THE AUTOMOBILE AND TECHNICAL REGULATIONS

1 Introduction

Amid growing interest in environmental and energy issues, various countries are continuing to tighten regulations. In addition, concerns over measuring real driving emissions (RDE), prompted by the emissions scandal, have prompted Japan and Europe to take the lead in establishing RDE regulations. More and more countries around the world have been establishing legislation aimed at making electric vehicles (EVs) and other zero emission vehicles (ZEVs) more widespread, as exemplified by the strengthening of the ZEV regulations in California in the U.S., the introduction of the new energy vehicle (NEV) regulations in China in 2019, and the announcement of a target proportion of EVs by the Indian government. In terms of safety regulations, progress has been made on the establishment of new regulations and guidelines concerning vehicle-to-vehicle (V2V) communication, cybersecurity, e-Call, and other matters involving communication outside the vehicle, as well as on the study of criteria on automatic steering. With respect to the international harmonization of standards, the World Forum for Harmonization of Vehicle Regulations (WP.29) of the United Nations Economic Commission for Europe has approved the amendments to the UN agreement on reciprocal recognition (1958 Agreement) and the implementation of the International Whole Vehicle Type Approval (IWVTA) scheme for the mutual recognition of whole vehicle type approvals at the international level.

2 Overall Trends

2. 1. Japan

The regulations implementing the IWVTA scheme (UN R0), originally proposed at the United Nations by Japan, which led the discussions in its role as Chair, were approved by WP.29 in November 2017 to come into effect in July 2018. In the area of safety, it was determined to introduce regulations on brake assist systems (BAS), electronic stability control (ESC), tire pressure monitoring systems (TPMS), vehicles using high-pressure CNG or LNG, and wheel assembly. The 13th report of the Central Environmental Council of Japan prompted the decision to introduce particulate matter (PM) regulations for gasoline direct injection vehicles and to strengthen the regulations concerning the reduction of evaporative fuel gases. In response to the diesel vehicle emissions scandal, a government review panel is drafting guidelines on the prohibition of illegal devices (defeat strategy) and the scope of protection control. The panel is also evaluating the introduction of the RDE testing already in place in Europe. The 2025 heavy-duty vehicle fuel economy standards have been set, imposing both stricter values and a more accurate fuel economy evaluation method than that of the 2015 standards.

2. 2. U.S.

Work related to advanced safety technologies is moving forward rapidly, as exemplified by the issuance of a draft proposal on V2V communication, a non-binding guidance on cybersecurity, and the second version of a non-binding guidance on automated driving. In anticipation of the spread of those technologies, a guidance, rather than a regulation, is being issued in more and more cases. The Environmental Protection Agency (EPA) has started applying the Tier 3 emissions regulations, a stricter equivalent of the Low-Emission Vehicle (LEV) III regulations that came into effect with the 2015 model year in California, to 2017 model year and later light-duty vehicles in the U.S. The California Air Resources Board (CARB) made various amendments, including revisions to the fault criteria for the onboard diagnostics (OBD) legislation applying to the LEV III regulations and detailed provisions on the diagnostics requirements for hybrid vehicles. The EPA and the National Highway Traffic Safety Administration (NHTSA) are considering whether the corporate average fuel economy (CAFE) and greenhouse gas (GHG) regulations for 2022 to 2025

model year vehicles need to be revised, with a decision expected in April 2018. In terms of recycling and substances of environmental concern (SOCs), the EPA has issued a regulation to ban the use of the current air conditioner refrigerant (R134a) in compact vehicles sold in the U.S. starting with the 2021 model year.

2. 3. Europe

The mandatory installation of the new advanced safety technologies represented by advanced emergency braking systems (AEBS), intelligent speed adaptation (ISA), lane keeping assist (LKA), emergency stop signals (ESS), event data recorders (EDR), seat belt reminders (SBR) on all seats, direct TPMS, rear view monitors, driver monitors, and pedestrian airbags), as well as the introduction of collision safety requirements (full lap collisions and rear-end collisions) are under examination as amendments to GSR ((EC) No. 661/2009), which aims to improve the safety and environmental performance of vehicles while also simplifying the legal code, with amendments scheduled to be submitted in the spring of 2018. The introduction of the Worldwide harmonized Light vehicles Test Procedure (WLTP) and of the RDE regulations in conjunction with the September 2017 coming into effect of Euro 6c, as well as the application of the revised procedures for the evaporative emissions test method staring in September 2019 have been determined. For the WLTP, global standardization expanding the scope from the new test cycle and procedures under the UN framework to other regulatory items (such as low temperature test methods), is being assessed. The European Commission is actively participating in those assessments with an eye toward incorporating them in EU regulations. Taking the introduction of the WLTP regulations into account, the New European Driving Cycle (NEDC)-based CO_2 regulations scheduled to start in 2020 (regulation values of 95 g/km for light-duty passenger vehicles and 147 g/km for light-duty commercial vehicles) will be replaced by WLTP-based values starting in 2021. Similarly, legislation concerning stricter post-2020 CO_2 regulations was announced in November 2017, and is to be introduced in two stages in 2025 and 2030. Proposed items include setting WLTP-based regulation values and zero-level emission vehicle (ZLEV) credits (a relaxation of CO_2 target values for manufacturers who exceed a set share of ZLEVs) to be introduced in two stages in 2025 and 2030. Proposed items include setting WLTP-based regulation values and zero-level emission vehicle (ZLEV) credits (a relaxation of CO_2 target values for manufacturers who exceed a set share of ZLEVs). The United Nations issued an acoustic vehicle alerting system regulation (UN R138) in 2016, and the 01 series prohibiting pause switches for the alerting system was issued in 2017. The EU acoustic vehicle alerting system (AVAS) requirements in the vehicle exterior noise regulations were also revised to mandate compliance with new legislation ((EU)2017/1576) and UN R138. The new legislation made pause switches an optional addition, but the intent to prohibit them in the future has been made clear.

2. 4. Other Regions

In China, the GB 7258-2017 technical requirements concerning the Safety specifications for power-driven vehicles operating on roads have been promulgated, making EDR installation mandatory starting in 2021. The various members of the Association of Southeast Asian Nations (ASEAN) are adopting safety standards and tightening emissions regulations as they prepare to implement harmonized standards and mutual recognition. Cambodia has postponed the mandatory application of 19 items in UN regulations until June 15, 2019. Meanwhile, Vietnam has issued Decree No. 116, which reinforces license acquisition requirements for manufacturers and importers. Other countries are considering mandating a range of safety devices, including seat belts, headrests, ISOFIX anchorage, airbags, anti-lock braking systems (ABS), ESC, BAS, and TPMS. They are also looking into tightening the emissions regulations currently in effect.

2. 5. United Nations

2. 5. 1. Harmonization of Standards

WP.29, the body that promotes international harmonization of automotive technical standards, meets regularly to discuss the 1958 and 1998 Agreements. The aim of the 1958 agreement, currently signed by 53 European and other countries as well as 1 region, is to use UN regulations to establish uniform technical standards for vehicles and obtain mutual recognition of those standards. There are currently (as of the end of 2017) 143 such UN regulations, and it was decided in November 2017 to add the emergency notification systems item as a new regulation. The 1998 Agreement went into effect in August 2000 as a means of establishing and realizing Global Technical Regulations (GTRs), and includes 35 participating countries and 1 participating region as of the end of 2017. The addition of WLTP in 2014 and WLTP EVAP for tires in 2017 has brought the number of items covered

by established GTRs to 19. Furthermore, additional GTRs on items such as compact vehicle emissions, fuel economy testing methods, hydrogen and fuel cell vehicles (phase II), pedestrian protection (phase II), tires (phase II), and quiet vehicles (proximity warning sounds), are also being revised or formulated.

2. 5. 2. System for Mutual Recognition of International Whole Vehicle Type Approval (IWVTA)

The Japanese government proposed the creation of the IWVTA scheme at WP.29 to extend the current 1958 Agreement-based mutual recognition of approval for devices, parts and systems to cover the whole vehicle. Revision 3 of the 1958 Agreement, which integrates IWVTA, went into effect in September 2017. The regulations implementing the IWVTA scheme (UN R0) were approved by WP.29 in November 2017 and scheduled to come into effect in July 2018. Mutual recognition by countries that adopt UN R0 will begin in April 2019. However, some items necessary for vehicle certification are not covered by this IWVTA scheme (emissions, for example), which means that even with IWVTA certification, compliance inspections for the missing items will be required in individual countries. WP.29 will continue its efforts to finalize a complete IWVTA.

2. 5. 3. Regulations on Automated Driving

Definitions and requirements for automated steering devices for each technological level are being examined in the context of a proposed update to the regulation on steering systems (UN R79). Amendments encompassing the requirements for the lower levels of automation that assume the driver is responsible for steering (e.g., assisted steering devices, park assist devices, and lane departure prevention devices) were approved as a new series in March 2017. Deliberations on the requirements for automated driving technologies initiated or decided upon by the vehicle (e.g., autonomous lane keeping functionality and lane changing functionality) will take place at a later date.

3 Japan

3. 1. Vehicle Safety

3. 1. 1. Progress of Safety Measures

The Ministry of Land, Infrastructure, Transport and Tourism (MLIT) is gradually assessing the regulation of the items to focus on among the four pillars of vehicle safety measures, namely (a) addressing accidents involving children or the elderly, (b) measures for the safety of pedestrians and automobile occupants, (c) measures to address grievous accidents involving heavy-duty vehicles, and (d) addressing new technologies such as automated driving, raised in its June 2016 compilation on the course of future automobile safety measures.

3. 1. 2. Strengthening of Safety Regulations and Harmonization of Criteria

Based on the 1958 Agreement, the MLIT is revising Japanese technical standards in line with revisions to UN standards. In 2017, standards concerning BAS, ESC, TPMS, vehicles using high pressure CNG or LNG, and tire mounting were introduced. The applicability of SBRs in passenger vehicles was expanded from only the driver's seat to the other seats as well.

3. 2. Emissions

3. 2. 1. Promotion of Measures on Emissions

In May 2017, the 13th Future Policy for Vehicle Emission Reduction report submitted to the Minister of the Environment by the Central Environmental Council of Japan, both in preparation for the introduction of PM regulations equivalent to those of diesel vehicles for direct injection gasoline vehicles in 2010 and in terms of measures against fuel evaporative emissions, called for establishing such measures applying to refueling at the stations. At the same time, it extended the number of parking test days with respect to measures against fuel evaporative emissions when parked, establishing a strengthening of vehicle regulations in 2020.

3. 2. 2. Diesel Vehicle Emissions Scandal

Guidelines on the prohibition of illegal control in diesel passenger and other vehicles to prevent a diesel vehicle emissions scandal are being drafted, and the introduction of the RDE test is under assessment.

3. 3. Fuel Economy

To prevent cheating in fuel and electricity consumption measurements for specified automaker models, stipulations on fuel and electricity consumption were added to the safety regulations in January 2018. The tighter fuel economy standards set to apply in 2020 for passenger vehicles and 2022 for light-duty trucks will be measured using the current test cycle (JC08). However, it was also made mandatory for the catalog and other documents to indicate the Worldwide harmonized Light vehicles Test Cycles (WLTC) overall fuel economy as well as fuel economy in urban, suburban and highway driving environments. The 2025 fuel economy standards for

heavy-duty vehicles were approved. The constant values for aerodynamic drag and rolling resistance used in the existing 2015 standards have been updated with actual measured values, while the details of fuel economy simulations were revised to reflect the latest real-world conditions. While the current Tokyo driving mode (JE05) and the interurban test cycles will remain in use, the ratio assigned to each mode was modified to reflect the expansion of highways. The standard (target) values are also stricter than those of 2015.

3. 4. Promotion of the Spread of Low-Emissions & Fuel Efficient Vehicles

A tax system (known as the green tax system or fuel-efficient car tax reduction) that reduces conventional vehicle-related taxes, such as the vehicle tax, motor vehicle weight tax, and vehicle acquisition tax, was established to promote the spread of low-emissions and fuel-efficient vehicles. In the FY 2017 Tax Reform (Main Points), the criteria for eligible vehicles were revised, with stricter fuel economy standards than the previous ones for 2017 and a further strengthening scheduled for 2018. In terms of exhaust emissions criteria, compliance with the existing 4-star low emissions certification standard is required.

3. 5. Substances of Concern

In May 2017, at the Eighth Conference of the Parties to the Stockholm Convention, the decision to add decaBDE and SCCPs to the list of chemicals to eliminate (Annex A) was adopted. Following this decision, decabromodiphenyl ether (decaBDE) and short-chain chlorinated paraffins (SCCPs) are scheduled to be added as Class I Specified Chemical Substances in the Chemical Substances Control Act in April 2018. Regulations mandating regulatory content limits and labeling for headlamps and other products containing mercury have been enacted.

4 The U.S. and Canada

4. 1. Vehicle Safety in the U.S.

4. 1. 1. Vehicle-to-Vehicle (V2V) Communication

In January 2017, a draft proposal to make the Basic Safety Message (BSM) specification, performance requirements for dedicated short-range communication (DSRC) equipment, and other on-board devices mandatory was submitted.

4. 1. 2. Acoustic Vehicle Alerting Systems (AVAS)

The final rule mandating the installation of a sound generating device in EVs and hybrid electric vehicles (HEVs) was issued in February 2018.

4. 1. 3. Cybersecurity

A non-binding guidance on approaches to cyberattacks and other cyberthreats was issued in October 2016.

4. 1. 4. Distracted Driving

The phase 2 non-binding guidelines draft proposal that also covers portable devices, including smartphones and navigation systems, were issued in December 2016.

4. 1. 5. Automated Driving

Version 2 of a non-binding guidance that includes a 12-point safety assessment was issued in September 2017. It applies to automated driving defined as level 3 and above in the SAE J3016 standard.

4. 1. 6. ESC in Heavy-Duty Vehicles

Federal Motor Vehicle Safety Standard (FMVSS) No. 136 made heavy-duty vehicle ESC mandatory for some tractors in August 2017, and in buses with a gross vehicle weight rating (GVWR) exceeding 14,969 kg starting in June 2018.

4. 2. Emissions in the U.S.

4. 2. 1. Federal Regulations

The EPA has set Tier 3 emissions regulations that are almost fully harmonized with the California LEV III regulations and started implementing them with the 2017 model year. In addition to the emissions regulations, the OBD regulations have also been brought in lines with those of California. In response to the emissions scandal, they tighten evaluations of emissions control system and also add a road test to the certification test. Spurred by the below mentioned proposal from California, work on drafting Low NOx standards for heavy-duty vehicles by 2024 has begun.

4. 2. 2. California

4. 2. 2. 1. ZEV 2.0 Regulations

The tightening of regulations from the 2018 model year requires making plug-in hybrid electric vehicles, electric vehicles, and fuel cell vehicles compliant, and requirements concerning the number of vehicles are becoming more stringent every year. In March 2017, the state government kept the regulations covering up to the 2025 model year unchanged, and decided on a policy to examine tighter regulations for the 2026 and subsequent model years.

4. 2. 2. 2. Emissions Regulations

The LEV III regulations were implemented from the 2015 model year, and corporate average fuel economy regulations are being strengthened every year. In addi-

tion, PM regulations are also being tightened in stages, to 3 mg/mile from the 2017 model year, and 1 mg/mile from the 2025 model year.

4. 2. 2. 3. OBD Regulations

The regulations have been made stricter with the 2016 amendments, which include setting malfunction thresholds for LEV III compliant vehicles, defining clear diagnostics requirements for hybrid vehicle parts, and expanding the number of test items and amount of required data during certification.

4. 2. 2. 4. Low NOx Standards for Heavy-Duty Vehicles

An initiative to implement a regulation reducing low NOx standards up to tenfold over the current standards by 2023 has been put in motion.

4. 3. Fuel Economy and GHG Regulations in the U.S.

4. 3. 1. CAFE and GHG Regulations

The January 2017 decision of the previous government not to revise the regulations for the 2022 to 2025 model years established in 2012 following the mid-term review on the necessity of such a revision was overturned by the new government in March, and the review will continue. The EPA and NHTSA are expected to make a decision on whether to apply revisions in April 2018. In accordance with a 2016 congressional directive, the penalties for non-compliance with CAFE regulations will become approximately 2.5 times higher starting with the 2019 model year.

4. 3. 2. EPA Fuel Economy Labels

Explaining the disparity between fuel economy labels and actual fuel economy has long been a problem. After purchasing vehicles on the market and carrying out its own running resistance tests, the EPA used the results to issue new guidelines with stricter monitoring requirements for running resistance. In addition, it has revised the coefficient used in the 5-cycle fuel economy formula. Both changes will come into effect from the 2017 model year.

4. 3. 3. Phase 2 Fuel Economy Standards for Heavy-Duty Vehicles

The Phase 2 standards to come into effect in three stages in 2021, 2024, and 2027 were announced. Test methods include the stipulation of a new cycle average-based test and a required powertrain for hybrid vehicles (HVs).

4. 4. Substances of Concern in the U.S.

In 2016, the federal Toxic Substances Control Act (TSCA) was updated, broadening EPA authority and otherwise strengthening its powers to enable more effective gathering and management of information concerning risks related to existing chemical substances. The use of substances of concern, copper, and copper alloys in brake friction material will be gradually prohibited (5% from 2021, and 0.5% from 2025 onward). The use of the current refrigerant (R134a) will be banned in light-duty vehicles sold in the U.S. starting with the 2021 model year. The Safer Consumer Products (SCP) regulations have come into force in California, with restricted substances and products covered by the regulations specified every year.

4. 5. Canada

4. 5. 1. Vehicle Safety

The final Side Impact Protection Regulations (CMVSS 214) harmonized with the U.S. FMVSS 214 were issued in October 2016. In November 2016, the regulation covering rear view mirrors (CMVSS 111) was aligned with the U.S. FMVSS 111 with a draft proposal on the mandatory installation of rear view cameras, and a draft proposal for a new ejection mitigation regulation (CMVSS 226) harmonized with the U.S. FMVSS 226 was issued.

4. 5. 2. Emissions

The Canadian federal government has adopted its own Tier 3 regulations, equivalent to the U.S. ones, for the 2017 and subsequent model years. As with the current Tier 2, vehicles with the U.S. Tier 3 certification sold in Canada do not need to acquire the Canadian certification. Similarly, the Quebec provincial government issued ZEV regulations equivalent to the California ZEV II ones at the end of 2017, to come into effect starting with the 2018 model year.

4. 5. 3. Fuel Economy and GHG Regulations

Harmonizing with the U.S., the Canadian federal government has decided to apply fuel consumption label values based on the 5-cycle test methodology, and simultaneously changed the design of the labels, which apply from the 2016 model year. As in the U.S., GHG regulations were strengthened starting with the 2017 model year, but a higher multiplier has been set for advanced technology vehicles.

4. 5. 4. Environmental Protection

Regulations mandating reporting and labeling for headlamps and other products containing mercury have been enacted. There are plans to follow in the footsteps of the U.S. in banning the use of the current refrigerant

(R134a) in light-duty vehicles starting with the 2021 model year. Legislation for the Canadian ministry of the environment policy to prohibit asbestos announced in 2016 is expected to come into effect in 2018.

5 Europe

5. 1. Whole Vehicle Type Approval (WVTA)

Amendments to European Directive 2007/46/EC, which establishes a framework for vehicle type approval in the EU are under review and include additions such as strengthening current market monitoring requirements, implementing type approval procedures, streamlining multi-stage approval, the mandatory certification of aftermarket parts, and requirements on repair and maintenance. An unofficial consensus on the details of revisions was reached in the deliberations of the European Parliament, Council of the European Union, and European Commission held from September to December 2016. Actual legislation will require undergoing the formal European Parliament and Council of the European Union approval procedures. After they are approved, the new regulations are expected to go into effect starting on September 1, 2020.

5. 2. Vehicle Safety

5. 2. 1. eCall

Detailed technical regulations for the regulation that mandates the installation of 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 were issued in September 2016. Those same technical regulations, which were under examination by the UN as new regulation proposals retaining compatibility with the European ones, were adopted in November 2017 and are scheduled to go into effect in July 2018.

5. 2. 2. GSR

The mandatory installation of advanced safety technologies (AEBS, ISA, LKA, ESS, EDR, SBR on all seats, direct TPMS, rear view monitors, driver monitors, and pedestrian airbags), as well as the introduction of collision safety requirements (full lap collisions and rear-end collisions) are under examination as amendments to GSR ((EC) No. 661/2009), which aims to improve the safety and environmental performance of vehicles while also simplifying the legal code. The European Commission has set halving the number of 2010 traffic accident fatalities by 2020, and is planning to issue an amendment proposal that accounts for not only cost effectiveness, but also market competitiveness, in the spring of 2018.

5. 3. Emissions and OBD

5. 3. 1. Light-Duty Vehicles

The RDE regulations effective from September 2017 stipulate NOx and PN regulation values, and stricter NOx values will apply from January 2020. Legislation covering the requirements for real world test was announced at the end of 2017 and is expected to be approved in the summer of 2018. The evaporative emissions test procedure incorporating revisions such as a shorter preparation cycle before the test, longer diurnal test period, and additional durability requirements will come into effect in September 2019. With respect to the WLTP, the examination involving following up on the establishment of the new test cycle and procedures under the UN framework (Phase 1) with the addition of items such as a low temperature, durability, and market test methods, as well as OBD regulations (Phase 2) is still underway. The European Commission is actively taking the lead in those activities with an eye toward both incorporating them in its own regulations and ensuring they integrate EU aims.

5. 3. 2. Heavy-Duty Vehicles

The Euro VI Stage D standards, which strengthen test requirements in response to RDE regulations, will apply to new models starting in September 2018 and to existing vehicles in September 2019.

5. 4. CO_2 (Fuel Economy)

In conjunction with the introduction of the WLTP regulations in September 2017, the NEDC-based CO_2 regulations are scheduled to start in 2020 and manufacturers will replace their 2020 NEDC compliance rate with WLTP-based values, which will be applied the following year, in 2021. Legislation concerning stricter post-2020 CO_2 regulations was announced in November 2017, and is to be introduced in two stages in 2025 and 2030. Proposed items include setting WLTP-based regulation values and zero-level emission vehicle (ZLEV) credits (a relaxation of CO_2 target values for manufacturers who exceed a set share of ZLEVs). Fuel economy and CO_2 regulations based on the VECTO simulation tool have been issued for commercial heavy-duty vehicles exceeding 7.5 t. Phase one will gradually introduce monitoring and reporting starting in 2019. Regulation values for CO_2 will be discussed in Phase 2. Discussions for vehicles of 7.5 t or less are currently underway.

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) for passenger vehicles and light-duty commercial vehicles. The metals other than lead are already fully prohibited, and the eighth revision tightening the regulations was published as an Official Journal of the European Union in November 2017. 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, the European Community Regulation on chemicals and safe use that entered into force in June 2007, has made the registration and reporting of chemical use to government authorities, as well as the disclosing information to users of chemicals, mandatory ((EC) No. 1907/2006). Any usage restrictions on chemical substances related to automotive products will generally be handled under this regulation. Prohibiting methanol in window washer fluid and phthalic acid esters in plastic components is currently under consideration. 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, 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 Exterior Noise

The United Nations issued an acoustic vehicle alerting system regulation (UN R138) in 2016, and the 01 series prohibiting pause switches for the alerting system was issued in 2017. The EU acoustic vehicle alerting system (AVAS) requirements in the vehicle exterior noise regulations were also revised to mandate compliance with new legislation ((EU)2017/1576) and UN R138. The new legislation made pause switches an optional addition, but the intent to prohibit them in the future has been made clear.

5. 7. Russia

In the Eurasian Customs Union (EACU), the Technical Regulation of the Customs Union (TR CU), a common approval system based on Russian regulations, came into effect for new models starting in January 2015. These regulations were applied to all vehicles starting in July 2016. It was decided to make it mandatory for vehicles to be equipped with the Russian version of the European eCall system (ERA GLONASS) ahead of Europe, a requirement applied to new model vehicles starting in January 2015 and to existing vehicles starting in January 2017. (Unlike the European eCall, it also applies to heavy-duty vehicles. Rollover requirements not found in Europe have also been applied since January 2017. Euro 5 standards have been applied to new models since January 2014, and were applied to existing models for passenger vehicles on schedule in January 2016. For heavy-duty vehicles, the Euro V standards were applied to new models in January 2016 and to existing vehicles in January 2018.

6 Central and South America

6. 1. Mexico

6. 1. 1. Vehicle Safety

Regulations from major areas (U.S., EU, UN and others) on basic safety systems for light-duty vehicles (head restraints, seats, seat belts, controls and indicators, speedometers, mirrors, hood latches, defrosters and defoggers, wipers and washer fluid, lamps, tires, brakes, and windows) came into effect with the 2017 model year. Regulations on frontal and side collision, ABS, and seat belt reminder (SBR) regulations will come in effect from the 2020 model year (for new models) and the 2021 model year (for all models).

6. 1. 2. Emissions

Emissions regulations contained in U.S. and European laws (equivalent to Tier 2-Bin 7 and Euro 4) have been fully introduced. Emissions regulations for large diesel trucks equivalent to U.S. 2004 or Euro IV regulations have been introduced. There are expectations that ultra-low-sulfur diesel (ULSD) fuel will spread by January 2019, and a strengthening of regulations to the equivalent of U.S. 2010 or Euro VI is scheduled for 2019.

6. 1. 3. CO_2 (Fuel Economy)

Fuel economy regulations modeled on the US CAFE have been in effect since 2014.

6. 2. Brazil

6. 2. 1. Vehicle Safety

The installation of three-point seat belts and head restraints on all seats in passenger vehicles, and of child restraint systems (CRS) anchorage devices, will become mandatory in January 2018. In both cases, the international standards represented by UN regulations and FM-

VSS are accepted as alternative performance requirements. Regulations will be applied in 2020 for ESC and in 2021 for daytime running lamps (DRL) and side turn signals.

6. 2. 2. Emissions

The public and private sectors have reached an agreement on strengthening regulations from the current L6 to L7, and decided to bring them into force in 2022. Changes include stricter regulation values and durability requirements, PM regulations for direct injection gasoline vehicles, and modifications to the evaporative emissions test method. The L8 regulations and RDE are also under consideration.

6. 3. Chile

6. 3. 1. Vehicle Safety

The mandatory installation of ABS and ESC on light-duty passenger vehicles has been decided, applying in March 2019 for ABS, and in March 2020 for ESC. The application of lighting device regulations starting with the 2019 model year has also been decided. In addition, the installation of safety systems such as seat belt, safety glass, and head restraints already mandatory on light-duty vehicles was extended to apply to medium-duty vehicles from January 2016. For heavy-duty vehicles, regulations on safety glass, brakes, and seat belts will apply starting in February 2020, and to other parts such as seats and seat belt anchorages, as well as fuel tanks starting in February 2022.

6. 3. 2. Emissions

Emissions regulations equivalent to Euro 5 or the U.S. Tier 2-Bin 5 are currently in effect for light-duty diesel and gasoline vehicles, and a strengthening of the regulations to Euro 6 staring in September 2020 is being considered. Euro V regulations are in effect for heavy-duty vehicles, and moving up to Euro VI regulations as of 2019 is under consideration. Plans to apply the stricter Euro 6 regulations to light-duty vehicles from the latter half of 2020 have been announced.

6. 3. 3. Noise

A noise certification system for light-duty vehicles registered in July 2019 and later will be set up. It covers acceleration and stationary noise, with acceleration noise based on UN R51-03 and stationary noise based on UN R51-02. There are no regulation values for stationary noise, and a declaration by the manufacturer is sufficient in both cases.

6. 4. Argentina

6. 4. 1. Vehicle Safety

Sources state that in addition to ESC pedestrian safety regulations and requirements for the installation of rear seat head restraints and three-point seat belts, as well as onboard fire extinguishers, will be gradually implemented starting in January 2019. Furthermore, the implementation of pole side impact, SBR, AEBS, lane departure prevention system, and stricter head restraint requirements (introduction of FMVSS 202a) between 2025 and 2030 is under consideration. It was decided to make the installation of speed limiters mandatory on heavy-duty vehicles. The schedule for the implementation is November 2016 for M2 and M3, and May 2017 for N2 and N3.

6. 4. 2. Emissions

Regulations equivalent to Euro 5 were in effect since January 2015 for new light-duty passenger vehicles and were applied to all vehicles in January 2017. For light-duty commercial vehicles, they have applied since January 2016, and will apply to all vehicles in January 2018. Revising the COP regulations to expand the scope of covered imported vehicles is also being considered (only vehicles produced in Argentina are currently covered). Fuel economy certification and the affixing of labels will be implemented. Certification begins in January 2018, and the labels will come into effect in January 2019. A fuel consumption tax is also scheduled to be examined for one year starting in 2020. After a one year delay, the implementation of Euro V equivalent regulations to heavy-duty diesel vehicles was applied to new models in January 2016 and will apply to all vehicles in January 2018.

6. 4. 3. Noise

It has been decided to move from UN R51-02 to UN R51-03. The new regulations will apply in July 2019 and later to new model certifications and to expanded certifications. The timing for instituting the phases 1 to 3 regulation values in UN R51-03 is still unknown. For heavy-duty diesel vehicles, they are scheduled to apply from January 2021.

6. 5. Columbia

6. 5. 1. Vehicle Safety

The installation of ABS, airbags and head restraints for light-duty vehicles, and ABS for heavy-duty vehicles, became mandatory as of January 2017. The study of new regulations scheduled to apply to light-duty vehicles and buses from January 2020 has begun. For light-duty vehicles, regulations on frontal-, side- and rear-end collisions,

seats, and head restraints will be made compliant with UN regulations or FMVSS, while for buses, the regulations concerning the upper structure, seat, seat belt, seat belt anchorage, and flame retardant interior materials will be made compliant with UN regulations or FMVSS and the installation of ESC and automatic fire suppression systems will be made mandatory.

6. 5. 2. Emissions

Regulations equivalent to Euro 2 or Tier 1 are currently in effect for light-duty gasoline vehicles. A shift to the stricter Euro 4 or U.S. Tier 2 Bin 8 in starting on January 1, 2020 is being assessed. Regulations equivalent to Euro 4 or The U.S. Tier 2 Bin 9 for light-duty diesel vehicles, and to Euro IV or the U.S. 2004 for heavy-duty diesel vehicles, have been in effect since January 2015. Mandating fuel labels has also come under consideration.

6. 6. Ecuador

6. 6. 1. Vehicle Safety

The regulation making safety systems mandatory (RTE INEN 034) has been revised and was enacted in 2015. It mainly introduces the UN regulation, but retains some Ecuador-specific requirements. It has become mandatory to submit documents proving compliance with the various requirements. Even after the certification system began operations, the regulations have frequently been amended, alternative regulations from nations such as Japan, the U.S. or China have been added, and the mandatory installation of ESC on light-duty vehicles has been postponed to the 2020 model year.

6. 6. 2. Emissions

Regulations equivalent to Euro 3 or U.S. Tier 1 covering light-duty gasoline vehicles have applied to vehicles produced in Ecuador since September 30, 2017. They had already applied to imported vehicles since 2017. An ordinance of the capital city of Quito will impose Euro III regulations on diesel vehicles used for public transportation or freight transportation.

6. 7. Uruguay

6. 7. 1. Vehicle Safety

Starting in April 2018, the installation of an anchorage system (ISOFIX or LATCH) allowing a child restraint system to be set on the right side of the rear row of seats will become mandatory.

6. 7. 2. Emissions

Applying emissions regulations equivalent to Euro 4 to passenger vehicles and light-duty commercial vehicles from June 2018 is being examined. The application of mandatory fuel economy labels from January 2018 for passenger vehicles is also under consideration.

6. 8. Peru

6. 8. 1. Emissions

The current regulations for light-duty vehicles are equivalent to Euro 3 or U.S. Tier 1, and Euro 4 regulations will come into effect in April 2018 (one year behind schedule). On the same date, Euro IV will apply to heavy-duty vehicles.

6. 9. Costa Rica

6. 9. 1. Emissions

For light-duty vehicles, the application of regulations equivalent to Euro 4 or the U.S. Tier 2 from January 2018, and to Euro 6 or the U.S. Tier 3 from January 2021 has been decided.

6. 9. 2. Noise

Since October 2015, stationary noise regulations based on independent regulation values and test methods have applied to in-use vehicles.

7 Middle East and Africa

7. 1. Gulf Cooperation Council (GCC)

7. 1. 1. Vehicle Safety

The GSO 42 general safety requirements have undergone a major revision and came into effect from the 2017 model year, but this was subsequently made voluntary for the 2017 model year and compulsory from the 2018 one. A separate regulation stipulating specific test methods for ESC, TPMS, and brake override is under assessment, and legislation concerning TMPS has been announced.

7. 1. 2. Emissions

Although the GSO 42 indicated that emissions regulations will be strengthened to Euro 4 starting with the 2018 model year, the lack of quality improvement in diesel market fuel, has limited that strengthening to Euro 3 for diesel vehicles. The application of these regulations has been postponed to the 2019 model year, and GCC countries, with the exception of the UAE, maintained the Euro 2 regulations for both gasoline and diesel 2018 model year vehicles. In the UAE, however, Euro 4 regulations will apply to both gasoline and diesel vehicles starting with the 2019 model year.

7. 1. 3. Fuel economy

Fuel economy labels on light-duty passenger vehicles and light-duty trucks mandatory have been mandatory since January 2015 in Saudi Arabia, and starting with

the 2017 model year in other GCC countries.

7. 2. South Africa

7. 2. 1. Vehicle Safety

Updates to the current safety regulations based on those of the UN and Europe were under consideration for implementation starting in 2017, but are now likely to be delayed until 2020 or later.

7. 2. 2. Emissions

Raising the current emissions regulations (Euro 2) to Euro 4 from 2020 for new models and 2022 for existing vehicles is being considered. New clean fuel regulations (equivalent to Euro 5) were scheduled to apply starting in 2017, but have been postponed due to delays in improving fuel quality. Based on the lead time needed for improvement and repairs, the local petroleum industry is calling for a postponement until around 2023.

7. 3. Egypt

The adoption of UN regulations (10 items) started in 2010 (Phase 1). The adoption of the next stage of safety items (Phase 2) that had been set to start on September 16, 2016, were postponed on the grounds of revising the items to adopt. It is not known when it will come into effect after the postponement.

7. 4. Morocco

WVTA items or equivalent UN regulations have been adopted since 2010 and applied to all vehicles starting in 2015.

7. 5. Algeria

In April 2015, many regulations requiring the installation of safety systems were issued, and a UN regulation containing approximately 30 items became mandatory. However, due to factors such as the mandating of local investment by automakers and the imposition of quota system on vehicle imports, these regulations effectively act as restrictions on imports.

8 Asia

8. 1. China

8. 1. 1. Vehicle Safety

The GB 7258-2017 technical requirements concerning the Safety specifications for power-driven vehicles operating on roads have been promulgated, making EDR installation mandatory starting in 2021. The EDR standards are being drafted. The creation of standards for advanced safety technologies such as AEB, or lane departure warning (LDW) is under consideration.

8. 1. 2. Emissions

The China 6 regulations were promulgated for light-duty vehicles. The strengthening of the regulation values will come in two phases, with China 6a coming into effect nationwide staring in July 2020 and China 6b coming into effect in July 2023. Both are stricter than Euro 6. The province of Guangdong is considering enacting the China 6 regulations one year ahead of schedule, in July 2019. Although the city of Beijing was expected to apply the China 6 regulations in advance, no intent to do so has been made public. The next stage of emissions regulations for heavy-duty vehicles (China 6 regulations) were submitted to the WTO in November 2017 and are anticipated to be equivalent to Euro VI.

8. 1. 3. Fuel economy

Legislation on the concurrent management of corporate average fuel economy for fuel-based vehicles and fuel economy credits for new energy vehicles has been promulgated. It contains stipulations on the method of calculating credits and the submission of fiscal year reports, and will come into effect in April 2018. The next stage of standards for fuel economy regulations was submitted to the WTO in November 2017 and is scheduled for publication in 2018.

8. 1. 4. New Energy Vehicles

With the spread of new energy vehicles, electric vehicle batteries, motors, and charging were added to the vehicle certification procedure and standards for fuel economy and other tests for hybrid vehicles were included in the regulations implementing the certification.

8. 2. Hong Kong

8. 2. 1. Vehicle Safety

The adoption of resolutions based on those of the UN for parts such as door latches and hinges, lamps and brakes is an ongoing issue on which little progress is being made.

8. 2. 2. Emissions

The Euro 6b regulations have applied to gasoline passenger vehicles with a weight of 3.5 t or less since July 2017, and the Euro 6c regulations will be introduced in September 2019. For commercial vehicles weighing 3.5 t or less, Euro 6b has applied since January 2018 and Euro 6c will be introduced in September 2020. The Euro VI regulation comes into effect for buses and commercial vehicles weighing more than 3.5 t in October 2018, with OBD Phase C to apply as well starting in April 2019.

8. 3. Taiwan

8. 3. 1. Vehicle Safety

Safety standards based on UN regulations are updated and newly adopted annually. The mandatory installation of daytime running lamps (DRLs), ESC and BAS, as well as requirements on external protrusion and the identification of control indicators are the upcoming requirements set to gradually apply to new models starting in 2018. The introduction of the ten UN regulation items of pedestrian safety, internal projections, forward visibility, pedal placement, rear-end collisions, mandatory SBR installation in all seats, headlamp cleaner, reinforced commercial vehicle cabs, fuel tanks, and full lap frontal impacts, as well of the nation's own New Car Assessment Program (NCAP), is under consideration.

8. 3. 2. Environmental Protection

Discussions with the industry on strengthening the current Euro 5/V regulations to Euro 6/VI starting in September 2019 are underway. A proposal to raise the target average value for fuel economy by approximately 40% in 2022 has been announced. In terms of future vehicle exterior noise, the gradual adoption of regulations equivalent to UN R51.03 from July 2018 is under consideration.

8. 4. Thailand

8. 4. 1. Vehicle Safety

The Thai Industrial Standard Institute (TISI) and Department of Land Transport (DLT) are sharing the work of harmonizing standards with UN regulations and applying new regulations. For passenger vehicles, the DLT has decided to adopt UN R43 (glass) as of January 2018, as well as UN R28 (warning devices) and UN 51 (noise) as of January 2019. The gradual introduction of other UN regulations is also being examined. For its part, TISI has decided to apply UN R30 (passenger vehicle tires), UN 54 (commercial vehicle tires) as of January 2018, and UN R117 (tire noise) as of January 2022.

8. 4. 2. Emissions

Euro 4 regulations have been in effect for light-duty vehicles since December 2012, while Euro III regulations have been in force for heavy-duty diesel vehicles since March 2013. There are plans to apply Euro 5 to new light-duty vehicle models in 2023 and to all such models in 2024.

8. 5. Malaysia

Since joining the 1958 Agreement in 2006, Malaysia has been actively making the application of UN regulations mandatory, with approximately 30 UN regulations for items such as seat belts, brakes, and collisions becoming mandatory as of January 2012. The Malaysian Ministry of Transport is considering making ESC installation mandatory staring in June 2018 and eCall mandatory starting from January 2019. Preparations are underway for almost all UN regulations, including the latest standards such as pedestrian protection for light-duty vehicles or emergency braking systems in heavy-duty vehicles, as well as cab strength requirements, to become mandatory by 2020.

8. 6. Indonesia

Phase 1 of the ASEAN Mutual Recognition Agreement (MRA), which involves integrating UN regulations in the national standards, is being studied. Plans to introduce Euro 4/IV regulations in and after 2018 led to the decision to apply them to new models in 2017, and to existing vehicles in 2018 for gasoline vehicles, and 2021 for diesel vehicles. Euro 4 is already in effect for new models.

8. 7. Singapore

The Euro 6/VI regulations have applied to gasoline vehicles since September 2017, and their introduction for diesel vehicles in January 2018 is being assessed.

8. 8. India

8. 8. 1. Vehicle Safety

The Indian Standards (IS) and Automotive Industry Standards (AIS) sets of technical standards are gradually being harmonized with UN regulations. Work on building the infrastructure for certification tests such as collision safety testing, pedestrian protection, and electromagnetic interference is moving forward. In conjunction with the completion of those facilities, new models will be subject to the standards on the protection of occupants in the event of the steering mechanism moving back in a frontal collision (AIS 096), in the event of an offset frontal collision (AIS 098), or in the event of a lateral collision (AIS 099) starting in October 2017, and to the standard for the protection of pedestrians (AIS 100) in October 2018. The Indian Ministry of Road Transport and Highways (MoRTH) has decided to make the installation of ABS on new passenger vehicles from April 2018.

8. 8. 2. Emissions

The application of the Bharat Stage (BS) IV (equivalent to Euro 4/IV) regulations was expanded to all cities in 2017. In February 2016, the Indian government had decided to skip over the BS V (equivalent to Euro 5/V) and

apply BS VI (equivalent to Euro 6/VI) to new models starting in April 2020.

8. 8. 3. Fuel economy

The Indian government has decided to introduce of the corporate average fuel economy regulations applying to light-duty passenger vehicles as of April 1, 2017. Stage 1 will apply from 2017 to 2022, and Stage 2 from 2022 onward. Also, the Bureau of Energy Efficiency (BEE) is considering making the originally optional application of fuel economy labels mandatory.

8. 9. Vietnam

8. 9. 1. Vehicle Safety

Decree No. 116, which reinforces license acquisition requirements for manufacturers and importers has been issued, and standalone certification for parts such as glass, mirrors, tires, lamps, fuel tanks and aluminum wheels has also become mandatory for imported vehicles since 2018.

8. 9. 2. Environmental Protection

The Euro 4/IV emissions regulations were introduced in January 2017. A recycling law aimed at the recovery of waste products (Decision No. 16/2015/QD-TTg) was enacted, with its scope extending to components such as oil and batteries, tires and air conditioners as of July 2016 and scheduled to apply to the vehicle as a whole as of January 2018.

8. 10. The Philippines

The three-point seat belt, airbag (driver and passenger seats), head restraint (outer seat) and ABS safety systems were made mandatory for passenger vehicles in March 2016, and regulatory items for a further tightening of safety restrictions starting in 2018 are being considered.

8. 11. Brunei

The three-point seat belt, airbag (driver and passenger seats), head restraint (outer seat) and ABS safety systems were made mandatory for passenger vehicles in March 2016, and additional requirements such as SBRs, ISOFIX anchors, side and curtain airbags and ESC are under consideration.

8. 12. Cambodia

In preparation for the ASEAN Mutual Recognition Agreement (MRA), the adoption of 19 UN regulation items, including UN R13 (brakes) and UN R14 (seat belt anchorage) had been announced for January 2017, but their application has been postponed and they will become mandatory in June 2019.

9 Oceania

9. 1. Australia

9. 1. 1. Vehicle Safety

The individual Australian Design Rules (ADR), including their unique requirements, are being reviewed in line with a policy of adopting UN regulations. After the revision, compliance certification for the technical requirements in UN regulations cited in the ADR, or for subsequently issued UN regulations up to the latest version, will be recognized.

9. 1. 2. Emissions

The Euro 5 emissions regulations stipulated in ADR79/04 have been applied to all light-duty gasoline vehicles since November 2016. The Euro V regulations already applied to all heavy-duty vehicles since January 2011, and both the U.S. 2007 regulations and Japanese 2005 regulations (new long-term regulations) are recognized as alternative standards. A Ministerial Forum established by the Australian Government is taking a whole-of-government approach to studying the next emissions regulations, but progress is slow due to the bottleneck caused by the need to improve market fuel quality.

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.

10 Motorcycles

10. 1. Japan

10. 1. 1. Vehicle Safety

Lighting devices, (UN R50) and Headlamps emitting a symmetrical passing beam (UN R113), were adopted in June 2015 and will apply to both new models and existing vehicles from June 2020. The adoption of Installation of lighting devices (UN R53) is currently being considered based on the results of UN discussions concerning DRL. Control/tell-tales (UN R60) have been applied to both new models and existing vehicles from July 1, 2017. Reflecting amendments to UN R78 with respect to advanced brakes, the installation of ABS in vehicles with a displacement exceeding 125 cc and either ABS or a combined brake system (CBS) in vehicles with a displacement exceeding 50 cc but less than 125 cc will be made mandatory. This will apply to new models in October

2018, and to existing vehicles in October 2021.

10. 1. 2. Emissions

The third stage of emissions regulations, equivalent to Euro 4, came into effect in October 2016 for new models and in September 2017 for existing vehicles. Evaporation and OBD requirements were also applied at the same time.

10. 1. 3. Noise

Motorcycle noise emissions regulations (UN R41.04) were applied to new models from January 2014, and to existing vehicles from January 2017. Relative values were assigned in the close proximity exhaust noise regulations, applying to new models in October 2016 and scheduled to apply to existing models in September 2021.

10. 2. U.S.

10. 2. 1. Vehicle Safety

There were no significant changes in the laws or regulations.

10. 2. 2. Emissions

The emissions regulations of the EPA were strengthened in the past to establish a Class III HC+NOx regulation value of 0.8 g/km from the 2010 model year. There have been no subsequent other moves to further strengthen the regulations. For greenhouse gases, coefficients can be reported up to the 2017 model year, and the use of coefficients for the 2018 and later model years is being considered. The new CARB evaporative emissions regulation value and test method for off-road motorcycles and all-terrain vehicles (ATVs) starting with the 2018 model year, and to all vehicles up to the 2021 model year.

10. 3. Canada

There were no significant changes in the laws or regulations, and standards are being harmonized with those of the U.S.

10. 4. Europe

Regulations for a new uniform European vehicle type approval system were issued in 2014 and came into effect in January 2016 for motorcycles, and in January 2017 for mopeds. The three delegated and implementing acts concerning the environment, functional safety, and vehicle structure were passed in July 2016 and came into effect in October 2016.

10. 4. 1. Vehicle Safety

Turning the headlamp on automatically when the ignition is switched on, or installing DRL, as well as the installation of ABS, were made mandatory for vehicles in the L3e category (two-wheeled motorcycles). Vehicles in the L3e-A1 category (motorcycles with a displacement of 125 cc or less) must be equipped with ABS or CBS. Detailed technical requirements on aspects such as the electrical safety of electric powered vehicles are also applied as a deterrent to modifying such vehicles, and new requirements on steerability, cornering properties and turn-ability were added.

10. 4. 2. Emissions

Euro 4 has applied to new models since January 2016, and were applied to existing vehicles in January 2017. Crankcase emissions, evaporative emissions, endurance degradation, and OBD requirements for the have been incorporated into the regulations in addition to test cycle emissions regulations. Euro 4 for the L1e category (mopeds), which is exempted from OBD and evaporative emissions, was applied to new models in January 2017, and to existing vehicles in January 2018. The European Commission will finish examining the period and details of Euro 5 and preparing the regulations by 2016, which are currently scheduled to apply to new models starting in 2020 and to existing vehicles in 2021.

10. 4. 3. Noise

For L3e category vehicles, UN R41.04 has applied to new models since 2016, and to existing vehicles since 2017. For the L1e and L2e categories (three-wheeled mopeds), the have applied to new models since 2017 and to existing vehicles since 2018.

10. 4. 4. Technical Information for Repair and Maintenance

It was stipulated that automakers must maintain websites through which information on OBD as well as vehicle repair and maintenance can be obtained.

10. 5. Central and South America

10. 5. 1. Brazil

The enactment of the legislation making it mandatory for vehicles to be equipped with anti-theft devices has been put on hold. The mandatory installation of ABS or CBS for vehicles with a displacement below 300 cc (output below 22 kW), and for ABS for those with a displacement of 300 cc or higher (22 kW or more) has been applied gradually to production and import vehicles since 2016, and will fully come into effect in 2019. UN regulations on lighting devices were used as a basis to amend domestic laws, which will apply to production vehicles and to vehicles clearing customs starting in January 2019. The introduction of additional safety regulations is

also under consideration. The Second-stage PROMOT4 fuel emissions regulations (which are stricter, add evaporative emissions requirements, and CO_2 reporting) have applied to all vehicles since January 2016. Raising the current noise regulations, equivalent to UN R41.03, to the equivalent to UN R41.04 is being considered.

10. 5. 2. Peru

The Euro 3 emissions regulations came into effect on January 1, 2017.

10. 5. 3. Ecuador

New safety and emissions regulations were introduced, but the period for their application has been postponed and revisions to requirements in the various regulations (e.g., tires, mirrors, lighting devices) are under consideration.

10. 5. 4. Chile

Euro 3 or U.S. EPA (Tier 2) emissions regulations are currently in effect for all vehicles, and only Euro 3 will be accepted starting in March 2019. Noise regulations equivalent to UN R41.03 are scheduled to apply from July 2019.

10. 5. 5. Argentina

The gradual introduction of regulations on emissions, noise, and electromagnetic compatibility (EMC) is being considered. The introduction of five new safety regulations (stands, fuel tank, external projections, fuel tank, and passenger handholds)

10. 6. Middle-East

10. 6. 1 Gulf Nations

There are currently environmental and safety regulations in effect, with the addition of further regulations under consideration.

10. 7. Asia

10. 7. 1. Taiwan

Safety regulations matching those of Europe will make the installation of ABS or CBS mandatory in January 2019 for new vehicles and January 2021 for existing vehicles. Similarly, the installation of automatically activated headlamps or DRL has been mandatory for new vehicles since January 2017 and will apply to existing vehicles in January 2019. The sixth stage of emissions regulations (equivalent to Euro 4) has applied to new models since January 2017 and to existing vehicles since January 2018. Fifth stage fuel economy regulations under the World Motorcycle Test Cycle (WMTC) were introduced in January 2017. The sixth stage of noise regulations (equivalent to UN R41.04) has applied to new models since January 2017 and to existing vehicles since January 2018, with local regulation values applied to close proximity exhaust noise.

10. 7. 2. Indonesia

Emissions regulations equivalent to Euro 3 and alternative regulations that use the WMTC test cycle were added, applying to new models in August 2013 and to existing vehicles from August 2015.

10. 7. 3. Malaysia

Safety regulations concerning electromagnetic compatibility (UN R10), filament lamps (UN R37), and controls/tell-tales (UN R60) were applied to new models in January 2015 and to existing vehicles in January 2017. Euro 3 emissions regulations and UN R41.03 noise regulations have applied to new models since January 2016 and to existing vehicles since January 2017. For the next stage of regulations, the application of Euro 4-equivalent regulations and UN R41.04 from January 2020 for new models and January 2022 for existing vehicles is being considered.

10. 7. 4. The Philippines

The application of UN regulations in preparation for the harmonization of ASEAN standards is being examined, with regulations such as horns (UN R28), tires (UN R75) and speedometers (UN R39) under assessment in the area of safety. Emissions regulations equivalent to Euro 3 have applied to new models since September 2015. The application of UN R41.03 noise regulations to new models in 2018 and existing vehicles in 2020 is under consideration.

10. 7. 5. India

The installation of automatically activated headlamps or DRL has been mandatory for all production vehicles since April 2017. Other safety regulations matching those of Europe will make the installation of ABS or CBS mandatory in April 2018 for new vehicles and April 2019 for existing vehicles. The Bharat Stage (BS) 4 emissions regulations have applied to new models since April 2016 and to existing vehicles since April 2017, and evaporative emissions requirements have also come into effect. For the next regulations, BS 5 will be skipped and the BS 6 emissions regulations, equivalent to Euro 5, will apply to vehicles produced in April 2020 and later, at the same time as the OBD Stage I requirements will come into effect. Moreover, the OBD Stage II requirements are scheduled to apply from April 2023.

10. 7. 6. Vietnam

Emissions regulations equivalent to Euro 3 have applied to all vehicles since January 2017, and fuel economy regulations are under consideration. The revision, preparation and application of technical standards based on UN safety regulations are is gradually and continuously being carried out.

10. 7. 7. Thailand

Horn safety regulations (equivalent to UN R28.00) will apply to new models from January 2018 and to existing vehicles from January 2010. The addition of other safety regulations is also under consideration. Although sixth-generation emissions regulations equivalent to Euro 3 are in effect, the use of the WMTC test cycle is not recognized. The introduction of seventh-generation Euro 4 equivalent emissions regulations as the next-generation regulations is under examination.

Noise regulations equivalent to UN R41.03 are in effect, with the application of next stage regulations equivalent to UN R41.04 from 2019 for new models and 2021 for existing vehicles being considered.

10. 7. 8. China

The examination of the mandatory installation of advanced braking led to the decision to make installing ABS or CBS on motorcycles with a displacement of more than 150 cc and 250 cc or less, and ABS on motorcycles with a displacement exceeding 250 cc, mandatory. The introduction of regulations on external projections was assessed and will apply to new models from January 2018 and to all production vehicles from January 2019. The China IV (equivalent to Euro 4) emissions regulations are scheduled to apply to new models from July 2018 and to all vehicles form July 2019. Revisions to the noise regulations (equivalent to UN R41.04) and a strengthening of the fuel economy regulations are being assessed.

10. 7. 9. Hong Kong

The introduction of emissions regulations equivalent to Euro 4 is being examined. The introduction of noise regulations equivalent to UN R41.03 is under consideration.

10. 7. 10. Singapore

Euro 3-equivalent regulations have applied since October 2014, and the introduction of Euro 4-equivalent regulations is being considered. The introduction of noise regulations equivalent to UN R41.03 is under consideration.

10. 7. 11. South Korea

The Euro 4 emissions regulations came into effect on January 1, 2017. Regulations equivalent to Euro 5 are scheduled to come into effect in January 2020.

10. 8. Oceania

10. 8. 1. Australia

Regulations on the installation of advanced brakes matching those of Europe were approved and will become mandatory on new models starting in November 2019 and in all vehicles starting in November 2021. There were no significant changes in laws and regulations concerning either emissions or noise.