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# The Automobile and Technical Regulations

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## 1 Introduction

As environmental and energy conservation and traffic-accident prevention become global trends, regulations are being strengthened in Japan, the U.S., and Europe that demand further improvements in vehicle safety and environmental performance. In Asia, Australia, and Central and South America, legislation is being prepared and countries are writing laws and regulations based primarily on those issued by the UN. The international harmonization of standards, including uniform standards for the whole world (called Global Technical Regulations (GTRs)), is now being promoted as well.

## 2 Overall Trends

### 2.1. Japan

To develop the mutual recognition of certification at the level of devices and components which based on the UN Agreement on the Mutual Recognition of Type Approval or Vehicles into a system for the mutual recognition of whole vehicle type approval, Japan has stepped up the pace of deliberations and activities aimed at preparing a domestic legal framework.

For vehicle (bus, truck, and trailer) braking systems, the mandatory installation of vehicle stability control systems on some vehicles, of antilock brake systems (ABS) on all vehicles and the introduction of requirements for the configuration and identification of steering gear are adopted.

Measures to combat global warming are critical and continuous environmental issues, and the implementation of measures to increase the use of biofuels, the issuance of automotive fuel economy standards for 2020, and policies such as tax rebates to encourage the widespread use of vehicles compliant with those standards are all being actively examined.

A study of the issues involved in the adoption of the Worldwide Harmonized Light Vehicles Test Procedure

(WLTP) in Japan has also begun.

### 2.2. The U.S. and Canada

The economy showed signs of recovery thanks to the easing of monetary policy that followed the global financial crisis, and sales of vehicles in the U.S. rose 7.6% compared to the previous year, but the revision of regulations proceeded at a snail's pace.

Overall, work on safety measures moved slowly, with very few issues making it through from draft proposal to final issuance.

The Environmental Protection Agency (EPA) is set to adopt the Tier 3 regulations which are strengthening of the current federal Tier 2 regulations in April 2014. The California Air Resources Board (CARB) officially issued its on-board diagnostics (OBD) regulations for heavy-duty vehicles in September 2013, and is also working on revising the OBD regulations applying to the previously issued LEV III regulations for light- and medium-duty vehicles.

Harmonizing with the U.S., Canada has decided to apply new fuel consumption labels based on the 5-cycle test methodology beginning with the 2016 model year.

In terms of recycling and substances of environmental concern (SOCs), there was no federal legislation-based strengthening of the regulations as no amendment was made to the Toxic Substances Control Act (TSCA). However, the EPA is promulgating significant new use rules (SNURs) to manage and restrict hundreds of chemical substances of concern, and steady progress is being made on strengthening regulations on chemical substances. A proposal extending regulation to substances within products for brominated flame retardants such as decaBDE and HBCD has also been put forth, paving the way for the future regulation of products.

### 2.3. Europe

The introduction of the WLTP and of the Real Driving Emissions (RDE) regulation, as well as a revision of the evaporative emissions test method, are being examined

with the goal of synchronization with the implementation of the Euro 6c regulations in September 2017. For the RDE, a monitoring phase preceding the regulation is being assessed and could be adopted as early as 2014.

The phase-in of CO<sub>2</sub> regulations for light passenger vehicles started in 2012, and the phasing-in of these same regulations for light commercial vehicles will start in 2014. In addition, a proposed CO<sub>2</sub> regulation for the year 2020 is scheduled to be adopted at the plenary session of the European Parliament in March 2014. Emission targets have been set to a stricter 95 g/km, with a credit based on the number of vehicles sold applied to vehicles with emissions below 50 g/km (counted as multiple vehicles). The European Commission has also presented a proposal for a new regulation package (the so-called *pot-pourri*) to the European Parliament. This proposal covers elements such as the measurement of CH<sub>4</sub> (converted to CO<sub>2</sub>), relaxed THC regulatory values, the adoption of NO<sub>2</sub> regulations, and stricter low temperature regulations (stricter CO and THC regulatory limits, adoption of NO<sub>x</sub> and NO<sub>2</sub> regulations).

Changes to the vehicle exterior noise test method and stricter regulations as well as the addition of an Acoustic Vehicle Alerting System (AVAS) requirement for EVs and HEVs have been approved and are scheduled to come into effect in 2016.

#### 2.4. Other regions

China will introduce the nationwide China 5 (equivalent to Euro 5) emissions regulations for light-duty gasoline vehicles as of January 2018. In Beijing, this has already been preceded by the introduction of the Beijing 5 (equivalent to Euro 5) regulations for light-duty gasoline vehicles in effect since February 2013. Third-stage fuel economy (corporate average fuel economy) standards have been in force since May 2013, and the adoption of fourth-stage fuel economy standards in 2016 is being assessed.

In Taiwan, regulations on corporate average CO<sub>2</sub> emissions will come into effect in 2015, with the adoption of corporate average fuel economy regulations in 2016 currently being examined.

In South Korea, OBD in-use performance ratio (IPUR) regulations have been in effect since 2013. In 2014, stricter regulations (evaporative emissions test method and lower limits) based on California's LEV 2 standards and new regulations on PM for direct injection engines will be introduced.

In Singapore, Euro 4 emission regulations on light-duty gasoline vehicle will come into effect in April 2014.

## 2.5. The United Nations

### 2.5.1. Harmonization of standards

The World Forum for Harmonization of Vehicle Regulations of the United Nations Economic Commission for Europe (WP 29) was established as the body to promote international harmonization of automotive technical standards. WP 29 has been meeting regularly to discuss the 1958 Agreement (mutual recognition agreement) and the 1998 Agreement (global agreement). The aim of the 1958 agreement was to use UN regulations to establish uniform standards for vehicles and mutual recognition of those standards. There are 50 participating countries and 1 participating region, including those from outside of Europe. There are currently (as of the end of 2013) 132 items, with additional items such as emergency call systems, hydrogen and fuel cell vehicles, and pole side impacts being worked on. The 1998 Agreement went into effect in August 2000 as a means of establishing and realizing GTRs, and it currently (as of the end of 2013) includes 32 participating countries and 1 participating region. With the addition of GTRs on hydrogen and fuel cell vehicles and pole side impacts, there are currently 14 GTRs that have been established. Furthermore, additional GTRs concerning subjects such as passenger vehicle emissions, fuel economy testing methods, hydrogen and fuel cell vehicles (phase II), pedestrian protection (phase II), tires, and quiet vehicles (Acoustic Vehicle Alerting System), are also being worked on.

### 2.5.2. Mutual recognition system for international vehicle type approval

WP 29 is actively undertaking discussions and work on the establishment of the International Whole Vehicle Type Approval (IWVTA) system. This initiative was proposed by the Japanese government with the aim of extending the current mutual recognition of approval for devices and parts based on the 1958 Agreement to cover the whole vehicle. The following three items are to be accomplished by March 2016: (1) an amended 1958 Agreement, (2) establishment of vehicle type approval regulations, and (3) preparation of the necessary technical requirements for the IWVTA system.

## 3 Japan

### 3.1. Vehicle safety

#### 3.1.1. Promotion of safety measures

At the 14th Automobile Safety Symposium hosted by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) on the theme of The Current State of Vehicles That Protect Lives: Things to Know about Safety Technologies and Their Uses, the safety technologies presentations featured reports entitled Introducing Recent Active Safety Technologies and Child Seat Safety. The symposium also included panel discussions on measures to apply safety technologies to make seniors and children safer.

### **3.1.2. Strengthening of safety regulations**

To improve vehicle safety, as well as from the standpoint of global harmonization, it is mandatory for some vehicles to be equipped with an electronic vehicle stability control (EVSC) system and for all vehicles to be equipped with ABS.

### **3.1.3. Harmonization of standards**

MLIT promotes the revision of domestic national standards based on the 1958 Agreement to follow revisions to UN regulations. In 2013 the standards for steering gears, truck, bus, and trailer brake systems, electric vehicles, exterior appearance, lighting devices, entrances and exits, supplemental restraints for younger passengers, tires for passenger vehicles, and brake systems were revised.

## **3.2. Emissions**

### **3.2.1. Examination of the issues involved in adopting the WLTP in Japan**

Issues arising from the introduction of the WLTP in Japan, including (1) differences in vehicle class definitions, (2) the transition in test cycles from JC08 to the WLTC, and (3) the setting of fuel consumption standard values are considered at present.

### **3.2.2. Next measures to reduce emissions**

A challenging target value for heavy-duty diesel vehicles is now being subjected to technical verification. The target value and the period by which this target is to be achieved will be determined as necessary.

### **3.2.3. Alternative fuels**

In March 2012 MLIT revised the Announcement that Prescribes Details of Safety Regulations for Road Vehicles and stipulated the fuel regulations for gasoline engine vehicles that can use E10 fuel (i.e., fuel blended with up to 10% ethanol), creating the legal environment to allow the launch of such vehicles onto the market.

## **3.3. Fuel economy**

The notice for the report on the new fuel economy

standards for passenger vehicles, which sets 2020 as the year by which the targets are to be achieved, was published in March 2013. The target improvement rates are 24.1% compared to the actual results in 2009 and 19.6% compared to the standards for 2015. In addition, there will also be a change in the new fuel economy standards so that the Corporate Average Fuel Economy (CAFE) method is used instead of current fuel economy regulations by vehicle weight category. It is also now mandatory to indicate the vehicle's JC08 test cycle fuel economy value in the vehicle catalog.

### **3.4. Green tax to promote spread of low-emissions/fuel efficient vehicles**

A new tax system (the so-called green tax system or fuel-efficient car tax reduction) that reduces conventional vehicle-related taxes, such as the vehicle excise tax, motor vehicle weight tax, and vehicle acquisition tax, was established to help promote the spread and popularization of low-emissions and fuel-efficient vehicles. The tax system was revised in 2012 after reviews were conducted and these revisions include the following changes. The motor vehicle weight tax (the so-called short-term tax rate) was abolished for fuel efficient vehicles. The classifications in the green tax system (vehicle excise tax) were reorganized based on the new fuel economy standards (2015 fuel economy standards) and it was extended for two years. The classifications in the fuel-efficient car tax reduction (motor vehicle weight tax and vehicle acquisition tax) were also reorganized based on the new fuel economy standards and it was extended for three years. Reduction in the vehicle excise tax rate and part reconsideration of the vehicle weight tax are planned to perform according to the consumption tax increase from April in fiscal year 2014. The low displacement vehicle tax is also planned to be drawn up. Table 1 shows a summary of these tax system changes.

## **4 The U.S. and Canada**

### **4.1. Vehicle safety in the U.S.**

#### **4.1.1. Seat belt anchorage**

A draft proposal (a revision of FMVSS 210) that would modify the shape of body blocks was issued, and a draft containing the amendments is scheduled for release in April 2014.

#### **4.1.2. Vehicle rearward visibility**

A draft proposal (a revision of FMVSS 111) that would make the installation of rear view monitors and cameras

**Table 1 Preferential measures of motor vehicle weight tax and vehicle acquisition tax (2012).**

Applicable vehicle weight (GVW)		Conditions		Motor vehicle weight tax and vehicle acquisition tax
		Emissions	Fuel economy	
Passenger vehicles and buses/trucks with a GVW of 2.5 tons or less	Gasoline vehicles (including hybrid vehicles)	75 % reduction from 2005 standard	20 % increase from 2015 standard	Tax exempt
			Same + 10 %	75 % reduction
			Achieve same standard	50 % reduction
	Clean diesel vehicles	Compliant with 2009 regulations	—	Tax exempt
Buses and trucks with a GVW of 2.5 tons to 3.5 tons	Gasoline vehicles (including hybrid vehicles)	75 % reduction from 2005 standard	10 % increase from 2015 standard	Tax exempt
			Same + 5 %	75 % reduction
			Achieve same standard	50 % reduction
		50 % reduction from 2005 standard	10 % increase from 2015 standard	75 % reduction
Same + 5 %	50 % reduction			
Buses and trucks with a GVW of over 2.5 tons	Diesel vehicles (including hybrid vehicles)	10 % reduction of NOx and PM from 2009 standard	10 % increase from 2015 standard	Tax exempt
			Same + 5 %	75 % reduction
			Achieve same standard	50 % reduction
		Compliant with 2009 regulations	10 % increase from 2015 standard	75 % reduction
			Same + 5 %	50 % reduction
Electric vehicles, plug-in hybrid electric vehicles, and fuel cell vehicles		—	—	Tax exempt
Natural gas vehicles		10 % reduction of Nox and PM from 2009 standard	—	Tax exempt

Special period: April 1 2012 to March 31 2015 (for the motor vehicle weight tax: from May 1 2012 to April 30 2015)

mandatory as a means of increasing the area of rearward visibility when a vehicle is backing up was issued. The deadline for issuing the final regulation was extended to January 2015. In the meantime, the installation of rear view monitors and cameras will be encouraged through their addition to a public list of equipment requirements.

#### 4. 1. 3. Measures for quiet vehicles

The U.S. Congress passed a law (in 2010) that makes it mandatory for EVs and HEVs to be equipped with a noise-emitting device. Consequently, a draft proposal (to newly establish FMVSS 141) with specific requirements has been issued. The final regulation is scheduled for release in April 2015.

#### 4. 1. 4. Brake override systems

A draft proposal (a revision of FMVSS 124) that adds requirements making it mandatory for automakers to equip vehicles with a device that will give priority to the

brakes when both the accelerator and brake pedal are depressed at the same time has been issued. The final regulation is scheduled for release in April 2015.

#### 4. 1. 5. Keyless ignition systems

A draft proposal (a revision of FMVSS 114) that adds requirements for stipulating the engine stopping method as these systems are becoming more varied and diversified has been issued. The final regulation is scheduled for release in February 2015.

#### 4. 1. 6. Distracted driving

Identifying and implementing measures to help prevent accidents caused by operating portable electronics while driving has become a priority issue for the U.S. Secretary of Transportation, Ray LaHood, due to the massive popularity and spread of social media. The NHTSA has issued guidelines for limiting the operation of vehicle-mounted devices, such as navigation systems,

as phase 1 of these measures. There are also plans to create guidelines for portable electronic devices in phase 2 and voice-operated devices in phase 3.

#### **4.1.7. Electronic stability control (ESC) for large truck tractors and commercial buses**

A draft proposal (FMVSS 136) that would make it mandatory for ESC systems to be installed on large truck tractors and buses to reduce the occurrence of rollover accidents has been issued.

### **4.2. Emissions in the U.S.**

#### **4.2.1. Federal regulations**

The EPA will introduce the Tier 3 regulations, which are more stringent than the current federal Tier 2 regulations, in April 2014. Tighter regulations for 2017 to 2025 MY vehicles include significant changes, such as changes for test gasoline in terms of ethanol blend and lower sulfur content, the addition of leak check tests to EPA OBD requirements and more definite test methods for 4WD CDM, which are enacted as part of a package to reduce the sulfur content of gasoline in the market. Consistency with LEV III regulations was also applied wherever possible.

#### **4.2.2. California**

##### **4.2.2.1. ZEV regulations**

The new regulations provide a combined pooling option for the 10 states that have adopted ZEV credits (CA, CT, MA, ME, MD, NJ, NY, OR, RI, VT). In addition, a memorandum of understanding has been signed between California and those other states (excluding ME and NJ) to cooperate on initiatives to expand ZEV and its infrastructure.

##### **4.2.2.2. Emissions regulations in s. 177**

The so-called s. 177 states, which had adopted the CARB LEV II regulations, examined whether or not to adopt the LEV III regulations. Twelve states (CT, DE, MA, ME, MD, NJ, NY, OR, PA, RI, VT, WA) decided to adopt them, while New Mexico decided to withdraw.

##### **4.2.2.3. OBD regulations**

CARB officially issued OBD regulations for heavy-duty vehicles in September 2013. For light and medium-duty vehicles, a revision of the OBD II regulations is being studied to bring them in line with the preceding issuance of the LEV III regulations. Additions reflecting OBD thresholds and air conditioner diagnostics for the new LEV emissions levels and diesel-related diagnostics standards regulated for heavy-duty vehicles are undergoing examination.

### **4.3. Fuel economy and GHG regulations in the U.S.**

#### **4.3.1. CAFE and GHG regulations**

To provide supplementary guidance on emissions regulations, the EPA issued a draft of the new Compliance Assurance Program (CAP2000) focusing on certification requirements. The issuance of the final draft, amended with GHG requirements has been delayed.

#### **4.3.2. EPA fuel economy labels**

Clarifying the disparity between fuel economy label values and actual fuel economy has long been a problem. Although it is described as research, the EPA has begun preparing in-use vehicles and carrying out its own coast-down surveillance tests. It intends to eventually turn them into market validation tests.

### **4.4. Recycling and SOCs in the U.S.**

While the current administration's policy is to strengthen regulations on chemical substances, revisions are stalled because the federal TSCA has not been approved by Congress. To make up for this, the EPA has applied SNURs to start imposing restrictions on several hundred chemical substances. A proposal extending regulation to substances within products for brominated flame retardants such as decaBDE and HBCD has also been put forth, paving the way for the future regulation of products.

In contrast, at the state level the strengthening of regulations is making progress. In Washington D.C., the use of decaBDE has been banned starting with the 2016 MY, while Washington State and California have decided to limit the use of copper in brake friction materials in stages starting in 2021. Moreover, the Safer Consumer Products (SCP) regulations have come into force in California, and deliberations on the products and substances to restrict have begun.

### **4.5. Canada**

#### **4.5.1. Vehicle safety**

The final version of Occupant Protection in Frontal Impacts (CMVSS 208) was issued. It includes protection requirements for small females, infants, and three- and six-year old children. A draft proposal has been issued for Location and Identification of Controls and Displays (CMVSS 101). The final regulations are scheduled for release between April and June 2014.

#### **4.5.2. Fuel economy**

Harmonizing with the U.S., Canada has decided to apply new fuel consumption labels based on the 5-cycle test methodology. At the same time, the labels will be rede-

signed, with interim labels used for the 2015 MY and official application beginning with the 2016 model year.

#### 4.5.3. Environmental protection

The Prohibition of Certain Toxic Substances Regulations, 2012 annex to the Canadian Environmental Protection Act, 1999 were issued, making the beginning of restrictions in stages on BNST, an amine-series antioxidant.

## 5 Europe

### 5.1. Whole vehicle type approval (WVTA)

European Directive 2007/46/EC establishes a framework for the type approval of motor vehicles in the EU. The EC agreed to a Commission Regulation ((EU) No. 1229/2012) that amended the directive for the WVTA framework. These amendments incorporated a review and relaxation of the requirements for vehicles that are produced in small volumes. An Official Journal of the European Union announcing these changes was then published. The content of these amendments are explained in some detail as follows. A Regulation (EC) No. 661/2009 was introduced that concerns the general safety of motor vehicles (i.e., a General Safety Regulation (GSR)). The individual requirements for vehicles produced in small volumes when receiving type approval were clarified for each of the GSR regulatory requirements that were packaged together. Certain systems that were required to be equipped on vehicles in the GSR were also waived and the amendments incorporated the relaxation of regulations and changes that allow some alternative laws to be applied. The March 2013 amendment (195/2013) added revisions to the weight-size relationship in the WVTA submission format.

### 5.2. Vehicle safety

#### 5.2.1. eCall

The EC is preparing a draft measure that would make it mandatory for vehicles to be equipped with a system that automatically or manually contacts an emergency call center with the vehicle's data and location data in the event of a traffic accident. In July 2012, the European Parliament issued a resolution that requested the EC to submit a draft measure that would start to make such systems mandatory in 2015.

#### 5.2.2. GSR

A GSR ((EC) No. 661/2009) was issued for the purpose of improving the safety and environmental performance of vehicles and also to simplify the legal code. This GSR abolished roughly 50 EU Directives that concerned

safety and instead mandated UN regulations equivalent to these EU directives. In addition, any EU directives that did not exist in UN regulations were revamped as new EC regulations. In December 2012, the Commission Regulation ((EU) No. 1230/2012) that concerns the mass and dimensions of motor vehicles was issued. However, the issuance of the regulation concerning GSR approval procedures was delayed.

Another GSR contains provisions that make advanced safety systems (TPMS, AEBS, LDWS, gear shift indicators (GSI), and ESC) mandatory and also stipulates tire rolling resistance requirements, grip requirements, road noise requirements, and cab strength requirements.

### 5.3. Emissions and OBD

#### 5.3.1. Subcompact vehicles

The next regulations (Euro 6) will be applied in two stages starting in September 2014. The vehicles that will be subject to the regulations are those that have a reference mass (RM) or standard mass of 2,610 kg or less (M1, M2, N1, and N2 category vehicles). However, the extension of approval obtained under Euro 5 for vehicles with a RM of more than 2,610 kg, but less than 2,840 kg, will be accepted. The Euro 6b limit value for diesel NO<sub>x</sub> is a 56% reduction in comparison to Euro 5b and the value for THC + NO<sub>x</sub> is similarly a 26% reduction. A PN emission limit will be introduced in September 2014 for direct-injection gasoline engine vehicles, but the application of relaxed emission limit values has been approved for the first three years. The malfunction criteria values for on-board diagnostics (OBD) have become stricter than those under Euro 5+, and will be further strengthened in two stages starting with Euro 6. For Euro 6c, the EC has also presented a proposal to the European Parliament for a new regulation package covering the measurement of CH<sub>4</sub> (converted to CO<sub>2</sub>), relaxed THC emission limit values, the adoption of NO<sub>2</sub> emission limit, and stricter low temperature regulations (stricter CO and THC emission limits, adoption of NO<sub>x</sub> and NO<sub>2</sub> emission limits).

#### 5.3.2. Large vehicles

The Euro VI regulations concern emissions of large vehicles with a RM of over 2,610 kg. It was stipulated in (EC) No. 595/2009 that the Euro VI regulations will be applied to new model vehicles starting on December 31, 2012, and to newly registered vehicles starting on December 31, 2013. The implementing and amending regulation (EU) No. 582/2011 that stipulates the technical

content was issued in June of 2011. In addition, the PM PN measurement method, requirements for accessing the OBD repair and maintenance information, and other items not covered by (EU) No. 582/2011 were added in (EU) No. 64/2012. This EC regulation also added a certification test for vehicle-mounted portable emissions measurement systems (PEMS) and requirements for in-use sampling test vehicles.

#### **5. 4. CO<sub>2</sub> (fuel economy)**

Starting in 2012 the EU moved away from voluntary agreements and phased-in more stringent regulations (Regulation (EC) No. 443/2009) on CO<sub>2</sub> so that the M1 category should average 130 g/km of CO<sub>2</sub> or the equivalent. The regulations also made it mandatory for vehicles to be equipped with high-efficiency air conditioners, GSI, low rolling-resistance tires, and TPMS and like as the complementary measures to further reduce CO<sub>2</sub> emissions by approximately 10 g/km. New model vehicles are required to be equipped with GSI and TPMS according to a GSR, starting in November 2012, while the requirement starts in November 2014 for newly registered vehicles. Another regulation that will be phased-in starting in 2014 stipulates that the average CO<sub>2</sub> emissions for N1 category vehicles should be 175 g/km.

In July 2012, a draft of CO<sub>2</sub> regulations for the year 2020 was proposed by the EC and it is now being debated by the European Parliament and the European Council.

#### **5. 5. Recycling and SOCs**

The end-of-life vehicles (ELV) Directive (2000/53/EC) restricted and reduced the use of four types of heavy metals (lead, mercury, cadmium, and hexavalent chromium). In February 2010, the exemptions for the use of lead solder in circuit boards were subdivided into multiple specific applications (2010/115/EU) and, in March 2011, the Directive that reduced the lead content in other parts was revised (2011/37/EU). In addition, initial audit requirements that will be applicable from 2012 (2009/1/EC) were added to the Directive that concerns the recyclability certification of WVTA (2005/64/EC). REACH is the European Community Regulation on chemicals and safe use that entered into force in June 2007. It concerns the registration, evaluation, authorization, and restriction of chemical substances. This regulation requires chemical use to be registered and reported to the government, as well as the disclosure of information to users of chemicals. The registration will be gradually phased-

in by May 31, 2018 ((EC) No. 1907/2006). Any usage restrictions on substances that are related to automotive products will generally be handled under this regulation. The classifying, labeling, and packaging (CLP) regulation, which stipulates the requirements for the classification, labeling, and packaging of hazardous substances, is currently in force and applies to items such as puncture repair sealants for maintenance, adhesives, oils, and window washer fluid ((EC) No. 1272/2008). The existing Biocides Directive (98/8/EC) was revised as a biocidal products regulation and any chemical substances applied to vehicle parts as a biocide are subject to the usage restrictions and information disclosure requirements ((EU) No. 528/2012).

#### **5. 6. Vehicle air conditioning refrigerants**

The leakage of vehicle air conditioner refrigerants is one cause of global warming. EC Directive 2006/40/EC stipulates restrictions on refrigerant leakage and also prohibits the use of refrigerants that have a global warming potential (GWP) in excess of 150. This Directive first went into effect for new model vehicles in January 2011, but it is also scheduled to be applied to all successor models from January 2017. However, there has been a problem with insufficient supply of the new refrigerant, so the EC placed a moratorium (postponement of application) on this regulation for new model vehicles until the end of December 2012.

In September 2012, Daimler AG expressed concerns about the flammability of the new refrigerant (HFO1234yf) and recalled all products that were equipped with this new refrigerant, even though these had already received approval. Daimler also requested an additional extension of the moratorium, but the EC denied the request. Consequently, Directive 2006/40/EC has come into force as scheduled in January 2013. The German authorities implemented it independently in 2013 and have announced concerns about safety. Manufacturers of the new refrigerants, who claim there are no problems, and the SAE are currently trying to resolve the situation.

#### **5. 7. Vehicle exterior noise**

The EC published a proposal to revise the EU vehicle exterior noise regulations. Three main revisions were proposed: (1) Setting regulation values in accordance with the UN test methods, (2) the addition of additional sound emission provisions (ASEP), and (3) the addition of requirements for approaching vehicle alerting devices

(AVAS) for EVs and HEVs. The acceptance of the European Parliament and European Council will be obtained in the future to implement these proposals.

## 5.8. Russia

### 5.8.1. Emissions

Euro 5/V regulations for emissions came into force for new model vehicles in January 2014, and will apply to all vehicles as of January 2016.

### 5.8.2. Vehicle safety

New vehicle safety regulations have been in effect since 2010. In the case of new model passenger vehicles the GTR9 (pedestrian safety) regulations will become mandatory in January 2016, equipping vehicles with ESC and brake assist will become mandatory in January 2014, and equipping vehicles with daytime running lamps (DRL) and TPMS will become mandatory in January 2016. ESC will become mandatory for large vehicles in January 2016.

### 5.8.3. Recycling

Regulations equivalent to the EU's type-approval of motor vehicles with regard to reusability, recyclability, and recoverability (2009/1/EC) are being examined.

### 5.8.4. Other

In 2012 the Common Economic Space (CES), consisting of the Russian Federation, Kazakhstan, and Belarus, determined new regulations for the CES based on Russian regulations to realize mutual recognition of safety standards and a common approval system.

These regulations will apply to new model vehicles starting in January 2015. It was also decided to make it mandatory for vehicles to be equipped with the Russian version (ERA GLONASS) of the European eCall system ahead of Europe and this requirement will also be applied to new model vehicles starting in January 2015.

## 6 Central and South America

### 6.1. Mexico

#### 6.1.1. Emissions

Emissions regulations contained in U.S. and European laws (equivalent to Tier 2-Bin 7 and Euro 4) are being applied in stages and will be 100% in effect as of the 2013 MY. Emissions regulations for heavy-duty diesel trucks equivalent to California's 2005 regulations or Euro IV are being introduced.

#### 6.1.2. CO<sub>2</sub> (fuel economy)

As of 2014, fuel economy regulations modeled on the North American US-CAFE were introduced. The regu-

lations are at the same level as the emissions regulations (equivalent to Tier 2-Bin 7 and Euro 4).

### 6.2. Brazil

#### 6.2.1. Vehicle safety

Regulations to make it mandatory for vehicles to be equipped with a stolen vehicle tracking device were postponed and the regulations will now be introduced and put into effect in stages starting in June 2014. Steering tie rods and tie rod ends were added to the part approval system introduced to make it mandatory for service parts (some of which are installed at the manufacturing plant), such as brake fluid, glass, wheels, tires, shock absorbers, fuel pumps, horns, and engine parts, to be marked with a certification number or other marking.

#### 6.2.2. Emissions

A stricter emissions regulation called the L6 regulation will be applied to new model gasoline vehicles in January 2014, to all gasoline vehicles in January 2015, and to all diesel vehicles in January 2013. The Euro V regulations are being applied to heavy-duty diesel vehicles. In addition, Brazil has its own unique OBD second-stage requirements that are applicable.

### 6.3. Chile

#### 6.3.1. Vehicle safety

Safety regulations were applied requiring that light vehicles to be equipped with a folding rear mirror, and occupant protection regulations were applied for light commercial vehicles covering head restraints, foldable rear mirrors, seat anchors, brakes, flame retardants, and collapsible steering columns. A safety regulation for large vehicles was applied to cover the use of safety glass. Since January 1st, 2013, immobilizers have become mandatory for vehicles with a GVWR of 3,860 kg or less.

#### 6.3.2. Emissions

Emissions regulations for light-duty diesel vehicles equivalent to Tier 2-Bin 5 or Euro 5 are already in effect. Regulations for light-duty gasoline vehicles that are also equivalent to Tier 2-Bin 5 or Euro 5 are scheduled to go into effect from September 1, 2014 (however there are no requirements for OBD and low-temperature testing). Historically, the level of the regulations was different in different regions of the country, but in the future the same regulations will be applicable across the whole country. The Euro III regulations for heavy-duty vehicles are currently in effect and the Euro V regulations are scheduled to go into effect in October 2014.

Another regulation was also issued that requires a fuel



economy label to be displayed on vehicles to help consumers take into account energy consumption and the impact on the environment when purchasing a vehicle. These labels are mandatory as of February 2, 2013.

#### **6.4. Argentina**

##### **6.4.1. Vehicle safety**

Regulations that require small vehicles and commercial vehicles to be equipped with front airbags and rear seat external head restraints are being applied in stages.

##### **6.4.2. Emissions**

Regulations equivalent to Euro 5 for both light-duty gasoline and diesel vehicles are scheduled to be applied to new model vehicles in January 2014 and to all vehicles in January 2016. The Euro IV regulations were applied to new model heavy-duty diesel vehicles in June 2009 and will be applied to all successor models starting in 2014. The Euro V regulations will be applied to new model vehicles in 2014 and then to successor all models from 2016.

#### **6.5. Venezuela**

Regulations concerning vehicle identification number (VIN), noise, flame retardants, brakes, lights, glass, tires, and seat belts are in force and certification has begun.

#### **6.6. Colombia**

##### **6.6.1. Safety regulations**

New requirements for brakes have been postponed twice and went into effect from June 4, 2013.

It applies technical standards for main parts of brakes, however as an alternative, it also accepts to be applied performance standards of brake system. In addition, installation requirement of ABS, air bags and head restraints is applied as of 2015MY (ABS for other than M1 is as of 2016MY)

##### **6.6.2. Emissions**

Current emissions regulations are equivalent to US94 or Euro 2, but the Euro 4 is scheduled to be applied to diesel vehicles.

#### **6.7. Ecuador**

A draft amendment was issued for Ecuadorian Technical Regulation RTE INEN 034, Motor Vehicle Safety Regulatory Requirements. It mainly introduces UN regulations, but some local requirements are retained.

## **7 Middle East and Africa**

### **7.1. Gulf Cooperation Council (GCC)**

#### **7.1.1. Vehicle safety**

Compared to 2014 MY vehicles, a brake regulation

equivalent to UN R13H for passenger vehicles was newly adopted in the regulations applied to 2015 MY. There are also indications that general safety requirements will be amended in the future

#### **7.1.2. Emissions**

There are plans to improve the sulfur content in the fuel to 10 ppm, but the prospects for this are unclear. There is also a strong likelihood that the emissions regulations for light-duty vehicles will be strengthened, but items such as the level of the regulations and the timing of implementation have not been announced. The introduction of Euro III or Euro IV regulations for heavy-duty vehicles is said to be under consideration, but this is also unclear.

### **7.2. South Africa**

Specifications for the properties of commercial fuels used in gasoline and diesel engines were revised (to take effect on July 1, 2019). After that date, the current emissions regulations (Euro 2) are scheduled to be strengthened and become equivalent to the Euro 5 regulations.

## **8 Asia**

### **8.1. China**

#### **8.1.1. China Compulsory Certification (CCC)**

The promulgation of the amended certification implementation rules (CNCA-02C 023) was scheduled for 2013, but it has been pushed back to 2014.

It became necessary to update certification to meet the 2012 edition of the GB 7258 vehicle operational safety and technical conditions standard by August 31, 2013. Displaying the vehicle identification number in the trunk and on five main components also became a requirement. The draft GB requiring that the vehicle identification number (a number that can be tied to the VIN is also permitted) be displayed on the transmission of passenger vehicle was scheduled to apply as of September 1st, 2013, but due to delays in approving the GB, it is not scheduled to come into effect on December 1st, 2014.

CNCA official notices No. 5 and No. 18 were issued, announcing that the 2013 edition of the GB for seat belts, seat belt anchorage, rear view mirrors (indirect visibility), wipers and washer fluid, door latches and hinges, side marker lamps and parking lamps would gradually come into effect as of January 1st, 2014, starting with new model vehicles.

#### **8.1.2. Emissions**

The China 4 (equivalent to Euro 4) regulations apply

to all light-duty gasoline vehicles throughout China as of July 2010, and it has been decided to introduce the China 5 (equivalent to Euro 5) regulations as of January 2018. In contrast, the Beijing 5 (equivalent to Euro 5) emissions regulation is introduced in February 2013 for light-duty gasoline vehicles in the city of Beijing. There early introduction of the China 5 regulations in major cities other than Beijing is also being discussed. In principle, the light-duty gasoline vehicle China 5 and Beijing 5 regulations require the installation of an OBD for NOx catalyst monitoring and IUPR.

For heavy-duty diesel vehicles, the enforcement of the Beijing 5 (equivalent to Euro 5) regulations is scheduled for the end of 2014, and China 5 (equivalent to Euro 5) regulations are scheduled to come into effect throughout China as of 2018.

#### **8.1.3. Fuel economy**

Although third-stage fuel economy regulations for light-duty passenger vehicles have come into effect as of May 2013, the rules on the standard for determining compliance and appropriate fines for violators still have not been finalized. A draft proposal for fourth-stage fuel economy regulations has been issued, with the details of the requirements currently under examination. Work on revising the contents of the fuel economy labels is also underway.

#### **8.1.4. Consumer protection law**

The “three guarantees” of the consumer protection law, namely the responsibility for the repair, replacement, or return of private vehicle products, apply as of October 1st, 2013.

### **8.2. Hong Kong**

#### **8.2.1. Vehicle safety**

The introduction of UN regulations concerning door latches and hinges, lights, brakes, and collisions is being examined in accordance with the regulation issuance process. It has also been suggested that the other vehicle safety regulations be replaced with the corresponding UN regulations.

#### **8.2.2. Emissions**

The Euro 5 regulations are the main regulations, with equivalent Japanese and U.S. standards adopted as alternative standards. OBD systems satisfying each standard are also required. The U.S. 2008 federal regulations apply to heavy-duty diesel vehicles. At this time, the Euro 6 regulations are scheduled to come into effect as of 2016.

### **8.3. Taiwan**

#### **8.3.1. Vehicle safety**

Electromagnetic compatibility (EMC), adaptive front-lighting systems (AFS), and indirect vision devices are being covered in the third stage of the vehicle safety standards based on UN regulations. CC marking will also be required on seat belts as of January 2014. Electric safety requirements for EV apply as of January 2014. Mandatory equipping of TPMS will apply as of November 2014, and mandatory installation of seat belts on all seats will apply as of January 2015. There are also plans to further strengthen these requirements.

#### **8.3.2. Emissions**

The Euro 5 or U.S. Tier 2-Bin 5 regulations were introduced for light-duty gasoline vehicles in October 2012. The Euro V regulations or U.S. 2007 regulations were applied to new models of heavy-duty vehicles from January 2012 and to all models from January 2013.

#### **8.3.3. Fuel economy**

Corporate average CO<sub>2</sub> regulations for small vehicles will be introduced in 2015. The introduction of corporate average fuel economy regulations for light-duty vehicles in 2016 is being examined.

### **8.4. South Korea**

#### **8.4.1. Vehicle safety**

Requirements for ESC, TPMS, and pedestrian protection were added to the Korean Motor Vehicle Safety Standards KMVSS), while standards for head restraints and vehicle glass were harmonized with the relevant GTRs. A 5-year plan to accept UN regulations by harmonizing standards under the 1958 Agreement was announced in 2009. In February 2013, a self-certification system was started. It applies to the following replacement parts: brake hoses, lamps, rear reflectors, seat belts, and rear underrun protection devices. The signing of the FTA between South Korea and the EU is moving the introduction of UN regulations forward.

#### **8.4.2. Emissions and OBD**

In 2014, stricter regulations (changes to the evaporative emissions test method and lower regulatory limits, new regulations on PM from direct injection engines, and new OBD in-use performance ratio (IPUR) regulations) based on California’s LEV II standards will be introduced. For diesel vehicles, the Euro 6/VI regulations will be gradually introduced by vehicle category starting in January 2014.

### **8.5. Thailand**

#### **8.5.1. Vehicle safety**

The Department of Land Transport (DLT) in Thailand is promoting the revision of domestic laws to apply UN regulations for items such as seat belt installation, belt anchorages, brakes, tires, installation of lighting devices, noise, seat anchorages, and speedometers starting in 2016.

#### 8.5.2. Emissions

The Euro 4 diesel vehicle regulations for light-duty vehicles were introduced in December 2012. The Euro III regulations apply to heavy-duty diesel vehicles and CNG vehicles.

#### 8.6. Malaysia

##### 8.6.1. Vehicle safety

Approximately 30 UN regulations for items such as seat belts, brakes, rearview mirrors, seats, lighting devices, safety glass, noise, frontal collisions, and side collisions, were applied as of January 2012. In addition, there is a plan to apply approximately 20 more UN regulations for items such as internal and external projections, door latches and hinges, prevention of vehicle fire risks, installation of lighting devices, temporary tires, and the illumination of license plates starting in January 2015.

##### 8.6.2. Emissions

The introduction of the Euro 4 regulations for light-duty gasoline vehicles starting in 2015 is being examined, and is scheduled for 2016 for heavy-duty diesel vehicles.

#### 8.7. Indonesia

##### 8.7.1. Vehicle safety

The start of the application of safety standards was delayed from the initial plan, but Indonesia's own Indonesian National Standard (SNI) marking requirements for wheels produced in Indonesia and individually imported wheels were applied starting in January 2013. This does not apply to parts equipped on completed vehicles that are imported.

##### 8.7.2. Emissions

The introduction of Euro 4 regulations for light-duty gasoline vehicles in 2016 is being examined.

#### 8.8. Singapore

##### 8.8.1 Emissions

The Euro 4 regulations (excluding the Type 6 low temperature test) will be introduced for gasoline vehicles starting in April 2014. The Euro 5/V regulations will be introduced for diesel vehicles in January 2014.

#### 8.9. India

##### 8.9.1. Vehicle safety

EMC requirements are scheduled to be applied from

October 2015 as a new safety regulation. However, this will only apply to vehicles that are compliant with the Bharat Stage (BS) IV (equivalent to Euro IV) regulations.

#### 8.9.2. Recycling and substances of environmental concern

The Society of Indian Automobile Manufacturers finished its draft of the Indian End-of-life vehicle ELV regulation in October 2013. The contents are based on the European ELV regulation, with slightly lower standards. It is not known when it will come into effect.

#### 8.10. Vietnam

##### 8.10.1. Vehicle safety

Vehicles and parts are required to obtain approval and testing and other checks are required at the time that this approval is renewed (every year). These requirements are based on a Vietnamese safety regulation, QCVN09: 2011/BGTVT, that went into effect in January 2012. In conjunction with the issuance of this safety regulation, vehicle glass, mirrors, tires, and lighting devices must comply with Vietnam's own requirements, which are equivalent to UN regulations, or comply with the requirements in UN regulations.

##### 8.10.2. Emissions and fuel economy

The introduction of Euro 4 emissions regulations starting in 2017 is being examined.

## 9 Oceania

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#### 9.1. Australia

##### 9.1.1. Vehicle safety

A review of the individual Australian Design Rules (ADR), which includes original requirements, is being promoted in conjunction with a policy of adopting UN regulations. A seat belt regulation (ADR4/05) that was harmonized with UN regulations was issued. In addition, technical requirements when an ISO-FIX child restraint system is installed in a vehicle (ADR34/02) were also issued. Brake regulations (ADR31/03, ADR35/05) making the installation of ESC and Brake Assist Systems (BSA) mandatory as of November 2015 have also been issued.

##### 9.1.2. Emissions

ADR79/03 stipulates that the Euro 5 emissions regulations will be applied to new model light-duty gasoline vehicles starting in November 2013, while ADR79/04 stipulates that these same regulations will apply to all vehicles starting in November 2016. Moreover, regulations equivalent to Euro 6 are scheduled to apply to new model vehicles starting in July 2017. The Euro 5 regula-

tions are already applied to heavy-duty vehicles and both the U.S. 2007 regulations and Japanese 2005 regulations (new long-term regulations) are also recognized as alternative standards. However, in the case of compliance obtained via the new long-term regulations, compliance with the new long-term regulations standard value in the Japanese D-13 test cycle is also necessary.

#### 9.1.3. Fuel economy (CO<sub>2</sub>)

Debate and discussion of the new CO<sub>2</sub> reduction plan that was proposed by the government in the autumn of 2008 is ongoing. The government proposed the introduction of regulation values starting in 2015 for the CO<sub>2</sub> average target values for all new vehicles registered in Australia. In addition, the government is also examining the idea of paying a rebate to vehicle users who switch from an older vehicle produced before 1995 in favor of a new vehicle that is more fuel efficient and makes less pollution as an environmental measure up to the year 2015. A government Regulation Impact Statement (RIS) was scheduled for issue in July 2013, but with the pending general election in September, it was deferred and the contents are being discussed anew.

#### 9.1.4. Vehicle exterior noise

The government allowed the application of all of the alternative regulation (UN R51.02) series regarding ADR83/00 noise regulation.

#### 9.1.5. Other

The voluntary code of practice that was applied since 1999 for EMC was reviewed and now it will be necessary for all new model vehicles to comply with 2005/83/EC and UN R10.03 from 2015.

### 9.2. New Zealand

Vehicles that are manufactured in Japan (using Japanese technical standards and the like), Europe (EC/UN regulations), the U.S. (FMVSS), and Australia (ADR) are accepted. The emissions regulation laws were also revised in 2012 in conjunction with the move by Australia to harmonize regulations with Euro 5. This revision and strengthening of the regulations clarified the timing of when the emissions regulations, including Japan's post-new long-term regulations, would be applied. A law that would make it mandatory for vehicles to be equipped with an immobilizer is being examined, but no concrete progress has been made.

## 10 Motorcycles

### 10.1. Japan

#### 10.1.1. Vehicle safety

Electromagnetic compatibility (UN R10) went into effect on August 1, 2011 and in conjunction with the R10.04 revision, will be applied to new type vehicles from August 1, 2016, and to existing type vehicles from October 28, 2016. Lighting, (UN R50) and symmetrical headlamps (UN R113), are scheduled for adoption in fiscal 2014, but the period for lighting installation (UN R53) has not been determined. Control/tell-tales (UN R60) are scheduled for adoption in fiscal 2014.

#### 10.1.2. Emissions

The third stage emissions regulations is scheduled to begin by the end of 2016. Whether to apply the evaporative emissions regulations at the same time and whether to make installation of OBD systems mandatory are also being examined.

#### 10.1.3. Noise

Noise emissions of motorcycles (UN R41.04) was adopted and will be applied to new type vehicles from January 2014 and to existing type vehicles from January 2017. In this, revision the constant speed noise was abolished, while the stationary noise was left in.

### 10.2. The U.S.

#### 10.2.1. Vehicle safety

The contents of the global technical regulation for motorcycle brake systems (GTR3) were incorporated in the brake regulations (FMVSS 122) as a part of measures to harmonize standards, and will be applied to all motorcycles manufactured from September 1, 2014. The regulations for lighting equipment (FMVSS 108) was also revised and the visibility requirements and others were changed. It has been applied since December 2012.

#### 10.2.2. Emissions

The emissions regulations of the EPA were strengthened in the past to establish a Class III HC+NO<sub>x</sub> regulation value of 0.8 g/km from the 2010 MY. After this there have been no other moves to further strengthen the regulations. It was made mandatory to report for each emissions component, i.e. CO<sub>2</sub> from 2011MY, CH<sub>4</sub> from 2012MY, and N<sub>2</sub>O from 2013MY, in an effort to reduce greenhouse gases. CARB is examining the application of a new evaporative emissions regulation value and test method applying to off-road motorcycles and ATVs from the 2018 MY.

### 10.3. Canada

There were no significant changes in laws and regulations concerning either safety or emissions.

#### 10.4. Europe

On October 4, 2010 the EC announced a draft regulation that concerned L category vehicle type approval and market surveillance. Then, the new EC-WVTA (Whole Vehicle Type Approval) (EU Regulation (EU) No. 168/2013 codecision) was published on March 2, 2013. It is scheduled to be applied on January 1, 2016 for new type motorcycles and on January 1, 2017 for new type mopeds. The three delegated acts concerning the environment, functional safety, and vehicle construction were decided. An official gazette on the implementing act is scheduled for publication around July 2014, completing the new EC-WVTA regulations. The revision included further subdivisions of categories, and a new Powered Cycle category with a maximum speed of 25 km/h and maximum power of 1,000 W established for mopeds.

Some of the contents of the regulations are as follows.

##### 10.4.1. Vehicle safety

It was made mandatory for vehicles in the L3e category (two-wheeled motorcycles) to be equipped with ABS and have either AHO (automatic headlight on) system or daytime running light. In addition, L3e-A1 category vehicles (125 cc or under) must be equipped with ABS or combined brake system (CBS), or both. Detailed technical requirements are also applied regarding tamper prevention.

##### 10.4.2. Emissions

To new type vehicles, the Euro 4 emissions regulations will be applied from 2016, and the Euro 5 regulations will be applied from 2020. Each of these regulations will be applied to registered vehicles 1 year later. Requirements of crankcase emissions, evaporative emissions, durability, and OBD system have been included into the regulations in addition to tailpipe emissions regulations. The European Directive that concerns L1e vehicles (mopeds) was revised and the Euro 3 regulations will apply from July 2014.

##### 10.4.3. Noise

As for noise test, UN R41.04 was applied to L3e category vehicles, UN R63 was applied to L1e category vehicles, and UN R9 was applied to L2e category (three-wheeled mopeds) vehicles. The regulations will apply from 2016 to new type L3e vehicles, from 2017 to registered L3e vehicles and to new type L1e/L2e vehicles, and from 2018 to registered L1e/L2e vehicles.

##### 10.4.4. Technical information for repair and maintenance

It was stipulated that automakers must have websites through which vehicle repair and maintenance information can be obtained.

#### 10.5. Central and South America

##### 10.5.1. Brazil

Regarding safety issues, the draft regulation on mandatory equipment of anti-theft devices was repeatedly revised. The application date of this regulation was postponed (to September 2014) and the extent of their applicability was modified. Motorcycle brake NBR standard based on UN brake regulation (UN R78.03) was issued and its application is being examined. In conjunction with these, the application of ABS/CBS (starting in 2016, with the extent of applicability determined every year) is also being examined.

The next emissions regulations are called PROMOT4. The regulation values were not changed and only the running test cycle was changed to the Worldwide Harmonized Motorcycle Emissions Test Cycle (WMTC). Durability requirements were also added. These regulations will apply to new type vehicles as of January 1, 2014. It has been decided that, thereafter, the emissions regulation values will be strengthened and evaporative emissions regulations will be applied at the same time to vehicles produced starting from January 1, 2016. The noise regulations are currently equivalent to UN R41.03, but authorities are examining whether to strengthen these for equivalence with UN R41.04.

##### 10.5.2. Peru

An official gazette was issued announcing the start of Euro 2 (or equivalent to EPA 2010) regulations for customs clearance and production as of December 31, 2013.

##### 10.5.3. Chile

As of 2013, the application of emissions regulations (Euro 3 or equivalent to EPA 2010) is limited to major cities, but extending the application of Euro 3 throughout the country is being considered.

#### 10.6. Middle East and Africa

The Gulf Cooperation Council (GCC: Saudi Arabia, Bahrain, Qatar, Oman, Kuwait, the UAE and Yemen) is examining the introduction of a certification system for motorcycles. The GCC Standardization Organization (GSO) is examining the requirements and test methods to be applied.

##### 10.7. Asia

###### 10.7.1. Taiwan

In 2013, some UN regulations concerning vehicle safety

are incorporated into vehicle certification requirements. The new additions to these requirements are electromagnetic compatibility (equivalent to UN R10.03, applied as of March 20), tires (equivalent to UN R75.00, applied as of January 1), and brakes (equivalent to UN R78.03, applied as of January 1). The requirements apply to new type vehicles. As of 2013, emissions regulations equivalent to Euro 3 are in effect, but the application of emissions regulations equivalent to Euro 4 and the strengthening of fuel economy regulations are being examined.

#### **10.7.2. Indonesia**

Regarding safety, the wheel standard (SNI 4658-2008) was issued as an individual part regulation. Application for production and customs clearance from December 31, 2012 has begun. In addition, the tire standard (SNI 0101-2012) was revised, and application for production and customs clearance from August 21, 2013 has begun.

Emissions regulations equivalent to Euro 3 and alternative regulations that use the WMTC test cycle were added. These will apply to new type vehicles from August 1, 2013, as well as to vehicles registered from August 1, 2015. The noise regulations will be introduced and implemented in two steps. In the first step, unique regulation values, which use a test method equivalent to UN R41.01, will be applied. In the second step, the regulation value was scheduled to be strengthened and made equivalent to UN R41.03 as of July 1, 2013, but its actual implementation has been delayed.

#### **10.7.3. Malaysia**

For vehicle safety regulations, UN regulations concerning brakes (UN R78), horns (UN R28), speedometers (UN R39), mirrors (UN R81), and tires (UN R75) were all applied to new type vehicles starting on January 1, 2012. The regulations on electromagnetic compatibility (UN R10), filament lamps (UN R37), and controls/tell-tales (UN R60) will be added starting in 2015. (Each regulation series is based on the type approval guidelines issued by the Malaysian Road Transport Department.)

The examination of the strengthening of emissions regulations to the equivalent of Euro 2 and Euro 3 is moving forward, but when they will be applied remains undetermined.

For noise regulation, UN R41.01 has been applied to new type vehicles starting on January 1, 2012. As the next regulation, application of UN R41.03 is being examined.

#### **10.7.4. The Philippines**

Examinations and discussions are underway to harmonize ASEAN standards and to apply UN regulations in 2015. The incorporation of safety-related UN regulations for horns, tires, speedometers, and others is being planned. Emissions regulations equivalent to Euro 2 were applied from September 27, 2012 and regulations equivalent to Euro 3 are scheduled to be applied from September 27, 2015.

The incorporation of noise regulations equivalent to UN R41.03 is also being examined.

#### **10.7.5. India**

EMC regulations were revised to the equivalent of UN R10.03 and will be applied to new type vehicles from October 2013 and to existing type vehicles from October 2015. Safety regulations concerning the installation of mudguards (AIS 103) and brake hoses (IS 7079) will apply to existing type vehicles starting from October 2013. It has been decided to apply the regulations on controls/tell-tales (AIS 071) from March 14, 2013 for new type vehicles and March 14, 2014 for existing type vehicles, and the authorities are examining whether or not to apply dedicated motorcycle regulation (AIS 126) starting from 2015.

BS 4, the next stage of emissions regulation which is based on the Euro 3 regulatory values, is being examined for scheduled application starting on April 1, 2015. The application of evaporative emissions regulation is also planned. Examination of BS 5, equivalent to Euro 4, has also begun.

#### **10.7.6. Vietnam**

Emissions regulations equivalent to Euro 2 were put into effect and applied from May 2012. The next step will be to apply regulations equivalent to Euro 3 to all vehicles from January 1, 2017. Currently, the application of fuel economy regulations is also being examined.

The application of noise regulations equivalent to UN R41.03 in conjunction with the introduction of the next emissions regulations is being examined as well.

#### **10.7.7. Thailand**

The gradual introduction of safety-related UN regulations for mirrors, tires, speedometers, and the like from 2014 is being examined in an effort to harmonize ASEAN standards. Drafts have been issued for mirrors, tires, and speedometers. For speedometers, an official gazette has also been issued and it will apply to new type vehicles produced from January 1, 2014. However, the method of application does not match the views of the

industry, so the coordination with the government is in progress.

The introduction of Euro 4 emissions regulations from 2018 is being examined. Future fuel economy regulations that would differentiate between vehicles in accordance with fuel efficiency levels are also being examined.

The application of noise regulations equivalent to UN R41.03, was decided from January 1, 2012 for new type vehicles and from January 1, 2014 for existing type vehicles, and the implementation has begun.

#### **10.7.8. China**

The safety regulation GB 7258 (technical requirements concerning operating safety) was revised and the re-

quirement for motorcycle front license plate was eliminated. However, GA 36 (license plate standard) was not revised, which means that equipment requirements are not consistent.

The strengthening of the China 4 emissions regulations (equivalent to Euro 4) and fuel economy regulations are being examined.

The introduction of noise regulations equivalent to UN R41.04 is also being examined.

#### **10.7.9. South Korea**

Work on amending the Korea Motor Vehicle Safety Standards (KMVSS) is being carried out, and harmonization with UN-R and GTR is being examined.