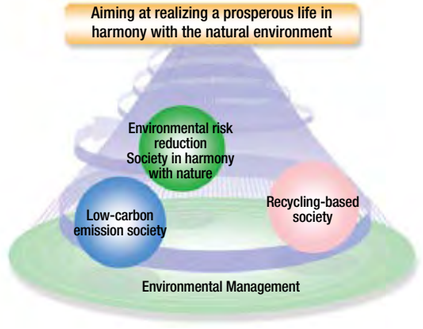
Environmental Initiatives

Vision for Environmental Activities

We have defined our aspirations in 2050 and launched the Sixth Environmental Action Plan in fiscal 2017.

Global Environmental Commitment

As one tenet under our Basic Philosophy, Toyota Industries works to contribute to regional living conditions and social prosperity and also strives to offer products and services that are clean, safe and of high quality. Accordingly, in February 2011, we established the Global Environmental Commitment, a specific environmental action guideline, to be shared and implemented throughout the Toyota Industries Group. The entire Toyota Industries Group will dedicate concerted efforts to realizing a prosperous life in harmony with the natural environment.



Notional Diagram of Global Environmental Commitment

Aspirations in 2050 and the Sixth Environmental Action Plan

The Global Environmental Commitment, which represents our basic approach to environmental activities, specifies the four action themes, namely, 1) establishing a low-carbon emission society; 2) establishing a recycling-based society; 3) reducing environmental risk and establishing a society in harmony with nature; and 4) promoting environmental management. For each action theme, we have defined our aspirations in 2050.

Aspirations in 2050

1. Establishing a low-carbon emission society
   ⇒ Globally take on challenge of establishing a zero CO_2 emissions society
2. Establishing a recycling-based society
   ⇒ Take on challenge of minimizing the use of resources
2. Reducing environmental risk and establishing a society in harmony with nature
   ⇒ Generate positive influence on biodiversity
4. Promoting environmental management
   ⇒ Enhance consolidated environmental management and promote enlightenment activities

As a milestone toward achieving our aspirations in 2050, we have formulated the Sixth Environmental Action Plan, a new five-year plan for the period from fiscal 2017 to fiscal 2021, and will resolutely undertake activities in accordance with the plan.

(See the Sixth Environmental Action Plan on pages 62–63 for details.)

TOPIC

Sharing Environmental Vision across the Toyota Industries Group

We created a panel summarizing our newly formulated aspirations in 2050 and the Sixth Environmental Action Plan. Each Group company has posted this environmental panel to raise employee awareness and appeal our approach to outside parties.

Tokyu Co., Ltd.

TOYOTA L&F Shizuoka Co., Ltd.

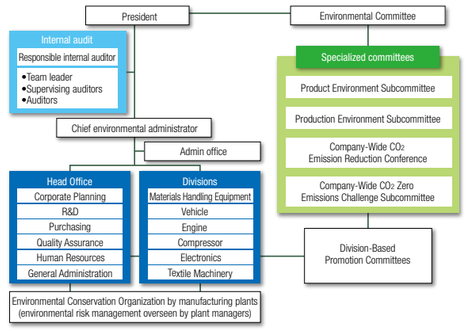
Structure to Implement Environmental Management

Positioning environmental response as one of its most crucial management issues, Toyota Industries is enhancing its environmentally oriented corporate management on a global basis through the promotion of consolidated environmental management.

Promotion of Environmental Management System

Toyota Industries has positioned environmental response as one of its most crucial management issues. To quickly reflect top management's decisions on business operations, Toyota Industries has established and been operating a Company-wide integrated environmental management system (EMS), with the president at the top. In August 2016, another specialized committee, the Plant CO_2 Zero Emissions Challenge Subcommittee, was established.

Environmental Management Structure



Response to the Revised ISO 14001 Standard

Following the revision of the international standard ISO 14001 in September 2015, we reviewed our Environmental Management Manual and redefined its regulations. In August 2016, we initiated activities based on the new regulations and have been working to thoroughly inform employees in each business division.

We are enhancing our environmental management by conducting introductory educational courses to foster knowledge for environmental management.

As for knowledge and techniques of internal audits, we offer an introductory educational course for environmental audits with a view to developing auditors. In relation, we provided education on the 2015 regulations to those persons who have already been qualified as auditors. By having these auditors who have taken the course perform internal audits, we monitor the progress of each department in conforming to the revised standard.

Introductory course for environmental audits

Main Companies Subject to Consolidated Environmental Management (As of March 31, 2017)

Europe

Toyota Material Handling Manufacturing Sweden AB (Sweden)
Toyota Material Handling Manufacturing Italy S.p.A. (Italy)
Toyota Material Handling Manufacturing France SAS (France)
L.T.E. Lift Truck Equipment S.p.A. (Italy)
TD Deutsche Klimakompressor GmbH (Germany)
Uster Technologies AG (Switzerland)

Asia

Toyota Industrial Equipment Vietnam Co., Ltd. (Vietnam)
Toyota Industries Engine India Private Limited (India)
Kirloskar Toyota Textile Machinery Pvt. Ltd. (India)
P.T. TD Automotive Compressor Indonesia (Indonesia)
Toyota Industry (Kunshan) Co., Ltd. (China)
TD Automotive Compressor Kunshan Co., Ltd. (China)
Yantai Shougang TD Automotive Compressor Co., Ltd. (China)
Tallift Material Handling Taiwan Co., Ltd. (Taiwan)

Japan

Non-consolidated: 10 plants
Consolidated subsidiaries in Japan
Aichi Corporation (Saitama)
Nishina Industrial Co., Ltd. (Nagano)
Takeuchi Industrial Equipment Manufacturing Co., Ltd. (Aichi)
HANDA Casting Company (Aichi)
Unica Co., Ltd. (Aichi)
Tokaiseiki Co., Ltd. (Shizuoka)
Altex Co., Ltd. (Shizuoka)
IZUMI MACHINE MFG. CO., LTD. (Aichi)
Nagao Kogyo Co., Ltd. (Aichi)
Miduho Industry Co., Ltd. (Aichi)
Iwama Loom Works, Ltd. (Aichi)
Tokyu Co., Ltd. (Aichi)
Hara Corporation (Gifu)

North America

Cascade Corporation (U.S.A.)
Indiana Hydraulic Equipment, Corp. (U.S.A.)
North Vernon Industry Corp. (U.S.A.)
Raymond-Muscatine Inc. (U.S.A.)
The Raymond Corporation (U.S.A.)
Toyota Industrial Equipment Mfg., Inc. (U.S.A.)
Michigan Automotive Compressor, Inc. (U.S.A.)
TD Automotive Compressor Georgia, LLC (U.S.A.)
Toyota Industries Compressor Parts America, Co. (U.S.A.)

Latin America

Toyota Material Handling Mercosur Indústria Comércio de Equipamentos Ltda (Brazil)

Sixth Environmental Action Plan

The results of our activities in fiscal 2017 showed steady progress across the board toward achieving respective targets for fiscal 2021.

Progress of Sixth Environmental Action Plan

With an eye to realizing a prosperous life in harmony with the natural environment through the establishment of a sustainable society, we formulated the Sixth Environmental Action Plan for the period from fiscal 2017 to fiscal 2021 and are promoting activities according to the plan. Through activities undertaken during fiscal 2017, we made steady progress toward achieving respective targets for fiscal 2021.

Production Related

Segments	Action Policies/Specific Actions	FY2017 Achievements					FY2021 Targets
		Subject	Scope	Control Items	Base Year (FY)	Achievements	Targets
Establishing a Low-Carbon Emission Society	Reduce CO_2 emissions from production activities • Develop and introduce production engineering technologies with lower CO_2 emissions • Reduce CO_2 emissions by fully implementing improvement activities on a daily basis • Develop innovative CO_2 reduction technologies that utilize clean energy • Manage greenhouse gases other than CO_2	CO_2 emissions	Non-consolidated	Total emissions	2006	–20%	–10%
			Global	Emission volume per unit of production*1	2006	–22%	–26%
			Non-consolidated			–27%	–30%
	Reduce CO_2 emissions from production-related logistics • Improve transportation efficiency through such measures as modal shift and better cargo loading efficiency	CO_2 emissions from logistics	Non-consolidated	Emission volume per unit of production	2007	–35%	–28%
Establishing a Recycling-Based Society	Promote measures against resource depletion by recycling waste • Reduce the volume of discarded materials by taking action at the source, such as improving yields and other measures • Promote internal reuse Promote effective resource utilization in production activities • Reduce use of packaging materials • Monitor water input and output in each country/region and develop and promote appropriate measures	Waste generation volume	Japan consolidated	Emission volume per unit of production	2006	–29%	–27%
			Non-consolidated			–30%	–29%
Reducing Environmental Risk and Establishing a Society in Harmony with Nature	Further reduce emissions of substances of concern • Minimize the use of substances of concern by promoting efficient production activities	VOC*2 emissions	Non-consolidated (automobile body)	Emission volume per unit of production	2006	–36% ($24g/m^2$)	–36% ($24g/m^2$)

Product Related

Sixth Environmental Action Plan Targets			FY2017 Achievements
Segments	Action Policies	Specific Actions	
Establishing a Low-Carbon Emission Society	Reduce CO_2 emissions through product and technology development	• Develop technologies that contribute to an even greater level of energy efficiency • Develop products and technologies that respond to electrification • Develop technologies to enable weight reduction • Reduce energy loss • Develop technologies for the realization of a hydrogen-based society	• Developed electric towing tractor • Developed next-generation electric compressor • Developed plastic glazing rear window • Developed air-jet loom • Developed next-generation air compressor for fuel cell vehicles
Establishing a Recycling-Based Society	Implement initiatives to promote 3R (reduce, reuse and recycle) design for effective resource utilization	• Reduce use of resources through longer product life • Reduce use of resources through standardization, modularization and reduction of components • Reduce use of resources through development of technologies to enable weight reduction and downsizing • Promote reuse of components and resources	• Developed 4-wheel counterbalanced electric lift truck • Developed DC-DC converter for plug-in hybrid vehicles
Reducing Environmental Risk and Establishing a Society in Harmony with Nature	Reduce emissions to improve air quality in urban areas in all countries and regions	• Develop engines that meet future regulations	• Developed engine compliant with Australian EURO 5 emissions regulations
	Manage chemical substances contained in products	• Investigate chemical substances contained in products and manage switching over of SVHC*3 and other substances of concern to other substances	• Supported chemical substance management at consolidated subsidiaries • Conducted survey on chemical substances contained in products

Others

Sixth Environmental Action Plan Targets			FY2017 Achievements
Segments	Action Policies	Specific Actions	
Reducing Environmental Risk and Establishing a Society in Harmony with Nature	Augment activities related to protection of biodiversity	• Share the biodiversity guidelines across all Toyota Group companies and contribute to the expansion of a habitat for living organisms • Formulate and promote plans to link activities and bring more greenery by undertaking activities for conservation of biodiversity throughout the Toyota Industries Group, including at consolidated subsidiaries in and outside Japan	• Participated in All Toyota Green Wave Project • Devised plans for biodiversity protection activities within company premises
Promoting Environmental Management	Augment and promote consolidated environmental management	• Build a global environmental management system and promote related activities to: Comply with environment-related laws in each country and region Formulate a medium-term plan based on visualization of environmental risks and conduct activities to prevent risks from occurring Enhance risk communication with relevant organizations and local residents Achieve the highest-level environmental performance in each country and region • Enforce strategic environmental management that integrates environmental activities and business activities	• Implemented measures for wastewater risks • Diagnosed environmental risks at non-production bases • Promoted activities to familiarize the Sixth Environmental Action Plan among consolidated subsidiaries in and outside Japan
	Enhance education and enlightenment activities	• Extend the scope of Toyota Industries' enlightenment activities to consolidated subsidiaries in and outside Japan • Give back to society the outcomes of enlightenment activities	• Posted environmental panels at Toyota Industries Group companies • Conducted environmental awareness survey among employees
	Promote environmental activities in collaboration with business partners	• Ensure compliance with laws and regulations and improve environmental performance based on the Environmentally Preferable Purchasing Guidelines	• Revised the Environmentally Preferable Purchasing Guidelines
	Improve eco-conscious brand image	• Pursue higher brand image through proactive information disclosure	• CDP*4 climate change: ranked B (on a performance band of A to F) • CDP water: ranked C (on a performance band of A to F) • Nikkei's Environmental Management Survey: ranked 36th (out of 1,733 target companies)

*1: We manage emissions in each business by using either unit of production or unit of sales as a basic unit of emissions. The weighted average of reduction rates of all businesses is used as our management index.
*2: Volatile Organic Compounds
*3: Substances of Very High Concern
*4: An international NGO undertaking a project through collaboration among institutional investors to call for disclosure of strategies against climate change issues and greenhouse gas emissions data to leading companies around the world
† Details of the Sixth Environmental Action Plan are available at:
https://www.toyota-industries.com/csr/environment/management/plan_6/index.html

Establishing a Low-Carbon Emission Society

We position the curbing of global warming as our most crucial environmental task. We have been working to reduce CO_2 emissions in our global business activities and at the same time accelerate our efforts to develop more environment-friendly products.

Summary

CO_2 Emissions (Production Activities)

FY2017 Results

Total emissions (non-consolidated)

20% reduction (vs FY06 level) | FY21 target: 10% reduction (vs FY06 level)

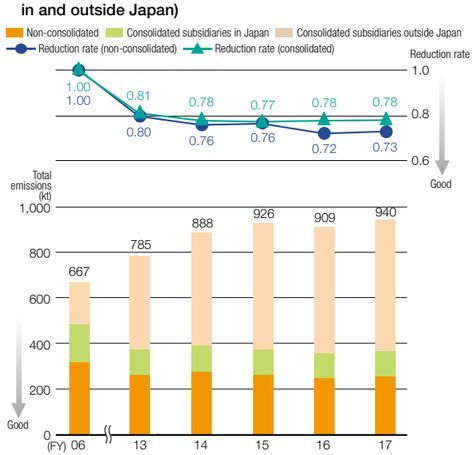
Emission volume per unit of production (global)

22% reduction (vs FY06 level) | FY21 target: 26% reduction (vs FY06 level)

Under the Sixth Plan, we are working toward achieving fiscal 2021 targets of reducing total non-consolidated CO_2 emissions from production activities by 10% and global emission volume per unit of production by 26%, both from the fiscal 2006 level. In fiscal 2017, we attained the specified targets by continuing to undertake Company-wide activities to reduce the amount of air used in production activities and encouraging energy just-in-time (JIT) efforts in production processes. In addition, we established the Plant CO_2 Zero Emissions Challenge Subcommittee and embarked on a discussion as to how we should contribute to the realization of a zero CO_2 emissions society.

Initiatives for Establishment of a Low-Carbon Emission Society

■ CO_2 Emissions (Non-consolidated/Consolidated subsidiaries in and outside Japan)



Saving Energy by Adding a Device at a Washer to Blow Air Intermittently

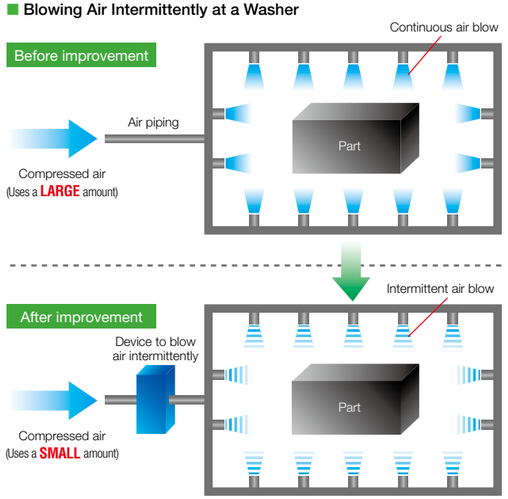
In its ongoing effort to reduce the amount of compressed air used in production activities, Toyota Industries worked to reduce the amount of air used by a washer in an engine processing line in fiscal 2017.

Conventionally, water droplets left on a part after washing had been removed by continuously blowing air. This caused a drop in air pressure, which in turn required a large amount of air to compensate for the pressure drop.

To solve the problem, we installed a device that automatically blows air intermittently and succeeded in saving energy while keeping the air pressure at a sufficient level. The results were reductions in the amount of air used by about 25% and in annual CO_2 emissions by around four tons.

The same washer is used in a number of other production lines within Toyota Industries. As the application of a similar device Company-wide can offer profound energy-saving effects, the project won a Best Practice Award in fiscal 2017 under our internal award program to recognize excellent environmental improvement activities.

■ Blowing Air Intermittently at a Washer



Munenori Sato (left)
Takato Morishita

Planning Group No. 2, Planning Office, Plant Engineering & Environment Department, Head Office
(As of December 31, 2016)

Through collaboration with related departments, we achieved an improvement that ensures quality and saves energy. We plan to spread the information about this improvement so that it will be adopted in many more equipment.

Reducing CO_2 Emissions by Reducing the Time to Maintain Preheated Temperature of a Die Cast

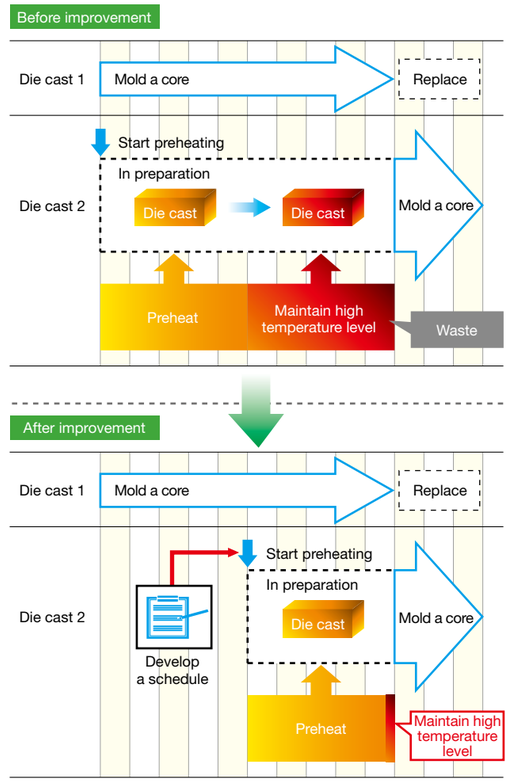
A production process of foundry parts uses a die cast and a casting sand core to be fitted inside the die cast. To mold the core, the die cast has to be preheated to and maintained at an appropriate temperature.

In the conventional process, the preheating of the next die cast had been initiated immediately after the start of production of a preceding foundry part, which means a considerable amount of energy had been consumed to maintain its temperature before actual use.

In countering the situation, we first surveyed the time required to preheat each die cast in order to allow management of an overall preheating schedule. Then, we started adjusting the preheating timing of each die cast according to a daily production plan and successfully reduced the extra time required to keep the preheated temperature. As a result, we achieved some 97% reduction in the amount of energy used for temperature maintenance, and consequently, reduced annual CO_2 emissions by about 96 tons.

This project won an Excellent Practice Award in fiscal 2017 under our internal award program to recognize excellent environmental improvement activities as an outstanding day-to-day improvement example for the energy JIT efforts currently promoted by Toyota Industries.

■ Reducing Time to Maintain Preheated Temperature of a Die Cast



Certification of Environmentally Friendly Products

Toyota Industries has been proactively promoting development and design of eco-conscious products. As part of the efforts, we launched the Environmentally Friendly Product Certification System in fiscal 2007, which certifies products that possess exceptionally high environmental performance, and have been showcasing these products to the public. With the addition of one product in fiscal 2017, a total of 20 products have obtained certification under this system since its launch.

We will continue to promote the development of eco-conscious products in the future as well.

Product Certified in Fiscal 2017

gene B (8FB10 – 8FB30 and 8FBJ35) electric lift truck with 1.0- to 3.5-ton capacity

Key features to reduce environmental impact

The lift truck is equipped with a new AC motor and motor driver and features an improved rate of recovering energy generated when the brake is applied, which lead to a significant reduction in power consumption compared with our previous models.

Power Consumption

Approx. 12% lower power consumption (1.0- to 2.5-ton capacity)

Approx. 17% lower power consumption (3.0- to 3.5-ton capacity)

(Compared with previous models)

Establishing a Recycling-Based Society

With a view to establishing a recycling-based society, we have been striving to reduce resource consumption.

Summary

Waste Generation Volume (Production Activities)

FY2017 Results

Waste generation volume per unit of production (non-consolidated)

30% reduction (vs FY06 level) | FY21 target: 29% reduction (vs FY06 level)

Waste generation volume per unit of production (non-consolidated/consolidated subsidiaries in Japan)

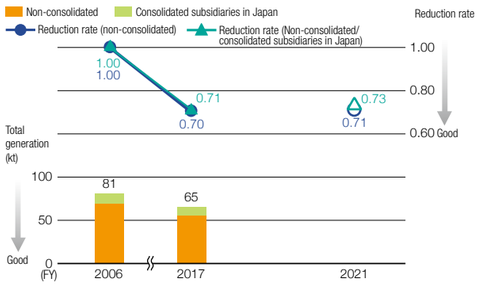
29% reduction (vs FY06 level) | FY21 target: 27% reduction (vs FY06 level)

In seeking to minimize resource consumption in 2050, we are making efforts to reduce our waste generation volume by implementing measures to reduce resource consumption at the source and promoting internal reuse of waste.

In the Sixth Plan, we set out targets of reducing waste generation volume per unit of production compared with the fiscal 2006 level by 29% on a non-consolidated basis and by 27% for Toyota Industries and its consolidated subsidiaries in Japan. Accordingly, we have been promoting activities toward these targets.

Initiatives for Establishing a Recycling-Based Society

■ Waste Generation (Non-consolidated/Consolidated subsidiaries in Japan)



Extending the Life of Cutting Tools

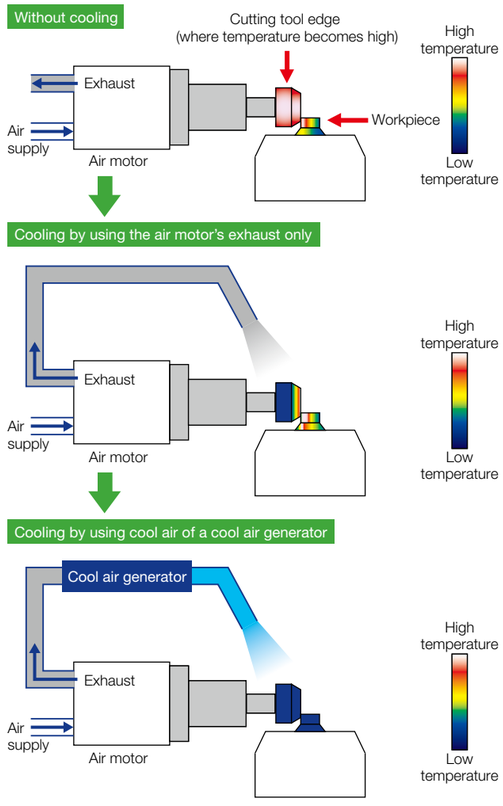
The Hekinan Plant, an engine production base in Aichi Prefecture, has been conducting improvement activities to achieve a longer life for cutting tools used in production lines.

Their latest effort was to extend the tools' life by lowering the high temperature generated at the edge of a rapidly rotating tool with the contact with a workpiece.

Previously, the plant's production lines adopted a dry cutting technique that does not use a cutting fluid. This caused cutting tools to turn hot easily and reach their life early. In this dry cutting technique, the plant endeavored to achieve the level of cooling performance equivalent to that attained with the use of a cutting fluid. They considered several cooling methods, including the one to utilize exhaust of an air motor used to rotate a tool, collaborated with relevant departments to accumulate necessary data and found out that a commercially available cool air generator that can take in air and discharge cool and warm air separately is fit for the purpose. Installing the generator enables the cooling of cutting tools via the air motor's cool exhaust and made it possible to achieve our original target. Cutting tools now last about 1.8 times longer than before.

This improvement has already been applied to other Toyota Industries plants, and the generator has been proven effective both in terms of cooling (using its cool air) and warming (using its warm air). We will continue our activities to generate excellent ideas under the motto "Continue improvements, however small."

■ Efforts to Extend the Life of Cutting Tools



Akio Nakamura (left)
Taishi Matsuda (team leader)
Prototype Production Section, Manufacturing Department No. 1, Hekinan Plant
(As of December 31, 2016)

The Prototype Production Section makes resourceful efforts and improvements in order to provide better technologies for use in production lines. We will continue to contribute to production activities while promoting communication within our section and with other relevant departments.

Recovering Used Cutting Fluid with Improved Discharge Plate

The Kariya Plant, a production base of textile machinery in Aichi Prefecture, created a discharge plate to better recover used cutting fluid generated in a cutting process of foundry parts and to reuse the recovered fluid.

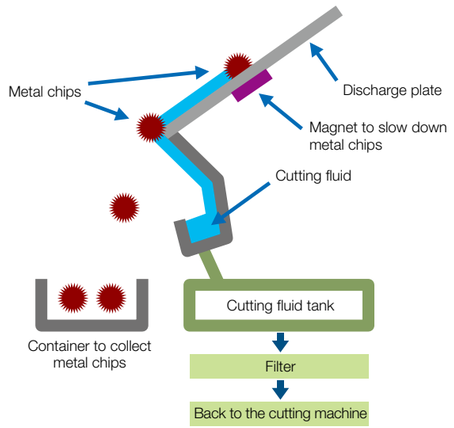
The plant had already been recycling used cutting fluid but had discarded the fluid containing metal chips. In order to more finely remove metal chips from used fluid, the plant worked to modify the discharge plate, on which used fluid containing metal chips flow down.

The improvement involved placing magnets on the back of the plate to slow down metal chips while allowing used cutting fluid to slide down the plate. After a number of trials and errors, appropriate magnetic power and optimum locations of magnets were determined.

The improved discharge plate has allowed the plant to reuse 20 tons of used cutting fluid annually. It has been adopted by other Toyota Industries plants in their cutting machines, and they have added their own improvements, such as changing the shape of the discharge plate, for better results. The project won a prize in the Creativity category in the Fiscal 2017 Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology.

Improved discharge plate

■ Mechanism of the Improved Discharge Plate



Shinya Kakehi
Manufacturing Planning, Manufacturing Section, Production Department
(As of December 31, 2016)

An improvement of the used cutting fluid recovery process had already been done before, but it did not become widespread due to a workability problem. So, it was the second trial. We are very satisfied with the improvement we came up with this time because it works great without imposing an extra burden on workers. We will continue our improvement activities while gathering seeds of improvements on-site.

Conducting Water Risk Assessment

Toyota Industries uses water in many processes, for example, for washing products and cooling production lines. Globally, consumption of water, which is one of the most important resources, is increasing in line with growth in the world's population. Flooding and other water-related natural disasters due to climate change cause serious impact. We duly consider that these factors present risks to our business activities.

In fiscal 2017, we assessed water risks at each base as part of efforts to identify and mitigate risks associated with water resources to our business activities. We used Aqueduct, a global water risk mapping tool developed by the World Resources Institute (WRI), and various public databases available in corresponding regions. The assessment revealed no "extremely high" water risks for any of our bases. Based on the assessment results, we will implement appropriate measures in our bases, starting with those found to have higher risks. Simultaneously, we will work to assess and mitigate water risks in our supply chain as well while seeking ways to conserve water resources.

Reducing Environmental Risk and Establishing a Society in Harmony with Nature

We have been making efforts to reduce the use of substances of concern while carefully monitoring the latest trends in environmental laws and regulations on a global basis. At the same time, we have been promoting activities for conservation of biodiversity toward realizing a society in harmony with nature.

Summary

VOC Emissions (Production Activities)

FY2017 Results

Emissions per unit of production (non-consolidated/automobile body)

36% reduction (vs FY06 level)

FY21 target: 36% reduction (vs FY06 level)

Under the Sixth Plan, we set a target of reducing emission volume per unit of production for volatile organic compounds (VOC) from the automobile body painting process by 36% from the fiscal 2006 level and have been striving to reduce VOC emissions. In fiscal 2017, we continued our efforts to increase the recovery rate and enhance maintenance and management of thinner, a solvent used for cleaning. Consequently, we were able to cut down emission volume per unit of production in fiscal 2017 by 36%.

Strengthening Management of Chemical Substances at Consolidated Subsidiaries Outside Japan

Many of the chemical substances needed for our production activities may cause adverse effects on the environment. Thus, appropriate management of chemical substances is crucial in ensuring safe handling and minimizing potential harmful effects.

To appropriately manage chemical substances contained in raw materials and products, we have been assisting our consolidated subsidiaries outside Japan in establishing a system to manage chemical substances.

In fiscal 2017, we started providing such support to three companies.

We will continue to provide support and undertake activities to prevent violations of chemical substances regulations at production bases outside Japan.

Study group session at a production base in India

Initiatives for Conservation of Biodiversity

We believe that it is important to undertake business activities while continuously paying attention to the impact of these activities on the natural environment. Based on this belief, we have formulated the biodiversity policy and been promoting initiatives accordingly. The policy clearly stipulates that we seek to reduce the impact of our business activities on biodiversity and work with local communities for conservation of biodiversity.

Participation in the Aichi Prefectural Government Ecological Network Forum

Toyota Industries has been collaborating with the Aichi prefectural government in its initiative to foster the development of ecological networks for the realization of biodiversity-conscious local communities. In January 2017, we participated in the Aichi Prefectural Government Ecological Network Forum through a poster exhibition. The exhibition showcased our Biotope at the East of Obu Station, which we have developed on Company-owned idle land in Obu City, Aichi Prefecture, in collaboration with diverse organizations and individuals, including the prefectural government, companies, NPOs, expert bodies and local community members, with the aim of forming a link to the local natural environment. We will continue to cooperate with other organizations and contribute to the development of ecological networks within the entire prefecture.

Poster exhibition

All Toyota Biodiversity Conservation Activities

Toyota Industries has been taking part in the Green Wave Project, a biodiversity conservation initiative undertaken jointly by Toyota Group companies. The project conducts various activities, including development of a wooded area within the plant premises and conservation of natural habitats of living organisms, and aims to extend its reach from Toyota Group companies to local communities and governments.

Our activities under the project in fiscal 2017 included participation in the Fujimae Tideland Cleanup Campaign, which was an All Toyota event; publication of a booklet that compiles initiatives of each company in the Toyota Group; and hosting study group sessions for development of a quantitative environmental assessment method. We plan to expand the project throughout the Toyota Industries Group to form a broader circle of collaboration.

All Toyota Green Wave Project
All Toyota Harmony with Nature Working

Logo used in Green Wave Project activities

Environmental Learning Using Our Biotope

In August 2016, we invited local children to our Biotope at the East of Obu Station and held a nature observation event to explore aquatic organisms.

On the day of the event, the children closely interacted with nature, learning about non-native species as well as about the biotope itself, catching organisms living in the pond and looking up their names in picture books, and drawing pictures of these organisms.

We will continue to develop our biotope in the hope of contributing to conservation of the local ecosystem.

Children drawing organisms caught in the pond

Participants of the nature observation event

Conducting WET*1 Testing

For effluents released from its production bases, Toyota Industries sets and endeavors to comply with voluntary standard values, which are more stringent than those stipulated under law.

In fiscal 2017, in addition to complying with these voluntary standard values, we conducted WET testing at two production bases in Japan to evaluate the environmental impact of their effluents on organisms.

*1: Short for Whole Effluent Toxicity, a WET test is used to assess the aggregate toxic effect of a facility's wastewater by using bioresponse of algae, crustacea and fish.

Water sampling for WET testing

Revisions to the Environmentally Preferable Purchasing Guidelines

Toyota Industries defined its aspirations in 2050*2 in its environmental vision in March 2016, and accordingly, revised the Environmentally Preferable Purchasing Guidelines in October 2016.

Key Revisions
Environmentally conscious practices throughout the product lifecycle, from the purchase of raw materials to end use by customers and disposal
Strengthening environmental management of the entire supply chain, including secondary and tertiary business partners
Augmenting initiatives in such areas as greenhouse gas (GHG) emissions, resource recycling and biodiversity

We will continue to collaborate with our business partners toward the implementation of appropriate environmental management within the entire supply chain.

*2: Our aspirations in 2050 represent our goals under the four action themes (establishing a low-carbon emission society; establishing a recycling-based society; reducing environmental risk and establishing a society in harmony with nature; and promoting environmental management) as declared in our Global Environmental Commitment.

Environmental Management

Toyota Industries proactively discloses its initiatives for reduction of environmental risk and other environmental information.

Status of Compliance with Environmental Laws

Toyota Industries carries out soil and groundwater surveys at its plants and performs purification when the survey results reveal that soil or groundwater contains substances exceeding standard values. We also disclose the progress of purification efforts in the corresponding *Toyota Industries Report* and at local community meetings.

In a voluntary soil and groundwater survey conducted at the Kariya Plant in Aichi Prefecture, we have confirmed that certain substances were above their standard values. We reported the incident to the Aichi prefectural government on June 1, 2016 and disclosed the relevant information to the public.

In accordance with the results of the survey, we are implementing purification measures under the guidance of Aichi Prefecture while placing the highest priority on not to cause any inconvenience to local residents.

In fiscal 2017, there were no incidents of violations of environmental laws.

Measurement results are available at:
https://www.toyota-industries.com/csr/environment/

Measures to Prevent Irregular Effluent Discharges from a Rainwater Drainage System

In order to prevent water contamination by irregular effluent discharges, we have been implementing a measure to avoid external leakage from rainwater discharge outlets throughout Toyota Industries since fiscal 2012.

More specifically, we have been installing a system to constantly monitor rainwater quality at rainwater discharge outlets, and if there is a problem in the quality, to stop the release of rainwater into public areas at a water gate or reroute it back to a wastewater treatment facility.

Water quality monitoring equipment

In fiscal 2017, we installed water quality monitoring equipment and a water gate at the rainwater discharge outlet of the Higashiura Plant in Aichi Prefecture, thereby completing the implementation of the measure against the risk of undesirable external leakage of rainwater in all production bases in Japan.


Water gate

Adding More Monitoring Tanks to Wastewater Treatment Facilities to Reduce Risk of Irregular Effluent Discharges

From fiscal 2015 to fiscal 2017, we undertook the task of reducing the risk of irregular effluent discharges at the Kyowa Plant in Aichi Prefecture. Our specific efforts were: 1) implementing the aforementioned measure at the rainwater discharge outlets to prevent external leakage; and 2) separating drainage systems for wastewater from production processes, non-industrial wastewater and rainwater to apply appropriate treatment depending on respective water qualities.

In fiscal 2017, we added two more monitoring tanks to the wastewater treatment facility of the plant. We now have three separate monitoring tanks, one each for the reception phase, monitoring phase and discharge phase, which allow us to reliably stop external leakage of irregular effluent discharges into public areas when the water quality is found unfit for release.

These measures have led to not only lower risk of irregular effluent discharges from our plants but also better energy and resource savings through less burden on the wastewater treatment facility.

Conducting Environmental Risk Diagnosis at Non-Production Sites

Toyota Industries has been striving to reduce environmental risks not just in production bases but also in Company housing and dormitories, Company-owned welfare facilities and other non-production sites.

In fiscal 2017, we conducted a *genchi genbutsu* (go and see for yourself) environmental risk diagnosis at 23 such sites in Japan. Specifically, we performed a quantitative assessment by checking equipment installation measures at facilities, the boundary and the discharge outlets within each site and by examining their operational status.

We will continue to prioritize necessary countermeasures based on the assessment results and formulate a medium-term action plan.

Facilities and equipment subject to assessment	Oil and chemical tanks, storage warehouses, waste storage yards, kitchens, car wash stations, piping, manholes, water purifier tanks, power generators, boilers, small compressors and air conditioners
Diagnosis results (sample)	■ Oil and chemical tank: Leakage; Discharge; Inspection ■ Water purifier tank: Odor; Legally required inspection; Routine inspection


On-site risk diagnosis

Holding Environmental Seminars

We hold environmental seminars to raise employees' environmental awareness. In fiscal 2017, we selected "taking on the challenge of establishing a zero CO_2 emissions society" as the lecture's main theme and invited Mr. Kou Sakata of the Institute of Applied Energy to talk about "a scenario for spreading the use of CO_2-free hydrogen." From Toyota Industries and its consolidated subsidiaries, 182 employees and executives attended the lecture to deepen their understanding of the possibility of hydrogen as a driver of a sustainable society.


Environmental seminar

Running an Environmental Booth at the Shokki Festa

We run an environmental booth at the Shokki Festa, an annual event jointly held by Toyota Industries and its labor union.

In fiscal 2017, under the theme of "people and nature in harmony" we hosted various environment-related events at the booth. They included handing out flower seedlings and compost made from branches from pruned trees on the Company premises and fallen leaves, creating eco-friendly shopping bags and holding a quiz rally on nature and organisms.

Attended by many visitors, including employees and their families as well as local community members, the booth provided an opportunity for them to think and get to know more about biodiversity in a fun way while drawing their favorite animals and flowers on eco-friendly shopping bags and answering quizzes on the blessings of nature.

Environmental booth

Activity Examples of Consolidated Subsidiaries (Outside Japan)

Reducing CO_2 Emissions by Using Renewable Electricity

Our subsidiaries engaging in production or sales and servicing of materials handling equipment in Europe have been promoting the use of renewable energy, such as solar, wind and hydraulic power, as part of their efforts to reduce CO_2 emissions.

Two of our sales and servicing subsidiaries, namely, Toyota Material Handling Deutschland GmbH (TMHDE) in Germany and Toyota Material Handling Nederland B.V. (TMHNL) in the Netherlands, have installed a rooftop solar panel system that respectively generates 28% and 5% of their annual electricity consumption.

Moreover, Toyota Material Handling Manufacturing Sweden AB (TMHMS) and Toyota Material Handling Manufacturing Italy S.p.A. (TMHMI), production subsidiaries in Sweden and Italy, respectively, and TMHNL have purchased renewable electricity certificates, which as a total of the three companies are equivalent to approximately 28,005 MWh of annual electricity consumption and about 2,927 tons of CO_2 emissions. Through the purchase of these certificates, the three companies have contributed to lower CO_2 emissions.

Renewable electricity certificate and TMHMS staff

Renewable electricity certificate and TMHMI staff

Reducing CO_2 Emissions by Switching to LED Lighting

Our consolidated subsidiaries outside Japan have been promoting reduction of CO_2 emissions by proactively switching to LED lighting. For example, Yantai Shougang TD Automotive Compressor Co., Ltd. (YST), a subsidiary producing car air-conditioning compressors in China, has replaced all plant and office lights with LED lighting.

Elsewhere, Toyota Industry (Kunshan) Co., Ltd. (TIK), a subsidiary producing automotive parts and materials handling equipment in China, has switched 90% of its lights to LED lighting. At Toyota Industrial Equipment Mfg., Inc. (TIEM), a subsidiary producing materials handling equipment in North America, 85% and 50% of lights in its plant area and office area, respectively, are now using LED lighting. TIEM plans to complete the replacement in its plant area in fiscal 2018.

Recycling All Wastewater

In India, Toyota Industries Engine India Pvt. Ltd. (TIEI), a subsidiary producing automotive parts, and Kirloskar Toyota Textile Machinery Pvt. Ltd. (KTTM), a subsidiary producing textile machinery, have been recycling and effectively utilizing all wastewater.

For example, the two companies apply purifying treatment to wastewater from production processes, such as liquid waste of coolants and used cooling water, and reuse it in production processes. Non-industrial wastewater is also treated in-house and used to water trees and flush toilets.

Local Community Event Held during Environment Month

During Environment Month held in every June, YST hosts an environmental event for local community members.

In the fiscal 2017 event, YST exhibited posters and materials to highlight the importance of activities for saving energy and curbing global warming. YST also handed out original paper fans to visitors to increase their energy-saving awareness.

Environmental event

GHG Emissions in the Supply Chain

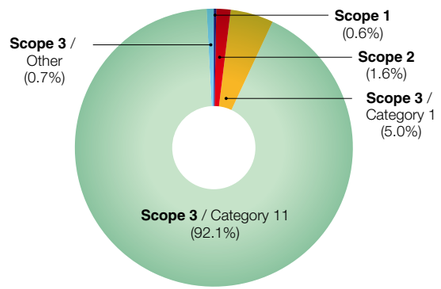
We recognize that measuring the three scopes defined by the GHG Protocol and turning the results into specific efforts to reduce CO_2 emissions are important in creating a low-carbon society. Scopes 1 and 2 are GHG emissions from our business activities, the former being direct emissions from our use of fossil fuels and the latter being indirect emissions from the use of purchased energy resulting from generation of electricity by power plants and other facilities. Scope 3 emissions are indirect emissions associated with each product from the purchase of raw materials to end use by customers and disposal.

In the fiscal 2017 results, combined Scope 1 and 2 emissions accounted for 2.2% of the total emissions, with Scope 3 emissions reaching 97.8%. The largest source of emissions, which accounted for 92.1%, was Category 11 (Use of sold products) under Scope 3, followed by Category 1 (Purchased goods and services) also under Scope 3, which accounted for 5.0%.

Going forward, we will continue to monitor GHG emissions within the entire supply chain and accordingly promote CO_2 emissions reduction activities.

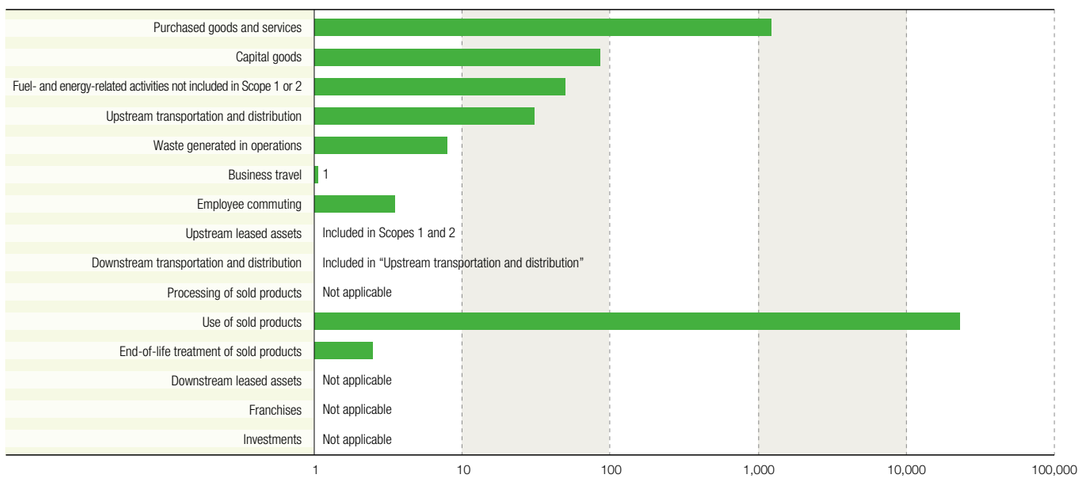
Detailed data is available at:
https://www.toyota-industries.com/csr/environment/process/scope3/index.html

GHG Emissions in Supply Chain (FY2017)



Emissions from Toyota Industries' business activities	Scope 1	Direct emissions from Toyota Industries through the use of fossil fuels, etc.
	Scope 2	Indirect emissions from the use of purchased energy resulting from generation of electricity by power plants, etc.
Emissions other than from Toyota Industries' business activities	Scope 3	Emissions associated with purchase of raw materials, end use of Toyota Industries' products by customers and disposal of products

Scope 3 Emissions by Category (FY2017)



Calculated by using the emissions associated with employee business travel as the baseline set at 1

Proactive Disclosure of Environmental Information

Toyota Industries fosters environmental communication with our stakeholders through proactive disclosure of environmental information. In fiscal 2017, Toyota Industries was evaluated to be in the performance band of B in the CDP* climate change survey.

Since fiscal 2015, we have been participating in the Ministry of the Environment's project for the establishment of a framework for disclosure of environmental information and examining the ideal way to disclose our environmental information. We will continue to upgrade our method of disclosure and contents to be disclosed.

* An international NGO undertaking a project through collaboration among institutional investors to call for disclosure of strategies against climate change issues and GHG emissions data to leading companies around the world

Environmental Impact Flow and Environmental Accounting

In this section, we provide an overall picture of environmental impact resulting from our global business activities and report the results of environmental accounting (environmental conservation cost, environmental conservation benefits and economic benefits of environmental conservation initiatives).

Environmental Impact Flow

INPUT

Energy [consolidated]	
Energy consumption	16,520 TJ*1
Electricity	1,242,408 MWh
City gas	76,229 km^{3}N
LPG	9,709 t
Petroleum products	5,399 kl
Coal products	6,675 t
LNG	5,503 t
Raw Materials [consolidated]	
Raw material consumption	712,293 t
Water [consolidated]	
Water consumption	4,661 km^3
Chemical Substances [Japan consolidated]	
PRTR law*2 designated substances	1,579 t

*1: Terajoule is a unit used to measure heat. 1 TJ = 10^{12} joules

Environmental Impact Flow

R&D/Design

Procurement

Production

Transportation/Sales

Usage

Recovery/Recycling

OUTPUT

Into the Air [consolidated]	
CO_2 emissions	939,753 t-CO_2
Greenhouse gases other than CO_2	5,391 t-CO_2
CO_2 from logistics	27,180 t-CO_2
SOx (Sulfur oxides)	412 kg
NOx (Nitrogen oxides)	137 t
VOC (Volatile organic compounds)	1,460 t
Chemical Substances [Japan consolidated]	
Emissions/transfers of PRTR law designated substances	571 t
Waste [consolidated]	
Waste generation	87,917 t
Into Waterways [Japan consolidated]	
Water pollutants	33 t
Discharge of treated wastewater	2,370 km^3

*2: Short for Pollutant Release and Transfer Register, the PRTR law is a scheme whereby businesses measure the release and transfer of PRTR designated pollutants and report their performance to the government. The government then compiles this data and releases it to the public.

Environmental Accounting

Fiscal 2017 Environmental Accounting*3

Scope of data collection: Toyota Industries Corporation
Period of data collection: April 1, 2016 – March 31, 2017

*3: Environmental accounting data is collected in compliance with the Ministry of the Environment's *Environmental Accounting Guidelines 2005 Edition.*

Environmental Conservation Cost (Millions of yen)

Category		FY2017 Investment	FY2017 Expenses	FY2016 Investment	FY2016 Expenses
Business area costs	Pollution prevention costs	833	120	525	147
	Global environmental conservation costs	450	2,335	716	3,156
	Resource recycling costs	129	140	113	193
Upstream/downstream costs		0	568	0	71
Management costs		0	276	6	166
Research and development costs		7	2,398	6	309
Social contribution activity costs		0	92	0	89
Environmental remediation costs		16	0	50	0
Total		1,435	5,929	1,416	4,131
		7,364		5,547	

Environmental Conservation Benefits

Environmental Impact	Comparison with Previous Fiscal Year
CO_2	1,414 t decrease
Generation of waste products	469 t decrease
Water	23,317 m^3 increase

Economic Benefits of Environmental Conservation Initiatives (Millions of yen)

Item	Details	Amount
Revenue	Returns from sale of recycled waste products	3,299
Cost reduction	Energy cost reductions	129
	Cost reduction by resource savings (including reductions in amount of water use and wastewater treatment costs)	87
Total		3,515

Third Party Assurance of Environmental Performance Data

In order to ensure the transparency and accuracy of the information we disclose, the Toyota Industries Group obtained third party assurance for its GHG emissions (Scopes 1, 2 and 3) and waste generation volume data for fiscal 2017.

Verification by a Third Party


Verification Statement

SGS

21 June 2017

Mr. Akira Onishi
President
TOYOTA INDUSTRIES CORPORATION

Objective

SGS Japan Inc. (hereinafter referred to as "SGS") was commissioned by TOYOTA INDUSTRIES CORPORATION (hereinafter referred to as "the Organization") to conduct independent verification based on criteria of verification: ISO 14064-3: 2006 and the SGS' verification protocol) regarding the data prepared by the Organization on the scope of verification (hereinafter referred to as "the assertion"). The objective of this verification is to confirm that the assertion in the Organization's applicable scope has been correctly calculated and reported in the assertion in conformance with the criteria, and to express our views as a third party.

Scope

The scope of verification is limited to performance data of GHG emissions at 10 sites of non-consolidated, 12 companies of consolidated subsidiaries in Japan and 15 companies of overseas consolidated subsidiaries.

GHG emissions included in this performance data are Scope 1 and 2: GHG emissions from energy consumption, and Scope 3: category 1 - 7, 11 and 12 (non-consolidated: category 1-7, 11, 12, consolidated subsidiaries in Japan and overseas: category 3). Waste generations is for non-consolidated and consolidated subsidiaries in Japan.

The period subject to report is from 1 April 2016 to 31 March 2017.

Procedure of Verification

This assertion was verified in accordance with criteria of verification, and the following processes were implemented at a limited level of assurance:

- Verification of the calculation system, interviews on the measurement, tabulation, calculation and reporting methods employed by the Organization as well as review of related documents and records.
- Verification of the assertion. On-site verification and review of vouchers at the Higashichita Plant and the Nagakusa Plant, and analytical procedures and interviews carried out at all sites excluded in the scope of verification.

The criteria for this review is based on "GHG Emissions Calculation and Reporting Manual Ver.4.2" and the protocol specified by the Organization.

Conclusion

Within the scope of the verification activities employing the methodologies mentioned above, nothing has come to our attention that caused us to believe that the Organization's assertion was not calculated and reported in conformance with the criteria.

SGS Japan Inc. affirms our independence from the organization, being free from bias and conflicts of interest with the organization.

For and on behalf of SGS Japan Inc.
Senior Executive & Business Manager
Certification and Business Enhancement

Signed.

The verification statement of the third party organization is available at:
https://www.toyota-shokki.co.jp/csr/environment/process/items/Verification_ENG.pdf

Toyota Industries obtained third party verification of its GHG emissions and waste generation volume data for fiscal 2017.

On-site verification was performed by the verification organization at two of our production bases in Aichi Prefecture, namely, the Higashichita Plant and Nagakusa Plant, and the transparency and accuracy of our environmental data have been confirmed through the verification.

The organization is also sequentially conducting verification at the remaining eight production bases of Toyota Industries as well as 12 consolidated subsidiaries in Japan and 15 consolidated subsidiaries outside Japan.

We will continue to utilize this third party verification in making continuous improvements in our environmental activities and disclose data to our stakeholders in a more transparent manner.



On-site verification conducted at the Higashichita Plant and Nagakusa Plant

Bases Subject to Verification

Category	Region	Names of Bases and Subsidiaries
Toyota Industries Corporation	Japan	Kariya Plant, Takahama Plant, Nagakusa Plant, Kyowa Plant, Obu Plant, Hekinan Plant, Higashichita Plant, Higashiura Plant, Anjo Plant, Morioka Works (10 bases)
Consolidated subsidiaries in Japan	Japan	Tokaiseiki, Tokyu, Altex, Iwama Loom Works, IZUMI MACHINE MFG., Miduho Industry, Nagao Kogyo, Nishina Industrial, HANDA Casting, Unica, Hara, Aichi (12 companies)
Consolidated subsidiaries outside Japan	North America, Asia and Europe	NVIC, Raymond, TIEM, MACI, TACG, TICA, TIK, TIEI, KTTM, TACK ,YST, TDDK, TMHMF, TMHMS, TMHMI (15 companies)