[Public-Private Forum]
Country Report (Japan)

December, 2021

Engineering and Environmental Policy
Division, Road Transport Bureau

Contents

1. Safety Measures for Automobiles

1. (1) Overview of Traffic Accidents and Governmental Goals

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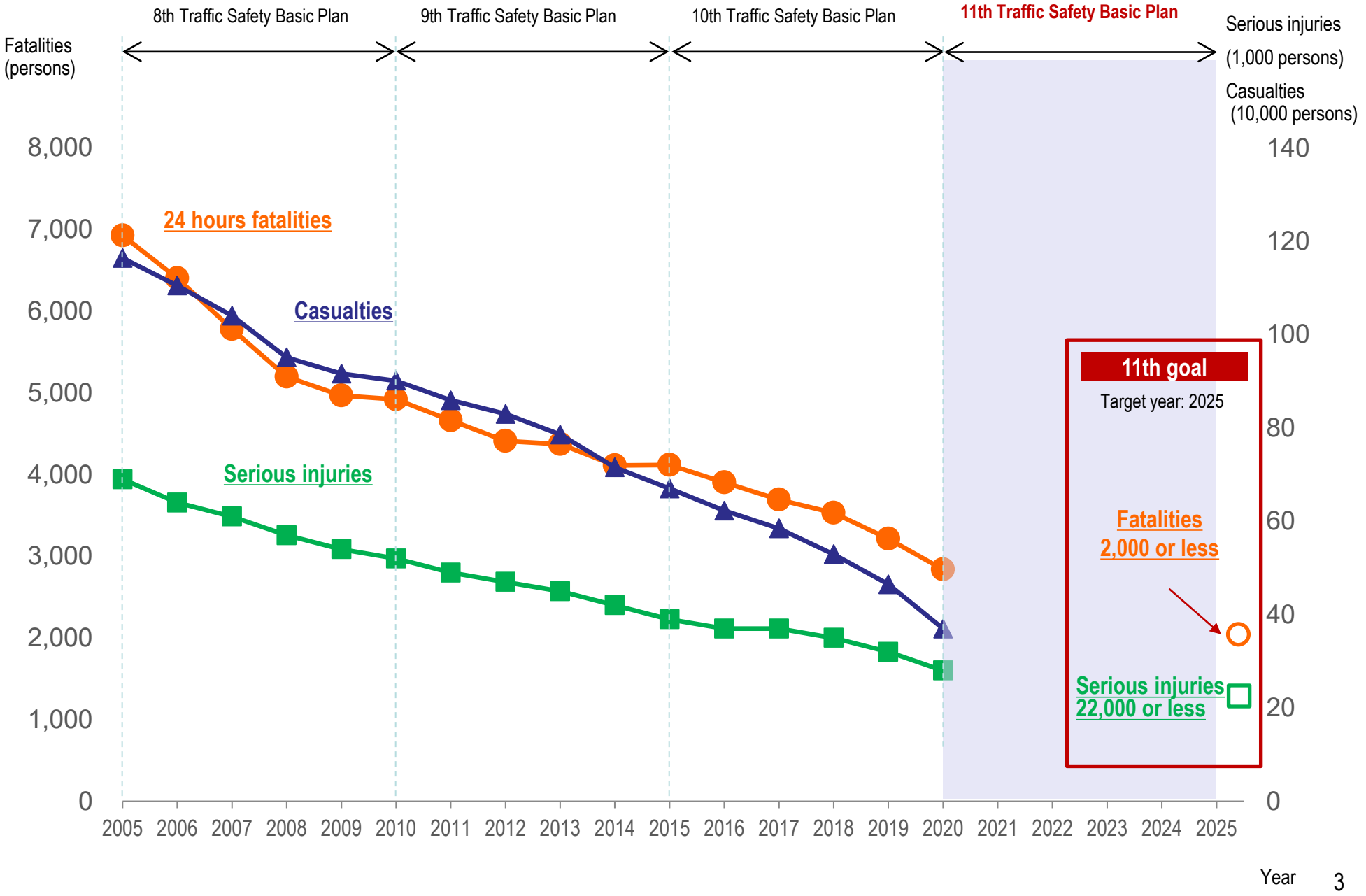

1. (2) Promotion of Vehicle Safety Measures

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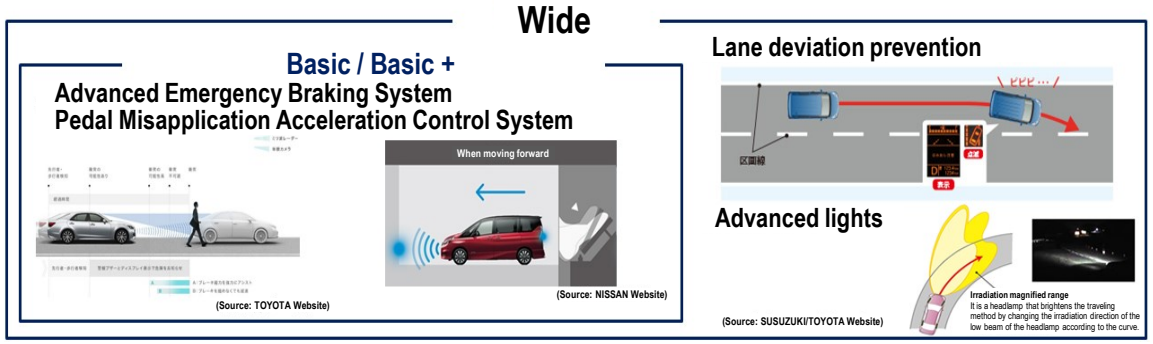
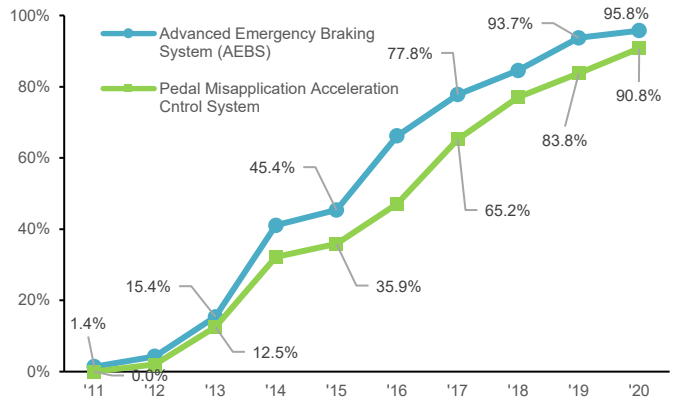
○ Based on the fatal accidents caused by elderly drivers, it is necessary for the public and private sectors to work together to prevent traffic accidents caused by elderly drivers.

1. Concept of "Safe driving support car"

Passenger cars equipped with advanced safety technologies such as "Advanced Emergency Braking System" and "Pedal Misapplication Acceleration Control System"



<Goal> Increase the rate of new passenger car installation of the Advanced Emergency Braking System (AEBS) to 90% or more by 2020



- It is obliged to equip AEBS to new passenger cars from November 2021.

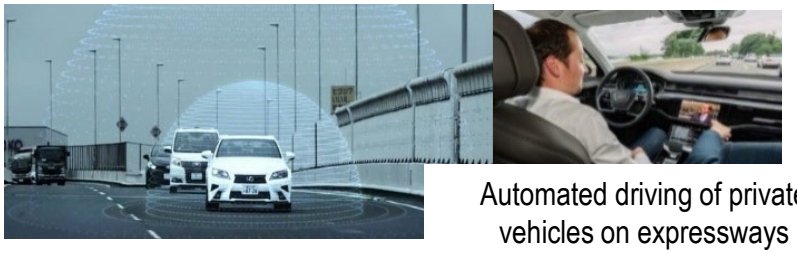
2. Dissemination and enlightenment of "safe driving support car," etc.

◆ Nicknamed (Safety Support Car (abbreviation: Suppo-car)), the public and private sectors are working together to promote dissemination and enlightenment.

◆ Car manufacturers are requested to expand the equipment of advanced safety technology to new cars and to develop safe driving support devices to be equipped additionally.

1. (3) Promotion of Automated Driving

The Parliament in May 2019 amended the Road Transport Vehicle Act as a development of necessary legal system based on the discussions at WP.29.



Automated driving of private vehicles on expressways

Amendment to Road Transport Vehicle Act

Enacted in May 2019
Enforcement in April 2020

- "Automated driving system" was added to systems subject to Safety Regulations for motor vehicles
  - To be implemented the function of Automatically Lane Keeping System (ALKS) on expressway, etc.
  - To take measures to ensure cyber security to prevent unauthorized access, etc.
- MLIT defines the conditions (speed, route, weather, etc.) which is used the automated driving system.
- Establishment of authorization system for modification of the program incorporated in the automated driving system, etc.

* The Road Traffic Act has also been amended to support automated driving level 3.

1. (4) Review of Automobile Inspection Regulations

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- **From October 1, 2021, "OBD (On-Board Diagnostics) diagnosis results"** is added to the inspection items of the periodic inspection regulations for automobiles, and it is obliged to connect a scan tool to inspect * in annual basis.
  * A visual inspection such as the identification display to be diagnosed can be used in alternative.

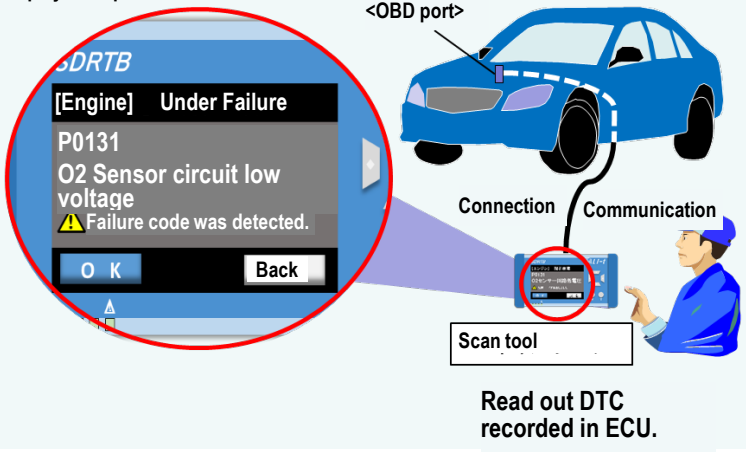
<Target car>

- Ordinary car, small car, light car
  * Excluding towed cars and motorcycles

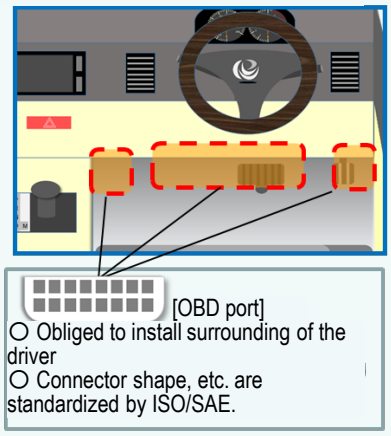
<Inspection method>

- Inspect by connecting the connection part of the scan tool to the on-board diagnostics and reading the diagnosis result.
  * A visual inspection such as the identification display to be diagnosed can be used in alternative.

<Display example>



<Position of OBD port (inside of the car)>



<Main target devices>
- Motor
- Braking device
- Anti-lock braking system
- Advanced emergency braking system, automatic command type steering function and automatic operation device (limited to those which warns a risk of non-compliance with the security regulations of the Road Transport Vehicle Act)

<Maintenance method>

- Carry out the maintenance based on the maintenance manual prepared by the car manufacturer. It should be noted that when carrying out maintenance, certification for the specific maintenance may be required.

1. (5) Appropriate Maintenance for Automobiles

Automobile inspection and maintenance promotion campaign

- In order for automobile users to understand the necessity of carrying out appropriate inspections and maintenance, the **"Automobile Inspection and Maintenance Promotion Campaign"** is carried out mainly by the "Inspection and Maintenance Promotion Council" consisting of the MLIT and 31 automobile-related organizations and by the "Liaison Meeting on the Prevention of Wheel Drop Accident for Large Vehicles" consisting of 15 automobile-related organizations.
- **In addition to the national unified strengthening month (September), a regional unique strengthening month (October) is set** to focus on enlightening the necessity and importance of inspection and maintenance, and how to carry out appropriate inspection and maintenance for large vehicles.

Specific efforts

Enlightenment on the necessity and importance of inspection and maintenance

- Focusing on females and young car users such as teens to 30s, enlighten the necessity and importance of inspection and maintenance.
  - Widely publicize using posters, leaflets, SNS, etc.
  - Hold events which take advantage of regional characteristics
  - Carry out the inspection and maintenance practical training, free inspections, etc.

Enlightenment on how to carry out appropriate inspections and maintenance for large vehicles

- In order to prevent wheel drop accidents of large vehicles, fire accidents of buses, etc., carry out inspections related to the mounting condition of wheels and important points such as fuel equipment.
- Inspect wheels and nuts for looseness at least once regardless of a legal inspection period.
- Enlighten the implementation of inspection and maintenance using leaflets, etc. specialized for large vehicles.

Public relations and enlightenment according to the actual situation of the region

- In collaboration with the Transport Bureau / Transport Branch Bureau and local related organizations, carry out efforts to resolve challenges related to local inspections and maintenance.

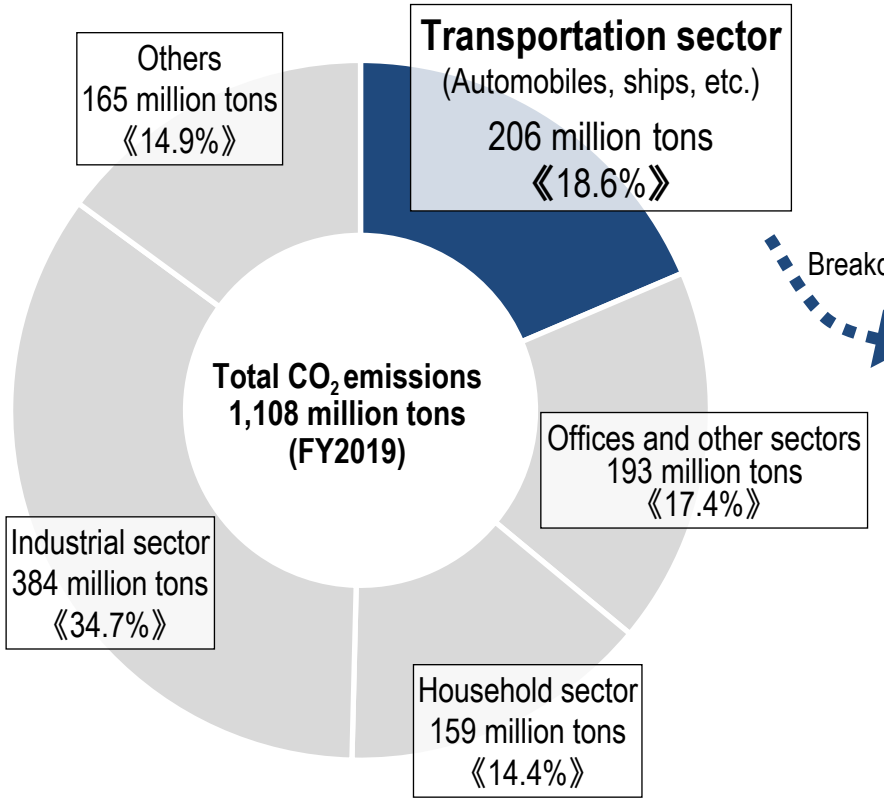
2. Environmental Measures of Automobiles

Prime Minister Suga's policy speech presented at the Diet (October 26, 2020)

I, on behalf of Japan, declare here that Japan aims to reduce its greenhouse gas emissions to zero as a whole by 2050, that is, to realize a carbon-neutral, carbon-free society in 2050.

- **18.6%** of Japan's carbon dioxide emissions (FY2019) are **from the transportation sector**.
- **86.1% of the above emissions from the transportation sector (about 16.0% of Japan's total)** are from whole of the automobile sector.

Japan's Carbon dioxide emissions by sectors



Carbon dioxide emissions from transportation sector (after allocation)

Breakdowns

- **Total automobiles account 86.1% of the transportation sector (16.0% of whole Japan)**
- **Automobiles (passenger transportation) account 49.3% of the transportation sector (9.2% of whole Japan)**
- **Automobiles (cargo transportation) account 36.8% of the transportation sector (6.8% of whole Japan)**

Buses
3.99 million tons《1.9%》
Taxis
2.23 million tons《1.1%》
Motorcycle
0.72 million tons《0.3%》
Coastal shipping
10.25 million tons《5.0%》
Aviation
10.49 million tons《5.1%》
Railway
7.87 million tons《3.8%》

Source: "Confirmed values of the greenhouse gas emission data in Japan (1990-2019)" (2021)

2. (2) Governmental Policies Shown in Green Growth Strategies

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2021 2030 2035 2040 2050

Passenger car

FY2020
Electrification ratio 40%

Electrification goal
100% new car sales

Middle and Large

Demonstration will be conducted toward the 2030 goal setting

Goal setting based on demonstrations, etc.

Electrification goal ● %
* Including cars compatible with decarbonized fuel

Profia, Hino Motors

Preceding introduction 5,000 cars

Carbon neutral

-- Total weight 8t

Small

Goal setting for 2030 and 2040

Electrification goal
20-30% new car sales

Electrification goal
100% new car sales
* Including cars compatible with decarbonized fuel

ELF, ISUZU Motor

MINICAB-MiEV, Mitsubishi Motors

2. (3) Promotion of Development and Dissemination in Eco-Friendly Automobiles

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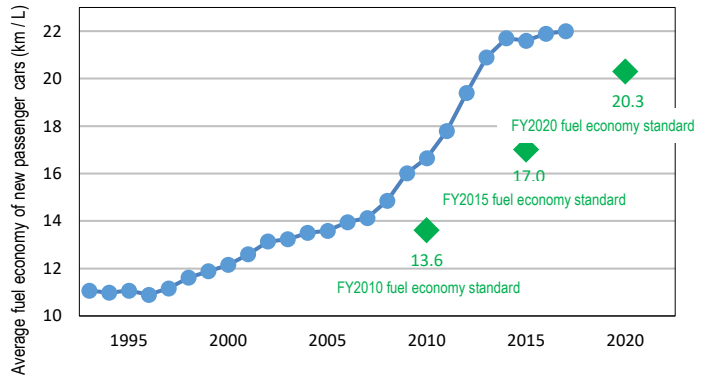
- Regarding passenger car fuel economy, the "2020 goal" was formulated in March 2013 based on the Act on the Rational Use of Energy (Energy Conservation Act), but many manufacturers have already achieved this goal.
- For this reason, at a joint meeting of MLIT and METI (chaired by Professor Masahiro Shioji, Kyoto University)*, study for the next passenger car fuel economy standards was commenced in March 2018, and in June 2019, arranged the new fuel economy standards .
- In March 2020, the domestic laws and regulations for fuel economy standards applicable to automobiles sold after 2030 were revised.



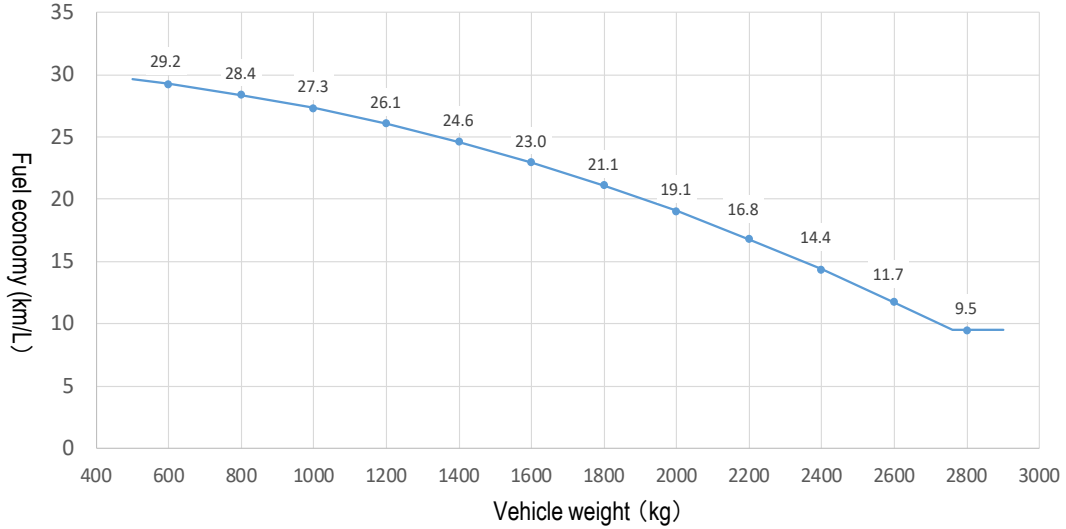
* Automobile Fuel Economy Standards Subcommittee of Transportation Policy Council and Automobile Judgment regulations WG of Comprehensive Energy Investigation Committee

FY2030 fuel economy standards

◆ Coverage : Gasoline vehicle
Diesel vehicle
LPG vehicle
Electric vehicle
Plug-in hybrid vehicle

* Underlined types are newly regulated

◆ Fuel economy standards : Average 25.4 km/L
(32.4% improvement in fuel economy compared to FY2016 results)



◆ In order to evaluate electric vehicles and plug-in hybrid vehicles, the concept of Well-to-Wheel that takes into account CO_2 during power generation and transmission / charging loss from the power plant to the vehicle will be introduced.

2. (4) Promotion of Emitted Gas Measures

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In order to tighten emission regulations for motorcycles, the relevant notifications, etc., were revised and applied from December 2020 for new models and will be applied from November 2022 for continuous production vehicles (excluding some).

Item	Regulations in 2016 (The 3rd regulations)				Regulations in 2020 (The 4th regulations)				(Reference) EURO5		
Applicable time	From 2016.10				From 2020.12				From 2020.1.1		
Emission regulation value (g/km)	Class	1	2	3	Class	1	2	3	Class	1,2 <130km/h	3 ≧130km/h
	CO	1.14	1.14	1.14	CO	**1.00**			CO	1.00	
	THC	0.30	0.20	0.17	THC	**0.10**			THC	0.100	
					NMHC	**0.068**			NMHC	0.068	
	NOx	0.07	0.07	0.09	NOx	**0.06**			NOx	0.06	
	PM	✘	✘	✘	PM	**0.0045 (DI only)**			PM	0.0045 (DI only)	
Idling	CO: 3.0% HC：1000ppm（Light 2, Small 2） 1600ppm（Motorcycle 1, Motorcycle 2）				**CO: 0.5%** HC：1000ppm（Light 2, Small 2） 1600ppm（Motorcycle 1, Motorcycle 2）				CO: 0.5% or manufacturer declaration value HC: None		
Evaporator	2g/Test				**1.5g/Test**				1.5g/Test		
Endurance	Endurance distance: 6k/8k/24k (km)				**Endurance distance: 20k/35k (km)**				Endurance distance: 20k/35k (km)		
OBD	J-OBD Circuit diagnosis (disconnection, etc.), fuel system diagnosis				**OBD Ⅱ** **Emission reduction system malfunction, deterioration detection**				OBD Ⅱ Emission reduction system malfunction, deterioration detection		

* Red: Strengthened regulations

Thank you for your attention!