Government & Industry Forum
Country Report (Japan)

January 2021

Engineering and Environmental Policy Division,
Road Transport Bureau, MLIT

Contents

1. Safety Measures for Motor Vehicles

1. (1) Overview of traffic accidents and government targets

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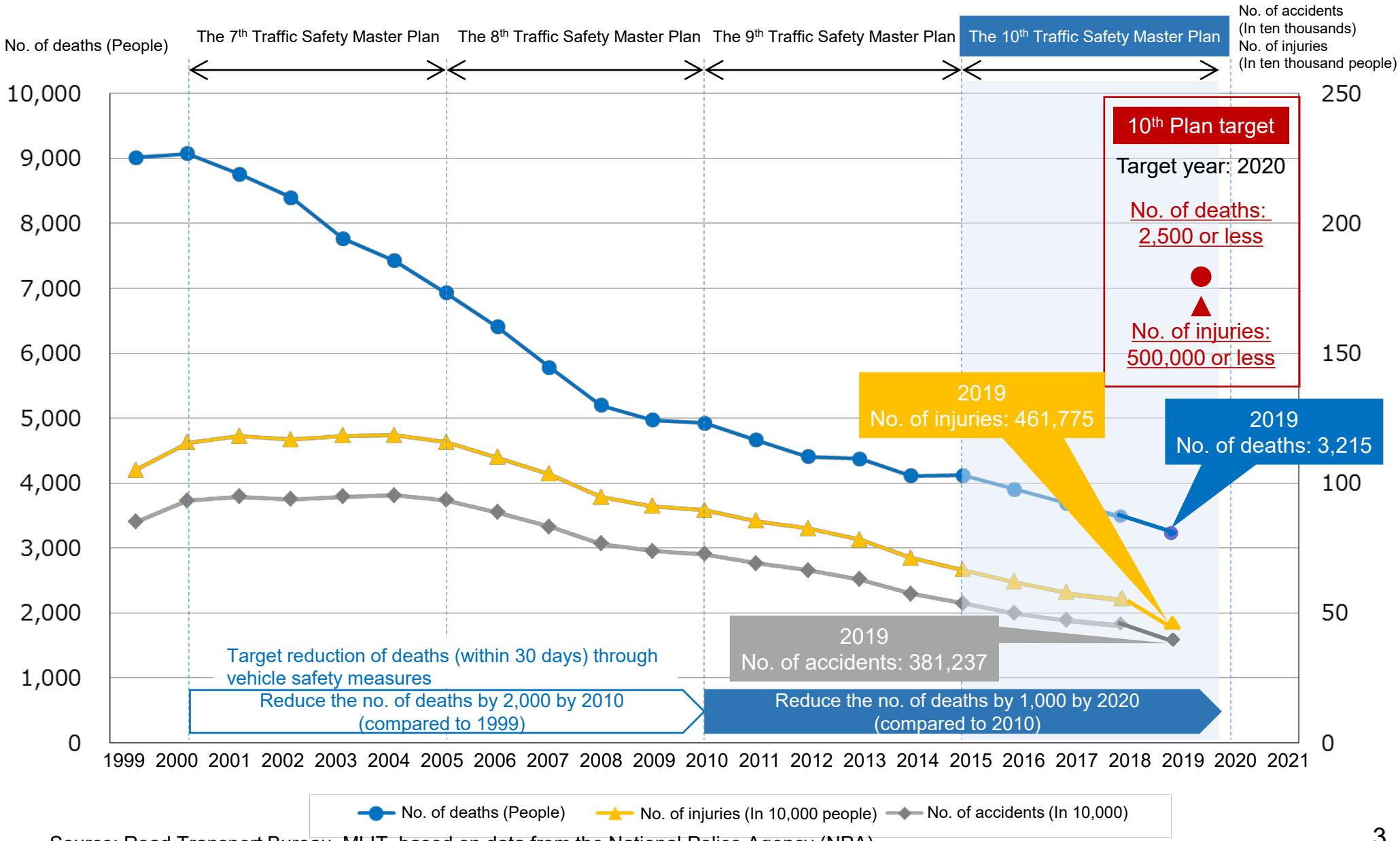

Source: Road Transport Bureau, MLIT, based on data from the National Police Agency (NPA)

1. (2) Promotion of vehicle safety measures

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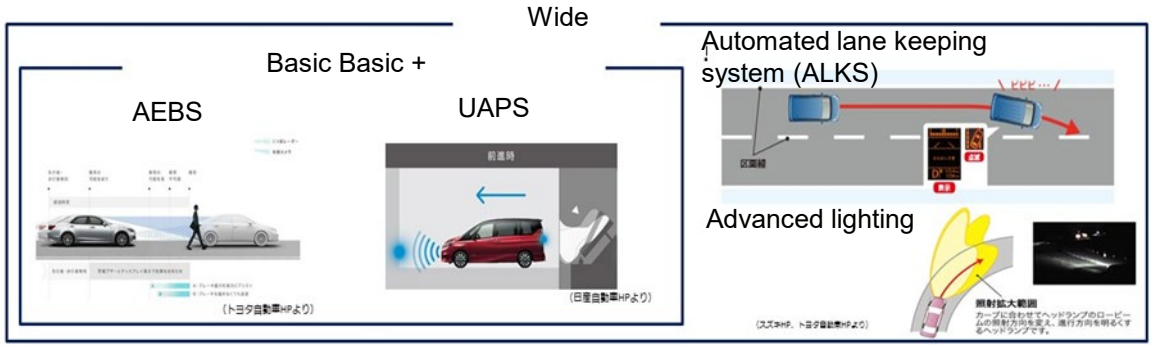
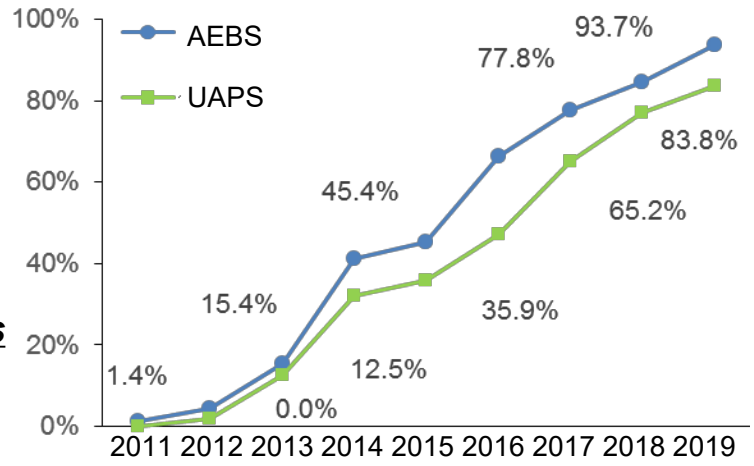
- Considering the increase in the number of fatal accidents involving elderly drivers, it is imperative for the government and industry to work together on developing and implementing measures to prevent traffic accidents involving those people.

1. Concept of *safety driving support cars*

The term refers to passenger cars and other vehicles equipped with advanced safety technologies such as *automatic emergency braking systems (AEBS)* and *unintended acceleration prevention systems (UAPS)*.



<Target> To increase the installation rate of AEBS in new passenger cars to 90% or more by 2020



From November 2021 onward, AEBS will be made mandatory in phases for all newly registered passenger cars.

2. Promotion of the spread and awareness of *safety driving support cars*

- The government and industry are working together to promote the spread and awareness of safety support cars (or suppocars as they are nicknamed).
- Requested automakers to expand the range of new models equipped with advanced safety technologies and to develop retrofit safe driving support devices.

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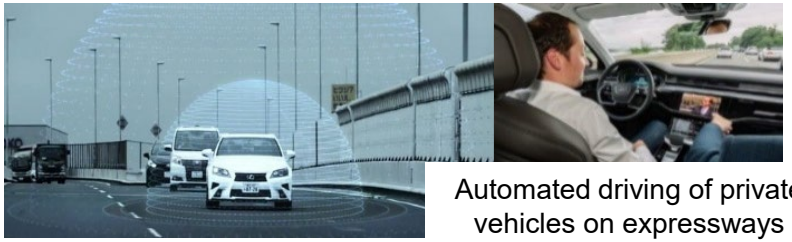
Safety Support Car S

サポカー
Safety Support Car

1. (3) Promotion of automated driving

In response to the discussion at WP.29, the Road Transport Vehicle Act was amended as necessary in the Diet in May 2019.



Automated driving of private vehicles on expressways

Amendment to the Road Transport Vehicle Act

Enacted in May 2019
Enforced in April 2020

- *Automated driving systems* (ADS) added to the systems subject to the Safety Regulation on Road Transport Vehicles.
  - **The basic principle in the development of the Safety Regulation is that the details of technical requirements should be consistent with those of relevant international regulations newly established.**
  - **The Safety Regulation must be revised without delay as international regulations are revised.**

- The Operational Design Domains (ODD) of automated driving systems must be as determined by the MLIT.
  - Safety is ensured by limiting the ODD of automated driving systems, such as speed, route, and weather conditions.
  - The appropriateness of ODD set by automakers, etc. and the compliance with the Safety Regulation by ADS will be checked.

1. (4) Vehicle inspection and maintenance

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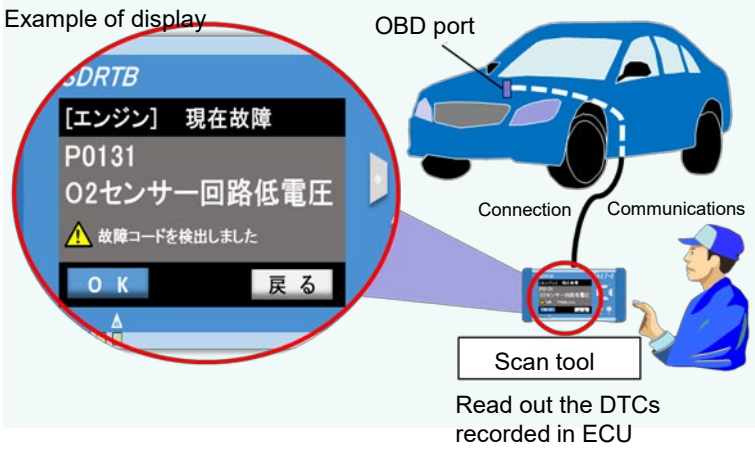
- From October 1, 2021, *results of diagnosis by onboard diagnostic devices (OBD)* are added to the items to be checked on periodic inspections of motor vehicles so that they will be inspected every year with a scan tool connected.

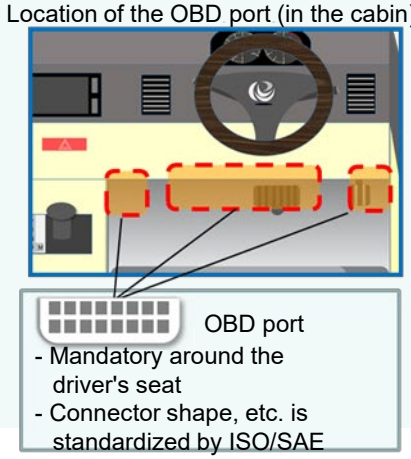
Vehicles concerned:

- Standard vehicles, compact vehicles, and mini-sized motor vehicles
  *Excluding trailing vehicles and motorcycles.

Inspection method:

- Vehicles will be inspected by connecting the connector of a scan tool to the OBD and reading out the results of diagnosis.
  *Can be substituted by visual inspection of relevant trouble codes displayed, etc.





Major devices to be diagnosed onboard:
- Engine/motor
- Braking system
- Anti-lock braking systems
- AEBS, automatically commanded steering systems, and automatic navigation systems (limited to those that must be alerted when not in compliance with the Safety Regulation on Road Transport Vehicles)

Maintenance method:

- To be maintained in accordance with the maintenance manual provided by the automaker, etc. Note that certification may be required when performing specific types of maintenance.

1. (5) Proper maintenance and management of motor vehicles

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Vehicle Inspection and Maintenance Promotion Campaign

- To raise users' awareness of the necessity of proper inspection and maintenance, the MLIT, the Council for Promotion of Motor Vehicle Inspection and Maintenance, which consists of 31 automobile-related organizations, and the Liaison Committee for Prevention of Accidents Involving Wheels Falling Off of Heavy Vehicles, which consists of 15 automobile-related organizations, have taken the lead in implementing a ***Vehicle Inspection and Maintenance Promotion Campaign***.
- **In addition to a nationwide campaign period (September), a regional campaign periods (July in Kitami and Asahikawa areas, August in Okinawa, and October in other areas) have been set** to focus on raising users' awareness of the necessity and importance of inspections and maintenance, as well as how to properly conduct inspections and maintenance on heavy-duty vehicles.

Specific Measures

Raising awareness of the necessity and importance of inspection and maintenance

- Raise awareness of the necessity and importance of inspection and maintenance, focusing on women and age groups teens to 30s.

  * Widely publicize through posters, flyers, SNS, etc.
  * Hold events featuring local characteristics
  * Provide practical training on inspection and maintenance skills as well as free inspections.

Raise awareness of proper inspection and maintenance methods for heavy-duty vehicles

- To prevent accidents such as wheel falling off of heavy-duty vehicles and vehicle fire accidents on buses, inspections are conducted on the condition of wheels, fuel system, and other critical points.
- Raise awareness of inspections and maintenance with flyers and other materials destined to heavy-duty vehicles and transport operators.

Publicity and education tailored to local conditions, etc.

- In cooperation with regional transport bureaus, their branch offices, and related local organizations, implement measures to resolve issues related to inspection and maintenance in local areas.

2. Environmental Measures for Motor Vehicles

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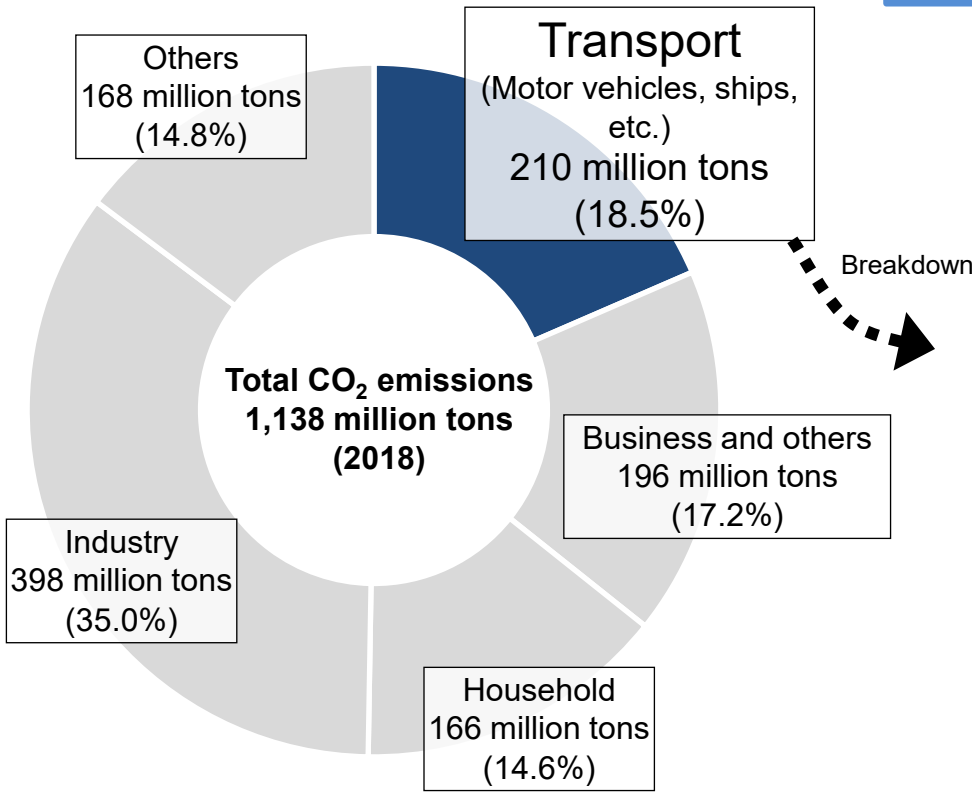
Prime Minister Suga's policy speech at the Diet (October 26, 2020)

I hereby declare that Japan aims to reduce its overall greenhouse gas emissions to zero by 2050, that is, to achieve a carbon-neutral, decarbonized society by 2050.

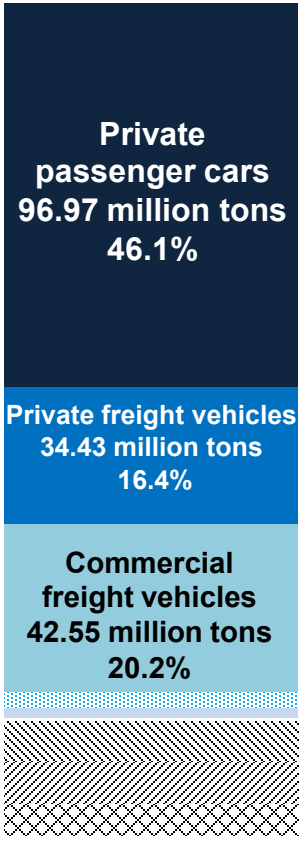
- Of Japan's carbon dioxide emissions (in 2018), **18.5% came from the transportation sector**.
- **Of the emissions from the transportation sector**, motor vehicles **emit 86.2% (15.9% of Japan's total)**.

Carbon dioxide emissions in Japan by sector



Breakdown

Carbon dioxide emissions from the transportation sector (after allocation)



- **Motor vehicles as a whole account for 86.2% of the transport sector (15.9% of Japan's total).**
- **Motor vehicles (passenger transport) account for 49.6% of the transport sector (9.2% of the Japanese total)**
- **Motor vehicles (cargo transport) account for 36.6% of the transport sector (6.8% of the total for Japan)**

Buses
4.1 million tons 1.9%
Taxis
2.48 million tons 1.2%
Motorcycles
0.79 million tons 0.4%
Coastal shipping
10.32 million tons 4.9%
Aviation
10.53 million tons 5.0%
Railroad
8.24 million tons 3.9%

Source: *Japan's Greenhouse Gas Emissions Data (1990-2018),* (Revised values) (2020)

- 2020 targets for passenger car fuel efficiency, set in March 2013 in accordance with the Act Concerning the Rational Use of Energy (Energy Conservation Act), have already been achieved by many automakers.
- Accordingly, a joint fuel efficiency committee of the MLIT and the METI (chaired by Professor Masahiro Shioji, Kyoto University)* began studying the passenger car fuel efficiency standard for the next phase in March 2018, and finalized a new fuel efficiency standard in June 2019.
- In March 2020, national laws and regulations were revised for new fuel efficiency standards to be applied to vehicles sold from 2030 onward.

* Motor Vehicle Fuel Efficiency Standards Subcommittee under the Council for Transport Policy and Motor Vehicle Assessment Standards Working Group under the General Energy Research Council

Fuel efficiency standards

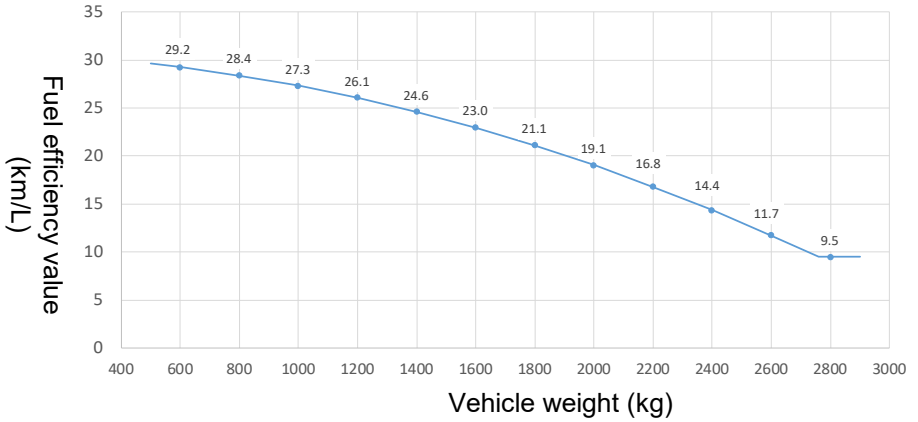
- Target year: 2030

- Scope: Gasoline vehicles
  Diesel vehicles
  LPG vehicles
  Electric vehicles,
  Plug-in hybrid vehicles

*Underlined are the types of vehicles newly subject to the regulation.

- Next phase fuel efficiency standards: Average 25.4 km/L

* 32.4% improvement in fuel efficiency compared to 2016



- Handling of electric vehicles: For the assessment of electric vehicles and plug-in hybrid vehicles, the *well-to-wheel* concept will be introduced, taking into account CO2 emissions during power generation and the loss in plant-to-vehicle power transmission and recharging.

2. (3) Promotion of emission control measures

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To enhance emission control for motorcycles, relevant public notices, etc. have been revised and applied from December 2020 to new models and from November 2022 to continuing production models (excluding certain models).

Item	2016 control (3rd phase)				2020 control (4th phase)				(Reference) EURO5		
Applied starting:	Oct 2016				Dec 2020				Jan 2020		
Emission control value (g/km)	Class	1	2	3	Class	1	2	3	Class	1,2 <130 km/h	3 ≥130 km/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: 1000 ppm (Light motorcycles*1 and motorcycles*2) 1600 ppm (Mopeds type I*3 and mopeds type II*4) *1 Motorcycles over 125 to 250 cc *2 Motorcycles over 250 cc *3 Mopeds up to 50 cc *4 Mopeds over 50 to 125 cc				**CO: 0.5%** HC: 1000 ppm (Light motorcycles and motorcycles) 1600 ppm (Mopeds type I and mopeds type II)				CO: 0.5% or manufacturer's declared value HC: None		
Evaporation	2 g/Test				**1.5 g/Test**				1.5 g/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** **Detect malfunctions and deterioration of the emission reduction system**				OBD II Detecting malfunctions and deterioration of the emission reduction system		

* Red: Where tightened

3. International Harmonization of Vehicle Safety and Environmental Regulations

- Through activities at WP.29, develop and establish vehicle safety and environmental international regulations.
- Promote the utilization of the international whole vehicle type approval (IWVTA) system.

Spread and promote safer and more environment-friendly vehicles, thereby reducing traffic accidents, improving air quality, and helping build up a safer and more environment-friendly international community.

System for the Development of International Regulations for AD Technology and Items to Be Discussed

World Forum for Harmonization of Vehicle Regulations (WP.29)

*Major member countries include Japan, US, EU, and China.

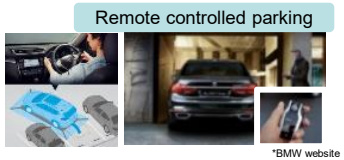
- Automated Vehicle (GRVA)
  - Automatic Braking
  - Validation of Automated Driving
  - Cyber-security
  - EDR/DSSAD*
  - Functional Require-ments
- General Safety (GRSG)
- Passive Safety (GRSP)
- Lighting & Light Signaling (GRE)
- Noise & Tyres (GRBP)
- Pollution & Energy (GRPE)

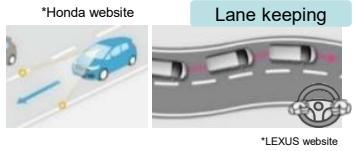
Discussion bodies related to AD technology	Japan's post
Working Party on Automated/Autonomous and Connected Vehicles (GRVA)	Vice-chair
Task force on automatic braking	Co-chair with the EC
Task force on validation methods for AD	Co-chair with the Netherlands and Canada
Task force on cybersecurity	Co-chair with the UK and the US
Task force on EDR/DSSAD	Co-chair with the Netherlands and the US
Task force on functional requirements	Technical secretary

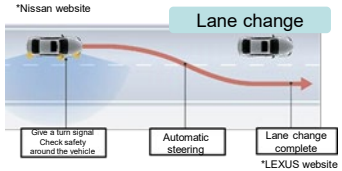
*Operated as a joint discussion body between GRSG on EDR and GRVA on DSS

International regulations so far established:

Level 2:
- Automatic parking (remote controlled parking)
- Hands-on automatic steering (Lane keeping/Lane change)







Level 3:
- Low-speed automated driving (ALKS)
- Driver monitoring

Thank you for your attention!