

# Toyota Environmental Challenge 2050

Toyota has promoted a wide range of initiatives to address increasingly severe global environmental issues, such as extreme weather phenomena attributed to greenhouse gas emissions, biodiversity depletion due to development, and water shortages caused by population growth. The Toyota Environmental Challenge 2050 was announced in October 2015 as a means of contributing to the realization of a sustainable society. The challenge reaffirms our commitment to reducing the environmental burden of automobiles to as close to zero as possible, while developing measures to contribute to positive impact on the Earth and its societies.



## Achieving Zero CO<sub>2</sub> Emissions: Challenge of Achieving Zero × Benefitting the Earth: Net Positive Impact Challenge

**1** **CO<sub>2</sub> 0**  
**New Vehicle Zero CO<sub>2</sub> Emissions Challenge**  
 Reduce global average CO<sub>2</sub> emissions from new vehicles by 90% from Toyota's 2010 global level

### Actions

Accelerate widespread use of next-generation vehicles to save energy and utilize a diverse range of fuels

- Accelerate global expansion of hybrid vehicles and plug-in hybrid vehicles
- Accelerate widespread use of fuel cell, electric, and other zero-emissions\*1 vehicles

\*1 Zero emissions: Complete elimination of harmful exhaust gas emissions. In recent years, zero emission vehicles refer to EVs and FCVs, which do not emit CO<sub>2</sub> at all. In the environment field, zero emission means complete elimination of incinerated waste and landfill waste.

**2** **CO<sub>2</sub> 0**  
**Life Cycle Zero CO<sub>2</sub> Emissions Challenge**  
 Completely eliminate all CO<sub>2</sub> emissions from the entire vehicle life cycle

### Actions

Reduce CO<sub>2</sub> emissions along the entire vehicle life cycle, from materials production, parts and vehicle manufacturing to driving and disposal stage

- Reduce CO<sub>2</sub> emissions during materials production by developing and expanding use of low-emission materials
- Promote eco-friendly actions through wider use of recycled materials

**3** **CO<sub>2</sub> 0**  
**Plant Zero CO<sub>2</sub> Emissions Challenge**  
 Achieve zero CO<sub>2</sub> emissions at all plants by 2050

### Actions

At all production plants, develop and adopt low-CO<sub>2</sub> technologies and implement daily *kaizen*, while promoting the use of renewable energy and hydrogen

- Reduce energy consumption to one third or less by simplifying and streamlining production processes and taking innovative energy-saving measures
- Adopt renewable energies at plants, including the use of wind power produced on-site at our Tahara Plant by around 2020

**4** **Challenge of Minimizing and Optimizing Water Usage**  
 Minimize water consumption and implement wastewater management based on individual local conditions

### Actions

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

- Manage wastewater quality by complying with strict standards, improving the local environment by returning clean water

**5** **Challenge of Establishing a Recycling-based Society and Systems**  
 Promote global deployment of End-of-life vehicle treatment and recycling technologies and systems developed in Japan

### Actions

Establish a recycling-based society with four key features: use eco-friendly materials; use auto parts longer; develop recycling technologies; and manufacture vehicles from End-of-life vehicles

Two global projects started in 2016:

- Toyota Global 100 Dismantlers\*2 Project
- Toyota Global Car-to-Car Recycle Project

\*2 Dismantlers: Auto-dismantling businesses operators

**6** **Challenge of Establishing a Future Society in Harmony with Nature**  
 Connect nature conservation activities beyond the Toyota Group and its business partners among communities, with the world, to the future

### Actions

Enhance Toyota's long-standing nature conservation activities in the areas of nature fostering, environmental grants, and environmental education. Develop three "connecting" projects started in 2016, sharing our know-how and environmental experiences

- Connecting communities: Toyota Green Wave Project
- Connecting with the world: Toyota Today for Tomorrow Project
- Connecting to the future: Toyota ESD\*3 Project

\*3: ESD: Education for Sustainable Development

## Processes to Identify and Implement the Key Challenges (Materiality)

Environmental challenges may involve both business risks and opportunities. It is therefore essential to identify key challenges (materiality) from both risk and opportunity perspectives when formulating a long-term vision. In order to grasp the potential risks and business opportunities, Toyota has collected information, analyzing and identifying environmental challenges from the standpoints of their importance for both stakeholders and our business.

For the implementation phase, we have created the Sixth Toyota Environmental Action Plan to carry out the company-wide specific initiatives to accomplish the Six Challenges under the Toyota Environmental Challenge 2050.

### Step

1

#### Collect and Analyze Information

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We examined a wide range of global trends in collecting and analyzing information. These include scientific predictions for the environment in 2050, global frameworks and policy trends, development in emerging countries, major index from external rating agencies, and world leaders' remarks on environmental issues at G7 Summits. This broad examination provided us with an understanding of macroeconomic trends and important needs of societies, leading us to grasp potential risks and opportunities.

### Step

2

#### Identify Environmental Challenges (Materiality)

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We identified environmental challenges (materiality) through analysis of both the external and internal environments. Our analysis of the external environment is derived from ESG investor and research organization surveys and major indices, along with communication with stakeholders including international organizations, NGOs, and consumers, while the internal analysis is based on the Guiding Principles at Toyota, the Toyota Earth Charter, and discussions among internal related divisions.

### Step

3

#### Identify Key Challenges (Materiality)

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We identified the key environmental challenges (materiality) by considering two aspects, which are the influence on stakeholders, and impacts on our potential business risks and opportunities. This helped us prioritize the importance of key challenges.

### Step

4

#### Toyota Environmental Challenge 2050 Approval, Regular Review, and Information Disclosure

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High priority challenges for both stakeholders and Toyota were formulated in the Toyota Environmental Challenge 2050 (Six Challenges) and approved by the Corporate Planning Meeting, which decides our medium- to long-term strategies. Steady implementation of our challenges requires management's recognition of environmental activities as potential business opportunities and effective investments, in addition to involving Group companies to strengthen collaboration with our business partners. We will review and evaluate our action plans on a regular basis.

## The Sixth Toyota Environmental Action Plan: Action Plan to Implement the Six Challenges

The Toyota Environmental Action Plan defines the Toyota Earth Charter in specific corporate activities to ensure steady progress of our goals. We created the First Toyota Environmental Action Plan in 1993, followed by a review every five years afterwards to implement our plans.

The Sixth Toyota Environmental Action Plan clearly defines the initiatives to be implemented between FY2016 and 2020 in order to meet the Six Challenges of the Toyota Environmental Challenge 2050.

Toyota will contribute to the sustainable development of society and the Earth in harmony with the global environment through *monozukuri* (manufacturing), car manufacturing, providing products and services.