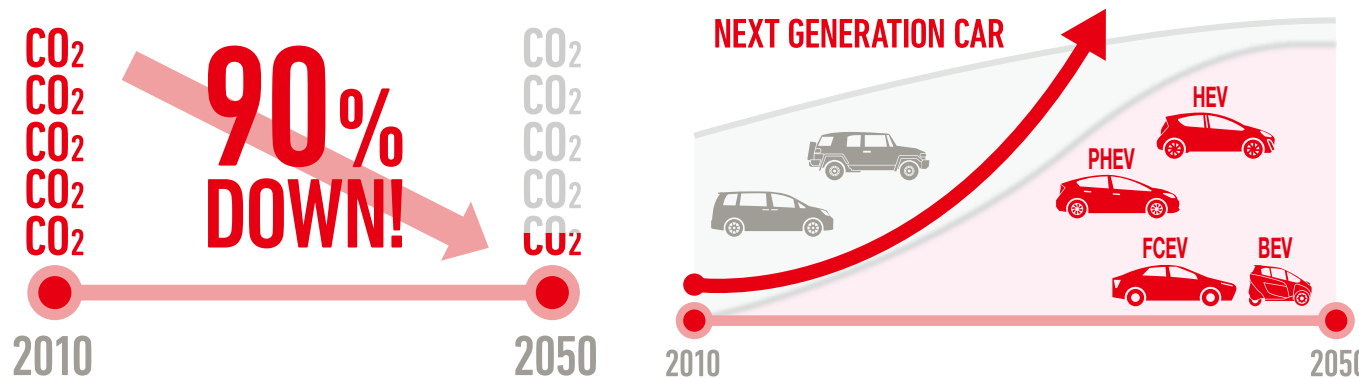


Challenge 1 **New Vehicle Zero CO₂ Emissions Challenge**

Fundamental Approach Extreme weather phenomena around the world are wreaking havoc on society, attesting to the reality of global warming. If adequate measures are not taken, the harm will become even more severe, and the risks of global-scale damage have been pointed out. It has been reported* that if further efforts are not made to reduce greenhouse gas emissions and current conditions remain unchanged, average global temperatures could rise by 3.7 to 4.8°C by 2100 compared to pre-industrial levels and that in order to keep the temperature increase to less than 2°C, reducing CO₂ emissions to zero will not be enough—we must reduce emissions to less than zero. Amid global efforts to hold the temperature rise less than 2°C, Toyota sees this situation as both a risk and an opportunity and announced the “New Vehicle Zero CO₂ Challenge.” Toyota will strive to slash average CO₂ emissions per vehicle by 90 percent in comparison with 2010 levels, by 2050.

Based on the idea that eco-friendly vehicles contribute to society only when they come into widespread use, we are not only deploying technologies for conventional engine vehicles, but also accelerating advances in technology and its widespread adoption for the electrified vehicles that Toyota has been developing (including hybrid electric vehicles (HEVs), plug-in hybrid electric vehicles (PHEVs), battery electric vehicles (BEVs), and fuel cell electric vehicles (FCEVs)). Toyota is committed to continue working hand in hand with stakeholders to build the necessary infrastructure that supports the widespread adoption of these vehicles.

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



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

Eco-friendly Vehicles Contribute to the Environment Only When They Come into Widespread Use

Toyota has undertaken serious measures to address global environmental issues including global warming, air pollution, and resource and energy problems. In order to solve these social issues, we believe that effective vehicle electrification is essential for the efficient use of energy, and encouraging the use of alternative fuels. Based on the belief that eco-friendly vehicles can contribute to the environment only when they come into widespread use, Toyota has taken the initiative in developing and promoting the use of electrified vehicles. In 1997, we launched the Prius, a predecessor to electrified vehicles, and over the following 20 years, we have improved the performance of the Toyota Hybrid System (THS) and expanded the models on which it is used, developed electrified vehicles based on hybrid technologies, and supported the widespread adoption of these technologies.

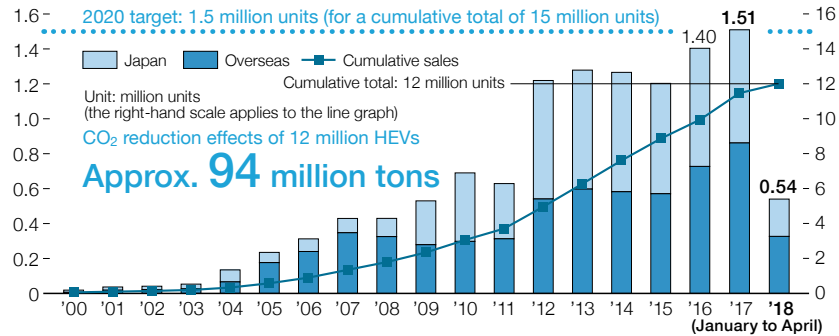
In December 2017, we announced the “challenge to promote widespread use of electrified vehicles” covering the period from 2020 to 2030 and are working to encourage broader adoption.

Challenge to Promote Widespread Use of Electrified Vehicles

We aim to achieve global sales of at least 5.5 million electrified vehicles including at least 1 million zero-emission BEVs and FCEVs by 2030. We will expand dedicated electrified models and electric options through about 2025 and will have no vehicles available only as an engine model globally. Starting in 2020, we will accelerate the introduction of BEVs, initially in China, and will expand BEV models to at least 10 in the first half of the decade worldwide. We will also expand the lineup of FCEVs and PHEVs throughout the 2020s. With regard to HEVs, we will raise the efficiency of the THS II while developing various types of hybrid systems such as high-power and simplified versions, expanding the product line-up to meet customer needs.

Annual HEV Sales and Cumulative Sales (Global)

Third-Party Assurance



Column SORA Production Model Fuel Cell Electric Vehicle Bus Launched

Toyota obtained vehicle type certification for the SORA fuel cell electric vehicle (FCEV) bus, a first for a fuel cell electric vehicle bus in Japan, in March 2018. Precisely because the SORA is a vehicle that works for society, the environment has been taken into consideration and it is equipped with the Toyota Fuel Cell System, which can be used as a power supply in the event of a disaster.

Toyota considers FCEVs, which emit no CO₂ or substances of concern during operation and have the potential to achieve massive CO₂ reductions through the use of CO₂-free hydrogen derived from renewable energy, to be core next-generation eco-friendly vehicles.

Toyota plans to deliver at least 100 FCEV buses, primarily in Tokyo, in advance of the Olympic and Paralympic Games Tokyo 2020. We expect that as FCEV buses operating in urban areas increase, understanding of the FCEV buses among the general public will rise.



Column Toyota Achieves the 2020 Sales Target for HEVs Under the Toyota Environmental Challenge 2050, Three Years Ahead of Schedule

Sales of HEVs reached 1.51 million units, a record high in 2017. We achieved the Toyota Environmental Challenge 2050 target for HEV sales in a single year—1.5 million units by 2020—three years ahead of schedule. In addition, cumulative HEV sales since the launch of the Prius in 1997 reached 12 million units (as of April 2018).

Developing Technologies to Achieve the Leading Fuel Efficiency Performance

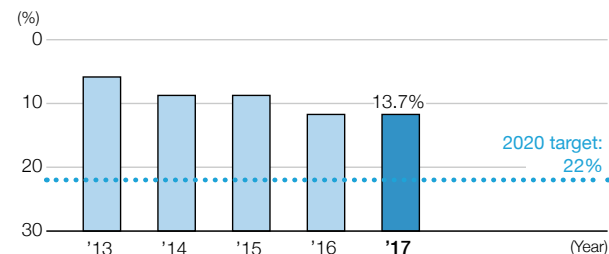
Toyota is committed to reducing the global average CO₂ emissions from new vehicles more than 22 percent by 2020 from the 2010 level to steadily proceed with our challenge. As specific initiatives, we will further improve the environmental performance of electrified vehicles and expand their use in line with developing and deploying powertrains with high environmental performance, based on our next-generation platform strategy known as TNGA*.

In August 2017, Toyota launched the new Camry, which boasts vastly improved fuel efficiency performance, in Japan. We are expanding hybrid systems, including the October 2017 launch of the JPN TAXI equipped with the newly-developed liquefied petroleum gas (LPG) hybrid system. Along with measures to improve the environmental performance of conventional engine vehicles, we are conducting steady development to achieve our 2020 targets.

* Toyota New Global Architecture (TNGA): Toyota's company-wide global program to structurally transform automobile design. The goal of TNGA is to dramatically improve the basic performance and marketability of Toyota vehicles by reforming and integrally redesigning powertrain components and vehicle platforms.

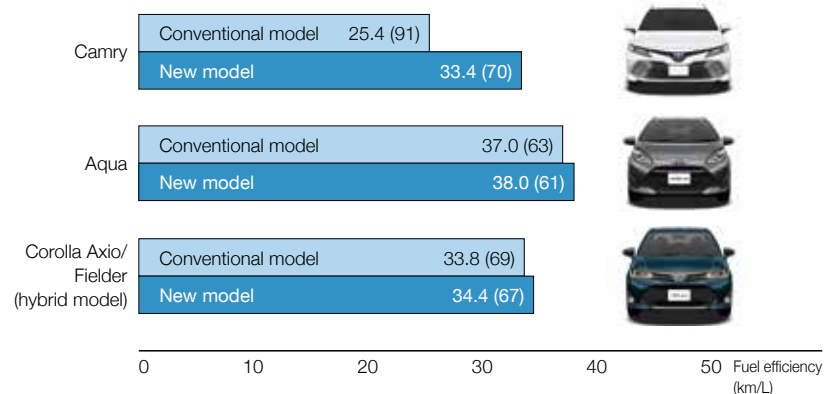
Global Average CO₂ Emissions from New Vehicles Reduction Rate Versus 2010 (Japan, U.S., Europe, China)

Third-Party Assurance



• The average CO₂ emissions (g/km) of new vehicles in each year, based on the fuel efficiency value (CO₂ emissions) certified by each national authority

Fuel Efficiency Comparison Between Selected New Models Introduced in FY2018 (in Japan) and Old Models



- Fuel efficiency values are based on JC08 test cycle verified by (Ministry of Land, Infrastructure, Transport and Tourism of Japan)
- CO₂ emissions (g/km) in brackets

Column JPN TAXI with Exclusive LPG Hybrid Engine Launched

Toyota launched the JPN TAXI in October 2017. The JPN TAXI embodies the spirit of Japanese hospitality and was developed specifically for use as a taxi to provide usability and comfort to a wide range of people including children, seniors, wheelchair users, and visitors to Japan from abroad. The aim is to change the landscape of Japan, develop barrier-free cities, and contribute to the environment through the widespread use of the JPN TAXI. With regard to environmental performance, the JPN TAXI achieved low fuel consumption of 19.4 km/L in the JC08 test cycle by employing a newly developed LPG hybrid system that runs on LPG based on the THS II hybrid system that Toyota developed over many years. This is approximately double the fuel efficiency of the Crown Comfort (9.8 km/L in 10.15 mode), which has been sold for use as a taxi until now.



Column New 2.0-Liter Class TNGA-based Powertrain Developed

Toyota has been developing and promoting the use of new powertrains and platforms that offer both superb driving performance and high environmental performance based on the TNGA, a development framework aimed at making ever-better cars. Toyota has developed a new 2.0-liter engine, 2.0-liter hybrid system, transmissions (CVT and six-speed manual), and 4WD systems.

Going forward, Toyota will expand models equipped with TNGA powertrains globally, with a target of approximately 80 percent¹ of annual vehicles sales by 2023. Toyota forecasts these TNGA powertrains will have CO₂ reduction effects of at least 18 percent².

■ The new Dynamic Force (2.0L) 2.0-liter direct-injection, inline 4-cylinder gasoline engine
The new 2.0-liter direct-injection, inline 4-cylinder gasoline engine, known as the 2.0-liter Dynamic Force Engine, employs high-speed combustion technology, a variable control system, and other features, achieving the world's highest thermal efficiencies of 41 percent for hybrid vehicles and 40 percent for gasoline vehicles.

■ New 2.0-liter Toyota Hybrid System (THS II)
Toyota has developed the new 2.0-liter Toyota Hybrid System (THS II). This new system preserves the compact, lightweight, and low-loss technologies adopted on the fourth-generation Prius and enhances driving performance while maintaining high environmental performance.

■ New Direct Shift-CVT continuously variable transmission
The new Direct Shift-CVT continuously variable transmission reduces mechanical loss and adopts a wider gear range, achieving transmission efficiency and transmission gear ratio range at the world's highest levels in its class, and improving fuel efficiency by 6 percent.

■ New six-speed manual transmission
The new six-speed manual transmission has been developed to meet needs in Europe and around the world. Compared to conventional products, this new transmission is 7 kg lighter and features a world-leading compact size, contributing to improved fuel efficiency.

■ New Dynamic Torque Vectoring AWD 4WD System
The new Dynamic Torque Vectoring AWD system, a 4WD system for use on gasoline engine vehicles, adopts the ratchet-type dog clutches for the first time in the world. When operating in 2WD mode, the clutches stop rotation of the drive system that transmits driving force to the real wheels, substantially reducing losses.

¹ Toyota-brand sales volume in Japan, the U.S., Europe, and China
² The reduction rate in 2023 compared to average CO₂ emissions per new vehicle sold by Toyota in 2015



Toyota Marks 20th Anniversary of Prius Launch

Since its launch in 1997 as the world's first mass-produced hybrid passenger vehicle, the Prius has endeavored to carve open a new era. It celebrated its 20th anniversary in 2017. The Prius name, derived from the Latin for "to go before," was adopted to embody the idea of a vehicle that will shape the future of the Earth. The Prius has gained the support of many customers who are in agreement with this concept. Based on the concept that eco-friendly vehicles can contribute to society only when they come into widespread use, the Prius and the electrified vehicles that have inherited environmental technologies will strive to contribute to the global environment with the support of its many users.

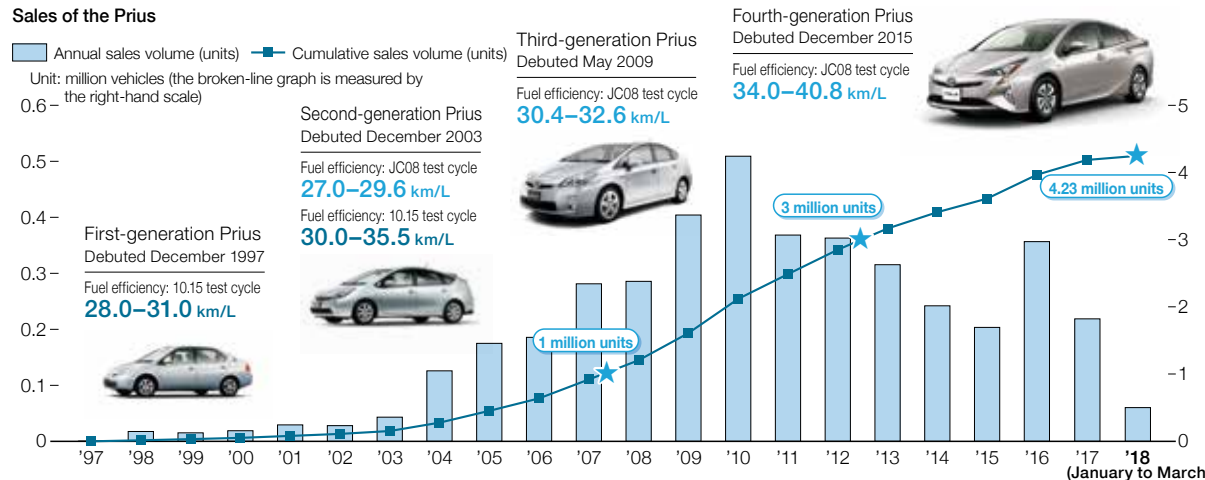
Looking Back on the Birth of the Prius

The development of the first-generation Prius had a two-fold mission: build a car for the 21st century and transform the way Toyota makes cars. Among the many issues facing the automotive world at the time, we anchored our efforts on two themes—the environment and natural resources. We faced numerous hardships developing an unprecedented vehicle, but we announced the first-generation Prius in October 1997 under the banner "In time for the 21st century" in advance of COP3 (the third United Nations Framework Convention on Climate Change, where the Kyoto Protocol was adopted).

The Prius boasted fuel efficiency approximately double that of gasoline vehicles in the same class at the time and was a pioneering first step not just for the widespread adoption of Toyota hybrid electric vehicles, but also for the current global trend toward widespread use of electrified vehicles.

With each new generation, Toyota is enhancing environmental and driving performance and has increased the number of units sold.

Sales of the Prius



Inheriting Hybrid Technologies

The Toyota Hybrid System (THS) adopted on the first-generation Prius evolved into the second-generation THS II, and later, use was expanded to other models. Toyota positions hybrid technologies as core technologies and is developing a range of electrified vehicles including PHEVs, BEVs, and FCEVs.

Each type of electrified vehicles has its own characteristics and each alternative fuel also has unique strengths and weaknesses. Furthermore, energy conditions and policies vary among countries and regions, and accordingly, Toyota is creating mobility opportunities with an emphasis on energy efficiency by developing and promoting the use of vehicles optimized for each application and each country and region.

