Friendly to the Global Environment

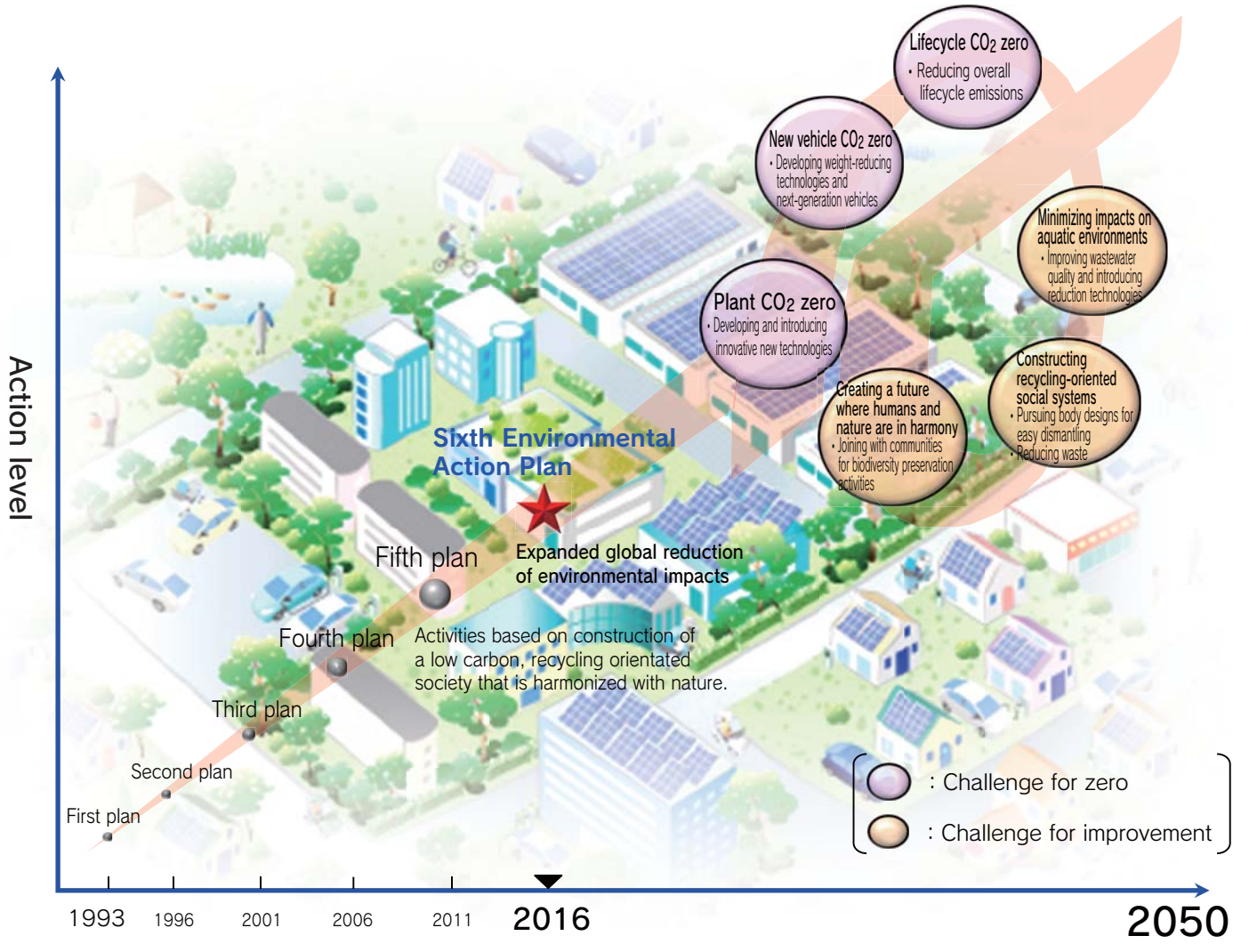
Production Engineering Headquarters
Production Environment Committee Chairperson:
Akitsugu Ishiguro,
Executive Vice President

Working to Create Plants that are Harmonized with Nature and Coexist with Local Communities

One of the fundamental principles of Toyota Auto Body is harmony with the environment, and we are working to create a sustainable society.
In fiscal year 2016, we formulated a "Toyota Auto Body Long-term Environmental Vision" which challenges us to reduce our environmental impact from a long-term perspective in response to global-scale environmental problems. Specifically, this is planned in the Toyota Auto Body Environmental Action Plan that is established every five years (currently the sixth plan, covering fiscal years 2016 – 2020), and the entire Toyota Auto Body Group is working together to achieve it.

Toyota Auto Body Long-term Environmental Vision

Sets items to address in six areas as we work towards 2050.
-We are working on reducing environmental impacts such as CO_2 zero emissons from the plants, using knowledge and capability of monozukuri (manufacturing).



: Toyota Auto Body logo mark

click Basic Environmental Policy

click Sixth Toyota Auto Body Environmental Action Plan

click Results of fiscal year 2016 programs

Toyota Auto Body Environmental Action Plan

1993	1995	2000	2005	2010	2015	2020
First Plan ◇Construct a system for environmental programs.	**Second Plan** ◇Improve the level of the programs by introducing ISO14001.	**Third Plan** ◇Achieve zero landfill waste and expand the areas of environmental activities.	**Fourth Plan** ◇Work to reduce CO_2 emissions, and apply environmentally friendly designs to our products.	**Fifth Plan** ◇Develop super-compact EV. ◇Create plants that coexist with local communities.	**Sixth Plan** ◇Reduce environmental impacts on a global scale. • Reduce CO_2 emissions. • Enact programs for biodiversity.	

Sixth Toyota Auto Body Environmental Action Plan

Field \ Area	Building a low-carbon society	Building a recycling-oriented society	Building a society that lives in harmony with nature
Product environment (development and design)	· Improve fuel efficiency by reducing vehicle weight (P.11) · Develop and promote the use of super-compact EV	· Improve ease of vehicle dismantling (P.11) · Expand use of recycled materials (P.11) · COMS recycling business (P.33) · Develop materials using plant fibers (P.34)	· Improve the management of products containing chemical substances (P.34) · Introduce products that contain fewer substances that impact the environment
Production environment (production)	· Develop/introduce production technology that reduces greenhouse gas emissions, improve productivity, and intensify energy-saving activities (P.13, P.35)	· Carry out activities to reduce emissions and improve yield	· Reduce environmental-impact substances (VOC) in painting operations (P.13) · Create plants that coexist with local communities and are harmonized with nature (P.30)
Environmental management (Environmental administration)	· Promote and improve consolidated environmental management (P.36) · Enhance and promote environmental education and training (P.36)	· Strengthen and carry out plans to prevent environmental risks. · Promote further environmental activities that are coordinated with suppliers (P.36)	

Environment Activity Organization and Action Items

CSR Committee
Chairman: President Masui

Product Environment Committee
Chairman: Managing Officer Nakane

- **Improving fuel efficiency W/G**
  · We are developing and commercializing lightweight technologies that contribute to greater vehicle fuel economy of a vehicle.
- **Recycling and Dismantlability W/G**
  · Promoting reductions in dismantling time with designs that facilitate dismantling
  · We have constructed a recycling system that began operating in April 2015 for recycling of scrapped COMS vehicles.
- **Chemical Substance Management W/G**
  · Development of and conversion to replacement technologies for restricted chemical substances
  · We are promoting checks for presence of regulated environmental burden chemicals found (Lead, mercury, and others) in new products and in mass production, as well as auditing of management systems

Production environment Committee
Chairman: Managing Officer Suda

- **Production Environment Committee**
  · Risk assessment and improvements regarding environmental complaints
  · Activities for achieving the sixth plan targets (CO_2, VOC (volatile organic compounds), waste materials, etc.)
- **Production Engineering Div. Energy Reduction Committee**
  · Creation of energy-saving production lines in plant renovations, and development of low CO_2 emission production technology
  · Introduction of renewable energy and improvement of energy supply efficiency
- **Toyota Auto Body Group Production Environment Meeting**
  (At production consolidated subsidiaries in Japan and overseas)
  · Yokoten of environmental activities at Toyota Auto Body group companies
  · Spreading of CO_2 reduction activities in each business activity
  · Promoting prevention of environmental risks

- **Social Contribution Committee**
- **Corporate Ethics Committee**

Product Environment

Three Priority Themes: **Low Carbon** | Recycling Orientation | Harmony with Nature

Development of Weight-Reducing Technologies that Contribute to Top-Class Fuel Economy

Energy and global warming problems are important environmental issues that may have a major effect on humanity and the ecosystem. In cooperation among related divisions, we are developing technologies and working from the initial design stage in order to create environmentally friendly vehicles.

Developing Weight Reduction Technologies for Vehicle Parts

Improving the power train and reducing vehicle weight are essential in order to improve fuel economy. We consider reducing the weight of vehicle parts as a core approach of Toyota Auto Body, and the entire company is actively working for this purpose.

Main programs for reducing the weight of Alphard and Vellfire body and interior parts

[Coaster examples]

→ Listed on P. 11 "Environmental performance" in the "Creating Ever-better Cars" section.

Three Priority Themes: Low Carbon | **Recycling Orientation** | Harmony with Nature

Active Recycling Programs and Promoting Effective Use of Resources

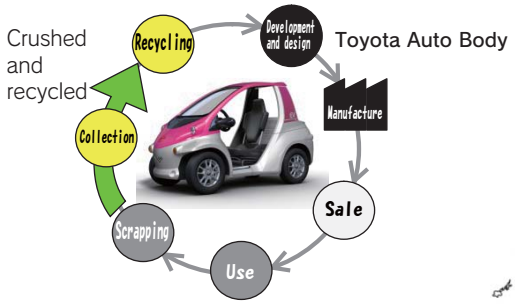
Because we understand that all resources are finite, based on the 3 R's (reduce, reuse, recycle), we are working to improve the ease of dismantling, expand the use of recycled materials, and develop and design plant-fiber materials.

Start of a Recycling Business for the COMS Super Compact EV

The COMS Recycling System that was launched in April 2015 is an original recycling system constructed by Toyota Auto Body for the COMS – a vehicle which is not subject to the Automobile Recycling Act. In this system, COMS which are no longer needed are suitably recycled. We will continue to work for the creation of a recycling-oriented society in the future.

Recovery of lead-acid batteries and other parts

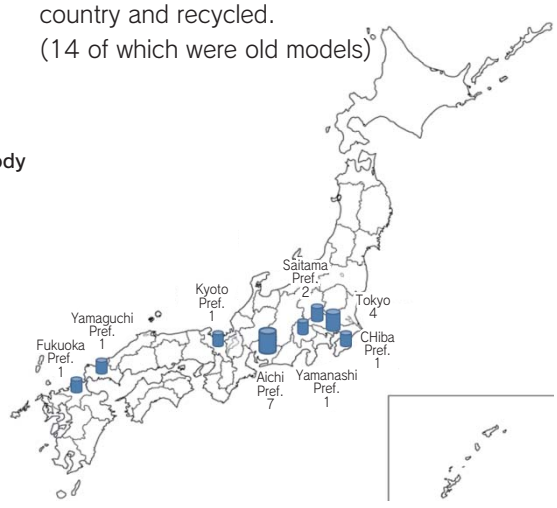
COMS lifecycle



COMS retrieval and transport

Recycling results (FY 2016)

18 COMS that were no longer needed have been collected from around the country and recycled.
(14 of which were old models)



Development of Materials using Plant Fibers

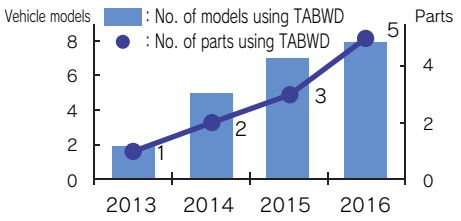
Utilizing the light weight and heat strength of wood

We have developed the TABWD *1 flame retardant injection molding material that uses fine wood fibers.
With a growing record of successful use starting from the aftermarket fog lamp bracket, this material is helping reduce the weight of parts.

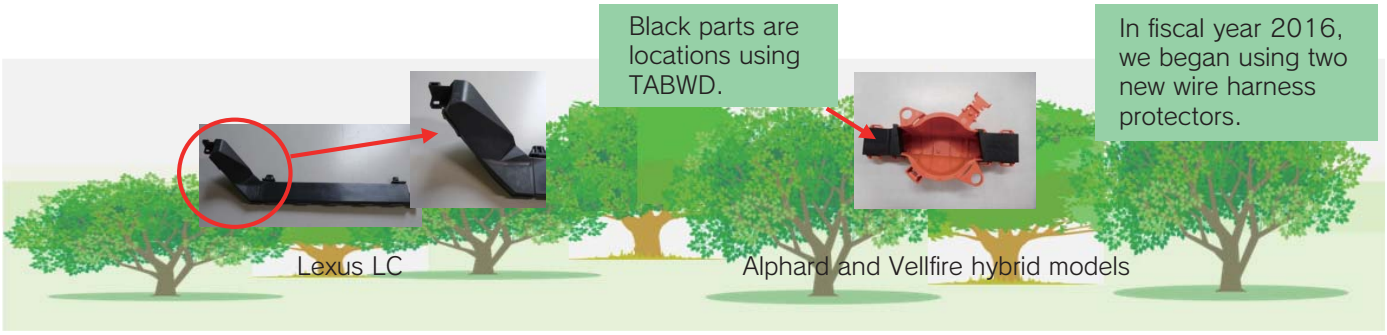
*1.TABWD : Toyota Auto Body WooD plastic

Fine wood fiber　　TABWD

Vehicle models and number of parts (total)



Examples of TABWD use (wire harness protector)



Three Priority Themes: Low Carbon　Recycling Orientation　Harmony with Nature

Improving Management of the Chemical Substances Used in Products

We at Toyota Auto Body are coordinating with our raw material and parts suppliers to identify and assess the risks of the chemical substances that are used in our products, and we are working to protect the environment via actions such as managing chemical substances and changing to the use of substances with lower environmental impacts

Certain Compliance with REACH Regulations and Other International Chemical Substance Regulations

Regulations of chemical substances include the Japanese Chemical Substance Control Act*1, the European ELV Directive*2, and the REACH Regulations*3, as well as independent regulations in North America and Asia.

Toyota Auto Body is working together with Toyota Motor Corporation and our suppliers to build and administer a system for IMDS *4 registration and other systems for chemical substance management under these kinds of international chemical substance regulations.

In May 2016, we revised the Green Purchasing Guidelines and began applying chemical substance management to the supply chain for the Coaster and other new products.

Comment from a developer responsible for environmental impact substances

Materials Engineering Div.　Tsukinosuke Fujisaki

This fiscal year, we worked together with Gifu Auto Body which produces primarily the Coaster, and with our suppliers, for careful control of chemical substances as we endeavor to produce vehicles that are friendly to people and the environment.

*1.Chemical Substance Control Act: Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.
*2.ELV Directive: End-of-Life Vehicles Directive
*3.REACH Regulations : Registration,Evaluation,Authorization and Restriction of Chemicals
*4.IMDS : International Material Data System

Production Environment

Three Priority Themes: Low Carbon | Recycling Orientation | Harmony with Nature

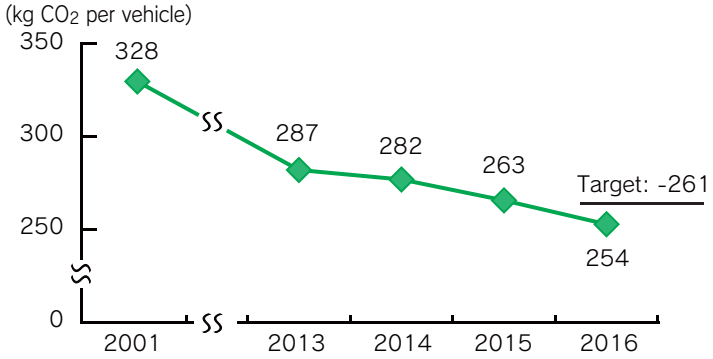
Reducing Environmental Impacts in Production Activities

We are developing and introducing production technologies that generate little CO_2 and VOC (volatile organic compound) emissions, and are carrying out everyday work improvements as we strive for complete energy conservation.

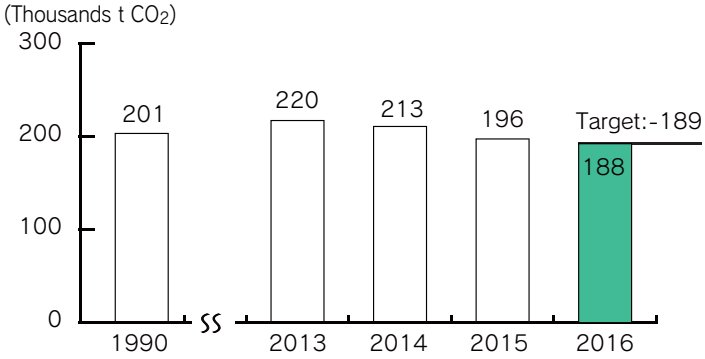
Activities to reduce CO_2 emissions from production processes

In fiscal year 2016 we achieved our targets for CO_2 emissions (consolidated) per vehicle and for CO_2 emissions (Toyota Auto Body).

CO_2 emissions (consolidated) per vehicle



CO_2 emissions (Toyota Auto Body)



Aiming for vehicle production with low environmental impact

[Coaster examples]

→ Printed on P. 13, "Creating Ever-better Plants" in the "Creating Ever-better Cars" section.

Everyday work improvements

We have accelerated solutions aimed at minimizing energy when in standby mode, and improvements based on new discoveries resulting from energy conservation diagnosis.

Creating processes which stop when equipment is not operating

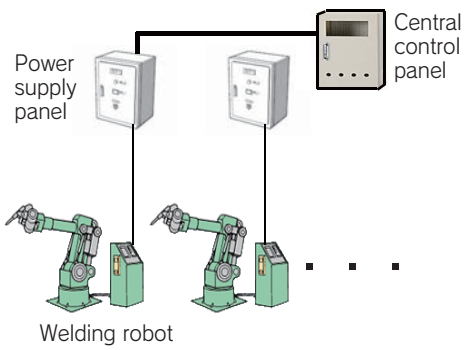
In order to reduce the standby consumption of electricity by welding robots on holidays, we have installed control panels which can turn off multiple power supplies, enabling all robot power to be switched off.

Previously, there were concerns of robot malfunctions resulting from instantaneous current when the equipment was started, however in cooperation with the manufacturer, we created specifications for and installed a resistor that reduces the current and eliminates the risk of malfunction.

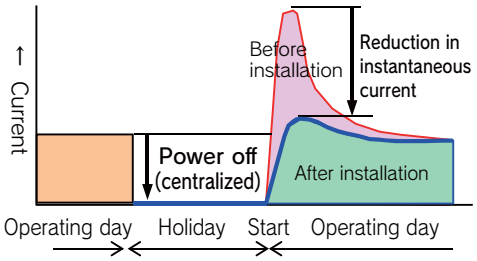
Improvements resulting from energy conservation diagnosis

The amount of heat generation is reduced by the technology which reduces robot welding current, and the production engineering and manufacturing divisions cooperated to reduce the amount of coolant flow, reducing energy consumption by the coolant pump and other parts.

Welding robot power supply system



Welding process: Changes in power

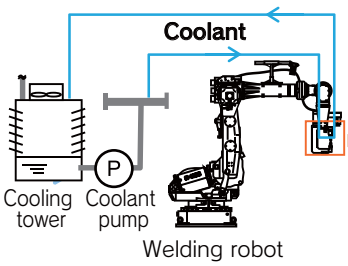


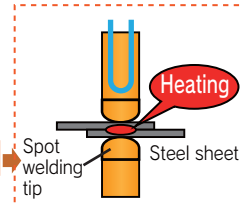
<Reduction effects>

CO_2 reduction* 500 t CO_2 per year

*: Effects currently being verified.

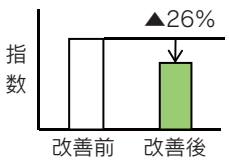
Welding robot cooling flow





The coolant reduces heating when energized and protects the tip to prevent welding failures.

通水量削減 結果



<Reduction effects>

CO_2 reduction 200 t CO_2 per year

Comment from developers responsible for reducing coolant flow

Body Assembly Engineering Div. Hideki Sugiura

Fujimatsu Body Assembly Plant Maintenance Sect. Toshiaki Kagitani

Changing the operating conditions has a large effect on quality, and requires clear rationale and trial verification. We will cooperating and aiming for further improvements in the future.

Environmental Management

Strengthening Consolidated Environmental Management

We are working to create close relationships through active environmental programs that bring together Toyota Auto Body, Group companies, suppliers, and communities.

Developing Personnel with High Levels of Environmental Sensitivity and Who are Capable of Action

Using Environment Month as an opportunity to think about future environmental programs, lectures were held on the subject of "Toyota Environment Challenge 2050" as we aim for new areas and higher levels of achievement.

A system of providing awards to workplaces that achieve results through environmental protection programs was established in fiscal year 2014. During this fiscal year, outstanding workplace awards were presented by the chairman of the Production Environmental Committee to the workplaces (Fujimatsu stamping and Inabe molding shops) which achieved large reductions in energy loss when not operating.

Lecture at which Department GM Yamato from Toyota Motor Corporation was invited to speak (August 2016)

Launching of the awards system and presentation of awards to workplaces that achieve energy conservation results (May 2016)

Strengthening Management in Cooperation with Japan and Overseas Group Companies and Suppliers

We conducted a study meeting for suppliers to discuss the matters and responsibilities that the company will be addressing with regards to environmental problems in the future.

We also held environmental conferences with Japan and overseas Group companies and discussed recognition of environmental preservation issues and measures to address them, and are working for training of local staff.

Study meeting with suppliers (March 2017)

Environmental conference with Japan Group companies (June 2016)

click Resource Investment into and Emissions Produced by Our Business Operations

click Environmental Accounting

click Active Release of Environmental Information

Topics

Receiving the Energy Conservation Center Chairman's Award

In the awareness improvements and results of our past energy conservation programs, we were awarded the Energy Conservation Center Chairman's Award in the energy conservation case studies category at the fiscal year 2016 Energy Conservation Awards.
(Held by: The Energy Conservation Center, Japan)

[Theme: Energy conservation resulting from management improvements at plants]

Genchi-genbutsu check of energy conservation results by top management

Improving operator technical abilities with exhibits of advanced technologies and improvement case studies

PE Environment Div.
Takamitsu Yamamoto (left)
Hironao Otake
(February 2017 award ceremony)

In order to utilize the valued opinions of all readers to enhance further and reflect information more accurately for these CSR activities and this report of Toyota Auto Body for the future, please enter information in the survey.

The opinions and information provided will only be used for the purpose mentioned above.
(Private information will be handled appropriately pursuant to the Toyota Auto Body "Privacy Policy")

Please click here to view the survey. 

Publishing

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