Overview of Road Vehicle Compliance in Japan

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Comprehensive measures for Compliance from design to usage stage

MLIT and NALTEC carriy out comprehensive operations from design process and new vehicles to the usage stage and implements rapid and reliable measures to introduce new technology and discover defects.

Design | New vehicles | Usage process

Developing feasible regulation

» Use the actual conditions and technological information of automobiles to examine the content to be standardized and formulate plans for safety and environmental standards.

Type approval test

» Prevent the distribution of faulty vehicles by carrying out regulations compliance examinations related to type approvals at test tracks and collision test facilities

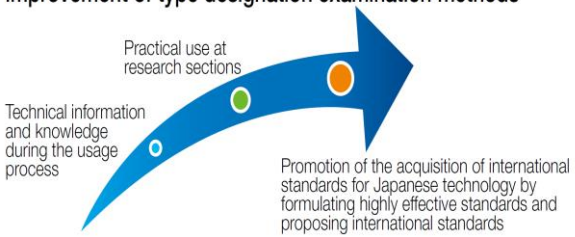
Vehicle inspections

» Guarantee regulations compliance during the usage process by examining the regulations compliance of over 7 million cases per year at the 93 vehicle inspection station nationwide

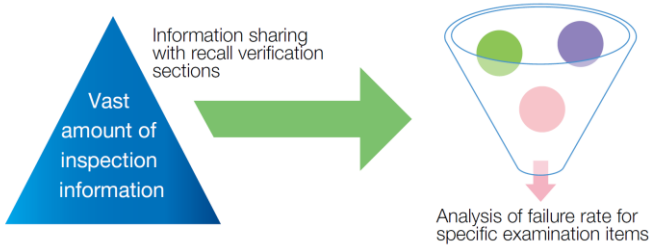
Technical verification for recalls

» Reject vehicles that do not comply with regulations by technically verifying the causes of vehicle defects and recall measures

» Formulation of standards focused also on the usage stage and improvement of type designation examination methods

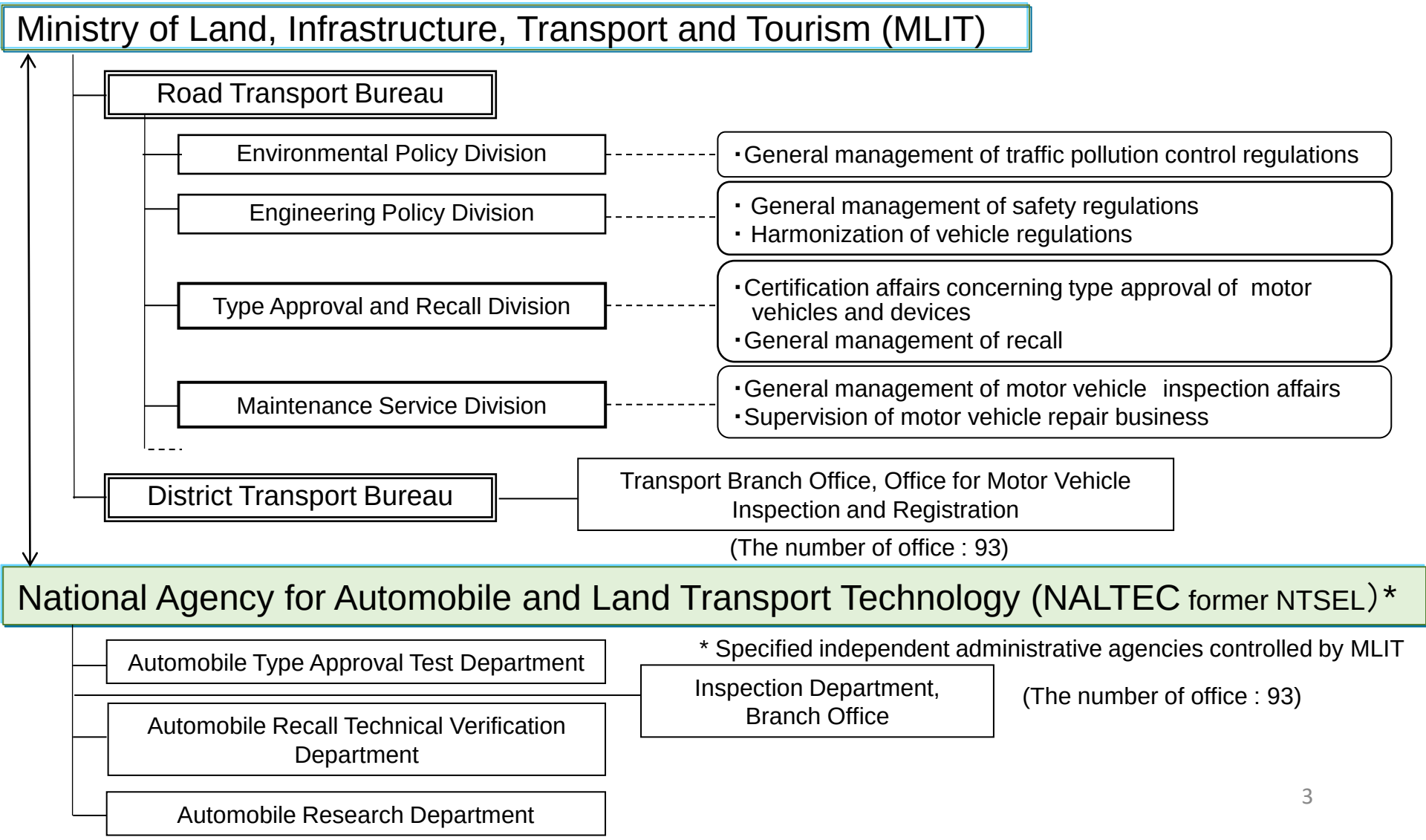


» Swift implementation of recalls based on relevant information



» Development of appropriate and efficient examination methods for innovative technology

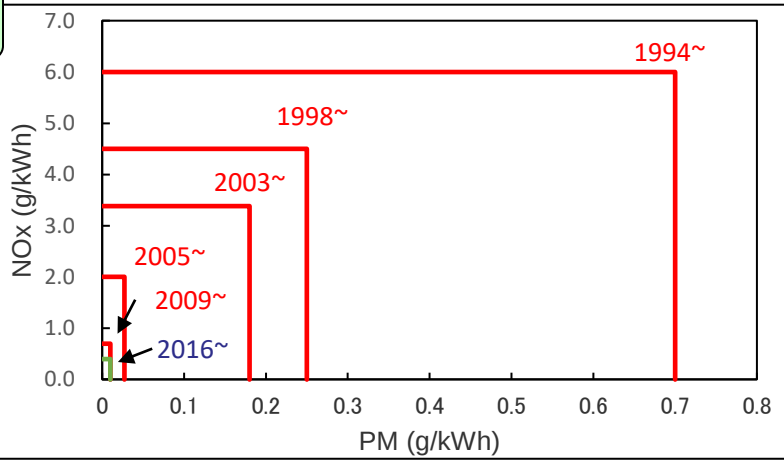
Organization



* Specified independent administrative agencies controlled by MLIT

Emission regulation for Heavy Duty Vehicles

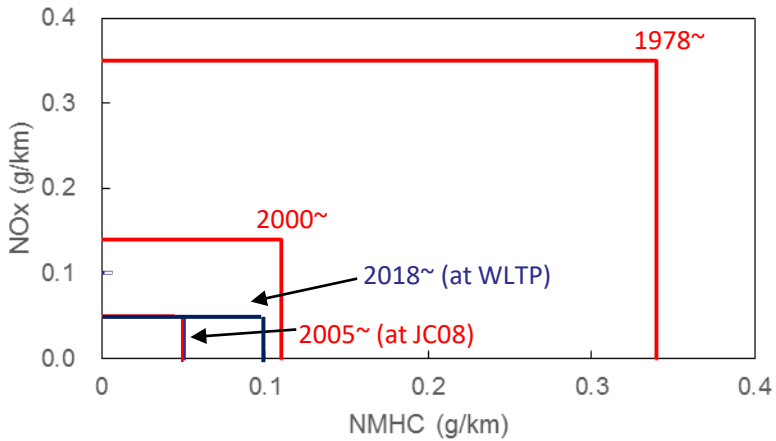
- The current regulations for HDVs based on WHDC have been applied since Oct. 2016.
- The emission limit values are 0.4g/kWh for NOx and 0.010g/kWh for PM.



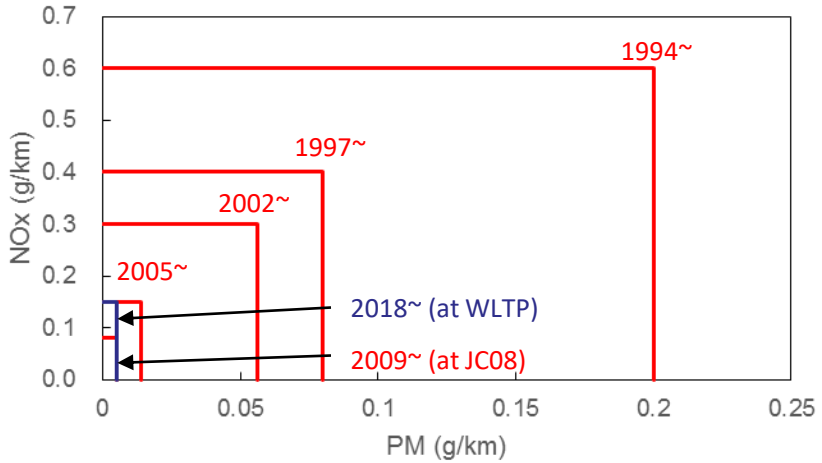
Emission regulation for Passenger Vehicles

- The new regulations for PVs based on WLTC have been applied since Oct 2018.

＜Gasoline vehicles＞



＜Diesel vehicles＞



Motor Vehicle Maintenance and Periodic Technical Inspection in Japan

Note) The explanation given below concerns commercial motor vehicles and reference to legal provisions gives only the outline thereof, not the text itself.

Motor vehicles must not be put into operational use unless they conform to safety regulations.
(Art. 40 to 42 of the Road Vehicle Act (hereinafter the articles referred to are those of the same Act))

The user of a motor vehicle must keep it in conformity with safety regulations by having it checked & maintained. (Art. 47)

・The maintenance include: (1) daily maintenance; (2) periodic maintenance; and (3) ad-hoc maintenance to be performed as necessary according to how it is used and type of the vehicle.

(1) Daily maintenance

・The user of a commercial vehicle or the person who operates it must conduct daily check and necessary maintenance of the vehicle once a day before the start of its operation. (para. 2, Art. 47-2)

(2) Periodic maintenance

・The user of a motor vehicle must periodically check the vehicle and maintain it as necessary. (Art. 48)

The requirement for monthly check was abolished pursuant to the system reform in 2000

Quarterly maintenance → Quarterly maintenance → Quarterly maintenance → Annual maintenance → Quarterly maintenance → Quarterly maintenance → Quarterly maintenance → Annual maintenance →

Periodic technical inspection

Periodic technical inspection

(3) Periodic technical inspection (PTI)

・A motor vehicle must not be put into operational use unless it has been inspected for compliance with safety regulations and issued a safety regulations conformity certificate. (Art. 58)

The person who violates the above will be punished by imprisonment with work not more than 6 months or a fine not more than 300,000 yen (para. 1, Art. 108)

(4) Other maintenance

・The manufacturer of motor vehicles must endeavor to provide technical information on vehicles necessary for maintenance other than daily and periodical maintenance to the users of motor vehicles. (Art. 57-2)

Maintenance order

・If a vehicle is not in compliance with safety regulations, the authority can issue a maintenance order to the user of the vehicle. (para. 1, Art. 54)

・If the user does not obey the maintenance order, the authority can take a disposition to forbid them to use the motor vehicle. (para. 2, Art. 54)

The person who violates the order will be punished by a fine not more than 500,000 yen (para. 7, Art. 109).

The person who violates the disposition will be punished by imprisonment with work for not more than 6 months or a fine of not more than 300,000 yen (para. 2, Art. 108)

Vehicle Registration and Inspection System

- Through vehicle inspections, the government checks vehicles at regular intervals to see whether individual vehicle complies with Safety Regulation for Road Vehicles.
- Primary achievements through vehicle inspection system are :

  [1]Prevents air pollution with exhaust emissions, [2]Reduces noise from vehicles,

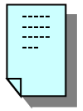
  [3]Raises users' consciousness of safety and environment ,

  [4]Reduces traffic accidents caused by improper maintenance,

  [5]Prevents traffic congestion due to broken-down vehicles

  [6]Eliminates illegally-transfigured vehicles, [7]Improves actual fuel economy
- Safety and environmental level of vehicles cannot be achieved without appropriate maintenance, and Vehicle Inspection System ensures the quality of vehicles under use.

Vehicle Inspection Flow (Periodic Technical Inspection)



USER

or

or

① User

② Certificated Vehicle Maintenance Service

③ Designated Vehicle Maintenance Service

Checks, maintenance, repairs

Checks, maintenance, and Completion of inspection

Presentation of the vehicles, records of periodical checks, maintenance and repairs, and other documents are required.

Local Transport Branch Office (MLIT)

Inspection Offices (NALTEC)

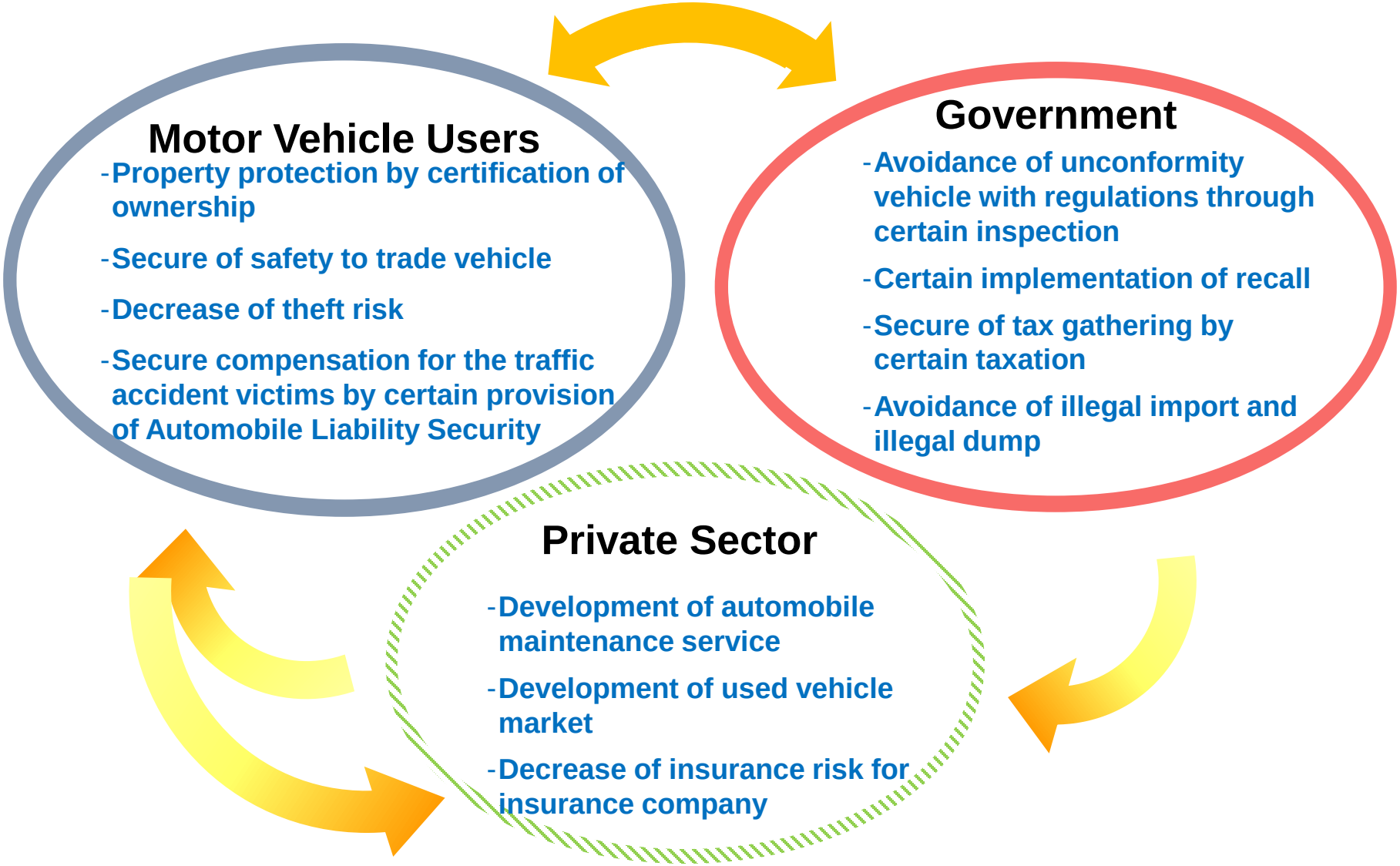
Renewal of Valid Term of Vehicle Inspection Certification

- Presentation of vehicles may be omitted.
- Safety regulations conformity Certificate.

Other documents are required.

USER

◆ Benefits of Vehicle Registration and Inspection System



Achievement of Environmental Quality regulations for Nitrogen Dioxide (NO2)

＜Air Quality regulation＞

Average of the hourly values for each day : between 0.04 ppm and 0.06 ppm, or less

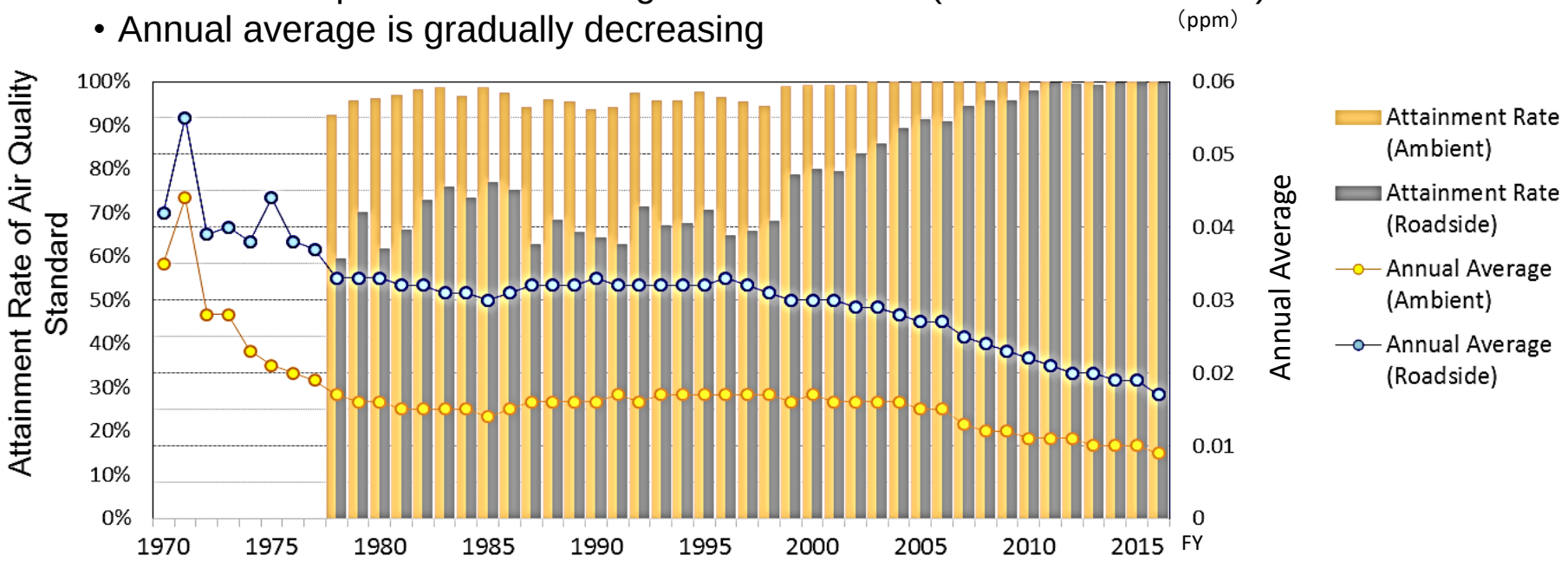
＜Achievement rate of EQS in FY 2016＞

■All Japan

- Ambient air pollution monitoring stations: 100% (all 1,243 stations)
  Roadside air pollution monitoring stations: 99.7% (392 of 393 stations)
- Annual average is gradually decreasing

■Specified areas based on 'NOx and PM law' (big city area)

- Ambient air pollution monitoring stations: 100% (all 403 stations)
  Roadside air pollution monitoring stations: 99.5% (214 of 215 stations)
- Annual average is gradually decreasing



Source Ministry of the Environment

Achievement of Environmental Quality regulations for Suspended Particulate Matter (SPM)

＜Air Quality regulation＞

Average of the hourly values for each day : 0.10 mg/m^3 or less

Hourly values : 0.20 mg/m^3 or less

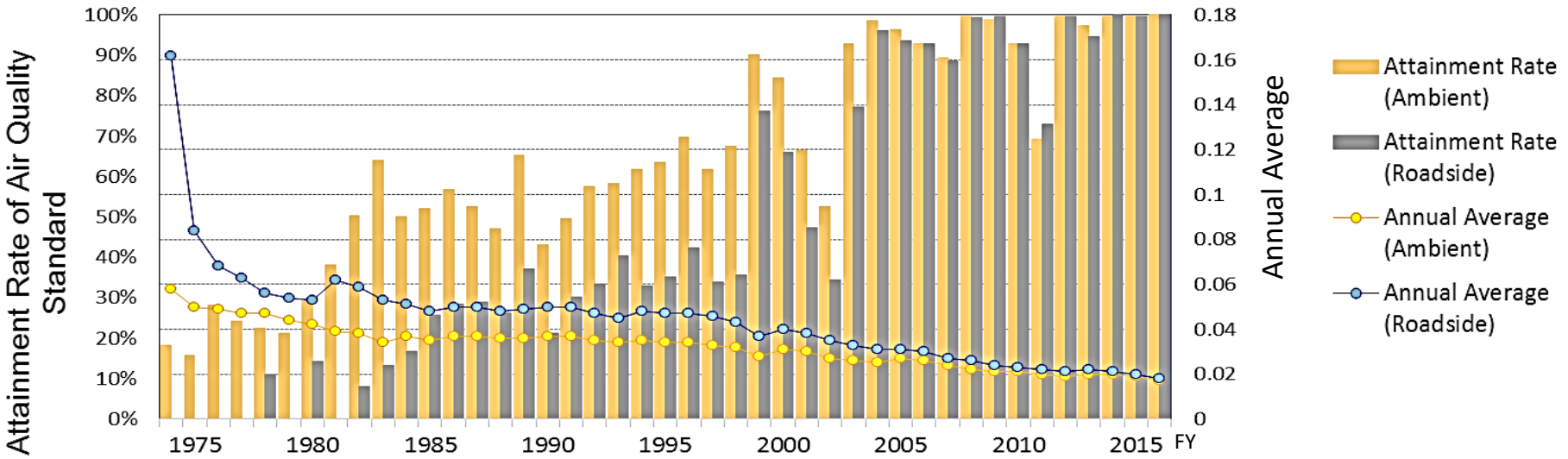
＜Achievement rate of EQS in FY 2016＞

■All Japan

- Ambient air pollution monitoring stations: 100% (all 1,296 stations)
  Roadside air pollution monitoring stations: 100% (all 388 stations)
- Annual average is gradually decreasing

■Specified areas based on 'NOx and PM law' (big city area)

- Ambient air pollution monitoring stations: 100% (all 412 stations)
  Roadside air pollution monitoring stations: 100% (all 218 stations)
- Annual average is gradually decreasing



Source Ministry of the Environment

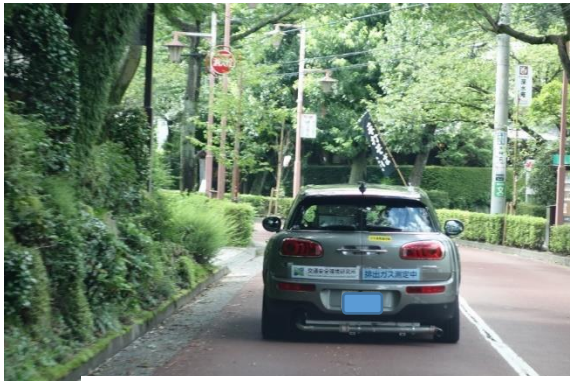
New Challenges①　: Surveillance

Background

- Surveillance was introduced in Japan in 2017, after the Volkswagen emission scandal.
- **Surveillance is conducted to examine whether any irregular defeat devices are installed, by comparing the results of various emission tests.**
- If a defeat device is detected, vehicles must be recalled.
- The National Traffic Safety and Environment Laboratory (NTSEL), together with MLIT, is responsible for conducting surveillance.

Tested vehicles

Around Kongoji Temple



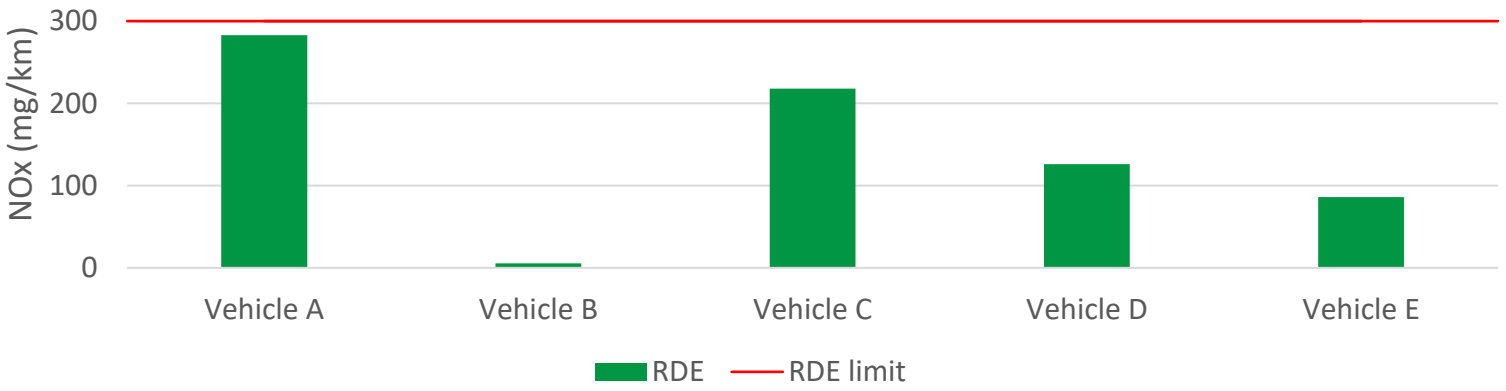
Around Jindaiji Temple

Outline of Surveillance

- Vehicles of M1 or N1 categories will be selected by MLIT for surveillance tests.
- Vehicles are selected based on data including registration information.
- Six vehicles have been surveyed so far.
- Vehicles to be surveyed shall be new or almost new to avoid any effects from deterioration.
- Nitrogen oxides (NOx) are evaluated.
- NTSEL conducts emission tests and evaluations as follows:
    1. Difference between two modes
    2. Comparison between on-track and in-laboratory tests
    3. **Evaluation of J-RDE test**

Evaluation of J-RDE test

- The regulation value of J-RDE from 2022 in Japan was applied to this study.
- All tested vehicles met the regulation.
- Based on the surveillance results it was concluded that there were no defeat devices installed on the tested vehicles.



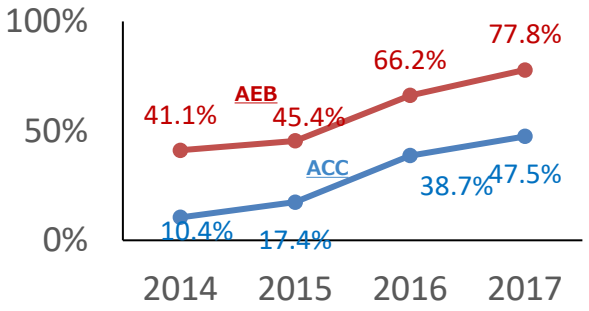
Future Direction

- **Improvement of RDE test procedure**
  The RDE test is almost applicable in Japan, although some improvement is necessary.
  Continuous efforts to improve the effectiveness of the test method are necessary.

- **Other issues to conduct surveillance**
  Develop the process of selecting vehicles for testing by 2022 when the RDE test becomes mandatory.

New Challenges② New Vehicle Inspection by utilizing OBD

AEB, ACC equipped in new passenger cars in Japan



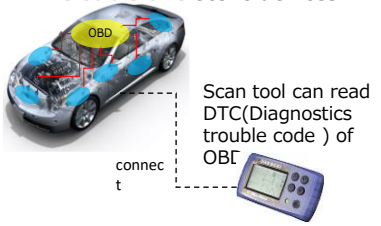
※AEB･･･Autonomous Emergency Braking
ACC･･･Adaptive Cruise Control

Problem Point

- Conventional inspection
  ⇒ ・ Chassis check by looking
  ・ Brake tester , Exhaust gas probe check
- Electric device failure can not be detected by conventional inspection method.

OBD is …

OBD(On-Board Diagnostics) is equipped with new car.
OBD monitor and record a trouble of electric devices.



Scan tool can read DTC(Diagnostics trouble code) of OBD

ABS･･･Anti Lock Brake System
ESC･･･Electric Stability Control
BAS･･･Brake Assist System
AVAS･･Acoustic Vehicle Alerting System
ACSF･･･Automatically Commanded Steering Function

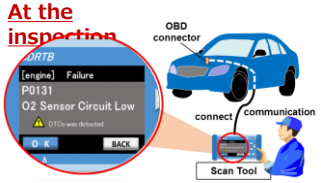
New vehicle inspection method by using OBD

OEMs

Submission of list of DTC which is related to inconformity for regulations (“Specific DTC”) from OEMs

Authorized scan tool in which information of Specific DTC is installed.

At the inspection



If Specific DTC is detected by authorized scan tool, the vehicle is rejected at the inspection.

Scope / Schedule

○**Scope**

New models of passenger car, Bus and Truck since 2021 (Import Car 2022)

1. ADAS (Advanced driver- assistance systems)
   ABS, ESC, BAS, AEB and AVAS

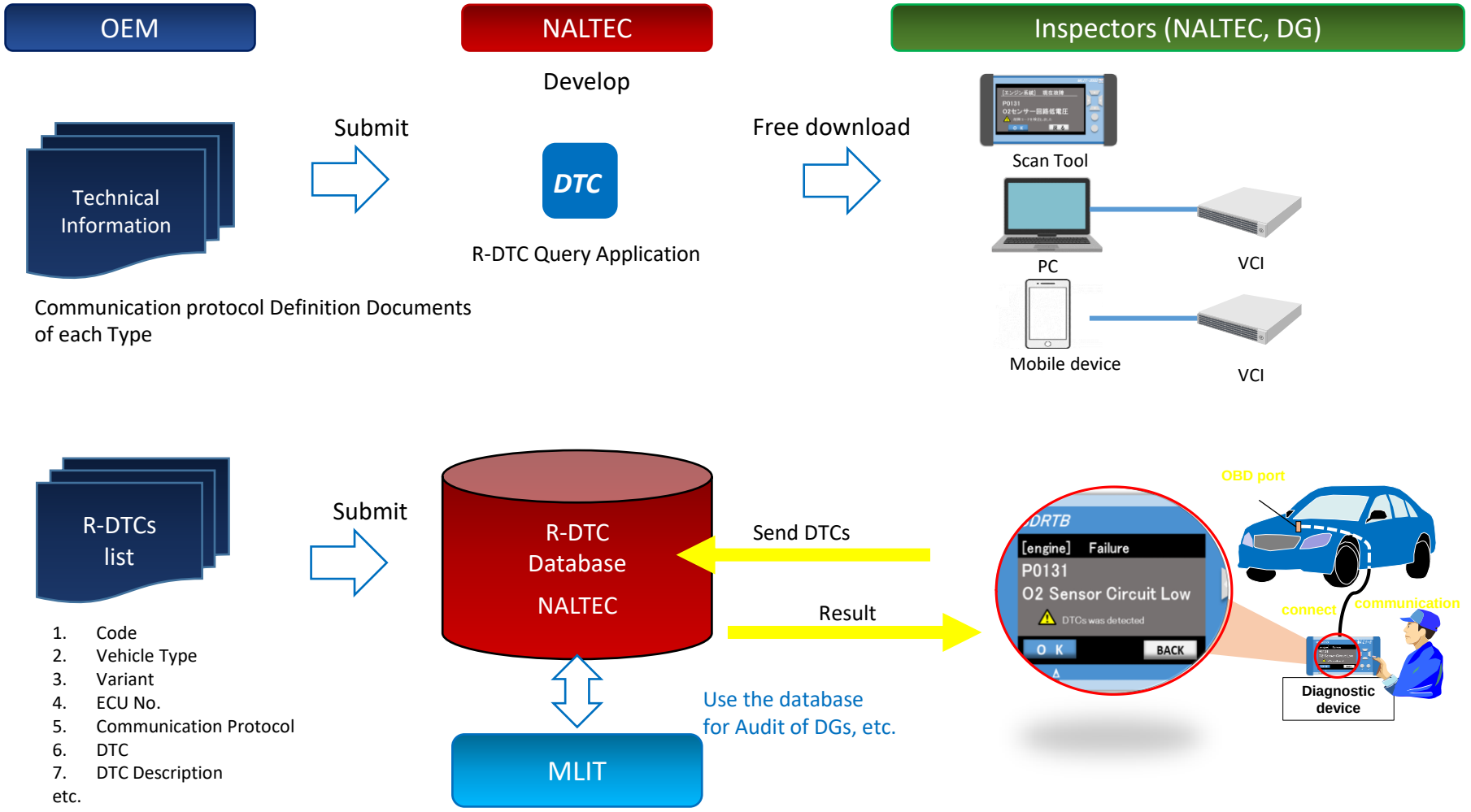
2. ACSF
   Enhanced-Lane Keeping, Lane changing

3. Exhaust gas reduction systems

○**Date of enforcement**

2024 (Import Car 2025)

Japanese ePTI system and Role of OEMs, NALTEC and DGs



1. Code
2. Vehicle Type
3. Variant
4. ECU No.
5. Communication Protocol
6. DTC
7. DTC Description

etc.

Conclusion

- MLIT and NALTEC/NTSEL carry out comprehensive and unified measures as formulating feasible regulations, new vehicle type approval, periodic technical inspections for using vehicle and analyzing defect through recall verification.
- Improvements in the air quality are advancing through the collaborative efforts of vehicle users, repair technicians (private garages), manufacturers and authorities.
- We are also challenging new issues such as development of new technologies and (emission) scandals.
- We would like to consider revisions to new regulations and test methods in collaboration with UN/ECE, national authorities and agencies.