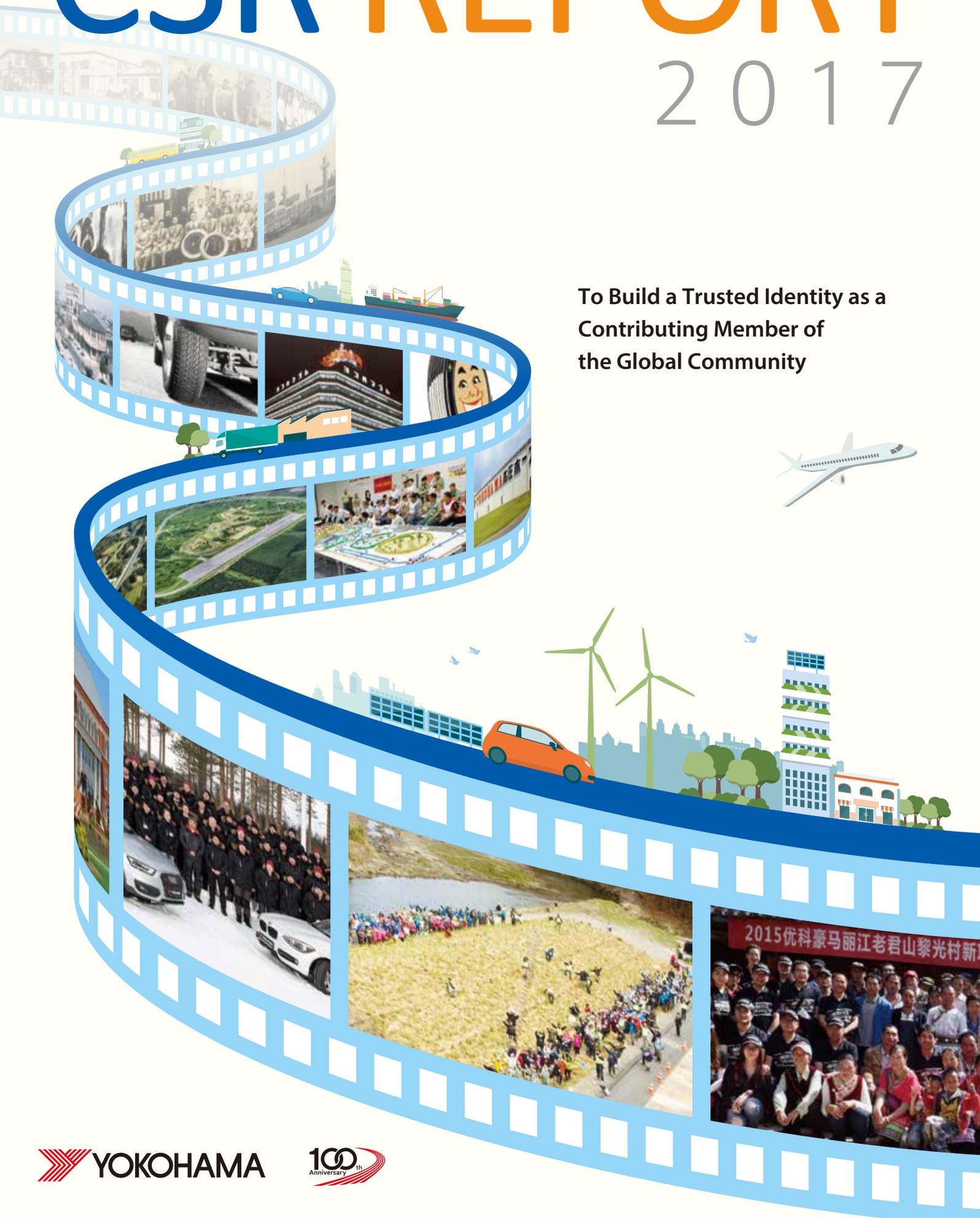


# CSR REPORT

2017

To Build a Trusted Identity as a  
Contributing Member of  
the Global Community



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### Editorial Policy

This report was created to share Yokohama Rubber Group's policies, approach to CSR, orientation and performance with each of its stakeholders in a concise and clear manner. On October 13, 2017, Yokohama Rubber celebrated the 100th anniversary of the company's founding. Looking ahead to the future, this report introduces our company's approach to helping to solve social problems, in line with our goal of building a trusted identity as a contributing member of the global community. Additional details of our activities can be found on our CSR website, which contains a host of information compliant with GRI Guidelines Ver. 4 about the progress of Yokohama Rubber Group's CSR activities. We invite you to review this website together with the print version.

Period covered by the Report: January 1, 2016 to December 31, 2016 (Information includes some activities which were conducted in and after January 2017)

Date of publication: December 2017 (the Report is issued annually)

## ↔ Message from the Chairman ↔

Since we began implementation of our GD100 medium-term business plan in fiscal 2006, we have been working towards the achievement of clear, specific goals in the run-up to the 100th anniversary of the founding of Yokohama Rubber in 2017. I feel that we have been successful at coming up with ideas to further the realization of our objectives, and then getting everyone at Yokohama Rubber working together as one to put these ideas into practice. Both in our company and in society as a whole, it is important to “pass on the baton” to the next generation; over the past 12 years, we have been constantly thinking about how we can pass on the baton in the best possible way.

In our CSR activities, rather than merely seeking to fulfil our corporate responsibilities to society, we have adopted an approach that emphasizes building ourselves into a company that is trusted by society. Instead of focusing only on short-term profitability, we have concentrated on earning the trust of a wide range of different stakeholders. At the same time, I believe that maintaining a constant awareness of the importance of Environmental, Social and corporate Governance (ESG), which has become a major focus of attention in recent years, will help us to stay on the right path.

Today, as we look ahead to our company’s 100th anniversary, we need to start thinking in terms of what society will look like in 2050, or 100 years from now. Regardless of how society changes, I firmly believe that, if we continue to strive for steady, healthy growth, then we can be sure of keeping society’s trust.

As I see it, Yokohama Rubber’s biggest strength lies in our corporate culture, with its emphasis on freedom. By making maximum use of our corporate culture, which encourages employees to think freely for themselves and to make their views known, we can continue to respond effectively to the rapid pace of change in technology, and the rapidly changing social environment, which Industry 4.0 embodies. I believe that, as we continue to respond to change, we need to aim at becoming a truly “global enterprise” that is able to successfully develop localized business operations throughout the world.

To realize this vision, it is vitally important for all employees to demonstrate “thoughtfulness,” in terms of thinking not just about themselves, but about how they can be of use to, and make a positive contribution towards, other people and society as a whole. I sincerely hope that the new generation that will be carrying Yokohama Rubber into the future will approach their work with this kind of “thoughtfulness.”

### **Tadanobu Nagumo**

Chairman and Representative Member of the Board



# Yokohama Rubber Group at a Glance (as of December 31, 2016)

<b>Company Name</b>	The Yokohama Rubber Co., Ltd.	<b>Number of Employees</b>	24,610 (consolidated)
<b>Establishment</b>	October 13, 1917	<b>Number of Shareholders</b>	10,663
<b>Paid-in Capital</b>	JPY 38,909 million	<b>Number of Shares Issued and Outstanding</b>	169,549,081
<b>Net Sales</b>	JPY 596,193 million (FY2016)	<b>Number of Consolidated Subsidiaries</b>	135
<b>Fiscal Year End</b>	December 31	<b>Stock Exchange Listings</b>	Tokyo and Nagoya
<b>Chairman and Representative Member of the Board</b>	Tadanobu Nagumo	<b>Our Worldwide Locations</b>	Japan, the USA, Canada, Australia, Germany, the Philippines, Vietnam, China, Thailand, Russia, etc.
<b>President and Representative Director</b>	Masataka Yamaishi (appointed in March 2017)	<b>Website</b>	<a href="http://www.y-yokohama.com/global/">http://www.y-yokohama.com/global/</a>
<b>Head Office</b>	36-11 Shimbashi 5-chome, Minato-ku, Tokyo 105-8685, Japan		

## ● Main Products

### Tires

Yokohama Rubber manufactures a wide range of tires, tubes, aluminum foil and automotive components for passenger vehicles, trucks and buses, light-duty trucks, construction vehicles, and industrial vehicles

### MB\*

Yokohama Rubber supplies conveyor belts, rubber plates, various hoses, fenders, oil-spill containment booms, marine hoses, rubber molded products, air springs, highway joints, rubber support, waterproof materials, water stopping materials, sound- and vibration-proof materials, adhesives, sealants, coatings, encapsulants, and aerospace products.

\*MB stands for Multiple Business. This term is collectively used by Yokohama Rubber to refer to a diversified and growing business portfolio.

### ATG\*

Production of a wide range of different types of tire for use on agricultural machinery, industrial vehicles, construction vehicles, forestry machinery, etc.

\*The Alliance Tire Group product family

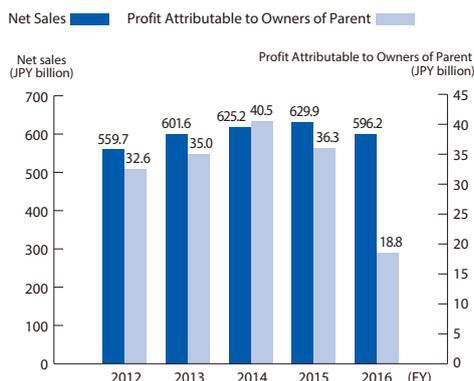
### Other

Sporting goods, information processing services, real estate leasing, and others

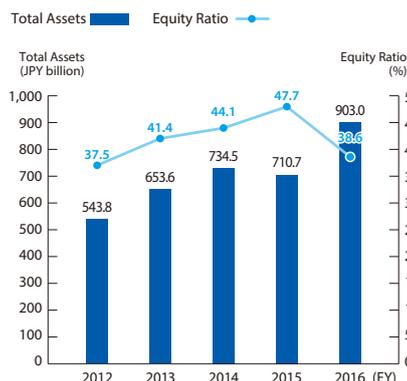
## ● The Main Regions Where Yokohama Rubber Is Developing Its International Operations (as of March 2017)



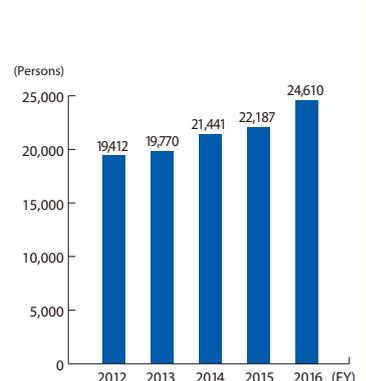
## ● Net Sales (consolidated) and Profit Attributable to Owners of Parent



## ● Total Assets and Equity Ratio (consolidated)



## ● Number of Employees (consolidated)



## Corporate Philosophy (Launched in 1992)

### Basic Philosophy

To enrich people's lives and contribute to their greater happiness and well-being by devoting our wholehearted energies and advanced technology to the creation of beneficial products.

### Management Policies

- Take on the challenge of new technologies to produce new value.
- Develop proprietary business fields to expand the scope of business.
- Create a workplace that values, improves and energizes people.
- Deal fairly with society and value harmony with the environment.

### Action Guidelines

- Develop ourselves so that we may give our personal best.
- Trust, challenge and improve one another.
- Nurture a welcoming, open spirit.

### Corporate Slogan

**Excellence by nature**

## CSR Management Vision (Launched in 2008)

**To build a trusted identity as a contributing member of the global community.**

### CSR Action Guidelines

- Identify continually changing social trends.
- Act swiftly to earn affirm trust.
- Ascertain the items that can contribute.
- Practice CSR in one's own work.

## Yokohama Rubber Group Action Guidelines (Updated in 2014)

1. We shall respect human rights inside and outside the company
2. We shall create workplaces that are safe and healthy
3. We shall harmonize our activities with the global environment
4. We shall provide safe and high-quality products and services
5. We shall conduct corporate activities with a high transparency and practice proper disclosure of information
6. We shall observe not only laws and regulations but also social norms
7. We shall aspire to harmony and prosperity with local communities

## Grand Design 100 (GD100) Medium-range Management Plan

### GD100 Vision and Basic Policy

To mark the Yokohama Centennial in fiscal 2017, we will evoke a distinctive global identity in building corporate value and in building a strong market presence.

### Long-Term Financial Targets (FY2017)

Net sales: ¥770 billion, operating income: ¥80 billion, operating margin: 10.4%

### Basic Policy

Deliver the best products at competitive prices and on time.  
Assert world-class strengths in technologies for protecting the environment.  
Foster a customer-oriented corporate culture that honors rigorous standards of corporate ethics.

Updated in 2015

## Environmental GD100

### Basic Policy

Following the principle of dealing fairly with society and valuing harmony with the environment, we shall assert our world-class strengths in technologies for protecting the environment.

- Continued improvement of environmental management.
- Action to combat global warming.
- Contributing to the creation of a sustainable recycling society.

Established in 2006

## The Founding Spirit

1. Production business is a social service. Its purpose is to make people's lives more convenient and enjoyable. Its aim should be to offer good, useful products at moderate prices.
2. There must be a basic commitment to delivering quality products unrivaled by those of competitors.
3. Management should adhere to the principles of fairness and consideration. The mission of a fair, honest management is to ensure capital, share the fruits of endeavor with its workers, and fulfill its responsibilities to consumers to act, in other words, rationally.
4. A company should have as few employees as possible and make the best use of the productivity of machines. This is the great secret for improving efficiency.
5. The success or failure of a business depends on how much one is willing to study, and with how much determination, to mutually improve and grow. Accordingly, one must make a great effort.

## Building on the foundation was founded Aiming to continue to be a

### Reaching the milestone of our 100th anniversary while facing a rapidly changing business environment

Recently, the business environment in which Yokohama Rubber operates has been undergoing dramatic changes. Besides the increased uncertainty in the economic and political spheres, and in international relations, the rapid development of autonomous driving technology and of the Internet of Things (IoT), as well as the increasingly widespread adoption of electric vehicles, has created a situation where the automotive industry is undergoing a transformation of the kind that normally only occurs once every few decades. Having been appointed President of Yokohama Rubber in March 2017, I am deeply aware of the heavy responsibility that I now bear to steer the Yokohama Rubber Group, an organization that comprises around 25,000 people, through these challenging times.

Yokohama Rubber's GD100 medium-range management plan, which takes as its final year of implementation the year 2017 (the year that marks the 100th anniversary of the founding of Yokohama Rubber), was launched in fiscal 2006. At that time, demand for our company's tires and other products was growing steadily throughout the world; anticipating that we would be able to ride this wave of growth, we set ourselves the high targets of achieving annual sales of 1 trillion yen and annual operating income of 100 billion yen. Afterwards, however, the world has experienced a series of events that could not have been foreseen, including the Lehman collapse of 2008, the Great East Japan Earthquake of 2011, the European Debt Crisis, etc. In addition, the emergence of major new tire manufacturers in South Korea and China has led to the global market becoming flooded with cheap tires, disrupting the supply-demand equilibrium. As a consequence, the company has been operating within a very challenging business environment over the past few years.

Despite the unexpectedly dramatic changes in the business environment, because all of the companies in the Yokohama Rubber Group have been moving in the same strategic direction in a coordinated manner, I feel that the setting of high targets over the medium-term timeframe still had a very positive impact. Over the past few years, we have achieved steady growth in the global OE (Original Equipment) segment, and our sponsorship agreement with Chelsea Football Club has helped us to boost Yokohama Rubber's global brand recognition. We have also succeeded in expanding our industrial tires business, with the acquisition of Alliance Tire Group B.V. (ATG) in fiscal 2016 and of Aichi Tire Industry Co., Ltd. in fiscal 2017. As a result, despite the uncertain times in which we have found ourselves, we have succeeded in maintaining steady growth in the global market as a whole, and have made significant forward progress.

### Remaining true to Yokohama Rubber's core values, and realizing corporate social responsibility from a broad perspective

In order to maintain our status as a business enterprise that is felt

# of trust over the first 100 years since our company

# company indispensable to society over the next 100 years

to be irreplaceable, both by our customers and by society as a whole, as we approach our 100th anniversary, we need to think seriously about the next 100 years. We are currently formulating our next medium-term strategy, focused on what we want to achieve by fiscal 2020.

To ensure the continued growth of Yokohama Rubber in today's constantly changing automotive sector, it is vitally important to spread awareness of our company's tires among the customers of leading global automotive manufacturers in Japan, Europe, North America and China, etc., ensuring that the Yokohama Rubber brand becomes more widely known. One area where our company is particularly strong is in relation to the superior environmental performance of our tires. Making effective use of our unique technology that combines low rolling resistance with improved wet-weather performance (two attributes that in the past have usually been mutually exclusive), we are expanding our presence in the premium car market, where the emphasis is on speed and comfort.

CSR, which includes not only measures to address environmental problems but also compliance and quality enhancement initiatives, is an area that needs to be an integral part of our day-to-day operations in order to realize continued growth for our company. Companies that are weak in CSR cannot win the trust of society; a single mistake in CSR can be fatal, even for a firm with a history going back 100 years.

The impact of our corporate activities is felt far and wide, and we need to take account of the impact on the regions in which we operate, and on our suppliers. It is not enough just to look at how things are now; we need to build solid foundations that look ahead to the situation several decades from now, when the people currently joining our company as new employees will be approaching retirement.

We attach great importance to initiatives aimed at tackling major international challenges, such as the Sustainable Development Goals (SDGs) adopted by the United Nations in 2015. The 17 objectives enunciated by the SDGs each represent new business opportunities for our company. Yokohama Rubber's manages have an important role to play in formulating strategies that recognize this importance and that reflect the connections between the SDGs and our company's business operations, and in encouraging every individual employee to participate fully in implementing these strategies.

Yokohama Rubber has been described as "a serious-minded company run by good people." Environmental activities such as the Yokohama Forever Forest initiative, launched in fiscal 2007 with the goal of planting 500,000 trees, are a reflection of the kind of company we are. Every individual tree is being carefully cultivated by us from a seedling until it is fully grown. A company that is willing to continue making this type of effort, working away steadily year after year, is a company with a corporate culture that it can be proud of, and which can be maintained over the next 100 years.

## Striving for continued growth, and focusing on the development of diverse human talent around the world

To remain competitive in an era of revolutionary changes, both business innovation and technology innovation are vitally important. Without question, the single most important driver of innovation is the diverse human resources that underpin our Group's operations. At our Japan-based facilities, we are working actively to promote women's advancement and participation. Nearly 40% of the new employees that have joined the company in fiscal 2017 are women, and we view the creation of a workplace environment in which outstanding female employees can maximize their potential as a top priority.

In addition, as part of our efforts to take the global expansion of our business operations a step further, we are proactively recruiting local talent, and cultivating the local managers to whom we can entrust the running of our business sites in countries throughout the world. Japanese-style business management cannot be applied in a "one size fits all" way throughout the world; while ensuring that the human talent that plays such a key role in our overseas operations has an in-depth understanding of the Yokohama Rubber corporate philosophy and of the policies that we seek to adhere to, we also need to give them the latitude to develop business operations in ways that reflect local culture and the unique features of local society. In the future, I hope that we will see some of these locally-recruited managers making an important contribution on the board of directors of our company.

When undertaking human talent cultivation, I believe that an effective approach is to set targets that are slightly higher than what each individual might currently think they are capable of achieving, and to gradually entrust them with more and more responsibility. The individual employee learns to make decisions for himself or herself, determine what steps need to be taken, take responsibility for the outcome, and accept assessment of his or her performance. This can be very challenging, but younger employees really do need to build up experience in this way.

We need to treasure the "Yokohama Rubber core values" that have been built up by so many employees over the 100 years of our company's history, and work to enhance them still further. By working together as one, we can take on the challenge of dealing with the changes that the next 100 years will bring.

**Masataka Yamaishi**

President and Representative Member of the Board

# Yokohama Rubber's 100 Year History of Staying Ahead of Society

## 1917 to 1999

### 1917 to 1937

#### Foundation to prewar growth period

Established with aspirations of producing some of the finest products in the world

Operating based on a founding spirit that values economic efficiency and social qualities.



Hiranuma Plant

### 1938 to 1950s

#### From military demand, expansion, and defeat to reconstruction

Business driven by military demand/overseas production and reconstruction from postwar

Promptly developed environmentally friendly products while resuming business following hardships.



Head Office and Tokyo Branch Office

#### Developments at Yokohama Rubber

- 1917** Yokohama Rubber Co., Ltd. was established on October 13 as a joint venture between the BF Goodrich Company and Yokohama Electric Cable Manufacturing Company. Has the ambition to produce the best rubber products in the world using the advanced technology of the US.
- 1920** Started tire production
- 1923** Hiranuma Plant was completely destroyed by the Great Kanto Earthquake. Worked to rebuild the plant while importing and selling tires from the BF Goodrich Company.
- 1929** Started operations of the Yokohama Plant completed in Tsurumi-ku, Yokohama. The speech at that time by President Suekichi Nakagawa adopted as the founding spirit.

#### Founding spirit (summary)

1. Production business is a social service.
2. Commit to delivering quality products unrivaled by those of competitors.
3. Management should adhere to the principles of fairness and consideration.
4. Making the best use of the productivity of machines is the great secret for improving efficiency.
5. Make a great effort to succeed in business.

**1938 to 1944**

Established production sites in Asian countries

**1944**

Opening of Mie Plant

**1945 (end of war)**

Yokohama Plant rendered inoperative by Allied air raids. Lost all the business sites in Japan and overseas

**1946**

Got a fresh start based on a dauntless spirit. Started operations at Mishima Plant

**1951**

Started operations at Hiratsuka Plant

#### Representative products

- 1921** Independent development and utility model registration of a cut-edge flat belt. Developed Japan's first corded tire, the "Hama Town Cord". Extended the life of tires by three times.
- 1929** Started domestic production of V-belt. Revolutionized the V-belt industry with high-speed operation, long life, and excellent acoustics.
- 1937** Launched a Y-shaped tire that adopts a new tire cord. Improved durability, etc.

**1940**

Started sales of recycled rubber

**1952**

Launched Japan's first cord conveyor belts

**1954**

Launched the "Y-29", Japan's first snow tire

**1958**

Launched HAMATITE® sealant made from a rubber and resin compound. Aimed for the domestic production of construction sealant, which passed stringent durability testing and has been used in many high-rise buildings. Developed a pneumatic fender as the Company's first environmental contribution product. Previously, whales had been used as cushioning material for whaling ships coming alongside the pier, which were substituted by this fender.

Yokohama Rubber will celebrate its 100th anniversary since foundation in 2017. Over this period of 100 years, we have overcome various difficulties and worked as a company to develop products ahead of the world.

We will introduce the values Yokohama Rubber has continued to provide to society along with our environmental and CSR activities.

### 1960s to 1970s High growth period

Taking on our social responsibility as quickly as possible

As pollution had become a social issue and in anticipation of the times, we indicated a stance of consideration for not only our own company, but also the supply chain and the local community.



Onomichi Plant

### 1980s to 1990s From the bubble economy to a period of low economic growth

Pioneering environmental support

Launched sales of the "DNA" series as the first eco-tires in Japan, staying ahead of the global low fuel consumption trend.



"DNA", the first eco-tires in Japan

100 Year History of Staying Ahead of Society

- 1963** Renamed to The Yokohama Rubber Co., Ltd.
- 1970** Pollution Prevention Committee established  
Became the Environmental Improvement Department the following year.
- 1972** Established Tokyo Retread Co., Ltd. and started a retreading business
- 1973** Formulated a new management philosophy  
Aim to put an emphasis on corporate social responsibility. Around this time, we indicated that we would not generate pollution even at the stages of subcontractors, raw materials suppliers, and customers.
- 1974** Started operations at Onomichi Plant  
Equipped with a full factory wastewater closed system.
- 1977** Occurrence of some defects in car steel radial tires and subsequent announcement  
Started withdrawal and replacement measures. Made prompt response efforts including inspections.  
Planned and executed recurrence prevention measures.

- 1983** Entered the PRGR (ProGear) golf business
- 1992** Formulated the corporate philosophy
- 1992** Mie Plant completes a tire incineration boiler using waste heat in consideration of the environment
- 1993** Formulated environmental protection action plan
- 1996 to 1997** Established production and sales subsidiaries in the Philippines, Thailand, and Vietnam
- 1999** Acquired ISO 14001 for all plants in Japan



- 1964** Japan's first spiral high pressure hose released  
Supports the adoption of hydraulics for industry machinery.
- 1965** Manufacturing and sales of the first jet aircraft tires in Japan
- 1967** Launched sales of "G.T. Special" and "G.T. Special XX", radial tires for passenger cars  
Radial tires with doubled durability of bias tires up until now became mainstream.
- 1971** Launched sales of "G.T. Special Steel",  
Japan's first steel radial tubeless tire for passenger cars
- 1976** Started development of fuel-efficient tires for North America
- 1978** Launched sales of "ADVAN HF" for passenger cars

- 1980** Launched sales of "ASPEC AX-323", a Kevlar radial tire for passenger cars
- 1983** Launched sales of golf balls
- 1988** Launched sales of low-permeability air hose with one-tenth the alternative freon R134a permeability of traditional products
- 1990** Launched sales of "SY101", a studless tire for trucks and buses
- 1991** Launched sales of "Flex Line", a cylindrical conveyor belt that prevent scattering of the transported object
- 1998** Launched sales of "ES-01" and "ES-02" as first offerings of new fuel-efficient "DNA" series of passenger car tires in Japan  
The rolling resistance used for indicating fuel economy at this time is regarded as a benchmark for tire fuel economy now.



# Yokohama Rubber's 100 Year History of Staying Ahead of Society

## 2000 to 2017

### 2000s Evolution of CSR management

Becoming a company having world-class strengths in technologies for protecting the environment.

We have implemented various initiatives as a company having world-class strengths in technologies for protecting the environment based on GD100 and the Environmental GD100.



Logo for GD100

### Developments at Yokohama Rubber

- 2001** Started a zero emissions campaign  
Aim to stop producing industrial wastes for landfills by end of fiscal 2005
- 2001 to 2004** Established production and sales subsidiaries in China and Thailand
- 2003** Completed construction of Shinshiro-Minami Plant in Aichi Prefecture
- 2005** Established a tire sales company in Russia, Yokohama Russia L.L.C



- 2006** Announced new medium-range management plan, Grand Design 100 (GD 100)  
At the same time, set out on a policy of being a company having world-class strengths in technologies for protecting the environment
- Established production and sales subsidiaries in China (Shandong, Suzhou)
- 2007** Started the YOKOHAMA Forever Forest tree-planting project  
We create forests in consideration of biodiversity at offices in various locations.
- Established a local subsidiary in India, Yokohama India Pvt. Ltd.
- 2008** Established a Corporate Social Responsibility Division  
Released the CSR Management Vision of "To build a trusted identity as a contributing member of the global community."
- 2010** Formulated Guidelines on Biodiversity



### Representative products

- 2000** Began sales of prepreg for aircraft structures  
Achieved a significant reduction in weight compared to conventional metal structure materials and contributed to improved fuel economy.
- 2001** Launched sales of "ECU-193" wood-based flooring material elastic adhesive as a sick house countermeasure
- 2002** Launched sales of "iceGUARD iG10" studless tires for passenger vehicles
- 2003** ISO certification acquired for Yokohama Rubber's pneumatic fenders  
Launched sales of "Ecotex", an energy efficient conveyor belt
- 2005** ADVAN become a global flagship brand  
Launched worldwide sales of "ADVAN Sport V103"  
Launched sales of the "AIR Watch" tire pressure monitoring system for passenger cars

- 2007** Launched sales of "ZEN 102ZE", a fuel-efficient, low maintenance tire for trucks and buses
- 2009** Launched sales of "Y-coat", a coating material used in household appliances and electronic devices  
Contributed to improved durability for information home electronic products such as mobile phones.
- 2010** Launched sales of "BluEarth AE-01", a fuel-efficient tire for passenger cars, as the first offering in the "BluEarth" series



We would like to introduce our efforts to expand CSR management and environmentally friendly products that we have particularly focused on since 2001. We will implement world-pioneering business and social initiatives in preparation for the next 100 years for Yokohama Rubber.

## 2010s Further progress of globalization and expansion of social activities

In preparation for the next generation of society  
Evolution of social activities aimed at the next 100 years



Acquired Alliance Tire Group into a subsidiary



Indonesia Plant (marine products manufacturing)

**2011** Established Yokohama Peer Support Co., Ltd., as a company promoting employment of disabled individuals

Started environmental protection project in the Laojunshan Preservation Area in China

**2012** Received integrated ISO 14001 certification (China)

Signed the United Nations Global Compact

**2014** Introduced a regional comprehensive work position system, and abolished general position system

**2015** Held social contribution activities awards for business partners  
Awards were based on the result of self-diagnosis and questionnaires previously conducted with business partners



**2016** Acquired Alliance Tire Group B.V.

Certified for top-ranking A List in the CDP Climate Change Report 2016

**2017** Acquired Aichi Tire Industry Co., Ltd.

Achieved the goal of planting 500,000 trees in the YOKOHAMA Forever Forest Project



**2012** Launched sales of "Duotex", a long-life conveyor belt composed of recycled materials



**2015** Launched sales of the "AC6B 11" air conditioning hose, the first in the world to support next-generation refrigerant



**2016** Launched sales of the "ibar HG82" hose for high-pressure hydrogen gas  
Contributed to the spread of fuel cell vehicles and hydrogen stations.



**2017** Expected to achieve goal of 100% environmentally-friendly products





# Development of Products and Services that Contribute to the Environment and Society

## Tire business

### Tire business that evolves technologies in response to the expectations of customers and society

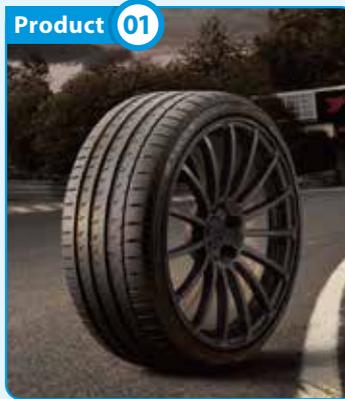
We continue to pursue technologies that achieve a top-level of environmental performance and lead to safety and peace of mind.

#### Tire products

We offer products that enrich the lives of customers while responding to the social needs.

Development of Products and Services that Contribute to the Environment and Society

#### Product 01



#### ADVAN Series "ADVAN Sport V105" "ADVAN FLEVA V701"

High-performance sporty tires  
We offer enjoyable handling and high driving performance on wet surfaces so that many people can enjoy comfort even at high speeds.

#### Product 03



#### iceGUARD Series "iceGUARD 6"

The masterpiece of Yokohama's studless tires "iceGUARD 6" added good performance in wet conditions and superior noise reduction to the existing key strengths of the iceGUARD brand (first-class performance on icy roads, long-lasting high performance, and improved fuel economy) to achieve even further safety on winter roads.

#### BluEarth Series "BluEarth RV-02"

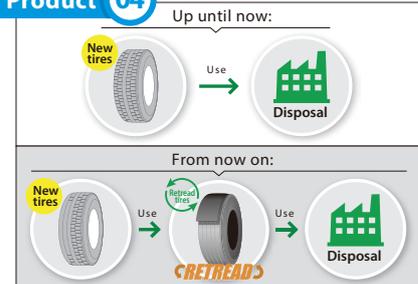
Acquired the highest grade of "a" for wet grip performance  
This tire for minivans and crossover SUVs you use to drive around your precious family members and cargo achieves both fuel efficiency and safe driving during rainy weather.

#### Product 02



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#### Product 04



#### Retread tires

Retread tires are tires that have been reused through re-adherence of tread rubber that has worn off to restore function as a tire. By reusing resources we contribute to the reduction of CO<sub>2</sub> emissions in tire production as well as a reduction in waste tires.

#### Product 05



#### Internet release of "Rainy Day Hill"

We have made an appeal for the excellent wet performance of Yokohama's tires through this original short movie in an effort to improve recognition.

**Technology 01**



**Development of and cooperation between technical bases**

We have developed regional development bases near markets including Japan, North America, Thailand, and Europe as a structure capable of supporting the requirements of each region.

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**"AIRTEX" low air permeability material**

This low air permeability liner that is applied inside tires significantly reduces tire air leaks and contributes to improved fuel efficiency for tires and resource conservation.

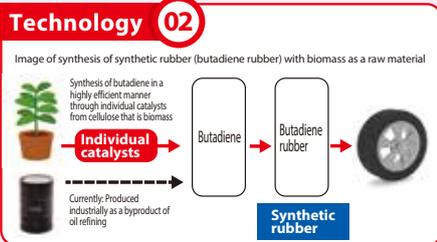
**Technology 03**



**Biomass materials**

We are developing technologies for the generation of raw materials for synthetic rubber including butadiene and isoprene from biomass. We can reduce CO<sub>2</sub> emissions to one-fourth of previous levels through the development of these technologies.

**Technology 02**



**Technology 04**

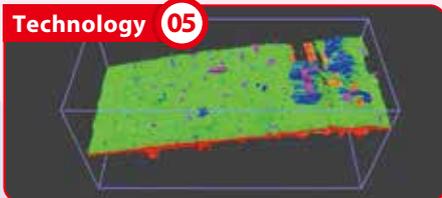


**Tire simulation technologies**

Super computers, numerical simulations, and data science are used to clarify the impact that the variety of design factors of tires and rubber can have on various characteristics to facilitate the development of next-generation tires.

To P. 34

**Technology 05**



**World's first 3D analysis technologies (Adhesion deterioration assessment)**

In partnership with Tohoku University and Hitachi High-Technologies Corporation, we have developed technologies for the three-dimensional analysis of rubber and steel cord adhesion deterioration. These technologies are expected to be applied to the development of tires with high durability.

To P. 34

**Promoting motor sports activities**

We promote and support various motor sports as opportunities to experience the joy of driving.

We will leverage the design, manufacturing, and assessment technology and know-how developed in these activities in the development of future projects.

To P. 25

**Service & Business 01**



**Service & Business 02**



**Expansion of production goods tire business**

We have expanded our business of tires for agricultural, forestry, and industrial applications through the acquisition of the Alliance Tire Group (ATG) and Aichi Tire Industry Co., Ltd. and partnerships.

To P. 27

**Technology development**

We utilize advanced technologies and materials technologies in response to the requirements of customers and society to develop a global R&D structure covering various use conditions.

**Service and business development**

We have a technology, service, and sales structure in place that allows us to quickly respond to various needs. Recently, we have also focused on the expansion of industrial application products and sales channels through M&As.

**Service & Business 03**



Development of Products and Services that Contribute to the Environment and Society

**Sponsorship agreement with Chelsea FC and social contribution activities**

We have entered a sponsorship agreement with a Premier League football club to help improve recognition of our company and our brand image. We also conduct social contribution activities, including a football school and tire safety awareness activities.

To P. 24

### We provide backing support for the lives of people through MB business products

Development of Products and Services that Contribute to the Environment and Society

**MB products**

We offer a variety of products that support social infrastructure.



**"Versatran" high pressure hose**

High pressure hoses are essential for a wide variety of industrial equipment such as construction machinery and machine tools. The hoses have the characteristic of improving flexibility through the optimization of materials and keeping the bending radius to a minimum.

We plan to develop a lineup of spiral hose products that prioritize high pressure, high durability, quality, and performance, and to strengthen the overseas sales of high pressure hoses with a focus on the mid-range and above market overseas.



**"AC6B 11" next-generation refrigerant hose**

This is an air conditioning refrigerant hose that supports HFO-1234yf that has a low global warming coefficient. We succeeded in improving coolant resistance through patented plastic materials.

[To P. 22](#)



**Resin tailgate adhesives**

Resin tailgate adhesives were developed through revolutionary primer-less technologies, and have contributed to a reduction in car body weight. As fuel efficiency is improved, they contribute to both the global environment and fuel cost reductions.



**Marine hose and pneumatic fender**

Yokohama Rubber has a global top class market share for pneumatic fenders and marine hoses, widely used in marine transport operations for crude oil, etc.

Since oil leaks can lead to major marine pollution, high reliability and durability have been essential for these products. In recent years, we have further improved the safety by introducing to the market our double carcass hoses with an oil leak detection feature.

[To P. 26](#)

**Technology 01**



**High-pressure hydrogen gas hoses "ibar HG82"**

We have achieved lightness, flexibility, and also durability through a hybrid structure of patented fiber and steel wire. We are also actively engaged in the development of hoses to support the 87.5 MPa international standards.

**Silicon encapsulating materials for LED**

We have developed highly durable silicon encapsulating materials for high-brightness LED lighting, which have been applied in many areas close to daily life including offices and shopping malls. In addition, UV-resistance silicon encapsulating materials, developed through proprietary technologies for UV-LED that demand has grown for recently, have been adopted and applied in various fields, including sensors and cosmetics.

**Technology 02**



**Technology development**

We conduct various forms of R&D in pioneering technologies and materials development to respond to the needs of customers, and technology development to support next-generation social infrastructure.

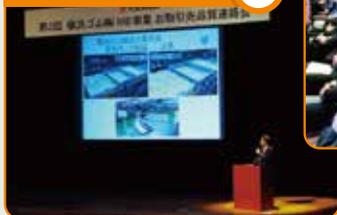
**"Tuftex α" conveyor belt**

By carrying out a number of field trials, using a proprietary evaluation criteria, and making fine adjustments at the compound level, we were able to develop "Tuftex α" with an abrasion resistance of 64% better than our existing Ultra Wear Resistant (UWR) cover compound.

**Technology 03**



**Service & Business 01**



**Business Partners Liaison Council**

We endeavor to stably provide high-quality products by creating strong trust relationships with business partners.

To P. 29

**Service and business development**

We have put in place global production, supply, and sales structure, and we also conduct activities aimed at improvements in terms of quality, technologies, and services.

**Service & Business 02**



**Expansion of global production and sales structure**

During the GD100 period, we have established sales and production bases in China (Shandong/Hangzhou), Italy, and Indonesia; sales bases in China (Shanghai), Singapore, and Europe (Dusseldorf); and a production base in Mexico in order to strengthen our global production and sales structure.

Development of Products and Services that Contribute to the Environment and Society



# YOKOHAMA Forever Forest Project

— Spreading greenery for smiling faces —

## Activities have spread over a period of eleven years since the start of the Project

YOKOHAMA Forever Forest Project that started from fiscal 2007 is a project for planting 500,000 seedlings at business locations in Japan and overseas by fiscal 2017 that mark Yokohama Rubber's 100th anniversary, based on our Environmental GD100 slogan of "we will become a company having world-class strengths in technologies for protecting the environment". Based on stance of potential natural vegetation, we plant the species native to that region. In addition, through tree planting we conduct green environmental regenera-

tion activities that protect life in the regional environment and local communities through means such as raising the environmental awareness of participants, creating fire prevention programs and forests to preserve the environment, contributing to global warming prevention, maintaining biodiversity, and improving communication with the local community. The activities of this period of eleven years have spread significantly in aspects including ties between various people and contributions to the environment.

## History of 500,000 trees and the fixed quantity of CO<sub>2</sub> absorption (Estimated based on measurements at the Hiratsuka Factory)



### China



**Zhangyong Huan**

Safety and Environmental Section Manager  
Yokohama Industrial Products - Hangzhou Co., Ltd. (YIPHZ)

We have conducted tree planting activities every year since 2014. We also participate in regional tree planting activities when we have the opportunity and value our relationship with the local community. In March 2016, we also participated in tree planting activities held near the Qiantang River that flows through the city of Hangzhou, and donated seedlings that we had nurtured in our plant premises. These types of YOKOHAMA Forever Forest Project activities have been noticed by the local community and were introduced in an event as public welfare activities in November 2016. In March 2017, employees provided guidance on tree planting at a tree planting event held at an elementary school in the Xiasha District of the city of Hangzhou.

### India



**Pradeep Baswana**

Joint Manager, EHS  
Yokohama India Pvt. Ltd. (YIN)

At the first tree planting event conducted in February 2016, 24 species of 2,159 tree seedlings were planted in the plant premises, with the participation of personnel from Embassy of Japan, state government, representatives from other related companies and school children. The trees grew about 3 m tall after one year, as the tree planted area grew into green area many birds and insects started to come. In February 2017, 24 species of 1,740 tree seedlings were planted at the second tree planting event. Our employees take pride in their contributions as part of CSR activities and biodiversity conservation activities. We are planning tree planting in Kasar Village as our next CSR activity including village personnel.

### Shinshiro



**Masaru Naito**

Meister, Shinshiro Plant

Currently, approximately 70,000 seedlings are growing at the Shinshiro Plant. Seedlings are contributed to nursery schools, kindergartens, elementary schools, social welfare corporations, and other organizations to assist with local reforestation. At the Shinshiro City Johoku Nursery School, as activities to protect the lives of trees when trees were felled at the local Tominaga Shrine accompanying the relocation of the school building, we supported the raising and planting of seedlings from acorns from the trees that were felled. In addition, we conducted tree planting activities together with the NPO Donguri Mongori, Parks and Green Spaces Division and Natural Environment Division in Aichi Prefecture, and local children.

## Ongoing support for disaster areas leveraging the know-how of the YOKOHAMA Forever Forest Project "Green Tide Embankment" in Otsuchi-cho, Iwate Prefecture

We support the "Green Tide Embankment" Project that is part of the reconstruction plan concept set forth by Otsuchi-cho that focuses on creating a beautiful town with unique paths with a view of the sea that make you want to walk, and as part of these efforts we supported the creation of a forest that will serve as a model case. The "Green Tide Embankment" is an idea conceived by the plant ecologist Dr. Akira Miyawaki, who has provided guidance for the YOKOHAMA Forever Forest Project. The Miyawaki method is a unique method for growing trees closely together in a state near to a natural forest by planting native species and raising many types of seedlings. On April 30, 2012, a mound (embankment) utilizing earthquake rubble was formed for a length of 50 m along the Kozuchi River that flows through Otsuchi-cho. Starting with the first tree planting event, a mound of approximately 250 meters long was forested by 2015. These activities have been

carried on in a tree planting course in the "Furusato (Hometown) Course" of Otsuchi Gakuen that is operated by the town of Otsuchi. Debris from the Great East Japan Earthquake are buried inside of the mounds where these trees are planted. We believe these activities not only constitute the effective utilization of debris that are full of the memories of people who underwent a disaster, but that they will also help prevent disasters in the future.



### Hiratsuka



#### Fumina Suzuki

Environmental Protection Promotion Department, Hiratsuka Factory

We started bird watching from September 2008 in order to understand the effects of the YOKOHAMA Forever Forest Project on the ecosystem. We have held monthly bird watching events 106 times as of June 2017 while receiving guidance from the Komatan bird watching group, and we have observed 55 species of birds in the process. We have felt the connection between birds and the YOKOHAMA Forever Forest while keeping records that include the forest being used by migrating birds including the eastern crowned warbler and nests built of trees that were planted by birds such as the white-eye. We will continue bird watching in the future as well.

### North America



#### Christian Yates

Senior Environmental Specialist, Yokohama Tire Manufacturing Virginia, LLC (YTMV)

We planted 2,300 seedlings during the first tree planting event in 2009. We have plans to complete the planting of a total of 13,000 trees in 2017. A YOKOHAMA Forever Forest that contributes to the habitat of living creatures has been formed at the plant, and the breeding of mammals such as deer and red fox and the eastern bluebird that is an endangered species has been observed at this forest. In addition, we are confident that the positive effects of this YOKOHAMA Forever Forest that include contributions to biodiversity, the absorption of CO<sub>2</sub>, and controlling surface water and soil erosion to assist penetration to groundwater will lead to trust from the community surrounding the plant.

### Vietnam



**Nguyen Thanh Duy Sinh** (left)  
General Affairs Section Manager

**Huynh Thi Thu Ai** (right)  
Environment Section Manager, Yokohama Tyre Vietnam Inc. (YTVI)

We have also planted a total of 2,235 trees in tree planting activities at eight elementary schools in the neighborhood outside of the plant. According to Principle Nguyen Anh Hong, "As the students are proud of the trees they have planted, and they bring along their friends and family to tell them which tree they planted, I think these activities are also good for raising their awareness of environmental protection." It also makes us happy to see children play under the shadows of trees they have grown, and we take pride in the fact that we have also contributed to an improvement in the awareness of people in the local community towards climate change and the environment.

### Thailand



#### Nittaya Suna

Environment Supervisor, Safety and Environment Section, Yokohama Tire Manufacturing (Thailand) Co., Ltd. (YTMT)

We started tree planting activities in 2008 under the guidance of Dr. Shirin of the Thai Royal Household Bureau. We expect to achieve the planting of approximately 81,000 trees in 2017, which is 161% of the tree planting target of 50,000 trees. We have also conducted bird and insect monitoring surveys within the plant premises since 2013. Furthermore, from 2015 we started creating a biotope, and held information sharing events for stakeholders including local residents, local municipalities, and elementary schools.

# The Future of Yokohama Rubber and CSR

## CSR and Important Issues (Materiality)

Yokohama Rubber Group is committed to the ten principles of the UN Global Compact<sup>\*1</sup> and carries out the Plan-Do-Check-Act (PDCA) cycle following the framework of ISO 26000<sup>\*2</sup>.

\*1: A voluntary initiative in which companies participate in a worldwide framework for realizing a sustainable society by taking action as a good corporate citizen through creative and responsible leadership.

\*2: A set of guidelines created by the International Standards Organization (ISO) on the social responsibilities of companies and other organizations.

### The Ten Principles of the UN Global Compact

#### Human Rights

- Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and
- Principle 2: make sure that they are not complicit in human rights abuses.

#### Labour

- Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
- Principle 4: the elimination of all forms of forced and compulsory labour;
- Principle 5: the effective abolition of child labour; and
- Principle 6: the elimination of discrimination in respect of employment and occupation.

#### Environment

- Principle 7: Businesses should support a precautionary approach to environmental challenges;
- Principle 8: undertake initiatives to promote greater environmental responsibility; and
- Principle 9: encourage the development and diffusion of environmentally friendly technologies.

#### Anti-Corruption

- Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.



### ISO 26000 Seven Core Subjects

- 1 Organizational governance
- 2 Human rights
- 3 Labor practices
- 4 The environment
- 5 Fair operating practices
- 6 Consumer issues
- 7 Community involvement and development

### ● Determining Important Issues (Materiality)

In 2014 we determined important issues (materiality) with regards to themes of great interest to and impacts on both the company and stakeholders, from among the many CSR issues that exist.

We focus on specific items among these and establish KPI as we work towards ongoing improvements by implementing the PDCA cycle to achieve these items.

<b>The global environment</b>	We challenge to build a sustainable society in harmony with the environment, to protect our blue planet and human beings.	<ul style="list-style-type: none"> <li>● Materials</li> <li>● Energy</li> <li>● Water</li> <li>● Biodiversity</li> <li>● Emissions</li> <li>● Products and services</li> <li>● Environmental grievance mechanisms</li> </ul>
<b>Local communities</b>	We build a trusted identity as a contributing member of the global community by making contributions to the development and prosperity of local communities.	<ul style="list-style-type: none"> <li>● Market presence</li> <li>● Local communities</li> <li>● Grievance mechanisms for impacts on society</li> </ul>
<b>Customers</b>	We supply safe and secure products through manufacturing focused on our passion and technology.	<ul style="list-style-type: none"> <li>● Customer health and safety</li> <li>● Product and service labeling</li> <li>● Marketing communications</li> <li>● Compliance (Product liability)</li> </ul>
<b>Shareholders/investors</b>	We improve our company value by growing business opportunities.	<ul style="list-style-type: none"> <li>● Economic performance</li> </ul>
<b>Business partners</b>	We promote CSR activities throughout the value chain.	<ul style="list-style-type: none"> <li>● Supplier human rights assessment</li> <li>● Supplier assessment for impacts on society</li> <li>● Supplier environmental assessment</li> <li>● Supplier assessment for labor practices</li> <li>● Child labor</li> <li>● Forced or compulsory labor</li> </ul>
<b>Employees</b>	We value and develop our people, and create opportunities for people.	<ul style="list-style-type: none"> <li>● Occupational health and safety</li> <li>● Training and education</li> <li>● Diversity and equal opportunities</li> <li>● Human rights grievance mechanisms</li> </ul>

\*Please see page 21 for specific initiatives for stakeholders in terms of value creation through our businesses.

# Participation in initiatives in Japan and overseas

## ● Japan Association for the World Food Programme

We endorse the World Food Programme (WFP) in undertaking to eradicate hunger and poverty and support the activities of the WFP as a trustee.

## ● WBCSD (World Business Council for Sustainable Development)

WBCSD refers to the united association consists of top executives from global corporations in order to perform their leadership in their industry, have lively discussion, and propose policies with regards to the environment and sustainable development. We are participating in the Tire Industry Project which is to conduct surveys pertaining to possible impact on the environment and health to be made by tires, and to promote various activities to save energies in the buildings and offices.



## ● Charter of Corporate Behavior of Keidanren

We conduct business activities in accordance with the Charter of Corporate Behavior in order to gain trust and empathy from society. Furthermore, we have been in accordance with the idea of "Declaration of Biodiversity by Keidanren" and their promotion partners since 2009 to develop various approaches for the preservation of biodiversity. Basic policies and action guidelines have been set forth as "Guidelines for the Preservation of

Biodiversity."

In addition, we participate in various activities for Keidanren's Commitment to a Low Carbon Society under the vision of "Japanese business community to harness our technological prowess and assume an instrumental role in the drive to halve global GHG emissions by the year 2050".

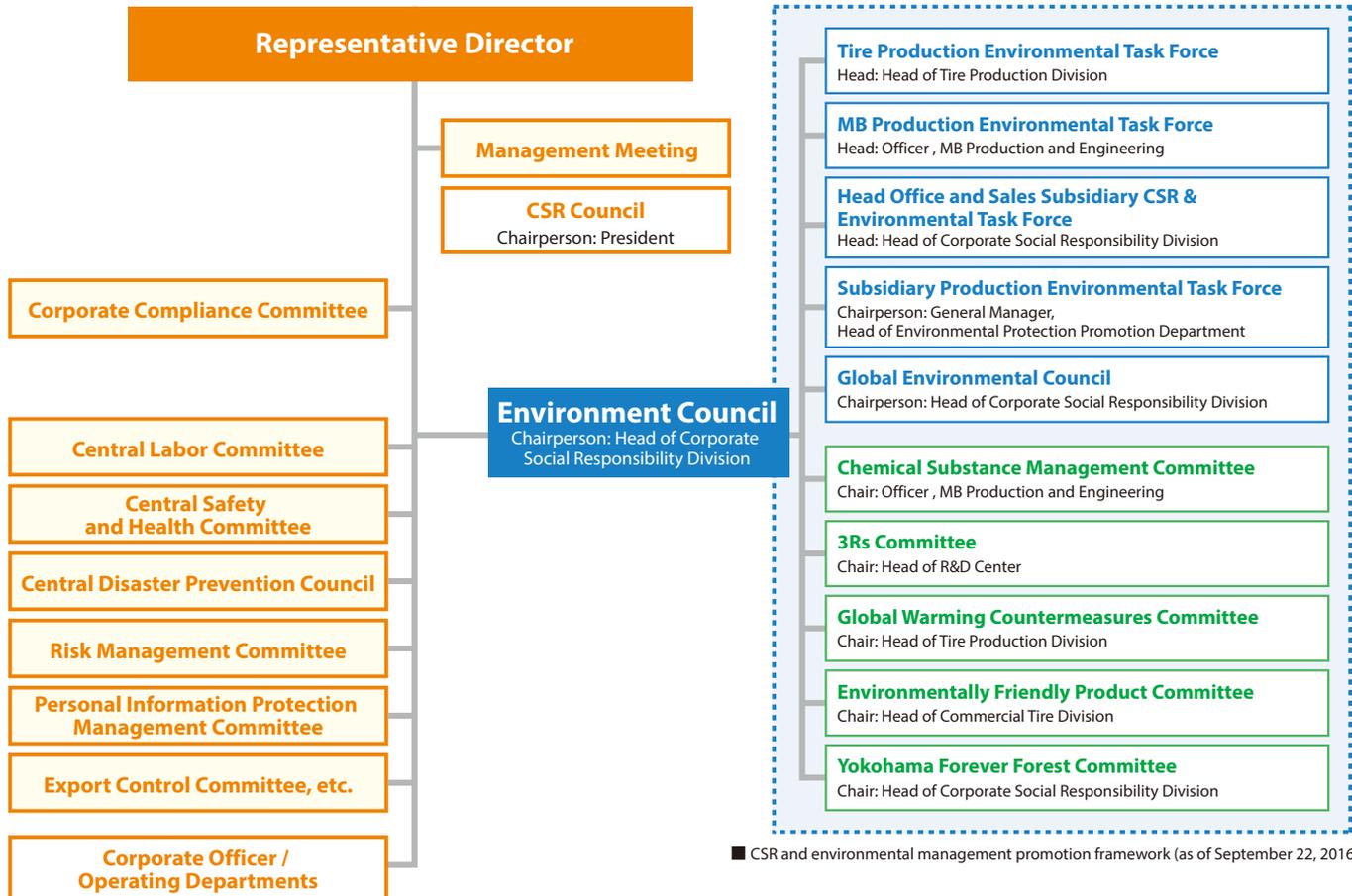
## ● Sustainable development goals (SDGs) adopted by the United Nations

We work to resolve important issues (materiality) as we conduct business activities that contribute to SDGs in order to achieve a sustainable society.



# CSR and Environmental Management Promotion System

Twice a year, we hold a CSR Council chaired by the President and an Environmental Council chaired by the Head of Corporate Social Responsibility Division, in order to plan and review CSR issues that Yokohama Rubber Group should be addressing. Matters that affect management are reported to the Executive Committee for approval.

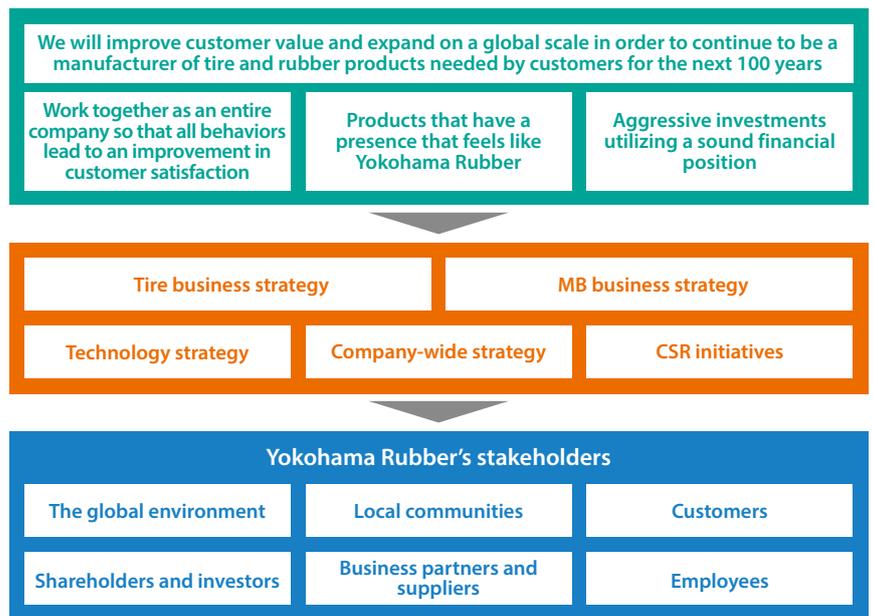


■ CSR and environmental management promotion framework (as of September 22, 2016)

# Creating Value through Our Businesses

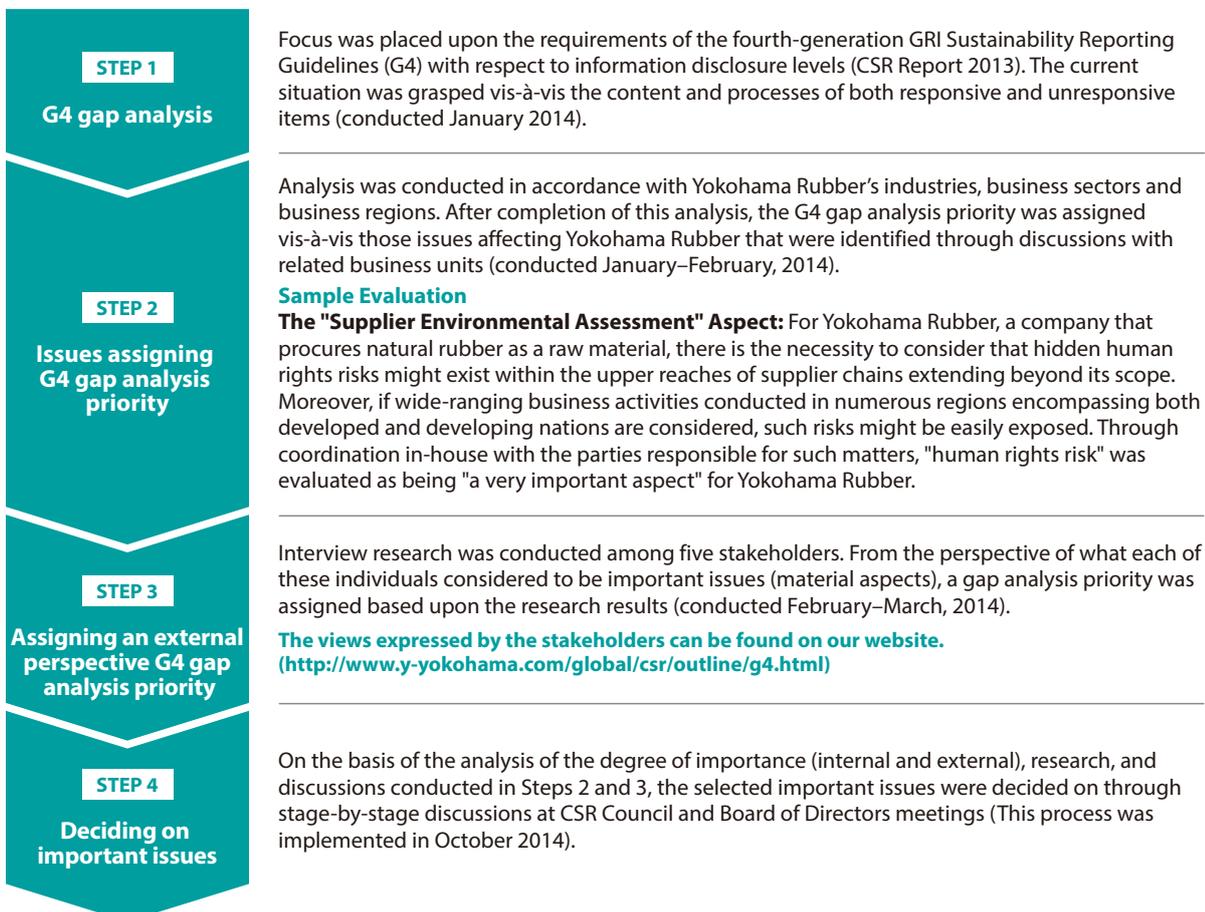
## GD100 Phase IV: All for growth

Phase IV (2015 to 2017) is the culmination of GD100 and is positioned as the phase for setting the stage for progress in our company's second century and resolving issues that have arisen up until now based on the theme of "All for Growth—Open the way for the next 100 years by bringing together the potential of Yokohama Rubber". We hope to bring together all forms of growth in our business activities, including the growth achieved in each phase, the growth of the Group overall, and individual growth. Net sales of 770 billion yen, operating income of 80 billion yen, and an operating margin of 10.4% have been set as the quantitative targets for 2017. Note that due to subsequent changes in the environment, these figures were net sales of 660 billion yen, operating income of 50 billion yen, and an operating margin of 7.6% in the report for the second quarter of fiscal 2017 (as of August 2017).



## Process used for identifying important issues

We identify important issues in relation to Yokohama Rubber's stakeholders and determine which issues should be prioritized.



We will strive for ongoing improvement by setting KPIs and implementing the PDCA cycle in relation to the selected important issues.

# Yokohama Rubber's Important Issues

## For the Global Environment



We challenge to build a sustainable society in harmony with the environment, to protect our blue planet and human beings.

-  Organizational governance
-  The environment



## Together with Local Communities



We build a trusted identity as a contributing member of the global community by making contributions to the development and prosperity of local communities.

-  Organizational governance
-  Community involvement and development



## Together with Our Customers



We supply safe and secure products through manufacturing focused on our passion and technology.

-  Organizational governance
-  Consumer issues



## To Our Stakeholders and Investors



We improve our company value by growing business opportunities.

-  Organizational governance



## Together with Our Business Partners



We promote CSR activities throughout the value chain.\*  
\*The overall series of activities or stakeholders providing or receiving products or services.

-  Organizational governance
-  Human rights
-  Labour practices
-  Fair operating practices



## Together with Our Employees



We value and develop our people, and create opportunities for people.

-  Organizational governance
-  Human rights
-  Labour practices



\*       These symbols correspond to the ISO 26000 framework outlined on pages 35 and 36.



For the Global Environment



The tractor unit of an 18-wheeler tractor-trailer in the U.S.  
The rear axles are fitted with ultra-wide base (UWB) single tires

## Development of ultra-wide base (UWB) single tires that help alleviating the environmental impact by large commercial vehicles

Since 2011, Yokohama Rubber has been rolling out ultra-wide base (UWB) single tire products in the North American market that make a positive contribution towards improving the transport efficiency and fuel economy of large commercial vehicles such as buses, trucks and tanker trucks.

Conventionally, these types of large vehicles have been fitted with sets of dual tires (two tires positioned adjacent to each other) in order to fully support the weight of the vehicle and its cargo or passengers. Yokohama Rubber's UWB single tires are nearly as wide as two conventional tires, so just one of these tires can support the load of a large commercial vehicle that used to require two tires. UWB tires have a very low aspect ratio.

Switching over to UWB single tires offers many benefits. For one thing, the overall weight of the vehicle itself is reduced. In the case of the eighteen-wheeler tractor-trailers that are the most common type of long-distance truck in the U.S., using UWB single tires instead of dual tires can reduce overall vehicle weight by around 200 kilograms.

A vehicle's maximum load capacity is determined by the vehicle's shape and size; it cannot carry more than this maximum capacity. By making the vehicle itself lighter, you can increase the size of the load that it can carry. A UWB single tire requires less space to install than a set of dual tires; this means that a vehicle equipped with UWB single tires can not only carry heavier cargo, it can also carry cargo that occupies a larger volume of space.

Being able to carry more cargo at one time makes for improved transport efficiency, which reduces transport costs and also minimizes the impact on the environment. The use of UWB single tires also reduces rolling resistance by around 10–12%, making it possible to achieve significant improvements in fuel economy. All of Yokohama Rubber's UWB single tire products have received SmartWay® certification, which is awarded under the U.S. Environmental Protection Agency (EPA) SmartWay® program for evaluating products that make a contribution towards reducing the environmental burden of commercial transportation.

In addition, the amount of materials needed to manufacture one UWB single tire is much smaller than the corresponding amount for a set of dual tires, so the adoption of UWB tires also helps to save resources.

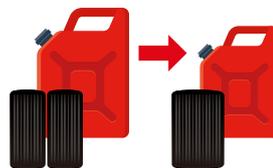
While UWB single tires do offer all of the benefits outlined above, because the tire's section width is greater in relation to its section height, a very heavy load is placed on the tire belt, and conventional

tire construction methods cannot provide adequate performance. To overcome this problem, Yokohama Rubber developed SPIRALOOP tire belt structure technology, which optimizes materials, sizing, alignment and manufacturing processes. This patented technology has made it possible for Yokohama Rubber to undertake mass production of UWB single tires.

In the North American market, where long-distance road transportation is highly developed, UWB tires accounted for 3.9% of the total demand for large commercial vehicle tires in 2016, and this figure is forecast to grow in the future. Currently, UWB single tires account for just under 10% of Yokohama Rubber's total tire production; given that demand for this type of tire is expected to increase in Japan as well in the future, Yokohama Rubber's UWB tires can be expected to start making inroads into the Japanese market too.

### The benefits of UWB single tires

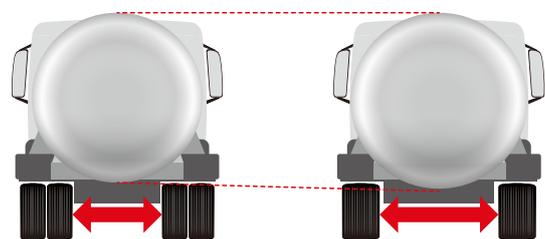
#### Improved fuel economy



#### Light-weighting



#### Increased load-carrying space



# We challenge to build a sustainable society in harmony with the environment, to protect our blue planet and human beings.

## < Our Goals >

- To make all of our products environmentally friendly
- To reduce the total amount of greenhouse gas (GHG) emissions (to 50% less than 2005 levels across the value chain)
- To promote the efficient use of water resources according to the characteristics of water risks
- To develop biodiversity conservation activities at production sites

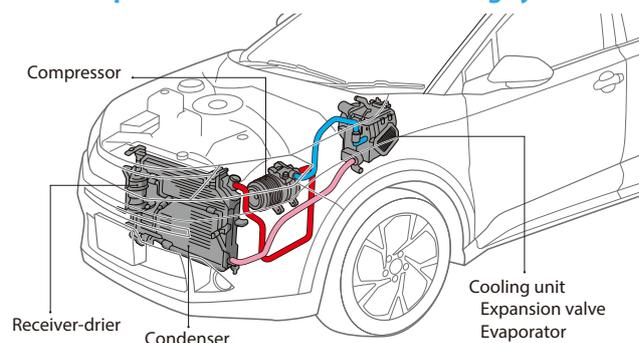
## Ongoing improvement of air-conditioning hoses that support next-generation air-conditioning refrigerant

A car's air-conditioning system, which is an indispensable part of the vehicle, creates cold air using vaporization heat generated by a continual cycle of alternating liquefaction and gasification (through the application of pressure) of refrigerant inside hoses located within the air-conditioning system in the engine compartment.

In recent years, there has been a worldwide movement towards tighter regulation of the types of refrigerant used in air-conditioning systems, with the aim of helping to prevent global warming. Starting from 2017, it will be obligatory for all new cars sold within the European Union to use air-conditioning refrigerant that has a Global Warming Potential (GWP) of no more than 150. Similar regulations are expected to be introduced in North America and Japan in the future. Responding to this trend, Yokohama Rubber has launched the "AC6B 11" high-pressure hose, which is designed to support the new-generation HFO-1234yf air-conditioning refrigerant to which car manufacturers are starting to switch over. HFO-1234yf has a very low GWP of just 4, compared to a GWP of 1,300 for traditional air-conditioning refrigerants. However, when HFO-1234yf is used in conventional air-conditioning hoses under pressure, it can be dangerous because it may lead to the release of acid that can cause cracks to develop in the inner resin of the hose. The new "AC6B 11" hose uses a new type of resin that has been specially developed by Yokohama Rubber, and features improvements to the outer rubber layer and to the fibers of the reinforcement layer, which successfully prevents the problem with acid.

Yokohama Rubber has also developed an improved version of the new hose that enhances the durability of the hose two-fold. Additional improvements include the adoption of softer resin to prevent vibration from the compressor from being transmitted to the passenger compartment, improvement of the high gas-permeability resistance layer that prevents gasified refrigerant from escaping from the hose, etc. By improving all three layers of the hose—the rubber layer, resin layer and reinforcing layer—Yokohama Rubber has succeeded in enhancing overall hose functionality across the board in line with users' requirements. In the future, we will continue to undertake further R&D in this area with the aim of meeting the differing needs of individual automotive manufacturers and individual models with greater precision.

### Main components of a car air-conditioning system



## VOICE The manager who heads Yokohama Rubber's UWB single tire sales division

Yokohama Rubber's ultra-wide base (UWB) single tires offer many benefits. Firstly, they reduce the overall weight of the vehicle. This means that one UWB single tire can carry more load than a set of two standard dual tires, which also makes for improved fuel economy. In addition, because UWB single tires have a larger contact patch than conventional dual tires, they provide the vehicle with enhanced running stability. Another major benefit of UWB single tires relates to maintenance and pre-trip inspections. Because none of the tires are located behind other tires, checking the air pressure and performing other inspections on UWB single tires is easier than it is with dual tires. The biggest issue with UWB single tires is retreading; in regard to this issue, Yokohama Rubber leads the way in the industry by producing UWB tires that are easier to retread than those of any other manufacturer. Reflecting the confidence we have in our products, in the North American market we offer a six-year unlimited retread guarantee.

**Dan Funkhouser**, Sr. Director of Commercial Sales, Yokohama Tire Corporation (North America)



Together with  
Local Communities

## 2016年YOKOHAMA（优科豪马） 奖学金颁奖典礼

高分子科学与工程学  
2016年12月2日



Scholarship presentation ceremony

### Yokohama Rubber (China) Co., Ltd. awards scholarships to local students

Every year since fiscal 2009, Yokohama Rubber (China) Co., Ltd. (which oversees all of Yokohama Rubber's operations in China) presents "Yokohama Scholarships" to academically outstanding students at Qingdao University of Science and Technology in Qingdao City, Shandong Province. In fiscal 2016, nine students received these scholarships.

Qingdao University of Science and Technology is a Key University\* that is administered directly by Shandong Provincial Government, and has a highly-regarded polymeric materials program. The Yokohama Scholarships are awarded to students in their second, third or fourth years at Qingdao University of Science and Technology. There are three classes of scholarship: second-year students receive between 1,500 and 6,000 Yuan, third-year students receive between 2,000 and 8,000 Yuan, and fourth-year students receive between 5,000 and 10,000 Yuan. Every year, scholarships totaling at least 50,000 Yuan are awarded.

Yokohama Rubber (China) Co., Ltd. has implemented measures to ensure that the company is run in harmony with the local community, for example by proactively recruiting local talent, and by providing sponsorship for a conservation project in the Laojunshan district of Yunnan Province. The Yokohama Scholarships program forms a part of

these activities. By providing financial support for outstanding local students, this program helps to raise awareness of Yokohama Rubber among people in the area, and the program is also expected to help Yokohama Rubber (China) Co., Ltd. recruit talented graduates. While the number of people recruited varies from year to year, in fiscal 2016 Yokohama Rubber (China) Co., Ltd. recruited a total of 37 local inhabitants, including graduates of Qingdao University of Science and Technology. While the number of scholarship recipients who subsequently go on to join the company has so far been limited, Yokohama Rubber is still proud to be able to make a contribution towards the cultivation of human talent in the region. By providing support for young people through community contribution activities of this kind, Yokohama Rubber (China) Co., Ltd. is aiming to strengthen awareness of Yokohama Rubber within the local community. In the future, we will continue to proactively undertake community contribution activities, including the provision of support for educational institutions.

\* Key University: In China, universities that are outstanding in a particular field(s) are designated as Key Universities by the government, and receive priority in the provision of government funding support. Both public and private universities are eligible for designation as Key Universities.



#### VOICE A student who has received a Yokohama Scholarship

I would like to express my sincere appreciation for the support that Yokohama Rubber has given to our university and to its students. I was born in a small village in Shanxi Province. My parents were not wealthy, but they brought me up with love and care. I firmly believe that studying hard is the only route to success. Receiving this scholarship is a great honor for me. I am determined to acquire as much specialist knowledge as I can during my time in university, and then go on to accumulate practical experience in society, so that I can build solid foundations for my future career and live up to the expectations of my parents, my teachers, and everyone else that cares about me. I hope that all of the students who have benefited from the support provided by Yokohama Rubber will be able to enjoy healthy, successful lives in which they can fulfil their dreams, and that in doing so they will also be making a contribution to the continued development of Yokohama Rubber. Thank you!

**Liu Xiliang**, Class 134, Rubber Science Division, Qingdao University of Science and Technology

**We build a trusted identity as a contributing member of the global community by making contributions to the development and prosperity of local communities.**

**< Our Goals >**

- Making contributions to local community development by engaging with the community, with a focus on the Forever Forest Project (a 500,000 tree-planting project)



## Making a positive contribution to society through collaboration with Chelsea FC

Following the signing of an Official Partner agreement between Yokohama Rubber and English Premier League football club Chelsea FC, Yokohama Rubber has been providing support for the Chelsea Foundation. The Chelsea Foundation is actively involved in using sport as a way to undertake socially-beneficial activities at the community level.

The Chelsea Foundation's core activity is the holding of soccer schools for young people. These soccer schools are held in a wide range of different locations: at the invitation of Yokohama Rubber, for the 2016–2017 season the Chelsea Foundation arranged for its coaches to provide soccer schools for local children in locations near Yokohama Rubber facilities in various parts of the world, including Qatar, several locations in Russia (including Moscow), and several locations in the U.S.A. Around 50 children are able to participate in each soccer school. Besides providing the opportunity to learn some of Chelsea's first-class soccer skills, the schools also help children to develop a positive outlook on life. Chelsea FC soccer schools are often the subject of reports in local media, and so this collaboration

with the Chelsea Foundation has also helped to raise Yokohama Rubber's international profile.

Yokohama Rubber is also providing support for New York football club FC Harlem through our collaboration with Chelsea FC. FC Harlem uses a range of football-based activities to keep children from low-income households from getting involved in drugs and crime.

In the U.K., Yokohama H.P.T. Ltd. (YHPT) has also collaborated with Chelsea FC on an awareness-raising initiative that makes use of short films reminding people of the importance of vehicle safety inspections (featuring players from the Chelsea Ladies team) which are shown on the main display screen after matches at the Chelsea FC Stamford Bridge ground, as well as tire safety information printed on the back of football match programmes. This initiative has been very well-received, and has been awarded the Tire Safety Association Award from TyreSafe, a British NPO. Yokohama Rubber will continue to collaborate with Chelsea FC in the future, endeavoring to make a positive contribution to both tire safety and local communities.



Meeting with children from all over the world who have participated in Chelsea Foundation soccer schools



Soccer school at FC Harlem in the U.S.A.



Together with  
Our Customers



## Bringing together a broad spectrum of new technologies to develop the "tires of the future"

In September 2017, Yokohama Rubber launched the "iceGUARD iG60", a new product under our iceGUARD brand of studless tires designed to provide enhanced safety when driving on winter roads. As befits a product introduced in 2017, the final year of implementation of Yokohama Rubber's GD100 medium-range management plan, the "iceGUARD iG60" is a truly superb studless tire that incorporates all of our company's latest technologies. The last few years have seen significant changes in road conditions due to the increasingly widespread adoption of snow-clearing technology and the impact of rising temperatures; there has been growing awareness of the need for studless tires to provide outstanding performance not only on ice but also on wet roads. "iceGUARD iG60" added good performance in wet conditions and superior noise reduction to the existing key strengths of the iceGUARD brand: first-class performance on icy roads, long-lasting high performance, and improved fuel economy. "iceGUARD iG60" achieves this through the adoption of a unique asymmetric tread pattern and the use of a newly-developed "Premium Absorptive Compound".

The new tire tread pattern improves grip on ice through effective use of the edge effect on the inner side of the tire and through enhanced traction, while greater stiffness makes for smoother handling.

The new "Premium Absorptive Compound" enhances the ability to absorb the film of water on the surface of the ice that is a major cause of cars skidding on ice, through uniform distribution of the new "Absorptive Micro Balloons". "iceGUARD iG60" also incorporates a new "Silica High Reactive White Polymer" that increases the proportion of silica in the mix and provides more uniform distribution; by strengthening adhesion to the road surface, this improves performance on both icy and wet roads.

In addition, the "Orange Oil S" that Yokohama Rubber has developed for use with studless tires helps "iceGUARD iG60" tires to maintain their flexibility and their performance on ice for a longer time.

Thanks to the adoption of these new technologies, "iceGUARD iG60" provides an improvement in braking performance on ice of 15%, and an improvement in performance on wet roads of 5%, compared to our iceGUARD iG50 PLUS. It also provides a level of performance sustainability and fuel economy comparable to iceGUARD iG50 PLUS.

In the future, Yokohama Rubber and "iceGUARD iG60" will continue striving to make driving on winter roads safer throughout the world.

Yokohama Rubber's involvement in motor sports has helped to enhance our global brand visibility while also driving the development of new technologies for Yokohama Rubber tires. In the 60-year history of our participation in motor sports, we have supplied a wide range of tires for motor sport competitions, mainly under our flagship ADVAN brand.

Recently, there have been major changes in the wider social environment that have affected cars. The scope of what is expected from tire performance has expanded to include economy—particularly in terms of fuel economy—and also how environmentally-friendly the tires are, and countries throughout the world have been formulating new regulations that tires are expected to comply with. At the same time, there is still room for improvement in other aspects of tire performance (including durability, wear resistance, light-weighting, steering control, etc.).

In the future, as the regulatory constraints on tires become ever more restrictive, Yokohama Rubber will continue to make effective use of the full gamut of our technologies to further enhance all of the functions that tires are expected to provide.



# We supply safe and secure products through manufacturing focused on our passion and technology.

## < Our Goals >

- Achievement and maintenance of zero violations of regulations and voluntary codes concerning usage of our products and services

## Providing highly reliable hoses that support offshore oil transportation throughout the world

Marine hose is one of the key products at Yokohama Rubber's Industrial Products Division, and which we hold a very high global market share. Our marine hoses play a vital role in the safe offshore transportation of petroleum. The Yokohama marine hose products are custom-made to the needs of the individual customers, carefully designed to suit the hydrographic conditions in the areas where they are used, as well as the shape of related systems, and anticipating the frequency of use.

Marine hoses are a product where reliability is vitally important, as damage can result in leakage of crude oil, and pollution of the ocean. Yokohama Rubber understands this matter and offers products with high reliability, including the industry-leading double-carpass hose, with enhanced leak detection capability. To ensure that customers can enjoy even greater peace of mind when using our marine hose products, Yokohama Rubber has obtained certification for its Seaflex marine hose products under the GMPHOM 2009 international certification framework, as formulated by the Oil Companies International Marine Forum (OCIMF). This certification requires the completion of a rigorous evaluation program, including the implementation of dynamic fatigue testing up to 25,000 times. In addition to our existing Hiratsuka Factory, Yokohama Rubber has also begun commercial production of Seaflex marine hose at its

Italian factory (through acquisition in 2014), and at its factory on Batam Island, Indonesia. Having three production facilities in different parts of the world provides Yokohama Rubber with a significant competitive advantage: we are able to supply customers from the plant that is most convenient for them in terms of logistics and delivery schedules, and we are also able to provide prompt after-sales service.

In the past few years, we have established new sales offices in Singapore, Germany and the U.S. that are functioning as hubs for the continued expansion of our marine hose business. By providing high-quality products and making effective use of the reputation of the Yokohama Rubber brand, we are demonstrating our determination to become an even bigger presence in the global market.



Dynamic fatigue testing in progress



### VOICE A marine hose customer

Due to the exposed locations of the offshore oil and gas production facilities, the transfer operations are often carried out under severer weather conditions than normally encountered at near shore applications. There is an overall requirement for extreme reliability, considering numerous factors including the cyclic loading on the hose against the constant wave action, the increased connection loads between hose sections and terminations, and additional crushing loads and bending forces being applied when the hose string is stored on a hose reel.

Having been involved in numerous projects where Yokohama hoses are used for the offloading systems of FPSO's and FSO's, I found the hoses to be of high quality and give exceptionally good performance. The construction of the hoses is robust and able to withstand the rigorous requirements imposed on the hoses. Furthermore, the Yokohama factory provides sound engineering support their products and this is helpful in the development of new concepts and systems for transferring fluid between vessels.

With the industry moving towards more developments of offshore gas fields, and in particular the production of liquid natural gas, it is hoped that Yokohama can expand its hose technology to include hoses suitable for the offshore transfer of cryogenic fluids.

**Alan Hooper**, President, Promor Pte. Ltd. (an offshore oilfield engineering firm)



To Our Stakeholders and Investors



Aerial View of the Yokohama Test Center of Sweden

## Expanding our commercial tire business through the acquisition of Alliance Tire Group and of Aichi Tire Industry

One of the tire business development strategies included in Phase IV (2015–2017) of the Yokohama Rubber Group's GD100 medium-term management plan is to grow the commercial tire business. With the aim of helping to realize this goal, Yokohama Rubber acquired Alliance Tire Group B.V. (ATG) in July 2016, and Aichi Tire Industry Co., Ltd. in March 2017. Demand for commercial tires is reckoned to account for approximately 45% of total global tire demand, compared to around 55% for consumer tires; through these acquisitions, Yokohama Rubber succeeded in raising commercial tires' share of our total tire sales substantially, from 20% to 32%. Through the addition of ATG, a specialist manufacturer of off-highway tires, and Aichi Tire Industry, a specialist manufacturer of industrial tires, we are aiming to strengthen our commercial tire business by adding tires for agricultural machinery and forestry machinery and industrial tires to our product line-up. We are also making effective use of the brands owned by ATG; in May 2017, we began sales of Alliance brand tires, giving us a second passenger car tire brand which is focused on the European market. In the future, by making effective use of the respective strengths of ATG and Aichi Tire Industry, we expect to be able to realize a high level of synergy. Initially, we will be using collaboration on design and production technology to make product development and production more efficient, and then go on to reduce procurement costs and logistics costs. We will be also utilizing the respective management resources of Yokohama Rubber, ATG and Aichi Tire Industry to achieve stronger growth and enhanced earnings performance in the tire business as a whole. ATG is a multinational corporation with production locations in India and Israel and with strong brands and extensive sales networks in

the European and North American markets. Rapid decision-making and brisk organizational management are key characteristics of those firms that succeed in achieving high growth and superior earnings performance in global markets. Particularly with respect to management, these firms tend to have a corporate culture that encourages all managers to keep costs and financial performance in mind all the time when performing their duties. In the future, the Yokohama Rubber Group will be striving to take full advantage of the marvelous opportunity presented by the acquisition of ATG, working proactively to incorporate a multinational-style organizational structure and organizational management methods oriented towards achieving rapid growth in global markets into the operations of the Group as a whole.



Technology exchange in progress

### Four strong brands



- A long-established agricultural machinery tire brand, originating with a company founded in Israel in 1950
- Has a product line-up with more than 1,000 different products and sizes
- Has a strong presence in the European market



- Has been heavily focused on tires for construction vehicles since the 1970s
- Has a strong presence in the North American market



- Mainly produces tires for use on forestry and mining equipment
- Has a strong presence in the North American market



- Japan's leading industrial tire brand



# We improve our company value by growing business opportunities.

## < Our Goals >

- Continuous improvement of corporate value and an identity that is trusted by all stakeholders.

## A global network of R&D facilities

By focusing on creative effort, practical application, and composite technologies, Yokohama Rubber has taken up the challenge of exploring the potential of rubber polymer technology and various other technologies.

Our materials research includes not only research on rubber compound tire materials, but also the creation of a wide range of new materials, including metals, aramid fiber, carbon fiber and plastic materials. These materials are utilized in the development of products that make effective use of their material properties across a wide range of industry sectors, including tires, industrial products, aerospace products and sporting goods.

In our tire business, to ensure that R&D activity is carried out close to our major markets, we have established tire R&D centers in North Carolina in the U.S. and in Thailand, and the Yokohama China Technical Center in Zhejiang Province, China. These facilities conduct a wide range of activities, from raw materials testing and evaluation through to quality assurance. At these R&D centers, products are assessed from multiple perspectives, contributing to the development of next-generation technologies.

Given that tires play a vital role in safeguarding people's lives, it is vitally important that we carry out practical evaluation from a safety-oriented, human-centric perspective. Yokohama Rubber has established the Tire Test Center of Asia in Thailand, which functions as the Group's main tire testing track, and also the Yokohama Test Center of Sweden, a dedicated winter tire testing track. At these test tracks, testing is carried out repeatedly using real vehicles, so that we

can use human evaluation as a basis for continuing to create the kind of tires our customers want.



The Tire R&D Center in North Carolina, U.S.  
(located on the Charlotte campus of the University of North Carolina)



Tire Test Center of Asia

## Corporate Governance

In fiscal 2016, Yokohama Rubber worked to achieve a further strengthening of corporate governance. One important measure that was implemented was the inclusion of external directors as members of the Personnel/Remuneration Committee for Corporate Officers and Directors, with the aim of helping to ensure transparency and fairness in regard to personnel and compensation issues relating to directors and corporate officers. An Outside Directors Committee was also established, with a membership consisting solely of outside directors (Outside Directors and Outside Audit & Supervisory Board Members), with the aim of fostering the exchange of ideas and building of consensus among external

directors; it is intended that the Outside Directors Committee will continue to meet twice a year.

With regard to the effectiveness of the Board of Directors, in 2017 an evaluation survey was implemented, targeting all directors (with the exception of the Chairman of the Board), including external directors. The results obtained in this survey were presented at a Board meeting, so that the issues identified could be shared with all Board members. On the basis of the views and opinions expressed in this survey, we will be working to further improve the functioning of the Board of Directors in the future.



Together with  
Our Business Partners



Presentation of awards at a Supplier Quality Coordination Meeting

## Holds MB Business Supplier Quality Coordination Meeting to enhance product quality

Yokohama Rubber's MB Group currently purchases component parts from approximately 200 suppliers, as well as engaging in transactions with a large number of processing service providers and other outsourcing partners.

We are committed to ensuring that our customers can continue to enjoy a stable supply of high-quality MB products, and we are collaborating with our suppliers to strengthen our ability to respond effectively to quality issues.

As part of these efforts, since fiscal 2015 we have been holding annual Supplier Quality Coordination Meetings, at which the suppliers of all four of the MB Group's divisions are invited to meet together with other manufacturing industry professionals to share ideas for raising the overall level of quality awareness. The scale of the Supplier Quality Coordination Meetings has expanded over the years; the third Supplier Quality Coordination Meeting held in April 2017 was attended not only by Yokohama Rubber managers working in quality assurance and procurement related areas, but also by key corporate officers and all four division heads from the MB Group, as well as by the heads of technology and production related divisions, for a total of around 50 Yokohama Rubber managers attending. At the Meeting, Yokohama Rubber managers gave presentations on the company's business strategy, quality, and CSR, and representative of two suppliers gave presentations on case studies of improvements that they have made. In addition, awards were presented to outstanding suppliers, and there was a party for participating suppliers, which helped to strengthen ties between those attending the Meeting. Besides the holding of the Supplier Quality Coordination Meeting, we have also been asking suppliers to submit quality-related self-inspection

result reports, and have been strengthening the conducting of on-site auditing operations on suppliers' premises. These quality audits are preventive activities that make use of a checklist formulated by analyzing the causes of past quality issues; Yokohama Rubber is continuing to visit the production sites of all suppliers on an ongoing basis. By deepening the level of direct communication between suppliers and Yokohama Rubber quality personnel, we are able to foster mutual understanding with regard to the issues affecting our respective companies and appropriate strategies for resolving these issues. By comparison with the situation in fiscal 2014 (prior to the introduction of these measures), we have achieved a substantial reduction in the number of defective products attributable to failings by suppliers. In the future, we will continue working closely with our suppliers to enhance quality standards still further.



### VOICE Suppliers' comments (Extracts)

- I have attended all of the Supplier Quality Coordination Meetings so far, and they get better every time. At the most recent Meeting, we were able to develop a good understanding of Yokohama Rubber's overall strategy for quality management, and build consensus. I hope that in the future the Meetings will also include an explanation of Yokohama Rubber's procurement strategy.
- We were able to develop a thorough understanding of what kind of safety, quality and environmental measures Yokohama Rubber is implementing in line with the major trends affecting the automotive manufacturers, etc., and an understanding of the importance of ISO and other management activities. It would be very helpful if Yokohama Rubber could provide suppliers with support for securing quality-related certification.
- Listening to the case studies of improvement efforts brought home to us just how much hard work has gone into these initiatives at the production facilities, and these case studies provide a useful reference for us to develop similar measures in our own facilities. I hope that Yokohama Rubber will continue to include these case study presentations at the next Meeting.
- It would be good if we had more opportunities to develop closer communication with divisional managers, so as to help us improve the quality of the products that we deliver. I hope that Yokohama Rubber will try to put the necessary contact windows and measures in place in the future.

# We promote CSR activities throughout the value chain.

## < Our Goals >

- CSR activities in collaboration with our partners

## Natural rubber supplier survey and support for sustainable production of natural rubber

Natural rubber accounts for around one-quarter of all raw materials used by the Yokohama Rubber Group; natural rubber is a vital material for the production of our company's tires and other products. For us to be able to continue to supply customers with our company's products without interruption, it is extremely important that we are able to obtain a steady supply of natural rubber. To research the current situation, in fiscal 2016 we implemented a CSR-related questionnaire survey, which was administered to natural rubber suppliers; all suppliers completed and returned the questionnaires. From the questionnaire survey results, we were able to confirm that there had been no human rights issues relating to the use of child labor or forced labor, etc. On the basis of the survey results, we are developing a roadmap for CSR-based procurement in the future, by identifying the areas where our Group's existing suppliers may be creating an environmental impact.

As part of our efforts to ensure a stable supply of raw materials and foster environmentally-friendly behavior by our suppliers, our natural rubber processing subsidiary Y.T. Rubber Co., Ltd. (YTRC) has been providing support for the adoption of agro-forestry—which involves the interspersed cultivation of ten different plant species, including natural rubber trees, bamboo, fruit trees, etc.—by farmers. YTRC employees hold seminars at which farmers can learn agro-forestry techniques, starting with the farms of employees' own family members, with the aim of gradually expanding the scope of agro-forestry implementation to include neighboring villages and Yokohama Rubber's own raw materials suppliers. YTRC donates seedlings to neighboring farmers; the farmers are then able to use

the non-rubber trees as sources of fertilizer, and obtain supplementary income from the fruit trees. Their attitudes are changing, raising hopes that rubber farms can be made more sustainable than they have been in the past. Yokohama Rubber supports the goals of the Sustainable Natural Rubber Initiative (SNR-i) launched by the International Rubber Study Group (IRSG), and is participating in SNR-i activities. To help realize a sustainable natural rubber economy, we attend SNR-i meetings, share information with other participants, and endeavor to implement related measures within our own company.



## Adoption of a Business Continuity Plan (BCP) system linked with our suppliers

The last few years have seen a heightening of society's expectations with regard to companies' response to earthquakes and other natural disasters, and plant accidents; firms need to be able to access supplier data rapidly in the event of an incident or inquiry. To be able to respond effectively in this type of situation, in 2016 the Yokohama Rubber Group adopted a new cloud-based emergency contact system in collaboration with our suppliers, and supplier details are being updated on an ongoing basis.

The information recorded by the system includes basic company

details and contact details for key managers; the system also ensures that the chronological order of responses that have been given to inquiries can be checked. In this way, it is anticipated that if a disaster occurs or if there is an inquiry regarding CSR procurement, the most up-to-date information can be accessed on screen and this system will make it possible to respond more promptly and more appropriately.



Together with  
Our Employees



Members of the Women's Participation and Advancement Taskforce

## Working towards the creation of a more employee-friendly working environment —Establishment of the "Women's Participation and Advancement Taskforce"

With the aim of building a more employee-friendly working environment, Yokohama Rubber is implementing a comprehensive overhaul of working practices, with the introduction of new systems reflecting a variety of different perspectives.

As part of these efforts, in line with the Japanese government's implementation of the "Act on Promotion of Women's Participation and Advancement in the Workplace," in October 2016 seven-member "Women's Participation and Advancement Taskforces" were established in our head office and at each individual production site. In addition to their regular duties in the department that they are assigned to, each member of the Taskforce participates in regular discussion sessions, with full-scale activities commencing in January 2017.

Following the implementation of a questionnaire survey that was administered to all employees, individual interviews were held with every female employee, providing a direct opportunity to hear female employees' frank views and suggestions regarding the working environment. The results obtained from the survey and interviews helped to clarify how female employees approach their work, and what their hopes are regarding the creation of a more employee-friendly working environment and related systems; we were able to identify the key issues that we will need to address in order to make Yokohama Rubber a company that provides meaningful support

for diverse workstyles, including support for employees who need to balance their work with childcare or other care responsibilities. By ensuring that the Women's Participation and Advancement Taskforces' analysis of the current situation and key issues (based on examination of the questionnaire survey and interview results) is promptly shared with senior management, we are able to rapidly formulate the basic strategies needed for the creation of a workplace environment in which all employees can maximize their potential. Taking as our core strategy the goal of "Aiming to be a company that welcomes diverse workstyles, with an employee-friendly working environment that will encourage employees to stay with the company over the long term," we will be undertaking internal reforms aimed at building a workplace environment in which employees support one another, and in which every employee can fully develop their capabilities and talents, without feeling that they need to give up their career. The Women's Participation and Advancement Taskforces are currently working to strengthen coordination with Yokohama Rubber's Global Human Resources Department and IT & Management Planning Department, etc., and are implementing activities aimed at fostering an attitude to work that is free from gender bias among all employees, as well as the revision and implementation of relevant systems.

## Employment of people with disabilities that meets their real needs

In order to provide people with disabilities with a workplace environment in which they can work with maximum peace of mind, Yokohama Tire Japan Co., Ltd. (YTJ) has forged a partnership with Startline Co., Ltd., a company which helps develop satellite offices with the aim of providing employment support for disabled people. A new Yokohama Office, a satellite office providing employment for people with disabilities, was established in April 2017; four disabled persons, employed as contract employees, perform work involving HR-related data collation and inputting, etc.

YTJ has employed disabled people in the past, but they often found that even just coming into the workplace was a challenging experience; in many cases, they left the company after a short period because of difficulty in adjusting to the frenetic pace and the complex interpersonal relationships. This experience brought home to us that creating an environment in which people with disabilities can work with peace of mind is no easy task.

The Yokohama Office has staff from Startline (who possess specialist expertise in providing support for the disabled) permanently stationed there, who hold periodic one-to-one meetings with the disabled people working at the Office; the responsible Human Resources department manager is provided with feedback on a regular basis. This arrangement makes it possible to adjust the disabled employees' workload or the type of work they perform by adding a third-party opinion on the individual employee's current state of health to the discussion between the disabled employee and the Human Resources manager. It is important that disabled employees take frequent breaks so that they do not exhaust themselves by working continuously for too long; the Yokohama Office provides an environment in which it is easier (both physically and mentally) for employees with disabilities to continue to work, and enabling them to enjoy peace of mind while playing an active role. When the Yokohama Office was first established, there were

# We value and develop our people, and create opportunities for people.

## < Our Goals >

- To be an organization that allows people of diverse ages, genders, and nationalities to demonstrate their maximum capabilities
- Establishing a zero-hazard culture of safety by promoting physical and mental health
- Respecting human rights both internally and externally; no child labour or forced labour in our group or by our partners; sincerely responding to and improving complaints on human rights

concerns that having the new Office physically separate from the YTJ head office might make work-related communication difficult, and there were some teething troubles in terms of what type of work to assign to the new Office. Now, however, by holding meetings with relevant managers to decide on the appropriate workflow in advance, it has become possible for work to proceed smoothly based on procedures that are not a burden for either the disabled employees at the Yokohama Office or YTJ's head office. Through regular visits to the Yokohama Office by managers from YTJ's head office, and through information-sharing with Startline, we are able to make precise adjustments to reflect individual employees' current state of health and other circumstances, as needed. By making effective use of the skills possessed by the employees at the Yokohama Office, we have been able to undertake data collation work that we had previously not had time to get started on at the head office. Also, getting employees to check each other's work has led to a substantial improvement in the overall quality of the work performed. We have had some very positive comments from the employees working at the Yokohama Office, such as "I had been out of the workforce for so long, and it is great to be able to work again," and "I appreciate the fact that people interact with us in a non-discriminatory way." In the future, we will be working to further increase the

opportunities for communication between the Yokohama Office and employees at YTJ's head office, and to spread awareness throughout the company of the work results achieved by the Yokohama Office. By expanding these efforts throughout the company, we can get people to recognize the important source of human talent that disabled people represent, with the aim of expanding the scope of work entrusted to them.



The Yokohama Office

## VOICE

### Comments by people working at the Yokohama Office

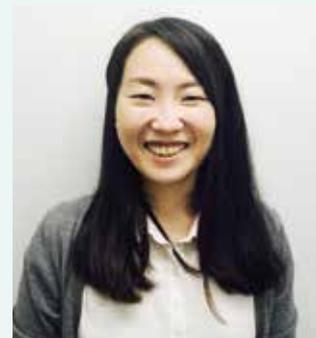
- "Having regular visits from managers at YTJ's head office, who are always very friendly and polite, is very encouraging, and helps us to carry out our work with real peace of mind."
- "I very much appreciate having the Startline staff here to provide back-up for our work and health conditions."
- "I feel that, right from when I first joined the company, YTJ has made a real effort to create a disability-friendly environment, for example in terms of flexibility in working hours and being willing to accommodate time off for hospital treatment, etc."
- "This was the first time that I had taken up employment as a disabled employee, so initially I was quite nervous, but thanks to the considerate, helpful training and the weekly meetings with the Startline and YTJ staff, I have been able to work with genuine peace of mind."

## VOICE

### Comments from a Startline manager

Startline Co., Ltd. provides consulting services regarding workplace development and recruitment, as well as services relating to the establishment and running of satellite offices for people with disabilities. YTJ established its satellite office in April 2017, and there are now four disabled people working there. I have been very pleased to see that, although only a short time has elapsed since then, we have already started to see progress in terms of people being able to work longer than when they first joined the company, and people collaborating in ways that take account of the special aspects of their individual disabilities. In the future, we will continue to provide support aimed at helping the satellite office to run itself autonomously and at realizing stable, long-term employment for the people working there.

**Yasuda Satsuki,**  
Yokohama Center Support Staffer,  
Satellite Office Division,  
Startline Co., Ltd.



# Our Commitment to Social Challenges

## over the Next 100 Years

### Relationship between our business and SDGs

Yokohama Rubber has confirmed the current state of initiatives through its business in consideration of the objectives of sustainable development goals (SDGs), and analyzed which target areas initiatives should be strengthened in going forward. Based on this analysis, Yokohama Rubber will endeavor to review its priority issues

going forward.

An assessment will be conducted on the efforts in response to social challenges by all Group companies based on documents and interviews from the four perspectives of planning, implementation status, monitoring, and communication of results.

### Relationship between efforts through the value chain and SDGs



- 1 Systematic monitoring and protection of rubber trees, plantations, and the ecological system at the stage of raw materials use
- 2 Education on agroforestry farming, etc. for rubber farmers at the procurement stage
- 3 Income support through employment for processors and local companies in developing countries
- 4 Resource conservation and the development of new materials through LCA analysis on natural resources
- 5 Indirect contributions to agriculture through the sale of tires in the field of agriculture and forestry through ATG
- 6 Improvements in CSR procurement and the environmental technologies of suppliers in the MB business

- 7 Project for considering infrastructure for a hydrogen-based society that has adopted highly durable conveyor belt for a reconstruction project in Rikuzentakata City
- 8 Preservation of forests and protection of the ecological system by supporting planned agricultural management
- 9 Recycling of water during production, effective use of groundwater, etc.
- 10 Introduction of cogeneration systems and renewable energy, spread of environmentally friendly products
- 11 Reduction of greenhouse gases through 10 above
- 12 Use of heat from waste tires, achieving zero emissions at plants, promotion of retread tires, development of more highly durable products
- 13 Prevention of marine pollution through marine hose development and improvements

### VOICE Comment from an analysis and assessment organization



**Mizuki Kurauchi**  
Environmental Assessment  
Section Manager,  
Global Environmental  
Project Department,  
Japan Quality Assurance  
Organization

We recently confirmed the business performance of the Yokohama Rubber Group and its business processes through the filter of SDGs. As a result of this assessment, we found that nearly all of the activities conducted in accordance with the vectors indicated in the CSR Management Vision, Yokohama Group Action Guidelines, and GD100 and Environmental GD100 mapped with the SDGs, and that actual management of the organization was closely linked with the resolution of social issues for sustainable development. Looking at the results of mapping in the value chain, there were many extremely positive areas including multiple efforts in upstream processes that assist in achieving SDGs, and multiple efforts that strengthen positive effects and minimize negative effects that have been conducted since in the past with clear objectives related to sustainability. Going forward it would be preferable to review what challenges should be tackled as priorities in sustainable development goals through materiality analysis and dialogue with stakeholders.

We hope that Yokohama Rubber remains to be a global company for the next 100 years and continues to contribute to happiness and prosperity based on sustainable development.

\* The CSR Report 2017 that contains this comment has been prepared based on materials including sustainability reports deemed to be generally acceptable, and this comment does not represent the conclusion that information contained within the CSR Report 2017 has been accurately measured and calculated and disclosed without omission.

Yokohama Rubber celebrated its centennial on October 13, 2017. We would like to introduce how we will be involved in the resolution of social challenges and our efforts from the perspective of technology development for the provision of new products and services over the next 100 years.

## Basic technologies to support the future development of products and services at Yokohama Rubber

### Computational Science Aeroacoustic simulation

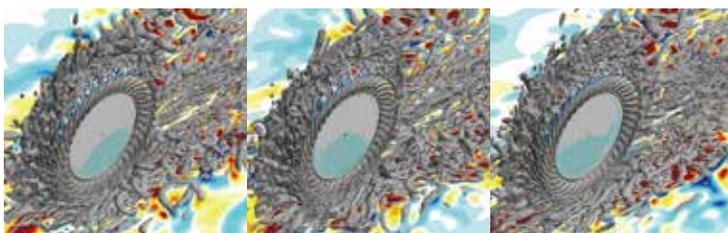
The reduction of tire noise is an important environmental issue. As the disruption of the flow of air around tires and the road surface is one of the main causes of tire noise, we are engaged in research

related to direct simulations of air vortex flow structure around tires and the resulting acoustic waves.

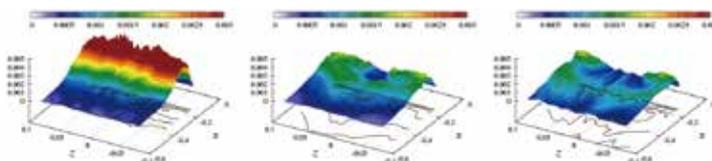
(i) No groove (ii) Groove shape A (iii) Groove shape B



Instantaneous pressure fluctuations and vortex structure



Turbulent kinetic energy in front of tire



In 2014, Yokohama Rubber succeeded in becoming the first in the world to have a precise simulation of the vortex structure and acoustic waves around tires when running.

In 2015, the theme was selected as an HPCI (High Performance Computing Infrastructure) research topic, and the impact of the differences in the depth, width, etc. of grooves on the tire surface on acoustic waves (noise) was clarified.

This has been helpful in the design of tread patterns and facilitated the development of low noise tires.

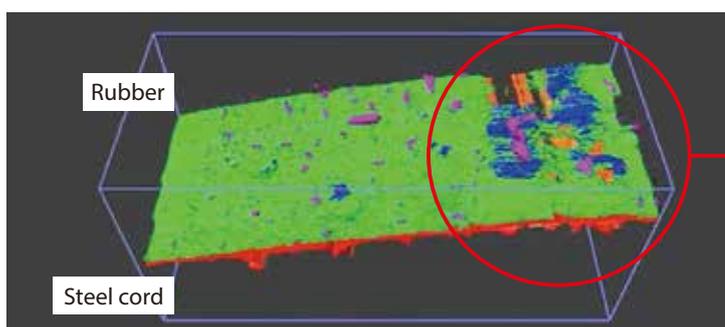
### Analysis 3D structural analysis of tire steel cord / rubber adhesion surfaces

Steel cords are embedded in tires to improve durability. The adhesion between these steel cords and the rubber that covers them is important for safety.

We have utilized electron microscope technology to become the first in the world to visualize the adhesion layer between steel cord and rubber surfaces in 3D (see diagram).

Some separated areas and/or spaces were discovered in the

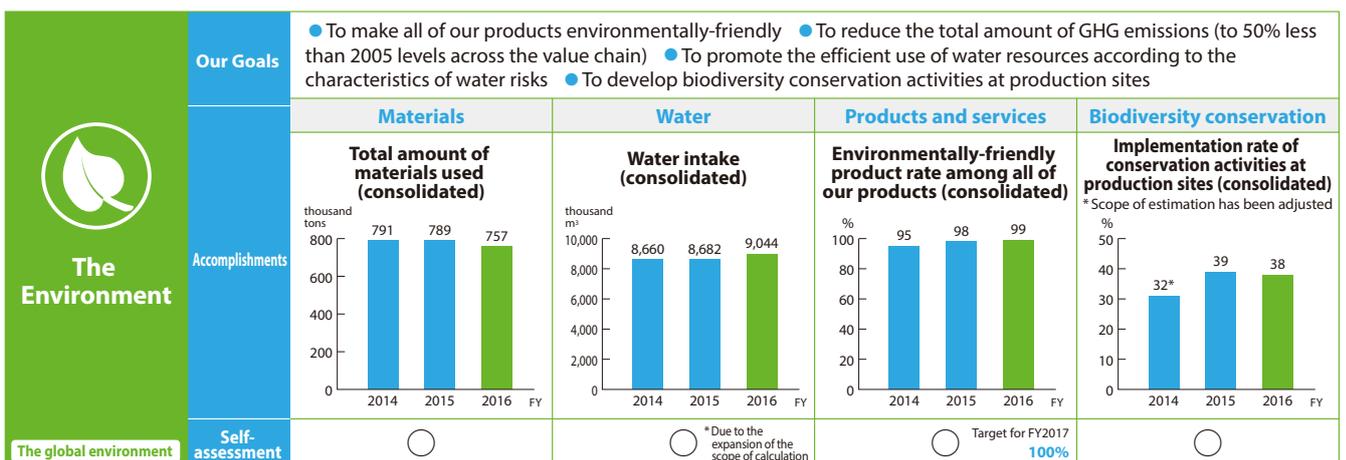
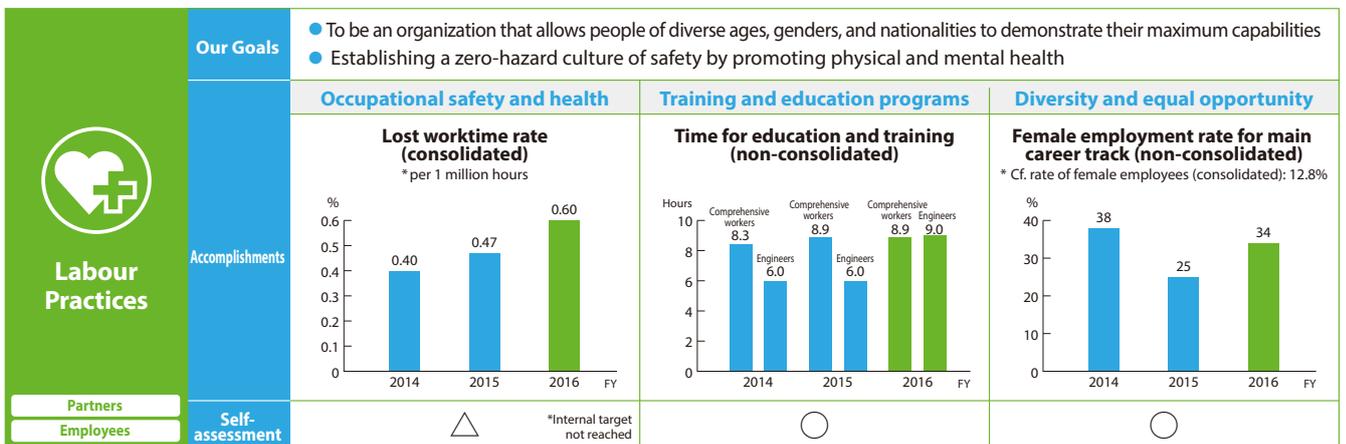
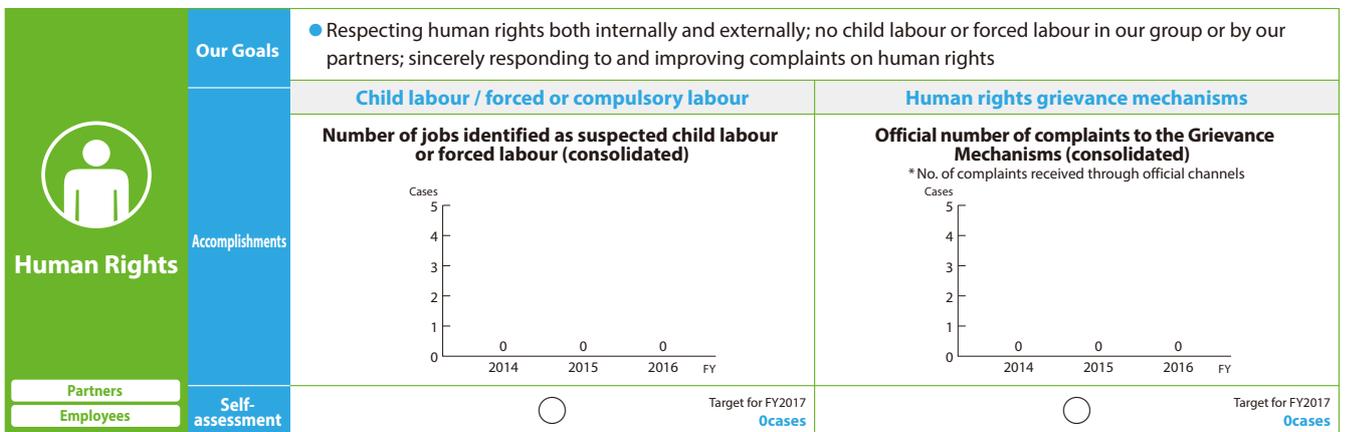
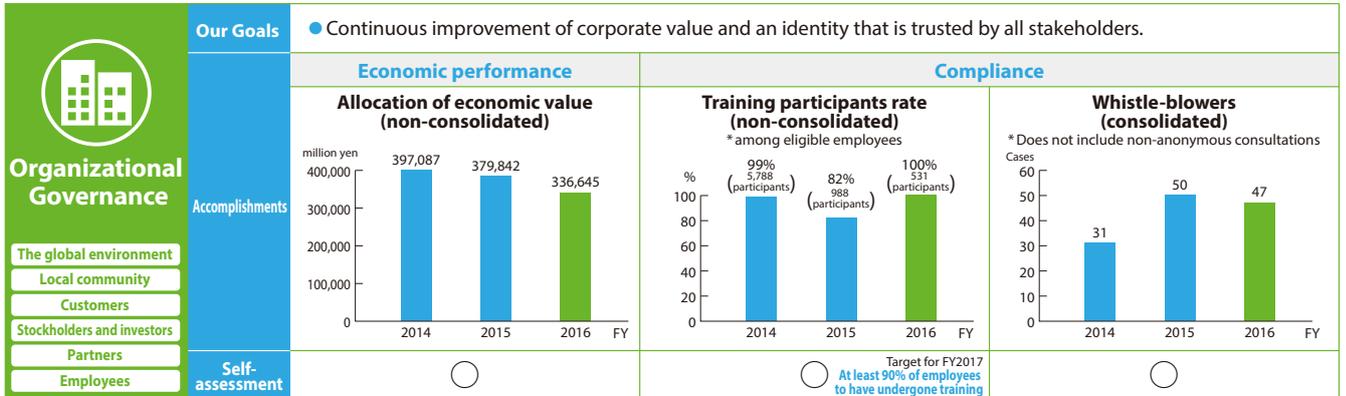
adhesion layer in the rubber and metal adhesive interface for the wire sample after humidity aging. The adhesive force between steel cord and rubber is weak in these areas, and can be inferred that this is a source of declines in adhesiveness. Going forward we will further clarify the adhesion mechanism and apply this knowledge to the development of more durable tires.



Result of 3D observation of the adhesion layer between steel cord and rubber (the circle indicates an area with adhesion defects)

# ISO 26000 Compliance Activity Report

[Self-evaluation code] ○: Achieved or improved △: Unachieved or unchanged ×: Deteriorated



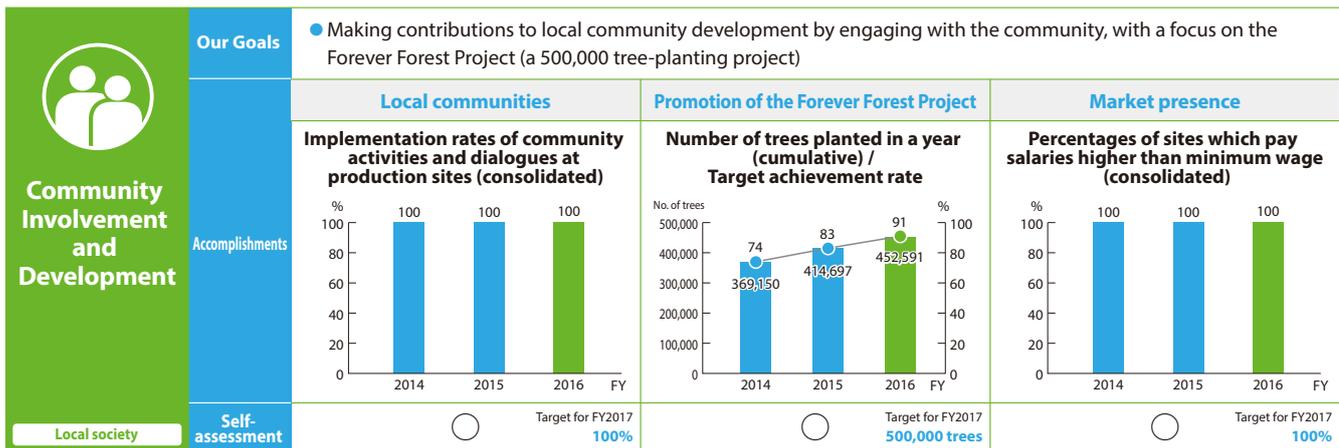
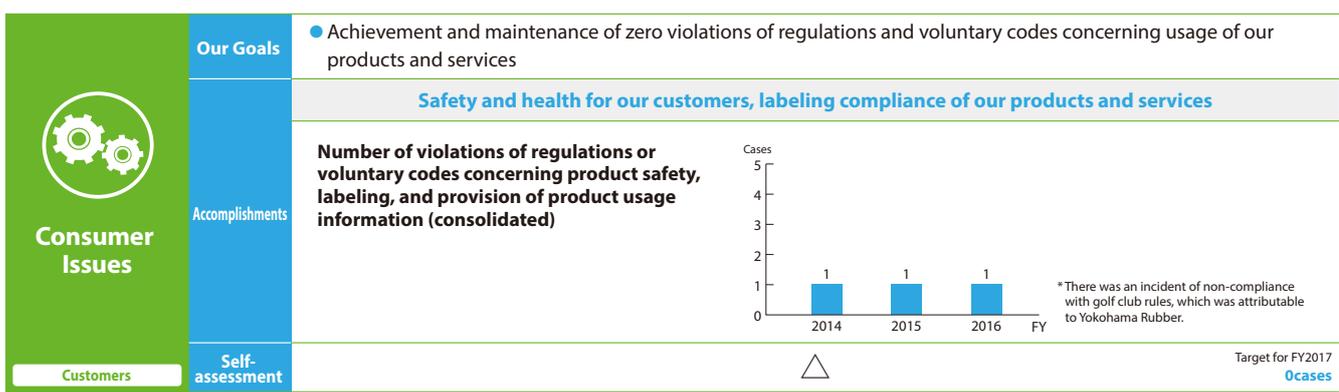
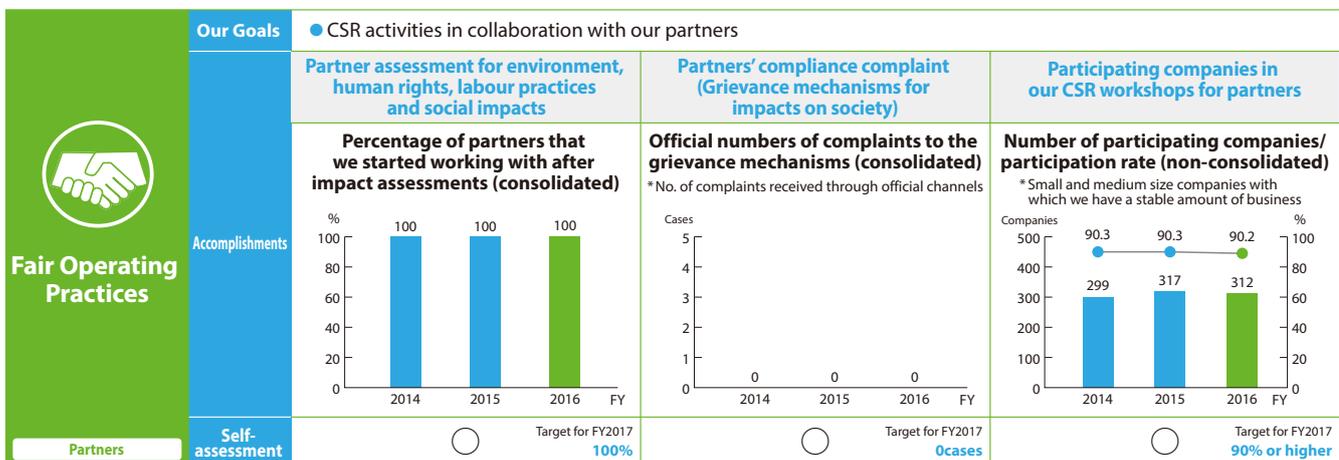
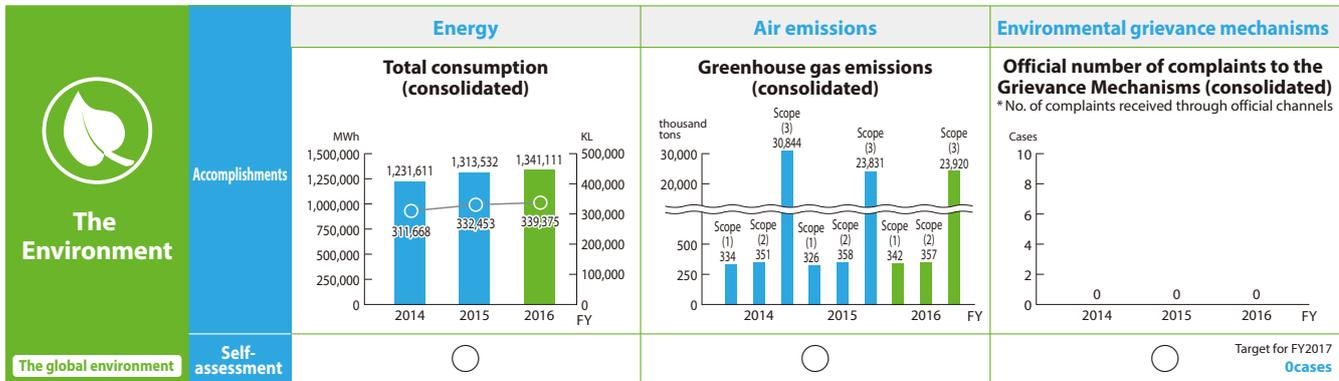
The Yokohama Rubber Group selected priority issues for each group of stakeholders.

In this section, we report on the priority items identified according to ISO 26000 and our progress toward achieving them, as well as the data requested for disclosure.

On our CSR Website, we describe backgrounds regarding the importance of each priority, our goals, our aspirations, the FY 2016 activity report, the challenges we faced, and future measures.

Please refer to our CSR Website for detailed reports of each achievement.

<http://www.y-yokohama.com/global/csr/>



# Information Map

We would like to introduce the information disclosed on our website.

## Website of Yokohama Rubber



<http://www.y-yokohama.com/global/>

<http://www.y-yokohama.com/global/csr/>



Our CSR website

**1 Centennial website**

Introduces a chronology of our 100 years of history through a video

**2 Products Information**

Delivers information about product features and specifications, including tires, industrial products, and sporting goods

**3 Investor Relations**

Presents investor relations information about management plans, growth strategy and earnings

**4 CSR**

Provides information about ESG policies, activities and progress

**5 Corporate Information**

Highlights the corporate philosophy, company profile and governance structure

## CSR (Environmental/Social) Activity pages



### How to view the Fiscal Year 2016 Activity Report

These web pages introduce the details on matters we prioritize as a company in accordance with the framework of ISO 26000. This describes the page layout using the human rights page as an example.

- Indicates our stance and policies towards the respective CSR activities.
- A responsible personnel describes their stance towards CSR activities and the status of efforts.
- Indicates our vision toward activities.
- Shows our priority issues. Click here to see the progress status and KPIs.
- You can view the progress status of general CSR activities we are involved with.

## Other information

### Annual Report

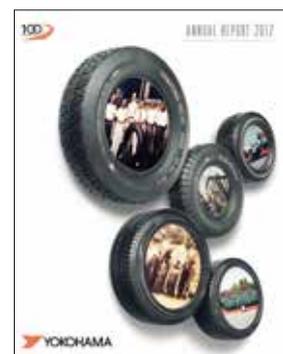
The Annual Report that contains our financial statements, etc. is issued at the end of May every year.

<http://www.yrc.co.jp/cp/global/ir/library/areport/>

### Securities Report

The Securities Report that contains an overview of Yokohama Rubber, a description of business activities, etc. based on the Securities and Exchange Act is issued every year.

<http://www.yrc.co.jp/cp/ir/library/securities/>



# Third-Party Opinion

The description herein refers to the opinions based on this report and a related website (<http://www.y-yokohama.com/global/csr>); interviews held with persons in charge from the planning, quality assurance, and raw/indirect materials procurement departments of Yokohama Rubber's Tire and MB divisions, as well as from the corporate planning, quality audit, human resources and safety and health, general affairs, compliance, and CSR departments; and along with on-site observation of the various bases for tire production and testing, MB business production, rubber processing bases (YTMT, TTCA, YRTC, and YTRC) in Thailand, and rubber plantations that provide natural rubber raw materials to YTRC. While Yokohama Rubber's various approaches to CSR are continuing to advance on the field level, it can be said a further clear and concrete commitment from management could be called for.



**Hideto Kawakita**  
CEO and Editor/Publisher of Socio Management  
International Institute for Human,  
Organization and the Earth (IIHOE)

IIHOE: The International Institute for Human, Organization and the Earth is a non-profit organization established in 1994 for the democratic and balanced development of all the lives on the earth. Although it mainly provides management support for citizens' groups and welfare workers, the group is also heavily involved in providing CSR support to large corporations. <http://blog.canpan.info/iihoe/> (available only in Japanese)

## Truly Commendable Areas

● **Regarding conservation of biological diversity:** (<http://www.y-yokohama.com/global/csr/report/environment/environment03/>), over the period of ten years since the start of the YOKOHAMA Forever Forest Project (<http://www.y-yokohama.com/global/csr/mori/>), the Company has planted over 450,000 trees overseas and in Japan in consideration of maintaining and improving biodiversity. These seedlings have been cultivated in-house, as 24,000 seedlings (<http://www.y-yokohama.com/global/csr/mori/widening/>) were also provided to municipalities and other companies. Systematic activities ranging from seedling cultivation to planting have also been conducted at business locations overseas, including Thailand and China. I highly commend the high global standards that have been achieved by the YOKOHAMA Forever Forest Project as a social contribution program for the maintenance and improvement of forest ecosystems and greenery, and I also continue to have high hopes for the project site's evolution into a comprehensive portal site that also introduces similar efforts by other companies in multiple languages.

## While Approving of Progress, Areas that May Require Further Improvement

● **Regarding its quality assurance promotion system** ([http://www.y-yokohama.com/global/csr/report/consumer/consumer\\_01/](http://www.y-yokohama.com/global/csr/report/consumer/consumer_01/)), while I commend the active implementation of market measures, I continue to look forward to seeing the Company further advance quantitative and effective measures in response to quality issues that affect customers, such as assessments of the likelihood, scale, and severity of issues and the incorporation of the minimization of impacts on customers as part of its management indicators.

● **Regarding the reduction of environmental impacts** (<http://www.y-yokohama.com/global/csr/report/environment/environment08/>), I would like to commend the Company for its achievement of interim targets in regard to total waste generated (on a per unit of production output basis) and greenhouse gas emissions (total emissions) and the undergoing development of targets for 2030. Going forward, I strongly encourage the Company to try to meet the target that the Japanese government has recently set of reducing greenhouse gas emissions by 26% by 2030 (compared to 2013) as soon as possible, and to thoroughly shed light on its challenges and methods, such as transitioning to the non-fixation of energy usage adjustable to the fluctuation of production volume (Just-In-Time for Energy), as well as to expand energy saving effects at the stage of customer use.

● **As for CSR at suppliers** (<http://www.y-yokohama.com/global/csr/report/partner/>), I commend the Company for revising the CSR Procurement Guidelines and checklist, for continuing to hold CSR workshops for suppliers in key countries, for establishing a commendation system based on feedback from suppliers in regard to the results of supplier self-checks and field surveys, for conducting surveys on natural rubber plantations, and for supporting the adoption and implementation of agro-forestry techniques by natural rubber suppliers in Thailand (<http://www.y-yokohama.com/global/csr/report/partner/partner01/>). In order to more effectively improve initiatives being undertaken by suppliers, I strongly encourage the Company to implement more detailed evaluation of individual items in guidelines and checklists and measures taken, and to establish a support system with suppliers for sharing actual cases and further understanding initiatives in greater detail.

● **Regarding improvement of workplaces' ability to retain employees** (<http://www.y-yokohama.com/global/csr/report/employee/employee03/>), I commend the establishment of the Women's Participation and Advancement Taskforce, which aims to be a company that welcomes diverse workstyles, with an employee-friendly working environment that will encourage employees to stay with the company over the long term, the fact that 4.16% of Yokohama Rubber employees took advantage of the systems for paid vacation, leave of absence, or shorter work hours in order to care for a child or family member in need, and that Yokohama Rubber has started holding of nursing care leave seminars in collaboration with the labor union. I continue to strongly urge the Company to establish an environment where employees can continue to work, while also taking leave. In terms of mental health care, I hope that the Company will promote more effective measures of this kind in the future.

● **As regards the enhancement of the human resource portfolio required as a global corporation**, I commend the fact that managerial level employees have been registered in the global human resources database. Meanwhile, going forward, I strongly encourage the Company to accelerate its development of the next generation of executives at both its head office and overseas sites based on a long-term goal and strategy that reflects how the Company sees itself being positioned in global markets in the 2020s, and the business models that it expects to have adopted.

● **As regards employment of persons with disabilities**, I commend that an employment rate of 2.15% has been achieved for the Group in Japan and that opportunities have been expanded in terms of employment conditions and available positions. I ask that the Company continues to work proactively toward implementing measures to ensure that employees with disabilities are retained over the long term.

## Areas that May Require Further Improvement

● **Regarding corporate governance and CSR promotion system** (<http://www.y-yokohama.com/global/csr/report/governance/governance/>), while I commend the promotion of initiatives using key performance indicators (KPI) based on the core issues addressed by ISO 26000, it concerns me that the effects on the sustainability of the society and the Company through efforts to achieve these KPI are unclear, and that there are some departments that view CSR efforts as something separate from their core operations. Going forward, I sincerely hope the top management will communicate in their own words in a clear and concrete manner why and in what manner employees should approach CSR and call for progress management in day-to-day management. Also, I strongly expect that the Company will develop a strategy and a system that, led by the managers responsible for planning in each division, focus on the Company's position in world markets and the evolution of its business model in the 2020s. In terms of its reporting and communication, I would like to commend the Company for providing more detailed introductions of the initiatives (<http://www.y-yokohama.com/global/csr/data/>) being carried out by major Yokohama Group business sites in Japan and abroad; I hope that the Company will continue to promote stakeholder engagement further as required by ISO 26000, setting up opportunities for continuous dialogue with NPOs in important operating regions.

● **As regards employee safety** (<http://www.y-yokohama.com/global/csr/report/employee/employee01/>), I have concerns that major accidents at business sites overseas have continued since fiscal 2017. Moving forward, I continue to urge the Company to make efforts on the field level in addition in improvements to facilities and structural systems to ensure the greater effectiveness of safety measures and to issue a detailed report about the progress of improvements

## Response to Third-Party Opinion

We have received positive feedback as well as suggestions and recommendations regarding our CSR initiatives. We will make even further efforts in areas where we have received positive feedback, and we will make sincere improvements in response to suggestions and recommendations.

In response to serious accidents that occurred during fiscal 2017 that improvements are underway for, we will renew our efforts to rebuild safety equipment and a safety culture. On the other hands, in terms of human resources, we will make improvements to the workplace environment to all diverse employees to achieve their full potential and work with the Company over the long term, and we will also work together with human resources utilization taskforces both inside and

outside of the Company. In terms of environmental contributions we will launch the Post-Forever Forest Project, and continue ongoing activities.

As we celebrate our centennial, we will redefine CSR priority issues and implement resolution measures that will lead us from the present into the future as we aim for sustainable growth for the next 100 years, and we will further expand contributions to society through the provision of products and services sought by customers and regional activities at business sites around the world.

**Shuichi Tsukada**  
Officer

Head of Corporate Social Responsibility Division



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Yokohama Rubber is a signatory to the United Nations Global Compact.  
Yokohama Rubber is an advocate of Fun to Share, a climate change program working to realize a low-carbon society.  
Yokohama Rubber Group is an official partner of Chelsea F.C.  
This publication was printed on FSC®-certified paper, which includes materials from timber manufactured in properly managed forests.  
This publication was printed with a waterless printing method that does not emit hazardous waste fluids.  
This publication was printed with vegetable oil ink which does not emit VOCs (volatile organic compounds) that cause air pollution.