

# KOREAN GOVERNMENT STATUS REPORT: THE FIRST AUTOMOTIVE POLICY MASTER PLAN (2012-2016)

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## ABSTRACT

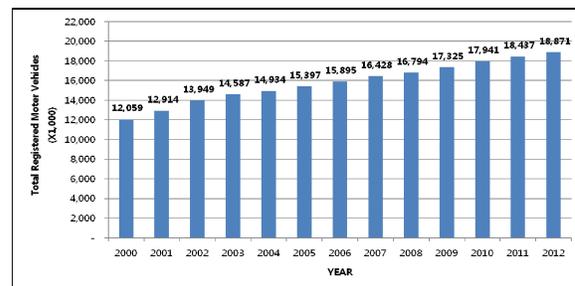
Over the last 50 years, Korea has seen huge changes in automotive policy conditions in terms of both quantity and quality. Accordingly, the Korean government has realized the necessity of establishing policy plan to manage vehicles more efficiently and improve vehicle safety. In particular, in establishing a mid-term master plan related to the automotive industry, Korea as an advanced car-making country focused on the globalization of automotive safety standards and the development of future vehicles. This plan is a record on automotive safety in the First Automotive Policy Master Plan, which was established by the Korean government based on the result of research on the master plan.

## INTRODUCTION

Over the last half-century, the number of new vehicle registrations in Korea has continued to increase, and accordingly the national interest in safer vehicles has also continued to rise. As the Korean automotive environment has changed significantly in both quantity and quality, it has become necessary to establish a comprehensive plan based on long-term prospects on vehicle supply and automotive technologies in order to manage vehicles more efficiently and improve safety. Accordingly, in order to provide systematic and predictable automotive policy guidelines, the Korean Ministry of Land, Transport and Maritime Affairs (MLTM) commenced establishing the plan in the second half of 2011, and completed the First Automotive Policy Master Plan (2012-2016) through investigations and consultations, expert workshops and discussion with related authorities and announced it. This paper will explore detailed contents of this plan aimed at providing safer and more convenient automotive use environments to the people.

## STATUS OF VEHICLE SUPPLY IN KOREA

The number of new vehicle registrations in Korea exceeded 1 million in 1985, and with the successful hosting of Seoul Olympics in 1988 and the continued economic growth, the number passed 10 million in 1997. As shown in Figure 1, annual new vehicle registrations recorded 18.87 million vehicles as of the end of 2012, and are expected to reach 20 million vehicles in 2015.



*Figure 1.* Total Registered Motor Vehicle Statistics in ROK

In addition to the increase in the number of new vehicle registrations, population per vehicle also recorded less than 3 for the first time in 2008, and as of the end of 2012, the number is 2.70. As the number of vehicles and population increase, vehicle-related traffic accidents have also become an important factor to be managed. As shown in Figure 2, traffic fatality has continued to decrease since 2002 but the rate began to slow down from 2004.

Although it is the world's No.5 in vehicle production, the traffic fatality per every 10,000 vehicles is 2.4 persons as of the end of 2011, which is one of the lowest ranks among the OECD member countries. For this reason, the Korean government established the "Reduce Traffic Fatality by Half" policy and has run it. As one of the methods to achieve the goal in terms of automotive policy, the government has

continued to strive to protect human lives before or in traffic accidents by reinforcing automotive safety.

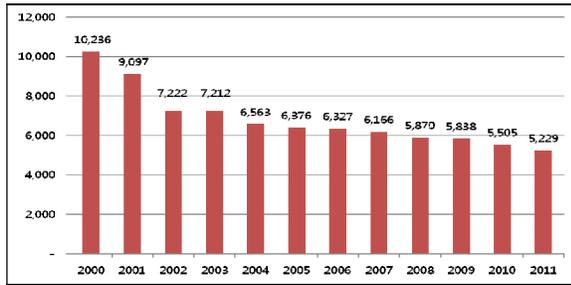


Figure 2. Fatalities Statistics since 2000

Not only automotive safety but also eco-friendly vehicles have also been actively developed. Since the development of Hyundai's Click Hybrid in 2004, a variety of hybrid cars have been released in the market. In addition, according to the government's green car development strategy established in 2010, electric cars are developed and supplied to public authorities first, and will be expanded to the private sector.

**Table 1.**  
**Strategies of the First Automotive Policy Master Plan and its tasks**

Securing global-level automotive safety	1. Strategically globalize automotive safety standards 2. Continue to seek enhancement of automotive safety
Vitalizing the operation of state-of-the-art future vehicles	1. Reinforce automotive R&D 2. Activate the operation of electric vehicles early
Establishing the foundation for the development of automotive policy	2. Improve laws related to future-oriented vehicles

To respond to changes in automotive industrial environments, such as increase in vehicles and rapid increase in the development of eco-friendly and cutting-edge safety vehicles, and to advanced and diversified automotive services, it is necessary to move into a new automotive policy paradigm represented by three keywords of 'state-of-the-art', 'smart' and 'green'. In order to satisfy the policy demand for the whole life cycle of vehicles, considering the new automotive policy paradigm and aiming to create safe and convenient automotive use

environments that can satisfy the needs of the era of 20 million vehicles, the First Automotive Policy Master Plan (2012-2016) which comprises 5 Strategies and 18 Tasks was established.

This paper will focus on the automotive safety area in the Automotive Policy Master Plan, and discuss the main implementation tasks for automotive safety: securing global-level automotive safety, vitalizing the development of state-of-the-art future vehicles, and establishing the foundation for the development of automotive policies.

## STRATEGY 1. SECURING GLOBAL-LEVEL AUTOMOTIVE SAFETY

### Strategic internationalization of automotive safety standards

Establishment and revision of global standards regarding vehicles have been actively discussed mainly by UN/ECE/WP29, and Korea also established its 5-year automotive safety standard globalization plan and has continued to globalize safety standards. Korea plans to complete the current phase 1 plan by 2014, and continue to carry out safety standard improvement, including the implementation of the phase 2 plan.

**Table 2.**  
**Status of the international harmonization of the Phase 1 Automotive Safety Standard**

Classification	Pre-2010	2010	2011	2012-	Total
Int'l Harmonization Items	9 items	5 items	3 items	39 items	56 items

As many governments come to pay more and more attention to reducing traffic fatality, UN/ECE/WP.29 is actively implementing the internationalization of new-concept safety technology standards, such as establishing and revising UN Regulation and Global Technical Regulation (GTR), and is discussing innovative methods, such as International Whole Vehicle Type Approval, agreeing to the efforts to reduce trade barriers in the existing system. Korea has also actively participated in such international activities.

In addition, in order to implement the internationalization of such automotive safety standards, Korea plans to establish an international harmonization organization or separate institutes comprising a variety of stakeholders, including MLTM, Korea Automobile Testing & Research Institute (KATRI), domestic car makers, import car makers, and related associations

One of important characteristics in terms of internationalization is reflection of trade issues initiated since 1995. Korea and USA made 2 memorandums of understanding about foreign motor vehicles in Korea in 1995 and in 1998. Stimulated by such MOUs, EU also raised trade issues related to automotive goods. Resultantly, Korean detailed enforcement regulation of safety standards came to have an exceptional provision regarding some of the two countries' motor vehicle safety standards as equivalent to the corresponding Korean Motor Vehicle Safety Standards (KMVSS) in 1997.

In the same context, Korea enlarged the range of the exceptions through the Korea and US FTA and the Korea and EU FTA. The basis of this exceptional provision is that there will not be much influx of foreign vehicles in the total population of vehicles so that such small amount of vehicles can be dealt as exceptional case. However, the market share of foreign vehicles is increasing to the remarkable level. Thus, MLTM plans to deal with this matter through research oriented approach.

**Continuous improvement of automotive safety**

**Expanding the safety assessment of new vehicles**

Korea has conducted the safety assessment of new vehicles since 1999. However, there is an increasing demand for expanding its assessment function and provision of assessment results. For this, Korea plans to introduce the automotive safety rating system to rate the results of safety assessment (collision, driving and pedestrian), and push ahead to improve various systems, including mandatory automotive safety rating labeling.

The government will also establish methods to assess new cutting-edge safety devices, and provide more variable automotive safety information to consumers by reflecting socially-interested items, such as airbag suppression collision test and exhaust invasion.

**Table 3.**  
**Automotive Safety Rating System**

Classification	Assessment items							Pedestrian	Driving	
	Impact						Overall Rating		Roll over	Brake Dry/Wet
Vehicle model	Full Frontal Impact	Offset Frontal Impact	Side Impact	Whiplash	Side column	Overall Rating				
Sub-compact car A	★★ ★★ ★ (13.2, 83%)	★★ ★★ ★ (14.0, 88%)	★★ ★★ ★ (15.5, 97%)	★★ ★★ ★ (5.2, 87%)	2.0, 100%	1 <sup>st</sup> Class (49.9, 92%)	★★ ★ (17, 57%)	/	44.1 m	44.4 m
	Compact car B	★★ ★★ ★ (15.5, 97%)	★★ ★★ ★ (15.3, 96%)	★★ ★★ ★ (16.0, 100%)	★★ ★★ ★ (5.1, 85%)	2.0, 100%	1 <sup>st</sup> Class (51.9, 96%)		★★ ★ (14, 47%)	44.6 m
Compact car C		★★ ★★ ★ (15.6, 98%)	★★ ★★ ★ (13.4, 84%)	★★ ★★ ★ (16.0, 100%)	★★ ★★ ★ (5.2, 87%)	2.0, 100%	1 <sup>st</sup> Class (52.2, 97%)	★★ ★ (15, 50%)	/	41.6 m

**Self-certification system for automotive parts**

The government plans to expand the current automotive safety management system to automotive parts and gradually expand the subject parts for the system, and continue to expand test facilities to secure the public confidence of the self-certification system for automotive parts.

**Table 4.**  
**Subject items of the self-certification system for automotive parts by year**

Year	Items
2012	Brake hose, safety belt, lighting system (3 items including asymmetry headlight), reflex reflector, rear safety valve
2013	Brake lining, passenger car wheel, pressure tire, window, lighting system (14 items including fog lights), reflex system (4 items including rear reflecting plate)

2014	Connector, recapped tire, hydraulic brake fluid, lighting system (parking light), lighting source (2 items including filament lamps)
2015	Children protection equipment, spare tire, lighting system (3 items including daytime running lights), reflex systems (reflecting strip)

Note) The above items for the self-certification system for automotive parts by year are provisional

**Plan for establishing the safety standards for state-of-the-art safety devices**

The government is implementing some pilot projects for installation of safety equipment, such as lane departure warning system (LDWS) and electronic stability control (ESC), for vans and trucks. By reflecting the results of the pilot projects, the government will gradually expand the installation and obligation of such equipment by device and vehicle model. It will also establish plans to promote the development of vehicles and manage vehicles more efficiently by introducing the assessment system for a variety of safety and convenience devices for a variety of classes (female and elderly drivers).

**STRATEGY 2. VITALIZING THE OPERATION OF STATE-OF-THE-ART FUTURE VEHICLES**

**Reinforcement of automotive R&D**

Many countries across the world set their “zero traffic accident” vision and have strived to reduce traffic fatality for the recent 10 years. Korea is also implementing the “Reduce Traffic Fatality by Half” campaign at the government level. In addition, the paradigm of the automotive industry is changing from the existing internal combustion era to the era of eco-friendly and clean vehicles, in order to prevent the depletion of fossil fuels and environmental contamination.

In order to respond to such global demand for enhanced automotive safety and eco-friendly vehicle development, the Korean government will also develop technologies required to enhance the safety of future vehicles through intelligent technological convergence.

The research areas related to the development of safety enhancement technologies will include driving support for accident prevention, driving

warning technology, state-of-the-art safe automotive technologies for developing collision avoidance/relaxation technology and standardized technology, vehicle-to-vehicle passenger protection for better safety in accidents and technologies for securing safety in vehicle collisions for active protection of pedestrians and future lighting systems for better visibility.

In order to vitalize the R&D activities for eco-friendly vehicles, researches on the security of safety of alternative fuel, electric and hydrogen fuel cell vehicles will be also conducted. Moreover, in order to secure the safety of communication-based vehicles, vehicle-vehicle and vehicle-infrastructure, researches required to secure technologies related to functional safety of electronic control systems, such as autonomous cruise, vehicle-vehicle communication control, hacking prevention technology and sudden unintended acceleration (SUA) and malfunctioning, will be also carried out.

The assessment technologies and safety standards obtained as the result of these researches will be utilized not only in Korea but to lead international safety standards, such as WP29.

**Early vitalization of the operation of electric vehicles**

As advanced car makers, including BMW, Nissan and GM, strive to boost the progress of their development and supply of popular electric vehicles, Korean car makers also need to have the basis for vitalizing the operation of electric cars earlier than they originally planned.

As of the end of 2012, the total number of electric vehicles registered in Korea is 860. (including 193 neighborhood electric vehicles). At present, the Ministry of Environment plans to execute the pilot project for supply of EVs to the private sector in 2013, and the full-scale supply of EVs in 2014.

In order to supply safer electric vehicles, MLTM executed the EV road driving monitoring project and the safety assessment technology development project from 2010 to 2012 to comprehensively assess the safety standards, safety performance and EV charging infrastructure safety of EVs. According to the result of the monitoring and the development of safety assessment technologies, the government is currently improving its safety standards and related regulations in preparation for increase in the supply of EVs.

### STRATEGY 3. ESTABLISHMENT OF THE FOUNDATION FOR THE DEVELOPMENT OF AUTOMOTIVE POLICY

#### Improvement of laws related to future-oriented vehicles

The current Automotive Management Act is a mixture of automotive management matters, such as registration and trading, and technical matters required to secure the safety of vehicle driving. In order to manage vehicles more efficiently, therefore, it is necessary to improve the act. In order to reflect rapidly changing automotive policy environments, such as the advent of an 18-million vehicle era and the development and supply of eco-friendly vehicles, the government is currently planning to split the current Automotive Management Act into the Automotive Act and the Automotive Safety Act, and establish them separately.

**Table 5.**  
**Improvement of the legal system related to vehicles**

As-is	Split into 2 laws	As-is	To-be
Automotive Management Act (Chapter 10, Article 88)	Automotive Act (Chapter 12, Article 94)	Master plan, registrations, Automotive management business, computing	Unification of registration procedures and expansion of convenience, green license plate, management business co-op, automotive informatization, spread of technical development, automotive service complex, spread of automotive culture
	Automotive Safety Act (Chapter 13, Article 77)	Safety standards, certification and troubleshooting for vehicles, parts and pressure-resistant containers, registration of car makers, inspection and maintenance	Incentives for new technology vehicle certification, integration of maintenance and inspection, supply of safety devices, promotion of R&D, re-training

### CONCLUSIONS

The Automotive Policy Master Plan will be established every 5 years from 2012 in accordance with the Automotive Management Act revised in 2011. This plan was established to suggest efficient automotive management methods required to prepare for the era of 20 million vehicles and respond to changes in the future automotive environments based on the prospects for state-of-the-art automotive technologies. As a plan that comprehensively covers a variety of policy tasks as well as the direction of automotive policies required to improve the safety of vehicles, the Automotive Policy Master Plan is expected to play a critical role as the basis of Korean automotive management in the future.

### REFERENCES

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- [2] Ministry of Land, Transport and Maritime Affairs statistical data at <https://stat.mltn.go.kr/portal/cate/partStat.do>