

Regulations Governing Issuance, Revocation, and Cancellation of Emissions Certificate of Conformity for Diesel and Alternative Clean Fuel Engine Vehicles

Article 1 The Regulations are established pursuant to Paragraph 2, Article 42 of the Air Pollution Control Act (hereinafter referred to as the Act).

Article 2 Terms used in these Standards are defined as follows:

1. Engine family: The diesel and alternative clean fuel engine (hereinafter referred to as diesel engine) with similar combustion cycle (strokes), cooling mechanism (e.g., air cooled, liquid cooled), cylinder block configuration, number of cylinders; location of air intake valves, air supply method (with or without turbo charge), emission control system, fuel supply system and intake air cooling methods (e.g., after cooler, inter cooler) are deemed as the identical engine family.
2. Vehicle configuration means light-duty diesel commercial or passenger vehicles—that are identical in terms of the basic engine, emission control system, transmission and inertia weight class, and are deemed identical vehicle configuration.
3. In-use diesel and alternative clean fuel engine vehicle (hereinafter referred to as “in-use foreign diesel vehicle”) from abroad: the diesel vehicle which has been registered and licensed by the motor vehicle supervisory agencies of the country of importation, and an import and commodity tax payment (exemption) certificate issued by Customs must be obtained at the time of importation of such vehicle as documentary proof.
4. On Board Diagnostics System (hereinafter referred to as OBD): A computer system inside the vehicle that monitors vehicle emissions control equipment and can diagnose current operating status, detect and save malfunction codes, and display the signal indicator if malfunctions occur.
5. Hybrid Electric Vehicle (hereinafter referred to as HEV): A vehicle which has an internal combustion engine and electric motor dual power sources and uses diesel or other alternative clean fuels.
6. Deterioration factors: Each engine family shall have separate emissions deterioration factors to present the durability performance of the specified vehicle or engine in real world operation if the user has conducted normal maintenance

according to the owner's manual provided by the manufacturer. The gaseous pollutant's or particulate matter's test results shall be multiplied or added by the applicable deterioration factors to represent the durability test results.

7. Ki factors: Ratio of non-regenerating driving cycle test results to regenerating driving cycle test results for vehicles with a periodically regenerating system.
8. Evolution coefficient: The exhaust emission ratio between the vehicle reaching its expected stable condition and before it is in use.
9. Defeat devices: Which, by measuring, sensing or affecting the vehicle's operating parameters (such as speed, engine rpm, transmission gear position, temperature, altitude, intake manifold vacuum, or other parameters), may trigger, adjust, delay or stop the working or emissions control functionality of some part when the vehicle is in normal operating condition and hence reduce the effect posed to, or render no effect on, the emissions control.
10. Inspection organization: An organization (institution) or school that has been designated by the central competent authority to issue the inspection report for a diesel and alternative clean fuel engine vehicle (hereinafter referred to as the diesel vehicle) emission Certificate of Conformity (hereinafter referred to as the Certificate of Conformity) or heavy-duty diesel vehicle Letter of Conformity (hereinafter referred to the Letter of Conformity).
11. PEMS test family: A specific diesel vehicle model that is designed with similar exhaust and emission characteristics; or that can be classified as the same on-board test family according to the PEMS test family classification principles stipulated in No. 715/2007 and the subsequent directives established by the European Union (hereunder briefed as the EU).

Article 3 Diesel vehicles and their engines shall comply with Article 5 of the Air Emission Standards of Mobile Sources (hereinafter referred to as the Emission Standards) that is defined in Paragraph 2, Article 36 of this Act, as well as relevant requirements herein before the central competent authority issues the Certificate of Conformity.

Before filing an application for the heavy-duty diesel vehicle Letter of Conformity, it is necessary to seek the Certificate of Conformity issued by the central competent authority.

- Article 4 The applicant using engine family as the basis to apply for a Certificate of Conformity shall abide by the following regulations:
1. For domestically manufactured diesel vehicle, the manufacturer shall submit the application.
 2. For imported diesel vehicles, the diesel vehicle manufacturer's designated agent or association of importers shall submit the application.
 3. For imported diesel vehicles procured by various administrative agencies, the agencies shall submit the application by themselves or winning tenderers on their behalf.

Article 5 The central competent authority shall take the test results from the following test methods as the basis for judging whether or not an engine family complies with the emission standards:

1. The test results being conducted by the testing organization domestically according to the following requirements for the vehicles representing the maximum pollutant emission for such engine family that the central competent authority or the applicant has selected:
 - (1) Before February 28, 2025: Refers to the testing organizations designated by the central competent authority.
 - (2) After March 1, 2025: Refers to the testing organizations approved by the central competent authority.
2. For the engine family that has obtained the Certificate of Conformity issued by the United States according to the requirements of the United States, or any EU member or the United Kingdom in accordance with the regulations of the EC or UN/ECE, the foreign testing results for the vehicle representing the engine family as provided by the applicant shall apply.

If the testing organization approved by the central competent authority, as defined in the preceding Item 2 under Subsection 1, is organized by the applicant, then such organization shall not be allowed to conduct the vehicle model inspection and the new vehicle random check.

Article 6 When using the engine family as the basis to apply for or to modify the Certificate of Conformity, the applicant shall submit the application to the central competent authority by submitting the documents and meeting the compliance requirements in Appendix 1 or Appendix 2, in the format defined in the network transmission application system designated by the central competent authority.

As of January 1, 2025, the applicant shall submit the documents and the compliance matters according to the aforementioned application method and format for securing the inspection report from the inspection organization and then uplink to the Network Transmission Application System designated by the central competent authority. In this case, the expenses required for the inspection shall be borne by the applicant.

Article 7 The review procedure upon the inspection organization's receipt of the application for the inspection report is specified as follows:

1. The inspection organization shall check the integrity of the document. If any missing item or non-compliance is found in the application document, then the inspection organization shall inform the applicant to make a correction and the duration of the correction days shall not be longer than 30 days. If the applicant fails to complete the correction within the specified timeline, then the submitted document will be rejected.
2. After verifying the document integrity for the application case, the inspection organization shall also check if such document complies with the requirements defined in Appendix 1 or Appendix 2.
3. If any defect exists in the content of the inspection case, then the inspection organization shall inform the applicant to make a correction and the duration of the correction days shall not be longer than 45 days. If required, the applicant may request an extension of the correction period. However, such extension shall be limited to once only. If the applicant fails to complete the correction within the specified timeline, then the inspection organization may conduct the document review.

4. The inspection organization shall issue the inspection report. When conducting the aforementioned review, the inspection organization may undertake the field and the substantive inspections as required. The aforementioned inspections shall include the monitoring of the testing process being executed by the applicant in the domestic premise or the auditing in the applicant's manufacturing plant or service location. In this regard, the entire inspection process shall be completed within 30 days.

Article 8 When revising part of the engine family-related data for the same engine family or when adding any new vehicle configuration or engine configuration, the applicant shall apply for modification of Certificate of Conformity with the central competent authority, and also submit the comparative data being acquired before and after the modification. When all of the items affecting the pollutant

emission are proven to be identical to the original engine family and provided with the same emission characteristics, then the applicant shall be allowed to modify the Certificate of Conformity of said engine family upon review and approval by the central competent authority.

Article 9 Applicants shall submit the deterioration factors of all regulated emissions for each engine family. The deterioration factors shall be handled in accordance with Appendix 3.

For a diesel vehicle using the European Union (hereinafter referred to as the EU) NEDC or WLTC or WHTC driving cycle for the tests and required to submit the related regeneration factor K_i and evolution coefficient, Appendix 3 shall apply.

Article 10 Mass production diesel vehicles or diesel engines for which the applicants have obtained the Certificate of Conformity shall comply with the following requirements:

1. Each mass production diesel vehicle or diesel engine shall have the same vehicle configuration or engine configuration recorded in the Certificate of Conformity. All items affecting the pollutant emission and the emission control system shall be consistent with the contents and approved items that are mentioned in the application documents, which have already been reviewed and approved.
2. Any manuals and instructions made available by the manufacturer, manufacturer's designated agent or association of importers to any agents, distributors, after-sale service units (including depots and stations providing maintenance and repair services) and vehicle owners, and any use, repair, adjustment, maintenance or test related to emission control systems, shall be consistent with the contents and approved items that are mentioned in the application documents which are already reviewed and approved.
3. The manufacturer, manufacturer's designated agent or association of importers shall undertake the mass production quality controls, including the quality controls over new vehicles and in-use vehicles. The applicable execution requirements, quality control test items, random inspection ratio and testing result (including related data), and testing result submission schedule shall be handled in accordance with Appendix 4. For the diesel vehicles or diesel engines of which the quality control result does not meet the emission standards, and requirements referred to herein, the reasons causing the non-conformity shall be explained and corrections made.

4. The applicant shall coordinate with and assist the central competent authority to conduct the audit and designated test and shall also provide vehicle-related sales information. When required, the applicant shall help deliver the selected vehicle to the designated location.

Article 11 The central competent authority may conduct a new vehicle random check on diesel vehicles or diesel engines that have already obtained the Certificate of Conformity. The test procedures, selection of vehicles, judgment on the testing result, and other compliance requirements shall be handled in accordance with Appendix 5.

If the conducted new vehicle random check is judged as non-compliant by the central competent authority, the Certificate of Conformity for such vehicle configuration or engine family shall be cancelled or revoked. After the day following receipt of the notice, within 45 days, the applicant shall submit a recall and correction plan for unsold and sold vehicles of the failed vehicle configuration or engine. After the central competent authority reviews and approves the plan and the correction is completed, the applicant may reapply for the vehicle configuration's or engine family's Certificate of Conformity pursuant to the Regulations. The contents of the recall and correction plan shall be handled in accordance with Appendix 5.

Article 12 For diesel vehicles required to be equipped with an OBD system pursuant to the Emission Standards, when applying for said engine family's Certificate of Conformity, the applicant shall provide documents and OBD specifications that meet Appendix 1 or Appendix 2 and also Appendix 6.

Article 13 When importing newly manufactured diesel vehicles or in-use diesel vehicles from overseas separately under a personal name, the applicant shall submit the following testing reports in replace of the Certificate of Conformity for each vehicle:

1. The certificates showing that the diesel vehicles are already judged by the central competent authority having the vehicle configuration using the engine that meets the Emission Standards, or the following testing reports tested by a central competent authority-approved testing organization showing that the vehicles meet the Emission Standards:
 - (1) Vehicle driving cycle or engine test cycle testing results.
 - (2) Smoke opacity testing report.
 - (3) OBD testing report (to execute at least one circuit continuity test).

2. If the diesel vehicles cannot be tested by a central competent authority-approved testing organization, then the applicant may submit the testing result that has been judged by the central competent authority as meeting the Emission Standards.

Article 14 Where the Certificate of Conformity issued by the central competent authority meets any of the following circumstances, the central competent authority may cancel or revoke the Certificate of Conformity:

1. Violating the provisions of Article 10, the time-limited improvement is imposed three consecutive times within two years.
2. The results of the new vehicle random check are determined as non-compliance with the applicable standards.
3. Using any false document in the application, reporting false information, or keeping false records of operations.
4. Other severe offenses determined by the central competent authority.

Article 15 The central competent authority may contract agencies (organizations) to handle the relevant matters related to the new vehicle random check.

Article 16 The Regulations shall be enforced as of the date of promulgation.

Appendix 1: Documents required and the compliance matters for the Diesel Vehicle Certificate of Conformity application

1. Before applying for the Certificate of Conformity, the applicant shall provide the inspection organization with the required documents for verification. The Certificate of Conformity may be issued only upon approval of the central competent authority.
2. Application for Heavy-duty Diesel Bus and Truck Certificate of Conformity

2.1 Test vehicle and test fuel specifications

2.1.1 Test vehicle

The test vehicle's configuration shall be consistent with the information stated in the diesel vehicle's Certificate of Conformity application form and be tested in accordance with the test methods prescribed in this Appendix. The test vehicle shall comply with all the requirements regulated in this Appendix.

2.1.1.1 Selection of test vehicle

The test vehicles shall be selected based on engine family category. For each engine family category, the test vehicle shall be selected according to the following conditions:

- (1) For different engine types, a separate representative test vehicle shall be selected.
- (2) Separate representative test vehicles shall be selected for each chassis vehicle and complete vehicle.

2.1.2 Test fuels

2.1.2.1 Reference diesel fuel specifications for the emissions tests

- (1) For the US FTP Transient test cycle: Subject to the 2007 US test fuel specifications.
- (2) For the EU WHSC, WHTC and WNTE test cycles: Subject to the test fuel (B7 diesel) specifications in EU Regulation (EC) No 595/2009 related directives and Regulation (EU) No 582/2011 Annex IX.

2.1.2.2 Reference alternative clean fuel specifications for the emissions tests

The Alternative Clean fuel for exhaust emissions testing shall be in accordance with domestic regulated specifications. If unavailable, the foreign specifications shall be adopted, but the manufacturer shall ensure that the vehicle comply with the applicable Emission Standards when using domestic market fuel to conduct the new vehicle random check. If domestic market fuel is unavailable, the foreign market fuel specifications shall be adopted.

2.2 The applicant shall provide a Chinese version of the user manual, including a warranty for emission control systems and after-sales service units (including depots and stations providing maintenance and repair services) recorded for reference by the central competent authority. The manual shall provide maintenance guide and schedules for inspection items and component changes within the warranty period so that the vehicle owner could perform maintenance accordingly, hence to ensure normal functioning of the emission control systems of the diesel vehicle or engine within its warranty period.

2.3 Warranty period

2.3.1 For diesel vehicles within the warranty period and under normal maintenance and operation conditions, their emitted exhaust emissions shall comply with Article 5 of the Emission Standards.

2.3.2 The warranty period for diesel vehicle emission control systems shall be in accordance with Article 5 of the Emission Standards.

2.4 The use of a defeat device on diesel vehicles is prohibited, but the need for the device is justified if the device has the following functions:

2.4.1 The device has functions to protect the engine against damage or accidents.

2.4.2 The device does not function beyond the requirements of engine start and warm up duration.

2.5 Testing and inspection

2.5.1 For the Certificate of Conformity application, the central competent authority may request the applicant to send more than one vehicle or engine to the designated location to perform type approval testing. The applicant shall be responsible for the testing-related fees.

2.5.2 For the vehicle manufacturer applying for a diesel vehicle emissions Certificate of Conformity, the central competent authority's personnel may enter the applicant's inspection room and factories, review the related document records to determine whether the test vehicle and the mass-production vehicles comply with provisions of this Appendix, and verify the consistency of design specifications with the application.

2.5.3 During the Certificate of Conformity application process, the central competent authority may send personnel to supervise and check the preparation process. The central competent authority may together with the designate inspection and testing organization supervise and check the preparation process.

2.6 Test specifications and testing report

The instrument metered smoke opacity pollution percentage test method for heavy-duty diesel buses and trucks shall follow the test

methods prescribed in the “Diesel Motor Vehicle Smoke Opacity Testing Methods and Procedures,” and the testing report thereof shall be provided.

2.7 Heavy-Duty Diesel Bus and Truck Certificate of Conformity application method

2.7.1 The application for a heavy-duty diesel bus and truck Certificate of Conformity may be filed in two steps:

2.7.1.1 Application for a heavy-duty diesel vehicle Letter of Compliance (hereinafter referred to as Letter of Compliance, which shall comply with provisions of Appendix 2).

2.7.1.2 Application for the Certificate of Conformity.

2.7.2 Applicants who meet any of the following eligibility requirements may combine the two steps prescribed in Paragraph 2.7.1 of this Appendix into one for the application.

2.7.2.1 The applicant is a diesel engine manufacturer and vehicle manufacturer.

2.7.2.2 The applicant is an imported engine manufacturer’s designated agent and a vehicle manufacturer’s designated agent (or domestic vehicle manufacturer).

2.7.3 Where the applicant already obtains the Letter of Compliance issued by the central competent authority (or Consent to Use Agreement from the original holder of Letter of Compliance and a photocopy of the Letter of Compliance and Guarantee Letter) and the smoke opacity testing values for the engine family (testing values being measured in accordance with the Diesel Motor Vehicle Smoke Opacity Testing Methods and Procedures) comply with Article 5 of the Emission Standards, the applicant may apply with the central competent authority for diesel vehicle Certificate of Conformity.

2.8 The heavy-duty diesel bus or truck Certificate of Conformity applicant shall submit the related documents in an electronic form, including the authorization documents provided by foreign vehicle manufacturers to the domestic agent. The authorization documents shall endow the domestic agent with full authority to represent the said vehicle manufacturer to apply for diesel and alternative clean fuel engine vehicle’s Certificate of Conformity and both sides will fully comply with related regulations. The designated domestic agent also needs to prove to bear the same responsibility as the foreign manufacturer. The contents of authorization letter shall include: the vehicle models covered by the engine family; the US, EU or UK certification information according to the related testing items; and the vehicle’s identification number that corresponds to the vehicle model recorded in the foreign Certificate of Conformity. If unable to provide the authorization documents, the applicants shall submit an application

through an association of importers and distributors with a letter of guarantee declaring that they will bear the same responsibility as the vehicle manufacturer.

2.9 An application for a Certificate of Conformity for a HEV shall be attached with the following explanations:

- 2.9.1 Verification and description of vehicle type.
- 2.9.2 Operation mode-switch function description.
- 2.9.3 Energy storage device description and warranty mileage.
- 2.9.4 Electrical power and mechanical system.
- 2.9.5 Control Unit.
- 2.9.6 Power Control Unit.
- 2.9.7 Pure electric power maximum driving range.
- 2.9.8 Suggestions from vehicle manufacturers.

2.10 Other provisions

2.10.1 The Certificate of Conformity application documents shall be in Chinese or in English. The Chinese translation shall be provided if the application is prepared by the foreign vehicle manufacturer in a non-English foreign language, and signed by the vehicle manufacturer's authorized agent with the latest update of related information.

2.10.2 The vehicle manufacturer shall satisfy all applicable requirements to show compliance with the Emission Standards.

2.10.3 The applicant shall keep the latest documents, recorded data, and testing results for 5 years, counted from the issuance date of the Certificate of Conformity.

2.10.4 The applicant shall complete the forms and documents to be submitted in an electronic form in response to the e-operating procedure, when filing the application.

2.10.5 For an engine family or vehicle model with one of the following conditions, the central competent authority may request the applicant to provide explanations. Within 45 days following the receipt of notification from the authority, the applicant should respond and provide relevant explanations. If the applicant fails to respond within the deadline, the central competent authority may suspend the use of an application for the Certificate of Conformity (including the verification stamp for the suspension) for said engine family or the same vehicle or brand.

2.10.5.1 Recall has being announced by foreign competent authority or original manufacturer.

2.10.5.2 The exhaust emission results from periodic or irregular testing show that in the same engine family or vehicle model, at least 3 vehicles were tested for emissions of the same pollutant and did not meet the Emission

Standards.

2.10.5.3 Other items determined by the central competent authority as non-compliant with the Emission Standards.

3. Application for a light-duty diesel commercial or passenger vehicle Certificate of Conformity

3.1 For the light-duty diesel commercial or passenger vehicle Certificate of Conformity application, the deterioration factors must be submitted with the application, and the regeneration factor shall be included for vehicles equipped with periodic regenerative devices using the EU NEDC or WLTC driving cycle for the type approval test. The deterioration factors and regeneration factor shall be determined in accordance with Article 9 herein.

3.2 Test vehicle and test fuel specifications

3.2.1 Test vehicle

The test vehicle's configuration shall be consistent with the information stated in the Certificate of Conformity application form, and be tested in accordance with the methods prescribed in this Appendix. The test vehicle shall comply with all the requirements regulated in this Appendix.

3.2.1.1 Selection of test vehicle

- (1) The test vehicles shall be selected based on the engine family category with maximum laden mass (including optional equipment) that would be expected to generate the highest emissions. In the case of different vehicle configurations with the same maximum laden mass, select the vehicle with maximum road-load resistance (at the speed of 80 kilometers per hour) for the chassis dynamometer setting. If the road-load resistance is identical, select the vehicle with maximum engine displacement. If the engine displacement is identical, select the vehicle with highest total gear ratio (include over drive (OD) gear), the next option is with the highest axle ratio.
- (2) If the vehicle configuration covered by the engine family may be applicable to different emission standards when the light-duty diesel commercial vehicle Certificate of Conformity application is filed, the most stringent standards shall apply, and the application shall also be attached with a Vehicle Confirmation Certificate of Conformity issued by the Ministry of Transportation and Communications.
- (3) The applicant shall determine the minimum mileage

needed to attain stable test results. However, the accumulated mileage for new vehicle emissions certification and COP testing shall not exceed the following limits:

- a. Vehicles tested using the US FTP-75 driving cycle: 6,400 km.
- b. Vehicles tested using the EU NEDC or WLTC driving cycle: 15,000 km.

3.2.1.2 Durability test vehicle

One representative vehicle for each engine family shall be selected for the durability test. The durability test vehicle selection and test plan shall be examined by the inspection organization and then approved by the central competent authority; the testing results for different stages of the durability test should be reported to the authority according to the schedule in the test plan.

3.2.2 Test fuels

3.2.2.1 Pollution test fuel specifications.

(1) Pollution test diesel specifications.

- a. For the US FTP-75 test cycle: Subject to the 2007 US test fuel specifications.
- b. For the EU NEDC or WLTC test cycles: Subject to the test fuel (B7 diesel) specifications in EU Regulation (EC) No 715/2007 related directives.

(2) Pollution test alternative clean fuel specifications

The Alternative Clean fuel for the emissions testing shall be in accordance with domestic regulated specifications. If those are unavailable, the foreign specifications may be adopted, but the manufacturer shall ensure when using the domestic market fuel to conduct new vehicle random check testing, and the vehicle must still be in compliance with the Emission Standards. If the domestic market fuel is unavailable, the foreign market Alternative Clean fuel specifications shall be adopted.

3.2.2.2 Durability test fuel specifications

(1) Durability test diesel specifications

The reference diesel fuel for durability tests shall be in accordance with the domestic market premium diesel fuel specifications and the foreign area market diesel fuel may also be adopted. If there are multiple foreign market diesel fuels available, the specifications closest to the domestic market diesel

fuel shall be adopted.

(2) Durability test alternative clean fuel specifications

The alternative clean fuel for durability tests shall be in accordance with domestic regulated specifications, and if unavailable, the foreign specifications shall be adopted; if both domestic and foreign specifications are unavailable, the domestic market fuel specifications shall be adopted; if domestic market fuel is unavailable, the foreign area market fuel specifications shall be adopted.

3.3 The applicant shall provide a Chinese version of the user manual, including a warranty for emission control systems and information about after-sales service units (including depots and stations providing maintenance and repair services) recorded for reference by the central competent authority. The manual shall provide a maintenance guide and schedules for inspection items and component changes within the warranty period so that vehicle owners can perform maintenance accordingly. Hence to ensure normal functioning of the emission control systems of the diesel vehicle or engine within its warranty period.

3.4 Labeling

3.4.1 The applicant who has obtained the vehicle's Certificate of Conformity shall produce a durable, corrosion and rust proof, hard-to-remove and clearly identifiable Chinese label affixed on the vehicle or engine surface. If removed from the vehicle or engine, it will be damaged or cause printed text to be unrecognizable.

3.4.2 The Chinese contents of the label shall include the following information:

3.4.2.1 The title of the label shall be "Vehicle Emission Control Information."

3.4.2.2 Full name of the company, vehicle manufacturer and brand.

3.4.2.3 Engine family name, engine displacement, emission control components and related systems, OBD system.

3.4.2.4 The minimum requirements for engine optimal performance adjustment, and minimum specifications to be included: injection timing, valve clearance, and other parameters deemed necessary by the vehicle manufacturer.

3.4.2.5 Notes such as: "This engine family complies with the diesel vehicle Emission Standards effective on January 1, 2004 (or the subsequent Emission Standards promulgated after this date)" and "To remove or modify the emission

control devices is prohibited.”

3.4.2.6 Schematic diagrams of all the locations of emission control related devices.

3.5 Warranty period

3.5.1 For diesel vehicles within the warranty period and under normal maintenance and operation conditions, the emitted exhaust emissions shall comply with Article 5 of the Emission Standards.

3.5.2 The warranty period for diesel vehicle emission control systems shall be in accordance with Article 5 of the Emission Standards.

3.6 The use of a defeat device on diesel vehicles is prohibited, but the need for the device is justified if the device has the following functions:

3.6.1 The device has functions to protect the engine against damage or accident.

3.6.2 The device does not function beyond the requirements of engine start and warm up duration.

3.7 Testing and inspection

3.7.1 The central competent authority may request the applicant to send more than one vehicle to the designated location for certification testing for the Certificate of Conformity application. The applicant shall be responsible for the testing related fees.

3.7.2 For a vehicle manufacturer applying for the Certificate of Conformity, the central competent authority’s personnel may enter the applicant’s inspection room and factories, review the related document records to determine whether the test vehicle and the mass-production vehicles comply with the provisions of this Appendix, and verify consistency with the design specifications in the application.

3.7.3 During the Certificate of Conformity application process, the central competent authority may send personnel to supervise and check the preparation process. The central competent authority may together with the designated inspection and testing organization supervise and check the preparation process.

3.8 Test specifications and testing report

3.8.1 Driving cycle testing: To be tested on the chassis dynamometer under FTP-75 or NEDC or WLTC driving cycles.

If vehicles using the US FTP-75 driving cycle for the test:

3.8.1.1 For light-duty diesel commercial vehicles complying with the Emission Standards effective on October 1, 2006 (or subsequent Emission Standards promulgated after this date), the applicant shall provide an emissions compliance declaration as a substitute for the formaldehyde (HCHO) regulated emission test. But the declaration shall be based on the vehicle’s emissions tests, development tests or other

appropriate information.

3.8.1.2 A light-duty diesel commercial vehicle's emissions test measured NMHC value may be multiplied by 1.0 (conversion factor) and treated as the NMOG value for regulation compliance determination purposes.

3.8.2 Instrument metered smoke opacity test: The smoke pollution percentage instrument metered test method for light-duty diesel commercial or passenger vehicles shall follow the test methods prescribed in the "Diesel Motor Vehicles Smoke Opacity Testing Methods and Procedures," and the testing report thereof shall be provided.

3.8.3 OBD test: For a light-duty diesel commercial or passenger vehicle equipped with an OBD system according to the requirements of the Emission Standards, the test procedure shall follow the provisions of Appendix 6, and the testing report thereof shall be provided.

3.8.4 RDE test:

For mass-produced engine vehicles, it is necessary to conduct the RDE (Real Driving Emission) test. The testing method shall meet the Real Driving Emission provisions of EU Regulation (EC) No 715/2007 and the subsequent related directives, and an RDE test report that meets the Conformity Factors governed by said directives shall be provided.

3.9 Engine family

3.9.1 Engines that apply for the Certificate of Conformity shall be categorized by individual engine family. Each engine family shall undergo a separate application for the Certificate of Conformity.

3.9.2 If the central competent authority considers that engines might have different emission characteristics, it may categorize these engines into different engine families. The determination shall be based on the following engine characteristics.

3.9.2.1 Bore and stroke.

3.9.2.2 The cylinder surface area and volume ratio when at the top dead center.

3.9.2.3 Size and configuration of intake manifold valve opening.

3.9.2.4 Size and configuration of exhaust manifold valve opening.

3.9.2.5 Sizes of intake and exhaust valves.

3.9.2.6 Cam and fuel injection timing characteristics.

3.10 Application for a light-duty diesel commercial or passenger vehicle Certificate of Conformity

3.10.1 Application for a driving cycle test:

3.10.1.1 Application method, if the certificate of conformity issued by any country designated by the central competent

authority is made available.

- (1) If the applicant has obtained the US-EPA issued new vehicle configuration Certificate of Conformity using FTP-75 cycle for the type approval test, and the test results comply with Article 5 of the Emission Standards, the applicant may submit the application for a light-duty diesel commercial or passenger vehicle Certificate of Conformity to the central competent authority.
- (2) If the applicant has obtained an EU member state or UK issued new vehicle configuration Certificate of Conformity in accordance with the Regulation (EC) No. 715/2007 and related directives (including UN/ECE Regulation No. 83) using the NEDC or WLTC test cycles for type approval test, and the test results comply with Article 5 of the Emission Standards and also EU Regulation (EC) No. 715/2007-related Euro 6d-Temp or Euro 6e (applicable to the new engine family filing the application as of January 1, 2028) and subsequent related directives, the applicant may submit the application for a light-duty diesel commercial or passenger vehicle Certificate of Conformity to the central competent authority.

3.10.1.2 Application method, if no certificate of conformity issued by any country designated by the central competent authority is made available.

If the applicant has obtained a relevant test report prepared by an accredited inspection and testing laboratory, it may submit the application for a light-duty diesel commercial or passenger vehicle Certificate of Conformity to the central competent authority. The eligibility requirements for the accredited inspection and testing laboratory are as follows:

- (1) Already obtained the US-EPA issued new vehicle configuration Certificate of Conformity using FTP-75 cycle for the type approval test, which is sufficient to prove that the laboratory has the test equipment and capabilities to complete the FTP-75 test cycle, and the test value meets Article 5 of the Emission Standards.
- (2) Already obtained an EU member state or UK issued new vehicle configuration Certificate of Conformity in accordance with the Regulation (EC) No. 715/2007

and related directives (including UN/ECE Regulation No. 83) using the NEDC or WLTC test cycles for type approval test, which is sufficient to prove that the laboratory has the test equipment and capabilities to complete the NEDC or WLTC test cycle governed by said directives. The test value meets Article 5 of the Emission Standards and also EU Regulation (EC) No. 715/2007-related Euro 6d-Temp or Euro 6e (applicable to the new engine family filing the application as of January 1, 2028) and subsequent related directives.

- (3) Those failing to comply with paragraphs 3.10.1.2(1) and (2) herein shall obtain a test report issued by a inspection and testing organization approved by the central competent authority, showing certified emission values meeting Article 5 of the Emission Standards.

3.10.1.3 For the engine family or vehicle model with the central competent authority recognized country issued Certificate of Conformity; the Country of Origin shall be recorded. For the engine family or vehicle model unable to obtain the central competent authority recognized foreign country issued Certificate of Conformity and intend to use the domestic issued testing report for the application, for the same engine family vehicle but manufactured or imported from different countries, the test vehicle shall be separately selected according to the Customs issued import and commodity tax payment (exemption) certificate.

3.10.2 Application for an OBD Certificate of Conformity: The application shall comply with the test methods prescribed in Appendix 6 and related requirements.

3.10.3 Application for RDE test:

3.10.3.1 Application for the PEMS test family, if the certificate of conformity issued by any country designated by the central competent authority is made available.

If the applicant has obtained an EU member state or UK issued new vehicle configuration Certificate of Conformity in accordance with Regulation (EC) No. 715/2007 and related directives, and the RDE test report attached to the Certificate meets paragraph 3.8.4 of this Appendix, the applicant may submit the application for the light-duty diesel commercial or passenger vehicle Certificate of Conformity to the central competent

authority.

3.10.3.2 Application for the engine family, if no certificate of conformity issued by any country designated by the central competent authority is made available:

- (1) If the applicant has obtained an EU member state or UK issued new vehicle configuration Certificate of Conformity in accordance with the Regulation (EC) No. 715/2007 and related directives using the WLTC test cycles for type approval test, deemed sufficient to prove that the laboratory has the test equipment and capabilities to complete the WLTC test cycle governed by said directives. If the RDE test report meets paragraph 3.8.4 of this Appendix, the applicant may submit the application for a light-duty diesel commercial or passenger vehicle Certificate of Conformity to the central competent authority.
- (2) If the applicant submits the EU Certificate of Conformity showing the same PEMS test family for the original engine or vehicle manufacturer, and the RDE test report meets paragraph 3.8.4 of this Appendix, the applicant shall attach a statement and certificate showing the same PEMS test family for the engine family or vehicle configuration identified in the Certificate, and may submit the application for a light-duty diesel commercial or passenger vehicle Certificate of Conformity to the central competent authority.
- (3) Those failing to comply with paragraphs 3.10.3.2(1) and (2) herein shall obtain a RDE test report issued by a inspection and testing organization approved by the central competent authority. Meanwhile, if the RDE test report meets paragraph 3.8.4 of this Appendix, the applicant may still submit an application for a light-duty diesel commercial or passenger vehicle Certificate of Conformity to the central competent authority.

3.11 The applicant for a light-duty diesel commercial or passenger vehicle Certificate of Conformity shall submit the related documents in an electronic form, including the authorization documents provided by foreign vehicle manufacturers, to a domestic agent. The authorization documents shall grant the domestic agent the full power to represent said vehicle manufacturer to apply for the light-duty diesel commercial or passenger vehicle Certificate of Conformity, and both

parties shall strictly comply with related regulations. The designated domestic agent also needs proof of bearing the same responsibility as the foreign manufacturer. The contents of authorization letter shall include: the vehicle models covered by the engine family; the US, EU or UK certification information according to the related testing items; and the vehicle's identification number corresponding to the vehicle model recorded in the foreign Certificate of Conformity. If unable to provide any authorization documents, the applicants shall submit an application through an association of importers and distributors with a letter of guarantee to ensure they will bear the same responsibility as the vehicle manufacturer.

- 3.12 According to the requirements of the Emission Standards, vehicles shall be equipped with an OBD system, and the applicant shall provide OBD compliance-related documents. The contents of these documents are stated as follows:
 - 3.12.1 Description of the OBD system.
 - 3.12.2 Description or annotated drawing of the MIL used in the OBD system.
 - 3.12.3 Description of all emission control equipment and related components/systems monitored by OBD, as well as a list of malfunction codes and the computer code related format and meanings.
 - 3.12.4 Description or flowchart of the actuation principle for OBD monitoring devices (include monitoring strategy, malfunction indicator standards and MIL light on timing).
 - 3.12.5 OBD test report.
 - 3.12.6 An explanation of adopted solutions or strategies to prevent arbitrary adjustment or modification of the Engine Control Units (ECU)
 - 3.12.7 Description of the location of OBD connector (DLC).
 - 3.12.8 Other required supplemental documents when deemed necessary.
- 3.13 An application for a HEV's Certificate of Conformity shall be attached with the following explanations:
 - 3.13.1 Verification and description of vehicle type.
 - 3.13.2 Operation mode-switch function description.
 - 3.13.3 Energy storage device description and warranty mileage.
 - 3.13.4 Electrical power and mechanical system.
 - 3.13.5 Control Unit.
 - 3.13.6 Power Control Unit.
 - 3.13.7 Pure electric power maximum driving range.
 - 3.13.8 Suggestions from vehicle manufacturers.
- 3.14 Other provisions

- 3.14.1 The Certificate of Conformity application documents shall be in Chinese or in English. The Chinese translation shall be provided if the application is prepared by the foreign vehicle manufacturer in a non-English foreign language, signed by the vehicle manufacturer's authorized agent with the latest update of related information.
- 3.14.2 The vehicle manufacturer shall satisfy all applicable requirements to show compliance with the Emission Standards.
- 3.14.3 The applicant shall keep the latest documents, recorded data, and testing results for 5 years counted from the issuance date of the Certificate of Conformity.
- 3.14.4 The applicant shall complete the forms and documents to be submitted in an electronic form in response to the e-operating procedure, when filing the application.
- 3.14.5 For an engine family or vehicle model with one of the following conditions, the central competent authority may request the applicant to provide explanations. Within 45 days following the receipt of notification from the authority, the applicant should respond and provide relevant explanations. If the applicant fails to respond within the deadline, the central competent authority may suspend an application for the Certificate of Conformity (including the verification stamp for the suspension) for said engine family or the same vehicle or brand.
 - 3.14.5.1 Recall is announced by foreign competent authority or original manufacturer.
 - 3.14.5.2 The exhaust emissions periodic or irregular testing results have shown that in the same engine family or vehicle model, at least 3 vehicles were tested for emissions of the same pollutant and did not meet the Emission Standards.
 - 3.14.5.3 Other items determined by the central competent authority as non-compliant with the Emission Standards.

Appendix 2: Documents required and compliance matters for Heavy-Duty Diesel Vehicle Engine Letter of Conformity applications

1. Before applying for the heavy-duty diesel vehicle Certificate of Conformity, the applicant shall provide the inspection organization with the required documents for verification, and then the Letter of Conformity may be issued only upon approval by the central competent authority.
2. To apply for a Certificate of Conformity, the applicant shall provide the deterioration factors for that engine family. The deterioration factors shall be determined in accordance with Article 9 herein.
3. Test engine and reference fuel specifications

3.1 Test vehicle

The test engine's configuration shall be consistent with the information stated in the Certificate of Conformity application form completed by the engine manufacturer, and be tested in accordance with test methods stipulated in this Appendix. The test engine shall also comply with all the requirements stipulated in this Appendix.

3.1.1 Selection of test engine.

3.1.1.1 The test engine shall be selected based on the engine family category and be tested to measure its exhaust emissions. The selected engine should have the maximum horsepower or maximum quantity of fuel injection per stroke (or with maximum emissions) within that engine family.

3.1.1.2 The applicant shall determine the minimum engine operation hours to achieve stabilized test values for each engine family. For new vehicle certification tests and Conformity of Production (COP) tests, the maximum engine operation hours shall not exceed 125 hours.

3.1.2 Durability test engine

One representative engine for each engine family shall be selected for the durability test. Durability test engine selection and test plans shall be examined by the inspection organization and then approved by the central competent authority, and the testing results for different stages of the durability test should be reported to the authority according to the schedule in the test plan.

3.2 Test fuels

3.2.1 Pollution test fuel specifications.

3.2.1.1 Reference diesel fuel specifications for engine cycle emissions tests

- (1) For the US FTP Transient test cycle: Subject to the 2007 US test fuel specifications.

- (2) For the EU WHSC, WHTC and WNTC test cycles:
Subject to the test fuel (B7 diesel) specifications in EU Regulation (EC) No 595/2009 related directives and Regulation (EU) No 582/2011 Annex IX.

3.2.1.2 Reference alternative clean fuel specifications for engine cycle emissions tests

The alternative clean fuel for emissions tests shall be in accordance with domestic regulated specifications. If those are unavailable, then the foreign specifications shall be adopted, but the manufacturer must ensure that the vehicles comply with the applicable Emission Standards when using domestic market fuel to conduct the new vehicle confirmatory selective audit testing. If domestic market fuel is unavailable, the foreign market fuel specifications shall be adopted.

3.2.2 Durability test fuel specifications

3.2.2.1 Durability test diesel specifications

The reference diesel fuel for durability tests shall be in accordance with the domestic market premium diesel fuel specifications, and the foreign market diesel fuel may also be adopted. If there are multiple foreign market diesel fuels available, the specifications that closest to the domestic market diesel fuel shall be adopted.

3.2.2.2 Durability test alternative clean fuel specifications

The alternative clean fuel for durability tests shall be in accordance with domestic regulated specifications. If they are unavailable, the foreign specifications shall be adopted. If both domestic and foreign specifications are unavailable, the domestic market fuel specifications shall be adopted. If domestic market fuel is unavailable, the foreign market fuel specifications shall be adopted.

4. The applicant shall provide a Chinese version of the user manual, including a warranty for emission control systems and after-sales service units (including depots and stations providing maintenance and repair services) to the central competent authority. The manual shall provide a maintenance guide and schedules for inspection items and component changes within the warranty period for the vehicle owner to perform maintenance accordingly to ensure the normal functioning of emission control systems of the diesel and alternative clean fuel engine.
5. Labeling
 - 5.1 The engine manufacturer shall affix an English label that is durable, corrosion- and rust-proof, not easy to remove and easily identifiable. The label contents shall be in accordance with the regulations of the Country

of Origin and be affixed to a clearly visible place in the engine compartment.

- 5.2 Applicant who has obtained the Certificate of Conformity shall provide a Chinese version of label to be affixed on the engine. If torn off from the engine, the label shall be damaged or cause the printed text to become unrecognizable.
- 5.3 The Chinese contents of the label shall include the following information:
 - 5.3.1 The title of the label shall be “Vehicle Emission Control Information.”
 - 5.3.2 Full name of the company, engine manufacturer and brand.
 - 5.3.3 Engine family name, engine displacement, emission control components and related systems, OBD system.
 - 5.3.4 The minimum specifications shall be included for engine optimal performance tune-up adjustment: idle engine speed, injection timing, valve clearance, maximum horsepower and torque, and other parameters deemed necessary by the engine manufacturer.
 - 5.3.5 Note such as: “This engine family complies with the diesel vehicle Emission Standards effective on January 1, 2004 (or the subsequent Emission Standards promulgated after this date)” and “To remove or modify the emission control devices is prohibited.”
 - 5.3.6 Relative schematic locations of all the emission control related devices.
6. Warranty period
 - 6.1 For diesel vehicles within the warranty period and under normal use conditions, the pollutant emissions shall comply with Article 5 of the Emission Standards and provisions of this Appendix.
 - 6.2 The warranty period for diesel vehicle emission control systems shall be determined in accordance with Article 5 of the Emission Standards and provisions of this Appendix.
7. The use of a defeat device on diesel and alternative clean fuel engines is prohibited, but the need for the device is justified if the device has the following functions:
 - 7.1 The device has functions to protect the engine against damage or an accident.
 - 7.2 The device does not function beyond the requirements of engine start and warm up duration.
8. Testing and inspection
 - 8.1 The central competent authority may request the applicant to send more than one engine to the designated location for the type approval tests at the time of application for a Letter of Compliance. The applicant shall be responsible for the test related fees.

- 8.2 As for the engine manufacturer applying for the Letter of Compliance, the central competent authority or inspection organization's personnel may enter the applicant's inspection room and factory, examine the related documents to determine whether the test engine and the mass-production engines comply with provisions of this Appendix, and verify the consistency of design specifications for the application.
 - 8.3 During the Letter of Compliance application process, the central competent authority may send personnel to supervise and check the preparation process. The central competent authority may together with the designate inspection and testing organization to supervise and check the preparation process.
9. Test specifications and testing report
 - 9.1 Engine test cycle emissions test:
 - 9.1.1 Engines using the US emissions testing cycles for the test: Subject to the FTP Transient test cycle, and required to submit the test report.
 - 9.1.2 Engines using the EU emissions testing cycles for the test: Subject to the WHSC, WHTC and WNTC test cycles, and required to submit the test reports.
 - 9.2 OBD test method: For heavy-duty diesel vehicles equipped with an OBD system according to the requirements of the Emission Standards, the test shall be performed in the manner referred to in Appendix 6 to the Regulations.
 - 9.3 RDE test:

The applicant shall conduct the RDE test based on the engine family for his mass-production engine vehicles. The testing method shall comply with provisions stipulated in Regulation (EU) No 595/2009 and Annex II to Regulation (EU) 582/2011 and the subsequent directives. The applicant shall also provide the test report in accordance with Regulation (EU) No. 595/2009 and Chapter C, Table 1 of Appendix 9 of Annex I to Regulation (EU) No. 582/2011.
 - 9.4 Measurement of net engine power:

The applicant shall measure the net engine power based on the engine family of his mass-production engines. The testing method shall comply with provisions stipulated in Regulation (EU) No 595/2009 and Annex XIV to Regulation (EU) 582/2011 and the subsequent directives. The applicant shall also provide the test report.
 10. The contents of engine exhaust emissions quality control plan shall be determined in accordance with Appendix 4.
 11. Engine family
 - 11.1 Engines that apply for the diesel vehicle Certificate of Conformity shall be categorized by individual engine family. Each engine family shall apply for the Certificate of Conformity separately.

11.2 If the central competent authority considers that engines might have different emission characteristics, it may categorize these engines into different engine families separately. The determination shall be based on the following engine characteristics.

11.2.1 Bore and stroke.

11.2.2 The cylinder surface area and volume ratio when at top dead center.

11.2.3 Size and configuration of intake manifold valve opening.

11.2.4 Size and configuration of exhaust manifold valve opening.

11.2.5 Sizes of intake and exhaust valves.

11.2.6 Cam and fuel injection timing characteristics.

12. Application methods

12.1 The application for a heavy-duty diesel bus and truck Certificate of Conformity may be filed in two steps:

12.1.1 Application for a Letter of Compliance

12.1.2 Application for a diesel vehicle's Certificate of Conformity.

12.2 Applicants who meet any of the following eligibility requirements may combine the two steps prescribed in paragraph 12.1 of this Appendix into one for the application.

12.2.1 The applicant is the diesel engine manufacturer and also the vehicle manufacturer.

12.2.2 The applicant is an imported engine manufacturer's designated agent and also the vehicle manufacturer's designated agent (or domestic vehicle manufacturer).

12.3 Where the applicant already obtains the Letter of Compliance issued by the central competent authority (or Consent to Use Agreement from the original holder of Letter of Compliance and a photocopy of the Letter of Compliance and Guarantee Letter) and the smoke opacity testing values for the engine family (testing values being measured in accordance with the Diesel Motor Vehicle Smoke Opacity Testing Methods and Procedures) comply with Article 5 of the Emission Standards, the applicant may apply with the central competent authority for diesel vehicle Certificate of Conformity.

13. Application for a Letter of Compliance

13.1 Eligibility requirements for application

13.1.1 For domestically manufactured engines, the engine manufacturer shall submit the application.

13.1.2 For imported heavy-duty diesel vehicles, the foreign engine manufacturer's designated domestic agent shall submit the application.

13.1.3 For applicants not being defined in paragraphs 13.1.1 and 13.1.2 of this Appendix (importers shall submit their applications through their pertaining associations) shall submit the testing

report being issued by the central competence authority-designated inspection and testing organization in accordance with paragraph 9 of this Appendix, including the information about after-sales service units (including depots and stations providing maintenance and repair services).

13.2 Application methods for a Letter of Compliance

13.2.1 Application for an engine cycle test Letter of Compliance.

13.2.1.1 Application for the engine family, if the certificate of conformity issued by any country designated by the central competent authority is made available.

- (1) If the applicant has obtained the US-EPA issued new vehicle configuration Certificate of Conformity using FTP Transient cycle for the type approval test, and the exhaust certified values comply with Article 5 of the Emission Standards, the applicant shall submit the application for the Letter of Conformity to the central competent authority.
- (2) If the applicant has obtained an EU member state or UK issued new vehicle configuration Certificate of Conformity in accordance with the Regulation (EU) No. 595/2009 and related directives (including UN/ECE Regulation No. 49) using the WHSC, WHTC and WNTE test cycles for type approval test, and the exhaust certified values comply with Article 5 of the Emission Standards and also Regulation (EU) No. 595/2009-related directives and Chapter C, Table 1 of Appendix 9 of Annex I of Regulation (EU) No. 582/2011, the applicant may submit the application for the Letter of Conformity to the central competent authority.

13.2.1.2 Application for the engine family, if no certificate of conformity issued by any country designated by the central competent authority is made available.

If the applicant has obtained the test report prepared by an accredited inspection and testing laboratory may submit the application for a Letter of Compliance to the central competent authority. The eligibility requirements for the accredited inspection and testing laboratory are as follows:

- (1) Already obtained the US-EPA issued diesel engine family Certificate of Conformity using US-Transient Cycle for the type approval test, which is sufficient to prove that the laboratory has the test equipment and

capabilities to complete the US-Transient cycle, and the test value meets Article 5 of the Emission Standards.

- (2) Already obtained an EU member state or UK issued new diesel vehicle configuration Certificate of Conformity in accordance with the Regulation (EU) No. 595/2009 and related directives (including UN/ECE Regulation No. 49) using the WHSC, WHTC and WNTe test cycles for type approval test, which is sufficient to prove that the laboratory has the test equipment and capabilities to complete the test cycles governed by said directives, and the test value meets Article 5 of the Emission Standards and also Regulation (EU) No. 595/2009-related directives, and Chapter C, Table 1 of Appendix 9 of Annex I of Regulation (EU) No. 582/2011 and related directives.

13.2.2 Application for an OBD Certificate of Conformity: The application shall comply with the test methods prescribed in Appendix 6 and related requirements.

13.2.3 Application for RDE test:

13.2.3.1 Application for the engine family, if the certificate of conformity issued by any country designated by the central competent authority is made available:

If the applicant has obtained an EU member state or UK issued new vehicle configuration Certificate of Conformity in accordance with Regulation (EU) No. 595/2009 and related directives (including UN/ECE Regulation No. 49), and the RDE test report attached to the Certificate meets paragraph 9.3 herein, the applicant may submit the application for the Letter of Conformity to the central competent authority.

13.2.3.2 Application for the engine family, if no certificate of conformity issued by any country designated by the central competent authority is made available:

- (1) If the applicant has obtained an EU member state or UK issued new diesel vehicle configuration Certificate of Conformity in accordance with the Regulation (EU) No. 595/2009 and related directives using the WHSC, WHTC and WNTe test cycles for type approval test, which is sufficient to prove that the laboratory has the test equipment and capabilities to complete said WHSC, WHTC and WNTe test cycles governed by said directives, and the RDE test report

meets paragraph 9.3 of this Appendix, the applicant may submit the application for the Letter of Conformity to the central competent authority.

- (2) That failing to comply with paragraph 13.2.3.2(1) herein shall acquire the RDE test report issued by a inspection and testing organization approved by the central competent authority. Meanwhile, if the RDE test report meets paragraph 9.3 of this Appendix, the applicant may still submit the application for the Letter of Conformity to the central competent authority.

13.2.4 Measurement of net engine power application method:

13.2.4.1 Application for the engine family, if the certificate of conformity issued by any country designated by the central competent authority is made available: If the applicant has obtained an EU member state or UK issued new vehicle configuration Certificate of Conformity in accordance with the Regulation (EU) No. 595/2009 and related directives (including UN/ECE Regulation No. 49), and the measurement of net engine power report attached to the Certificate meets paragraph 9.4 of this Appendix, the applicant may submit the application for the Letter of Conformity to the central competent authority.

13.2.4.2 Application for the engine family, if no certificate of conformity issued by any country designated by the central competent authority is made available: If the applicant has obtained an EU member state or UK issued new diesel vehicle configuration Certificate of Conformity in accordance with the Regulation (EU) No. 595/2009 and related directives (including UN/ECE Regulation No. 49) using the WHSC, WHTC and WNTE test cycles for type approval test, which is sufficient to prove that the laboratory has the test equipment and capabilities to complete said WHSC, WHTC and WNTE test cycles governed by said directives, and the measurement of net engine power report meets paragraph 9.4 of this Appendix, the applicant may submit the application for the Letter of Conformity to the central competent authority.

14. According to the requirements of the Emission Standards, vehicles shall be equipped with an OBD system, and the applicant shall provide OBD compliance-related documents. The contents of these documents are stated as follows:

14.1 Description of the OBD system.

- 14.2 Description or annotated drawing of the MIL used in the OBD system.
- 14.3 Description of all emission-control equipment and related components/systems monitored by OBD, as well as a list of malfunction codes and the computer code-related format and meanings.
- 14.4 Description or flowchart of the actuation principle for OBD monitoring devices (include monitoring strategy, malfunction indicator standards and MIL light on timing).
- 14.5 OBD test report.
- 14.6 An explanation of adopted solutions or strategies to prevent arbitrary adjustment or modification of the Engine Control Units (ECU)
- 14.7 Description of the location of OBD connector (DLC).
- 14.8 Other required supplemental documents when deemed necessary.
15. An application for an HEV's Certificate of Conformity shall be attached with the following explanations:
 - 15.1 Verification and description of vehicle type.
 - 15.2 Operation mode-switch function description.
 - 15.3 Energy storage device description and warranty mileage.
 - 15.4 Electrical power and mechanical system.
 - 15.5 Control Unit.
 - 15.6 Power Control Unit.
 - 15.7 Pure electric power maximum driving range.
 - 15.8 Suggestion items from vehicle manufacturers.
16. Other provisions
 - 16.1 The Letter of Conformity application documents shall be in Chinese or in English. The Chinese translation shall be provided if the application is prepared by a foreign engine manufacturer in a non-English foreign language and signed by the engine manufacturer's authorized agent with the latest update of related information.
 - 16.2 The engineer manufacturer shall satisfy all applicable requirements to show compliance with the Emission Standards.
 - 16.3 The applicant shall keep the latest documents, recorded data, and testing results for 5 years counting from the issuance date of the Letter of Conformity.
 - 16.4 The applicant shall complete the forms and documents to be submitted in an electronic form in response to the e-operating procedure, when filing the application.
 - 16.5 For engine family with one of the following conditions, the central competent authority may request the applicant to provide explanations. Within 45 days following the receipt of notification from the authority, the applicant should respond and provide relevant explanations. If the applicant fails to respond within the deadline, the central competent authority may suspend the use of and application for the Letter of Conformity for said engine family or brand.

- 16.5.1 Recall is announced by a foreign competent authority or original manufacturer.
- 16.5.2 The exhaust emissions periodic or irregular testing results have shown that in the same engine family, at least 3 vehicles were tested with the emissions of the same pollutant against the Emission Standards.
- 16.5.3 Other items determined by the central competent authority as non-compliance with the Emission Standards.

Appendix 3: Provisions for determination of diesel vehicle and diesel engine deterioration factors, Ki factors, and evolution coefficients

1. Each engine family shall have its own exhaust emission deterioration factors. The deterioration factors of said engine family shall be multiplied or added in the gaseous or particulate matter emissions test data for new vehicles (including new vehicle configuration test, quality control test, and new vehicle random test), as the basis for determining whether the engine family complies with the Emissions Standards. Before comparing with the Emissions Standards, the test values shall be calculated to one more decimal place of the emission standard values and then rounded. The rounded values shall not exceed the Emission Standards.

For diesel vehicles using the NEDC or WLTC or WHTC driving cycle for the test and equipped with periodically regenerating system, the test results shall further include Ki factors.

The engine family test results being calculated using deterioration factors or Ki factors in accordance with this Appendix must comply with Article 5 of the Emissions Standards.

2. The deterioration factors shall be determined in either of the following manners:

2.1 Adopting a vehicle on-road or an engine bench durability test

2.1.1 Conducting the durability test:

2.1.1.1 The exhaust emissions deterioration factors shall be determined by the durability test results. The applicant shall provide diesel vehicle (or engine) mileage accumulation driving cycle and durability test plan to the inspection organization for confirmation, and then the durability test may be conducted only upon approval of the central competent authority.

2.1.1.2 The minimum contents of the durability test plan shall include:

- (1) Execution unit (including proof of capability to conduct the test).
- (2) Test vehicle (or engine).
- (3) Test procedures
- (4) Test schedule.
- (5) Test equipment.
- (6) Repair and maintenance items.
- (7) Test fuel.

2.1.1.3 If the assigned multiplicative deterioration factor by vehicle or engine manufacturer is less than 1, it shall be deemed as equal to 1.

- 2.1.1.4 After completing the Durability Test Plan, the applicant shall submit it to the inspection organization for confirmation, and the deterioration factors may be adopted only upon approval of the competent authority.
 - 2.1.2 Using deterioration factors recorded in the US, EU or UK Certificate of Conformity:
 - 2.1.2.1 For engine family (heavy-duty buses and trucks) or vehicle configuration (light-duty commercial or passenger vehicles) with the US, EU or UK issued Certificate of Conformity, the applicant shall submit the relevant deterioration factors information that is recorded in the certificate for approval.
 - 2.1.2.2 For engine family (heavy-duty buses and trucks) or vehicle configuration (light-duty commercial or passenger vehicles) without a US, EU or UK issued Certificate of Conformity, the applicant shall provide declaration documents by the original engine or vehicle manufacturer to declare that said engine family or vehicle configuration is covered in the same durability family as recorded in the obtained Certificate of Conformity, and according to the provisions of EU Regulation (EC) No 715/2007 or No 595/2009 and related directives, the declaration and proof documents of the same durability family, in order to adopt the deterioration factors that are recorded in the Certificate of Conformity.
 - 2.2 Provisions of adopting the assigned deterioration factors are stipulated as follows:
 - 2.2.1 For engine family (heavy-duty buses and trucks) or vehicle configuration (light-duty commercial or passenger vehicles) without a US, EU or UK issued Certificate of Conformity, the applicant shall provide the declaration documents by the original engine or vehicle manufacturer to declare that said engine family or vehicle configuration adopts the designated deterioration factors required by this Appendix. The same shall be submitted to the inspection organization for confirmation, and then the designated deterioration factors may be adopted only upon approval of the central competent authority.
 - 2.2.2 For engine family (heavy-duty buses and trucks) or vehicle configuration (light-duty commercial or passenger vehicles) with a US, EU or UK issued Certificate of Conformity, the applicant shall submit such Certificate to adopt the designated deterioration factors recorded in the Certificate.
 - 2.2.3 In the case of an application for import of new diesel vehicles

and diesel vehicles which are used overseas for less than one year old (calculated from the date of production to the date of on-ship importation) not based on the engine family, or the application filed by the association of importers, the designated deterioration factors shall be adopted. For a vehicle older than one year, no deterioration factor is needed for the test.

2.2.4 The designated deterioration factors are defined as follows:

2.2.4.1 For a vehicle using the US FTP-75 driving cycle or engine using the FTP Transient cycle for the test, the designated deterioration factors are:

(1) For a light-duty commercial or passenger vehicle: Carbon monoxide: 1.2; Hydrocarbons: 1.0; Nitrogen Oxides: 1.0; Particulate Matter: 1.5, all of said deterioration factors are multiplicative.

(2) Application for Heavy-Duty Bus or Truck Certificate of Conformity:

a. Without after-treatment system (see Table 1 of this Appendix).

b. With after-treatment system (see Table 2 of this Appendix).

2.2.4.2 For vehicles or engines using the EU relevant cycles for the test, the designated deterioration factors are:

(1) For a light-duty commercial or passenger vehicle: Carbon Monoxide: 1.6; Sum of Hydrocarbons and Nitrogen Oxides: 1.5; Nitrogen Oxides: 1.3; Particulate Matter (PM): 1.1; Particulate Number (PN): 1.1, all of said deterioration factors are multiplicative.

(2) Application for Heavy-Duty Bus or Truck Certificate of Conformity:

Test cycle	CO	HC	NOx	NH ₃	PM	PN
WHTC	1.3	1.3	1.15	1.0	1.05	1.0
WHSC	1.3	1.3	1.15	1.0	1.05	1.0

Note: all the above listed deterioration factors are multiplicative.

2.2.5 The specific vehicle or engine of an engine family being identified by the central competent authority as unable to obtain its deterioration factors in accordance with the provisions of designated deterioration factors, the same shall not apply to that vehicle configuration or engine family.

3. The purpose of the durability test is to measure the emissions test results after the accumulated time period or mileages for the test vehicle or engine to derive the deterioration factors for each pollutant. The required aging or

mileage for the durability test within the gross vehicle weight rating is in accordance with Article 5 of the Emission Standards.

4. For a test engine or vehicle using the EU NEDC or WLTC or WHTC driving cycle for type approval tests, and equipped with periodically regenerating systems, the test results shall be multiplied by or have added into them the deterioration factors of that engine family, and further be multiplied by or have added into them the regeneration factor K_i to check whether they comply with Article 5 of the Emission Standards.

- 4.1 Periodically regenerating system: means a catalytic converter, particulate filter or an anti-pollution device that requires at least one periodical regeneration process under normal vehicle operation, namely with driving mileage within 4,000 km or within 100 hours of starting operation of the engine.

Notwithstanding, if regeneration of an anti-pollution device occurs at least once during an execution of the Type I test and preparation for tests, or in the WHTC test cycle, it will be considered as a continuously regenerating system.

- 4.2 The regeneration coefficients shall be determined in either of the following manners:

- 4.2.1 Carry out the regeneration coefficient test procedure:

- 4.2.1.1 In the case of the regeneration coefficient test procedures for the test engine or vehicle, the applicant shall submit the Regeneration Coefficient Test Plan to the inspection organization for confirmation, and then the regeneration coefficient test plan may be executed only upon approval of the central competent authority. The regeneration coefficient test procedure shall be conducted in accordance with provisions of Regulation (EC) No 715/2007 or No. 595/2009 and the subsequent related directives (include Annex 13 to the UN/ECE Regulation No 83, or Regulation No. 49).

- 4.2.1.2 After completing the regeneration coefficient test, the applicant shall submit the test result to the inspection organization for confirmation, and then the regeneration coefficients for that vehicle configuration may be adopted only upon approval of the central competent authority.

- 4.2.2 Adopt the regeneration coefficients recorded in the EU or UK Certificate of Conformity:

- 4.2.2.1 For a vehicle configuration granted the Certificate of Conformity issued by any EU member state or the UK according to EU or UN/ECE regulations, the applicant shall submit the documents required for obtaining the regeneration coefficient certification from the EU, and

then is allowed to adopt the regeneration coefficients recorded in the supporting documents.

- 4.2.2.2 For light-duty diesel commercial or passenger vehicle without the Certificate of Conformity issued by any EU member state or the UK according to the EC or UN/ECE regulations, the applicant shall submit the same periodic regeneration system family (Ki family) vehicle's EU Certificate of Conformity from the original engine or vehicle manufacturer to prove that said engine family or vehicle configuration adopts the same regeneration coefficients in accordance with EU Regulation (EC) No 715/2007 and the subsequent related directives. The applicant shall also provide a declaration of the same periodic regeneration system family and proof documents to adopt the Ki factors recorded in that Certificate of Conformity.
 - 4.2.3 The applicants for the light-duty diesel commercial or passenger vehicle Certificate of Conformity who file applications not based on the engine family, or file applications via the association of importers, are allowed to adopt the designated regeneration coefficients, which is 1.05 (multiplication).
 - 4.3 A light-duty diesel commercial or passenger vehicle of the same engine family, which belongs to the same Ki family in accordance with the provisions of EU Regulation (EC) No 715/2007 and the subsequent directives, is allowed to use the same regeneration coefficients.
 - 4.4 Use of regeneration coefficients: Multiplication or addition.
5. For a light-duty diesel commercial or passenger vehicle using the EU NEDC or WLTC driving cycle, before executing the new vehicle random test or quality control test, the vehicle configuration per engine family may adopt the evolution coefficients approved by the central competent authority, which, on the condition that the test vehicles have not yet gone through run-in (accumulation mileage less than 150 km), shall be multiplied by the evolution coefficients.
 - The evolution coefficient shall be determined by one of the following methods:
 - 5.1 Carry out the on-road mileage accumulation test:
 - 5.1.1 The evolution coefficients for exhaust emissions shall be determined based on the on-road mileage accumulation test. The applicant shall submit the Driving Cycle Test method and the plan required for the on-road mileage accumulation test of the light-duty diesel commercial or passenger vehicle. As a first step, the applicant shall submit the plan to the inspection

organization for confirmation, and then the on-road mileage accumulation test may be conducted only upon approval of the central competent authority.

- 5.1.2 The minimum contents of the on-road mileage accumulation test plan shall include the following items:
 - 5.1.2.1 Execution unit (including proof of capability to conduct the test).
 - 5.1.2.2 Test vehicle (or engine).
 - 5.1.2.3 Test procedures
 - 5.1.2.4 Test schedule.
 - 5.1.2.5 Test equipment.
 - 5.1.2.6 Repair and maintenance items.
 - 5.1.2.7 Test fuel.
- 5.1.3 The emission values shall be measured at zero (accumulation mileage less than 150 km) and at required mileage (accumulation mileage less than 15,000 km) for each pollutant separately.
- 5.1.4 The calculation method of evolution coefficient per pollutant type: The emission value at the required accumulation mileage divided by the value at zero mileage for each pollutant. The evolution coefficient may be less than 1.
- 5.1.5 After completing the Accumulated On-road Mileage Plan, the applicant shall submit the plan to the inspection organization for confirmation, and then the on-road mileage accumulation test evolution coefficient may be adopted only upon approval of the central competent authority.
- 5.2 Adopting the evolution coefficients recognized by the EU or the UK: For a vehicle configuration with a Certificate of Conformity issued by EU or the UK, the applicant shall submit the application information about certification of evolution coefficients filed with the EU or the UK to the inspection organization for confirmation, and then the evolution coefficients recorded in the Certificate may be adopted only upon approval of the central competent authority.

(Table 1) without after-treatment system

Deterioration factors				
Durability test	CO	HC	NOx	PM
80,000 km	0.4	0.1	0.4	0.04
176,000 km	0.4	0.1	0.4	0.04
296,000 km	0.7	0.1	0.4	0.04
696,000 km	1.1	0.2	0.7	0.04

Note: all the above deterioration factors are additive.

(Unit: g/ brake horse power·hour)

(Table 2) with after-treatment system

Deterioration factors				
Durability test	CO	HC	NO _x	PM
80,000 km	1.3	1.3	1.2	1.37
176,000 km	1.3	1.3	1.2	1.37
296,000 km	1.4	1.3	1.2	1.37
696,000 km	1.6	1.5	1.2	1.37

Note: all the above deterioration factors are multiplicative.

(Unit: g/ brake horse power·hour)

Appendix 4: Provisions for quality control over mass production of diesel and alternative clean fuel engine vehicles

1. In order to apply for a diesel engine or vehicle Certificate of Conformity based on the engine family, the applicant shall implement quality control measures in accordance with provisions of this Appendix to ensure the emission control systems of mass produced vehicles comply with the applicable Emission Standards during the useful life of the systems.

The quality control plan for diesel vehicle air pollutant emissions shall be implemented based on the following items and requirements:

- 1.1 Self-random test.
 - 1.2 Random inspection ratio.
 - 1.3 Test items.
 - 1.4 Execution organization.
 - 1.5 Instrument and equipment.
 - 1.6 Test results and complete records.
 - 1.7 Deployment data for personnel implementing the quality control plan and cooperating with the personnel engaged in the new vehicle random test and recall and correction investigation.
 - 1.8 Plan implementation flowchart.
 - 1.9 Corrective action programs.
 - 1.10 Other supplementary notes and information about after sales service units (including depots and stations providing maintenance and repair services).
2. Commissioned test requirements:
 - 2.1 For domestically made vehicles, the quality control test should be performed by inspection and testing laboratories accredited by the central competent authority.
 - 2.2 For imported engines or vehicles, the quality control test should be performed by inspection and testing organizations overseas approved by the central competent authority, or performed by local inspection and testing organizations accredited by the central competent authority.
 - 2.3 For overseas quality control tests, if deemed necessary, the central competent authority may designate local inspection and testing organizations to perform comparison testing, and the test fees and freight shall be borne by the applicant.
 - 2.4 For domestic quality control tests, the results from inspection and testing laboratories shall be entered into the online transmission application system designated by the central competent authority.
 3. New vehicle quality control:
 - 3.1 Inspection and Testing items:
 - 3.1.1 Application for Heavy-Duty Engine Certificate of Conformity:

To include at least one engine cycle test and OBD circuitry continuity test.

- 3.1.2 Application for Heavy-Duty Bus or Truck Certificate of Conformity: To include the Smoke Opacity test and OBD circuit continuity test reports.
- 3.1.3 Application for Light-Duty Commercial or Passenger vehicle Certificate of Conformity: To include the driving cycle test, Smoke Opacity test and OBD circuit continuity test reports.
- 3.2 When manufacturing or importing the vehicles, the manufacturer or the manufacturer designated dealer shall complete the quality control testing activities before the sales volume reaches the upper control threshold that is defined in paragraph 3.3: Random inspection ratio of this Appendix. In the meantime, the applicant shall also submit the test report within the specified timeline.
- 3.3 New vehicle quality control random inspection ratio:
 - 3.3.1 If the applicant is the manufacturer or manufacturer designated agent:
 - 3.3.1.1 Application for Heavy-Duty Engine Certificate of Conformity: For each engine family, at least one vehicle shall be selected per 500 vehicles manufactured or imported.
 - 3.3.1.2 Application for Heavy-Duty Bus or Truck Certificate of Conformity: For each vehicle configuration within each engine family, at least one vehicle shall be selected per 500 vehicles manufactured or imported.
 - 3.3.1.3 Application for Light-Duty Commercial or Passenger vehicle Certificate of Conformity: For each engine family, at least one vehicle shall be selected per 200 vehicles manufactured or imported.
 - 3.3.2 If the applicant is an association of importers, in the case of no more than 20 vehicles imported per engine family, at least one vehicle shall be selected per engine family, and; in the case of more than 20 vehicles imported per engine family, at least one additional vehicle shall be selected per 20 vehicles for the random test.
4. In-use vehicle quality control measures:
 - 4.1 For selection of test vehicles, the vehicle configuration enjoying a bigger sales volume or serving as the representational vehicle shall be considered the first priority. The following requirements shall apply during the warranty period of the emission control system.
 - 4.1.1 Application for Heavy-Duty Engine: The vehicle shall have run for at least 25,000 km (inclusive).
 - 4.1.2 Application for light-duty commercial or passenger vehicle:

The vehicle shall have run for at least 15,000 km (inclusive) or already been registered for more than six months (inclusive), whichever is later.

However, this shall not apply where the applicant becomes unable to conduct the test according to said requirements due to special reasons and submits a feasible alternative solution to the central competent authority for approval during the time limit for threshold limits to be attained at various stages.

4.2 Five years after discontinuing the manufacturing of such engine family or OBD Family, the applicant may stop submitting the quality control test result and relevant records being maintained for the in-use vehicles.

4.3 Test items:

4.3.1 Maintenance and Warranty information.

The applicant shall keep customer complaints related to the emission control systems, components, maintenance and warranties, and information on repairs and OBD malfunction services, as records to be filed and preserved for 2 years for future reference. The central competent authority may perform audit inspection sampling to check the implementation status.

4.3.2 OBD In-Use Performance Ratio (IUPR).

If the sales of the OBD family vehicles manufactured or imported have already accumulated over 200 units, the applicant shall conduct the OBD IUPR inspection on the vehicles sold domestically and produce the inspection report to be retained for two years for future reference, pursuant to the provisions of EU Regulation (EC) No. 595/2009 or (EC) No. 715/2007 and the subsequent related directives. The central competent authority may also perform a random test to check the implementation status.

4.3.3 Driving cycle test random inspection ratio

4.3.3.1 The applicant shall select test vehicles pursuant to the random inspection ratio and test time limit requirements under paragraph 4.4.2 of this Appendix, and complete the test according to the In-use Vehicle RDE on-road requirements under the Regulation (EU) No. 595/2009 or EU Regulation (EC) No. 715/2007 and related derivatives.

4.3.3.2 Determination of testing results: For driving cycle tests, the results shall comply with Article 5 of the Emission Standards. The vehicle RDE on-road test results shall comply with the following In-Service Conformity factor.

(1) Application for Heavy-Duty Engine: For the vehicle RDE on-road test, 90% of the pollutant emissions

within the Windows shall not exceed the threshold limits under WHTC cycle referred to in Article 5 of the Emission Standards multiplied by the In-Service Conformity factors listed in the following Table:

Pollutant	In-Service Conformity factor
CO	1.50
THC	1.50
NOx	1.50
PN	—

(2) Application for Light-Duty Commercial or Passenger vehicle: The pollutant emissions from urban driving and the entire RDE trip shall not exceed the threshold limits under NEDC or WLTC driving cycle test referred to in Article 5 of the Emission Standards multiplied by the In-Service Conformity factors listed in the following Table:

Pollutant	In-Service Conformity factor
NOx	2.1
PN	1.5
Test command	Regulation (EU) 2017/1154 and related amended derivatives

As of January 1, 2028, the emission test result shall meet the arithmetic product of the In-Service Conformity factors listed in the following Table:

Pollutant	In-Service Conformity factor
NOx	1.1
PN	1.34
Test command	Regulation (EU) 2023/443 and related amended derivatives
Remarks	Whether the Table may be applied shall be determined subject to the date when application is made for the Certificate of Conformity for a new engine family.

4.4 Random inspection ratio and the deadline for completing the testing

4.4.1 OBD In-Use Performance Ratio:

4.4.1.1 Except for the first test which shall be completed within 18~24 months as of the date when the sales of new vehicle configurations start, all other tests shall be executed on a yearly basis.

4.4.1.2 For OBD family vehicles for which accumulated sales have already reached 200 to 1,000 units, it is necessary to complete the tests and records for at least six vehicles. In

the case of accumulated sales over 1,000 units, it is necessary to complete the tests and records for at least six vehicles on a yearly basis.

4.4.2 Emissions test:

4.4.2.1 The same applicant shall have tests conducted according to the regulations defined in the table below, as soon as the accumulated sales volume of the respective PEMS test family or engine family reaches the lower threshold established for each stage:

Applicant	Group & unit	Test method	Reporting ratio			Time limit for completion
			Stage	Accumulated sales (unit)	Test number (unit)	
Light-Duty Commercial or Passenger vehicle	PEMS test family	On-road test with PEMS or WLTC	1	200~499 units	1 unit	Within 24 months
			2	500~1,999 units	1 unit	Within 18 months
			3	Per additional 2,000 units	1 unit	Within 18 months
Heavy-duty engine	Engine family	On-road test with PEMS	1	21~199 units	1 unit	Within 24 months
			2	More than 200 units (inclusive)	Additional one unit per two years	Within 18 months
Remarks	In the case of heavy-duty diesel engines, except for the first report which shall be completed within 18 months at the 2nd stage, the emission test results for the previous year shall be reported by March 31 of each year afterward.					

4.4.2.2 In the event a designated PEMS test family or engine family fails to achieve the required threshold, before precluding the said PEMS test family or engine family, the applicant shall conduct tests according to the regulations defined in the above table, if the sum of the sales for the rest of the vehicles is 200 or more units.

5. Test result and data reporting schedule

5.1 The applicant shall report and enter the test results and required data in the format defined by the network transmission system as designated by the central competent authority and then report the same to the central competent authority for future reference.

5.2 New vehicle quality control: Before the 20th day of each month, the applicant shall report the production quantity of new vehicles, quantity

of imported vehicles, and new vehicle quality control test results of the previous month.

- 5.3 In-use vehicle quality control: Before the 31st day of March each year, the applicant shall report the emission test result of the previous year.
- 5.4 After completing the quality control test, the applicant shall not arbitrarily change the test purpose of any vehicles failing the test.

Appendix 5: Requirements for the test methods, selection of test vehicles, judgement of test results, recall and correction plans and other compliance matters for the new vehicle random check of diesel vehicles, diesel and alternative clean fuel engine vehicles

1. General Provisions

- 1.1 The central competent authority may independently, or commission a inspection and testing organization to, conduct the new vehicle random check on the vehicle configuration or the engine type recorded in the diesel vehicle emissions Certificate of Conformity after the manufactured or imported vehicles of new vehicle configuration or engine has reached the regulated numbers or time period. If the test results show non-compliance, the Certificate of Conformity or Letter of Compliance for that vehicle or engine shall be repealed, and the related motor vehicle departments shall be notified accordingly and issuance of certificate to the vehicle configuration or engine that has gone through the certification process shall be suspended. During the confirmatory selective audit test, the specifications of vehicle emission control systems shall be checked to confirm their consistence with the specifications being recorded in the Certificate of Conformity. If determined as not consistent, the central competence authority shall repeal the Certificate of Conformity for that vehicle model or engine.
- 1.2 The central competent authority shall provide a detailed explanation about the time and tested items of the new vehicle random check. The applicant who has received the Certificate/Letter of Conformity shall respond to the new vehicle random check operations immediately upon receipt of the notice from the central competent authority. After receipt of the notice, if the applicant does not respond within 5 days without any good reason, the central competent authority may suspend the certification process for that engine family or vehicle model.

2. Random check requirements

- 2.1 The test engines or vehicles shall be randomly sampled for the test.
- 2.2 The random check engines or vehicles shall be selected and designated by the central competence authority. The test schedule and location shall be designated by the central competence authority. The applicant shall be responsible for the transportation, test and supervision fees for the tests (including supervising personnel's transportation, travel, accommodation and supervision fees).
- 2.3 The applicant shall provide any diesel engines or vehicles already granted the Certificate of Conformity for the central competent authority to select and conduct the test. The test engines or vehicles sample selection methods are as follows:
 - 2.3.1 The applicant's storage area for the engines or vehicles that has

been inspected satisfactorily.

2.3.2 The locations of the applicant designated representative, distributor or dealer where the applicant stores the engines or vehicles.

2.3.3 Storage warehouse of the Republic of China Customs.

2.4 The selected engines or vehicles shall be sent to a location designated by the central competent authority under supervision of the central competent authority designated personnel.

If there is no domestic inspection and testing organization recognized by the central competent authority, the engine or vehicle manufacturer may send the selected engines or vehicles for the random check to a test laboratory abroad and the test laboratory must fulfill the eligibility requirements stipulated in paragraph 5 of this Appendix. The central competent authority may send personnel to the laboratory to supervise the test (including verification of the vehicle, test, preparation, or sales adjustment).

3. Random check sample ratio:

3.1 The new vehicle random check sample ratio for the driving cycle test or smoke opacity test is specified as following:

3.1.1 Heavy-duty Buses and Trucks: For the same engine family (which applies for the Letter of Compliance) or vehicle configuration (which applies for the Certificate of Conformity), one vehicle shall be selected per 500 units. One vehicle shall be selected for the random check even if the annual production is under 500 units.

3.1.2 Light-duty commercial or passenger vehicles: For the same engine family, one vehicle shall be selected per 500 units. One vehicle shall be selected for the random check even if the annual production is under 500 units.

3.1.3 For applicants who fail to fulfill the implementation of a quality control plan, one vehicle shall be selected per 200 units. One vehicle shall be selected for the random check even if the annual production is under 200 units.

3.2 For the OBD test, one vehicle shall be selected per engine family.

4. Sampling and preparation for engines or vehicles

4.1 The engines or vehicles being selected for the random check shall be brand new ones manufactured according to the mass production procedures (such as, quality control and assembly process) by the engine or vehicle manufacturer.

4.2 The engines or vehicles being selected for the random check shall be normally maintained and free from any misuse.

4.3 The maximum accumulated mileage or engine operation hours shall not exceed the following limits:

- 4.3.1 Heavy-Duty Diesel Engines: 125 hours of engine operation.
- 4.3.2 Light-Duty Commercial or Passenger vehicles:
 - 4.3.2.1 Vehicles being tested using the US FTP-75 driving cycle: 6,400 km.
 - 4.3.2.2 Vehicles being tested using the EU NEDC or WLTC driving cycle: 15,000 km.
- 4.4 Upon approval by the central competent authority and under the supervision of personnel designated by the central competent authority, the engine or vehicle manufacturer may implement the vehicle's mileage accumulation, make adjustments, change the test sequence, and conduct maintenance.
- 4.5 When the engine or vehicle manufacturer is authorized by the central competent authority to execute the inspection or adjustment, it is only allowed to use the test and diagnosis equipment with the functionality equivalent to that used by the distributor.
- 4.6 To facilitate the test process, engine or vehicle manufacturers shall supply the necessary test engines or vehicles, special hardware, and personnel within 45 days following the receipt of the notice from the central competent authority in order to ensure the efficiency of test preparation. Inability to provide such special hardware equipment or personnel shall not be an excuse to claim invalidation of the test results, but the applicant may request for extra days for the OBD test according to actual needs.
- 4.7 The engines or vehicles for the new vehicle random check shall comply with the following provisions:
 - 4.7.1 Prior to the random check, the test engines or vehicles shall implement mileage accumulation in accordance with paragraph 4.3 of this Appendix and keep the seal or lead sealing intact.
 - 4.7.2 If the test engines or vehicles are unable to complete the mileage accumulation or if, due to defects of engine or vehicle functionality or a vehicle accident, it is impossible to complete the test, or if the seal or lead seal is damaged, the manufacturer shall provide an explanation to the central competent authority prior to the test. The central competent authority may authorize the manufacturer to conduct adjustments or repairs to restore the engines or vehicles back to a normal operation condition or make them suitable for the test. If the vehicle or engine is deemed as no longer representative for the test, the central competent authority may disqualify that vehicle or engine from the sample vehicles, and select other vehicles as replacement. The number of replacement vehicles is determined by the central competent authority.
 - 4.7.3 Unless approved by the central competent authority, the engine

or vehicle manufacturer shall not perform adjustments, repairs, preparations, carry out any maintenance, modifications, or perform any emissions test on the selected engines or vehicles.

- 4.7.4 If the engine or vehicle manufacturer can provide enough investigation data or other proof documents to prove that the preparation procedure is the same as that performed by the dealers before delivering the sold vehicles to customers, the central competent authority may approve the engine or vehicle manufacturer to carry out the same preparation procedure. (If the vehicle or engine manufacturer only claims that all his dealers being requested to carry out the preparation procedure before delivering the sold vehicles to customers without any support documents, the central competent authority shall not accept the procedure)
 - 4.7.5 If, subject to prior approval of the central competent authority and under the supervision of personnel designated by the central competent authority, the manufacturer uses the instrument, equipment or tool with the functionality equivalent to that used by the dealers' maintenance centers/depots, the manufacturer may perform the following maintenance, inspection or adjustments:
 - 4.7.5.1 Battery replacement or recharge.
 - 4.7.5.2 Wiring harness safety check.
 - 4.7.5.3 Oil change or filter replacement.
 - 4.7.6 If the engine or vehicle manufacturer requests any additional maintenance items, it shall provide an outline of reasons and related supporting data to the central competent authority for approval, and then may proceed to perform the additional maintenance items.
5. Test procedures
 - 5.1 All tests shall be performed in accordance with provisions of paragraph 2.6 of Appendix 1, paragraph 3.8 of Appendix 1, and paragraph 9 of Appendix 2.
 - 5.2 Prior to the random check, in accordance with paragraph 4.7 of this Appendix, the central competent authority may perform adjustments or have to perform necessary adjustments on other adjustable parts within the tolerance range.
 - 5.3 If the central competent authority or the inspection and testing organization approved by the central competent authority has determined that the user is able to access the components settings easily, during the random check, the central competent authority may adjust component settings beyond their designed range.
 6. Determination and handling of testing results

- 6.1 If the results of the entire random check comply with applicable Emissions Standards, the vehicles shall be deemed to pass the test.
- 6.2 If any of the selected vehicles fail the random check, then the applicant may ask to conduct the retest once or may also ask the central competent authority to conclude that such vehicle has failed the initial test. The applicant shall complete the test within the timeline instructed by the central competent authority. If failing to complete the test within such timeline, then the original test result shall be regarded as the finalized result.
 - 6.2.1 A re-test may be requested only before the test vehicle is removed from the test laboratory.
 - 6.2.2 Any repairs, adjustments, run-in or tests on the vehicle are prohibited during the test.
 - 6.2.3 The re-test results shall be treated as the final result. The vehicle shall be determined to pass the test if it is held to satisfy the Emission Standards.
- 6.3 If a vehicle is determined to fail the initial test, within 20 days from the day of receipt of notice from the central competent authority, the applicant shall submit a written request for re-test, or accept the result that the new vehicle has failed the random check, and then submit the recall and correction plan to the central competent authority according to the requirements regarding defective new vehicles found during the random check.
 - 6.3.1 The number of samples taken for the re-test shall be decided by the applicant personally, provided that it shall be no less than double that of the unqualified samples found in the preliminary test.
 - 6.3.2 The selection, preparation and test method for the vehicles are the same as the initial test.
 - 6.3.3 Before removing a vehicle that failed a re-test, the applicant may ask to repeat the re-test once. The applicant shall complete the second re-test within the timeline instructed by the central competent authority. If failing to complete the second re-test within such timeline, then the first re-test result shall be regarded as the finalized result. Otherwise, the result of the second re-test shall be regarded as the finalized result. In the meantime, the applicant shall not attempt to make any repairs, adjustment or other tests during the entire testing process.
 - 6.3.4 The arithmetic mean should be retrieved from the test values obtained from the vehicles failing the initial test and all the vehicles used in the random check during the retest, as the test result. Meanwhile, the vehicle will be determined qualified only if the arithmetic mean of the respective air pollutant shown in

the test result is lower than the emission standard; otherwise, it shall be determined as defective.

Notwithstanding, in the case of the OBD test, under the circumstances referred to in the preceding paragraph, if the sum of the vehicles failing the initial test plus vehicles failing the re-test divided by the sum of the vehicles failing the initial test and vehicles selected for the re-test shall be less than 0.4, and the sum of the vehicles failing the initial test and re-test is less than 4, the vehicle shall be determined as qualified in the following manners:

Determination	Criterion
Formula 1	$(N_{fn}+N_{sn})/(N_{fn}+N_s)<0.4$
Formula 2	$(N_{fn}+N_{sn}) <4$
Remarks	1. N_{fn} : Number of vehicles failing the preliminary test 2. N_{sn} : Number of vehicles failing the re-test 3. N_s : Number of vehicles undergoing the random check during the re-test

6.3.5 Although the test result shows qualified, for the vehicles failing the initial test or re-test, it is still necessary to explain the reasons and corrective actions, and submit the test report showing that each vehicle satisfies the emission standards after the correction to the central competent authority for future reference.

6.4 If the vehicle is determined to fail the new vehicle random check, the Letter of Conformity for the engine family and Certificate of Conformity for the use of the engine family shall be revoked. If the test vehicle only failed the Smoke Opacity test, only its diesel vehicle model Certificate of Conformity shall be revoked. When the central competent authority revokes the Certificate of Conformity pursuant to the relevant requirements, within 45 days following receipt of the notice, the applicant shall submit a recall and correction plan for the unsold and sold vehicles using the engine family to the central competent authority.

If the proposed recall and correction plan are reviewed and approved by the central competent authority, the applicant shall complete the implementation of recall and correction plan within 90 days upon receiving the approval letter. If unable to complete the recall and correction plan by the deadline, within 45 days upon receipt of the approval letter, the applicant shall submit a specific improvement plan to apply for an extension to the central competent authority. Based on actual conditions, the central competent authority

may approve the extension of deadline, and the maximum extension shall not exceed one year. The central competent authority shall immediately terminate the extension of deadline if the improvement plan implementation is investigated and confirmed not to be in accord with the approved plan.

- 6.5 The contents of the Recall and Correction Plan shall include the following items:
 - 6.5.1 Engineering cause analysis for each vehicle non-compliant with the applicable emissions standards.
 - 6.5.2 An impact assessment on the cause of non-compliance.
 - 6.5.3 The brand, engine family, vehicle model, vehicle configuration and quantity of the vehicles to be recalled and corrected, and the need to recall and correct the vehicles.
 - 6.5.4 The projected ratio for the number of recalled vehicles to the sales of the vehicle.
 - 6.5.5 Corrective actions to be taken against recalled vehicles, such as component replacements, repairs, inspection, calibration, adjustments, other necessary changes and any other technical information summaries that are sufficient to prove that they may improve the air pollutant emissions in line with the Emission Standards.
 - 6.5.6 The access to the list of names and addresses of the recalled vehicle owners.
 - 6.5.7 For recalled vehicles, without the consent of the central competent authority, the vehicle manufacturer or importer shall not force the vehicle owner to comply with any maintenance and operation guideline or conditions (e.g. requiring the vehicle owners to use any spare parts other than those manufactured by the original manufacturer, or having the vehicle serviced by a repair center/depot not authorized by the vehicle manufacturer or importer).
 - 6.5.8 The recall and correction procedures to be implemented include setting the starting and end dates for the recall and correction, location, and reasonable hours needed for execution of the work.
 - 6.5.9 Technical capability and equipment required for the unit or personnel responsible for executing the recall and correction.
 - 6.5.10 Recall Notice to all vehicle owners.
 - 6.5.11 Appropriate supply system for the replacement components during the recall period.
 - 6.5.12 The work manual needed by workers involved in the recall and correction plan.
 - 6.5.13 If the implementation of the recall correction plan will affect the

vehicle's fuel consumption, noise, or other performance functionality, the manufacturer shall provide appropriate explanations.

- 6.5.14 The applicant may provide other technical data or test reports to prove the effectiveness of the recall plan to the competent authority for evaluation.
- 6.6 The central competent authority shall perform various verification tests for the corrective action taken under the recall and correction plan executed by the applicant.
- 6.7 Within 30 days upon completion of the implementation of the recall and correction plan, the applicant shall submit a recall and correction report to the central competent authority for review.
- 6.8 When the central competent authority notifies the applicant of the cancellation or revocation of the Certificate of Conformity, the Ministry of Transportation and Communications should be notified concurrently.
- 6.9 For those unsold vehicles for which the Certificate of Conformity is revoked, once the applicant has completed the implementation of the recall and correction plan as authorized by the central competent authority and is allowed to close the case by the central competent authority, the applicant may re-apply for a Certificate of Conformity for that engine family or vehicle configuration in accordance with these provisions.

Appendix 6: Regulations Governing Diesel Vehicles Equipped with OBD Systems

1. Definitions

- 1.1 Malfunction: When deterioration or failure of the vehicle's air pollution control equipment and related components results in pollution emissions failing to meet OBD control standards.
- 1.2 Malfunction simulation: Use of deteriorated or ineffective pollution prevention equipment and related components or electronic simulators to simulate the failure of equipment or components in the test project.
- 1.3 Malfunction indicator: The light indicator used to inform the vehicle driver of any failure in components or related equipment, detected by the OBD.
- 1.4 Continuous monitoring: Monitoring circuit continuity (e.g. lack of circuit continuity, circuit malfunction, and values exceeding normal operating values).
- 1.5 Driving Cycle: The vehicle driving process required for an OBD system to perform a comprehensive diagnostic assessment of air pollution control equipment and related components. This includes engine start-up, operation, a period of driving, followed by engine shutdown, and sufficient idle time before the next engine start. Any malfunctions occurring during this driving cycle should be diagnosed.

2. Functions and related testing items for OBD shall comply with the following provisions:

- 2.1 The OBD system shall be able to monitor and perform a periodical assessment of emission control equipment and related components. The frequency shall be one OBD monitoring assessment completed for each driving cycle.
- 2.2 The vehicle shall be equipped with a standardized OBD Malfunction Indicator Light (MIL) and malfunction code storage capability, and allow reading of malfunction codes via a connector. Said components and functions shall meet the relevant standards.
- 2.3 The OBD system shall perform a monitoring assessment of the pollution-related system or components, unless there is a likelihood of damage to the air pollution control equipment and related components, or any safety concerns, or the power take-off units are running.
- 2.4 OBD testing shall be performed on a test engine or vehicle that has completed the durability testing or the equivalent deterioration testing. In the case of a new vehicle, deterioration factors shall be applied to the new vehicle's OBD test results as the final OBD test results.
- 2.5 The applicant shall submit an OBD test plan pursuant to this Appendix. The applicant shall submit the same to the inspection organization for confirmation, and then the OBD test may be

performed only upon approval of the central competent authority.

The OBD test plan shall include the following items:

- 2.5.1 Unit conducting the test (including proof documents of its capability to perform a malfunction simulation and OBD tests).
 - 2.5.2 Test procedure, including flowchart and schedule for the malfunction simulation test.
 - 2.5.3 Test vehicle and description of vehicle configuration covered by the OBD family.
 - 2.5.4 Description of OBD test items, test equipment and methods for malfunction simulation.
 - 2.5.5 For the OBD related proof documents, please refer to the descriptions in paragraph 3.12 of Appendix 1 or paragraph 14 of Appendix 2.
 - 2.5.6 Other required supplemental documents.
- 2.6 The vehicle configurations produced by the same vehicle manufacturer with identical engine characteristics, emission control system, OBD monitoring functions and monitoring strategies may be categorized as the same OBD family. The test results of the representative vehicle with the highest emissions shall be taken as the test results for the OBD family.
- 2.7 Applicants who file applications not based on the engine family or file applications via an association of importers are allowed to perform at least one OBD circuit continuity test in the following manner.: The said circuit continuity test refers to the malfunction simulation for the specified items to be tested before the main test, in order to verify that the MIL, malfunction codes and freeze information comply with the OBD specifications during and after the main test. The simulation items may be the continuous monitoring emission control devices or systems. The main test shall comply with the following basic provisions:
- 2.7.1 After completion of the malfunction simulation, the engine shall be started 3 times consecutively, each time operating for at least 30 seconds; after the engine starts to operate, the engine shall be switched off and restart again. When the engine is in operation condition, with the consent of the central competent authority, the test vehicle may perform necessary test cycles.
 - 2.7.2 After the test is completed, the MIL must be verified to be operating and the malfunction codes verified to be consistent with the relevant simulation items, and the freeze data shall be recorded.
3. The threshold limits, scope, items, and In-Use Performance Ratio (IUPR) of the OBD system shall comply with the following provisions:

3.1 The OBD threshold limits are set as follows:

3.1.1 For light-duty commercial or passenger vehicles tested on a chassis dynamometer using the NEDC or WLTC driving cycle, the applicable OBD threshold limits (OTL) are as follows:

Category		CO mg/km	NMHC mg/km	NO _x mg/km	PM mg/km
M1	GVW ≤ 3500 kg	1750	290	140	12
N1	RW ≤ 1305 kg	1750	290	140	12
	1305 kg < RW ≤ 1760 kg	2200	320	180	12
	1760 kg < RW	2500	350	220	12

3.1.2 For Heavy-Duty Diesel Engine Buses and Trucks tested on an engine dynamometer using the ETC or WHTC cycle, the OBD threshold limits are as follows:

Category		NO _x OTL (mg/kWh)	PM OTL (mg/kWh)	Reagent quality and consumption NO _x (mg/kWh)
HD Buses and Trucks	Trucks with GVW over 3500 kg or buses with more than 10 seats	1200	25	460

3.1.3 For deterioration/malfunction simulation test results, if the emission values for each pollutant exceed the applicable OBD threshold limits by no more than 120% of the applicable OBD threshold limits, the vehicle shall be deemed qualified.

3.2 OBD monitoring items and scope:

Prior to performing the following OBD monitoring item tests, the applicant shall confirm that the test vehicle complies with the applicable Emission Standards. The central competent authority may designate specific items for the applicant to conduct for the test:

3.2.1 Application for Light-Duty commercial or passenger vehicle Certificate of Conformity:

During new vehicle type approval stage, at least five OBD monitoring items shall be tested, which include the Catalytic Converter, Diesel Particulate Filter, Fuel-Injection System, and the deNO_x and Diesel Particulate Filter combined system and other emission control systems or components.

3.2.1.1 Catalytic Converter: The system should be able to monitor the reduction in efficiency of catalytic converters in vehicles. The OBD must be able to detect deterioration or malfunction of the catalytic converter before tailpipe emissions exceed OBD threshold limits.

3.2.1.2 Particulate Filter: For vehicles equipped with a particulate

filter, the system should be able to monitor the functionality, integrity and reduction in efficiency of the particulate filter. The OBD must be able to detect deterioration or malfunction of the particulate filter before tailpipe emissions exceed OBD threshold limits.

- 3.2.1.3 Fuel Injection System: The fuel injection system's electronic fuel quantity and timing actuator(s) are monitored for circuit continuity and total functional failure. The system must be able to detect the deterioration or malfunction before the tailpipe emissions exceed OBD threshold limits.
- 3.2.1.4 A combination of deNOx and Diesel Particulate Filter (DPF) system: For vehicles equipped with this system, it should be able to monitor the reduction in efficiency of the DPF system. The OBD system must be able to identify the combined system's deterioration or malfunction before the NOx and PM emissions exceed OBD threshold limits.
- 3.2.1.5 Other emissions control equipment and related systems or components: Before any deterioration or malfunction of the emissions control-related power system or components results in any pollutant emission exceeding the OBD threshold limits, or causes any impact to the pollutant emissions not described in paragraphs 3.2.1.1 to 3.2.1.4 of this Appendix, the OBD system shall be able to diagnose such deterioration or malfunction. Such systems or components include those for monitoring and control of exhaust gas recirculation (EGR) system, air mass-flow, air volumetric flow (and temperature), turbo-charge boost pressure and inlet manifold pressure etc.
- 3.2.1.6 Other emissions control related components: The OBD system shall be able to diagnose the deterioration or malfunction of sensors, actuators or components related to the electronic signal input/output that affect the emissions control but are not described in paragraphs 3.2.1.1 to 3.2.1.4 of this Appendix. This portion, the continuity and rationality of electronic circuits, shall be monitored. The actuator must be actuated according to the instructions for the ECU.
- 3.2.2 Application for Heavy-Duty Bus and Truck Certificate of Conformity:

During new vehicle type approval stage, at least five OBD monitoring items shall be tested which include Catalytic Converter, Diesel Particulate Filter, deNOx System, Fuel

Injection System and other emission control systems or components.

- 3.2.2.1 Catalytic Converter: For vehicles equipped with a catalytic converter, the system should be able to monitor the reduction in efficiency of the catalytic converter. The OBD must be able to identify catalytic converter deterioration or malfunction before the NO_x emission exceeds the OBD threshold limit.
- 3.2.2.2 Diesel Particulate Filter: The system should be able to monitor the reduction in efficiency of a diesel particulate filter. The OBD system must be able to detect deterioration or malfunction of a Diesel Particulate Filter before PM emissions exceed the OBD threshold limit.
- 3.2.2.3 The deNO_x system: It should be able to monitor the reduction in efficiency of the deNO_x system. The OBD system must be able to detect the deNO_x system's deterioration or malfunction before the NO_x emission exceeds the OBD threshold limit.
- 3.2.2.4 A combination of deNO_x and Diesel Particulate Filter (DPF) system: For vehicles equipped with this system, the OBD system should be able to monitor the reduction in efficiency of the DPF system. The OBD system must be able to identify the combined system's deterioration or malfunction before the NO_x and PM emissions exceed the OBD threshold limits.
- 3.2.2.5 The OBD system should be able to monitor the continuity and rationality of electronic circuits between the ECU and the other power systems, vehicle electronics or electronic systems and components (such as transmission control interface), and also identify the deterioration or malfunction status, if any.
- 3.2.2.6 The fuel-injection system electronic fuel quantity and timing actuator(s) are monitored for circuit continuity (open or short circuit) and total functional failure. The OBD system should be able to diagnose the malfunction status before any regulated pollutant emissions caused thereby exceed the OBD threshold limits.
- 3.2.2.7 Other emissions control equipment and related system or components: Before any deterioration or malfunction of the emissions control related power system or components result in any pollutant emission exceeding the OBD threshold limits, or causes any impact to the pollutant emissions, which is not described in paragraphs 3.2.2.1 to

3.2.2.6 of this Appendix, the OBD system shall be able to diagnose such deterioration or malfunction. Such systems or components include those for monitoring and control of exhaust gas recirculation (EGR) system, air mass-flow, air volumetric flow (and temperature), turbo charged boost pressure and inlet manifold pressure, sensors and actuators for deNOx system and for electronic controlled active regeneration DPF system.

3.2.2.8 Other emissions control related components – The OBD system shall be able to diagnose the deterioration or malfunction of sensors, actuators or components related to the electronic signal input/output that affect the emissions control but are not described in paragraphs 3.2.2.1 to 3.2.2.6 of this Appendix. This portion, the continuity and rationality of electronic circuits shall be monitored. The actuator must be actuated according to the instructions for the ECU.

3.2.2.9 For engines using an exhaust after-treatment system requiring the use of a consumable reagent to achieve the intended reduction of regulated pollutants, the OBD system shall monitor:

- (1) Lack or insufficient supply of consumable reagent.
- (2) Whether the quality of consumable reagent is in compliance with the specifications (shall comply with provisions of Annex II to the EU Directive 2005/55/EC).
- (3) Consumption of reagent or injection reaction.

The other requirements include Regulation (EU) No. 595/2009-related directives and Chapter C, Table 1 of Appendix 9 of Annex I to Regulation (EU) No. 582/2011 and the subsequent related directives.

3.3 OBD In-Use Performance Ratio (IUPR):

During the vehicle's in-service stage, the OBD system shall be able to monitor and store OBD IUPR related information. The related specifications shall follow the OBD in-use performance requirements under the EU Regulation (EC) No. 715/2007 or (EU) No. 595/2009 and the related subsequent directives (including UN/ECE Regulation No. 83 or No. 49). When filing an application, the applicant shall specify that the monitored items, declaration of OBD monitoring conditions, monitoring conditions and the OBD IUPR comply with the following requirements:

3.3.1 Light-Duty commercial or passenger vehicle:

To confirm that the in-use vehicle's OBD IUPR fulfill the

following requirements:

- 3.3.1.1 The mean of IUPR for each major component or system shall ≥ 0.336 .
- 3.3.1.2 Subject to the test vehicles selected in accordance with paragraph 4.3.2 of Appendix 4 and paragraph 4.4.1 of Appendix 4, for at least for 50% of the test vehicles, their OBD IUPR test results for each major component or system shall comply with said OBD IUPR requirements.
- 3.3.1.3 The major components or systems referred to in the preceding paragraphs 3.3.1.1 and 3.3.1.2 are as follows:
 - (1) Catalyst;
 - (2) Oxygen (O₂)/Exhaust gas sensor; including secondary O₂ sensor.
 - (3) Exhaust Gas Recirculation (EGR) system.
 - (4) Variable Valve Timing (VVT) system.
 - (5) Diesel Particulate Filter (DPF).
 - (6) NO_x after-treatment system (such as NO_x adsorbent catalyst, NO_x reagent/catalyst system).
 - (7) Turbo/Supercharger Boost System.
- 3.3.1.4 The OBD IUPR shall comply with Euro 6-2 provisions under the EU Regulation (EC) 715/2007 and the subsequent related directives.
- 3.3.2 Heavy-Duty Bus or Truck:

To confirm that the in-use vehicle's OBD IUPR fulfills the following requirements:

 - 3.3.2.1 The mean of IUPR for each major component or system shall ≥ 0.1 .
 - 3.3.2.2 Subject to the test vehicles selected in accordance with paragraph 4.3.2 of Appendix 4 and paragraph 4.4.1 of Appendix 4, for at least for 50% of the test vehicles, their OBD IUPR test results for each major component or system shall comply with said OBD IUPR requirements.
 - 3.3.2.3 The OBD IUPR related specifications shall be in accordance with provisions of EU Regulation (EC) No 595/2009 and Annex X to Commission Regulation (EU) 582/2011 and the subsequent related directives.

4. Other provisions

- 4.1 A sequence of diagnostic checks must be initiated at each engine start and completed at least once to verify the OBD system's functionality and provide the correct test conditions.
- 4.2 The test engine or vehicle, environmental temperature, pressure, test equipment (such as chassis dynamometer), test fuel, and the instrument panel facing the driver seat shall be equipped with a

malfunction indicator light (MIL), OBD storage and trouble code retrieval method, OBD storage and diagnostic information retrieval method, OBD standardized interface, and other OBD related provisions that shall comply with the following requirements:

4.2.1 For the light-duty commercial or passenger vehicle: The OBD system shall comply with Euro 6-2 requirements under the EU Regulation (EC) No. 715/2007 and the subsequent related directives.

4.2.2 Heavy-duty bus and truck: The other requirements include Regulation (EU) No. 595/2009-related directives and Chapter C, Table 1 of Appendix 9 of Annex I to Regulation (EU) No. 582/2011 and subsequent related directives.

5. The OBD related testing requirements and application process shall comply with the following provisions:

5.1 Application for Light-Duty commercial or passenger vehicle Certificate of Conformity:

5.1.1 The application method if no OBD certificate of conformity issued by any country designated by the central competent authority is made available:

The applicant shall apply for an OBD test plan pursuant to this Appendix, and submit the same to the inspection organization for confirmation, and then the OBD test may be performed only upon approval of the central competent authority. The test laboratory eligible to perform the OBD test shall fulfill the following eligibility requirements and the central competent authority may also send personnel to the laboratory to supervise the testing (including verification of the vehicle inspection, testing, preparation or sales adjustment process). The applicant shall be responsible for test vehicle acquisition, test equipment, testing and supervision related fees.

5.1.1.1 The test report issued by the OBD inspection and testing organization designated by the central competent authority shall comply with the OBD functionality and test requirements in accordance with the Euro 6-2 provisions under the EU Regulation (EC) No. 715/2007 and subsequent related directives, and the OBD threshold limits shall also comply with paragraph 3.1.1 of this Appendix.

5.1.1.2 The OBD test laboratory shall issue the OBD test report based on the testing method in accordance with the Euro 6-2 provisions under the EU Regulation (EC) No. 715/2007 and subsequent related directives, and also once the EU member state or UK issued new vehicle

configuration Certificate of Conformity in accordance with EU Regulation (EC) No. 715/2007 and the subsequent related directives as a proof to show that the laboratory has the test equipment and capabilities sufficient to perform the test governed by said directives, and the OBD threshold limits also comply with paragraph 3.1.1 of this Appendix.

5.1.2 The application method if the OBD certificate of conformity issued by any country designated by the central competent authority is made available:

5.1.2.1 If the applicant has obtained an EU member state or UK-issued new vehicle configuration Certificate of Conformity in accordance with the EU Regulation (EC) No. 715/2007 and related directives (including UN/ECE Regulation No. 83), and the OBD threshold limits comply with paragraph 3.1.1 of this Appendix, and the functionality and test requirements thereof comply with Euro 6-2 related provisions and are accepted by EU member states, the applicant may be deemed to satisfy the requirements under this Appendix.

5.1.2.2 If the applicant has obtained the new vehicle configuration Certificate of Conformity issued by the US-EPA in accordance with the CFR Title 40 Part 86, and the OBD threshold limits and the functionality and test requirements thereof are also accepted by EU member states, the applicant may be deemed to satisfy the requirements under this Appendix.

5.2 Application for Heavy-Duty Bus and Truck Certificate of Conformity:

5.2.1 The application method if no OBD certificate of conformity issued by any country designated by the central competent authority is made available:

The applicant shall submit an OBD test plan pursuant to this Appendix. The applicant shall submit the same to the inspection organization for confirmation, and then the OBD test may be performed only upon approval of the central competent authority. The test laboratory eligible to perform the OBD test shall fulfill the following eligibility requirements and the central competent authority may also send personnel to the laboratory to supervise the testing (including verification of vehicle inspection, testing, preparation or sales adjustment process). The applicant shall be responsible for the test vehicle acquisition, test equipment, testing and supervision related fees.

The OBD test laboratory shall comply with the test report issued based on the test methods under Regulation (EU) No.

595/2009-related directives and Chapter C, Table of Appendix 9 of Annex I to Regulation (EU) No. 582/2011. Meanwhile, the laboratory should have obtained an EU member state or UK-issued new vehicle configuration Certificate of Conformity in accordance with Regulation (EU) No. 595/2009 and related directives (including UN/ECE Regulation No. 49), which is sufficient to prove that the laboratory has the test equipment and capabilities to complete the OBD test governed by said directives, and the test value meets Article 5 of the Emission Standards and also Regulation (EU) No. 595/2009-related directives, and Chapter C, Table 1 of Appendix 9 of Annex I of Regulation (EU) No. 582/2011 and related directives, and the OBD threshold limits also comply with paragraph 3.1.2 of this Appendix.

5.2.2 The application method if the OBD certificate of conformity issued by any country designated by the central competent authority is made available:

5.2.2.1 If the applicant has obtained an EU member state or UK-issued new vehicle configuration Certificate of Conformity in accordance with Regulation (EU) No. 595/2009 and related directives (including UN/ECE Regulation No. 49), and the OBD threshold limits comply with paragraph 3.1.2 of this Appendix, and the functionality and test requirements thereof comply with the Regulation (EU) No. 595/2009 and Chapter C, Table 1 of Appendix 9 of Annex I of Regulation (EU) No. 582/2011 and related directives and be accepted by the EU member states, the applicant may be deemed to satisfy the requirements under this Appendix.

5.2.2.2 If the applicant has obtained the new vehicle configuration Certificate of Conformity issued by the US-EPA in accordance with the CFR Title 40 Part 86, and the OBD threshold limits and the functionality and test requirements thereof are also accepted by the EU member states, the applicant may be deemed to satisfy the requirements under this Appendix.

6. If the engine family vehicles for which the applicant applies for the Certificate of Conformity are unable to comply with all OBD requirements preliminarily, the following principles shall apply:

6.1 The applicant, after considering the feasibility of technology, the timing of vehicle phase-in and phase-out schedule for the production, or any relevant special circumstances (such as computer program upgrades), which may lead to the unreliability of the On-Board

Diagnostics (OBD) monitoring function, may submit an application stating that the on-board diagnostic system (OBD) temporarily fails to fully comply with the regulations. Upon approval of the central competent authority, the applicant's OBD system may be exempted from compliance with OBD-related requirements temporarily.

- 6.2 The monitoring of the primary OBD monitoring items, such as Catalytic Converter, Diesel Particulate Filter, deNOx system, Fuel Injection System and EGR, shall not be waived.
- 6.3 For vehicles using alternative clean fuels (such as natural gas, liquefied petroleum gas, methanol, and ethanol), if the usage of the alternative clean fuel may reduce the reliability of OBD monitoring functions, the applicant may request to be exempted by the competent authority from specific monitoring requirements. However, alternative clean fuel engine vehicles shall still be equipped with an OBD system.