strategy of VISION 2017

In VISION 2017, our group will leverage our outstanding technology and focus on six fields of business which are essential for society—the three fields of mobility, energy, and communications (ICT) where we have a broad range of materials and products; environment and infrastructure, where we will integrate those fields; and the new fields of life sciences and resources. Through ceaseless innovation, we will create and globally provide new value, covering the full spectrum from materials to systems and solutions.

We aim to take a further step toward becoming a Glorious Excellent Company by:

1. Making the Sumitomo Spirit and the Sumitomo Electric Group Corporate Principles the basis of our business activities, and holding fast to the three bases of our group's business: human resources, manufacturing, and finances;
2. Raising the banner of "innovation," achieving new growth in current business fields, expansion into integrated business fields, and challenging new business fields;
3. Making high-priority efforts to strengthen "strategic marketing," increase our "global presence," and enhance our "leading technology"; and
4. Attaining our numerical targets of ¥3,300 billion in sales, ¥200 billion in operating income, over 9% ROA, and over 8% ROE.

Glorious

The word “Glorious” expresses qualitative characteristics, such as a company’s trustworthiness in society, reputation, corporate culture, etc. Concisely, a Glorious Company is a company trusted and respected by society.

We can become a Glorious Company by understanding and acting out in our respective day-to-day duties the Sumitomo Spirit and the Sumitomo Electric Group Corporate Principles.

Excellent

The word “Excellent” expresses the ideal state of a company in quantitative terms, that is, business performance. An Excellent Company is a company with excellent performance in sales, revenues and profitability.

The Sumitomo Electric Group aims to become an Excellent Company by achieving the numerical goals contained in the mid-term management plan VISION 2017.
Automotive
Responding to safety, amenity and environmental needs of future motorized society

With a focus on the interface between the vehicle and driver, Sumitomo Electric offers various products to the global market. A representative example of these products is a wiring harness that transmits electric power and information to various points in an automobile. Growing public demands for more eco-friendly vehicles require the supply of sophisticated hybrid and electric vehicle parts based on a wide variety of advanced technologies. Keeping in mind the harmony between vehicles and people in the next generation, Sumitomo Electric will continue developing a variety of new automotive products in order to contribute to the creation of a comfortable automobile society.

Wiring Harnesses
Wiring harnesses are laid throughout an automobile and play a key role in transmitting energy and information, similar to human blood vessels and nerves. The Sumitomo Electric Group (Sumitomo Electric, Sumitomo Wiring Systems, Ltd., and AutoNetworks Technologies, Ltd.) is integrally developing a global wiring harness business.

Pipe-Shielded Wiring Harness for HEVs
Sumitomo Electric provides pipe-shielded wiring harnesses comprising electric wires covered with an aluminum conduit for protection from shock and electromagnetic noise.

Charging Connector for EVs
We also provide charging plugs and connectors that are used to supply electricity from battery chargers to electric vehicles and plug-in hybrid vehicles.

Anti-vibration Rubber Products
Anti-vibration rubber products, one of Sumitomo Riko’s main products, are essential for absorbing or suppressing vibrations from the engine and road surface, thereby ensuring safe and comfortable driving. Among them, high-performance electrical active control products are increasingly being used.

Electronic Control Units (ECUs)
As the functionality of automobiles becomes more sophisticated, the number of onboard devices is increasing. To provide more safety and convenience, the electronic control unit (ECU) controls these onboard devices as the command center or brain of an automobile.

High-Strength Aluminum Wiring Harness
Automobiles are required to be more fuel efficient and have lower CO₂ emissions, and weight reduction of automobiles is the key to this challenge. The Sumitomo Electric Group has been producing aluminum wiring harnesses since 2010. Comprising aluminum wires in place of conventional copper wires, these harnesses have contributed to dramatic reductions of automobile weight without deteriorating their functional reliability as conductors. In 2015, the Group succeeded in developing a high-strength aluminum alloy wire with higher strength than that of copper wire. Aluminum wiring harnesses consisting of the newly developed wires are laid even along the periphery of engines and other equipment that vibrate intensely.
Infocommunications
Supporting communications

Sumitomo Electric provides various solutions that make our society safer, more secure, and more comfortable. A wide array of these solutions include optical fibers/cables and other telecommunication-related products necessary for FTTH and other optical network construction, ITS-related products, and access-based networks. We will continue to develop innovative technologies and products and supply them to customers, thereby contributing to the construction and upgrade of broadband network infrastructures.

ITS is a new system that links people, automobiles, and society through information to enhance safety and security while protecting the global environment.

For example, a driving safety support system (DSSS) alerts drivers based on a variety of information from ITS radio system, infrared beacons and other devices and the running condition of the vehicle. ITS is also used as a traffic control system to smooth traffic flow by controlling traffic signals. ITS helps reduce CO₂ emissions and supports a safe and comfortable motorized society.

Traffic Control System
Driving Safety Support System (DSSS)

Optical and Electronic Devices

With the increasing volume of video streaming and the rising number of cloud services and data centers, the need for high-capacity data transmission is rapidly growing. Sumitomo Electric develops and markets products that play an integral part in achieving high-speed data transmission and large-volume multiple-wavelength transmission.

The Company offers various optical and electronic devices essential for communications, such as optical data link products with a function to convert electrical and optical signals; groups of optical transmission and receiving devices including a variable wavelength laser used as a light source in optical communication systems and optical transceivers; and electronic devices that realize large-bandwidth, high-capacity wireless communications including LTE mobile, satellite, and base-to-base communications.

Optical Fiber Cable

Thin, hair-like optical fiber is a high-performance transmission media that can propagate signals for dozens of kilometers.

Optical fiber is free from electromagnetic induction noise and so features stable, high-speed communication over long distances.

Optical Fiber Fusion Splicer

These devices, indispensable for constructing optical networks, connect glass optical fibers easily within minutes by using electric discharge. Its compact design and light weight make this device easy to use even in restricted workspaces.

Broadband Network Service Products

We help achieve a convenient information communication society by supplying key devices for new communication and broadcast services (e.g. GE-PON systems, cable modems with built-in Wi-Fi routers, IP set top boxes) and by offering comprehensive system integration services that meet the needs of customers.

Compound Semiconductors
(Gallium Arsenide/Gallium Nitride/Indium Phosphide)

Compound semiconductors are used for laser oscillators and photosensitive elements of optical fiber communication systems; various types of transistors for mobile phones and other wireless communication systems; light sources of CDs, DVDs, Blu-ray disc devices; and white LEDs for lighting.

Compound Semiconductors

Business
Thunderbolt 3 Cable
Thunderbolt 3 is a high-speed interface standard that supports bidirectional communications at 40 Gbps, twice that of the previous Thunderbolt 2. Our Thunderbolt 3 cable uses unique high-performance, ultra-fine coaxial cables, realizing excellent flexibility and flame resistance. New applications will be explored, including those that require large-volume data transmission such as docking stations and 4K display connections.

Flexible Printed Circuits (FPCs)
The flexible printed circuit is a wiring material made by printing electrical circuits on an extremely thin insulated film. Owing to its outstanding features, such as light weight, high heat resistance, and superior stretching property, such a printed circuit provides flexibility in electric circuit design. This product helps downsize and sophisticate digital apparatuses including mobile phones, tablets, game consoles, and hard disk drives.

Poreflon™ Membrane Wastewater Treatment Equipment
Using polytetrafluoroethylene (PTFE) with its excellent chemical and heat resistance as well as durability, and applying our unique processing technology, we developed a new porous membrane and commercialized a wastewater treatment module using the membrane. Poreflon™ membrane wastewater treatment equipment saves space in installations, lessens labor in maintenance, and improves the quality of treated wastewater. It is highly appreciated in the field of household sewage and industrial wastewater treatment, with substantial business records in and outside Japan.

SUMI-CARD™
SUMI-CARD™ is a thin, lightweight flat cable ideal for high-density mounting, with an easy single plug/unplug interface for connectors. A wide variety of product models are available to accommodate customer specifications, such as a high-frequency type for TV and digital devices, a heat-resistant (up to 150°C) type for vehicle-mounting, and a thin and flexible type for sliding parts, thus helping to reduce both the size and weight of the final products.

SUMITUBE™
SUMITUBE™ is heat-shrinkable tubing used for various purposes, such as bundling, heat and corrosion protection, insulation, and waterproofing of electric wires and harnesses in household electric and electronic appliances, automobiles, aircraft, and other apparatuses.

Polyimide Tube Rollers
Highly tough and heat-resistant. This product is used as a toner fixing device for laser printers and other office automation equipment.

Business
Electronics
Supporting advancement in the functions and performance of electronics
In the electronics field, devices are required to be ever smaller, lighter, more functional, and more sophisticated. To meet these requirements, Sumitomo Electric has been expanding its product lineup by continuously developing new materials, wires and other parts. Sumitomo Electric’s cutting-edge technologies have been employed effectively for advanced medical, automotive and aircraft equipment, as well as for widely used products such as smartphones and tablet PCs.
Environment & Energy
Supporting a stable energy supply
Since its establishment, Sumitomo Electric has made efforts to develop wire and cable technologies that are essential for ensuring a stable power supply. The Company is now moving toward new businesses in the field of renewable energy and smart grids to supply environmentally friendly and energy-efficient products to the global market, thereby contributing to upgrading social infrastructure.

Business

Magnet Wires
Magnet wires are widely used in household electric appliances, motors and coils of electronic devices, and automotive electrical components in order to convert electrical energy to magnetic energy.

Overhead Power Transmission Lines
Overhead cables transmit electric power from power plants to distant consumer areas through substations. Sumitomo Electric cables come with many advantages including high energy saving rates, high corrosion resistance, and long service life.

Air Spring for Railroad Vehicles
These products are widely used around the world in subways, commuter trains, and high-speed trains like the Shinkansen. Our air springs can provide a comfortable ride by absorbing the vibrations of a running train. We utilize highly reliable rubber for air springs based on our electric wire coating technologies.

Ni Alloy Wires for Engine Spark Plugs
This material is used to make automotive engine ignition plugs. Over the years, Sumitomo Electric has kept the top global market share of this material. The Company has developed a unique alternative test method that can be carried out without using an engine and successfully shortened the alloy testing time by 75%. Recently, the Company has also developed a material suitable for making eco-friendly engine ignition plugs.

Ecology Cables
These cables are made from materials that generate minimal amounts of dioxin and other toxic substances even when incinerated. Sumitomo Electric is also making efforts to protect the environment by supplying eco-friendly and recyclable cables that are easier to separate and recover than conventional cables.

Copper Wire Rod
The history of Sumitomo Electric’s wire rod production can be traced back to the time of its establishment. Since then, the Company has developed a variety of unique products based on the technology. Wire rods are the basic materials of many of our products, such as high-voltage, large-capacity underground/submarine cables; wiring harnesses that function as blood vessels and nerves of automobiles; and magnetic wires used for various electrical and electronic parts.
Using a wide range of technologies for the prosperity of industrial society

Taking advantage of its material development capabilities based on electric wire/cable drawing technology, Sumitomo Electric has developed various products with unique features, including PC steel wires, steel tire cords, and other special steel wires essential for civil structure construction. The company also supplies a wide variety of superior materials including sintered parts used in automobiles and household appliances, and synthetic diamonds, called the “ultimate material.” Various products made from these sophisticated industrial materials support the bases of industries, thereby contributing to the development of society.

**Business**

**Industrial Materials**

**Special Steel Wire (Spring Steel Wire, Steel Tire Cord)**

Spring steel wires are used in applications such as automotive engine valve springs, while steel tire cords are used to reinforce radial tires. These products ensure comfortable driving by meeting automobile manufacturers’ needs for further improvements in energy savings, safety, security, and ride quality.

**Sintered Powder Metal Parts**

These products are made by utilizing powder metallurgy technology (sintering), a method of producing parts by baking compacts that are molded by compressing metallic powder. Sintering allows for the creation of highly accurate and intricately shaped parts, and is popularly used to make automotive engine components and drive train parts, as well as air conditioner parts.

**High Performance Powder Metallurgy Aluminum Alloys (SUMI ALTOUGH™)**

This aluminum alloy is made from rapidly solidified alloy powder. Due to its superior properties to conventional aluminum products in strength, wear resistance, heat resistance, machinability, and other physical properties, this new alloy is most suitable for meeting the need for lightening automotive and other machine parts.

**High-stress, high-carbon steel materials are used for prestressed concrete (PC) to improve its tensile strength and durability by tightening it with steel. These materials are widely used for such applications as road and railway bridges, LNG tanks, large buildings, and railway ties.**

**Nano-Polycrystalline Diamonds**

Sumitomo Electric has been engaged in the development of diamonds for over 40 years, during which the company has advanced its unique ultra-high-pressure technology to release various products. SUMIDIA™ BINDERLESS is the ultimate new nano-polycrystalline diamond having hardness higher than that of single crystal diamonds and overcoming cleavage, a shortcoming of single crystal diamonds.

**Copper molybdenum, copper tungsten, AIN ceramics, diamond, and other high-performance heat-sink materials are widely used to dissipate heat from high-power semiconductor chips installed in electric/hybrid electric vehicles, electric power converters, communication equipment and LED modules.**

**Grinding wheels and precision cutting tools made from diamonds and CBN are used for high-accuracy machining of automotive parts as well as precision parts used in semiconductor and electronic devices that support the development of the IT industry.**

**Cutting tools are used in various metalworking processes such as cutting, shaping, and drilling. Sumitomo Electric provides a wide variety of cutting tools, including IGETALLOY™, a cemented carbide alloy characterized by hardness rivaling diamond or cubic boron nitride and steel-like toughness, as well as SUMIBORON™/SUMIDIA™, whose cutting edges are made from cubic boron nitride or ultrafine diamond particles. Through these cutting tools, the Company has long contributed to enhancing productivity and reducing costs in the field of machining.**

**Cutting Tools (IGETALLOY™/SUMIBORON™ and SUMIDIA™)**

**Diamond and CBN Tools**

**Heatspreader Materials**

**Soldering Materials**

**Special Steel Wires**

**Spring Steel Wire, Steel Tire Cord**

**High-stress, high-carbon steel materials are used for prestressed concrete (PC) to improve its tensile strength and durability by tightening it with steel. These materials are widely used for such applications as road and railway bridges, LNG tanks, large buildings, and railway ties.**
Responding to New Social Needs

Taking advantage of our assets accumulated in a wide range of business fields, we will contribute to the establishment of a new social infrastructure.

Utilizing our assets accumulated in a wide range of business fields explained so far, our group will present solutions for future social needs. An example of such efforts is the development of a smart energy system, which is necessary for establishing a new power and energy infrastructure. Taking advantage of our strength as a manufacturer of a full range of products in a value chain consisting of power transmission, distribution, storage, and use, we are able to present proposals ranging from concepts and designs to solutions.
Promoting research and development with due consideration for the future and creating innovative technologies and products

Technology is the engine of the future and the very source for growth. From our origins as a copper business, we have developed a wide variety of technological bases. We will continue striving to create new technologies and products with due consideration for future social needs, and further accelerate our commercialization of technology in response to this time of rapid change.

**R&D**

Promoting research and development with due consideration for the future and creating innovative technologies and products

Technology is the engine of the future and the very source for growth. From our origins as a copper business, we have developed a wide variety of technological bases. We will continue striving to create new technologies and products with due consideration for future social needs, and further accelerate our commercialization of technology in response to this time of rapid change.

**Low-Loss Optical Fiber**

Sumitomo Electric has developed a copper-coated fiber that in March 2017 broke the world record, reducing transmission loss to 0.1419 dB/km (at 1,560 nm wavelength). Our ultra-low-loss optical fiber is based on high-performance, high-capacity, digital coherent communication systems. This fiber has already been adopted in many new submarine communication systems because of its excellent features: enabling total cost reduction by increasing data transmission capacity, reducing the number of expensive submarine repeaters, and reducing electrical consumption.

**Advanced Near-Infrared Image Sensors with High Sensitivity and Low Noise**

Magnetic flux sensors are the key to achieving high performance in motor vehicles. Our CMOS image sensors, which are the core component of vehicle sensors, combine high performance and accuracy, but are currently limited by their low sensitivity in dark environments. Through the development of a novel emitters and detectors, we will be able to increase the sensitivity of CMOS image sensors to the near-infrared region.

**Magnesium Alloys**

Mg alloys are the lightest of all structural metals, and are therefore expected to contribute to establishing an environmentally friendly society. In the past, Mg alloys were faced with limitations in terms of environmental burdens in ways such as recycling efficiency and corrosion resistance and processability. The wide range of promising application fields includes mobile devices, automobiles, railroad equipment, medical apparatuses and welfare devices.

**Research and Development Expenses**

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<tr>
<th>Year</th>
<th>FY2012</th>
<th>FY2013</th>
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<tr>
<td>(Millions of Yen)</td>
<td>94,500</td>
<td>99,500</td>
<td>105,600</td>
<td>110,800</td>
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**Superconducting Cable**

Electric cables made from bismuth-based superconducting wires with zero electrical resistance and strong electromagnetic help improve energy efficiency and thereby save energy. In December 2015, Sumitomo Electric successfully completed Japan’s first power transmission demonstration using its superconducting cables. The Company will promote technical innovation to fully use the superconductor technology.

**Dust Core Reactor**

The Dust Core Reactor, which consists of a porous carbon core and a permanent magnet, is a key component of in-wheel motors. Our motors are being developed for use in electric vehicles (EVs) and PHEVs, and the Dust Core Reactor will be used in the near future.

**Aluminum-Celmet™**

We have developed a porous aluminum sheet, Aluminum-Celmet™ that features a three-dimensional microstructure and a maximum porosity of 98%, the same as existing Celmet™ (95%),. Lithium-ion battery electrodes made from this material show high efficiency. Thus Aluminum-Celmet™ is expected, for example, to facilitate the development of long-range electric vehicles (EVs).
Bases Supporting Sumitomo Electric

The capability of individual members of the Sumitomo Electric Group is the prime motor of our business development. To improve each member’s capabilities and achieve VISION 2017 and the major goal of becoming a Glorious Excellent Company, we are setting up a work environment where all of our employees, each with their own system of values, can work with enthusiasm. We inherit and enhance the art of manufacturing nourished since the establishment of our company.

Promotion of Global HR Management

Sumitomo Electric Group’s business activities are continuously becoming more diverse - in technologies, markets, geographical locations and more - involving over 240,000 employees in about 40 countries around the world. We believe that for Sumitomo Electric Group to develop further globally and continue making significant contributions to society, it is essential that we fully mobilize the Group’s technologies, products, business models and all other resources and acknowledge that it is employees that make all our endeavors possible.

In September 2011, we decided to adopt the “Global Human Resource Management Policy” as the Group’s common basic worldwide policy, thereby clearly stating the Group’s commitment to truly global human resources management. With this policy, Sumitomo Electric Group aims to accelerate globalization from the aspect of human resources and organization, provide various career opportunities regardless of nationality, race, gender or age, and pursue globally “the right person in the right position” along with diversity in order to fulfill our policy.

Sumitomo Electric Group Global Human Resource Management Policy

We provide workplaces where all the employees can work actively, grow both personally and professionally through work, achieve self-actualization, and contribute to society.

We offer various career opportunities and globally pursue “the right person in the right position” regardless of race, ethnicity, national origin, religion, age, gender, gender identity, sexual orientation, or disability.

We value and promote diversity in the workplace in order to enhance the creativity of the organization and to sustain the growth of the business.

We develop global leaders who lead and give energy to our global business. Global leaders are those who understand and share the Sumitomo Spirit and the Corporate Principles and can lead highly diversified teams.

Developing Human Resources

Our human resources development is based on our traditional spirit of “People make the enterprise.” The cornerstone of human resources development resides with each staff member’s strong willingness for self-development, as well as with instructions by and dialogues with superiors at worksites. Under the concept of the SEI University, the Group offers a wide variety of training programs. By so doing, we provide strong support for self-development, as well as for instructions by and dialogues with superiors, and strive to achieve human resources development in compliance with our corporate philosophy and management strategy.

- Desired Human Resources
  Those who solidly adhere to the Sumitomo Spirit, understand the corporate management policy, remain faithful to the basics of their work, while having high levels of knowledge and skill, and are globally functional.

- Fundamental Principles of SEI University
  (1) Disseminating the Sumitomo Electric Group’s corporate philosophy
  (2) Sharing the Sumitomo Electric Group’s management strategies and visions
  (3) Developing employees’ abilities, skills, and knowledge so that they may play an active role in the global community

Enhancing Manufacturing Capabilities

To further strengthen our competence in the areas of Safety, Environment, Quality, Cost, Delivery, and Research & Development (SEQCDD), we promote company-wide activities to enhance our manufacturing capabilities such as safety activities, the Action ECO-21 Campaign, and the QR-1 (QR: quality and reliability) Campaign.

Under the leadership of the committee in charge, all divisions are working hard to improve their manufacturing structures based on the two key concepts of quality assurance covering all the processes undertaken at their facilities and completing tasks in time. The viewpoints and expertise gained through these activities are learnt, passed down, and improved in the Technical Training Center established in October 2008, along with other manufacturing techniques and skills that the Group should share and develop on a global basis.
For a better society and environment

The Sumitomo Spirit, which gives top priority to social credibility and corporate ethics, is deeply instilled in the Sumitomo Electric Group. With the Sumitomo Spirit and the Sumitomo Electric Group Corporate Principles serving as the basic values that guide us, we will continue to create social values and contribute to a better society and environment through business operations that comply with all applicable regulations.

We have specified five CSR core categories: Products & Services, Supply Chains, Human Resources, Environmental Preservation, and Social Contribution. Based on this approach, we will fulfill our responsibilities to stakeholders and establish good relationships with all of them. To transform into a Glorious Excellent Company, we will strive to secure sustainable growth.

Environmental Activities

We regard global environmental management as one of the top priorities in our business strategy. To promote our environment-oriented management, we set company-wide indexes and long-term targets for systematic actions regarding mitigation of global warming, resource savings, recycling, prevention of environmental contamination, and increased provision of environmentally friendly products.

“Action ECO-21” Campaign

We conducted the “Action ECO-21” campaign, initiated in April 2003. The ‘E’ in the Action ECO-21 campaign stands for environmental engineering, ‘C’ for environmental communication and ‘O’ for originality. The campaign was designed to enhance advanced activities for improving the global environment, thereby fulfilling our social responsibilities and further developing our businesses, so that we may grow as a company that always merits the trust of our customers and of society.

Reduction of Greenhouse Gas Emissions

We have been working to cut energy-derived CO₂ emissions through energy conservation activities and to reduce consumption of SF₆ and other greenhouse gases. In FY2015, greenhouse gas emissions were reduced by 2.8% from the base year on a group basis.

Greenhouse Gas Emissions and Reduction Ratio (in Japan and overseas)

<table>
<thead>
<tr>
<th>Year</th>
<th>In Japan</th>
<th>Overseas</th>
<th>Reduction ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2012 (Base)</td>
<td>1,469</td>
<td>1,442</td>
<td>8.9%</td>
</tr>
<tr>
<td>2013 Result</td>
<td>1,456</td>
<td>1,420</td>
<td>2.5%</td>
</tr>
<tr>
<td>2014 Result</td>
<td>1,420</td>
<td>1,395</td>
<td>2.5%</td>
</tr>
<tr>
<td>2015 Result</td>
<td>1,420</td>
<td>1,395</td>
<td>2.5%</td>
</tr>
<tr>
<td>2016 Result</td>
<td>1,417</td>
<td>1,393</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

Emissions converted to CO₂ equivalent (thousand tons CO₂-e/year)

Offering Excellent Eco-Products

We operate a product assessment program for environmental, qualitative evaluation of new products and an Eco Symbol Program for authorization of energy- and resource-saving products in order to offer environmentally friendly products to our customers.

Eco Life Activities

In January 2008, the Sumitomo Electric Group started Eco Life Activities, aiming to reduce greenhouse gas emissions from households. This campaign encourages the Group’s employees and their families to make energy-saving efforts with environmentally friendly activities at home in order to reduce CO₂ emissions by 1 kg per person per day. Successful activities are honored by the president.

Monetary contributions to university courses

In addition to these activities through the Foundation, Sumitomo Electric provides financial support in a wide range of fields such as art and cultural activities and community development programs.

Activities of the SEI Group CSR Foundation

Sumitomo Electric established the SEI Group CSR Foundation in April 2009 for the purpose of developing human resources and promoting academic activities in a wide variety of fields both in Japan and overseas. The Foundation was officially recognized as a public interest incorporated foundation in February 2010.

The Foundation implements the following programs:
1) making monetary contributions to university courses; 2) providing scholarships for local students studying at overseas universities; 3) providing scholarships for international students studying in Japan; (4) providing scholarships for students studying in Japan; and (5) offering support for academic and research activities.

Social Contribution Activities

Our business facilities in Japan actively work on a wide variety of measures to build harmonious relationships with local communities. They contribute to local communities by providing support including community cleanup activities, facilitating community development programs, and offering educational training support including hands-on programs for local students.

Social Contribution Activities in Foreign Countries

The Sumitomo Electric Group, which operates businesses in about 40 countries, respects each country and region’s unique culture and customs, and works on a wide variety of activities with a view to contributing to the development of the local economy and society. We provide support for our employees to participate in volunteer activities for local communities, make donations to local schools, and provide scholarships for university students.

CSR
### Europe

<table>
<thead>
<tr>
<th>Country</th>
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</thead>
<tbody>
<tr>
<td>Belgium</td>
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<tr>
<td>Bulgaria</td>
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<tr>
<td>Czech</td>
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<tr>
<td>France</td>
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<tr>
<td>Germany</td>
<td>1</td>
</tr>
<tr>
<td>Hungary</td>
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<tr>
<td>Italy</td>
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</tr>
<tr>
<td>Moldova</td>
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</tr>
<tr>
<td>Netherlands</td>
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<tr>
<td>Poland</td>
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<td>Portugal</td>
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<td>Russia</td>
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<tr>
<td>Serbia</td>
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<td>Slovakia</td>
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</tr>
<tr>
<td>Spain</td>
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<td>Turkey</td>
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<tr>
<td>U.K.</td>
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<tr>
<td>Ukraine</td>
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### Middle East & Africa

<table>
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<tr>
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<td>Morocco</td>
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<tr>
<td>Saudi Arabia</td>
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</tr>
<tr>
<td>South Africa</td>
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<tr>
<td>Tunisia</td>
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### North & South America

<table>
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<tr>
<th>Country</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>Argentina</td>
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</tr>
<tr>
<td>Brazil</td>
<td>1</td>
</tr>
<tr>
<td>Canada</td>
<td>2</td>
</tr>
<tr>
<td>Mexico</td>
<td>12</td>
</tr>
<tr>
<td>Paraguay</td>
<td>1</td>
</tr>
<tr>
<td>U.S.A.</td>
<td>3</td>
</tr>
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</table>

### Asia & Oceania

<table>
<thead>
<tr>
<th>Country</th>
<th>Total</th>
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</thead>
<tbody>
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<td>Australia</td>
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<tr>
<td>Cambodia</td>
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<tr>
<td>China</td>
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<td>India</td>
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<tr>
<td>Indonesia</td>
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<td>Korea</td>
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<td>Singapore</td>
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<tr>
<td>Thailand</td>
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</tr>
<tr>
<td>Vietnam</td>
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</tbody>
</table>

### Networks growing throughout the world

The Sumitomo Electric Group operates globally. The Group includes more than 390 subsidiaries and affiliates in about 40 countries around the world, mainly in Asia, North America and Europe.

The total number of employees for the entire Group exceeds 240,000. We aim to contribute to economic and social development not only by offering excellent products and services, but also by carrying out business activities in harmony with local society, based on our respect for the culture and custom of each country or region.

**Overseas Sales**

<table>
<thead>
<tr>
<th>Year</th>
<th>Overseas Sales FY2016</th>
<th>Domestic Sales FY2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>353</td>
<td>238</td>
</tr>
<tr>
<td>2014</td>
<td>381</td>
<td>269</td>
</tr>
<tr>
<td>2015</td>
<td>389</td>
<td>277</td>
</tr>
<tr>
<td>2016</td>
<td>389</td>
<td>275</td>
</tr>
<tr>
<td>2017</td>
<td>394</td>
<td>280</td>
</tr>
</tbody>
</table>

*Total subsidiaries and affiliates: total of consolidated subsidiaries and equity method affiliates