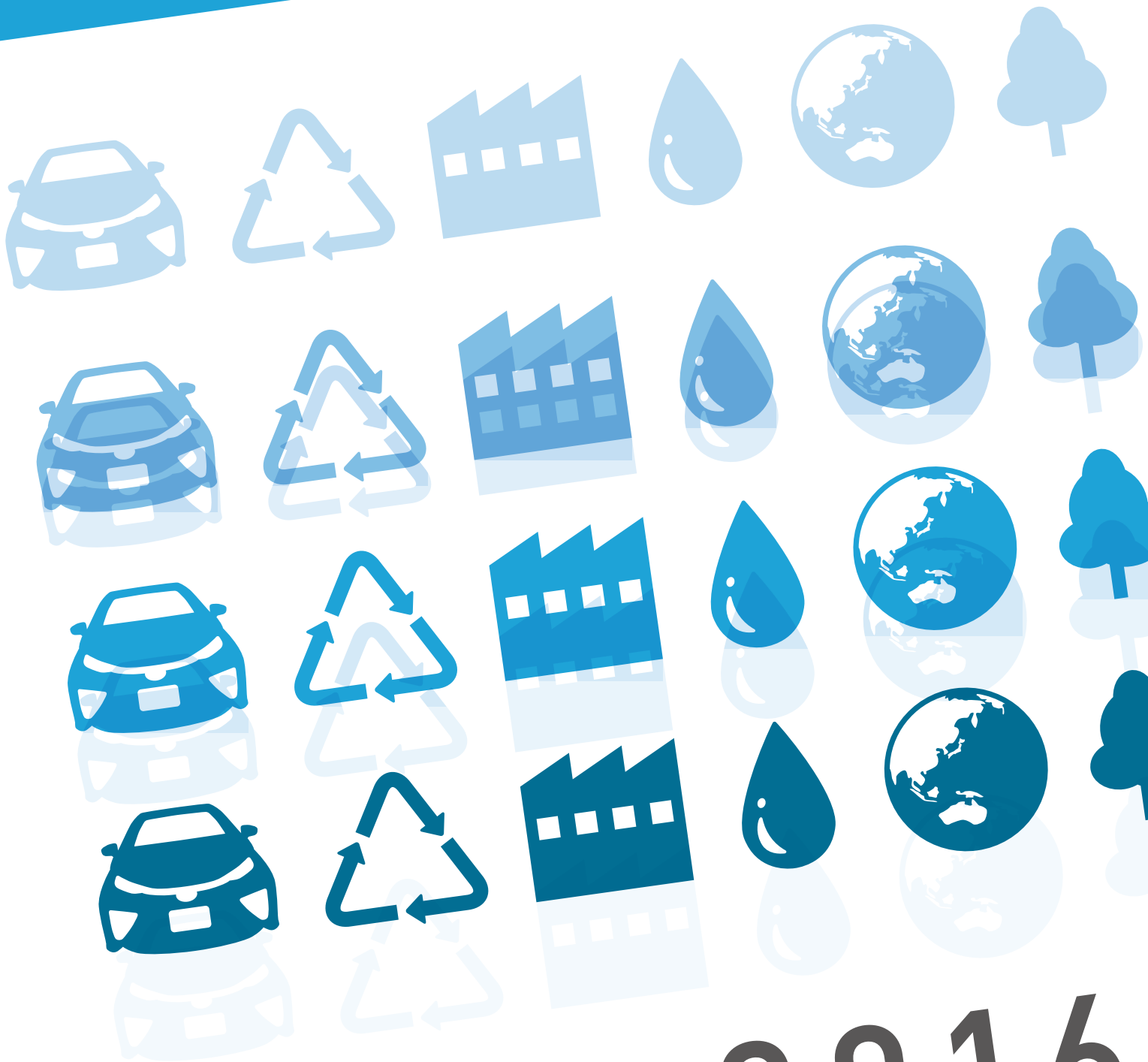
TOYOTA MOTOR CORPORATION

Environmental Report

— Toward the Toyota Environmental Challenge 2050 —



2016

Environmental Report 2016

—Toward the Toyota Environmental Challenge 2050—

Editorial Policy

Toyota Motor Corporation (TMC) considers environmental issues to be one of its management priorities. Since 1998, we have published an annual Environmental Report to explain our environmental initiatives. From FY2016, the report contents are presented in conformance with the six challenges defined under our long-term initiative, the Toyota Environmental Challenge 2050.

The Environmental Report is a specialized publication excerpted from the Sustainability Data Book (previously entitled "Sustainability Report") and covering only our environmental initiatives. For information on Toyota's CSR management and initiatives, please refer to our Sustainability Data Book 2016.

We have also published the Annual Report: Sustainable Management Report 2016 to share with our stakeholders the ways in which Toyota's business is contributing to the sustainable development of society and the Earth on a comprehensive basis from a medium- to long-term perspective.

Annual Report **Sustainable Management Report 2016**
http://www.toyota-global.com/sustainability/report/ar-smr/

Securities reports (Japanese text only)
http://www.toyota.co.jp/jpn/investors/library/negotiable/

U.S. SEC filings
http://www.toyota-global.com/investors/ir_library/sec/

Financial reports/Business reports
http://www.toyota-global.com/investors/financial_result/

Corporate governance reports
(updated as needed)
http://www.toyota-global.com/investors/ir_library/cg/

Sustainability Data Book 2016
http://www.toyota-global.com/sustainability/report/sr/

Environment

Environmental Report 2016
—Toward the Toyota Environmental Challenge 2050—
http://www.toyota-global.com/sustainability/report/er/

Social contribution

Toyota's social contribution activities
http://www.toyota-global.com/sustainability/report/citizenship/

* The Toyota website also provides information on corporate initiatives not included in the above reports.

CSR/Environment/Social contributions	http://www.toyota-global.com/sustainability/
Environmental initiatives	http://www.toyota-global.com/sustainability/environment/
Social contribution activities	http://www.toyota-global.com/sustainability/social_contribution/

Period Covered by Report

The data featured in this report covers the period from April 2015 to March 2016. For major ongoing initiatives, data from April 2016 onward is also included.

Scope of Report

The report covers Toyota Motor Corporation (TMC)'s initiatives as well as the activities of consolidated subsidiaries and affiliates in Japan and overseas.

Reference Guidelines

- "GRI Sustainability Reporting Guidelines," Version 4 (G4)
- Japan Ministry of the Environment's "Environmental Reporting Guidelines," (Fiscal Year 2012 Version)

About the Icons

Icons used in graphs

- Denotes data confirmed through third-party assurance
- Denotes data for TMC only (unconsolidated)
- Denotes global data

Icons used in focus

- Focus Denotes activities in Japan
- Focus Denotes activities outside Japan

Company Profile

Company Name	Toyota Motor Corporation
Head Office	1 Toyota-cho, Toyota City, Aichi Prefecture 471-8571, Japan TEL: +81-565-28-2121 (main contact)
Date Founded	August 28, 1937
Main Businesses	Motor Vehicle Production and Sales

Capital	397 billion yen
Number of Shareholders	577,044
Number of Shares Issued	3,385,097 thousand
Stock Listings	Japan: Tokyo, Nagoya, Osaka, Fukuoka, Sapporo Outside Japan: New York, London

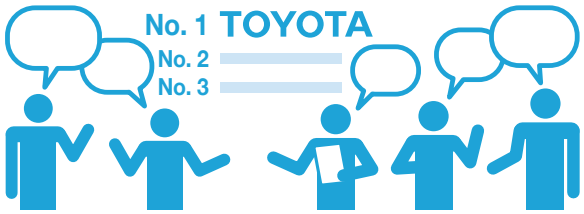
Note: Data on capital and shareholders is current as of March 31, 2016. Capital is rounded off to nearest hundred million.

CONTENS

Highlights

Nikkei BP Eco Management Forum

No. 1 in Eco Brand Survey 2016



Toyota has earned high praise from consumers for announcing the Toyota Environmental Challenge 2050 and clearly articulating a future vision.

The Financial Times

Boldness in Business Award

Winner in Corporate Responsibility/ Environment category

Toyota was appraised for selling and promoting the world's first mass-produced fuel cell vehicle, the MIRAI, and demonstrating its long-term commitment to environmental initiatives.

Low-Carbon Cup 2016

Best Long-term Goals Award, Corporate category, Grand Prize

Environmental experts recognized Toyota for its long-term commitment to a low-carbon society, awarding the company the Grand Prize in the Corporate category from among 256 entries.

Ranking of corporate water stewardship by CDP

CDP Water report Highest ranking "A"

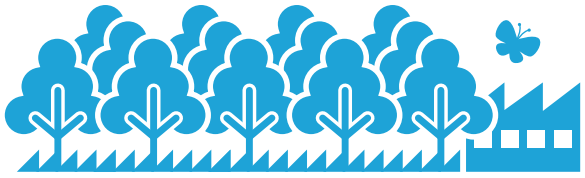
Toyota was appraised for its water management including water risk reduction and for its information disclosure, resulting in being selected as one of the world's best eight companies in water management.

Cumulative global hybrid vehicle sales reach 8.9 million units (as of March 31, 2016)

Compared with gasoline-powered vehicles in the same class, Toyota estimates its hybrid vehicles saved about 25 million kl of gasoline.

Collaboration among Toyota employees, regional groups, and local organizations leads to

about 8.6 million trees planted around the World



Toyota promotes ecosystem conservation in communities around its business sites through tree-planting project in collaboration with local NPOs, including afforestation activities at plant sites.

Environmental Awards Won by Toyota Motor Corporation and Overseas Affiliates

Receipt of awards in regions around the world for environmental activities

Japan	● Forest of Toyota received the third Green Society Award ● Toyota Shirakawa-Go Eco-Institute received an honorable mention for the FY2015 Promoting Youth Activities Award
Taiwan	● Environmental Protection Award
India	● CII-ITC Sustainability Award 2015
Indonesia	● Best Indonesia Green Award
Thailand	● Green Industry Award
U.S.A.	● EPA[1] ENERGY STAR Partner of the Year—Sustained Excellence Award
Canada	● Canada's Greenest Employers
France	● The Cleanest Cars in France
South Africa	● SAEE[2] Energy Company of the Year

1 EPA: U.S. Environmental Protection Agency
2 SAEE: Southern Africa Association for Energy Efficiency

The Fifth Toyota Environmental Action Plan

Overview of Initiatives (FY2011–FY2015)

Contribution to a Low-carbon Society

We have greatly exceeded our sales goal for hybrid vehicles (HV) by developing HV technologies and by expanding the lineups and sales regions. Annual HV sales surpassed one million units in 2012 and cumulative sales have reached 8.9 million units (as of March 31, 2016). We have also begun sales of fuel cell vehicles (FCV), electric vehicles, and plug-in hybrid vehicles.

Regarding fuel efficiency, we have firmly satisfied standards in each country and region. Although our global average fuel efficiency improved significantly in FY2015 owing to expanded sales of HVs, we missed our goal by a small margin amid higher sales of large vehicles in the United States due to lower gasoline prices.

In the area of production, we have taken thorough energy-saving measures by deploying innovative technologies when opening new plants and production lines, and daily *kaizen* at all plants. Consequently we achieved our CO_2 reduction goal for FY2015.

Contribution to a Recycling-based Society

In the area of production, we promoted sludge volume reduction and waste-reduction initiatives in coordination with cost reduction efforts. In the area of logistics, we reduced the amount of packaging and wrapping materials by simplifying and reducing such materials and increasing use of returnable containers. As a result, we achieved our FY2015 target for waste reduction.

We also developed new reuse and recycling technologies and systems for HV batteries and motor magnets. For FC stacks installed in FCVs, we established a system to collect and recycle rare metals. In these ways, we promoted the effective reuse of resources, mainly for the end-of-life parts of next-generation vehicles.

Environmental Conservation and Contribution to a Society in Harmony with Nature

We promoted the introduction of low-emission vehicles as planned in order to improve urban air quality in each country and region. We also enhanced chemical substance management globally to comply with stringent regulations in each country.

We promoted conservation of ecosystem and endangered species in countries around the world in collaboration with employees, local communities, and NGOs. We further enhanced environmental education through activities at Forest of Toyota, Toyota Shirakawa-Go Eco-Institute.

Environmental Management

We took initiatives to improve environmental performance in each region by closely collaborating with Toyota's internal environmental-related conferences in Japan and overseas. Additionally, we strengthened collaboration among suppliers, dealers, overseas distributors and other business partners to reduce our environmental impact, including CO_2 emissions.

We enhanced environmental information disclosure and communication to promote globally-integrated activities.

Detailed review of initiatives under the Fifth Toyota Environmental Action Plan
Web http://www.toyota-global.com/sustainability/environment/management/actionplan/plan5.pdf

Global awards for the MIRAI, fuel cell vehicle

Japan	● Minister's Prize, the Ministry of Economy, Trade and Industry, the 12th Eco-Products Awards ● Award for Excellence, 25th Nikkei Global Environmental Technology Awards, ● Minister's Prize, the Ministry of Economy, Trade and Industry, New Energy Award 2015
U.S.A.	● World Green Car of the Year
Austria	● ARBÖ* Environmental Award of the Year

* ARBÖ: Auto-Motor und Radfahrerverbund Österreiche

Aiming to Establish a Future Society in Harmony with Nature

We have formulated the Toyota Earth Charter based on the Guiding Principles at Toyota, considering environmental issues as a paramount importance, and have established its promotion structure to address such issues. In the course of perceiving public opinions or the world trend while considering our focus in the years to come, we have embarked on new challenges to tackle unsolved environmental issues.

In October 2015, we formulated and announced the Toyota Environmental Challenge 2050. Our ideal goal has grown higher from "Toyota's presence will not impact environment" to "Toyota's presence will have a positive impact on the environment." We are going further with an aim to establish a future society in harmony with nature.

Step by Step Toward 2050

Toyota has contributed to reducing CO_2 emissions with new ideas and technologies to address future challenges. Without changing its basic stance, Toyota will continue striving to address a wide variety of environmental challenges.

2050

Oct. 2015 • The 6th Toyota Environmental Action Plan (2016 – 2020) is released
• **TOYOTA ENVIRONMENTAL CHALLENGE 2050 is released**

Dec. 2014 • The MIRAI (FCV) is launched

Dec. 1997 • The Prius, Hybrid Vehicle (HV) is launched with a tag line "Just in time for the 21st Century."
• GHG reduction target is discussed at the 3rd Conference of Parties (COP3)

Apr. 1996 • RAV4-based FCV test vehicle parades in Osaka

1995 • The 1st Conference of Parties (COP1): Hereafter practical framework is discussed

1993 • G21 Project is launched

1992 • Development of Fuel Cell Vehicle (FCV) begins
• The United Nations Framework Convention on Climate Change is concluded at Earth Summit

* Blue letters: Excerpts from Toyota's main achievements

Leading Innovation with Technology and Creativity to Address Environmental Challenges

Takeshi Uchiyamada, Chairman of the Board of Directors

~From the Keynote Speech at the 2015 Toyota Environmental Forum~

Since its foundation, Toyota has inherited a corporate philosophy, "Contributing to society through manufacturing of cars." Similarly, we have embraced unshakable belief of "Leading innovation with technology and creativity." The first-generation Prius launched in 1997 is one of our achievements. Upholding a mission to "Manufacturing new vehicles for the 21st century," we developed the HV system not available at that time, and its unprecedented fuel efficiency performance contributed to the reduction of environmental impact.

I believe that the keys to success are to reverse ways of thinking, "to make the impossible possible" and "breakthrough technology". We will never change this basic stance, "Do what should be done instead of doing what is possible". This spirit of challenge that stands up to innovation is the Toyota's DNA. We wish to continue to be a company that creates a desirable future with our stakeholders and brings smiles to our customers and society.

Background and Purpose

Realization of Challenge to ZERO & Beyond

Toyota has promoted a wide range of environmental initiatives to address worsening global environmental issues. We will strive to reduce the environmental impact of automobiles as close to zero as possible, and will roll out new initiatives towards a sustainable society looking to a positive impact on the earth and society.

Serious Environmental Issues of the Earth and Society

The impacts on the global environment are becoming more serious.
Social demands have also become stringent due to growing concerns on environment.

- Extreme weather phenomena attributed to GHG emissions
- Aggravated air pollution in cities
- Water shortages due to population growth
- Resource depletion such as metals
- Fragmentation of ecosystem due to development progress
- Degrading biodiversity due to ecosystem changes and climate change

Six Challenges to be Achieved towards 2050

I. Challenge of Achieving Zero

Challenge 1

New Vehicle Zero CO_2 Emissions Challenge

Target Reduce global average new vehicle CO_2 emissions by 90% from Toyota's 2010 global level

Actions Accelerate widespread of next-generation vehicles to save energy and use diverse fuels

- Widespread of HV & PHV globally
- Widespread of zero emission vehicles such as FCV & EV

Challenge 2

Life Cycle Zero CO_2 Emissions Challenge

Target Completely eliminate all CO_2 emissions, including materials, parts and manufacturing from the vehicle lifecycle

Actions Reduce CO_2 emissions from the entire lifecycle, materials production, parts, and vehicle production to driving and disposal stage

- Reduce CO_2 emissions during material production by development and wider adoption of low CO_2 emission materials
- Reduce environmental impact by wider adoption of recycled biomaterials

Challenge 3

Plant Zero CO_2 Emissions Challenge

Target Achieve zero CO_2 emissions at all plants by 2050

Actions Introduce and develop low CO_2 technologies and daily *Kaizen*, and promote use of renewable energy and hydrogen

- Reduce energy use to one third by simplifying and streamlining production processes and innovative energy saving
- Use wind power produced on-site at our Tahara Plant by around 2020

II. Net Positive Impact Challenge

Challenge 4

Challenge of Minimizing and Optimizing Water Usage

Target Enact effective wastewater management and minimize water consumption based on individual local situations

Actions Reduce water consumption in existing manufacturing processes as well as introducing technologies that reduce industrial water consumption through rainwater use and improving water recycling rates

Improve local environment by ensuring by our own standards that plant wastewater is cleaner than local river water

Challenge 5

Challenge of Establishing a Recycling-based Society and Systems

Target Promote global rollout of end-of-life vehicle treatment and recycling technologies developed in Japan

Actions Establish a recycling-based society with four key areas:
(1) utilizing eco-friendly materials;
(2) using parts for longer;
(3) developing recycling technologies;
(4) manufacturing vehicles from end-of-life vehicles

Two global rollout projects started from 2016:
1) Toyota Global 100 Dismantlers*1 Project
2) Toyota Global Car to Car Recycle Project

Challenge 6

Challenge of Establishing a Future Society in Harmony with Nature

Target Promote global rollout of the nature conservation activities beyond the Toyota Group and its business partners

Actions Expand Toyota's long-standing nature conservation activities in the areas of forestry, environmental grants, and environmental education

The following three future-oriented projects started from 2016 to share our knowhow and experience gained from these environmental activities
1) Connecting communities: Toyota Green Wave Project
2) Connecting with the world: Toyota Today for Tomorrow Project
3) Connecting to the future: Toyota ESD*2 Project

*1: Business operators who dismantle automobiles
*2: Education for Sustainable Development

Formulation Process

Identify Six Challenges as Key Environmental Challenges (Materiality)

Since environmental issues may involve some risks whereas they will create business opportunities, it is essential to identify key challenges when formulating a long-term vision. In order to grasp potential risks and business opportunities, Toyota has collected information, and simultaneously analyzed and identified environmental challenges from the aspects of their importance for both stakeholders and our business.

After the Toyota Environmental Challenge 2050 was authorized by the Corporate Planning Meeting that determines the mid-term and long-term strategies of the corporation, we embarked on focusing on the establishment of a structure in a company-wide. When we formulate our Environmental Action Plan every five years, we review the plan accordingly.

Process to Identify and Implement the Key Challenges

1 Grasp the Global Trends, Social Demands, Risks and Opportunities

Global discussions, policy on environment, and consumer trends

- IPCC 5th Assessment Report, GB-Outlook 4, UNFCCC, CBD-COP SDGs, WBCSD
- Major indexes of ESG investors and investigative organization (CDP, SAM, ISO26000, GRI)
- Trends of international organizations and NGOs (IUCN, WWF)
- Trends of consumers (Media and our global marketing surveys)
- Trends of government (White Paper on Environment, EU & USA policies)

2 Grasp the Importance of Challenges for Toyota

Grasp key challenges for our business

- Environmental philosophy & policy
- Communication with related in-house divisions
- Communication with overseas affiliates

3 Grasp the Importance of Challenges for Stakeholders

Identify important issues for the stakeholders

- Advice and comments from experts and professors
- Communication with stakeholders

4 Identify Environmental Challenges (Materiality)

Identify the challenges to be resolved

- Analyze and prioritize environmental challenges measuring the level of stakeholder concern and potential business impacts by using a matrix
- Identify six areas of challenges

5 Authorize the Toyota Environmental Challenge 2050

Discussion and authorization by the top management

- Discussions within Product, Production, & Resource Recycling Committees
- Authorization by Corporate Planning Meeting (CSR Committee)

6 Regularly Review and Disclose Information

Perform PDCA based on KPI

- Establish KPI in accordance with the six challenges
- Review them every five years when formulating the 5-year Environmental Action Plan

Collect and Analyze Information

When we collect and analyze information, we grasp the trends of the macro economy and the key points to address based on the scientific predictions concerning the environment in 2050, global framework, policy trends, movements of emerging countries, major index of credit rating agencies, and world leaders' remarks on environmental issues at G7 Summits.

Grasp Importance of Challenges

We grasp the importance of challenges by analyzing the consistency with the Guiding Principles at Toyota and the Toyota Earth Charter, maintaining good communication with our stakeholders and inputs from in-house Divisions.

Identify the Key Challenges

We have identified the key environmental challenges, measuring the impact level of stakeholder concern and our business activities or potential business opportunities by using a matrix. Consequently we analyzed and prioritized the importance of the said challenges.

Steadily Implement Challenges

In order to steadily implement environmental activities, it is important that the management regards them as business opportunities, plans proper investments for environmental strategies, and enhances collaboration with business partners by involving global group companies on a company-wide basis.

We will establish a steady promotion structure with a regular progress check and a review of the action plan.

Progress of Action Plans

Steadily Promote the Action Plan for Realization

We are proactively promoting multiple activities to realize the Toyota Environmental Challenge 2050 released in October 2015, along with developing more practical strategies and roadmaps. Following is the two examples of our activities.

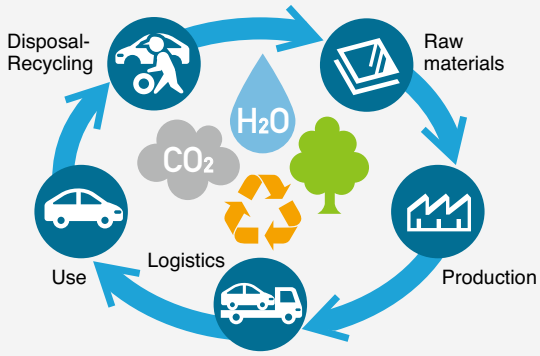
Revision of the Toyota Green Purchasing Guideline

In accordance with the Toyota Environmental Challenge 2050, we revised the Toyota Green Purchasing Guideline in January 2016.

Major Revision Points

1. **Expanded environmental initiatives such as greenhouse gas emissions, water environment, resource recycling and biodiversity**
2. **Enhanced "Environmental consciousness in the entire vehicle lifecycle" from raw material purchase to disposal and recycling**
3. **Enhanced the environmental management of the entire supply chain**

We will continue strengthening our collaboration with suppliers in a world-wide, and striving to realize a sustainable society with them.



Further green purchase in collaboration with suppliers

The initiative started with the International Union for Conservation of Nature (IUCN)

Toyota has initiated a partnership with one of the international organizations, IUCN, to provide funding to expand knowledge of threats to global biodiversity. This is one of the projects in Challenge 6 in the Toyota Environmental Challenge 2050, and part of Toyota "Today for Tomorrow Project" that is connected with the world.

IUCN and Toyota will broaden the scope of the "IUCN Red List of Threatened Species™" through a five-year partnership from 2016, and this will increase the knowledge on the extinction risk of more than 28,000 species. At the same time, we will disseminate data to stop the loss of biodiversity and knowledge of key food sources for a significant portion of the global population.

(From left to right)
Inger Anderson, IUCN Director General,
Didier Leroy, Executive Vice President, Toyota Motor Corporation
Dr. Jane Smart, Global Director of IUCN's Biodiversity Group

Ambitious Declaration that Defined the 21st Century Ahead of the World

Hiroshi Komiyama　Chairman of the Institute, Mitsubishi Research Institute, Inc./President, Platinum Society Network

For the past 20 years I have continually reiterated in the Vision 2050 (Japanese book: *Chikyu Jizoku-no Gijyutsu* - Technology of Global Sustainability) that human civilization can be sustainable if we can realize a resource recycling-based society by making use of "urban mines", significant improvement of energy efficiency by technology, and use of renewable energies including solar, wind, hydropower, geothermal power, and biomass energy.

I believe that the Toyota Environmental Challenge 2050 released in October 2015 is really the way we can put this idea into practice. It is a bold and aggressive declaration. In particular, the challenges of reducing CO_2 emissions from driving vehicles by 90 percent; plants' zero CO_2 emissions; and the building vehicles from end-of-life vehicles, are excellent.

Hereafter, I sincerely expect Toyota to lead Japan and the world through the disclosure of its action plan to steadily implement this declaration and its progress.

Toyota's New Approach to Making Cars Takes on the Challenge

Eighteen years have passed since the launch of the first-generation Prius, created as the world's first mass-produced hybrid vehicle. The Prius, which has pioneered the age of eco-friendly cars, has undergone a full redesign. The environmental performance traditionally found in its DNA has jumped even further and the greatly improved engine boasts 40 percent thermal efficiency, making it the most efficient gasoline engine in the world. All the technologies utilized have overcome major hurdles, helping the new Prius achieve the world's top fuel efficiency performance among gasoline-powered vehicles.

Development of Hybrid System that Offers an Answer to Environmental Issues of the 21st Century

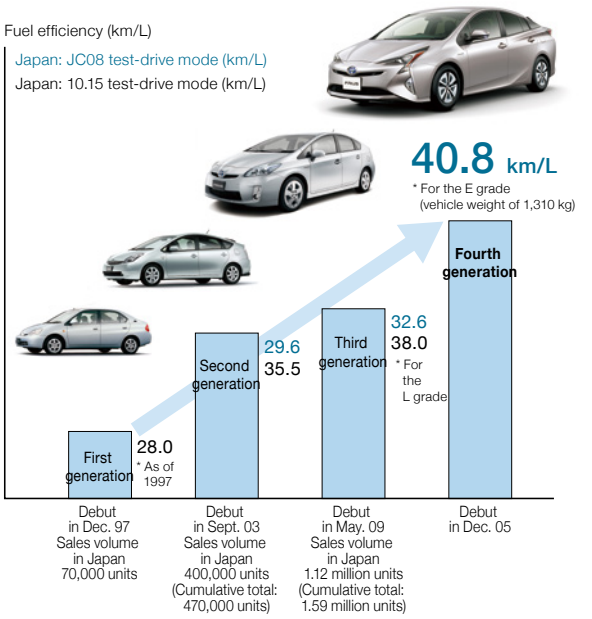
The project to develop the first-generation Prius began in 1993. Specific indexes toward making cars representing the 21st century were set in environmental performance, while CO_2 emissions reduction, energy conservation, and air pollution prevention were positioned as the three key issues during vehicle development. Toyota developed a hybrid system as the best means to achieve this concept.

Since the hybrid system does not require external charging like conventional electrical vehicles, it was well-suited to the existing infrastructure and achieved fuel efficiency roughly twice that of gasoline engines.

With the belief that "this vehicle is going to change the world," we named the vehicle "Prius," which means "prior to" in Latin. Many customers have resonated with and supported this belief.

Since then, the Prius has become an iconic hybrid vehicle that has contributed to the global environment as Toyota's flagship model.

Fuel efficiency and sales volume of the various generations of the Prius



Note 1: The fuel consumption rate varies depending on the grade, drive train, vehicle weight, etc.

Note 2: Fuel consumption rates are values from specified test conditions. These rates will vary depending on the vehicle's usage environment, including the weather and level of traffic congestion, as well as the driver's driving habits and air-conditioner use.

Seamless Cooperation of the Evolution of the Environmental Performance that is Prius' DNA, and the Changes Brought about by TNGA

The fourth-generation Prius is the first model to advance its inherent environment performance while simultaneously incorporating all the features of the Toyota New Global Architecture (TNGA*), Toyota's next-generation platform strategy. Thus, we proceeded to develop the new Prius with the goal of improving both the global and social environments.

In terms of the global environment, we focused on radically improving the Prius' environmental performance. For example, to further reduce environmental impact during operation, we set a high hurdle of 40 km/L for the fuel efficiency goal, which was achieved through the accumulation of detailed and steady technical development work.

In terms of the social environment, having set the goal of developing a safe vehicle that will help completely eliminate traffic accidents, we adopted a lower center of gravity with excellent stability and the Toyota Safety Sense P collision avoidance and mitigation package. We also added an external power sources, which are suitable for use following a disaster.

Development leader of the fourth-generation Prius
Koji Toyoshima, Chief Engineer

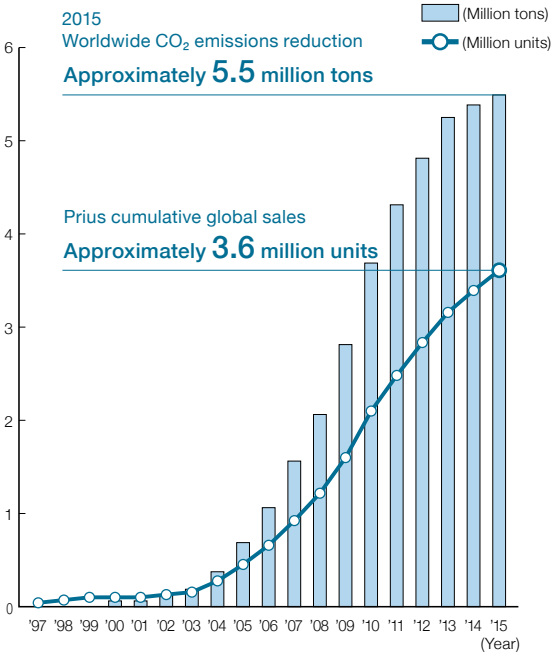
* TNGA represents wide-reaching structural innovations, conceived with the goal of realizing Toyota's desire to "make ever-better cars." By reassessing car platforms from the ground up, Toyota hopes to create packages that are more stylish, have a lower center of gravity, and are easier to drive. As the first TNGA vehicle, the fourth-generation Prius was redesigned starting with its base structure.

Eco-friendly Cars Contribute to the Environment when Widespread

Eco-friendly vehicles can only start contributing to the environment when they come into widespread use. Therefore, we want as many customers as possible to drive the Prius. The Prius has always played a pioneering role of contributing to the environment with its continued innovative features. For example, the first-generation Prius became the pioneer hybrid vehicle; the second generation was a pioneer in the hybrid vehicle popularization period; and the third generation was a pioneer in the era of broad market acceptance of hybrid vehicles. However, when we look at the car markets in various countries, it is true that hybrid vehicles are still perceived as special vehicles. Therefore, to bring hybrid vehicles, including the Prius, into even wider use, it is important to create vehicles that do not pale in comparison with any other vehicle so that customers include hybrid vehicles as a buying option.

I believe we have succeeded in making the fourth-generation Prius a "better car" in all aspects, including environmental performance, styling, driving performance, and safety. We want prospective buyers to feel that the car they wanted most of all happened to be a hybrid vehicle.

Prius sales volume and CO_2 emissions reduction effect



In FY2015, the Prius helped reduce annual CO_2 emissions by approximately 5.5 million tons (calculated by Toyota as of the end of December 2015). This is equivalent to the volume of CO_2 absorbed by a forest having roughly three times the area of Tokyo (having 600 million trees).

Starting with the second-generation, the Prius has been manufactured at the Tsutsumi Plant, located in Toyota City. It is a model sustainable plant, through which Toyota emphasizes the role of nature in creating production sites that are in harmony with their natural surroundings. The plant is working to reduce energy consumption based on low-CO_2 production technologies and day-to-day *kaizen* activities, and also reduces CO_2 emissions by using electrical power generated by solar panels whose total area is equivalent to 60 tennis courts. This is a site of eco-friendly *monozukuri*, where eco-friendly cars are made at an eco-friendly plant by eco-friendly people.

Employees involved in Prius production at the Tsutsumi Plant

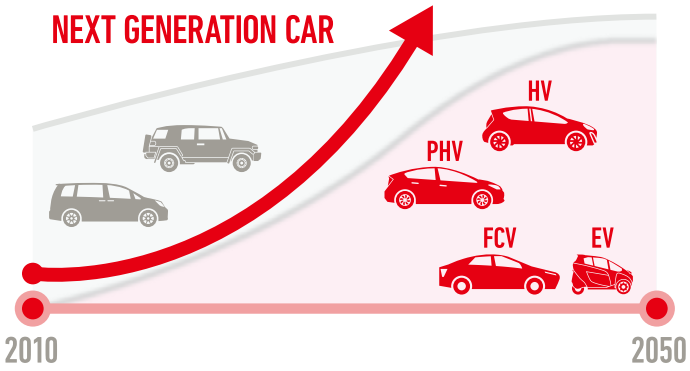
New Vehicle Zero CO_2 Emissions Challenge

Basic Concept

As if to demonstrate the fact of global warming, extreme weather patterns worldwide have been provoking successive disasters. If current conditions continue and increased measures are not taken to reduce greenhouse gases, it is estimated that by 2100 the world's average temperature will have risen by 3.7–4.8°C. It is further estimated that, to hold the temperature rise since before the Industrial Revolution to "below 2°C," we will not only have to reduce CO_2 emissions to zero, but will need to achieve an actual trend through absorption.*

While the world is trying to move toward "below 2°C" scenario, Toyota has, under the "New Vehicle Zero CO_2 Challenge," decided to challenge itself to reduce vehicle CO_2 emissions by 90 percent in comparison with 2010 levels, by 2050. To realize this, in addition to mileage improvement of engine-driven vehicles, Toyota will promote the development of next-generation vehicles with low or zero CO_2 emissions—hybrid vehicles (HVs), plug-in hybrid vehicles (PHVs), electric vehicles (EVs), and fuel cell vehicles (FCVs)— and further accelerate the spread of these vehicles. These eco-friendly vehicles can start making a contribution to society only when they come into widespread use. Toyota will also cooperate with relevant stakeholders to provide support necessary for building the infrastructure for widespread adoption of EVs and FCVs.

* 5th Assessment Report of IPCC Working Group III (2014)



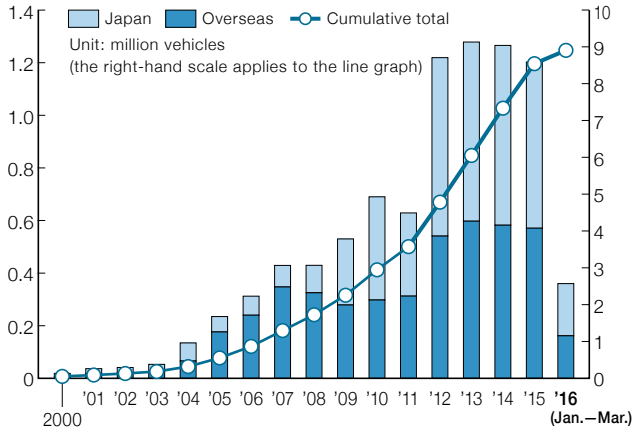
Promoting Development of Next-generation Vehicles with Electric Power and Widespread Use According to Their Features

Worldwide Sales of Toyota Hybrids Exceed 8.90 Million Units

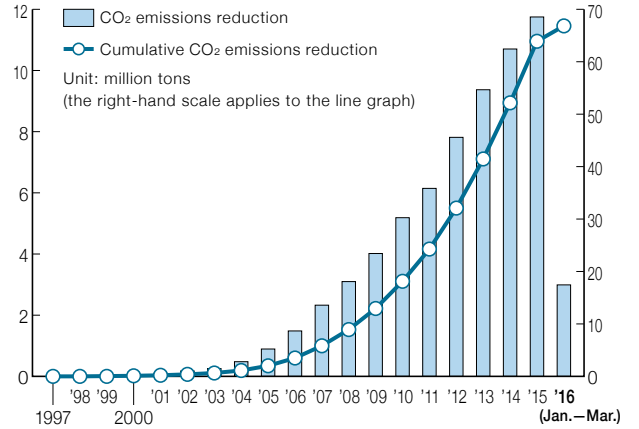
Toyota hybrid vehicles' cumulative global sales have reached 8.90 million units as of March 31, 2016 since the sales launch of the Prius—the world's first mass-produced hybrid passenger vehicle—in December 1997.

Toyota calculates that Toyota hybrid vehicles sold by March 31, 2016, have resulted in approximately 66 million fewer tons of CO_2 emissions than would have been emitted by gasoline-powered vehicles of similar size and driving performance, and have saved approximately 25 million kiloliters of gasoline than would have been used by gasoline-powered vehicles of similar class.

Cumulative Sales of Hybrid Vehicles



CO_2 Emissions Reduction Effects of Toyota Hybrid Vehicles (Toyota Calculations)



CO_2 emissions reduction effect: method of calculation

Difference in average annual fuel efficiency[1] × number of vehicles owned in the fiscal year[2] × average annual distance traveled[3] × CO_2 emissions coefficient

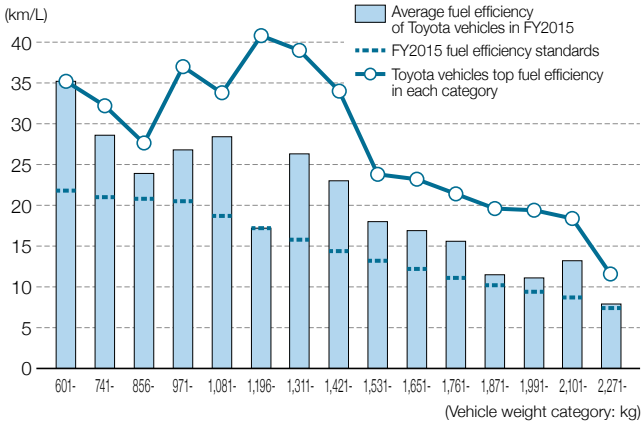
1 Difference in fuel efficiency between hybrid vehicles on the road in the fiscal year and corresponding gasoline-powered vehicle models. JC08 test cycle efficiency is converted into actual fuel efficiency.
2 Number of vehicles owned by customers as estimated by Toyota from the number of hybrid vehicles sold each year adjusted for average vehicle age.
3 According to 'Automobile Transportation Statistics' published by the Japanese Ministry of Land, Infrastructure, Transport and Tourism, the average annual distance traveled by passenger cars is 10,000 km.

Developing Technologies to Achieve the Leading Fuel Efficiency Performance

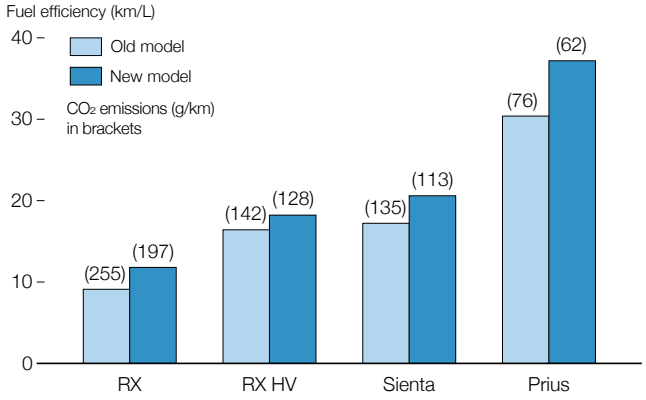
FY2015 Fuel Efficiency Standards Cleared by a Wide Margin Overall

- In FY2015, Toyota vehicles met the FY2015 fuel efficiency standards in 14 out of 15 vehicle weight categories, and exceeded the standards with all categories combined
- Four out of five new models and fully redesigned models launched in FY2015 met the FY2015 fuel efficiency standards
- Of the vehicles manufactured by Toyota in FY2015, 92 percent achieved the fuel efficiency standards for gasoline-powered passenger vehicles

Achievement of Fuel Efficiency Standards and Actual Fuel Efficiency of Toyota Vehicles in FY2015



Fuel Efficiency Comparison between Selected Old and New Models



Note: All fuel efficiency values are specification values from the Japanese Ministry of Land, Infrastructure, Transport and Tourism's JC08 test cycle.

Achievement of FY2015 Fuel Efficiency Standards in FY2015

Weight category (vehicle weight: kg)	Fuel efficiency standards (km/L)	FY2015 average fuel efficiency (km/L)	New models and fully redesigned models that met the standards in FY2015
601–740	21.8	**35.2**	
741–855	21.0	**28.6**	
856–970	20.8	**23.9**	
971–1,080	20.5	**26.8**	Pixis MEGA
1,081–1,195	18.7	**28.4**	
1,196–1,310	17.2	**17.2**[1]	Sienta, Prius
1,311–1,420	15.8	**26.3**	Sienta[2], Sienta HV, Prius
1,421–1,530	14.4	**23.0**	Prius
1,531–1,650	13.2	**18.0**	
1,651–1,760	12.2	**16.9**	
1,761–1,870	11.1	**15.6**	
1,871–1,990	10.2	**11.5**	RX (200t)
1,991–2,100	9.4	**11.1**	RX (200t, 450h)
2,101–2,270	8.7	**13.2**	RX (450h)
2,271–	7.4	**7.9**	

Note 1: ▭ indicates a category that has achieved the fuel efficiency standards
Note 2: (1) means that this average fuel efficiency did not meet the standards applicable to this weight category to the second decimal place. The increase in fuel consumption due to this shortfall was extremely small (0.1 percent or less) compared to the total fuel consumption reduction achieved in the weight categories that met the standards. For this reason, the standards were greatly exceeded when all categories were combined.
Note 3: The models indicated by (2) generally meet the standards, but certain types and specifications may not
Note 4: Vehicles that achieved the efficiency standards before FY2014 are not included
Note 5: All fuel efficiency values are averages for vehicles that have specification values under the Japanese Ministry of Land, Infrastructure, Transport and Tourism's JC08 test cycle

Increase in Average Fuel Efficiency

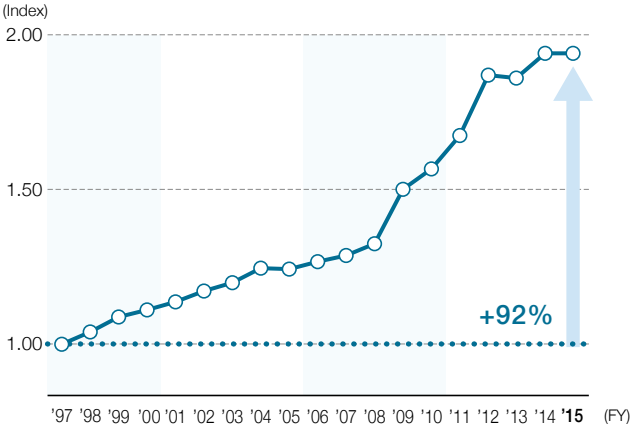
Toyota set "improve average fuel efficiency* in all regions by 25 percent compared to that of 2005 by FY2015" as a goal in the Fifth Toyota Environmental Action Plan, and has been increasing in its average fuel efficiency through steps such as introduction of more hybrid vehicles. However, the actual increase reached only 22 percent, remaining close to the FY2014 level of 23 percent. The rate of fuel efficiency improvement stalled in FY2015 because of the growth in sales of heavy vehicles in the U.S. market due to factors such as declining petroleum prices.

* Includes passenger vehicles in Japan, the United States, Europe, and China

In order to reduce CO_2 emissions by continuously improving fuel efficiency, Toyota set a new goal in the Sixth Toyota Environmental Action Plan, announced in October 2015: "Aim to reduce the year 2020 average CO_2 emissions from new vehicles globally by over 22 percent from the 2010 level (approximately a 28 percent improvement in terms of fuel efficiency)."

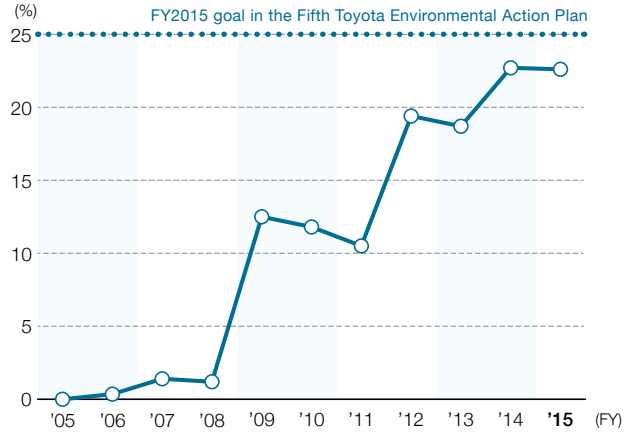
Toward achieving this goal, Toyota will continue developing CO_2 emissions reduction (increase in fuel efficiency) technologies and deploying them in its various vehicles.

Average Fuel Efficiency of Toyota Vehicles in Japan



Note: Change since introduction of hybrid vehicles in 1997

Average Fuel Efficiency of Toyota Vehicles in Japan, the United States, Europe, and China



Note: In the Fifth Toyota Environmental Action Plan, FY2005 was set as the base year for the fuel efficiency improvement goal.

Focus

New PHV "Prius Prime" Unveiled at New York International Auto Show

The new "Prius Prime" was unveiled at the 2016 New York International Auto Show in March 2016. The Prius Prime is an ultra-efficient model with a plug-in hybrid powertrain, one of the most technologically advanced and best-equipped Prius models in the history.

The Prius Prime's 120 or above MPGe (miles per gallon equivalent) is expected to be the highest MPGe rating of any plug-in hybrid,* representing a substantial 26-percent increase over its predecessor.

The Prius Prime offers an estimated two times the electric range of the previous model —22 miles—meeting the daily commuter distance of over half of U.S. drivers, and can reach speeds of up to 84 mph without leaving EV mode. On a full 11.3-gallon tank of regular-grade gasoline and a full electric charge, the Prius Prime anticipates a class-leading estimated total driving range of over 600 miles.

The Prius Prime is powered by Toyota's Hybrid Synergy Drive powertrain, which seamlessly combines the output of the gasoline engine and electric motor through a planetary-type continuously variable transmission, and also can be plugged in at home to recharge its larger 8.8 kWh battery pack. In hybrid mode, it can run on the gasoline engine or electric motor alone or a combination of both. Even when not running in EV mode, the Prius Prime will automatically rely more on its electric capability in situations where it is more efficient than running the gasoline engine.

In addition, the Prius Prime will feature a Toyota-first dual motor generator drive system, using both the electric motor and the generator for drive force, helping to boost acceleration performance. Regenerative braking recaptures electrical energy under deceleration and braking and stores it in the battery, which helps to reduce fuel consumption.

The Prius Prime's gasoline engine also plays a starring role in its efficiency. The 1.8-liter Atkinson-cycle, 4-cylinder engine—the same as in all 2016 Prius hybrid models—earns a groundbreaking thermal efficiency of more than 40 percent. Most modern automobile engines reach about 25–30 percent. Myriad details throughout the hybrid powertrain contribute to the efficiency, including its exhaust gas recirculation (EGR) system.

* Based on manufacturer's data (Prius Prime 120 MPGe) and fueleconomy.gov plug-in hybrid segment, as of February 2016

Toward Building a Hydrogen-based Society

—Driving into the future, for the future—

Hydrogen is described as the ideal energy to address the challenges confronting humanity, such as environmental problems and dwindling natural resources. A clean society can be achieved if the use of CO_2-free hydrogen becomes more widely accepted and utilized. However, to establish the infrastructure necessary for a hydrogen-based society and enable an unfettered supply of hydrogen will require more cooperation of society as a whole. Building an extensive hydrogen infrastructure will still take many years. But at Toyota, we thought we would make a start now.

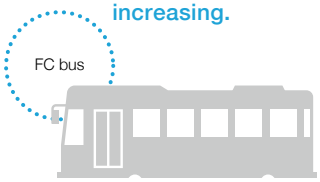
For a future of greater flexibility coexisting with current energy sources. A future in which multiple energy sources support each other. A future that cares about the environment our children will live in 100, 200 years from now.

Need to Build a Hydrogen-based Society

Zero CO_2 Emissions

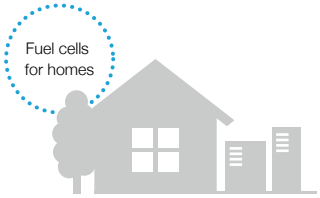
Using hydrogen results in zero CO_2 emissions.
The chemical reaction H2 + 1/2 O_2 → HO points the way to a brighter future.

The number of companies working on the utilization of hydrogen-based energy is also increasing.



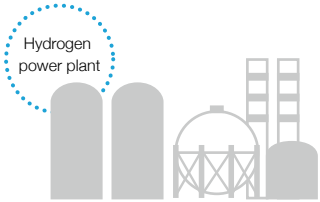
Can be Produced from a Wide Range of Primary Energy Sources

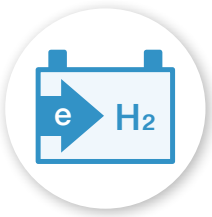
Because hydrogen can be produced from a wide range of primary energy sources, unlike fossil fuels, there is no need to worry about resources becoming depleted, meaning that a stable supply can be relied on.



Energy for Local Production and Local Use

Through hydrolysis, electricity generated from renewable energy sources can be stored as hydrogen for power supply. The stored hydrogen can be used to supply power as needed. Establishing a system of this kind can also reduce energy risk on islands and in other remote areas.

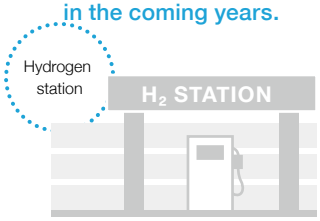




Canceling out Fluctuations in Energy Supply from Renewable Sources

The amount of energy that can be generated by renewable sources fluctuates greatly under the influence of natural conditions. By converting the electricity generated to hydrogen, it can be stored and easily supplied to meet demand.

The number of hydrogen stations is expected to increase in the coming years.



Toyota's Medium- to Long- term Roadmap toward Achieving a Hydrogen-based Society

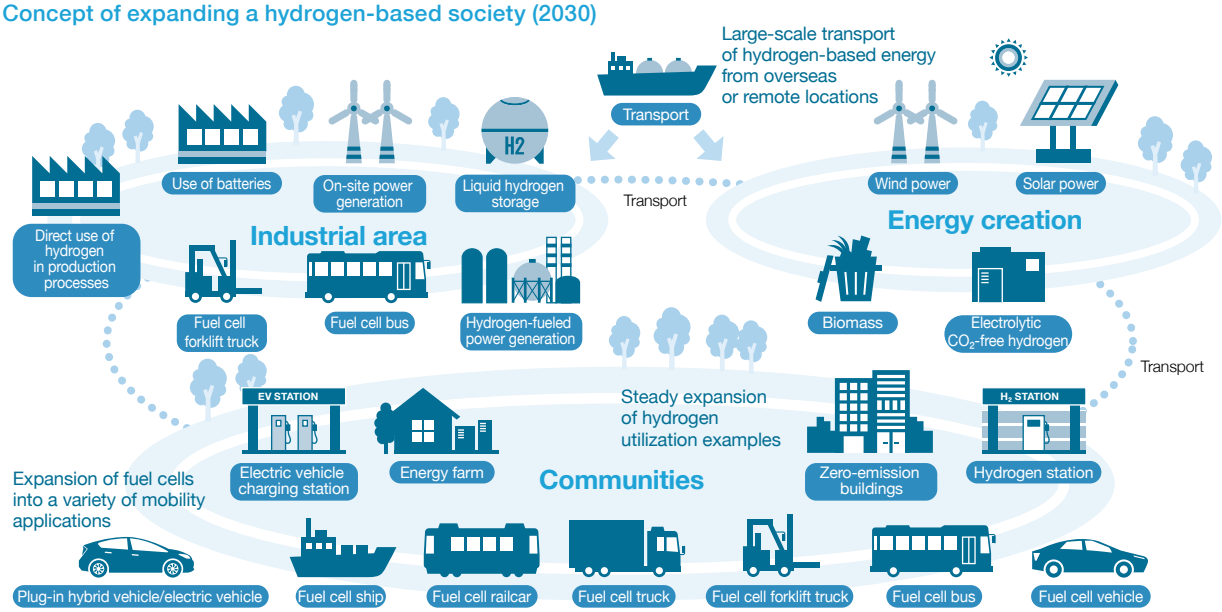
Helped in part by the market launch of the MIRAI, the impetus for achieving a hydrogen-based society has been increasing. However, a wide variety of issues still remain, including establishment of the necessary infrastructure.

Based on the current situation, Toyota has created a template based on the knowledge obtained from verification experiments and is contributing to initiatives toward achieving a full-fledged hydrogen-based society, targeting the year 2030.

What We Want to Create is an Ever-Better Society

The Next Challenge for Toyota

Concept of expanding a hydrogen-based society (2030)



Toyota's present mission

01 Aim to achieve a hydrogen-based society through the widespread use of fuel-cell vehicles

02 Working with nations, regions, and the energy industry, actively contributing to structure building and verification testing

Activity direction and steps

	2016	2020	2025	2030	2040–2050
Toyota's basic approach	Actively signing up partners toward promoting expanded use of hydrogen		Supporting economic autonomy • Achieving station infrastructure autonomy • Reducing CO_2-free hydrogen costs		Widespread establishment of full-fledged hydrogen-based society
	Using a verification model to share an image of the future • The Tokyo Olympic and Paralympic Games • FC mobility expansion • Regional and industrial hydrogen utilization	Expansion of hydrogen utilization examples, leading to the future			

Regional Collaboration Projects Toyota is Involved in toward Achieving a Hydrogen-based Society (Japan)

In regions where Toyota's production sites are located, we are carrying out verification and showcasing activities that match regional characteristics, cooperating with regional communities and promoting team building toward achieving a hydrogen-based society.

Toyota's fuel cell vehicle sales goal for around 2020 is at least 30,000 units or more globally each year, including at least 10,000 MIRAI vehicles in Japan.

Energy creation

Fukushima Concept for a New Energy Society Conference (established by the Ministry of Economy, Trade and Industry in March 2016)

(Fukushima Prefecture)

Toyota's role
Provide means of mobility such as fuel cell buses and fuel cell forklift trucks

Plants

Start of verification testing of hydrogen use to achieve zero CO_2 emissions in the MIRAI production line in 2020

(Aichi Prefecture)

Toyota's role
Carry out verification activities for future plants, including implementing hydrogen utilization technologies, with the aim of meeting the Plant Zero CO_2 Emissions Challenge in 2050

Commu-nity

The Tokyo Olympic and Paralympic Games Presenting models of the next-generation mobility society and a clean, hydrogen-based society to the world.

(Tokyo Metropolis)

Toyota's role
Providing support as a TOP partner of the IOC, as well as providing mobility means such as fuel cell vehicles and buses, and supporting the next-generation mobility society initiative

Fuel cell bus verification test in Tokyo in July 2015

Fuel cell buses will be introduced primarily in Tokyo before the end of FY2016. At least 100 buses will be readied for the 2020 Tokyo Olympic and Paralympic Games.

Plant

Aichi Prefecture Low-Carbon Hydrogen Supply Chain
Start of joint study by Aichi Prefecture, universities, and industries

(Aichi Prefecture)

Toyota's role
As an industry leader, Toyota will work with Aichi Prefecture to begin evaluating the possibilities for utilizing hydrogen together with Toyota Group companies in regions where they are engaged *monozukuri* (manufacturing)

Energy creation

Keihin Project, Keihin Coastal Area Renewable Energy Verification of Supply Chain Connecting Hydrogen Manufacturing to Users (Small- to Medium-scale Concentrated Office Model)

(Kanagawa Prefecture)

Toyota's role
Toyota will represent businesses as a user of hydrogen.

Plant

Locally-Produced, Locally-Consumed Green Hydrogen Network Promotion of industry-government-academia collaboration, led by Fukuoka Prefecture

(Fukuoka Prefecture)

Toyota's role
Toyota Motor Kyushu will participate in the verification of hydrogen use in its plant, representing the industry model

Commu-nity

KIX project, Kansai International Airport Verification of Airport Model for Hydrogen Grid (Large-Scale, Centralized Model)

(Osaka Prefecture)

Toyota's role
Toyota Motor, Toyota Industries, and Toyota Tsusho will support the KIX Hydrogen Grid committee of Kansai International Airport, capitalizing on their knowledge of hydrogen and fuel cell technologies.

In March 2016, two practical fuel cell forklift trucks were newly introduced into the International Cargo Area of Kansai International Airport, and are currently being tested and verified. A total of over 100 fuel cell forklift trucks would be introduced.

In March 2016, a verification project began in the Keihin Coastal Area. Supply chain verification is being carried out, in which CO_2-free hydrogen produced using renewable energy will power fuel cell forklift trucks in a variety of working environments, such as Central Wholesale Market, factories, and warehouses. About 12 fuel cell forklift trucks will be introduced for verification purposes.

Fuel cell forklift truck

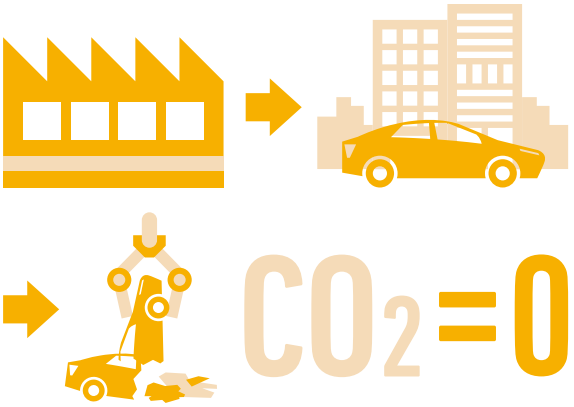
Note: Toyota's roles will vary since the purposes and activity details will vary depending on the project in each area.

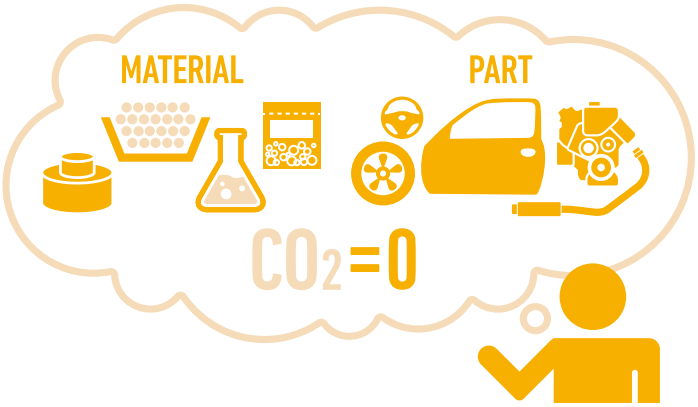
Life Cycle Zero CO_2 Emissions Challenge

Basic Concept

By Life Cycle Zero CO_2 Emissions Challenge, we mean efforts to completely eliminate CO_2 emissions not only while driving and in production, but also in the processes of materials production, disposal, and recycling of vehicles.

For instance, there are some next-generation vehicles that do achieve reduced CO_2 emissions when driven, but actually cause increased CO_2 emissions at the material and vehicle production stages. Because of this, we will further promote environmentally friendly design such as by choosing appropriate materials. In this way, we are going to pursue “ever-better cars.” For example, we will develop and expand the use of materials with lower CO_2 emissions during production and will reduce the quantity of materials and number of parts used in a vehicle. We will also adopt more recycled materials and so on for vehicle production and enhance initiatives aimed at designing vehicles for easy disassembly.





Promoting Environmental Management in Product Development (Eco-VAS)

LCA of New Models and Fully Redesigned Models in Five Vehicle Series

Purpose

The Eco-Vehicle Assessment System (Eco-VAS) is a comprehensive environmental impact assessment system that allows systematic assessment of a vehicle’s impact on the environment over the entire lifecycle from vehicle production and use to disposal stages. Toyota uses Eco-VAS to conduct lifecycle assessment (LCA) of a vehicle’s total environmental impact from the materials manufacturing, vehicle manufacturing, driving and maintenance stages through to the disposal stage.

Since the system allows targets to be set from the initial stages of development to achieve steady improvements in environmental performance, Toyota’s chief engineer sets targets and scenarios to achieve them in relation to environmental performance criteria in the planning and development stage, and then follows up at points throughout the development process to ensure that targets are steadily being met.

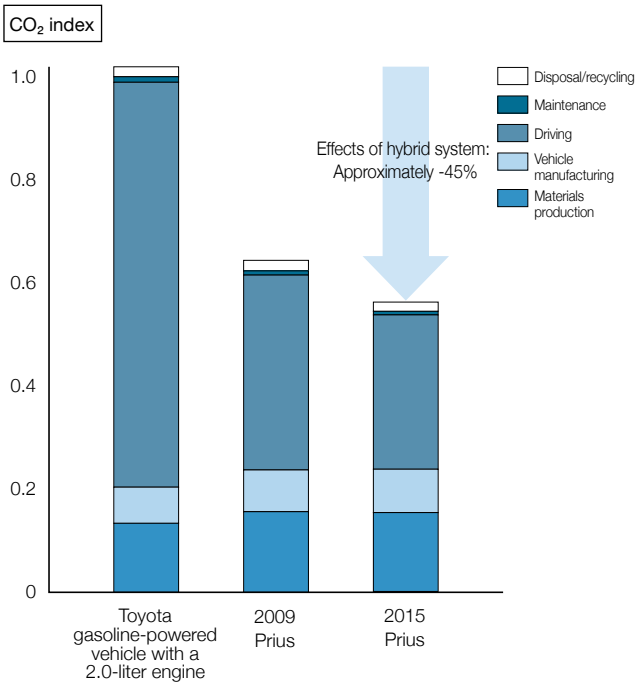
Progress in FY2015

Toyota conducted LCA on new models and fully redesigned models in five vehicle series (Sienta, Prius, Pixis Mega, Lexus LX, RX (200t, 450h).

LCA Method Certified
TÜVRheinland CERTIFIED
www.tuv.com ID 0000045604

The LCA that Toyota conducts on its passenger vehicles has been tested and certified by German third-party organization TÜV Rheinland based on ISO 14040/14044 standards.

LCA of the Prius



* Evaluations are based on the assumption that each vehicle travels 100,000 km over a 10-year period under the JC08 test cycle. LCA results are shown as an index.

Response to Scope 3

Scope 3 is a standard established to encourage corporations to visualize and account for indirect greenhouse gas emissions from the value chain that occur outside their own company and consolidated companies (purchased goods and services, transportation, business travel, employee commuting, use of sold products, etc.).

Comparison of the emission rates calculated according to this standard shows that the combined rate for Category 1 "Purchased goods and services" and Category 11 "Use of sold products" accounts for as much as 97 percent, while the rate for each other category is less than 1 percent.

Category 1 "Purchased goods and services" covers the manufacturing stage of the materials and parts that comprise automobiles, while Category 11 "Use of sold products" covers the driving stage of automobiles. Therefore, it is clear that parts weight reduction and material selection, as well as the development of fuel efficiency improvement and next-generation vehicle technologies are important measures that will lead to emissions reduction.

Details of the 15 Categories Specified in Scope 3 and Respective Share of Total Emissions

Category	Emission rate
1. Purchased goods and services	16.0%
2. Capital goods	0.9%
3. Fuel- and energy-related activities (not included in Scope 1 or Scope 2)	0.2%
4. Upstream transportation and distribution	Less than 0.1%
5. Waste generated in operations	Less than 0.1%
6. Business travel	Less than 0.1%
7. Employee commuting	0.2%
8. Upstream leased assets	-
9. Downstream transportation and distribution	Less than 0.1%
10. Processing of sold products	0.3%
11. Use of sold products	81.2%
12. End-of-life treatment of sold products	0.9%
13. Downstream leased assets	-
14. Franchises	-
15. Investments	0.1%

Note 1: Category 14 is not applicable. Category 8 is included in Scope 1 and 2, and Category 13 is included in Category 11.
Note 2: Emission rates are determined based on the FY2014 calculated values

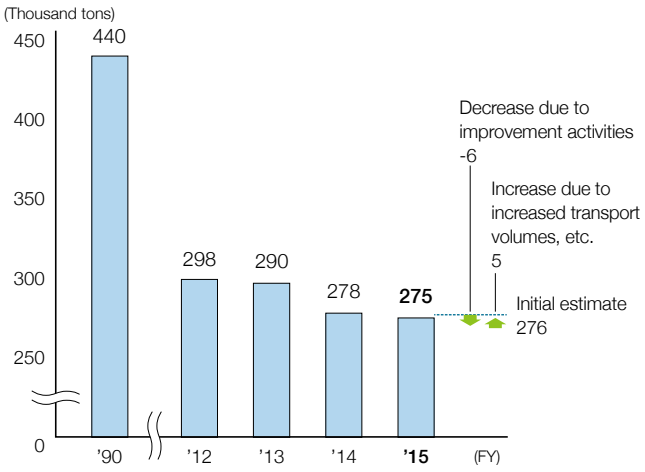
Pursuing Increased Transport Efficiency and Reducing CO_2 Emissions in Logistics Activities

Continue to Conduct Activities to Reduce CO_2 Emissions

In FY2015, Toyota Motor Corporation (TMC) implemented various initiatives, including activities to increase the loading efficiency of trucks, modal shifts, and ongoing fuel-efficiency improvement activities with logistics partners. Through these activities, CO_2 emissions were reduced by 6,000 tons, but changes including an increase in long-haul transportation resulted in total CO_2 emissions of 275,000 tons.

CO_2 emissions per ton-kilometer (the transport of one ton of goods over a distance of one kilometer) were 108.4 g-CO_2/tkm.

Trends in CO_2 Emissions from TMC Logistics Operations (Japan)

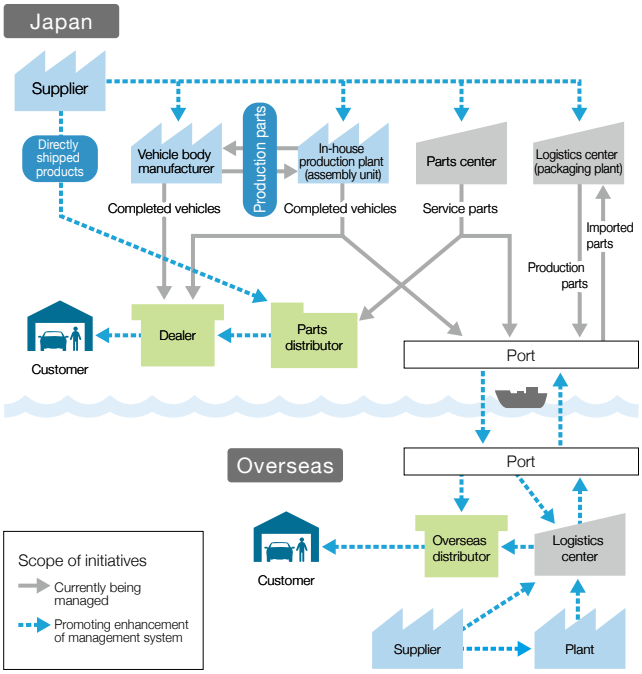


Note: The CO_2 conversion coefficient was calculated based on guidelines such as the "Guidelines on Disclosure of CO_2 Emissions from Transportation & Distribution (version 3.0)" issued by the Japanese Ministry of Economy, Trade and Industry and the Ministry of Land, Infrastructure, Transport and Tourism.

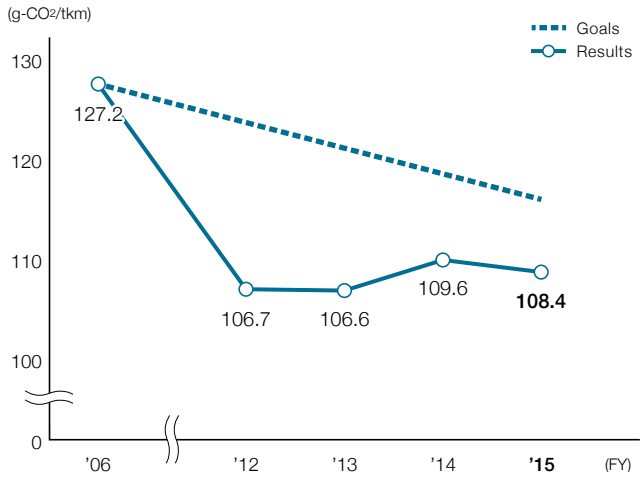
For more information on the conversion coefficient, please visit the webpage below:

Web http://www.toyota-global.com/sustainability/environment/data/conversionfactor.pdf

Scope of CO_2 Emissions Calculations from TMC Logistics Operations



Trends in CO_2 Emissions per Ton-kilometer from TMC Logistics Operations (Japan)



Results of Activities to Reduce CO_2 Emissions

Improvement item	Product	Details of activity	Reduction volume (thousand tons)
Reduction in total transport distance	Completed vehicles	Shortening shipping routes by changing vessel assignments, etc.	1.9
	Production parts	Changing packing style, reorganizing routes, etc.	3.8
	Service parts	Improving loading efficiency, reviewing routes, etc.	0.3
Total			6.0

Assessment of CO_2 Emissions and Implementation of Reduction Activities Worldwide

In FY2007, Toyota began assessing the CO_2 emissions from its overseas worksites. From FY2013, reduction targets are annually set for each country and region, and activities to reduce CO_2 emissions are being implemented based on the global guidelines.

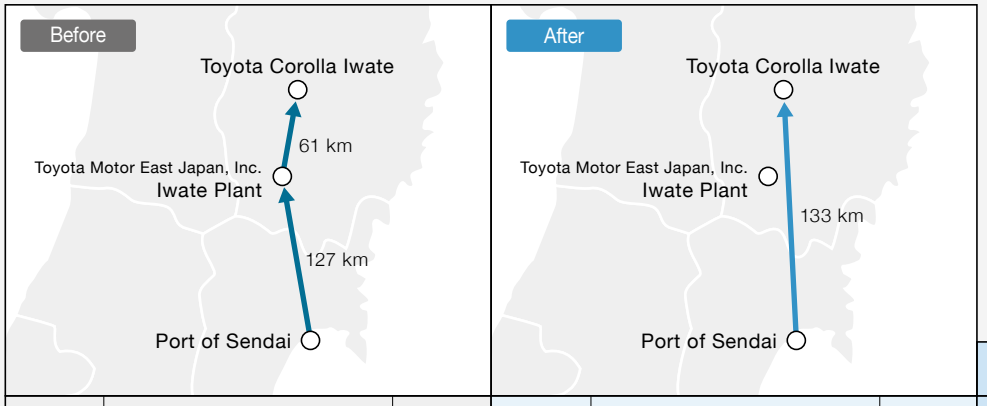
Toyota will disclose the volume of CO_2 emissions from its overseas worksites from FY2016. Toyota is currently working on investigating the methods to calculate CO_2 emissions in each country and region to improve the reporting accuracy. (Will be disclosed starting with the FY2017 report.)

Focus

Shortening Transport Distance for Vehicles to Toyota Corolla Iwate Co., Ltd. by Eliminating Routing via the Iwate Plant

Because of their small shipment volume, vehicles bound for Toyota Corolla Iwate Co., Ltd., unloaded at the Port of Sendai, used to be transported to the Iwate Plant first, formed into lots, and then sent to Toyota Carolla Iwate.

In FY2015, vehicles unloaded at the Port of Sendai were sent directly to Toyota Corolla Iwate, not going through the Iwate Plant, since the number of vehicles bound for Toyota Corolla Iwate increased. This change shortened the transport distance by 55 km, from 188 km (Port of Sendai → Iwate Plant → Toyota Corolla Iwate) to 133 km (Port of Sendai → Toyota Corolla Iwate). This distance reduction succeeded in reducing annual CO_2 emissions by approximately 11 tons, from 37.3 tons to 26.4 tons.



						Effects
Transport distance	Port of Sendai ➡ Iwate Plant ➡ Toyota Corolla Iwate 127 km 61 km	188 km	Transport distance	Port of Sendai ➡ Toyota Corolla Iwate 133km	133 km	55 km
CO_2 emissions	37.3 tons/year		CO_2 emissions	26.4 tons/year		–11 tons

Contributing to Local Communities through the Expansion of Local Grid Energy Management Technologies

Creating Sustainable, Regionally-integrated Towns and Industrial Areas: F-Grid Concept

Following the Great East Japan Earthquake, Toyota has been working to solve energy problems (security, environmental impact, economic efficiency) and to support the Tohoku region by creating new smart communities centered on factories.

In October 2015, F-Grid Ohira, Miyagi Limited Liability Partnership, began operating a regional emergency power supply system.

For details on the F-Grid concept, please see the Sustainability Data Book 2016 (page 24).

Promoting an "Integrated Approach" to Reduce CO_2 Emissions in Road Transport Sectors

WBCSD-led Project to Mitigate Traffic Congestion in Bangkok, Thailand: Sathorn Model

In 2013, Toyota established the Sustainable Mobility Project within The World Business Council for Sustainable Development (WBCSD), and began demonstration projects in six cities. Bangkok, where Toyota is a leading company, has received a grant from the Toyota Mobility Foundation. The objective of the initiative in Bangkok is to create a model solution for reducing traffic congestion by controlling traffic demand and improving the traffic flow, based on cooperation between industry, government, universities, and citizens.

In November 2015, a leadership forum was held, attended by executives from about 70 companies that are participating the initiative, and efforts are underway to encourage the participation of more people. In June 2016, a full scale social experiment was implemented with 23 measures on Sathorn Road to verify the model.

In the future, a roadmap for expanding the model throughout Bangkok will be created and promoted in cooperation with the Thai government.

Measures verified in the social experiment

- Park & Ride: Park & Ride parking lots were opened at 15 locations, and were being used by 504 people/day as of June 2016
- Shuttle buses: Introduced in two schools; a corporate membership shuttle bus was also introduced on a trial basis
- Flex time: Introduced at 11 companies, covering 4,410 employees
- Development of an application that supports selection of optimum transportation mode: 3,308 application downloads
- Measures to mitigate traffic flow bottlenecks: 18 measures were verified (at the location where the measures were most effective, the traffic flow rate improved by 13 percent and the travel speed by 27 percent)

Verification testing for traffic flow management

Kiss & Go (Parents leaving quickly after dropping their children off)

Reversible lane (A lane in which the direction of traffic flow can be changed)

For details on the Toyota Mobility Foundation, see the Sustainability Data Book 2016 (page 141).

Focus

Close Collaboration with Suppliers on Environmental Protection Activities

Kuozui Motors, Ltd., a manufacturing company in Taiwan, assesses its greenhouse gas emissions in line with ISO 14064-1 standards. The company has also recently acquired ISO 50001 certification and is working to improve its energy efficiency by visualizing its energy performance.

As for procurement, Kuozui Motors is promoting environmental protection activities in close collaboration with its suppliers. Major activities include holding yearly supplier meetings, setting KPIs and following up to achieve targets every month. The company is also promoting improvement activities toward the TTT30 (Team Taiwan Toyota Cost Reduction 30% during 5 years) initiative. In addition, through its Supplier Committee, the company is providing suppliers with guidance on CO_2 emissions reduction and sharing *kaizen* ideas and cases as well as best practices.

Besides the above, Kuozui Motors takes comprehensive procurement-related initiatives. For example, it has created a KPI form for use by its suppliers to simplify monitoring. It also participates in local government energy saving activities as part of providing guidance on CO_2 emissions reduction and invites all of its suppliers to meetings for learning new methods.

2015 supplier meeting

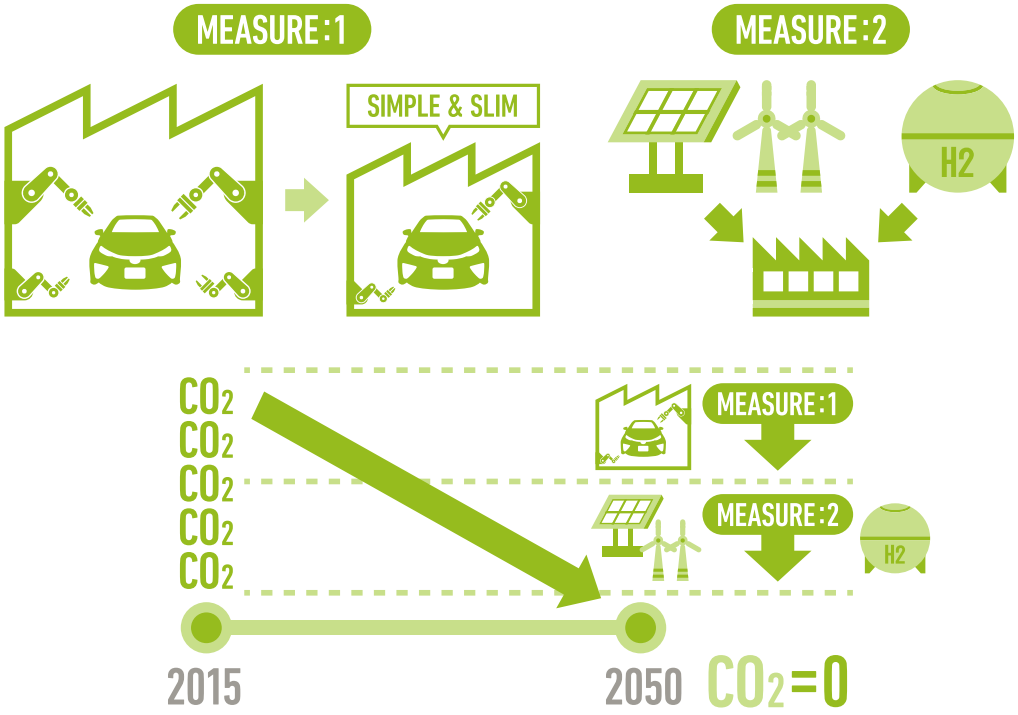
Plant Zero CO_2 Emissions Challenge

Basic Concept

Not only do vehicles emit CO_2 while traveling, they also generate CO_2 in the manufacture process. Reducing CO_2 to restrain climate change is therefore also a challenge for the plants that manufacture automobiles. The two main pillars of our strategy to achieve zero CO_2 emissions at our plants are improvement of manufacturing technology and switching to different forms of energy.

In terms of manufacturing technology, we will first carry out simplification and rationalization of the manufacturing process to shorten it and reduce the time, thus cutting CO_2 emissions. Improved efficiency in energy use can also reduce CO_2 emissions. We will further reduce CO_2 emissions in all process types, for instance by introducing mechanisms that do not use energy.

Regarding the energy sources used, we will cut CO_2 emissions by adopting renewable energy sources such as solar and wind power, and by utilizing hydrogen energy.



CO_2 Emission Reduction in Production Activities

Continuing to Conduct Activities to Reduce CO_2 Emissions in Production Activities

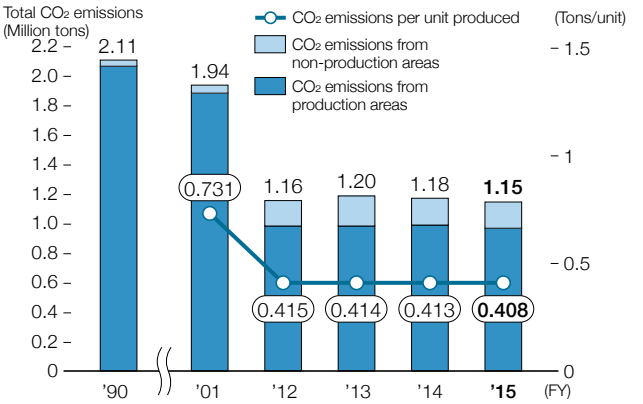
Toyota Motor Corporation (TMC) has been working on reducing its CO_2 emissions, setting targets for both of production sites and non-production sites such as offices.

In FY2015, the promotion of steamless process and the implementation of energy-saving activities resulted in annual CO_2 emissions of 1.15 million tons (a decrease of 45 from FY1990 level), and a figure of 0.408 tons for CO_2 emissions per unit produced (a decrease of 44 percent from FY2001).

In order to achieve Toyota's global five-year plan targets, we are promoting reduction of CO_2 emissions, with the adoption of innovative technologies at the launch of new plants and production lines. On the new production lines at STM (Thailand) and GTE (China), measures have been taken to simplify and rationalize, while ongoing initiatives to convert to steamless and airless processes are also in progress at existing plants. As a result, in FY2015 the annual CO_2 emissions were 7.57 million tons (a decrease of 2.8 percent from FY2014), and the CO_2 emissions per unit produced were 0.744 tons (a decrease of 1.2 percent from FY2014).

Calorific Energy Use Ratio at TMC

Trends in Total CO_2 Emissions (from Energy Sources) and CO_2 Emissions per Unit Produced at TMC



Note 1: For facilities in non-production areas for which FY1990 emissions data is not available, the oldest subsequent data available is used for the graph

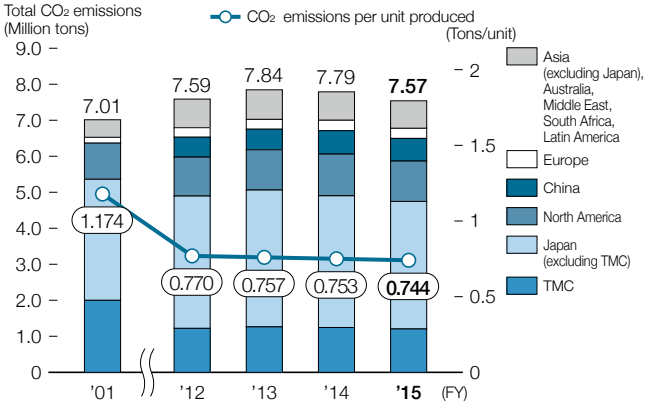
Note 2: Until FY2011, the total CO_2 emissions volume included emissions from production and non-production divisions (excluding the Toyota Biotechnology & Afforestation Laboratory and employee benefit facilities). Beginning in FY2012, the Laboratory was included as a non-production division

Note 3: The CO_2 emissions were calculated using the Nippon Keidanren's FY1990 CO_2 conversion coefficient.

For more information on the conversion coefficient, please visit the webpage below:

Web http://www.toyota-global.com/sustainability/environment/data/conversionfactor.pdf

Trends in Global CO_2 Emissions (from Energy Sources) and CO_2 Emissions per Unit Produced (Stationary Sources such as Plants and Offices)



Note 1: TMC and 121 companies (consolidated subsidiaries and other companies in Japan and overseas)

Japan: Companies listed in Groups 1-5 on page 42 (including sub-subsidiaries; excluding Toyota Tsusho)

Overseas: Production companies and production/sales companies listed on page 42

Note 2: Companies for which FY2001 emissions volumes could not be determined, the oldest subsequent data is used

Note 3: The CO_2 emissions were calculated using the Greenhouse Gas (GHG) Protocol CO_2 conversion coefficient.

Note 4: Errors appearing in previous figures have been corrected.

For more information on the conversion coefficient, please visit the webpage below:

Web http://www.toyota-global.com/sustainability/environment/data/conversionfactor.pdf

Promoting the Use of Renewable Energy

In March 2008, the Toyota Tsutsumi Plant installed a photovoltaic system rated at 2,000 kW (sufficient to provide power for some 500 households). During FY2015, the system generated 1,737 MWh of electricity.

Focus

Kamigo Plant: Reducing CO_2 Emissions from Engine Manufacturing for Vehicles for Japanese and Overseas Markets

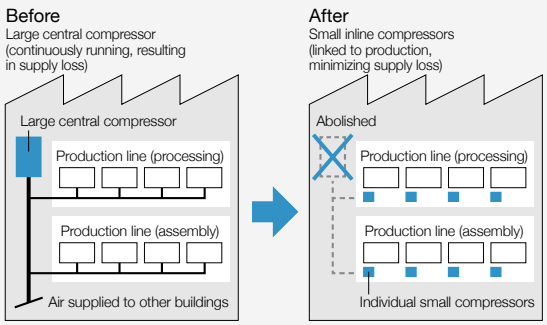
The air and steam for production used to be centrally controlled at the utility plant and supplied to the individual production lines. This resulted in air and steam supply loss during non-production periods, such as breaks of operation and holidays.

Therefore, for air, the large central compressor was abolished and small compressors were installed next to equipment that needed air. This change made it possible to supply the needed air for production with minimum supply loss.

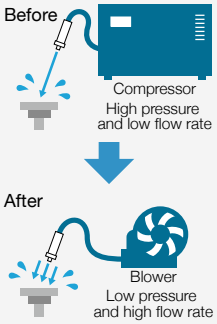
Air usage was further reduced by installing individual blowers by optimizing the shapes and positions of the air nozzles used for cleaning chips off machined engine parts.

As for steam, the use of hot air curtains installed at the entrance/exit of each building was stopped; instead, air-shielding sheets were installed and the shutter opening/closing timings were adjusted. These measures prevented temperature dropping inside buildings, and greatly reduced steam usage. Through these activities, annual CO_2 emissions were reduced by approximately 4,500 tons.

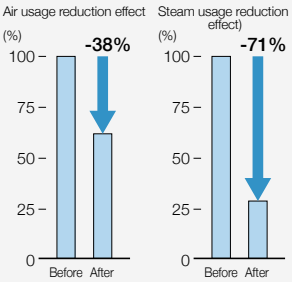
Conversion to inline air compressors



Conversion to blower



CO_2 emissions reduction effect



Eco-factory Activities Implemented at Five Plants

Toyota continues with eco-factory activities for plants being newly constructed and being enhanced in capacity to ensure that its factories set the highest worldwide standards for environmental consideration and sustainability. Activities include on-site verification of environmental solutions incorporated into each phase, namely planning, engineering, trial production and full-scale operation and, should a failure be discovered, the problem is corrected and environmental measures are reliably incorporated.

Progress in FY2015

Eco-factory activities were continued at a total of five plants in Thailand and China.

Eco-factory Activities

	Indonesia	Thailand	Brazil	China			
	TMMIN new engine plant	STM Plant No .2	TDB new engine plant	TFTM new plant	GTMC Plant No.3	TMCAP	GTE
Planning stage							
Audits of facility specifications							
On-site audit							
Compliance and risk evaluation	2016		2016				
Performance evaluation (CO_2, VOC, etc.)	2017		2017			2016	

: Capability enhancement projects (from FY2013) : Implementation completed in FY2015
: Implementation completed by FY2014 Numbers indicate planned year of implementation

Focus

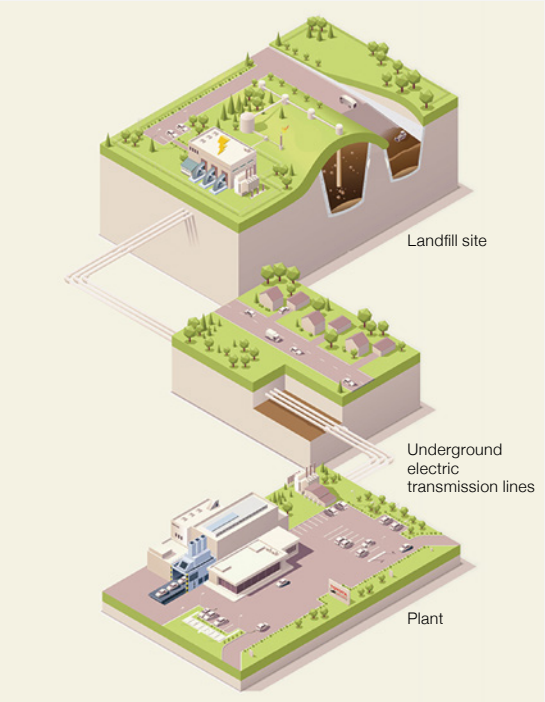
Utilizing Green Electricity Generated at Landfills for Production

As organic materials are broken down by microorganisms, methane gas is created. The methane produced at landfills is called landfill gas, and it is recognized as an organically-derived biofuel.

Toyota Motor Manufacturing Kentucky (TMMK, located in Georgetown, Kentucky), which manufactures models such as the Avalon and the Camry, is utilizing electricity produced by landfill gas generated at a local landfill. This project is a collaboration between TMMK and Waste Services of the Bluegrass, a company that provides waste transporting and disposal services in Kentucky, marking the first such business-to-business model in the region for converting landfill gas into usable energy.

The project began in 2010. TMMK installed underground electric transmission lines as it is located approximately 6.5 miles from the landfill, and it also installed the generator at the landfill site. The system then went online in November 2015. Toyota estimates that the system will generate one megawatt of electricity per hour, enough to power approximately 800 households at the average rate of consumption in the U.S., or to produce 10,000 vehicles. The system can eventually be scaled up to 10 megawatts of electricity per hour. It will also contribute to reducing landfill greenhouse gas emissions by as much as 90 percent.

Power generation system using landfill gas



Comment by Kevin Butt, General Manager for Environment Strategies

"The landfill gas generator represents the kind of thinking our company is asking of us to reduce our carbon footprint over the next 35 years. It's a small step, but a significant one."

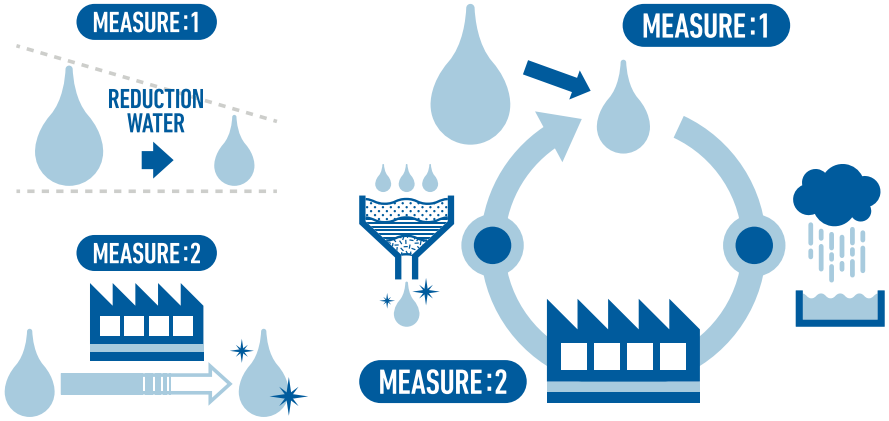
Challenge of Minimizing and Optimizing Water Usage

Basic Concept

According to forecasts, the world's population will climb to 9.1 billion by 2050, demand for water will increase by 55 percent from current levels, and as a result, the percentage of the total population suffering water shortages will reach 40 percent*. In automobile manufacturing, water is used in painting and other processes. Therefore, even a small reduction of its impact on the water environment is important. Our two measures to achieve this are comprehensive reduction of the amount of water used and comprehensive water purification and returning it to the earth.

So far, Toyota has implemented rainwater collection to reduce the amount of water used by production plants, filtering to increase the water recycling rate, re-use of wastewater through recycling, and returning water to the community at a higher quality than found in the local water environment. The local water environment differs greatly depending on region. Going forward, we intend to roll out a range of measures globally to deal with the water environment, taking local needs into account.

* According to Toyota data



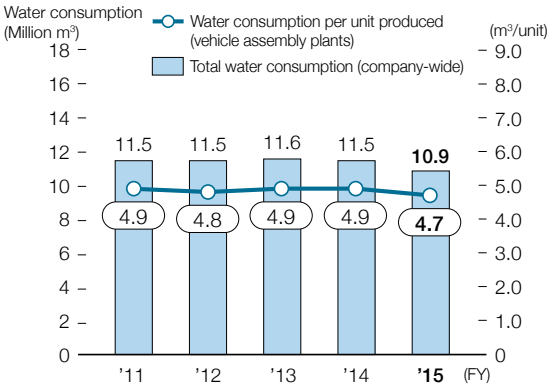
Reduce Water Consumption in Production Activities

Continuing to Conduct Activities Aimed at Reducing Water Consumption

TMC continued activities to reduce water consumption in FY2015, such as , reducing steam usage in production processes. As a result, total water consumption was 10.9 million m³ (a decrease of 5.1 percent from FY2014). Water consumption per unit produced was 4.7 m³, a decrease of 4.2 percent from FY2014.

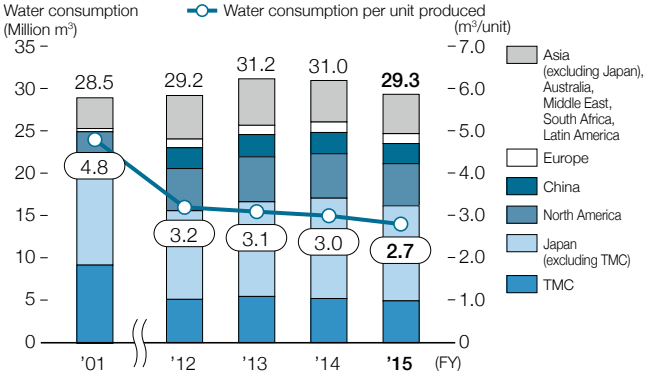
On the global level, Toyota is engaging in steady water conservation activities in response to the situation with the water environment in each country and region. As a result of initiatives including promotion of water recycling particularly in regions with scarce water resources, total water consumption in FY2015 was 29.3 million m³ (a decrease of 5.4 percent from FY2014) and water consumption per vehicle unit produced was 2.7 m³ (a decrease of 9.0 percent from FY2014).

Total Water Consumption and Consumption per Unit Produced at TMC



Note 1: The total water consumption includes both production and non-production divisions (excluding employee benefit facilities)
Note 2: Water consumption per unit produced indicates the consumption per unit produced at vehicle assembly plants
Note 3: Errors appearing in previous figures have been corrected

Global Water Consumption at Vehicle Assembly Plants and Consumption per Unit Produced



Note 1: TMC's assembly plants and 37 companies (consolidated subsidiaries and other companies in Japan and overseas)
Note 2: Companies added to the scope of calculation in FY2013

Focus

Utilizing Wastewater to Create a Variety of Waterfront Environments – New Life Brought about by Improved Water Quality -

For many years, Toyota's plants in Japan have been working on completely treating plant wastewater (through settling of suspended solids, filtration, decomposition of organic substances by bacteria, etc.) to return to natural rivers as discharge water.

Since 2015, the Environmental Center* at the Crown-producing Motomachi Plant has been working on building a biotope utilizing treated wastewater. The Center has raised the local native seedlings, and employees and their family members have planted several thousand seedlings in the vicinity over the past five years. Dragonfly nymphs and butterfly larvae have been observed in the biotope. This is great news because it proves that the discharged water quality has been embraced by the ecosystem in the area. It is said that the types of dragonflies that inhabit a body of water vary depending on the water quality and flow speed. The grown planted trees provide hiding places for dragonflies and spawning grounds for butterflies. Although the Motomachi Plant is located in the urban area of Toyota City, Atrocalopteryx atrata, an indicator species for clean flowing water, has already been observed in the forest and we hope that many nymphs will be raised there in the future.

Wastewater treatment facility

Biotope at the Environmental Center

Atrocalopteryx atrata that has been observed inside the area with planted trees

* The Environmental Center is a facility that powers the Motomachi Plant utilizing energy obtained from combustible waste generated at Toyota plants. Many initiatives related to a low-carbon society, resource recycling, and harmony with nature are being tested inside the Center.

Focus

Groundwater Purification System Installed to Help Improve Residents' Health and Living Environment

In India, many people are drinking water from sources other than municipal waterworks (primarily groundwater). According to a WHO survey, 21 percent of all communicable diseases reported in India are suspected to be caused by water, and therefore installing sanitation equipment to produce safe drinking water has become a basic requirement for regional development.

Therefore, Toyota Kirloskar Motor (TKM), a production affiliate in India, has since 2014 been promoting installation of groundwater purification systems to address regional issues and support the creation of healthy communities. So far, a total of 10 such systems have been installed throughout India, including Bidadi where TKM is located. Based on six filtration processes using reverse osmosis membranes* and other technology combined with ultraviolet light irradiation, these systems purify groundwater into water that satisfies IS 10500 (Indian standard related to drinking water). As a result, residents are able to purchase clean water at a price that is one-tenth of the market price and a sustainable structure has been built that uses the revenue from sales of the water to cover the operating expenses of the purification systems. Approximately 85,000 people are currently benefiting from these systems.

Opening ceremony for a water purification system

* Reverse osmosis (RO) membrane: a membrane designed to allow water through while blocking non-water material such as impurities and microparticles.

Challenge of Establishing a Recycling-based Society and Systems

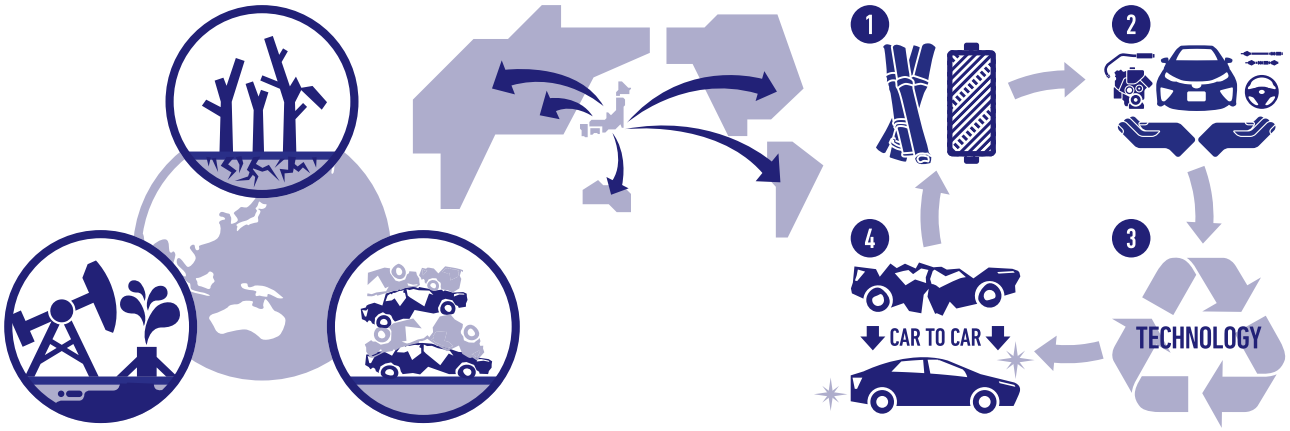
Basic Concept

With the worldwide increase in population and the pressure for economic growth and convenient lifestyles, the consumption of resources is accelerating. If present trends continue, large-scale exploitation of natural resources will deplete, and appropriate disposal will be unable to keep pace with the increasing amounts of waste generated by mass consumption, resulting in environmental pollution.

To prevent environmental destruction caused by end-of-life vehicles, Toyota is launching the Toyota Global 100 Dismantlers Project, which aims to establish automobile dismantling facilities around the world and develop a scheme that optimizes collection and processing of resources from end-of-life vehicles in an environment-friendly way.

In order to improve resource efficiency toward an ideal resource-recycling based society (circular economy), initiatives are needed in four key areas: (1) utilizing eco-friendly materials, (2) making use of parts for longer, (3) developing recycling technologies, and (4) manufacturing vehicles from end-of-life vehicles.

Toyota aims to establish the ultimate recycling-based society and will promote the Toyota Global Car to Car Recycle Project globally, turning end-of-life vehicles back into useful resources for the production of vehicles.



Reduce Consumption of Dwindling Natural Resources through Use of Renewable Resources and Recycled Materials

Development and Utilization of Plant-derived Ecological Plastic

Toyota has developed the plant-derived Ecological Plastic* for automotive applications for the first time in the world. Toyota promotes the development of new technologies and practical applications to further expand the use of Ecological Plastic in vehicle parts.

* This type of plastic is derived from plants that absorb CO_2 while growing. Its usage eliminates the CO_2 emitted during petroleum resource drilling and helps reduce the usage of petroleum resources.

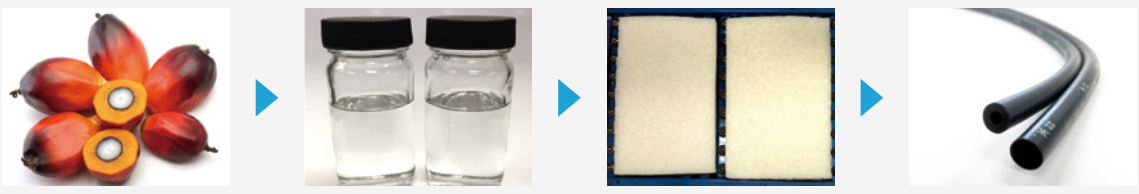
Focus

Pioneering Use of Biosynthetic Rubber in Engine and Drive System Hoses

Toyota became the world's first automaker to use biohydrin rubber,* a biosynthetic rubber jointly developed with Zeon Corporation and Sumitomo Riko Co., Ltd., in vacuum sensing hoses (engine and drive system hoses).

Biohydrin rubber is manufactured using plant-derived bio-materials instead of epichlorohydrin, a commonly-used epoxy compound. The first vehicles to use the new vacuum sensing hoses will be produced in May 2016, with usage expected to be rolled out to all Toyota vehicles manufactured in Japan by the end of the year. In the future, Toyota plans to expand the use of biohydrin to other high-performance rubber components, such as brake hoses and fuel line hoses.

* Since plants absorb CO_2 from the atmosphere during their lifespan, such bio-materials achieve an estimated 20 percent reduction in material lifecycle carbon emissions compared to conventional petroleum-based hydrin rubber.



Oil palm raw material | Bioepichlorohydrin | Biohydrin rubber (polymer) | Vacuum sensing hoses

As biodiesel fuel is produced by chemical processing on oil palm, the raw material of palm oil, bio glycerin is generated as a by-product. The bio glycerin can be used to manufacture bio epichlorohydrin. (Roundtable on Sustainable Biomaterials certification as a plant-derived raw material has been confirmed.)

Achieve Industry-leading Levels in Easy-to-dismantle Design for Effective Resource Recycling

Incorporating Initiatives to Improve Ease of Vehicle Disassembly into Designs

To promote resource recycling for end-of-life vehicles, Toyota has developed structural designs that make it easy to dismantle and separate parts, based on surveys of actual conditions at dismantling companies, and has actively adopted these designs for new models.

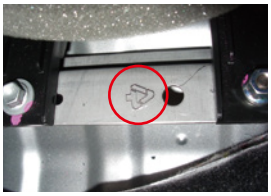
In December 2015, Toyota launched the fourth-generation Prius, the first model to incorporate the Toyota New Global Architecture (TNGA), an innovative, integrated development program for powertrain components and vehicle platforms, under the banner, “Building Ever-better Cars.” To achieve superior driving stability and a comfortable ride with little vibration or sway, the new TNGA-based Prius adopted a low center of gravity package and lowered the hood 100 mm compared to the previous generation, resulting in a smaller engine room. However, it still maintains the same level of operational ease for wire harness removal as the previous generation models.

The new Prius was also designed with further improvement in dismantlability.

Easy-to-dismantle Vehicle Structure

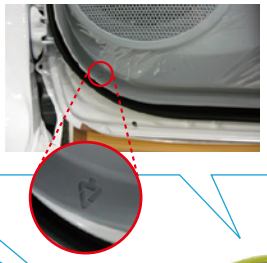
Removal of Heavy Components from the Hybrid Vehicle Battery

Component removal times for the Prius are further reduced. The new Easy to Dismantle Mark has been added to assist in hoisting heavy components with good balance.

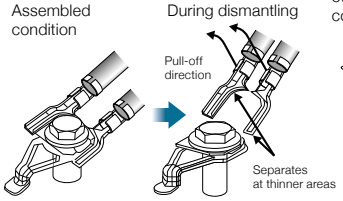


Door Trim Removal

The Easy to Dismantle Mark indicates places where the load required for removing the door trim is 30 percent less than usual.

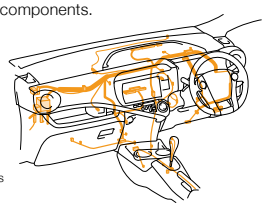


Wire Harness Using Pull-tab Type Grounding Terminals



Wire Harness Layout Innovation

The wire harness can be stripped out without interfering with other components.

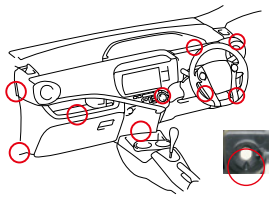


Use of Easy to Dismantle Mark

The Easy to Dismantle Marks are added to clearly indicate key points that assist in initial dismantling.

Instrument Panel Removal

The positioning of the V-grooves makes it easy to remove the instrument panel by pulling it strongly.



Overseas Rollout of Original Recycling System for End-of-life Vehicle Resources

Steady Progress in Recycling at Dealers and Parts Distributors

Toyota dealers and parts distributors throughout Japan promote recycling as much as possible throughout the use stage of vehicles, including collecting and recycling damaged and removed parts such as bumpers and lead wheel balance weights.

Toyota also promotes activities to reduce resource usage, such as selling rebuilt and used parts, and using tanker trucks to reduce drums for transporting oil.

Collection and Recycling of Damaged and Removed Parts in FY2015

Bumpers	809,000 units (collection rate of 69.4%)
Lead wheel balance weights	28.8 tons
Amount of oil delivered using tanker trucks (bulk supply system)	63.4% of the volume sold by parts distributors

Building a System for Recycling Fuel Cell-specific Parts

To properly dispose of the hydrogen tanks used in the MIRAI, commercially launched in December 2014, Toyota has distributed the Manual for Proper Disposal, Collection and Recycling of to vehicle dismantlers. Furthermore, Toyota instructs dismantlers all the necessary technical steps from removing the hydrogen gas to pulverizing gas containers.

The FC stack installed in the MIRAI uses rare metals such as platinum. Therefore, in conjunction with the launch of the MIRAI, Toyota has established the world’s first FC stack collection/recycling framework.

Focus

Start of Recycling of MIRAI Hydrogen Tanks in Europe

Leasing of the MIRAI has also begun in Europe. Therefore, it is imperative to properly dispose end-of-life hydrogen tanks. Toward commercialization of a recycling operation, Toyota conducted a pilot program in Europe, and the program recently reached the point of ensuring proper recycling of end-of-life hydrogen tanks, resulting in Toyota's decision to sign a subcontracted recycling agreement with a local company. From now on, the hydrogen tanks from the MIRAI that reach their end of life in Europe will be locally recycled. For example, carbon-fiber–reinforced plastic (CFRP) will be removed from these tanks and reused as a recycled material.


CFRP hydrogen tank


Pyrolysis process

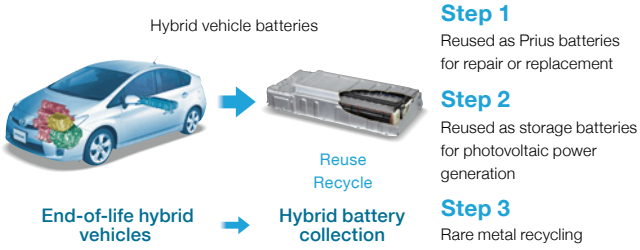
Promoting the Recycling of End-of-life Batteries

Since launching the Prius, the world's first mass-produced hybrid passenger vehicle released in December 1997, Toyota has built its own recovery network to collect end-of-life hybrid vehicle (HV) batteries to be recycled. As of March 31, 2016, Toyota has collected approximately 55,300 end-of-life HV batteries and is recycling all of them.

HV batteries contain precious resources such as nickel, cobalt, and rare earth elements. Toyota is developing the world's first vehicle-to-vehicle recycling technologies to enable these precious resources to be reused in new batteries.

Because it is expected that tens of thousands of end-of-life HV batteries will be generated by the middle of the 2020s, Toyota has also developed the world's first technologies for reusing these HV batteries. The batteries are reused as replacement batteries or as stationary storage batteries in photovoltaic power generation systems.

Toyota further plans to promote the skillful reuse of batteries from end-of-life vehicles as part of measures to use renewable energy in an environmentally conscious manner. When these reused batteries finally reach the end of their own use cycle, their metal parts are recycled into new batteries again.



Recovery of Neodymium and Dysprosium from HV Motors

The magnets used in HV motors contain neodymium and dysprosium, two types of rare-earth elements. Toyota is working on the research and development of a motor that uses as little rare-earth elements as possible. Toyota has also launched a vehicle-to-vehicle recycling system for extracting neodymium and dysprosium from end-of-life HV motors to be reprocessed back into new magnets, in collaboration with magnet manufacturers. In FY2012 and FY2013, Toyota affiliates, Toyota Metal Co., Ltd. and Toyotsu Recycle Corporation, received support from the New Energy and Industrial Technology Development Organization to conduct a verification project for separating magnets from motors. They have now installed appropriate equipment and developed related recycling technologies. Since February 2012, a total of 20 tons of magnets have been collected.

In FY2015, Toyota worked with Sanwayuka Industry Corporation to start a new recycling route for reusing recovered neodymium and dysprosium as additives to catalysts. This development adds a new route to the magnet-to-magnet recycling route, diversifying the recycling possibilities.

Vehicle-to-vehicle Recycling of Copper Resources in Wiring Harnesses

Copper is used in power transmission and other wiring, but roughly only 40 years' worth of mineable copper resources are said to remain worldwide. Meanwhile, demand for wiring in emerging countries is increasing, and large amounts of copper are used in the motors of hybrid and other next-generation vehicles, which are expected to become increasingly popular going forward. For these reasons, recycling the copper used in wiring harnesses has become a critical issue for the automotive industry.

Toyota has therefore collaborated with Yazaki Corporation, Toyota Tsusho Corporation and seven of Toyota Tsusho's dismantling partners in the Chubu region of Japan to develop vehicle-to-vehicle recycling technologies. Trial production involving small amounts of recycled copper began at Toyota's Honsha Plant in 2013. The prospect of being able to stably produce copper became evident in 2014, meaning that the copper recycling technology had been fully developed.

Since April 2013, a cumulative total of 127 tons of wire harnesses have been collected.

Focus

Promotion of Resource Recycling in Collaboration with Dismantlers

Toyota has collaborated with Toyota Tsusho Corporation and seven of Toyota Tsusho's dismantling partners in the Chubu region of Japan to establish the Resource Recycling Research Meeting. Since 2010, this research meeting has conducted research on ways to effectively utilize resources recovered from end-of-life vehicles, such as wire harnesses and plastic parts.

Seven Dismantling Companies in the Chubu Region of Japan (in Random Order)

Company name	Location
New Iwata Corporation	Ichinomiya City, Aichi Prefecture
Johoku Jidosya Kogyo Co., Ltd.	Kasugai City, Aichi Prefecture
Auto Recycle Sanri	Toyota City, Aichi Prefecture
Morita Sharyo Corporation	Handa City, Aichi Prefecture
Yamauchi Shouten Co., Ltd.	Inazawa City, Aichi Prefecture
Kobayashi-shouten Inc.	Tsu City, Mie Prefecture
Marudai Sangyo Corporation	Ina City, Nagano Prefecture

Tungsten Recycling

Additionally, in an effort to recycle rare metals used in products other than vehicles, Toyota collaborated with Sumitomo Electric Industries, Ltd. in 2010 to establish a business venture involving a system for recycling tungsten, which is used in cemented carbide tools, etc. One hundred percent of the tungsten used in Japan is imported and 80 percent of cutting tips of cemented carbide tools use tungsten. By sorting and collecting end-of-life cemented carbide tools generated at Toyota plants, the venture recovers and re-uses 100 percent of the tungsten they contain. By the end of March 2016, approximately 129 tons of tungsten had been recycled.

Contribute Worldwide through End-of-life Vehicle Treatment and Recycling Technology Developed in Japan

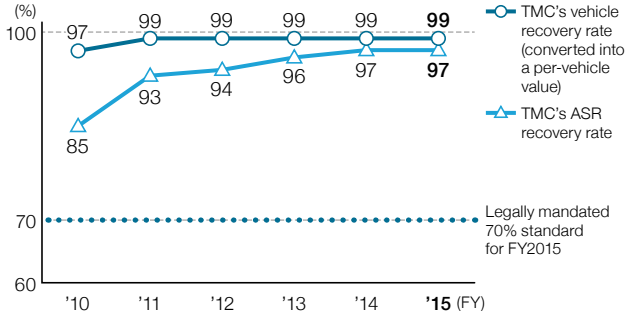
Ensuring Compliance with the End-of-life Vehicle Recycling Law in Japan

Toyota has been steadily working with dismantling and recycling companies to ensure compliance with the Japanese end-of-life vehicle (ELV) Recycling Law that came into effect in January 2005. Toyota collects and treats CFCs and HFCs, and also recycles and recovers airbags and automobile shredder residue (ASR[1]) from end-of-life vehicles.

In FY2015, the ASR recovery rate was 97 percent and the vehicle recycling rate[2] reached 99 percent.

1 Residue after vehicles are shredded
2 Calculated by adding to the percentage recycled and recovered up to the dismantling and shredding processes (approximately 83%, quoted from the April 2003 joint council report) the remaining ASR rate of 17% × ASR recovery rate of 97%

TMC's Vehicle Recycling Rate[2] and ASR Recovery Rate in Japan



Compliance with End-of-life Vehicle Recycling Laws Overseas

In China, the Sales/Recycling Working Group, under the Toyota China Environment Committee, is working closely with local affiliates to promote compliance activities with local automobile recycling laws through measures such as ascertaining regulatory trends and surveying local infrastructure conditions. In February 2014, a plant was opened in Beijing with 32 percent investment by Toyota Tsusho Group as the first base for the Toyota Global 100 Dismantlers Project. This plant aims to become a model dismantling plant for end-of-life vehicles in China. Approximately 20,000 vehicles were dismantled at the plant in FY2015. In the future, similar plants are being considered for other areas of China in step with progress in the establishment of applicable laws in Chinese society, such as the enforcement of automobile recycling laws.

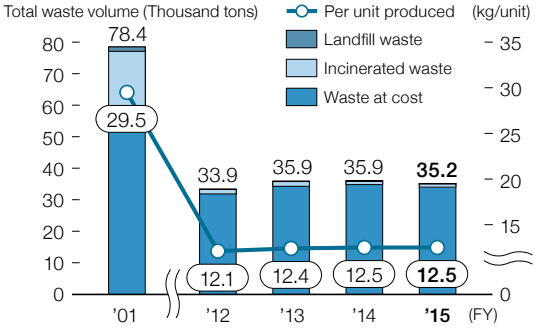
Reduce Waste and Use Resources Efficiently in Production Activities

Continuing to Conduct Activities Aimed at Reducing Waste Volume

In FY2015, Toyota Motor Corporation (TMC) continued implementing waste reduction measures such as reducing industrial dust and sludge volume. The total waste volume was 35,200 tons (a decrease of 2.0 percent from FY2014), and the waste volume per unit produced was 12.5 kg (a decrease of 0.1 percent from FY2014).

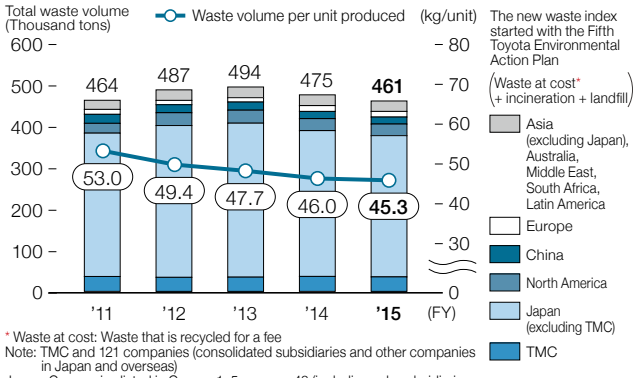
On the global level, Toyota is engaging in ongoing waste reduction activities, in coordination with diligent cost cutting. As a result, in FY2015, the total volume of waste was 461,000 tons (a decrease of 3.1 percent from FY2014) and waste volume per unit produced was 45.3 kg (a decrease of 1.4 percent from FY2014).

Total Waste Volume and Waste Volume per Unit Produced at TMC



Note 1: The total waste volume includes both production and non-production divisions (excluding employee benefit facilities)
Note 2: The total waste volume in production divisions covers the waste generated as a result of production activities
Note 3: Waste at cost = Waste that is recycled for a fee

Global Waste Volumes and Waste Volume per Unit Produced



* Waste at cost: Waste that is recycled for a fee
Note: TMC and 121 companies (consolidated subsidiaries and other companies in Japan and overseas)
Japan: Companies listed in Groups 1–5 on page 42 (including sub-subsidiaries; excluding Toyota Tsusho)
Overseas: Production companies and production/sales companies listed on page 42

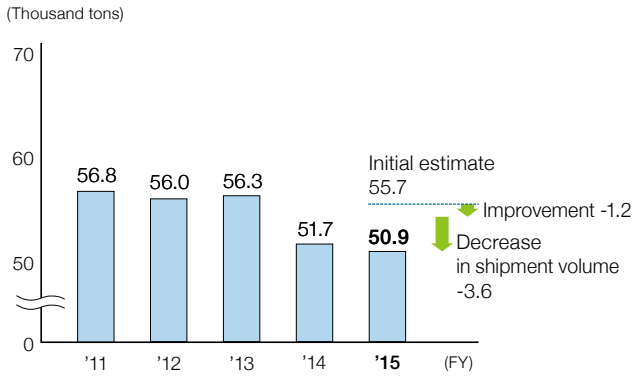
Reduce Packaging Materials and Use Resources Efficiently in Logistics Activities

Continuing to Conduct Activities Aimed at Reducing Use of Packaging and Wrapping Material

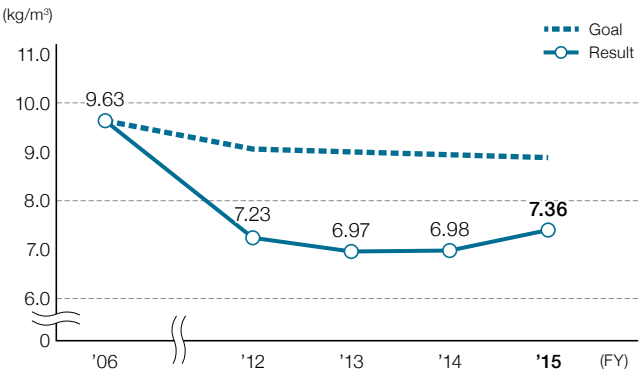
In order to reduce the use of packaging and wrapping materials, Toyota Motor Corporation (TMC) continued implementing measures such as simplifying wrapping specifications and expanding the use of returnable shipping containers. As a result of these measures, usage decreased by 1,200 tons. Together with the impact of a decrease in shipment volume and other factors, total usage was reduced to 50,900 tons. Usage of packaging and wrapping material per shipment unit was 7.36 kg/m³.

In FY2008, TMC began implementing measures to determine the usage volume of packaging and wrapping material at affiliates worldwide. Assessments for all regions, excluding North America, have almost been completed. Because it has been difficult to assess the usage at suppliers in North America, TMC is currently adjusting the assessment method.

TMC (Japan) Usage of Packaging and Wrapping Materials



TMC (Japan) Usage of Packaging and Wrapping Materials per Shipment Unit



Results of Activities to Reduce Usage of Packaging and Wrapping Material

Improvement	Products	Main details of activity	Reduction volume (thousand tons)
Simplification of specifications	Service parts	Changing packaging specifications, reuse etc.	0.1
		Increasing lean specifications for wrapping	0.3
	Production parts	Improvement of parts quantity per box, simplification of packaging specifications	0.3
Use of returnable containers	Service parts	Expanding the use of returnable containers (increasing the number of applicable items)	0.5
	Production parts	Expanding the use of returnable containers (increasing the number of applicable items)	0.03
Total			1.2

Focus

Activities to Test Recycling of Bumper Covers and Scrap Parts for Waste Reduction

Toyota's North American Parts Operation (NAPO) is working to reduce waste by recycling damaged bumper covers and scrap parts.

Working with business partner Boles Parts Supply (BPS), the program uses a methodology called "National Scrap Program" devised in 2014 to process various kinds of parts that previously could not be reused into plastic pellets of various sizes that can be reused.

The program was first verified at Toyota's two largest parts centers in Ontario, California and Hebron, Kentucky. In the first 15 months, the program recycled over 40,000 pounds of cloth and foam, two materials that in the past were incinerated or sent to landfills.

The program was then expanded to six parts distribution centers in Cincinnati, Los Angeles, San Francisco, and Portland. This move resulted in the recycling of over 88,000 pounds of parts, accounting for 92 percent of previously non-reusable parts.

BPS has so far succeeded in recycling more than 14 types of waste generated by Toyota. The recycled pellets are also sold to fabric makers and other vendors who manufacture car bumpers, and become part of the materials used to create new vehicle parts.

Juliana Dee, manager of the program at NAPO, states,

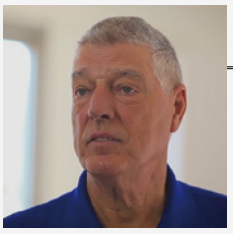
Damaged bumper covers are recycled into plastic pellets.




"We've been enormously pleased with the success of this program. Thanks to our partner BPS, we are giving a second life to things that used to be trash and making a real improvement in our recycling rate. . . It means fewer raw materials are used and less waste is being disposed—a real win-win for the environment."

NAPO confirmed that its overall recycling rate in FY2015 had improved by 3 percent over the previous year and that the parts center in Ontario in particular had improved its recycling rate by an amazing 11 percent.

Toyota is currently reviewing the program for potential rollout to remaining parts distribution centers by the end of FY2017.



BPS President
Jerry Boles

"Toyota is such an outstanding client, and these guys are truly focused on environmental performance. . . We are very proud of this success."

Challenge of Establishing a Future Society in Harmony with Nature

Basic Concept

If humans and nature are to coexist into the future, we need to conserve forests and other rich natural systems in all regions. However, deforestation is progressing around the world, and forest equivalent to 14 percent of Japan's land area is lost each year.*

The Toyota Group companies have engaged in planting trees at plants, environmental conservation activities in their surrounding areas, and environmental education in order to "enrich the lives of communities" in each region. Going forward, we will promote such activities at Group, regional, and organizational levels using the insights we have gathered so far.

* Toyota data

Three Connecting Projects Expand Activities to Communities, the World, and the Future

Ahead of COP 10*, Toyota created the Toyota Biodiversity Guidelines (a voluntary policy initiative) in March 2008. These guidelines consist of Toyota's basic philosophy on biodiversity-related initiatives and the following three action items: (1) Contribution through technology; (2) Collaboration and cooperation with society; and (3) Information disclosure. Toyota has been carrying out a variety of activities in accordance with these guidelines.

In conjunction with the recent announcement of the Toyota Environmental Challenge 2050, we have shared these guidelines with the Toyota Group companies and have launched three "connecting" projects.

* COP 10: 10th Meeting of the Conference of the Parties to the Convention on Biological Diversity

- **Toyota Green Wave Project: Connecting Communities**
- **Toyota Today for Tomorrow Project: Connecting with the World**
- **Toyota ESD Project: Connecting to the Future**

Basic Concept of the Initiatives

Cognizant of the importance of biodiversity and based on the Guiding Principles at Toyota, we are addressing biodiversity issues in areas such as the automobile and housing businesses, new businesses, and contributing to resolving social issues with the aim of realizing enhanced quality of the environment and prosperous societies, and achieving sustainable development.

Contribution through Technology

Toyota is pursuing the possibilities of biotechnology, afforestation technology, and environmental technology with the aim of balancing biodiversity and corporate activities.

Collaboration and Cooperation with Society

Toyota seeks to build collaborative and cooperative relationships with a wide range of organizations involved with biodiversity throughout society including governmental bodies, international organizations, and non-profit organizations.

Information Disclosure

Toyota voluntarily discloses its initiatives relating to biodiversity by synchronizing corporate activities and the outcome of such initiatives with the aims of sharing information broadly with society and thereby contributing to the development of a sustainable society.

Promote Expansion of Nature Conservation Activities Connecting Communities

Toyota Green Wave Project: Connecting Communities

The Toyota Group companies have planted trees at plants and undertaken environmental conservation activities in their surrounding areas in order to "enrich the lives of communities" in each region. The Toyota Green Wave Project is an initiative to connect these diverse activities. The All-Toyota Harmony with Nature Working Group was launched by the Toyota Group companies with a view to promoting this project. This working group has started concrete activities including planning and implementing activities that promote harmony with nature in each community, developing new evaluation tools, and raising social awareness through the dissemination of information.

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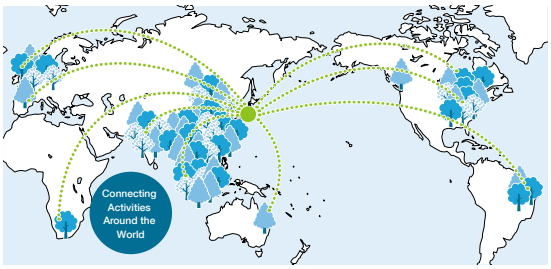
Preserving loggerhead turtle spawning beaches in Aichi Prefecture (April 2016)



Tree Planting by TMEC in China (May 2016)

Bamboo thinning in the Yahagi River in Aichi Prefecture (April 2016)

Focus

All-Toyota Harmony with Nature Working Group First "Connecting" Activity: Tree-planting at Millennium Hope Hills

The All-Toyota Harmony with Nature Working Group participated in the 4th Millennium Hope Hills Tree Planting Festival in Iwanuma City, Miyagi Prefecture on May 28, 2016. This project intends to create an evacuation site and minimize risk of disaster by building a 10 km green embankment on a shore that was damaged by the Great East Japan Earthquake.

A total of 175 people—72 from 20 supporting companies and 103 from Donguri-Mongori, an NPO funded by the Toyota Environmental Activities Grant Program—participated in the project. Some 2,500 seedlings of Tohoku tree varieties raised in Aichi were planted. The know-how developed through tree-planting activities at plants of individual Toyota Group companies was used for this first connecting activity. Tohoku-based companies including Toyota Motor East Japan, Inc. also participated, connecting activities in Tohoku and Aichi together. Going forward, we will expand such activities even further.

All-Toyota Green Wave Project Booklet Released

In June 2016, Toyota released a booklet to raise employees' environmental awareness and distributed it internally in conjunction with Environmental Month. The booklet presents information on the significance of the Green Wave Project, the importance of biodiversity, and examples of activities by Toyota Group companies, raising employees' awareness of participation in such activities and promoting the importance of cross-functional cooperation.

Web http://www.toyota-global.com/sustainability/environment/challenge6/green_wave/

Tree Planting at Plants: Promoting Sustainable Plant Activities

Since 2007, Toyota has been pursuing sustainable plant activities, positioning the Prius-producing Tsutsumi Plant as a model plant, to bring the concept of sustainability into *monozukuri*. With the concept of "plant development that fully utilizes natural resources while operating in harmony with nature," efforts are underway towards reducing energy consumption, changing energy sources, enhancing communication with local communities, and preserving biodiversity.

As part of those efforts, the number of trees planted by some 50,000 employees, family members, and local residents in regions around the world has come to 850,000 trees in 2015. As these forests grow, indigenous organisms are returning back and diverse organisms are propagating in the forests, creating habitats rich in nature and living organisms.

In FY2015, 440 trees were planted at the Teiho Plant, bringing the total to 3,600. At the Motomachi Environmental Center, 130 employees planted 1,850 trees, bringing the total to 15,478. We also conducted tree-planting activities at TMEC in China. Seedlings such as ring-cup oak and Japanese chinquapin are raised by employees from acorns (seeds) for three years until they reach a size suitable for planting. Some 30,000 of the seedlings have been provided for afforestation activities at 12 plants in Japan.

An employee growing seedlings

Teiho Plant (left: photo from 2014 before tree planting; right: photo taken in 2015 after tree planting)

Tree-planting activity at the Motomachi Environmental Center in May 2016

TOYOTA Mie Miyagawa Mountain Forest Project Builds Healthy Forests and Uses Timber Resources

In 2007, Toyota acquired 1,702 hectares of forest land in Odai-cho, Taki-gun, Mie Prefecture. The forestry restoration program was launched to maximize the diverse functions of the forest. In addition, automobile manufacturing expertise was introduced to the forest site and information management. We have also worked on data-based forest management, low-cost maintenance and improvement of worker safety. In FY2015, timber from the forest was used for renovation of Toyota facilities (the Toyota Kaikan Exhibition Hall and Toyota Automobile Museum).

Toyota also launched environmental education programs in FY2014 to make more people to understand the association with forests. In FY2015, we newly started tree planting for timber production and a hands-on course on traditional wooden housing building techniques for high school students in cooperation with local high schools and residents.

The restored forests

Wood materials used at the Toyota Kaikan Exhibition Hall

Boost Grant for Environmental Activities Connecting to the World

Toyota Today for Tomorrow Project: Connecting to the World

Toyota has conducted cooperative activities with domestic and overseas environmental NGOs including the Toyota Environmental Activities Grant Program and afforestation programs in China and the Philippines. The long-standing grant program will be conducted in the future in collaboration with a variety of global organizations to support projects that can provide significant impetus to society, create new value, take the initiative in launching projects that promote global environmental activities, and lead society as a whole.

First Stage of the Today for Tomorrow Project: Cooperative Project Launched with IUCN

In May 2016, Toyota signed a new partnership agreement with the International Union for Conservation of Nature (IUCN), the first such agreement with a private business. Toyota and the IUCN announced a strengthening of the IUCN Red List of Threatened Species, a global shared database maintained by the IUCN, and collaborative measures to raise awareness regarding the importance of biodiversity. In 2016, subsidies of approximately 1.2 million U.S. dollars will be provided.

For details on projects with international organizations, see the Special Feature1: Toyota Environmental Challenge 2050 (page 8).

Toyota Environmental Activities Grant Program

Outline and Purpose of Program

The Toyota Environmental Activities Grant Program was inaugurated in 1999, commemorating Toyota's receipt of the prestigious Global 500 Award, to further demonstrate Toyota's responsibility for the environment and sustainable development. Upon the occasion of receipt of this award, in FY2000, Toyota launched a grant program that supports the environmental activities of NPOs and other groups with the aims of solving issues in environmental fields and supporting the development of the next generation of human resources.

Grants Provided to Date

Over the 16 years since the Grant Program was established, it has provided support to 304 projects in 53 countries and regions worldwide

Country/ region of implementation	Asia (excluding Japan), Pacific	North America, Latin America	Africa	Europe	Japan	Total
FY2015	5	1	3	1	16	26
Cumulative total*	98	20	28	10	148	304

* FY2000 - FY2015 (Grant topics: biodiversity, global climate change)

Examples of Grant Recipient Projects

Guinea | The Green Corridors to Connect Two Forested Habitats of Wild Chimpanzees by Planting Trees

The Green Corridors

The Bossou chimpanzees in the Republic of Guinea have been faced extreme difficulty interchanging with other groups of chimpanzees due to fragmentation of the forests where they live. This project is to plant saplings in the savanna between Bossou and the Mount Nimba Strict Nature Reserve, a UNESCO world heritage site, to create an environment that allows the chimpanzees to travel back and forth and preserve this endangered species.

In FY2015, some 7,000 saplings were planted to connect to the green corridor created the previous year, bringing the total number of trees planted to 22,000, and a wildlife survey was conducted. The chimpanzee population plunged dramatically during the spread of the Ebola virus, and the community is aging. As a result, these chimpanzees' risk of extinction has become even higher. International teams which had been suspended were revived and educational activities were conducted through a variety of symposia in Guinea. We will also accelerate the tree-planting activities in the Green Corridor Project.

Wild chimpanzees in Bossou, Guinea

Japan | Yatsushiro Illustrated Encyclopedia for Children and Nature, Created Jointly by Youths, Governmental Agencies, Academics, and the Private Sector

Jisedainotameni Ganbarokai

To protect the critical wetlands at the mouth of the Kuma River in Yatsushiro City, Kumamoto Prefecture, where numerous critically endangered organisms live, a project team made up of youths, governmental agencies, academics, and the private sector was created with high school students from the city playing a central role. They are undertaking to develop the human resources that will be essential for environmental preservation. As one of these measures, they created the Yatsushiro Illustrated Encyclopedia for Children and Nature, prepared by conducting numerous interviews with distinguished local persons.

By comparing and organizing lifestyles in the past and present, the project team was able to enhance its own knowledge and awareness. Efforts will be made to raise local awareness of the natural environment through study sessions using the Illustrated Encyclopedia and a children's card game tournament using rare species picture cards created by high school students on their own.

The Yatsushiro Illustrated Encyclopedia for Children and Nature, prepared by conducting interviews with distinguished local persons

Rare species card game tournament

Boost Contribution to Environmental Education Connecting to the Future

Toyota ESD Project: Connecting to the Future

Human resources development is crucial for expanding environmental conservation activities to the future. Consequently, the Toyota Education for Sustainable Development (ESD) Project promotes sustainable human resource development that matches the community.

In Japan, taking the 10th anniversary of establishment of the Toyota Shirakawa-Go Eco-Institute, we focus on the children's camp program. Conservation activities as well as environmental education programs for local junior high school students are conducted at the new Toyota R&D Center.

Overseas, we launched the Toyota Biodiversity and Sustainability Learning Center at the Toyota Ban Pho Plant in Thailand, and the center is developing environmental educational programs. We further proceed with other environmental educational programs involving human resources and utilizing the Toyota Group plants.

Toyota Shirakawa-Go Eco-Institute Widely Promotes Locally-Rooted Environmental Education Programs that Value Nature's Wisdom

The Toyota Shirakawa-Go Eco-Institute, located in the World Heritage site Shirakawa-Go, was opened in April 2005 with the goal of promoting environmental education. In FY2015, the number of visitors reached a record high of 16,959 including many visitors from overseas, bringing the total number to 172,000.

On June 14, 2015, a commemorative ceremony was held to mark the 10th anniversary of the Institute's opening. The ceremony was attended by guests from Shirakawa Village and representatives from Toyota and other organizations. Toshiyuki Yamada, who was appointed as the new director of the Institute in April 2015, spoke of the institute's journey over the last 10 years and the direction for its future activities, with the key theme of "shared education" that leads to "harmonious coexistence."

The Institute's programs including the children's camp were highly acclaimed, and the institute received an honorable mention for the FY2015 Promoting Youth Activities award, sponsored by the Ministry of Education, Culture, Sports, Science and Technology. Consequently, it is undertaking programs that create opportunities to consider environment and harmonious coexistence, grow and learn together through "shared education," and enable individuals to "think and act independently."

Camp for building thatched house

Fossil excavation camp

Orientation in the snow field

Hands-on activities in the forests

Tenth anniversary commemorative ceremony

Forest of Toyota: Contributing to Develop a Sustainable Society through Forestry Activities

The 45-hectare company-owned forest in Toyota City was developed based on the *satoyama* model of biodiverse landscapes where humans interact with nature. It is offered as a site for environmental learning targeting a wide segment of society with a focus on local schoolchildren.

In FY2015, a new symposium on flying squirrels, which live in the area, was conducted. The symposium became an opportunity for mutual learning by the individuals who attended from around the country through the lectures by experts, fieldwork, and other programs. In recognition of these long-standing activities, Toyota received the Green Society Award in the presence of Their Imperial Highnesses Prince and Princess Akishino in October.

A hands-on learning program for elementary school children using persimmon

Flying squirrels use a nest box

For information on Forest of Toyota, see the Sustainability Data Book 2016 (page 111).

Focus

Protecting the Monarch Butterfly, an Indicator Species for Grassland Ecosystems, at All Sites in North America

Most flowering plants depend on pollinators for seed production. There are a variety of pollinators, moving pollen from the male to the female part of a flower to fertilize the plant, ranging from bees to birds, bats and butterflies. In addition to flowers, a number of food crops rely on pollination. However, as the number of pollinators, including honeybees, has declined globally, protecting them has become an urgent issue also from the viewpoint of preserving biodiversity.

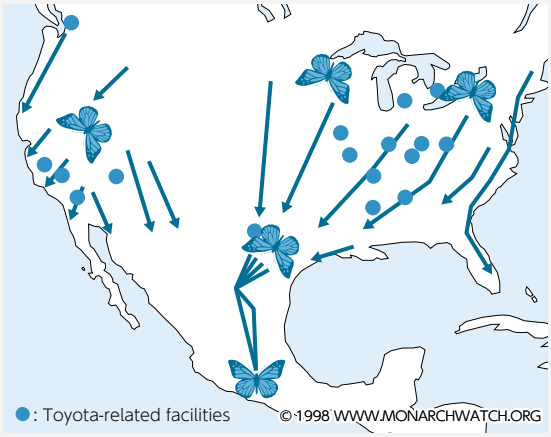
The monarch butterfly (Danaus plexippus) is a pollinator that migrates between the southern and northern parts of North America and is known as an indicator species for grassland biodiversity. Unfortunately, the monarch population in North America has declined by as much as 90 percent over the past two decades and the monarch is facing the risk of extinction. This is why Toyota has decided to create pollinator gardens in the 21,000 acres of land it owns in North America.

The monarch migrates from Canada in the north, through the U.S., to Mexico in the south. Studying the monarch's migration and overwintering patterns, we have been planting wildflowers and milkweed inside many of our North American plant sites and in the surrounding communities to provide waystations along the migration pathway. Wildflowers provide nectar to the adults while milkweed serves as food and shelter for monarch larvae.

Monarch butterflies have already been observed at all Toyota plant sites, indicating the waystations are helping the monarch butterflies during their migration. Toyota Motor Manufacturing Kentucky (TMMK) distributes milkweed seeds to elementary schools in the surrounding communities and teaches the students how to observe the monarch, with the hope of expanding its habitat.

These activities have been officially recognized as excellent initiatives for ecosystem protection by both the federal and state governments, and have received the "Wildlife at Work" certification from the Wildlife Habitat Council, an NPO.

Toyota's North American Facilities and the Monarch's Migration Pathways



Monarch butterfly

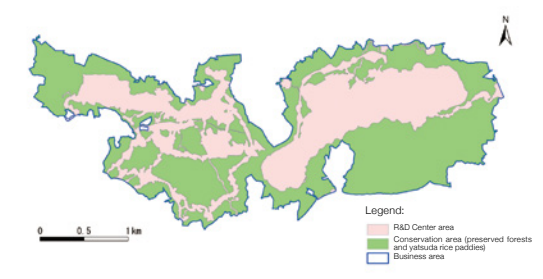
Monarch butterfly perched on an employee's hand

TMMMS's pollinator garden

Focus

Initiatives at the New Toyota R&D Center Promoting Harmony with the Natural Environment and Local Communities

In order to develop sustainable next-generation mobility, Toyota is proceeding with plans to construct a new R&D facility in Toyota City and Okazaki City. In pursuing this project, Toyota set out to build a technical center that operates in harmony with both the natural environment and local communities. About 60 percent of the total project site will be preserved as areas for the regeneration of forest and restoration of *yatsuda* rice paddies, and their management. Toyota is also actively sharing information that includes the status of these initiatives and the knowledge gained through them.



Site map of the new R&D Center

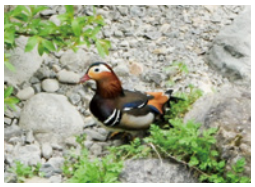
Progress in FY2015 (1): Wild Bird Conservation Activities—Mandarin Ducks Use Nest Boxes

Nest boxes for breeding were installed in planned conservation areas to promote wild bird conservation. The numbers of some species are declining in the wild, possibly because of the lack of tree hollows that birds can use for breeding. A conservation area was created with the aim of maintaining mature trees that can be expected to form hollows, but it will many years until these trees grow enough to develop natural hollows.

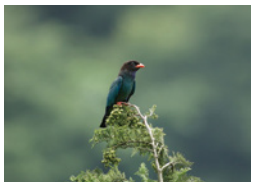
In FY2012, we established a joint program with a conservation group, selecting four species of endangered birds in the area (Mandarin Duck (*Aix galericulata*), Ural Owl (*Strix uralensis*), Oriental Dollarbird (*Eurystomus orientalis*) and Eurasian Treecreeper (*Certhia familiaris*)) as the targets of our conservation efforts using nest boxes to replace tree hollows. In FY2014, two pairs of Ural owls began using nest boxes. In FY2015, Mandarin ducks, which have rarely been observed breeding in Aichi Prefecture, began using the nest boxes and safe fledging was confirmed.


A Mandarin duck using a nest box

Target species for conservation and reasons for their selection


Mandarin Duck

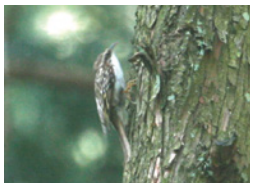
Despite the dwindling nesting habitat in the region, some individuals have been confirmed to inhabit the area surrounding the R&D Center site.


Oriental Dollarbird

Although the number of breeding occurrences in the region has been extremely small, some individuals have been confirmed to inhabit the R&D Center site.


Ural Owl

Despite the dwindling nesting habitat in the region, some individuals have been confirmed to inhabit the R&D Center site.

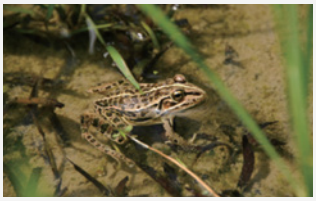

Eurasian Treecreeper

Although the number of breeding occurrences has been extremely small in the region, some individuals have been confirmed to inhabit the R&D Center site.

Progress in FY2015 (2): Frogs Join Series of Informational Pamphlets, Bringing Total to Five

Toyota prepares pamphlets about key species symbolizing the *satoyama* environment in the planned project area, distributes these at events, and makes them available on the Toyota global site. In FY2015, Toyota issued a new pamphlet on various species of frog. In addition to the known characteristics of frogs seen in and around the planned project site, the pamphlet uses photos, drawings, and easy–to-understand text in order to convey new information about the frogs' annual lifecycle gathered through surveys of their calls and so on.

At the same time, we updated the content of the four pamphlets previously released and shown below. The pamphlet on the Japanese Night Heron *Gorsachius goisagi* was listed as a reference work in the Japanese Night Heron Preservation Procedure announced by the Ministry of the Environment in June 2016.


A female Black-spotted Pond Frog
Ministry of the Environment Red List: NT (near-threatened species)

Environmental Management

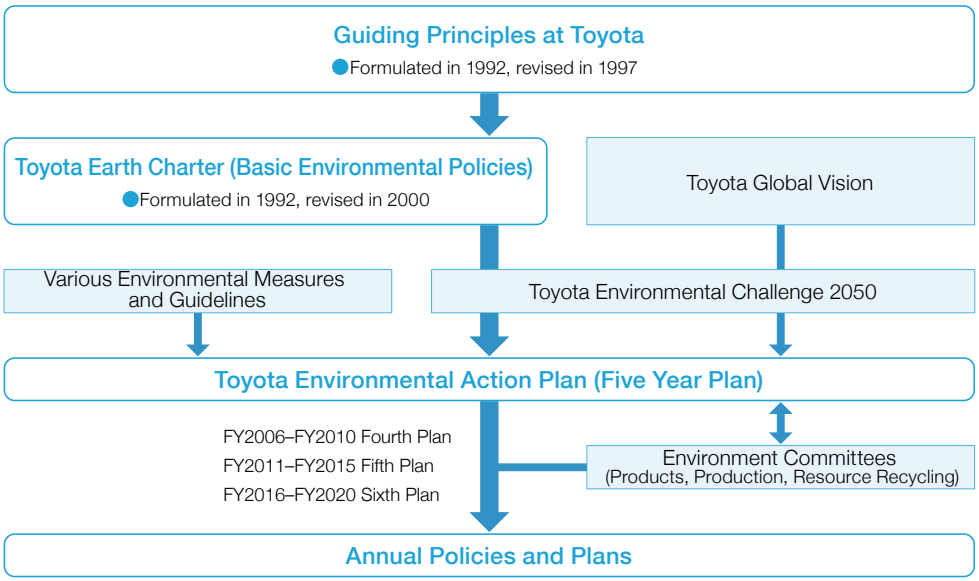
Basic Concept

Toyota's philosophy and policies on the environment are based on the Guiding Principles at Toyota, which were established in 1992 and revised in 1997. Policies for environmental initiatives were formulated as the Toyota Earth Charter in 1992 and then revised in 2000. This Charter is shared among 559 Toyota consolidated affiliates around the world.

The Toyota Global Vision announced in 2011 stresses the importance of "respect for the planet."

Based on its philosophy and policies, in FY2015 Toyota formulated the Toyota Environmental Challenge 2050, its first long-term vision for environmental initiatives. In FY2016, Toyota will begin the Sixth Toyota Environmental Action Plan (2016–2020) and take steps to grow sustainably together with society toward the year 2050.

Toyota Environmental Action Plan System



Toyota Earth Charter

I. Basic Policy

1. Contribution toward a prosperous 21st century society
   Contribute toward a prosperous 21st century society. Aim for growth that is in harmony with the environment and set as a challenge the achievement of zero emissions throughout all areas of business activities.
2. Pursuit of environmental technologies
   Pursue all possible environmental technologies, developing and establishing new technologies to enable the environment and economy to coexist harmoniously.
3. Voluntary actions
   Develop a voluntary improvement plan, based on thorough preventive measures and compliance with laws, which addresses environmental issues on the global, national and regional scales and promotes continuous implementation.
4. Working in cooperation with society
   Build close and cooperative relationships with a wide spectrum of individuals and organizations involved in environmental preservation, including governments, local municipalities, related companies and industries.

II. Action Guidelines

1. Always be concerned about the environment
   Take on the challenge of achieving zero emissions at all stages, i.e., production, utilization and disposal.
   (1) Develop and provide products with top-level environmental performance
   (2) Pursue production activities that do not generate waste
   (3) Implement thorough preventive measures
   (4) Promote businesses that contribute toward environmental improvement
2. Business partners are partners in creating a better environment
   Cooperate with associated companies.
3. As a member of society
   Actively participate in social actions.
   (1) Participate in the creation of a recycling-based society
   (2) Support government environmental policies
   (3) Contribute also to non-profit activities
4. Toward better understanding
   Actively disclose information and promote environmental awareness.

III. Organization in Charge

Promotion by the Corporate Planning Meeting which consists of top management

The Fifth Toyota Environmental Action Plan

The Fifth Toyota Environmental Action Plan defines the action plan and goals for the five-year period starting in FY2011.

In developing the plan, Toyota streamlined actions from two points of view: environmental risks and business opportunities (such as the spread of eco-cars) in corporate operations. Environmental activities to be implemented for 2020–2030 were categorized according to three priority themes: "contribution to a low-carbon society," "contribution to a recycling-based society," and "environmental protection and contribution to a society in harmony with nature." Initiatives and specific items to be implemented in each area of corporate activities were formulated in order to further promote and strengthen environmental management.

For details of the Fifth Toyota Environmental Action Plan, see page 4.

The Sixth Toyota Environmental Action Plan

The Sixth Toyota Environmental Action Plan defines the activities to be implemented over FY2016–2020 in order to meet the six challenges outlined in the Toyota Environmental Challenge 2050.

In formulating the plan, environmental activities were categorized according to the three priority themes of the Fifth Plan: "contribution to a low-carbon society," "contribution to a recycling-based society," and "environmental protection and contribution to a society in harmony with nature." Embracing these three themes, Toyota will contribute to the sustainable development of society and the planet by ensuring harmony with the global environment in its *monozukuri* (manufacturing), *kurumazukuri* (car-making) and delivery of products and services.

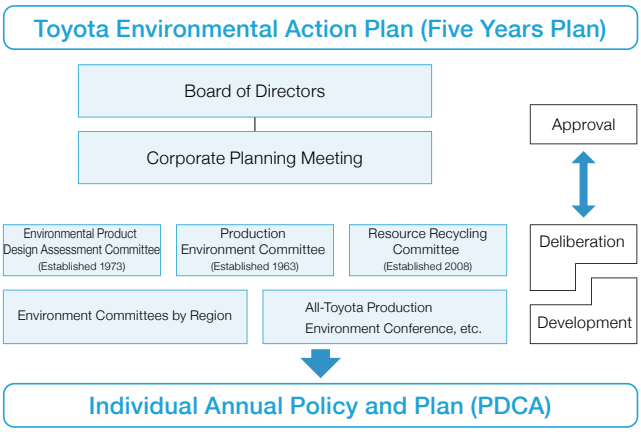
Promotion Structure and Framework

Since April 2015, Toyota has been considering growth and business strategies that take a variety of social issues into account at the Corporate Planning Meeting.

Environmental actions are discussed alongside business strategies in this meeting.

Through the following three committees—the Environmental Product Design Assessment Committee, the Production Environment Committee, and the Resource Recycling Committee—issues and response policies in all areas are investigated, and companywide initiatives are promoted in liaison with all relevant divisions.

Organization Framework (As of June 30, 2016)



Promote Strengthening of Consolidated Environmental Management

Promotion Structure for Global Environmental Management

Toyota positions the environment as a key management issue and has formed and promoted activities through a promotion structure for global environment management. From the standpoint of "more Toyota people should take the initiative in concern for the environment," the scope of our programs covers not only consolidated subsidiaries, but also voluntarily participating non-consolidated affiliate companies and production companies for a total of 559 firms. These companies cover almost 100 percent of the total production volume and approximately 90 percent of the total sales volume.

Promotion Structure for Global Environmental Management

Scope of Companies Subject to Consolidated EMS

Toyota's consolidated environmental management system (EMS) covers a total of 559 companies. This includes not only all financially consolidated subsidiaries, but also major production companies, overseas distributors and other companies not subject to consolidated accounting.

Specifically, companies subject to consolidated EMS fall into the following four major categories:

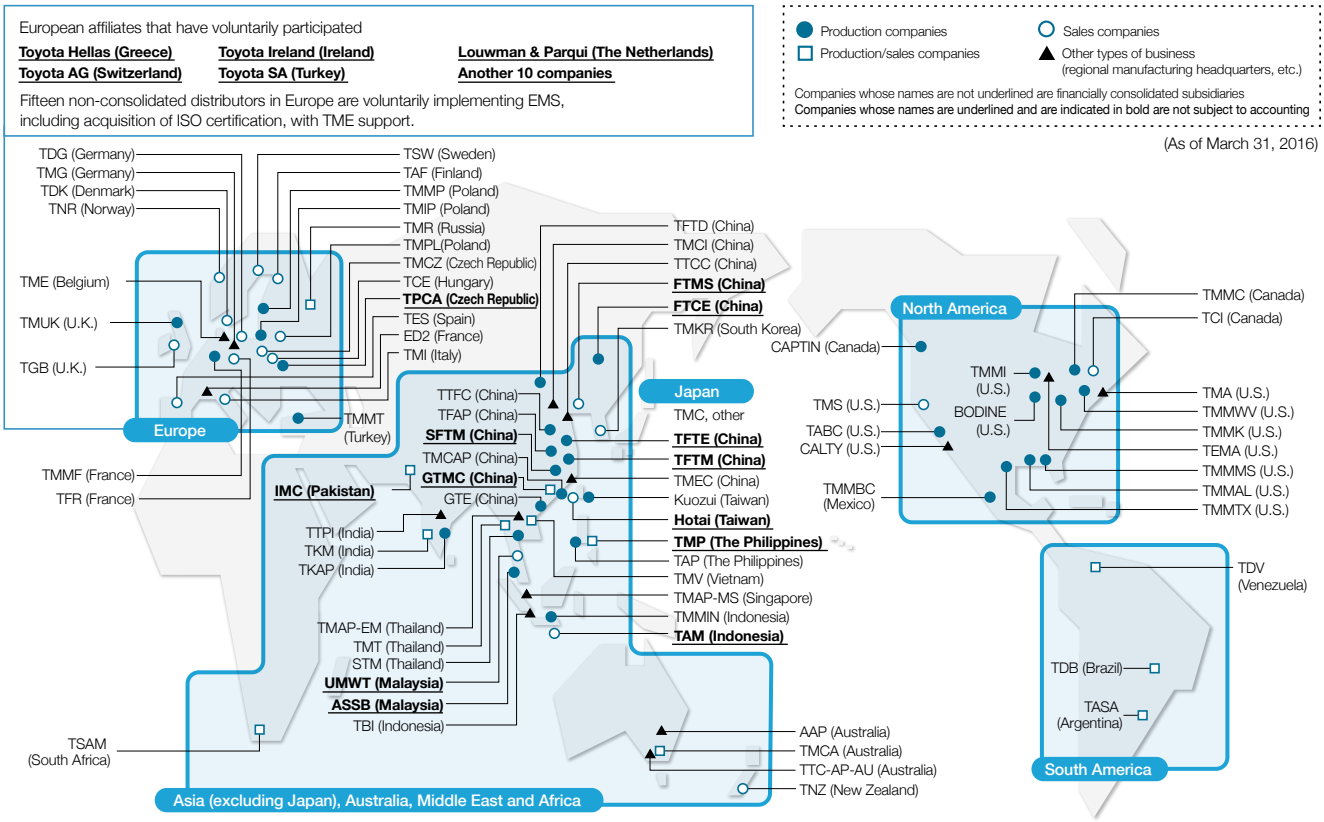
(1) 163 subsidiaries which are financially consolidated and under the direct control of Toyota Motor Corporation (TMC);
(2) 51 major production companies and overseas distributors that are not subject to consolidated accounting;
(3) One organization from other types of businesses; and
(4) 344 subsidiaries that are financially consolidated and under the indirect control of TMC (managed via consolidated subsidiaries).

Details of Actions

1. Jointly adopt the Toyota Earth Charter and draft individual environmental policies
2. In production, set quantitative goals and follow up on those goals
3. In sales, develop environmental management systems, and carry out environmental communication and other initiatives
4. Implement top level environmental responses based on actual conditions in each country and region

* TMC's requirements to companies not subject to consolidated accounting may vary according to region and the nature of business

Main Companies Subject to Consolidated EMS



Main Companies Subject to Consolidated Environmental Management System (EMS) in Japan (Alphabetical order)

(As of March 31, 2016)

Production companies

Group 1	Group 2	Group 3	Group 4	Group 5
· Consolidated subsidiaries · Automotive production companies and others · TMC secondary companies	· Companies not subject to consolidated accounting · Main parts manufacturers · Body manufacturers, etc.	· Consolidated subsidiaries · Parts manufacturers	· Consolidated subsidiaries · Various other products production companies	· Companies not subject to consolidated accounting · Parts manufacturers
Daihatsu Motor Co., Ltd. Gifu Auto Body Co., Ltd. Hino Motors, Ltd. Toyota Auto Body Co., Ltd. Toyota Motor East Japan, Inc. Toyota Motor Hokkaido, Inc. Toyota Motor Kyushu, Inc.	Aichi Steel Corporation Aisan Industry Co., Ltd. Aisin AI Co., Ltd. Aisin AW Co., Ltd. Aisin Seiki Co., Ltd. Aisin Takaoka Co., Ltd. Denso Corporation JTEKT Corporation Tokai Rika Co., Ltd. Toyoda Gosei Co., Ltd. Toyota Boshoku Corporation Toyota Industries Corporation Toyota Tsusho Corporation	Cataler Corporation Central Motor Wheel Co., Ltd. Kyoho Machine Works, Ltd. Primearth EV Energy Co., Ltd. Toyota Home Co., Ltd. Yutaka Seimitsu Kogyo, Ltd.	Admatechs Co., Ltd. Japan Chemical Industries Co., Ltd. Shintec Hozumi Co., Ltd. Toyota Turbine and Systems Inc.	Chuoh Pack Industry Co., Ltd. Chuo Spring Co., Ltd. Fine Sinter Co., Ltd. FTS Co., Ltd. Koito Manufacturing Co., Ltd. Kyowa Leather Cloth Co., Ltd. Taiho Kogyo Co., Ltd. Toyoda Iron Works Co., Ltd. Trinity Industrial Corporation Tsuda Industries Co., Ltd.
All-Toyota Production Environment Conference Members		All-Toyota Production Environment Meeting Members		

Logistics Companies

· Consolidated subsidiaries
· Finished vehicle distribution
· Parts distribution

Aichi Rikuun Co., Ltd.
Tobishima Logistics Service, Inc.
Toyofuji Shipping Co., Ltd.
Toyota Transportation Co., Ltd.

All-Toyota Logistics Environment Conference Members

Sales Companies

Tokyo Toyopet Motor Sales Co., Ltd.
Toyota Tokyo Parts Distributor Co., Ltd.
Toyota Tokyo Rental & Leasing Co., Ltd.
Total 31 companies

Other Businesses

TACTI Corporation
Toyota Central R&D Labs., Inc.
Toyota Enterprises Inc.
Toyota Modellista International Corporation
Toyota Technocraft Co., Ltd. and others
Total 45 companies

* Including one company not subject to consolidated accounting

Action Policies and Results of Major Affiliates Implementing Consolidated Environmental Management in FY2015

		FY2015 Action Policies and Activity Results		
		Action Policy	Goals	Activity Results
Overall		• Promote environmental management through strengthened cooperation with each region	• Achieve goals in all areas • Plan direction of future environmental strategy	• Strengthened consolidated environmental management • Carried out environmental meetings in Japan and overseas • Created global environmental awards • Promoted activities under the Fifth Toyota Environmental Action Plan • Established goals for each area (Sixth Toyota Environmental Action Plan)
Production (84 companies)	Japan (40 companies)	• All companies to implement initiatives toward achieving FY2015 goals • Strengthen activities to prevent recurrence of non-compliance and complaints	• Achieve goals in Japan and in all regions • Zero non-compliance and complaints	• All companies implemented systematic measures and almost all goals were achieved • Proactive preventive measures were implemented, but there were cases of minor non-compliance (1 instance[2] of non-compliance; 0 complaints)
	Overseas (44 companies[1])			
Sales (78 companies)	Japan (31 companies)	• Provide support to the Toyota National Dealers' Advisory Council for acquisition of third-party certification of its environmental management system	• Increase the number of dealers that acquire EMS[3] certification	• Provided support for the acquisition of EMS certification;
	Overseas (47 companies[1])	• Overseas dealers to promote environmental risk audits through DERAP[4]	• Achieve goals Percentage of dealers: 80% or more	• Achieved goals Percentage of dealers: 89%

The 65 other Toyota Group companies in Japan and overseas are implementing individual activities on their own initiative

1 Includes the 12 production/sales companies
2 1 in Japan (excluding TMC) and 0 overseas
3 Environmental Management System
4 Dealer Environmental Risk Audit Program

Global ECO. Award

Background and Purpose

The Global ECO. Award began in 2006 for the purpose of promoting improvement activities of overseas affiliates and encouraging *yokoten* (sharing) of the best improvement practices among affiliates worldwide. The process originally consisted of each affiliate selecting their best improvement practices for recognition by TMC.
In 2011, to increase interest in the activities related to the award, the process was changed to screening the chosen teams in each region to select those with excellent practices, and then having those teams present their practices in Japan for selection of the final winners. At the same time, the Award for Affiliates with the Best Performance was established to recognize the affiliates with the greatest outcomes from the improvement activities.

Initiatives in FY2015

In FY2015, the fourth year for the Award, five finalists out of 13 teams selected from 6 regions around the world were invited to give their presentations in Japan. The Toyota Motor Manufacturing Indonesia (TMMIN) team won the Platinum Award with its presentation on a project to reduce waste by separating dust from casting sand. The presentations made by the other four teams that won the Gold Award also served as examples of excellent achievements in resolving the very important issues each affiliate encountered.

At the award ceremony, Tatsuro Takami, who was the Managing Officer and Executive in charge of the Environmental Affairs Division, expressed his respect and encouragement to the teams, commenting: "Given that environmental issues are becoming more and more serious, meeting the challenges outlined in the new Toyota Environmental Challenge 2050 is becoming extremely important in order for Toyota to continue being a leading environmental company in the world. In order to meet these challenges, I urge you continue working on initiatives as *kaizen* leaders while supporting the growth of your junior colleagues."

Award Categories

Category	Award for On-site *Kaizen* Activity	Award for Affiliates with the Best Performance
Area	• Production/Production Affiliate (Plant) • Logistics/Administration, Production and Logistics Affiliate	• Production/ Production Affiliate (Plant)

On-site *Kaizen* Award Recipients

Platinum Award	TMMIN (Indonesia)
Gold Award	TMMC (Canada), STM (Thailand) TFTM (China), TDB (Brazil)

Affiliate Award Recipients

Platinum Award	TMUK (U.K.), TMMK (U.S.) TMCA (Australia), FTCE (China)

Managing Officer Takami (center) with TMMIN members, winners of the Platinum Award

Status of ISO 14001 Certification

Production companies and production/sales companies both in Japan and overseas have been working to renew their ISO 14001 certification and striving daily to maintain and improve their environmental management systems.

One of our newly established production companies overseas has recently been certified.

Number of ISO Certified Toyota Group Companies in Japan and Overseas

	Production companies	Production/ sales companies	Sales companies/ other businesses
Japan	39	-	10
Overseas	33	12	19

Reduce Vehicle Exhaust Emissions to Improve Urban Air Quality in Each Country and Region

Vehicles that Meet Japanese LEV Emission Standards

In FY2015, almost 100 percent of Toyota vehicles produced were certified as meeting the Ultra-Low Emission Vehicle (U-LEV) or higher standards by the Japanese Ministry of Land, Infrastructure, Transport and Tourism.

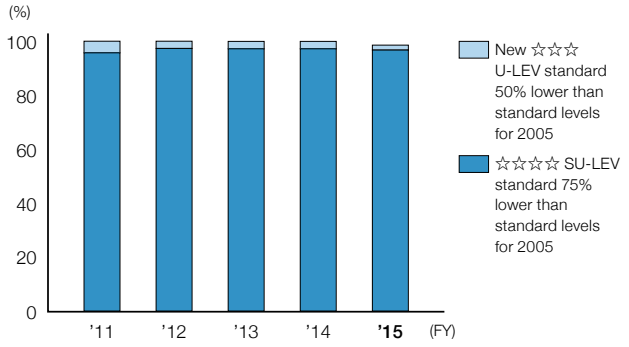
FY2015 Vehicles that Meet Japanese LEV Emissions Standards

Low-emissions level	★★★★ SU-LEV	★★★ U-LEV
Vehicle series	No. of models	No. of models
Lexus LX570	1	0
Lexus RX200t	2	0
Lexus RX450h	2	0
Sienta	4	0
Pixis MEGA	2	0
Prius	3	0
Total	14	0

Percentage of Total Production in FY2015 that Qualifies as LEVs Based on 2005 Exhaust Emissions Standards

Classification	Reduction level	Percentage of total production
New ☆☆☆ U-LEV standard	50% lower than standard levels for 2005	1.8%
☆☆☆☆ SU-LEV standard	75% lower than standard levels for 2005	96.8%

Low-emission Vehicles as a Percentage of Total Production in Japan



Reduce VOC Emissions in Production Activities

Reduction of VOC Emissions in Body Painting Processes

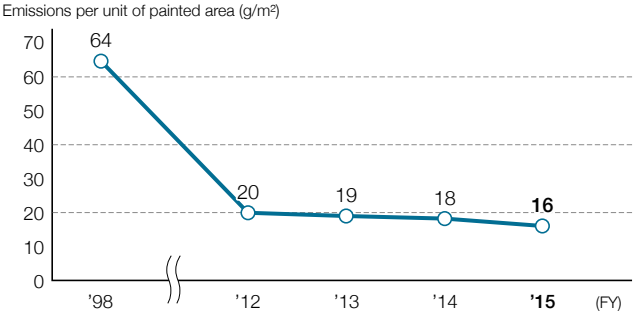
Purpose of Activities

Volatile Organic Compounds (VOCs) are one of the causes of photochemical oxidation, the cause of photochemical smog. Toyota Motor Corporation (TMC) is promoting initiatives to reduce VOCs emitted in the painting process.

Progress in FY2015

TMC has continued its efforts to limit the use of cleaning solvent and to recover a larger percentage of solvents, while also actively switching to water-borne paints. As a result, it has reduced total VOC emissions from TMC body paint lines to 16 g/m².

Trends in VOC Emissions Volume in TMC Vehicle Body Painting Processes (Average for All Lines)



Focus

VOC Emissions Reduction Activities at the Tsutsumi Plant

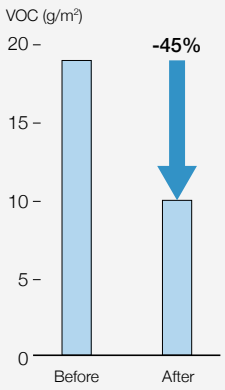
Because the painting process uses solvent-borne paints, it discharges a lot of VOC. Therefore, the Tsutsumi Plant is working daily to reduce emissions by taking steps such as recovering the solvent used for cleaning between paint color changes.

Its Painting Line No.1, which produces the Prius, became Toyota's first existing line to adopt the waterborne 3-wet painting method while maintaining production. Toyota has been introducing this painting method into its new plants since 2007.

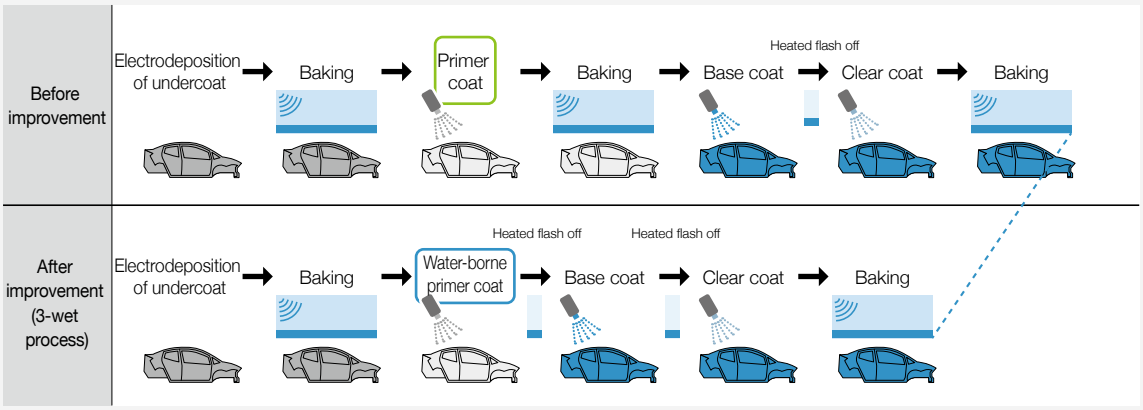
In the conventional automobile body painting process, after a rust-prevention undercoat is electrodeposited and baked in an oven, a primer coat primarily for protecting the electrodeposited coat is applied and then baked. Afterwards, a base coat for applying colors and a clear coat for producing gloss are applied and then baked, completing the painting process.

Adoption of the waterborne 3-wet painting method changed the primer coat to a waterborne type and eliminated the baking step after the primer coat. These changes have reduced the volume of VOC discharged from the painting process by 45 percent and are also helping reduce energy usage by shortening the process.

VOC-reducing effect



Process comparison



Promote Environmental Activities in Cooperation with Business Partners (Suppliers)

Revision of the Toyota Green Purchasing Guidelines

Toyota compiled the Toyota Green Purchasing Guidelines with an aim to address environmental issues that suppliers consider based on the Toyota Environmental Challenge 2050, and rolled this out to its suppliers. In the revision made in January 2016, the content of the Guidelines was greatly expanded based on the challenge.

For details on the Green Purchasing Guidelines, see the Special Feature 1: Toyota Environmental Challenge 2050 (page 8).

Raising Environmental Awareness through the CSR Study Meeting

Toyota organizes the CSR Study Meeting every year to support CSR promotion activities by suppliers. In FY2015, we provided our suppliers with a wide variety of information on climate change, water environment, biodiversity, metal resources, and stakeholder trends to raise environmental awareness.

For details on support for CSR activities by suppliers, see the Sustainability Data Book 2016 (page39).

Assessing Risks and Opportunities Related to Climate Change and the Water Environment in the Supply Chain

As part of its efforts to assess the environment-related risks and capitalize on opportunities in its supply chain, Toyota participated in the CDP Supply Chain Program in FY2015 to survey how its suppliers are addressing climate change and the water environment. We will gradually increase the number of targeted suppliers.

Ensuring Compliance with REACH and Other Global Regulations on Chemical Substances

Following the World Summit on Sustainable Development, held in Johannesburg in 2002, and adoption of the Strategic Approach to International Chemicals Management (SAICM) in 2006, the number of chemical substance management regulations was increased globally. The goal of this change is to minimize serious adverse effects on human health and the environment from the manufacture and use of chemical substances by 2020.

The international trend in the regulations on chemical substances has been moving from hazard management, which focuses on the toxicity of individual substances, to risk management, which takes into account their adverse effects on humans, plants, and animals. Thus, it is necessary to also consider the situation in which the chemical substances are being used. There are now various regulations on chemical substances, such as the Chemical Substances Control Law in Japan; the ELV Directive[1] and REACH Regulation[2] in Europe; and independent regulations in North America and Asia.

These regulations require corporations to collect information on the chemical substance content of their products and manage their supply chains. Toyota has built and is operating a chemical substance management framework in cooperation with its suppliers. In January 2016, Toyota revised its Toyota Green Purchasing Guidelines and is promoting chemical substance control in its supply chain.

1 European directive on end-of-life vehicles
2 European regulation on registration, evaluation, authorization and restriction of chemicals

Promote Environmental Activities in Cooperation with Business Partners (Dealers and Distributors)

Promoting Environmental Initiatives at Dealers

At CSR workshops held by the Toyota National Dealers' Advisory Council (TNDAC), all Toyota dealers have worked together to promote voluntary activities based on the Toyota Dealer CSR Guidelines set forth in 2005. To further promote these initiatives, they called for increased acquisition of third-party certification of environmental management systems to accelerate the development of human resources and the creation of environment-friendly dealerships, and to bolster the level of trust from customers.

Shizuoka Toyota Co., Ltd. has been working to reduce its electricity usage and to sell environment-friendly products. In September 2015, the company acquired certification under the "Eco-Action 21 (EA21)" guidelines issued by the Ministry of Environment. At the award ceremony, the company president Hideki Kawashima mentioned the effects of their initiative, " Our employees have become more aware of environment than before." The event was also covered by several newspapers.

Award ceremony for Shizuoka Toyota

Increase the Number of Certified Overseas Dealers

Toyota continues the Dealer Environmental Risk Audit Program (DERAP) to reduce environmental risks at overseas dealer service shops. These audits aim to establish a framework to deal with five fundamental environmental requirements including the proper management of waste and treatment of wastewater.

In FY2015, 70 distributors and 3,692 dealers from 66 countries worldwide participated in the program, representing an increase of 10 distributors and 228 dealers from FY2014. Eighty-nine percent of these participating dealers satisfied the five requirements. However, from the global perspective, there are still many Toyota distributors and dealers who have not yet participated in the program. Toyota will continue to encourage their participation and will also support the activities of the participating companies.

Legal Compliance Activities

Achieving Zero Non-compliance and Complaints

In FY2015, Toyota was able to achieve zero non-compliance incidents and complaints two years in a row.

The main activity toward this achievement was the creation of the Collection of Focal Points for Facilities and Management toward Complete Elimination of Wastewater Non-compliance, based on the non-compliance incidents and near misses* that had occurred in the past 10 years at Toyota and Toyota Group companies.

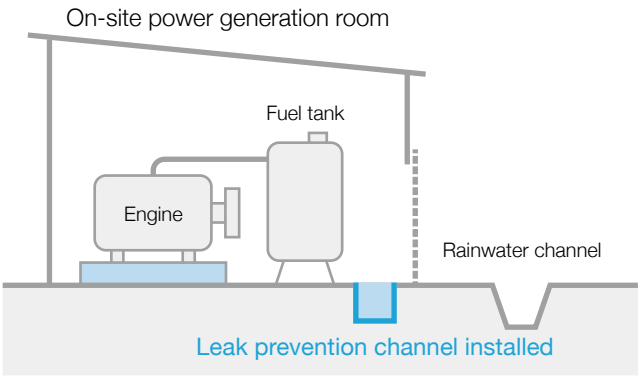
Collection of Focal Points toward Complete Elimination of Wastewater Non-compliance – For the Operations

Following "For the Facilities and Management" created in FY2014, we created "For the Operations" in FY2015 and applied it to prevention activities in educational platforms.

For those non-compliance near misses that were considered serious and needed to be shared through *yokoten* (sharing) with other affiliates, we investigated the root causes, and developed and promoted recurrence prevention measures through the Company-wide Environmental Secretariat Meeting. At the remote facilities that are not easy to be observed daily, such as employee dormitories, company-owned employee housing, and recreational facilities, we systematically implemented the risk-reduction measures that we had been working on since FY2014, such as leak prevention from facilities that use oils and fats.

The detailed operating status of these measures is checked on-site through environmental audits, and the PDCA cycle is used to make improvements.

* Non-compliance near misses: Cases that pose high potential risks even though they did not result in incidents



Leak prevention from facilities that use oils and fats

Reporting and Storing Electrical Devices Containing PCBs

Since FY2005, Toyota has been using outside subcontractors to process electrical devices containing polychlorinated biphenyl (PCB). To date, 5,243 transformers and condensers have already been processed. The remaining four units will be handled on an outsourcing basis in FY2016 and beyond.

Groundwater-related Measures

In 1997, Toyota completed the implementation of measures to prevent outflow of groundwater at six production plants.

Toyota is continuing groundwater remediation using pump and aeration treatment without exceeding the standards. The levels of trichloroethylene are reported to the government and also to local councils in the surrounding communities.

Trichloroethylene Levels

Plant	Levels of Groundwater before Remediation
Honsha	Less than 0.002-1.32
Motomachi	Less than 0.002-0.16
Kamigo	Less than 0.002-0.12
Takaoka	Less than 0.002-0.45
Miyoshi	Less than 0.002-0.11
Tsutsumi	Less than 0.002-0.54

Environmental standards: 0.01
Unit: mg/L

Note 1: Measurements are taken at all Toyota Motor Corporation plants
Note 2: Has not been detected in plants other than those listed
Note 3: The level has a range since each plant includes multiple measurement points

Further Strengthen Global Employee Education and Awareness Activities

Raising Environmental Awareness with Global Environment Month

In line with the Japanese government's designation of the month of June as the Environment Month, Toyota also designated the month of June as "Toyota Environment Month" in 1973, and began to carry out a variety of environment-related employee education and awareness-raising activities. In 1991, Toyota changed the name to "Global Environment Month" and expanded its activities globally. Toyota ensures that all employees are aware of Environment Month by displaying a common poster at all global sites, as well as making event-related notifications and posting the Toyota President's message on monitors at various locations throughout company sites and on the Intranet.

As one example, Toyota held an environment lecture, inviting outside speakers. Toyota is also working to raise the environmental awareness of its employees, for example by collaborating with the Ministry of Environment in carrying out the Light-Down Campaign. In addition to Toyota, Toyota Group companies, dealers, and overseas affiliates also participate in the Environment Month activities. Many of them organize unique events, such as environment-related photo contests and quizzes, and enthusiastically carry out other creative activities.

Starting in FY2015, Toyota enhanced its environmental education for newly hired employees. In addition to conventional classroom learning, these employees also participate in group discussions to help them think about environmental issues as their own problems. Time is also allocated to allow each employee to talk about the environment-related dreams and ambitions they want to realize.

Toyota Motor Corporation Australia (TMCA), a manufacturing affiliate, participating in National Tree Day, a tree-planting event organized by local NPO "Planet Ark"


Group presentation by newly hired employees during environmental education

Enhance Active Disclosure of Environmental Information and Communication

Information Disclosure by Overseas Affiliates

Toyota's overseas consolidated subsidiaries actively disseminate and disclose their environmental information through their environmental reports and websites to ensure excellent communication with their wide range of stakeholders.


Argentina

Australia


Brazil


China


Europe

India

Indonesia


Malaysia
* Issued in the UMW Holding Report


New Zealand

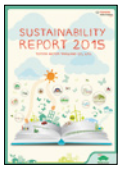
North America


South Africa

The Philippines


Taiwan (Kuozui)

Taiwan (Hotai)



Thailand


Vietnam

Environmental Information Available Online


Environmental Initiatives website

Web http://www.toyota-global.com/sustainability/environment/


All Toyota Green Wave Project


Automobiles and Recycling


Toyota's Afforestation Initiative


Toyota Environmental Activities Grant Program

Appendix

Status of Major Environmental Data for FY2015

Area	Item	Key indicator (unit)		FY1990	FY1995	FY1998	FY2001	FY2013	FY2014	FY2015	Related pages
Product	Exhaust gases ☑	Percentage of total production that achieves emission levels 50% lower than 2005 gasoline standards		-	-	-	-	2.4%	2.4%	1.8%	44
		Percentage of total production that achieves emission levels 75% lower than 2005 gasoline standards		-	-	-	-	97.2%	97.4%	96.8%	
	Clean-energy vehicles	Number of units sold [units]		-	-	-	-	718,541	646,258	639,766	-
			Electric vehicles [units]	-	-	-	-	0	0	0	
			Hybrid vehicles [units]	-	-	-	-	718,497	646,250	639,766	
			CNG vehicles [units]	-	-	-	-	44	8	0	
	Average fuel efficiency by weight category [km/L] (gasoline-powered passenger vehicles) ☑	JC08 test-drive mode	601—740 kg	-	-	-	-	32.4	34.8	35.2	12
			741—855 kg					27.7	28.5	28.6	
			856—970 kg					20.9	24.1	23.9	
			971—1,080 kg					26.9	29.2	26.8	
			1,081—1,195 kg					25.1	26.6	28.4	
			1,196—1,310 kg					17.2	17.4	17.2	
			1,311—1,420 kg					25.9	25.9	26.3	
			1,421—1,530 kg					21.4	21.9	23.0	
			1,531—1,650 kg					16.0	18.4	18.0	
			1,651—1,760 kg					18.0	17.2	16.9	
			1,761—1,870 kg					12.8	15.6	15.6	
			1,871—1,990 kg					10.7	10.9	11.5	
			1,991—2,100 kg					9.8	9.9	11.1	
			2,101—2,270 kg					12.5	11.8	13.2	
			2,271 kg—					7.9	7.8	7.9	
Production	CO_2 (Note 1) ☑	Total emissions volume [calculated in CO_2 equivalent in million tons]		2.11 (Note 3)	-	-	-	1.20	1.18	1.15	23
		Emissions volume per unit produced [calculated in CO_2 equivalent in tons/unit]		-	-	-	0.731	0.414	0.413	0.408	
	Substances of concern ☑	VOC emissions volume per body area [g/m²]		-	-	64	-	19	18	16	44
	Waste (Note 2) ☑	Volume of waste per unit produced [kg/unit]		-	-	-	29.5	12.4	12.5	12.5	31
Re-cycling	Recycling rate ☑	Vehicle recycling/recovery rate [%]		-	-	-	-	99	99	99	30

Note 1: Since non-production bases were also brought under the scope of the reduction goals in FY2005, figures include company-wide emissions from FY1990
Note 2: Zero landfill waste was achieved in FY2000 and has been maintained ever since
Note 3: Total figure for the period from January to December 1990

For information on indices other than in the environmental data listed above, please visit the webpage below:

Web http://www.toyota-global.com/sustainability/environment/data/

Global CO_2 Emissions (FY2015)

By region		CO_2 emissions
Toyota Motor Corporation (TMC)	(Million tons)	1.55
Japan (excluding TMC)	(Million tons)	4.30
North America	(Million tons)	0.97
China	(Million tons)	0.67
Europe	(Million tons)	0.27
Asia (excluding Japan), Australia, Middle East, South Africa, Latin America	(Million tons)	0.72
Total emissions	(Million tons)	8.48
CO_2 emissions per unit produced	(Tons/unit)	0.834

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Note 1: TMC and 121 companies (consolidated subsidiaries and other companies in Japan and overseas)
Japan: Companies listed in Groups 1–5 on page 42 (including sub-subsidiaries; excluding Toyota Tsusho)
Overseas: Production companies and production/sales companies listed on page 42
Note 2: The CO_2 emissions were calculated using the Greenhouse Gas (GHG) Protocol CO_2 conversion coefficient.
- Emissions from electric power were calculated using the 2013 conversion coefficient from the IEA's CO_2 Emissions from Fuel Combustion (2015 edition).
- For items other than electric power, the conversion coefficients used were those quoted in IPCC 2006, 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Prepared by the National Greenhouse Gas Inventories Programme, Eggleston H.S., Buendia L., Miwa K., Ngara T. and Tanabe K. (eds). Published: IGES, Japan.
  * For natural gas, steam, hot water, cold water, and coke-oven gas, the conversion coefficients used were those quoted in the Japanese Act on Promotion of Global Warming Countermeasures.

Independent Practitioner's Assurance Report

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(TRANSLATION)

Independent Practitioner's Assurance Report

August 10, 2016

Mr. Akio Toyoda,
President,
Toyota Motor Corporation

Hiroshi Inanaga
Chief Executive Officer
Deloitte Tohmatsu Evaluation and Certification Organization Co., Ltd.
3-3-1, Marunouchi, Chiyoda-ku, Tokyo

We have undertaken a limited assurance engagement of the quantitative environmental information (the "quantitative environmental information") indicated with ☑ for the year ended March 31, 2016 included in the "Environmental Report 2016" (the "Report") of Toyota Motor Corporation (the "Company").

The Company's Responsibility

The Company is responsible for the preparation of the quantitative environmental information in accordance with the calculation and reporting standard adopted by the Company (as described in the footnotes of graphs and tables, etc., included in the quantitative environmental information). CO_2 emissions quantification is subject to inherent uncertainty for reasons such as incomplete scientific knowledge used to determine emissions factors and numerical data.

Our Independence and Quality Control

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. We apply International Standard on Quality Control 1, *Quality Control for Firms that Perform Audits and Reviews of Financial Statements, and Other Assurance and Related Services Engagements*, and accordingly maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Our Responsibility

Our responsibility is to express a limited assurance conclusion on the quantitative environmental information based on the procedures we have performed and the evidence we have obtained. We conducted our limited assurance engagement in accordance with the International Standard on Assurance Engagements ("ISAE") 3000, *Assurance Engagements Other than Audits or Reviews of Historical Financial Information*, issued by the International Auditing and Assurance Standards Board ("IAASB"), ISAE 3410, *Assurance Engagements on Greenhouse Gas Statements*, issued by the IAASB and *the Practical Guideline for the Assurance of Sustainability Information*, issued by the Japanese Association of Assurance Organizations for Sustainability Information.

The procedures we performed were based on our professional judgment and included inquiries, observation of processes performed, inspection of documents, analytical procedures, evaluating the appropriateness of quantification methods and reporting policies, and agreeing or reconciling with underlying records. These procedures also included the following:

- Evaluating whether the Company's methods for estimates are appropriate and had been consistently applied. However, our procedures did not include testing the data on which the estimates are based or reperforming the estimates.
- Undertaking site visits to assess the completeness of the data, data collection methods, source data and relevant assumptions applicable to the sites.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement.

Limited Assurance Conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Company's quantitative environmental information is not prepared, in all material respects, in accordance with the calculation and reporting standard adopted by the Company.

The above represents a translation, for convenience only, of the original Independent Practitioner's Assurance report issued in the Japanese language.

Member of
Deloitte Touche Tohmatsu Limited

TOYOTA MOTOR CORPORATION

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