2018

European Automotive Council (EAC)

EUROPEAN CHAMBER
OF COMMERCE
IN HONG KONG
香 港 歐 洲 商 務 協 會

EAC
Position Paper

About the EAC

The European Automotive Council (EAC) of the European Chamber of Commerce represents the European passenger car and commercial vehicle manufacturers in Hong Kong. The Council aims to bring forward proposals and be a partner to the Government of the Hong Kong Special Administrative Region of the People's Republic of China, (Hong Kong), working together towards a safer, greener, more efficient and more competitive automotive sector. Members of the Council are European vehicle manufacturers, their subsidiaries and/or representative offices. This Position Paper expresses the common work and views of the members of the EAC and aims to lead to overall improvements in the target areas.

1302, 13/F, 158 Queen's Road Central, Central

Hong Kong

(852) 9150 3217

www.eurocham.com.hk

Table of Contents

Abbreviations

ADAS	Advanced Driving Assistance Systems
AV	Autonomous Vehicles
C-ITS	Cooperative Intelligent Transport System
ECE	Economic Commission for Europe of the United Nations
ELS	Earn and Learn Scheme
ETSS	Engineering Training Subsidy Scheme
EU	European Union
Hong Kong	Hong Kong Special Administrative Region of the People's Republic of China
ITS	Intelligent Transport System
JTISs	Journey Time Indication Systems
Mainland China	People's Republic of China
PHEV	Plug-in hybrid electric vehicle
TD	Transport Department
PLB	Public Light Buses
Policy Address	The Chief Executive's 2017 Policy Address from the Hong Kong Special Administrative Region of the People's Republic of China
Smart City Blueprint	Report of Consultancy Study on Smart City Blueprint for Hong Kong
SMPs	Speed Map Panels
VPET	Vocational and Professional Education Training
VTC	Vocational Training Council
V2C	Vehicle-to-car
V2I	Vehicle-to-infrastructure
V2X	Vehicle-to-everything
WLABs	Waste Lead-Acid Batteries

Executive Summary

The European Automotive Council (EAC) would like to submit the following recommendations for the attention of the Government of Hong Kong.

Sustainable mobility plays a key role in enhancing Hong Kong's results in reducing air pollutant emissions and promoting environmentally friendlier vehicles. In this regard, the EAC suggests further measures should be taken. First, the promotion of plug-in hybrid vehicles by utilising relevant incentives, can significantly contribute to the transition to electro-mobility. Second, the upgrade of charging stations requires further incentives to enjoy the benefits of off-peak charging. Third, the Government's *green* agenda should include steps to reduce total emissions of the heavy commercial vehicle fleet through an holistic approach including increased efficiency (see below), encouraging the use of alternative sustainable fuels and scrapping of older vehicles. Fourth, due to the increasing number of electric vehicles (EVs) in Hong Kong, there is an urgent need to improve the waste battery handling. Finally, the EAC strongly encourages the Hong Kong Government to review the parameters for the qualifying standards within its Environmentally Friendly Vehicle Scheme.

Public light buses (PLB) represent a category of vehicles in Hong Kong where the EAC can positively contribute. In fact, by allowing exemptions (i.e. length restriction) for the latest European minibuses complying with the Euro VI standard, the Government could introduce safer and more environmentally friendly minibuses to the Hong Kong PLB market.

The **efficient utilization of heavy vehicles** is an issue that requires the attention of the Government. Recent trends are for larger numbers of articles being transported with decreasing density and higher volumes. The EAC believes that allowing the circulation of larger trucks while reviewing the weight regulations for those trucks operating at their current legal weight limits will result in a reduction of trucks on the road, a reduction of fuel consumption per tonne.km, less traffic congestion and less air pollution.

The current shortage of manual labour is a clear signal that **attracting talent in Hong Kong** is a primary need. While the Vocational Education Training (VET) Programs demonstrate the Government's awareness of this issue, the EAC nonetheless suggests to raise the status of these workers, as well as to increase the labour market competitiveness by looking at other national examples (e.g. Mainland China) and to adopt best practices from the European vocational education systems (e.g. Germany).

The Hong Kong Transport Department has achieved significant improvements in terms of access to up-to-date **vehicle registration data**. However, to fully benefit from this service, the EAC suggests the monthly publication of a more processed dataset of vehicles registrations.

Finally, the EAC would like to draw the attention of the Hong Kong Government to the **future trends of the automotive industry**. First, opening up data access for the automotive industry is a key step that will not only provide a roadmap to the stakeholders seeking improvement on the future of mobility, but it will offer the opportunity for Hong Kong to be a leader in the connected vehicles market. Second, granting access to data for Intelligent Transport System is necessary in order to achieve the possibility to introduce connected vehicles in Hong Kong; real-time traffic information and on-street smart parking meters should be at the top of the agenda. Third, an improved vehicle-to-infrastructure communication by using in-vehicle displays represents a safe and environmentally friendly solution to improve the current traffic situation as well as to reduce air pollution. Fourth, owners of public car parks must be willing to share their information on parking vacancy with the government. Fifth, in order to provide the legal framework relating to autonomous vehicle pilots in Hong Kong, a review of the Traffic Ordinance (Cap. 374) is of primary importance.

1. Sustainable Mobility

The Hong Kong Environmental Protection Department's efforts to promote electric vehicles (EVs) have been successful, as demonstrated by the significant rise in the number of these vehicles: as at the end of February 2018, there are 11,103 EVs for road use, up from less than 100 in end 2010[1]. Although electric vehicles do emit indirectly – with the carbon intensity of the fuel mix of electricity generation and power station emissions reducing their environmental friendliness – EVs are still strongly promoted by the Hong Kong Government. As affirmed in the *Budget Speech 2018-19*, the Government has extended the first registration tax (FRT) concessions for EVs until 31 March 2021[2]. Furthermore, the introduction of the "one-for-one replacement" scheme will allow eligible private car owners who buy a new electric private car and scrap an eligible private car to enjoy a higher FRT concession.

1.1 Implementation of plug-in hybrid electric vehicle

The plug-in hybrid electric vehicle (PHEV) offers owners without guaranteed access to charging points the confidence the car will be available for use when needed. This is due to its additional conventional powertrain if battery charge is low and external charging is not possible. However, as long as electricity is free or cheaper than petrol, it is anticipated that PHEV owners will drive on electric power whenever they can. PHEVs are therefore a powerful stepping stone supporting the change to EVs and the EAC therefore encourages the EPD to consider incentives to encourage the purchase of PHEVs.

1.2 Upgrades of charging stations

As at the end of February 2018, there are 1862 EV chargers for public use including 701 medium chargers in Hong Kong, covering all 18 districts in various types of buildings[3]. However, they mainly serve as supplementary charging facilities and, for

[1] The Government of the Hong Kong Special Administrative Region, Environmental Protection Department. *Promotion of Electric Vehicles in Hong Kong.* http://www.epd.gov.hk/epd/english/environmentinhk/air/prob_solutions/promotion_ev.html (Accessed April 10, 2018).
[2] The Government of the Hong Kong Special Administrative Region. *The 2018-19 Budget*, 169-170. https://www.budget.gov.hk/2018/eng/pdf/e_budget_speech_2018-19.pdf

[3] The Government of the Hong Kong Special Administrative Region, Environmental Protection Department. *Promotion of Electric Vehicles in Hong Kong*. http://www.epd.gov.hk/epd/english/environmentinhk/air/prob_solutions/promotion_ev.html (Accessed April 10, 2018).

this reason, the EAC encourages further incentives in order to reach a move to home charging and smart meters to gain the benefits of off-peak charging. In the long-term perspective, there is a need to move to clean and renewable energies to guarantee the proposed positive impact of electric vehicles on the environment and air quality.

1.3 Heavy commercial vehicles

Fully electric heavy commercial vehicles are still some way off being commercially and operationally viable. However, there are alternative solutions to reduce carbon and other emissions from heavy vehicles, including alternative fuels and hybrid drives. These solutions, however, have not so far been actively explored or encouraged in Hong Kong and the EAC proposes the Hong Kong Government to include such solutions in a road map towards a sustainable transport system.

1.4 Recycling and disposal of batteries

Waste Lead-Acid Batteries (WLABs) are classified as chemical waste and they are controlled under the Waste Disposal Ordinance (cap. 354) (WDO) and its subsidiary Waste Disposal (Chemical Waste) (General) Regulation (CWR). Hence, WLABs must be collected by licensed chemical waste collectors for delivery to licensed chemical waste treatment facilities for disposal. Currently, there are 23 licensed collectors but only two licensed recycling or disposal facilities. Due to the increasing amount of EVs in Hong Kong, there will also be a significant increase in the need for waste battery handling, including the handling of different types of battery[4].

1.5 Incentives for cleaner vehicles

The Environmentally Friendly Vehicle (EFV) Scheme introduced by the Environmental Protection Department (EPD) is intended to encourage vehicle purchasers to buy vehicles of outstanding environmental performance. While the intention is good, the criteria applied to receive any incentive must achieve the objective while being fair to all suppliers. The EFV Scheme has worked well when the compliance standards applied within this Scheme have been based on recognized international standards, for example by encouraging the purchase of Euro VI vehicles before Euro VI standards

[4] The Government of the Hong Kong Special Administrative Region, Press Release. *LCQ16: Handling of waste car batteries*. http://www.info.gov.hk/gia/general/201106/22/P201106220215.htm (Accessed February 23, 2018).

become mandatory. However, it is not considered to be acceptable to create a local standard that does not truly reflect the environmental performance when the vehicles are in operation. Furthermore, the lead-time for announcing changes to the EFV Scheme has been very short in an industry that has lead times of several months and even years.

The latest Euro VI vehicles have, in any case, close to zero roadside emissions. Most of the pollution from vehicles is coming from pre Euro VI vehicles, so the introduction of a scrapping scheme to get older vehicles off the road was an excellent step taken by the EPD. The EAC therefore strongly supports the EPD investing in scrapping older vehicles as well as incentivising the purchase of lower emission vehicles when suitable international standards can be applied or if other methods can be found that more accurately and fairly compare the emissions of vehicles in operation.

1.6 Recommendations

The EAC would like to propose the following recommendations for the consideration of the Hong Kong Government:

- If the Hong Kong Government continues to support a policy encouraging the use of electric vehicles, then the purchase of plug-in hybrid electric vehicles (PHEVs) should also be encouraged as a “stepping stone” to full electric vehicles. Incentives given by the Environmental Friendly Vehicle Scheme to purchase EVs should be extended to PHEVs.
- To establish a “roadmap” with emission reduction objectives, working through future power generation fuel mix, alternative vehicle fuels, vehicles types and infrastructure for the new alternatives (be they electric vehicles or others), with the overall goal to gain environmental benefits from EVs, PHEVs and other technical solutions available today and coming in the future.
- To develop a long-term vehicular battery disposal and recycling strategy in order to avoid negative environmental impact when dealing with the batteries from electric vehicles.
- To continue the vehicle scrapping scheme to get older vehicles off the road.
- When establishing Qualifying Standards for the EFV Scheme, the EPD should investigate the use of international standards when available and/or find other

methods that may be used to more accurately and fairly compare the emissions of vehicles in operation.

- Following an industry consultation on any change that may have an effect on the market, at least six months and preferably one year's notice should be given before introducing changes or amending the EFV Scheme.

2. Public Light Buses

2.1 PLB minibus homologation

European vehicles meeting the Euro VI standards bring benefits in terms of safety and environmental friendliness. Through the reduced roadside emissions and the implementation of new assistance features that help to increase road safety, these vehicles are designed with road and passenger safety in mind. However, due to the current Road Traffic Ordinance established by the Hong Kong Transport Department, European minibuses are restricted to enter the Hong Kong public light bus (PLB) market. The two main factors preventing the European PLB manufacturers' market access are:

1. The maximum length of light buses, which is seven (7) meters in Hong Kong.
2. The Hong Kong Transport Department requires a rear emergency exit[5], which might not be available on European vehicles complying with the UNECE regulation[6].

As a consequence, the current fleet of Hong Kong PLBs can only comply with Euro V standards. This length restriction prevents the circulation of European vehicles that, by respecting the European standards, are larger in size due to the need to accommodate more components in the driveline while placing the engine in a forward location outside the passenger area. This arrangement creates more space inside the vehicle and makes the front compartment an important cushion in case of frontal collision, thus

[5] The Government of the Hong Kong Special Administrative Region, Transport Department. Road Traffic (Construction and Maintenance of Vehicles) Regulations. Cap. 374A, Schedule 12, Part I, art. 58-61. https://www.elegislation.gov.hk/hk/cap374A!en@2015-02-06T00:00:00?SEARCH_WITHIN_CAP_TXT=emergency%20exit (Accessed February 22, 2018).

[6] United Nations European Commission for Europe (UNECE). Addendum 106: Regulation No. 107. Annex I-Part I-Appendix 1 art.5.7, Annex I-Part I-Appendix 2 art.5.6 https://www.unece.org/fileadmin/DAM/trans/main/wp29/wp29regs/2015/R107r6e_01.pdf (Accessed February 23, 2018).

reducing the harm to the vehicle's driver compared with the currently licensed PLBs, where the engine is placed within the passenger compartment.

Safety of PLBs in Hong Kong appears to be a key concern. According to the Hong Kong road safety statistics, in 2016 public light buses had a significant involvement rate in vehicle accidents with over 1,000 cases[7]. In this regard, the European automotive manufacturers could introduce suitable models whose features can extensively reduce the risk of accidents while improving the safety of public transport drivers and passengers (e.g. Anti-Skid Regulation, Electronic Brakeforce Distribution, Brake Assist, Cross Wind Assist, Lane Keeping Assist, Blind Spot Assist, Collision Prevention Assist, Electronic Stabilizer Program, multiple emergency exits, deformation zone, air bags, Traction Control System, Cruise Control, etc.).

2.2 Recommendations

The EAC asks the Hong Kong Government to consider the following recommendations:

- To give exemptions to the latest European minibuses in order to allow the introduction of European models complying with Euro VI standards to be sold into the Hong Kong PLB market.
- To approve the safety window and escape hatch as emergency exits to increase the total area for emergency rescue.

3. Utilization of heavy commercial vehicles

The size and weight limits for commercial vehicles can affect the productivity rate of trucks with repercussions on their environmental impact. According to the recent trend, the number of articles and products transported is increasing, along with a decrease in density of the freight moved leading to a higher need for volume capacity of the loading unit. In order to address this need, the physical dimensions of containers must be increased up to technical and societal limits.

At the same time, trucks that work to their load capacity, such as construction trucks, have technical capacities meeting European regulations that in many cases exceed

[7] The Government of the Hong Kong Special Administrative Region, Transport Department. *Vehicle Involvements in Accidents by Class*. http://www.td.gov.hk/filemanager/en/content_4849/table72.pdf (Accessed February 23, 2018).

the legal loading allowed in Hong Kong. In such cases, the truck is being under-utilized in Hong Kong, thus resulting in an unnecessarily large number of trucks on the road.

3.1 Alignment with EU regulations

In order to embrace the demand for greater volume capacity, the previous European regulation needed to be reviewed. In 2011 the European Commission decided to revise Directive 96/53/EC of July 1996, specifically with regard to the weight and dimensions of road vehicles[8]. The purpose was to improve energy efficiency and road safety.

	Max. Length (HK/EU)	Max. Width (HK/EU)	Max. Height (HK/EU)*
Light Bus	7.0m / 12.0m	2.3m / 2.55m	3.0m / 4.0m
Single Deck Bus	12.0m / 15.0m	2.5m / 2.55m	3.5m / 4.0m
Medium Goods	11.0m / 12.0m	2.5m / 2.55m	4.6m / 4.0m
Heavy Goods (Rigid)	11.0m / 12.0m	2.5m / 2.55m	4.6m / 4.0m
Heavy Goods (Articulated)	16.0m / 16.5m	2.5m / 2.55m	4.6m / 4.0m
Trailer	n/a / 12.0m	n/a / 2.55m	n/a / 4.0m
Road Train	n/a / 18.75	n/a / 2.55m	n/a / 4.0m

Chart 1: Length Requirements in Hong Kong and EU

* 4.0m height restriction in Europe due to bridge heights. Not applicable in Hong Kong.

The European Parliament's Transportation Committee could not agree on the additional length to be allowed, but it nevertheless suggested the Commission to bring forward a delegation act on this issue. A full utilization of the load capacity, and therefore a larger truck, will reduce the fuel consumption per tonne.km, the number of

[8] Council of the European Union. Directive 96/53/EC, http://eur-lex.europa.eu/legal-content/IT/TXT/?uri=celex%3A31996L0053 (Accessed November 20, 2017)

trucks on the road and thereby reduce traffic congestion, air pollution, and the overall environmental impact.

3.2 Recommendations

The EAC would like to propose the following recommendations for the consideration of the Hong Kong Government:

- To revise the current weight and length regulations in Hong Kong and align them, wherever possible, with the EU regulations, so as to allow a better utilization of trucks while reducing their number on the road.
- To implement a pilot project in Hong Kong to test out heavier and longer vehicles that can carry two containers per vehicle on identified roads.

4. Attract Talent in Hong Kong

4.1 Shortage of Manual Labour in Hong Kong

In Hong Kong, there are 16,990 workers employed in the area of vehicle servicing sector and in the vehicle/auto-parts retail sector. Among these, 33% of the workforce is allocated to vehicle mechanics, summing up to nearly 5,600 workers. In 2017 the manpower requirement was expected to increase to 18,181[9]. This gap between labour force needed and available labour force has to be closed. In addition, the ageing population and declining birth rate of Hong Kong is inevitably leading to a further shortage of qualified manual labour in the vehicle sector. Therefore, as vehicles become more sophisticated and electrification increases there will be an increasing need for highly skilled and trained technicians.

According to the Automobile Training Board, graduates from the full-time Higher Diploma in Automotive Engineering program will cover 54% of the projected demand for technicians, whereas the projected demand of craftsman can be covered up to 76% by Diploma apprentice[10]. Hence, there is an urgent need to attract more trainees to the programs, as the quality of service might otherwise decrease.

[9] Automobile Training Board, Vocational Training Council. *2016 Manpower Survey Report Automobile Industry*, p. 1.http://www.vtc.edu.hk/uploads/files/publications/automobile_training_board/en/ (Accessed November 20, 2017).
[10] Ibid.

4.2 Attract talents to Manual Labour

The EAC supports the Hong Kong government's decision to continue with the Pilot Training and Support Scheme through the Vocational Training Council which, firstly introduced in the academic year 2014/15, has been reconfirmed in the 2018/19 budget release. With this Scheme, the Government aims at providing a more qualified "vocational and professional education and training" to attract the local youth to the vehicle maintenance industry[11]. In addition, the EAC also welcomes the paragraph "Importation of Labour" part of the 2017 Policy Address. The Hong Kong Government thus shows its commitment to make blue collar jobs more attractive as well as its availability to the "possibility of increasing imported labour on an appropriate limited scale"[12]. Similar to other blue-collar jobs, the chances and opportunities of becoming a mechanic need to be promoted among the public, especially among young staff members. Therefore, the EAC encourages the relevant policy bureaux and departments to recognize car manufacturers and mechanics as a relevant industry that is facing a significant shortage of labour force. The members of the EAC could contribute to discussions on how to enhance training and attract new talents based on their experience in Europe.

4.3 Vocational Education Training (VET) Programs

The Earn and Learn Scheme (ELS), recommended by the Training Board, provides clear academic and career pathways. Within this Scheme, participants will be introduced to a program of on-the-job training and classroom learning. The ELS seems to be successful as registered apprentices in vehicle servicing trades increased over the past 2 years.

For in-service workers, the Training Board recommends the Engineering Training Subsidy Scheme (ETSS) to upgrade their knowledge and qualifications. From the Academic Year 2016/17, the ETSS provides tuition fee subsidy for 3 cohorts of students enrolled in designated professional part-time programs offered by the

[11] The Government of the Hong Kong Special Administrative Region. *The 2018-19 Budget*, 127. https://www.budget.gov.hk/2018/eng/pdf/e_budget_speech_2018-19.pdf (Accessed March 24,2018).
[12] The Government of the Hong Kong Special Administrative Region. *The Chief Executive's 2017 Policy Address.* Available at: https://www.policyaddress.gov.hk/2017/eng/pdf/PA2017.pdf (Accessed 12 Feb. 2018).

Vocational Training Council (VTC)[13]. However, as this is only available to a limited number of students, additional efforts are needed to promote the programs offered by the VTC.

Nevertheless, the Vocational and Professional Education Training (VPET) Programs for young professionals might pose an alternative to students who recently graduated from high school. Even though VPET Programs have a good reputation in Hong Kong, 34% of secondary school students would not consider pursuing them, and 28% of their parents would not advise their children to pursue this type of career[14]. Regarding the career prospect, only half of the secondary school students and 56% of their parents believe VPET Programs offer good career prospects[15].

Taking these numbers into account, it is important to not only promote VPET Programs, but to also raise awareness about future career options. Therefore, the EAC welcomes Paragraph 124 and 125 of the 2017 Policy Address on the promotion and improvement of VPET Programs.

4.4 Education for manual labour in Germany

Among European countries, Germany offers an interesting example related to education for manual labour. In Germany, students can participate to a dual vocational training system that combines attending classes at a vocational school with receiving an on-the-job training at a company. This educational program is split into two parts and, currently, there are around 350 officially recognized training programs in Germany[16]. During the "dual system" apprenticeship, the apprentice spends two to three days per week working at a company where practical skills are passed on to the student. During the other days, the student goes to school to learn the relevant theoretical knowledge. Schools and companies are working together in order to align

[13] Automobile Training Board, Vocational Training Council. *2016 Manpower Survey Report Automobile Industry*, p. 5. http://www.vtc.edu.hk/uploads/files/publications/automobile_training_board/en/ (Accessed November 20, 2017).
[14] The Government of the Hong Kong Special Administrative Region. *Report of the Task Force on Promotion of Vocational Education*, p. 70. http://www.edb.gov.hk/attachment/en/edu-system/other-edu-training/vocational-other-edu-program/Report%20of%20the%20Task%20Force%20on%20Promotion%20of%20Vocational%20Education%20(ENG).pdf. (Accessed November 23, 2017).
[15] Ibid, p.72
[16] Make it in Germany. *Vocational training in Germany – how does it work?* http://www.make-it-in-germany.com/en/for-qualified-professionals/training-learning/training/vocational-training-in-germany-how-does-it-work (Accessed November 23, 2017).

and ensure the best training for the apprentice. The advantage of this program is that students are paid during the years of apprenticeship while being exposed to opportunities of on-the-job training and work experience – hence the attractiveness of this program among young students.

4.5 Recommendations

The EAC would like to propose the following recommendations for the consideration of the Hong Kong Government:

- The Hong Kong Government is encouraged to raise awareness on the importance of labour force to its economy and to make efforts to raise the status of such workers.
- Hong Kong should adopt best practices from the German vocational education system – such as the dual-track VPET – to attract the local youth to the vehicle maintenance industry.
- To further increase the labour market competitiveness, Hong Kong should look to other national examples (e.g. Mainland China) of opening up the market to foreign workforce.
- To include vehicle maintenance professionals in the service sectors enjoying preferential treatment under the Mainland and Hong Kong Closer Economic Partnership Arrangement (CEPA).

5. Vehicle registration data

5.1 Access to up-to-date vehicle registration data

The Government of the Hong Kong Special Administrative Region has shown its willingness to support the development of various industries by proactively opening up datasets in registered motorcycles, private cars and goods vehicles. Previously, the EAC requested detailed vehicle registration data from the Transport Department (TD); in response, the TD published official registration data related to vehicles from August to December 2017 on its website. However, the EAC would like to point out the importance of a more processed vehicle registration dataset to be provided by the TD. This is to give stakeholders, in particular vehicle manufacturers, access to this data within a timely manner in order to improve the supply-chain management. Vehicle manufacturers will be able to improve their sales forecasting to import vehicles that

better meet consumer demand while bringing increased efficiencies through better stock control.

5.2 Vehicle registration data in Europe: the German case

In Germany, the Kraftfahrt-Bundesamt (Federal Motor Vehicle Transport Authority) publishes a record every month, thereby announcing the cars sold in that month and the total cars sold during the current year. For a better overview, the data is already processed before being uploaded to the website. Several statistics and charts are provided and they can be accessed by everyone. In this way, every stakeholder can easily follow the number of cars sold, for example, by brand, category or size. In addition, the different datasets state the percentage by which the sales numbers have risen or fallen compared to the previous month and to the previous year, and also the total number of cars sold since beginning of the year compared to the previous year. This record allows car manufacturers to track the sales numbers over the course of the year and by comparing it to previous years, enabling them to identify a certain cycle or trend. For this reason, the record can improve the allocation of resources and therefore bring advantages to all stakeholders.

5.3 Recommendations

The EAC would like to suggest to the Transport Department of the Hong Kong Government:

- The monthly publication of a more processed dataset of vehicle registrations, presented by categories such as by brands, type of vehicle, PV and CV.

6. Future trends of the automotive industry

6.1 Opening up data access for the automotive industry

Digitalization is becoming an integral part of our daily lives. In a digital era, to improve the safety, mobility and efficiency of driving, the EAC welcomes paragraph 77 of the Chief Executive's 2017 Policy Address. The paragraph "Open up government data" highlights the willingness of the Hong Kong Government, in the course of the Smart City development, to proactively open up datasets in various areas to facilitate

technological research as well as the development of various industries[17]. These efforts have been further demonstrated by the publication of the Smart City Blueprint in December 2017. Similar to the work conducted by the Intelligent Transport System (ITS) and Cooperative Intelligent Transport System (C-ITS) Deployment Platform in the European Union, a whole section of this Blueprint is dedicated to Smart Mobility. This provides a roadmap to the stakeholders examining possibilities and seeking improvement on the future of mobility.

Following the suggestion stated in the Report of Consultancy Study on Smart City Blueprint for Hong Kong (Smart City Blueprint), the EAC supports the access to more real-time traffic/road information based on Vehicle-to-everything communication technology (V2X)[18]. The Hong Kong Government should consider the development of a strategy for centralized information and allow car manufacturers to access the existing data. Therefore, the EAC also supports the development of an ITS strategic roadmap, which will serve as a framework for the ITS development and implementation in Hong Kong[19]; such a holistic approach provides security and allows better planning for the manufacturers. As a result, Hong Kong could place itself as a leader in the connected vehicles market.

6.2 Access to data for Intelligent Transport System

The Hong Kong Government agreed on an important step by highlighting the need to collect additional data. As announced under paragraph 8(ii) of the 2017 Policy Address, the Government supports the launch of a pilot Multi-Functional Smart Lampposts scheme “to support the building of a smart city with city-wide coverage of data and network” and thus “to enhance city and traffic management”[20]. Moreover, paragraph 82 in the 2017 Policy Address, emphasizing Smart Mobility and the development of the Intelligent Transport System, addresses several important aspects such as real-time traffic information, on-street parking meters, and ideas to provide

[17] The Government of the Hong Kong Special Administrative Region. *The Chief Executive's 2017 Policy Address.* Available at: https://www.policyaddress.gov.hk/2017/eng/pdf/PA2017.pdf (Accessed October 11, 2017).
[18] PwC. *Report of Consultancy Study on Smart City Blueprint for Hong Kong*, p.28. https://www.smartcity.gov.hk/report/. (Accessed November 9, 2017).
[19] Ibid, p.29
[20] The Government of the Hong Kong Special Administrative Region. *The Chief Executive's 2017 Policy Address.* Available at: https://www.policyaddress.gov.hk/2017/eng/pdf/PA2017.pdf (Accessed October 11, 2017)

timely traffic information to drivers. In the past years, the above-mentioned topics have been of special interest to the European car manufacturers. Especially, to name a couple of examples, the access and sharing of real-time traffic information and smart parking information. To achieve the possibility to introduce connected vehicles in Hong Kong, it is of great importance to allow vehicle manufacturers to access the data being collected.

6.3 Installation of traffic detectors, Speed Map Panels and Journey Time Indication Systems

In order to enhance traffic management by using Intersection Traffic Controllers (ITC), it is essential to receive information about real time traffic and parking space. In fact, these features would allow the drivers to adapt their journey to the traffic situation and update their navigation route accordingly. The Hong Kong Government has proved to be committed to upgrade its traffic management tools. First, as mentioned in paragraph 82 of the 2017 Policy Address, it is recommended to combine various existing transport mobile applications of the Transport Department into one platform[21] – this operation would lead to the creation of an All-in-one Transport Mobile Application, instead of having three mobile applications as it is at the moment. Secondly, with reference to the Smart City Blueprint, the Hong Kong Government is also committed to the installation of additional Journey Time Indication Systems (JTISs) and Speed Map Panels (SMPs), which will further increase the coverage that currently sums up to 80% of the strategic routes of Hong Kong[22].

The EAC welcomes these initiatives. However, there is room for improvement by providing commuters with the collected data and allowing them to better adapt to the traffic situation. In this regard, the update of Regulation 37 of the Road Traffic Regulations is necessary to allow an improved vehicle-to-infrastructure (V2I) communication by using in-vehicle displays. In-vehicle displays could, for example, be connected to the Internet, to the driver's smartphone and mobile applications, which would consequently allow the driver to receive automated notifications shared via a mobile application. Moreover, with in-vehicle displays, drivers are less likely to be

[21] Ibid.
[22] PwC. *Report of Consultancy Study on Smart City Blueprint for Hong Kong*, p.24. https://www.smartcity.gov.hk/report/ (Accessed November 9, 2017).

distracted and induced to check current traffic information on their phone while driving. Significant potential can be seen in providing the driver with notification on less congested routes, but also in offering advice if other commuting transport systems might be a better choice. Finally, by broadening the drivers' options, these features can also have a positive impact on the air pollution in Hong Kong by reducing heavy traffic congestions.

6.4 Smart Parking

Drivers in Hong Kong do not only face congested roads but also the time-consuming search for a vacant parking place. This search, which obliges drivers to circle around an area while looking for a parking slot, results in an unnecessary and mostly avoidable contribution to air pollution. In order to improve the parking situation, the EAC welcomes the installation of a new generation of on-parking meters, as announced in paragraph 82 of the 2017 Policy Address[23]. These on-parking meters have new sensors integrated able to detect whether a parking spot is occupied and, in addition, they accept payments through a variety of electronic means[24]. However, to fully benefit from these new parking meters, owners of public car parks must be willing to share their information on parking vacancy with the government[25].

6.5 Driver assistance and safety features

According to the Smart City Blueprint, the use of autonomous vehicles (AV) pilots might start in 2021-2025, and in 2026-2030+ AVs are expected to be seen on the road[26]. However, prior to pilot testing AVs on public roads, the next step is to strengthen and to ease out the use of driving assistance and safety features in vehicles. Advanced driving assistance systems (ADAS) can be understood as "vehicle-based intelligent safety systems which could improve road safety in terms of crash avoidance, crash severity mitigation and protection, and automatic post-crash notification of collision; or indeed integrated in-vehicle or infrastructure based systems which contribute to some

[23] The Government of the Hong Kong Special Administrative Region. *The Chief Executive's 2017 Policy Address.* Available at: https://www.policyaddress.gov.hk/2017/eng/pdf/PA2017.pdf (Accessed October 11, 2017)
[24] PwC. *Report of Consultancy Study on Smart City Blueprint for Hong Kong*, p.39. https://www.smartcity.gov.hk/report/. (Accessed November 9, 2017).
[25] Ibid., p.26
[26] Ibid., p.28-29

or all of these crash phases"[27]. Examples of in-vehicle technologies used in Europe are Blind Spot Monitoring, Obstacle and Collision Warning, Brake Assist or eCall.

Hong Kong's Traffic Ordinance (Cap. 374, Part 7) does not currently provide the legal framework needed by car manufacturers to make the best use of the aforementioned features[28]. The Smart City Blueprint recommends the review of the Road Traffic Ordinance, Cap. 374, to be conducted in 2021-2025. However, the significant results of these features on Hong Kong's road safety make the EAC believe in the necessity to move the review to an earlier time period[29].

6.6 Recommendations

The EAC would like to propose the following recommendations for the consideration of the Hong Kong Government:

On-board Visual Displays

- To update regulation 37 of the Road Traffic Regulations, as well as the Legislative Regulation and Guidelines over the Installation of Visual Display Unit (TV Screen) in a Vehicle to allow modern in-car displays.
- To adopt the European Commission recommendations on safe and efficient in-vehicle information and communication systems (Update of the European Statement of Principles on HMI (2008/653/EC)).

Connectivity

- To adopt Cooperative Intelligent Transport Systems (C-ITS), 'Release 1 specifications' developed by the European Committee for Standardization (CEN) and the European Telecommunications Standards Institute (ETSI).

Autonomous Drive Features

- To follow the progress in the ECE and EU regulations, and revise the Hong Kong Road Traffic Ordinance (Cap. 374, Part 7) in a timely fashion to reflect the latest developments.

---

[27] European Commission. *Advanced driver assistance systems 2016*, p. 7. https://ec.europa.eu/transport/road_safety/sites/roadsafety/files/ersosynthesis2016-adas15_en.pdf (Accessed November 22, 2017).

[28] The Government of the Hong Kong Special Administrative Region, Transport Department. Road Traffic (Construction and Maintenance of Vehicles) Regulations. Cap. 374A, Schedule 12, Part I, art. 58-61. https://www.elegislation.gov.hk/hk/cap374A!en@2015-02-06T00:00:00?SEARCH_WITHIN_CAP_TXT=emergency%20exit (Accessed November 13, 2017)

[29] PwC. *Report of Consultancy Study on Smart City Blueprint for Hong Kong*, p.41. https://www.smartcity.gov.hk/report/. (Accessed November 9, 2017).