

Electronic Road Pricing Pilot Scheme in Central and its Adjacent Areas

Public Engagement Report

(January 2017)



運輸及房屋局
Transport and Housing Bureau



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Chapter 1 Background

Overview

- 1.1 This chapter sets out the background of planning for an Electronic Road Pricing Pilot Scheme (“the Pilot Scheme”) in Central and its adjacent areas (“Central District”), the objectives of public engagement exercise and an outline of the contents of this report.

Background of planning for the Pilot Scheme

- 1.2 Road traffic congestion is deteriorating in Hong Kong. During morning peak hours on weekdays, the average traffic speed of major roads in urban areas dropped from 23.5 km/hour in 2005 to 21.5 km/hour in 2015 and the traffic speeds of some road sections were lower than 10 km/hour. Besides, the worsening traffic congestion caused more vehicle emissions and adversely affected the air quality at local level. In the past decade, the annual average concentrations of respirable suspended particles and nitrogen dioxide as recorded at the Central roadside monitoring station were about two to four times higher than those of the guidelines set by the World Health Organisation. Our daily lives, our economy, air quality, as well as the image of Hong Kong as a world-class metropolis are adversely affected. Therefore, there is an urgent need to tackle road traffic congestion.
- 1.3 At the invitation of Professor Anthony Cheung Bing-leung, the Secretary for Transport and Housing, the Transport Advisory Committee (“TAC”) conducted a study on road traffic congestion of Hong Kong in 2014. At the end of the same year, the TAC submitted the “Report on Study of Road Traffic Congestion in Hong Kong” and recommended a total of 12 short, medium and long-term measures¹. The Government agreed with the

¹ The 12 short, medium and long-term measures recommended by the TAC are published at the following link: http://www.thb.gov.hk/eng/boards/transport/land/Full_Eng_C_cover.pdf

recommendations and adopted a multi-pronged approach to tackle road traffic congestion. One of the recommendations made by the TAC is that the Government should commence the early planning of an Electronic Road Pricing Pilot Scheme in Central District.

- 1.4 Electronic road pricing (“ERP”) is a traffic management tool that can effectively tackle localised road traffic congestion. It primarily aims at reducing the number of vehicles entering and leaving a charging area during its charging period, thereby improving the traffic conditions in the charging area.
- 1.5 The Government agrees that there is a need to implement an ERP pilot scheme, and Central District is the most suitable location for launching the Pilot Scheme because:
 - (1) Central District, being the central business district, is strategically important to Hong Kong, yet its traffic conditions are far from satisfactory. Traffic speeds on some road sections² during the morning peak hours on weekdays are only about 10 km/hour, which are not much faster than an adult’s average walking speed of 4 to 5 km/hour;
 - (2) Central District is served by excellent and high-capacity public transport services with an extensive coverage to various districts in the territory, allowing users of private cars and taxis to use different alternative public transport modes to access to this area; and
 - (3) the Central-Wan Chai Bypass, when commissioned, will provide a free-of-charge alternative route to road users whose origins and destinations are not in Central District to bypass the charging area, thus minimising the number of people affected.

² The traffic speeds on some road sections during the morning peak hours on weekdays from 2011 to 2015 were:

Connaught Road Central Flyover (Morrison Street to Jubilee Street)	9.0 to 15.2 km/hour
Chater Road (Pedder Street to Murray Road)	8.3 to 13.5 km/hour
Des Voeux Road Central (Eastbound) (Cleverly Street to Pedder Street)	8.6 to 12.5 km/hour
Hillier Street (Wing Lok Street to Connaught Road Central)	5.1 to 7.8 km/hour

- 1.6 Over the past decade, the concept of ERP had been floated in two large-scale surveys in Hong Kong. In 2007, the Council for Sustainable Development conducted a public engagement exercise on “Better Air Quality”, with focused discussions on three topics, viz. high air pollution days, road pricing and demand side management on electricity consumption³. The public and stakeholders were invited to express views on these three topics and more than 80 000 completed questionnaires and about 900 written submissions were received. A greater proportion of the views agreed⁴ that road pricing should be part of the Government’s air pollution policy.
- 1.7 During the TAC’s study of road traffic congestion in 2014, a public opinion survey was conducted, which included 6 000 telephone interviews with members of the general public and 3 000 face-to-face interviews with six groups of drivers (i.e. private car owners/drivers, taxi drivers, goods vehicle drivers, franchised bus drivers, public light bus drivers and other bus drivers⁵). The survey inquired whether the respondents supported the implementation of ERP in busy areas so as to reduce the number of specified types of vehicles entering these areas. The survey findings indicated that about 63% of the general public supported this measure, while 30% were against it and the remaining 7% had no comment. The views of the six groups of drivers were more diverse, with 52% supporting⁶,

³ In its report released in 2008, the Council for Sustainable Development pointed out that Hong Kong should adopt road pricing as soon as possible following a “polluter pays” principle to penalise polluting vehicles. The Pilot Scheme under planning is a traffic management tool primarily aimed at alleviating road traffic congestion. While the Pilot Scheme can, to a certain extent, help reduce vehicle emissions and greenhouse gas emissions thereby improving air quality, it is quite different from a road pricing scheme primarily aimed at improving air quality. As the Pilot Scheme and a road pricing scheme for improving air quality involve different stakeholders’ interests, they will adopt different charging and exemption strategies.

⁴ The respondents were asked a question in the questionnaire on whether they agreed that road pricing should be part of the Government’s air pollution policy. Among the responses received, 42% agreed, 21% disagreed, and 37% were neutral.

⁵ Other buses included tour coaches, residents’ service buses, school buses, cross-boundary coaches, hotel buses and company buses.

⁶ Among the various groups of drivers, over half of franchised bus drivers, other bus drivers, public light bus drivers and private car owners/drivers supported the implementation of ERP in busy areas, while slightly less than half of goods vehicle drivers and taxi drivers supported it.

which was marginally higher than the 44% opposing, and the remaining 4% had no comment.

- 1.8 The findings of the above two surveys showed that while there was quite some public support for the implementation of ERP, some in the community were still doubtful about it. As a result, the first step we take in planning for the Pilot Scheme is to conduct this public engagement exercise.

Objectives of public engagement exercise

- 1.9 The Government conducted three separate studies on whether ERP should be introduced in Hong Kong, in 1983, 1997 and 2006 respectively. The third study was completed by the Transport Department (“TD”) in 2009. The final paragraph of the executive summary of the study is quoted as follows:

“If a decision is made later to implement congestion charging (i.e. ERP) on traffic grounds, the Government will carry out an extensive public engagement/consultation to solicit public views. The engagement process would involve a wide range of stakeholders as well as the travelling public and the community as a whole. Only when a consensus is reached will the Government press ahead with the implementation of congestion charging.”

- 1.10 In 2014, the TAC also mentioned in the “Report on Study of Road Traffic Congestion in Hong Kong” that the concept of ERP remains a novel one to many road users in Hong Kong. The TAC therefore suggested that the Government should engage the public as soon as possible for the planning of an ERP scheme. The Secretary for Transport and Housing stated at a meeting with the Legislative Council (“LegCo”) Panel on Transport in May 2015 that a public engagement exercise for the Pilot Scheme would be launched within 2015.

1.11 The Government commenced a three-month public engagement exercise for the Pilot Scheme on 11 December 2015 to enhance public understanding of the six basic elements, three pertinent issues (see **Table 1**) and overseas experience of ERP. The exercise aimed at encouraging public discussion and building a consensus in the community, and enabling the Government to solicit the views of the public and stakeholders on the basic elements and pertinent issues. In the next step, the Government will appoint a consultant to conduct an in-depth feasibility study on the Pilot Scheme and formulate detailed scheme options for further discussion by the public.

Table 1 Six basic elements and three pertinent issues of the Pilot Scheme

Six basic elements: 1) charging area 2) charging mechanism 3) charging period 4) charging level 5) exemption and concession 6) technology	Three pertinent issues: 1) privacy concerns 2) effectiveness 3) complementary measures
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Contents of this report

1.12 The remaining chapters of this report include:

Chapter 2: Public Engagement Exercise

Chapter 3: Summary of Views on Basic Elements and Pertinent Issues of the Pilot Scheme

Chapter 4: Way Forward

Chapter 2 Public Engagement Exercise

Overview

- 2.1 This chapter gives a brief account of the publicity activities held, the events organised and participated during the public engagement exercise, and a summary of the numbers of submissions received from various channels.

Publicity activities

- 2.2 The public engagement (“PE”) exercise was launched on 11 December 2015 after the media session by Professor Anthony Cheung Bing-leung, the Secretary for Transport and Housing, and Mrs. Ingrid Yeung Ho Poi-yan, the Commissioner for Transport. The PE exercise lasted for about three months and ended on 18 March 2016.



Figure 2.1 Media session

- 2.3 The TD set up a dedicated website (www.erphk.hk) for this PE exercise to allow the public to browse and download the PE document and publicity leaflet via the internet, and submit their views through the message box of

the website⁷. On the website there was an interactive game called “Test Your ERP⁸ Knowledge” to help the public better understand ERP. The webpage attracted over 52 000 visits.



Figure 2.2 Dedicated website (www.erphk.hk)

2.4 During the PE exercise, we made use of television and radio Announcements in the Public Interest (“APIs”) for publicity and encouraged the public to express their views. APIs were also broadcast on the display panels in franchised buses, MTR stations and a number of government premises⁹. About 1 000 posters were put up at numerous

⁷ Members of the public could also submit their views through other channels, including post, fax, email, telephone, the Public Affairs Forum of the Home Affairs Bureau and the Transport Complaints Unit of the TAC.

⁸ The full name is “Test Your Electronic Road Pricing Knowledge”.

⁹ These included three Licensing Offices of the TD (the Hong Kong Licensing Office, Kowloon Licensing Office and Sha Tin Licensing Office), two major parks (the Victoria Park and Urban Council Centenary Garden) and two Home Affairs Enquiry Centres of the Home Affairs Department (Central and Western Home Affairs Enquiry Centre and Wan Chai Home Affairs Enquiry Centre).

venues¹⁰ to enhance publicity. Leaflets (about 32 000) were distributed in various districts at public libraries, public car parks, major Post Offices, Home Affairs Enquiry Centres and community halls/centres of the Home Affairs Department (“HAD”), as well as Licensing Offices and Vehicle Examination/Car Testing Centres of the TD. PE document (about 2 200) were made available to the public at Home Affairs Enquiry Centres of the HAD and major Post Offices in various districts. At the same time, publicity stickers were affixed on about 400 on-street parking meters and banners were displayed on more than 10 footbridges/flyovers in the Central District and Wan Chai.



Figure 2.3 Publicity materials

¹⁰ These included public libraries, sports centres, markets, public car parks, District Lands Offices, Post Offices, Immigration Offices, Home Affairs Enquiry Centres of the Home Affairs Department, community halls/centres, Licensing Offices and Vehicle Examination/Car Testing Centres of the TD, government premises.

Events organised and participated

- 2.5 During the PE exercise, we organised and participated in 20 events and meetings during which about 190 participants from eight major stakeholder groups (i.e. LegCo members and political parties, District Council members, professional bodies, academics, transport trades, business associations, green groups and other organisations) had expressed their views. A list of major meetings and events held during the PE exercise is at **Annex 1**.
- 2.6 One of the TAC's recommendations in the "Report on Study of Road Traffic Congestion in Hong Kong" was to start planning for an ERP pilot scheme. We attended the TAC meeting on 15 December 2015 and listened to its views on the Pilot Scheme.
- 2.7 We organised a District Council ("DC") forum and invited the representatives from each DC to express their opinions. Moreover, we attended meetings of the LegCo Panel on Transport, and the Central and Western DC to solicit opinions from different levels of councils. We also invited academics, professional bodies and green groups to attend three focus group meetings and had in-depth discussions with them on the basic elements and pertinent issues of the Pilot Scheme. In order to understand the concerns of the transport trades, we met and discussed with the representatives from urban taxi, Hong Kong-Guangdong cross-boundary coach, green minibus, public light bus, goods vehicle, franchised bus, school bus and non-franchised bus trades.
- 2.8 We were invited to attend several seminars and meetings arranged by various organisations, including the Hong Kong General Chamber of Commerce (Economic Policy Committee), the Small and Medium Enterprises Committee, the Hong Kong Institution of Engineers (Civil Division and Logistics & Transportation Division) and the Clean Air Network, to share and exchange views and ideas with the participants.



Figure 2.4 Some events held during the PE exercise

- 2.9 Furthermore, we were invited by the Education Bureau to attend a seminar on ERP for geography teachers teaching senior secondary students. We explained to the teachers the basic elements and overseas experience of ERP and exchanged opinions with them. We also participated in an online programme (called 「通識直播室」 in Chinese) co-organised by the Hong Kong Federation of Youth Groups Media 21 and the Education Bureau, during which we answered questions raised by students of three secondary schools about the Pilot Scheme and exchanged views with them.
- 2.10 We attended the thematic interviews by three media agencies at four programmes aired, including “Talkabout” of Radio Television Hong Kong (“RTHK”), “On a Clear Day” of Commercial Radio, “Backchat” of RTHK and “A Closer Look” of Television Broadcasts Limited. Through these programmes, we were able to spell out the basic elements and pertinent issues for planning the Pilot Scheme to the wider community and encouraged them to voice their opinions. In addition, the Commissioner

for Transport wrote an article¹¹ (entitled 「齊來籌劃電子道路收費計劃」 in Chinese) which was published on a number of local newspapers in early March 2016 to respond to several key questions of public concern as well as to give readers a better understanding of the need of the Pilot Scheme and the way forward.

Numbers of submissions from various channels

- 2.11 During the PE exercise, we received from various channels (including website, post, fax, email, telephone, the Public Affairs Forum of the Home Affairs Bureau and the Transport Complaints Unit of the TAC) a total of 515 submissions, of which 50 were “submissions from major stakeholder groups”¹², three were the findings of three “opinion surveys”¹³, and the remaining 462 were “submissions from the general public or organisations”. The major views contained in “submissions from major stakeholder groups” and “submissions from the general public or organisations” are summarised at **Annex 2**, whereas a brief summary of the findings of three “opinion surveys” is at **Annex 3**.
- 2.12 The major views gathered at the 13 key events that we organised are summarised at **Annex 4**.

¹¹ The Commissioner for Transport’s article on the Pilot Scheme as published in early March 2016 is at the following link (Chinese version only):
http://www.td.gov.hk/mini_site/erphk/download/document/article_commissioner_for_transport_newspapers_tc.pdf

¹² The 50 “submissions from major stakeholder groups” included (1) LegCo members and political parties (8 submissions); (2) DC members (3 submissions); (3) professional bodies (7 submissions); (4) academics (1 submission); (5) transport trades (9 submissions); (6) business associations (5 submissions); (7) green groups (6 submissions); (8) other organisations (11 submissions).

¹³ The findings of three “opinion surveys” were submitted by the Lion Rock Institute, Southern District Council member Mr. Paul Zimmerman, and Designing Hong Kong.

2.13 A breakdown of the submissions received from various channels is at **Annex 5**. A list of all submissions received and their originators (except those requested by their originators to remain anonymous) is at **Annex 6**. The copies of all submissions received (except those requested by their originators to remain confidential) are at **Annex 7**.

Chapter 3 **Summary of Views on Basic Elements and Pertinent Issues of the Pilot Scheme**

Overview

- 3.1 The PE document set out 13 questions on the basic elements and pertinent issues of the Pilot Scheme and invited views from the public and stakeholders (see **Annex 8**). This chapter provides a summary of views received during the PE exercise on the six basic elements (i.e. charging area, charging mechanism, charging period, charging level, exemption and concession, technology), three pertinent issues (i.e. privacy concerns, effectiveness, complementary measures) and other issues of the Pilot Scheme¹⁴.
- 3.2 When conducting the feasibility study of the Pilot Scheme at the next stage, we would take into account the views collected during this PE exercise and develop detailed options for the implementation of the Pilot Scheme for further public discussion (see **Chapter 4**).

Major views on six basic elements

(1) Charging area

- 3.3 In the PE document of the Pilot Scheme, we showed the extent of the proposed charging area (see **Figure 3.1**). The suggestions made by the public and stakeholders on coverage of the charging area can be summarised into the following five main groups:

- (1) Central only
- (2) Central, Sheung Wan and Admiralty

¹⁴ A summary of views of various stakeholder groups on the Pilot Scheme is at **Annex 2**. A summary of views collected at focus group meetings, DC forum and meetings with transport trades is at **Annex 4**. Detailed records of views provided by the general public, organisations and stakeholders are at **Annex 7**.

- (3) Central, Sheung Wan, Admiralty, Wan Chai and Causeway Bay, extending to Cross Harbour Tunnel and its connecting roads
- (4) Hong Kong Island North, Tsim Sha Tsui and West Kowloon
- (5) Areas outside Central (e.g. East Kowloon)

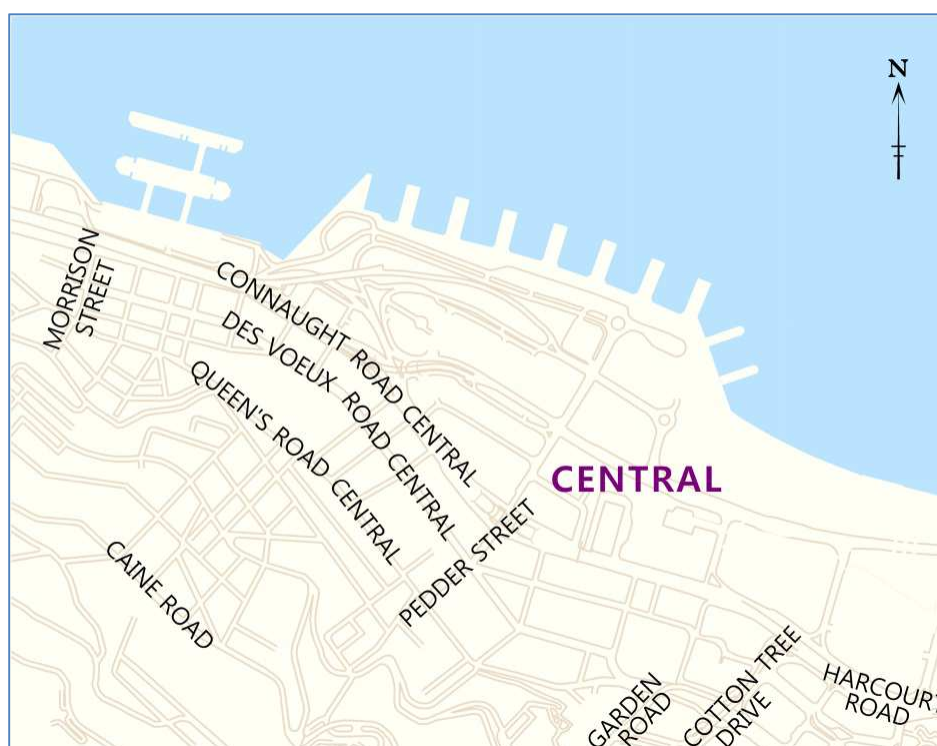


Figure 3.1 The proposed charging area of the Pilot Scheme in the Central District shown in the PE document

3.4 Regarding what factors should be taken into consideration in drawing up boundary of the charging area, the views of the public and stakeholders were as follows:

- (1) free-of-charge alternative route with adequate traffic capacity should be made available to motorists whose origins and destinations are not in the charging area, so that they may bypass the charging area and will not be mandated to pay ERP charges;

- (2) the charging area should be demarcated according to the level of traffic congestion with a focus on frequently congested areas;
- (3) whether the roads outside the charging area would become congested as a result of the implementation of the Pilot Scheme should be considered;
- (4) whether adequate public transport services would be available to road users for entering or leaving the charging area;
- (5) whether the roads entering or leaving the charging area would have adequate traffic capacity, and whether suitable loading/unloading and turnaround facilities would be available to motorists to avoid driving into the charging area;
- (6) whether the Pilot Scheme would cause inconvenience to residents living in or close to the charging area; and
- (7) whether there is sufficient space for the installation of ERP charging facilities.

3.5 Some LegCo members and academics took the view that the charging area should not be too large and should not extend to the Mid-levels, so that the Pilot Scheme can be implemented as soon as possible and the impact on the residents nearby can be minimised. On the contrary, a number of green groups suggested designating a larger charging area in order to enhance the effectiveness of the Pilot Scheme in alleviating traffic congestion and reducing air pollution.

3.6 Some individuals and organisations provided the following views on the charging area:

- (1) exclude large-scale car parks and their access roads in the Central District from the charging area so as to encourage more motorists to drive their cars directly into these car parks; and

- (2) include the connecting roads of the three road harbour crossings (“RHCs”) in the charging area so as to achieve a more reasonable distribution of the traffic flows among the three RHCs.

(2) Charging mechanism

- 3.7 Regarding the two charging mechanisms described in the PE document, namely the cordon-based mechanism (charging per pass) and the area-based mechanism (charging per day), a larger proportion of the public and stakeholders favoured the cordon-based mechanism (charging per pass) because it allows the charging level to vary according to time of day, location, and travel direction, hence allowing greater flexibility in managing different degrees of congestion.
- 3.8 While the area-based approach (charging per day) received less support, there were views that this charging mechanism, which is relatively simple, should be easier to implement in the Central District which is a small area.
- 3.9 There were views that a vehicle should be charged according to its duration of stay within the charging area. This “time-based” charging mechanism can better address the issue of prolonged stay or circulation of certain “chauffeur-driven vehicles” within the charging area and is more in line with the “user pays” principle. Some LegCo members and political parties even suggested a progressive charging approach under which the charging rate increases with the duration of stay within the charging area, such that the longer the duration of stay, the higher the charging rate. However, there were also suggestions that the time period a vehicle stayed in a car park should be deducted from the duration of stay within the charging area.
- 3.10 Some green groups suggested that a vehicle should be charged according to the distance it travelled within the charging area. The longer the distance travelled, the higher the fee charged. This type of charging mechanism, which can better reflect the social costs (e.g. expenses on public health

services and healthcare system) incurred by vehicle emissions, is more in line with the “polluter pays” principle.

3.11 On the cordon-based (charging per pass) charging mechanism which gained more support, the major views received were as follows:

- (1) a vehicle should be charged only once even if it passed through several charging points within a designated time period;
- (2) a vehicle that entered and re-entered the charging area several times on the same day should be charged a higher amount (i.e. the charge per pass will increase according to the number of times a vehicle entered and re-entered the charging area);
- (3) whether the “charging per pass” would lead to disputes between taxi drivers and passengers should be attended to; and
- (4) whether the “charging per pass” would create loopholes for charge evasion, e.g. taxi passengers could hire two taxis, one before a charging point and another one after a charging point, to evade the ERP charge.

(3) Charging period

3.12 The public and stakeholders basically agreed that the ERP charge should only be imposed during the time period when the traffic flow is comparatively high, and they almost unanimously opined that there should be no ERP charge on Sundays and public holidays as the traffic demand would be low. Mixed views were received on whether the ERP charge should be imposed on Saturdays.

3.13 As regards the setting of charging period on Mondays to Fridays, some agreed with the time period mentioned in the PE document (i.e. from 7:00 a.m. to 8:00 p.m.) since the traffic flow in the Central District remains high

throughout the period. However, there were also views that the charging period should only be confined to the morning and evening peak hours.

- 3.14 Some academics and professional bodies considered that there is no need to pre-set a charging period. They suggested that the Government should first define the criteria for traffic situation being considered as congested, for example, using traffic speed, and then levy a charge whenever the actual traffic speed is lower than the acceptable level. The charge should increase as the traffic speeds decrease. Some academics considered this “dynamic pricing” approach (i.e. the charge varying with degree of congestion) very effective because it would leave little room for argument given that motorists could see and experience the actual traffic speed themselves.
- 3.15 If a fixed charging period is set, some motorists may speed up to enter the charging area when the charging period is about to start, or slow down to delay entering the charging area when the charging period is about to end, thereby causing temporary traffic and safety issues. This issue needs to be addressed in future.
- 3.16 To the logistics industry, the length of the charging period will have direct implications on trade operations. On the one hand, the setting of a charging period can provide economic incentives to encourage trade operators to deliver goods outside the charging period, thus staggering the delivery traffic demand. On the other hand, as pointed out by the representatives of goods vehicle trade, since goods delivery has to suit the practical constraints of freight operations and delivery schedules of different businesses in the Central District, it is probable that only a small portion of delivery work could be re-scheduled to avoid the charging period.

(4) Charging level

3.17 The major views provided by the public and stakeholders on the charging level were as follows:

- (1) the charging level should be high enough to make the Pilot Scheme effective;
- (2) the charging level could be set low at the beginning of the Pilot Scheme in order to reduce resistance to implementation and foster acceptance by the public, and could be increased gradually afterwards;
- (3) the charging level should be set according to the prevailing level of traffic congestion so as to reduce traffic flow or increase traffic speed to meet a pre-defined target;
- (4) the charging level should be set according to the level of congestion at different times of the day, and should be adjusted during different times of the day; and
- (5) in setting the charging level, consideration should be made to the parking charges of car parks inside and outside the charging area, parking charges of accessible park-and-ride facilities, tolls of the three RHCs and motorists' value of time, etc.

3.18 The public and stakeholders also suggested that the charging level could be determined based on the following two factors:

- (1) factors directly related to congestion
 - (i) location (higher charge for more congested area / higher charge at the core of the charging area);
 - (ii) time of the day;
 - (iii) travel direction;
 - (iv) vehicle size, type, carrying capacity/efficiency, occupancy; and

- (v) duration of stay within the charging area.
- (2) factors indirectly related to or unrelated to congestion
 - (i) vehicle emission rate/vehicle emission rate per capita;
 - (ii) air pollution level;
 - (iii) cylinder volume;
 - (iv) luxury level of a private car; and
 - (v) vehicle owner's income.

3.19 Many green groups suggested linking the charging level to vehicle emissions, i.e. vehicles generating more emissions should pay higher charges. They urged the Government to provide more relevant data at the next PE exercise, such as quantification of reduction of air pollution and greenhouse gas emissions due to the Pilot Scheme, and how a charging level that is linked to vehicle emissions would affect the traffic, environmental and economic performance of the Pilot Scheme.

3.20 Regarding the three charging approaches described in the PE document, namely:

- (1) a unified charge for all vehicle types;
- (2) differential charges based on vehicle sizes; and
- (3) differential charges based on vehicles' carrying capacities,

a larger proportion of the public and stakeholders preferred charging approach (2), i.e. each vehicle type is charged differently according to road space occupied. While many members of the public and stakeholders opined that the charging level should be set according to different factors, very few made specific suggestions on the magnitude of ERP charges. For those who made specific suggestions on the charging level, some of them suggested charging \$10 to \$40 for passing one charging point, and there were also views that a higher charging level, such as a charge of over \$50 or

even \$500 for passing one charging point, should be levied in order to change motorists' travel behaviour.

3.21 Some individuals and organisations expressed the following views on the charging level:

- (1) Levying the same charge for all vehicle types is a comparatively simple and easy approach, and incurs less administrative and monitoring costs. If charges are set according to vehicle size or carrying capacity, it will be necessary for the Government to conduct regular random checks to prevent the charging mechanism from being abused, such as by making fraudulent claims that vehicles are of smaller sizes or larger carrying capacities to pay less ERP charges.
- (2) If differential charges are imposed based on a vehicle's carrying capacity, due regard should be given to goods vehicles which are not used for carrying passengers and a corresponding charging mechanism based on goods carrying capacity will be required. Besides, if private cars are charged according to their carrying capacity, consideration should be given to prevent a large number of 5-seater private cars from being changed to 7-seaters.
- (3) The charging level should not be linked to the costs of the Pilot Scheme lest road users would directly share the hefty capital costs and operating costs of the Pilot Scheme. The Pilot Scheme should adopt the "user pays" principle as in the case of road traffic congestion instead of the "self-financing" principle.
- (4) Cross-boundary vehicles should pay double.

(5) Exemption and concession

3.22 Views on exemption and concession were most often expressed by the public and stakeholders in this PE exercise. Nine transport trades (i.e. trams, franchised buses, green minibuses ("GMBs"), Hong

Kong-Guangdong cross-boundary coaches, school buses, non-franchised buses, goods vehicles, taxis and public light buses) requested exemption from ERP charge for the vehicle types of their trades. Some of the transport trades (e.g. taxis and franchised buses) made it very clear that they would support the Pilot Scheme if they were granted exemption. In addition, some of the transport trades (e.g. public light buses and goods vehicles) also clearly expressed that if their vehicle types were not given any exemption or concession, they would pass on the ERP charges to their passengers, customers or merchants.

- 3.23 Many of the public, LegCo members, DC members and political parties supported granting exemption to three public transport modes with high carrying capacities (i.e. trams, franchised buses and GMBs). They opined that such an exemption conformed to the transport policy of according priority to public transport and could spare passengers of these three public transport modes from paying additional fares. While concurring with the above considerations for granting exemptions for their vehicles, the Hong Kong Tramways Limited, franchised bus operators and GMB operators also emphasised that their vehicles operated on fixed routes and frequencies, and the number, frequency and service schedule of their vehicles entering or leaving the Central District would not change with or without the ERP charge. Hence, their vehicles should be granted exemption, unless it is the intention of the Government to discourage commuters from using these three public transport modes to enter or leave the Central District, or to make them switch to MTR, or even to raise revenue to the public coffers through the Pilot Scheme.
- 3.24 Some academics, professional bodies, goods vehicle trades and a small number of members of the public took the view that all vehicles should be treated equally and no vehicle should be granted exemption or concession. Their major argument was that all vehicles shared the limited road space and contributed to traffic congestion, and therefore every vehicle ought to be fairly charged based on the “user pays” principle. In addition, if no exemption or concession is given to any vehicle, the administrative and

monitoring costs of the Pilot Scheme will be reduced. If public transport modes were not exempted, the public still had the option to make less trips or travel during non-charging periods.

3.25 Apart from trams, franchised buses and GMBs, the vehicle types that had been suggested to be granted exemption or concession in the PE exercise are listed below:

(1) public transport vehicles/commercial vehicles

- (i) public light buses
- (ii) taxis
- (iii) non-franchised buses
- (iv) residents' service buses
- (v) Hong Kong-Guangdong cross-boundary coaches
- (vi) school buses
- (vii) tour coaches
- (viii) goods vehicles

(2) vehicles having associations with the charging area

- (i) vehicles of residents living in or close to the charging area
- (ii) vehicles of schools and non-profit-making organisations locating in or close to the charging area
- (iii) vehicles with designated parking spaces in the charging area
- (iv) vehicles of public organisations and utility companies with operational needs to enter or leave the charging area

(3) other types of vehicles

- (i) vehicles carrying people with disabilities
- (ii) electric vehicles

- (iii) environment-friendly vehicles
- (iv) vehicles of non-profit-making and charitable organisations
- (v) motorcycles

3.26 Regarding whether taxis should be exempted from ERP charge, there were both supporting and opposing views. Those who supported asserted that taxi is one of the public transport modes. The taxi trade also pointed out that if taxis were not given exemption, their business would be affected and the associated administrative costs would increase. Without exemption, vacant taxis would avoid entering the charging area and hence there would be an inadequate supply of taxis to meet passenger demand, making it even more difficult for passengers to hail taxis. However, those who opposed granting exemption to taxis opined that taxi is a personalised transport mode similar to private cars and taxis generate more vehicular traffic than private cars. If taxis, which currently take up about 35% of the traffic flow in the Central District¹⁵, were exempted from ERP charge, the effectiveness of the Pilot Scheme would be significantly weakened. Some academics suggested that the Government should offer solid proposals at the next PE exercise to address taxi trade's concern over the possible dwindling effect on business, including a detailed study on whether exemption could be given to vacant taxis entering or leaving the charging area.

3.27 Whether exemption should be given to goods vehicles is also contentious. Those who supported exemption asserted that freight transport plays a crucial role in sustaining the commercial activities in the Central District and goods vehicles serve the community similar to public transport. If public transport modes were granted exemption, goods vehicles should also be given similar treatment by the same argument. Those who opposed granting exemption to goods vehicles opined that goods vehicle operators or their users could choose to schedule the delivery services either outside

¹⁵ According to the information as at 2015, between 7:00 a.m. and 8:00 p.m. (13 hours in total) from Monday to Friday, private cars accounted for about 45% of all the vehicles entering or leaving the Central District, taxis about 35%, goods vehicles slightly over 10%, and buses and minibuses close to 10%.

the charging period or during period of a lower charge. However, goods vehicle trades pointed out that different businesses would inevitably be subject to practical limitations in scheduling their operations. Some political parties suggested that the Government could phase in the full ERP charge on goods vehicles to allow time for the trades to gradually adjust their operations. Moreover, there were suggestions that exemption should be given to goods vehicles that entered the charging area for a short duration in order to accommodate the actual delivery needs of the trades.

- 3.28 As regards whether exemption should be given to vehicles of residents living in or close to the charging area, quite a number of members of the public and stakeholder groups provided their views. Some political parties and DC members advised the Government that the definitions of “residents” and “residents’ vehicles” should be carefully drawn up to safeguard against any abuse of the exemption. There were also views that giving exemption to the vehicles of residents living in the charging area might impose constraints on future expansion of the charging area because, once granted, it will be difficult to revoke any exemptions.

(6) Technology

- 3.29 Regarding the choice of technology for the Pilot Scheme, the public and stakeholders suggested the following considerations:

- (1) general considerations
 - (i) whether motorists’ privacy would be adequately protected;
 - (ii) overall costs and staffing requirements, including those for installation, management, operation, maintenance, etc.;
 - (iii) specific law enforcement arrangements; and

- (iv) whether the technology would be easy to use, in particular whether it would be easy for motorists to master the operation of in-vehicle units (“IVUs”).

(2) technical considerations

- (i) whether the technology would be compatible with the automatic toll collection system used at the existing tolled tunnels;
- (ii) whether different technologies could be integrated so that they could complement each other’s inadequacies and limitations;
- (iii) whether the technology could foster the development of Intelligent Transport Systems, Transport Information System and Incident Management System in Hong Kong, and could even be used for other purposes (e.g. payment of car park charges); and
- (iv) whether adequate space would be available for the installation of roadside charging and enforcement facilities as well as their visual impact.

3.30 As regards the two charging technologies (i.e. Dedicated Short-range Radio Communication (“DSRC”) and Automatic Number Plate Recognition (“ANPR”)) described in the PE document, a greater proportion of views were favoured DSRC technology because it would better protect motorists’ privacy by allowing instant payment of charges with anonymous payment cards. Moreover, as vehicles equipped with IVUs could be instantly charged, the operation would be relatively more automatic. In terms of future management and operation, the DSRC technology would entail lower costs and less manpower requirements as compared with the ANPR technology which would require substantial manpower for manual cross-checking of unclear photographic images of vehicle number plates and for charging settlement. Those members of the public and stakeholders who favoured the DSRC technology also suggested that the IVUs should be used to pay tunnel tolls to obviate the need for vehicles to be fitted with two IVUs. Some professional bodies were in favour of the

use of the DSRC technology because the usage of IVUs could foster the development of intelligent transport in Hong Kong.

3.31 For the DSRC technology which gained greater support, the following views had been given by some individuals and organisations:

- (1) whether the installation of IVUs would be a mandatory requirement for all vehicles (or whether some vehicles would be exempted from the installation of IVUs);
- (2) whether the use of IVUs would give rise to privacy concerns (e.g. whether the IVUs would be assigned with identification numbers/serial numbers, what data would be stored in the IVU, what data would be kept in the charging system, would data of other smart cards be captured when a vehicle passing through the charging point, etc.);
- (3) who should bear the costs of the installation, maintenance, removal and replacement of the IVUs;
- (4) suggestion that the Government could start testing out the DSRC technology at existing tolled tunnels;
- (5) whether the IVU installed could be configured to record the time a vehicle entered and exited the charging area so as to facilitate the “time-based” charging mechanism or enable the short-stay vehicles to be exempted from charging;
- (6) specific arrangements for the installation of IVUs (including the installation arrangements of newly-registered vehicles and vehicles already registered);
- (7) whether the use of IVUs require a regular payment of administrative fees;

- (8) if differential charges would be levied based on vehicle types, a monitoring system should be developed to ensure that the required types of IVUs would be installed in the corresponding vehicles;
- (9) the feasibility of using Octopus Card for paying charges;
- (10) whether the IVU should be registered under a vehicle or a car owner; and
- (11) maintenance arrangement for the system.

3.32 Separately, there were views supporting the application of ANPR technology. The main argument was that through adopting ANPR technology, there would not be a need for installing IVUs, thus providing convenience to motorists who only enter the charging area occasionally, and saving them the costs for procuring and installing IVUs which would not be low. With the expected growth in the number of cross-boundary vehicles which would be probably not fitted with IVUs, ANPR technology might be a more convenient option for these vehicles as they could simply settle the ERP charge upon leaving Hong Kong. Besides, ANPR technology would be comparatively simple to understand and suitable to be applied in a small charging area under the Pilot Scheme.

3.33 Apart from the above two charging technologies, there were also views that the Government should consider other technological options such as:

- (1) direct adoption of the automatic toll collection system currently used at the tolled tunnels;
- (2) Global Navigation Satellite System (“GNSS”) technology¹⁶;
- (3) integration of DSRC, ANPR and other charging technologies;
- (4) Radio Frequency Identification (“RFID”) technology;

¹⁶ In 2016, Singapore awarded a contract for the development of the second generation of ERP using GNSS technology. Adopting a global positioning technology in ERP charging may engender more privacy concerns.

- (5) Near Field Communication (“NFC”) technology;
- (6) Wireless Fidelity (“WIFI”) technology;
- (7) Cloud Infrastructure technology; and
- (8) Electronic Number Plate technology.

Major views on three pertinent issues

(1) Privacy concerns

3.34 During this PE exercise, there were relatively fewer views expressed by the public and stakeholders on privacy issues. Of the views received, only a minority raised concerns over privacy issues arising from the Pilot Scheme, while the majority considered that the Pilot Scheme would not give rise to privacy concerns or there were measures in place to protect the motorists’ privacy.

3.35 Some members of the public and stakeholders were of the view that, at present, there are already ways to protect the motorists’ privacy upon the implementation of the Pilot Scheme, which can be grouped into four categories:

(1) legislation

- (i) new legislation or legislative amendments should be introduced to protect the motorists’ privacy;
- (ii) new legislation should be introduced to restrict the use of data collected under the Pilot Scheme; and
- (iii) images and data collected should only be used for charge settlement. Transfer of data to other parties (including law enforcement agencies) should be prohibited unless with prior authorisation from the court.

(2) policy

- (i) data that were no longer required for follow-up actions should be erased within a reasonable period of time; and
- (ii) data collected should mainly be related to vehicle number plates and should not include the appearance of motorists.

(3) technology

- (i) current technology (e.g. the DSRC technology) already protects motorists' privacy;
- (ii) images and data collected (including the serial numbers of IVUs) should be encrypted; and
- (iii) personal data related to charge payment should be stored in a standalone and offline database system.

(4) code of practice

- (i) a code of practice on handling charging data should be developed; and
- (ii) a code of practice governing the use of, and access to, data stored in the system by authorised personnel should be developed.

3.36 During the PE exercise, we wrote to invite views from the Office of the Privacy Commissioner for Personal Data ("PCPD") on the privacy issues pertaining to the Pilot Scheme. We also explained in detail to the PCPD the potential privacy issues pertaining to the three types of ERP technologies mentioned in the PE document (i.e. DSRC, ANPR and GNSS) and how they could be addressed. We also indicated that privacy impact assessments would be conducted in the course of the feasibility study on the Pilot Scheme to critically examine all potential privacy risks and propose relevant mitigation measures.

3.37 The PCPD pointed out in their reply that the Pilot Scheme would be legally bound by the Personal Data (Privacy) Ordinance (Cap. 486) as it would involve the collection, use or retention of personal data. The PCPD also stressed that the organisations responsible for the collection, retention, handling or use of personal data under the Pilot Scheme would be required to comply with the Personal Data (Privacy) Ordinance and its six data protection principles¹⁷.

3.38 The PCPD considered that the future evaluation of the effectiveness of the Pilot Scheme should take into account the overall public perception on whether privacy protection will be upheld. The PCPD also indicated that it would continue to advise on privacy related issues pertaining to the Pilot Scheme.

(2) Effectiveness

3.39 There were many views stating that there is a need to establish indicators for evaluating the effectiveness of the Pilot Scheme. The public and stakeholders generally supported using quantitative indicators directly related to road traffic congestion to evaluate the effectiveness of the scheme, such as:

- (1) traffic volumes going in and out of the charging area (the total number of vehicles and a breakdown by vehicle types);
- (2) average traffic speed within the charging area;

¹⁷ The PCPD suggested the adoption of the following six guiding principles regarding the collection and handling of personal data pertaining to the Pilot Scheme:

- (1) Only adequate but no excessive personal data shall be collected;
- (2) Data subject shall be explicitly informed of the purpose for which the data are to be used and the persons to whom the data may be transferred;
- (3) Data retention policies must be formulated and strictly followed. Duration of retention of personal data shall not be too long, and any data collected for purposes other than the original collection purposes shall be erased;
- (4) Personal data shall not, without the prescribed consent of the data subject, be used for a new purpose;
- (5) Policies, guidelines and procedures on managing and processing personal data shall be formulated to preserve data confidentiality; and
- (6) Contractual means shall be adopted to ensure that contractors who handle personal data will comply with requirements on personal data protection.

- (3) average traffic speed on roads adjoining the charging area;
- (4) average traffic speed of buses going in and out of the charging area;
- (5) patronage of public transport services going in and out of the charging area; and
- (6) total distance travelled by all vehicles within the charging area.

3.40 Some members of the public and stakeholders suggested using certain indicators that are indirectly related to or even unrelated to road traffic congestion to evaluate the effectiveness of the Pilot Scheme, such as:

- (1) roadside air pollutant concentrations in the charging area;
- (2) Air Quality Health Index in the charging area;
- (3) number of pedestrians in the charging area;
- (4) pedestrian flows into and out of the charging area;
- (5) public acceptability of the Pilot Scheme;
- (6) overall economic benefits of the Pilot Scheme;
- (7) impacts on commerce, retail sector, consumption, real estate, rental market, etc. in the charging area; and
- (8) total revenue and expenditure incurred under the Pilot Scheme.

3.41 There were many views stating that there is a need to establish a review mechanism for adjusting the charging level as and when necessary to maintain the effectiveness of the Pilot Scheme.

(3) Complementary measures

3.42 The suggestions made by the public and stakeholders on the complementary measures for the Pilot Scheme can be grouped into the following four categories:

- (1) existing measures which should be enhanced upon the implementation of the Pilot Scheme
 - (i) enhance road networks and public transport services;
 - (ii) conduct bus route rationalisation to reduce duplication of service;
 - (iii) implement more public transport priority schemes (such as bus-only lanes and bus gates);
 - (iv) adjust the toll levels of the three RHCs; and
 - (v) properly manage the land use and town planning in the Central District and ensure that the number of existing parking spaces will not be substantially reduced when approval is given to redevelop building sites in the Central District.
- (2) the 12 short, medium and long-term measures as recommended by the TAC in the “Report on Study of Road Traffic Congestion in Hong Kong”, with which the Government agreed and has adopted a multipronged approach
 - (i) implement measures to manage the fleet size of private cars (including raising first registration tax and annual licence fee for private car);
 - (ii) increase meter parking charges;
 - (iii) strengthen publicity and education to promote compliance with traffic rules and regulations;
 - (iv) raise the fixed penalty charges for congestion-related offences to restore their deterrent effect;
 - (v) adopt a stricter approach to enforce congestion-related offences;
 - (vi) make further use of information technology in enforcement;
 - (vii) review the parking policy and conduct regular surveys on the supply and demand of parking spaces across the territory to set an optimum level of parking provision;

- (viii) provide real-time information on parking vacancies at car parks so as to encourage motorists to drive their cars into car parks as soon as possible;
 - (ix) encourage the loading and unloading activities of goods vehicles to be conducted outside peak hours;
 - (x) implement more park-and-ride (or park-and-walk) facilities and provide shuttle bus services plying between the charging area and park-and-ride facilities;
 - (xi) assign parking spaces in car parks near public transport interchanges across the territory for park-and-ride purposes; and
 - (xii) start planning for an ERP pilot scheme in the Central District (i.e. the proposal put forward in this PE exercise).
- (3) complementary measures that need to be implemented together with the Pilot Scheme
- (i) strengthen/enhance various public transport services serving the charging area and ensure adequate carrying capacity of public transport services upon the implementation of the Pilot Scheme;
 - (ii) conduct bus route rationalisation in the charging area and its adjacent areas and consider providing bus-bus interchanges;
 - (iii) provide pedestrian and tram precincts in the charging area;
 - (iv) enhance the pedestrian environment/provide more pedestrian facilities in the charging area (e.g. improve the pedestrian network connecting to the public transport system, designate pedestrian precincts, construct additional hillside escalators/lifts connecting the Central District and the Mid-levels, construct travelators, etc.);
 - (v) upgrade/enhance cycling facilities in the charging area and its adjacent areas;
 - (vi) increase the number of parking spaces in the charging area;
 - (vii) disseminate real-time traffic and charging information (e.g. disseminate real-time charging information and real-time

parking vacancy information through website and mobile apps to help motorists plan their journeys);

- (viii) develop mobile apps to enable motorists to check the charging information pertaining to the Pilot Scheme and pay the charges by electronic means;
 - (ix) study how to handle and release the vast amount of data collected from the Pilot Scheme;
 - (x) attend to the needs of those motorists who only go to the Central District occasionally and keep them well informed of the charging arrangements;
 - (xi) provide clear traffic signs;
 - (xii) provide turnaround facilities to enable motorists to avoid entering the charging area;
 - (xiii) provide kerbside parking and loading/unloading facilities in the charging area and its adjacent areas;
 - (xiv) implement traffic management measures in the areas adjoining the charging area to prevent road traffic congestion or rampant illegal parking immediately outside the charging area;
 - (xv) install kerbside railings at appropriate locations to make it less convenient for “chauffeur-driven vehicles” to pick up/drop off passengers; and
 - (xvi) step up enforcement actions against traffic offences in the charging area and its adjacent areas.
- (4) other suggestions
- (i) introduce a vehicle quota system to restrict the number of new vehicles;
 - (ii) introduce a rationing scheme to restrict the number of vehicles on roads, such as only allowing vehicles with car plates ending in odd or even numbers to travel on alternate days;

- (iii) set higher fixed penalty for illegal parking inside the charging area than that outside the charging area;
- (iv) introduce a real-time traffic surveillance system to facilitate enforcement actions against vehicles obstructing traffic flow;
- (v) designate a “low driving speed zone” to further improve road environment;
- (vi) designate certain places inside the charging area as “car-free zone”/“low emission zone”/“high occupancy vehicles only zone” during certain periods and extend the restriction of access to the existing low emission zones from buses to all other vehicles;
- (vii) provide tax concessions to all environment-friendly vehicles;
- (viii) introduce more electric public transport vehicles and increase the provision of charging stations;
- (ix) introduce new designs of car parks to increase parking capacity; and
- (x) promote a transport policy of pedestrians being accorded the highest priority, mass transport the second priority, and private cars the lowest priority.

3.43 The feasibility and cost effectiveness of the complementary measures mentioned above will be explored in depth in the feasibility study to be conducted at the next stage. This is to ensure that certain complementary measures that are practicable and socially acceptable can be implemented together with the Pilot Scheme.

(4) Other issues

3.44 Apart from the above three pertinent issues, the public and stakeholders also expressed their views on other issues, including the use of revenue generated from the Pilot Scheme, stepping up enforcement actions against traffic offences, inadequate parking spaces and traffic distribution among

three RHCs. A summary of the views received and the responses by the Government are set out below.

(i) *Use of revenue generated from the Pilot Scheme*

3.45 There were views that the revenue generated from the Pilot Scheme should be spent on traffic improvement projects in order to dispel some public misconceptions that the Pilot Scheme would be “another tax revenue source” of the Government.

3.46 There were views that the revenue generated from the Pilot Scheme can be earmarked for specific transport-related purposes (i.e. “dedicated-fund-for-dedicated-use”), including the following purposes related to the Pilot Scheme:

- (1) reduce/stabilise the fares of public transport entering or leaving the charging area;
- (2) enhance the public transport services serving the charging area;
- (3) procure electric buses to improve public transport services serving the charging area;
- (4) improve the overall pedestrian environment in the charging area;
- (5) increase the enforcement manpower to combat traffic offences in the charging area;
- (6) provide concessions to car parks inside and outside the charging area to promote park-and-ride service or encourage motorists to drive their vehicles into the car parks as soon as possible for reducing traffic congestion;
- (7) plough back for the operation and maintenance of the Pilot Scheme; and
- (8) procure and install IVUs.

3.47 There were also views supporting the “dedicated-fund-for-dedicated-use” approach and considering that the revenue generated should be earmarked for the following purposes not directly related to the Pilot Scheme:

- (1) improve transport infrastructure and facilities;
- (2) improve public transport services and facilities;
- (3) enhance road safety measures;
- (4) enhance the quality and maintenance standards of existing roads;
- (5) upgrade walking environment and pedestrian facilities;
- (6) reduce annual licence fee or first registration tax of vehicles; and
- (7) develop and encourage the public to make use of environment-friendly transport modes, bicycles and pedestrian walkways.

3.48 Some academics pointed out that if the revenue generated from the Pilot Scheme is to be spent on specific purposes under the “dedicated-fund-for-dedicated-use” approach to provide direct benefits to the community (e.g. reductions of public transport fares or annual vehicle licence fees), the Pilot Scheme would gain more support from the public and stakeholders, and greater consensus could be built in the community. Some academics also called on the Government to explore the establishment of an authority, which might be named as the “ERP Authority”, with reference to the Housing Authority or the Airport Authority. The authority so established could be tasked with operating the Pilot Scheme, managing the revenue generated under the “dedicated-fund-for-dedicated-use” approach and deciding on the use of the revenue.

3.49 The public finance policy of the Government is to put revenue received into the General Revenue Account and then allocate resources according to the priorities of society as a whole with a view to meeting public aspirations.

The “dedicated-fund-for-dedicated-use” approach does not align with such an established policy of the Government. We will explore its feasibility in detail with regard to public opinions.

(ii) Stepping up enforcement actions against traffic offences

- 3.50 A considerable number of views opposing the Pilot Scheme were that traffic congestion problem in the Central District was resulted from rampant illegal parking and loading/unloading activities (in particular those of “chauffeur-driven vehicles”) which caused obstruction to traffic. As such, the problem could be solved effectively by more stringent enforcement actions by the Police.
- 3.51 Illegal kerbside parking and loading/unloading activities affect the smooth flow of traffic. More stringent enforcement actions can only alleviate traffic congestion at some road sections, but cannot bring about a significant reduction in the number of vehicles entering or leaving the Central District.
- 3.52 Though stepping up enforcement actions against traffic offences and implementing ERP are initiatives of different nature with different effects, they are in fact complementary to each other and can achieve synergy. In light of this, a multipronged approach should be adopted to use different measures to solve different problems. Moreover, we consider that the Pilot Scheme is no substitute for enforcement actions by the Police. As evident from overseas experience (including Singapore and London¹⁸), stringent enforcement is one of the prerequisites for the effective implementation of ERP.

¹⁸ In Singapore, prior to the implementation of ERP in 1998, a Driving-Offence Points System was introduced in 1983, whereby offenders of certain congestion-related offences were imposed with fines and demerit points. Those who received demerit points repeatedly would be disqualified from driving for at least one year. In London, before the commissioning of the London Congestion Charging Scheme in 2003, closed circuit television systems were deployed to enhance enforcement of traffic offences. Moreover, regarding the penalty level of congestion-related offences (such as illegal parking and loading/unloading of passengers and goods), the maximum penalty for Singapore and London are SGD 230 (about HKD 1 300) and GBP 130 (about HKD 1 300) respectively, both higher than the current maximum penalty of HKD 450 for Hong Kong.

(iii) Inadequate parking spaces

- 3.53 Many views considered that parking spaces are inadequate to accommodate the continuous growth in the number of vehicles in recent years. As a result, vehicles circulate on roads or park by the kerbside, causing traffic congestion.
- 3.54 The TD has been monitoring the demand and supply of parking spaces across the territory. As far as the Central District is concerned, according to a survey conducted by a traffic consultant in 2014, vacant parking spaces were available in car parks of some commercial buildings in the district during busy periods (i.e. from 9 a.m. to 5 p.m.), but many motorists chose to park illegally or circulate on roads instead of parking in the car parks. Overall speaking, the provision of parking spaces across the territory is still at an acceptable level.
- 3.55 It is the Government's policy to provide an appropriate number of parking spaces if overall development permits, but at a level which will not unduly attract potential passengers to opt for private cars in lieu of public transport modes. How a balance can be struck will depend on the policy principles as well as the actual situations in individual districts. For the Central District, it is extremely difficult to identify suitable sites to provide car parks. When there are new development or redevelopment projects creating opportunities to increase the parking spaces for private cars, we also have to consider the needs of the land or floor area for other uses. Besides, the provision of additional parking spaces in the Central District may attract vehicles going to or from the district, thus aggravating traffic congestion on existing roads.
- 3.56 The Government is reviewing the parking policy and will accord priority to considering and meeting the parking need of commercial vehicles. Depending on the review results, we will explore improvement measures, including the need to update the Hong Kong Planning Standards and Guidelines. We will also examine the feasibility of relevant

complementary measures in the feasibility study of the Pilot Scheme to be conducted at the next stage.

(iv) Traffic distribution among three RHCs

3.57 There were views that the road traffic congestion currently experienced on Hong Kong Island was closely related to the uneven traffic distribution among the three RHCs and that toll adjustments could effectively rationalise the traffic distribution among the RHCs.

3.58 The Government attaches great importance to this issue. We have commenced a consultancy study in January 2017 to explore options for rationalising traffic distribution among the three RHCs, including traffic volumes along the connecting roads of RHCs after rationalisation of traffic distribution and traffic impact on districts concerned. The Government has undertaken to complete the study and submit toll adjustment proposals to the LegCo Panel on Transport for discussion within the 2017-18 session.

Chapter 4 Way Forward

Overview

- 4.1 This PE exercise had triggered a lot of discussion on the Pilot Scheme in the community. It had enhanced the understanding of the public and stakeholders of the basic concepts of ERP and overseas implementation experience. It also enabled us to collect many invaluable views. The initial public reaction indicates that there are views supporting the implementation of the Pilot Scheme while there are also views opposing or expressing concerns.
- 4.2 We will appoint a consultant to conduct an in-depth feasibility study on the Pilot Scheme. The consultant will analyse in detail the views collected and, based on the latest traffic data, overseas experience and findings from past studies on ERP, develop specific implementation proposals for the Pilot Scheme for further discussion with the public and stakeholders. This chapter outlines the issues to be explored in the feasibility study and sets out the steps ahead.

Scope of feasibility study

- 4.3 The following will be included in the scope of the feasibility study:

Detailed option(s)

- (1) Formulate one or more detailed option(s) taking into account the views collected during the PE exercise and overseas experience. The detailed option(s) shall cover various aspects of the six basic elements (charging area, charging mechanism, charging period, charging level, exemption and concession, technology).

Traffic survey, technical evaluation and analysis

- (1) data collection through in-field traffic surveys;

- (2) technical evaluation and analysis of detailed option(s), including:
 - (i) carry out an in-depth traffic analysis using transport models;
 - (ii) evaluate the effectiveness of detailed option(s), including quantified benefits/impacts of the option(s) in traffic, environmental (including air quality, noise and greenhouse gas emissions), economic and social terms;
 - (iii) evaluate capital and recurrent operating expenditure, as well as cost-benefit analysis (both short-term and long-term); and
 - (iv) evaluate the privacy impact of the Pilot Scheme and recommend specific privacy protection strategies.

Operation of the Pilot Scheme

- (1) examine the future management and operational arrangements of the Pilot Scheme (including whether it should be directly operated by government departments);
- (2) examine the legal framework for implementing the Pilot Scheme (such as the scope of any new legislation, any necessary legislative amendments, relevant offences and penalties, etc.); and
- (3) formulate the implementation timetable of the Pilot Scheme.

Others

- (1) study the complementary measures for the Pilot Scheme;
- (2) consider critically the use of revenue generated from the Pilot Scheme on specific transport-related purposes (i.e. “dedicated-fund-for-dedicated-use”);
- (3) evaluate the traffic impact on the Central District upon the commissioning of the Central-Wan Chai Bypass; and

- (4) examine the compatibility of the ERP technology with the automatic toll collection system currently used at the tolled tunnels/roads as well as how best to further use the traffic data collected under the ERP system for the purposes of traffic management and planning and development of intelligent transport systems without compromising privacy protection.

Steps ahead

- 4.4 The Government is determined to implement the Pilot Scheme. As remarked by the Secretary for Transport and Housing at the media session on the launch of the PE exercise on 11 December 2015, the question is not “whether” but “how” to implement the Pilot Scheme.
- 4.5 We recognise that building a consensus in the community is instrumental to the successful implementation of the Pilot Scheme. At the next stage, we will appoint a consultant to conduct an in-depth feasibility study on the Pilot Scheme to develop one or more detailed options for further discussion and selection by the public during the more extensive Stage 2 PE exercise.
- 4.6 Having regard to the views collected from the Stage 2 PE exercise, the consultant will recommend a practicable proposal to the Government. Based on the proposal, the Government will prepare the legislation required and seek funding from LegCo to carry out various tasks, such as detailed design, construction, equipment installation and trial runs, etc.
- 4.7 We do not underestimate the challenges in implementing the Pilot Scheme. Overseas experience shows that an ERP scheme may not necessarily gain overwhelming support at the beginning of its implementation. For example, we note that nearly 70% of the community opposed to the ERP scheme in Stockholm of Sweden at the beginning of its implementation. However, after the scheme had been operated for a period of time, significant improvement in road traffic situation was apparent and over two-thirds of the community became supportive of the continued operation

of the ERP scheme in Stockholm. We understand that the key for gaining the acceptance of the public and stakeholders on the Pilot Scheme lies in the preparation of an effective implementation proposal. We believe that the Pilot Scheme will gain more support when it can effectively alleviate road traffic congestion for the benefit of the community.

- 4.8 While implementing the ERP is one of the important aspects of the Government's efforts in tackling traffic congestion, it is not our only measure. The Government will continue to adopt a multi-pronged approach to tackle traffic congestion, including improving transport infrastructure, enhancing public transport services, stepping up enforcement actions against traffic offences, implementing traffic management measures, reviewing the parking policy, studying ways to contain vehicle growth and usage, as well as rationalising the traffic distribution among the three RHCs, etc.

Abbreviations

ANPR	Automatic Number Plate Recognition
APIs	Announcements in the Public Interest
DC	District Council
DSRC	Dedicated Short-range Radio Communication
ERP	Electronic Road Pricing
GMBs	Green Minibuses
GNSS	Global Navigation Satellite System
HAD	Home Affairs Department
IVUs	In-vehicle Units
LegCo	Legislative Council
MTR	Mass Transit Railway
NFC	Near Field Communication
PCPD	Privacy Commissioner for Personal Data
PE	Public Engagement
RFID	Radio Frequency Identification
RHCs	Road Harbour Crossings
RTHK	Radio Television Hong Kong
TAC	Transport Advisory Committee
TD	Transport Department
WIFI	Wireless Fidelity