For discussion on
22 January 2020

Legislative Council Panel on Environmental Affairs

A Series of Measures to Improve Environment and Air Quality

Purpose

The Government has been implementing a series of measures to improve environment and air quality to protect public health and drive Hong Kong's low-carbon transformation. Further to the discussion on the Government's measures to improve air quality in this Panel last month, this paper continues to brief Members on the details of the Government's measures to improve environment and air quality. Various measures include the Pilot Scheme for Electric Ferries, Pilot Scheme for Electric Public Light Buses, Ex-Gratia Payment Scheme for Phasing Out Euro IV Diesel Commercial Vehicles, review of the Pilot Green Transport Fund, as well as the Green Tech Fund that encourages local research and development (R&D) on decarbonisation and green technologies.

Ex-gratia Payment Scheme for Phasing Out Euro IV Diesel Commercial Vehicles

Background

2. Diesel commercial vehicles (DCVs) are one of the major sources of roadside air pollution. To improve roadside air quality, the Government launched an incentive-cum-regulatory programme in March 2014 to subsidise the vehicle owners of pre-Euro IV DCVs (including goods vehicles, light buses and non-franchised buses) to progressively phase out their vehicles. As at the end of December 2019, about 78 000 pre-Euro IV DCVs have been phased out under the ex-gratia payment scheme. All pre-Euro, Euro I and Euro II DCVs have been phased out, and the remaining 1 500 Euro III DCVs will be phased out by late June 2020[1].

[1] The original deadline for application of the ex-gratia payment scheme for phasing out Euro III DCVs is 31 December 2019. Due to operational difficulties caused by the current

3. Among the about 128 000 registered DCVs in Hong Kong, around 39 700 are Euro IV vehicles (see **Annex A**). In 2017, these Euro IV vehicles accounted for about 23% of respirable suspended particulates and 19% of nitrogen oxides of the total vehicular emissions. To further improve roadside air quality, the Chief Executive has proposed in the 2018 Policy Address to launch a new incentive-cum-regulatory programme. By subsidising vehicle owners to phase out their Euro IV DCVs progressively, the scheme helps reduce emissions of air pollutants at roadside, further improving air quality.

Proposal

Eligibility Criteria and Level of Ex-gratia Payment

4. We propose the following application criteria with reference to the ex-gratia payment scheme for phasing out pre-Euro IV DCVs (pre-Euro IV DCVs Scheme) –

(1) the vehicle is a DCV (i.e. goods vehicle, light bus or non-franchised bus running on diesel) with the first registration date that falls within the dates specified in **Annex B**;
(2) the vehicle is registered or has applied for re-registration as a DCV as of 1 January 2020 and has had a valid vehicle licence on or after that date;
(3) the vehicle is scrapped during the period of the ex-gratia payment scheme for phasing out Euro IV DCVs (Euro IV DCVs Scheme) by a vehicle scrapping company registered under the Euro IV DCVs scheme[2];
(4) the registration of the vehicle is cancelled after it is scrapped[3]; and
(5) the applicant for the ex-gratia payment is the registered owner of the vehicle when its registration is cancelled.

---

economic situation, the transport trades might not be able to complete the necessary procedures for ex-gratia payment by the original deadline. Hence, the EPD has extended the deadline for six months to 30 June 2020.

2 We will set up a list of registered vehicle scrapping companies for the Euro IV DCVs Scheme. Vehicle owner must submit a scrapping certificate issued by a vehicle scrapping company registered when applying for ex-gratia payment.

3 For vehicles that have their registration cancelled on the ground of scrapping, the Transport Department will not accept re-registration.

5. We propose adopting the classification of vehicles in the pre-Euro IV DCVs Scheme and offering an ex-gratia payment ranging from 31% to 37% of the average taxable values of new vehicles. In addition, we will provide goods vehicles assembled with additions[4] with an extra 15% of average vehicle body price[5]. In response to the views from the transport trades that the vehicle price of lorry crane is significantly higher than other vehicle body types, we propose classifying lorry crane as a separate body type.

6. If the ex-gratia payment calculated above is still less than the amount of the pre-Euro IV DCVs Scheme in respect of the same vehicle age, we will adjust the ex-gratia payment of respective vehicle classes to at least 7% higher than that in the pre-Euro IV DCVs Scheme and maintain a differential amount among age bands, so as to provide extra incentives to vehicle owners to urge them to take action earlier. The proposed ex-gratia payment levels and vehicle types are at **Annex C**.

Deadlines

7. After considering the transport trades' opinions and our aim to phase out DCVs with higher emissions within a reasonable time frame, we propose to limit the age of the Euro IV DCVs at 15 years. The last batch of the Euro IV DCVs will be phased out by the end of 2027. Details of the phasing out deadlines are at **Annex D**.

Special Arrangements

8. Since some DCVs might have their classification of emission standards at first registration different from the actual emission standards[6], we propose to implement the following special arrangements:

---

4 With reference to the Motor Vehicles (First Registration Tax) Regulation (Cap. 330B), goods vehicles assembled with vehicle additions will be categorised into two groups, (A) general open body and enclosed body, and (B) body with equipment. In addition, van-type light goods vehicle, tractor and tractor crane will be categorised as three individual body types.

5 The ex-gratia payment levels of pre-Euro IV DCVs Scheme ranged from 27% to 33% of the average taxable values of new vehicles.

6 Making reference to the pre-Euro IV DCVs Scheme, the first registration dates will be adopted to distinguish Euro IV vehicles. Therefore, some vehicles originally designed as

(a) vehicles originally designed as Euro IV DCVs but first registered late and classified as Euro V DCVs could apply for the ex-gratia payment;

(b) vehicles originally designed as Euro V DCVs but first registered early and classified as Euro IV DCVs could apply for the exemption from being phased out under this scheme.

Vehicle owners who would like to apply for ex-gratia payment or exemption under the abovementioned special arrangement are required to submit proof of actual emission standards of their vehicles (such as documents issued by vehicle manufacturers). The Environmental Protection Department (EPD) will approve applications after reviewing the documents.

Relevant Regulation

9. The Secretary for the Environment will amend the Air Pollution Control (Air Pollutant Emission) (Controlled Vehicles) Regulation (Cap. 311X) to require registered Euro IV DCVs to, upon each application for licence from the specified deadlines as stated in **Annex D**, meet the prevailing emission design standards applicable for a DCV of the same class seeking first registration at the time the licence is being applied for. Failure to comply with the requirement may be a ground for the Commissioner for Transport to refuse to license the vehicles.

Consultation

10. We have consulted the relevant trades, including transport operators, vehicle suppliers, vehicle body builders and vehicle scrapping companies, and considered their views thoroughly. The trades in general welcome the ex-gratia payment scheme.

Implementation and Financial Implications

11. The Government has earmarked $7.1 billion for the proposed ex-gratia payment scheme. We plan to implement the ex-gratia payment scheme in the

---

Euro IV DCVs but first registered late will be classified as Euro V DCVs; whereas some vehicles originally designed as Euro V DCVs but first registered early will be classified as Euro IV DCVs.

fourth quarter of 2020. The Transport Department will administer the scheme, including receiving applications, vetting eligibility, approving applications and arranging ex-gratia payment to the vehicle owners of the approved applications.

Pilot Scheme for Electric Ferries

Background

12. The Government has been encouraging the use of green transport technologies in ferries to reduce their emissions. A consultancy study on green ferry technologies commissioned by the EPD in 2017 revealed that electric and hybrid ferries are potentially applicable to local ferry operations. While electric ferries are more suitable to in-harbour ferry routes which are characterised by short sailing distance at lower speed, hybrid ferries may be applicable to outlying island routes with longer sailing distance at higher speed.

13. The Chief Executive announced in the 2019 Policy Address that the Government would formulate the details of a pilot scheme for new energy ferries in the following year. The Government proposes to launch a Pilot Scheme for Electric Ferries in in-harbour ferry routes with a view to testing the technical viability of adopting such type of ferries in Hong Kong, and exploring whether conventional ferries could be replaced by new energy ferries in the long run.

14. As for hybrid ferries, the Transport and Housing Bureau/Transport Department has announced to introduce the Vessel Subsidy Scheme[7]. Six hybrid vessels will be put into trial operation at six major outlying island ferry routes[8] in the first stage of the scheme.

---

7 Please refer to the discussion paper for the Legislative Council Panel on Transport on 15 November 2019 (Legislative Council paper no. CB(4)114/19-20(05)).

8 The six major outlying island ferry routes include "Central – Cheung Chau", "Inter-islands" between Peng Chau, Mui Wo, Chi Ma Wan and Cheung Chau, "Central – Mui Wo", "Central – Peng Chau", "Central – Yung Shue Wan" and "Central – Sok Kwu Wan" routes.

Proposal

Scope and Subsidy Level

15. Currently, there are altogether four franchised or licensed passenger ferry operators running seven regular passenger ferry routes in the Victoria Harbour, as set out in **Annex E**. All four ferry operators have expressed interest to participate in the Pilot Scheme. To ensure an adequate coverage of routes and maintain a fair treatment among different operators, we initially propose that the Pilot Scheme will subsidise each ferry operator for the construction of an electric ferry and associated charging facilities to serve a dedicated in-harbour ferry route. This arrangement enables the ferry operators to acquire experience in operating electric ferries and the Government to understand the performance of electric ferries under different operating conditions. In addition, the Transport Department has issued a tender in December 2019 for the re-commissioning of the "Central – Hung Hom" ferry route and launching of a pilot "water taxi" service. If any new ferry operator provides in-harbour ferry service, we will consider extending the Pilot Scheme to the new operator.

16. Some in-harbour routes are earning minimal profit or even operating at a loss for the time being. All four ferry operators expressed that they are unable to shoulder the costs to design, build and operate the new electric ferries and associated charging facilities. Therefore, our initial proposal is to provide full subsidy to cover the capital cost of the electric ferries and associated charging facilities, as well as the operating, maintenance and repair costs during the trial operation. Ferry operators have to bear all the legal responsibilities/liabilities in respect of operation, management, repair and insurance, etc. of the electric ferries.

Implementation

17. We have established an Inter-departmental Working Group[9] in 2018 to work out the details of the Pilot Scheme and oversee its implementation. Given

[9] The Inter-departmental Working Group comprises representatives of the EPD, Transport and Housing Bureau, Transport Department, the Architectural Services Department, Civil Engineering and Development Department, Electrical and Mechanical Services Department, Marine Department, and the Tourism Commission.

the limited global application of electric ferries[10], the EPD will engage an independent consultant to advise on the design prepared by the ferry operators and assist them to prepare open tender for the construction of electric ferries and the associated charging facilities. In addition, the Government will form an expert panel comprising naval architects and academics to assist the working group in assessing the design proposals prepared by the ferry operators.

18. Taking into account the lead time for the construction of the electric ferries and the associated charging facilities, we anticipate that the trial operation will start in 2022-23 for a period of 24 months. During the trial operation, each ferry operator is required to commission a ship surveyor or consultant to collect and analyse operational data of the electric ferry, and evaluate its environmental effectiveness, technical performance and cost-effectiveness, comparing with a conventional diesel ferry with similar passenger capacity running the same ferry route, and submit an assessment report to the working group.

Arrangement after Completion of the Trial

19. After the completion of the trial, the working group will conduct an assessment on the cost-effectiveness of operating an electric ferry based on the data collected including the usage and deterioration of batteries. To ensure the effective use of public monies, upon the satisfactory completion of the two-year trial operation, we will require the ferry operators to continue deploying the electric ferries in the dedicated in-harbour ferry routes. The ferry operators will be responsible for all costs arising from the operation of the electric ferries including maintenance, electricity and battery replacement of the ferries and the charging facilities.

20. If a new ferry operator takes up an in-harbour ferry route upon the expiry of the relevant franchise/licence, and the new ferry operator is willing to take up the electric ferry, the outgoing ferry operator will be required to refurbish the electric ferry and appoint an independent certifying body[11] to inspect it before

---

[10] As far as we can understand, places with existing electric passenger ferry services include Denmark, France, Germany, Norway, Sweden and Kaohsiung, Taiwan.

[11] Independent certifying body includes ship surveyor or ship classification society recognised by the Marine Department.

transferring to the new ferry operator. The new operator will then be responsible for all costs arising from operating the electric ferry.

Financial Implications

21. We estimate the total expenditure of the Pilot Scheme would be about $350 million, as set out in **Annex F**. The actual expenditure will depend on the results of open tenders for the electric ferries.

Pilot Scheme for Electric Public Light Buses

Background

22. It has been the Government's policy and target to encourage wider adoption of electric vehicles as they have no tailpipe emissions and lower carbon emission. In 2017, public light buses (PLBs) accounted for about 0.6% of the whole vehicle fleet but contributed to about 8% of respirable suspended particulates and 4% of nitrogen oxides emitted. Therefore, it is necessary for the Government to put in place a trial scheme to test electric PLB (e-PLB) technology that suits local needs, in order to prepare for the future adoption of e-PLBs, thus further improve the air quality.

23. Hilly terrains, long daily mileage, high air-conditioning demand in different seasons, long charging time, as well as space and power requirements for installation of chargers all make application of e-PLBs in Hong Kong challenging. Since no electric light bus models available in the local market can fully meet the daily operational requirements of PLBs, the EPD engaged the Hong Kong Productivity Council (HKPC) in March 2019 for a study to develop the basic specifications and requirements for e-PLBs and the associated charging facilities that suit Hong Kong's operating environment. Upon completion of the study, the Government will invite manufacturers to develop e-PLBs and associated charging facilities according to the specifications and put them on trial.

Proposal

24. Initially, we propose inviting operators of green PLBs to participate in the Pilot Scheme as these PLBs run on relatively short routes with lower loadings. They therefore require lower driving range and charging requirement, and are suitable for trial. As green PLBs run on fixed routes, the daily operation of e-PLBs can be supported by installing charging facilities at the PLB termini, public transport interchanges or other designated places where they operate.

25. We recommend to subsidise about 40 e-PLBs running on various public light bus routes for a 12-month trial each, in which e-PLBs and charging facilities provided by different suppliers will be tested, so as to compare the performances of different products. The charging facilities will comprise both main chargers and back up chargers. Considering that PLB operators might have difficulties to park overnight and charge at the PLB termini or public transport interchanges, e-PLBs will be able to charge several times at around 10 minutes in each session during daytime in order to cater for their operation.

26. To cope with the operational pattern of PLBs, HKPC preliminarily suggested that the e-PLBs and associated charging facilities should support quick charging. Hence, we estimate that the costs of e-PLBs will be higher than conventional PLBs. In order to encourage PLB operators to participate in the Pilot Scheme, we initially propose subsidising the price differences between e-PLBs and their conventional counterparts, and inviting charging service providers to install and operate the charging facilities.

Implementation and Monitoring

27. In May 2019, the Government has established an interdepartmental e-PLB Task Force[12] to oversee the implementation and monitoring of the Pilot Scheme. Taking into account the time needed for developing and manufacturing e-PLBs, we anticipate that the first trial for the first e-PLB can be started in around

[12] The Task Force comprises representatives of the EPD, Electrical and Mechanical Services Department, Government Property Agency, Housing Department, Innovation and Technology Commission, Lands Department, Transport Department, Architectural Services Department, Highways Department, representatives of the Hong Kong Institution of Engineers, as well as academics and experts of electric vehicles technologies.

mid-2023. On the other hand, we notice that a local e-PLB manufacturer has been developing e-PLBs that support quick charging. The trial may start earlier if the manufacturer could launch products fulfilling the specifications suggested by the Government.

28. To ensure that public monies are spent appropriately, the Government will commission a consultant to oversee the implementation of the trial, collect operational data from PLB operators and charging facilities suppliers, evaluate the performance of e-PLBs and charging facilities, and submit evaluation reports. We aim to complete the trials and gather all results by 2025 so as to facilitate formulation of policy for the use of e-PLBs.

Financial Implications

29. The total expenditure of the Pilot Scheme will be determined upon Government's consideration of views of different sectors. We will follow the established mechanism to seek the approval of the Legislative Council for the funds required.

Review of the Pilot Green Transport Fund

Background

30. The Government has put in place a $300 million Pilot Green Transport Fund (PGTF) in March 2011 to encourage the transport sector to try out green innovative transport technologies. The current eligibility and subsidy levels and caps of the Fund are at **Annexes G and H** respectively. As at end-December 2019, the Fund has approved 183 trials[13] with a total subsidy of about $154 million. Among the approved trials, 84 are completed, 37 are on-going, and 62 are under preparation.

31. The Chief Executive set out in the 2018 Policy Address to review the scope of the Fund. After completing the review and consultation with the

[13] Including 110 on EVs, 65 on hybrid vehicles and eight applicable to buses and ferries. Applications approved and withdrawn subsequently are not included.

Steering Committee of the Fund[14], the Government considers it necessary to continue trials of green innovative transport technologies in order to encourage suppliers to introduce more products that suit local operational requirements. Meanwhile, the Government should also strive to promote among the transport sectors the wider use of technologies that have been proved to be relatively mature and suitable for local adoption.

Proposal

32. We propose renaming the PGTF to "the New Energy Transport Fund" ("NET Fund"), and extending the scope of the Fund as follows:

(i) Applications under the original scope of the PGTF will be categorised as "Applications for Trial" ("ATs") and detailed conditions of subsidy will also be refined;
(ii) Create a new section of "Applications for Use" ("AUs"). AUs will subsidise transport trades and charitable/non-profit making organisations to directly procure products of the technologies that have been proved under the Fund to be relatively mature and suitable for local use.

ATs

33. We suggest retaining the PGTF's conditions for approving subsidy, with the following recommendations for enhancement:

(a) Technologies to be subsidised: To extend the coverage of technologies or products to be subsidised. New energy commercial motorcycles, new energy non-road commercial vehicles and new energy commercial vessels[15], after-treatment emission reduction devices and fuel saving devices for conventional commercial vessels, and conversion of in-use conventional commercial vessels to new energy vessels will be included;

---

[14] The Steering Committee of the Fund is chaired by a non-government official with members comprising representatives elected by the transport sector, experts and academics in green innovative transport technologies, as well as representatives of relevant government departments.

[15] New energy commercial vehicles/vessels including hybrid vehicles/vessels, plug-in hybrid vehicles/vessels, electric vehicles/vessels, etc.

(b) Eligibility: To extend the eligibility of the applicants to cover commercial operators and charitable/non-profit making organisations using the technologies or products stated in (a), but suppliers and manufacturers of such technologies or products, or their related companies[16] will be excluded;

(c) Subsidy levels and caps:

- To maintain the total subsidy cap of $12 million per applicant. However, the subsidy cap per application will increase from the current $9 million to $10 million, in order to support installation of quick charging facilities which are more expensive to test;

- In general, newly built new energy commercial vessels are much more expensive than new energy commercial vehicles. Hence, the subsidy cap per new energy commercial vessel is set at $10 million;

- The subsidy level for charging facilities of new energy commercial vehicles/vessels (including chargers and their installation costs) will increase from the current 50% to 75%, to encourage applicants to set up charging facilities for their own use;

(d) Trial period: To be shortened from two years to one year; and

(e) Vetting Procedures: To expedite the review and approval process, the secretariat of the Fund will circulate preliminarily vetted information of the trial applications (including the types of technology or product to be put on trial, quantity, amount of subsidy, etc.) via email or fax to the Steering Committee for consideration. The Steering Committee will only convene meetings to discuss applications that members consider controversial. The average approval time is expected to be reduced from about three to six months currently, to about one to two months in future.

---

16 "Related Companies" refer to:
(i) a holding company or an individual that directly owns more than 50% shares of the applicant;
(ii) other companies of which more than 50% shares are directly owned by the holding company or individual in (i); and
(iii) subsidiary companies with more than 50% shares directly owned by the applicant.

AUs

34. To conduct trial is only the first step in the wider adoption of new energy transport technologies. With the rapid technological development, we expect that more and more technologies will become mature and suitable for local use in the short term, and these technologies will cover various modes of transport, including light goods vehicles, light buses, single-deck buses, etc. In this connection, the Government proposes to set up the new AU section under the Fund to subsidise direct procurement of products of the technologies proved to be relatively mature and suitable for local use. Similar to ATs, AUs must be approved by the Steering Committee.

35. We will refer to the trial results of the Fund, market supply of products, views of the transport trades, etc. to determine the types of technology or product to be included in the AUs. The types of technology or product included in the AUs will be removed from the scope of the ATs. The EPD will engage technical consultants to develop a set of rapid screening test methods. Product suppliers of relevant types of technology or product shall test their products at their own expense and submit the testing reports to the EPD. The EPD will review the reports and include the approved models in the list of AU funded product models after consulting the Steering Committee for applicants to select, thus simplifying the approval process.

36. The Government suggests that AU applicants must hold a valid business registration certificate and have engaged in transport related services for more than two years, or be charitable/non-profit organisations, in order to ensure that the applicants are real operators of the relevant transport trades, so as to avoid them reselling the subsidised products for profit. Other eligibility criteria are the same as those of the ATs. Besides, applicants are required to affix a fund logo sticker to the subsidised product for identification. Except for the tax concessions for electric vehicles, AU subsidised products are not eligible for other subsidies for the same purpose from the Government or other organisations, to ensure proper use of public monies.

37. In addition, to avoid a substantial increase in the number of vehicles due to the AUs, we propose to adopt the “one-for-one replacement” principle for the procurement of vehicles under AUs, i.e. requiring an applicant to scrap and de-register their old vehicle of the same type before getting reimbursement of the approved subsidy. The old vehicles involved in this "one-for-one replacement” arrangement are not eligible for the ex-gratia payment scheme for phasing out Euro IV DCVs.

38. The total AU subsidy for each applicant is capped at $12 million. The cap cannot be combined with the AT subsidy cap of $12 million, and vice versa. The Steering Committee will determine for each type of technology or product included in the AUs the quantity of products to be subsidised, and the subsidy cap and level. The subsidy for each application is capped at $10 million.

Implementation and Financial Implications

39. We propose injecting an additional $800 million into the Fund for the extended funding scope. Subject to funding approval, we plan to implement the new scope and conditions in the second quarter of 2020.

Green Tech Fund

Background and Objective

40. Green technologies play a critical role in environmental protection, helping to reduce pollution, conserve resources, and facilitate recycling and proper management of wastes, etc. Although the Environment and Conservation Fund (ECF) is providing funding support to non-profit-making organisations for various environment-related educational or research projects and activities, based on our experience in running the ECF over the years, applicants in general would wish to see more generous and focused funding support for the development and application of green technologies, which could meet the needs of R&D projects.

41. Meanwhile, climate change has brought about global environmental challenges which call for a more robust and timely response. Hong Kong is working hard to reduce carbon emissions, in line with the goal of the Paris Agreement to hold the increase in the global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels. The Government has invited the Council for Sustainable Development to conduct a public engagement exercise and initiate discussion on Hong Kong's long-term decarbonisation strategy. The Council is analysing the views collected, and will submit a report to the Government in due course. Based on our observations during the public interaction phase, we believe the public in general would agree that the Government should provide more resources to promote local R&D on decarbonisation technologies.

42. In view of the above, the Government proposes setting up a Green Tech Fund (GTF) to further promote green technologies and deep decarbonisation.

Proposal

43. We propose to establish the GTF, and will decide on the funding allocation after the Government has considered the views of different sectors.

44. To encourage participation, drive innovation and make R&D the funding focus, the GTF would have the following features:

(a) Broad yet focused project scope: both upstream (academic and technological development research) and downstream (practical application and pilot/demonstration plant operations) R&D projects, including incidental exchanges and visits, will be supported. We will prepare a list of priority R&D themes every year in consultation with relevant bureaux and departments, to facilitate applicants in planning for R&D projects with a high potential of utilisation, and to support Government's environmental protection efforts in decarbonisation, waste/wastewater management, and pollution control, etc.

(b) High funding ceiling and long duration for projects: funding of up to five years may be granted for each project; for justified large-scale projects, up to $30 million may be provided.

(c) Streamlined administration procedures: two rounds of applications will be accepted each year. Procedures in processing applications, monitoring project progress, disbursing funding, etc. will be kept as simple and flexible as practicable to reduce the burden of applicants. A panel comprising experts from the relevant fields will be formed to help vet applications.

(d) Wide range of eligible applicants: eligible applicants include designated local public research institutes[17] and R&D centres[18]. We will also actively explore the feasibility of allowing the local private sector to apply, in order to encourage practical application of project results. In this connection, we will consider appropriate arrangements (such as providing matching grants) to ensure that funding allocated to the private sector is value for money and well spent.

(e) Strong publicity: the GTF will be actively promoted to target applicants through briefing, presentation sessions and other suitable means.

(f) Platform to share project results: a platform will be set up to share the results of completed projects to encourage and facilitate application of R&D results and inspire further innovation.

---

[17] Referring to local universities, self-financing degree-awarding institutions registered under the Post Secondary Colleges Ordinance (Cap. 320), HKPC, the Vocational Training Council, the Clothing Industry Training Authority and the Hong Kong Institute of Biotechnology.

[18] Referring to the five R&D centres designated by the Innovation and Technology Fund, namely (a) Automotive Parts and Accessory Systems R&D Centre; (b) Hong Kong Applied Science and Technology Research Institute, designated as the R&D Centre for Information and Communications Technologies; (c) Hong Kong Research Institute of Textiles and Apparel; (d) Logistics and Supply Chain MultiTech R&D Centre; and (e) Nano and Advanced Materials Institute.

45. The EPD will adjust the scope of research projects to be covered under the ECF having regard to that of the GTF, in order to avoid duplication of resources. As for the Innovation and Technology Fund that has a wider funding scope, it could be another source of funding for environmental protection projects. However, with a clear positioning as well as dedicated funding and branding for R&D projects, the GTF should have its own attractions to eligible applicants. In addition, the Government will set priority R&D subjects every year, so that the R&D projects can match the needs and priority of the Government's environmental protection work. In any event, no applicant can receive double subsidy from different government funds. To this end, we will liaise and coordinate closely with the administrative offices of the related funds.

Financial Implications

46. The initial preparatory work for setting up the GTF will be undertaken by the existing staff establishment of the EPD, while additional resources will be required for the implementation stage. We will seek the Legislative Council's approval of the necessary funding in accordance with the established mechanism.

Implementation Plan

47. We are proceeding with the preparatory work, with an aim to accepting applications in early 2021.

Environment Bureau/Environmental Protection Department
January 2020

Annex A

Number of Euro IV DCVs – Subdivided by the First Registration Year and Vehicle Type (as at 30 September 2019)

Vehicle Type	Distribution of Euro IV DCVs by the first registration year (as at end of September 2019)							
	2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**Total**
Light Goods Vehicles	270	4,274	5,004	2,236	3,635	4,180	3,889	23,488
Medium Goods Vehicles	487	1,986	2,404	886	2,394	2,426	900	11,483
Heavy Goods Vehicles	10	77	117	133	378	529	254	1,498
Light Buses	7	129	185	55	107	128	55	666
Non-franchised Buses	46	320	538	369	514	492	256	2,535
Total	820	6,786	8,248	3,679	7,028	7,755	5,354	39,670

Annex B

The First Registration Dates Entitled for Applying Ex-gratia Payment Scheme for Phasing Out Euro IV DCVs

DCVs	Permitted Gross Vehicle Weight	First Registration Dates
Goods Vehicles	Not more than 1.7 tonnes	1 January 2006 to 30 December 2012
	More than 1.7 but not more than 3.5 tonnes	1 January 2007 to 30 December 2012
	More than 3.5 tonnes	1 October 2006 to 31 May 2012
Light Buses	Not more than 1.7 tonnes	1 January 2006 to 31 May 2012
	More than 1.7 but not more than 3.5 tonnes	1 January 2007 to 31 May 2012
	More than 3.5 tonnes	1 October 2006 to 31 May 2012
Non-franchised Buses	More than 3.5 tonnes	1 October 2006 to 31 May 2012

Annex C

Proposal of Ex-gratia Payment

Classes of DCVs			Body Types	Ex-gratia payment level# for scrapped vehicles of different ages* (HKD) [Figures in the blanket represent the ex-gratia payment level based on % of average taxable values of new vehicles]				
				15 years or above [31%]	14 years [32.5%]	13 years [34%]	12 years [35.5%]	11 years or below [37%]
Light Goods Vehicles	Permitted gross vehicle weight (pgvw)≦5.5 tonnes	Van type	---	89,815	94,161	98,507	102,853	107,199
		Non-van type	Lorry Crane	161,419	166,689	171,959	177,229	182,500
			(A)General Open Body and Enclosed Body	115,306	120,497	125,688	130,879	136,071
			(B)Body with Equipment	130,698	135,695	140,692	145,689	150,687
Medium Goods Vehicles	5.5 tonnes<pgvw≦10 tonnes		Tractor	133,225	139,573	145,921	152,269	158,617
			Lorry Crane	186,652	192,418	198,183	203,949	209,714
			(A)General Open Body and Enclosed Body	135,261	141,262	147,264	153,265	159,267
			(B)Body with Equipment	149,096	154,833	160,571	166,308	172,046
	10 tonnes<pgvw≦13 tonnes		Lorry Crane	209,501	216,372	223,243	230,114	236,985
			(A)General Open Body and Enclosed Body	168,545	176,157	183,770	191,381	198,993
			(B)Body with Equipment	182,351	189,698	197,045	204,391	211,738
	13 tonnes<pgvw≦16 tonnes		Tractor	219,360	228,761	238,162	247,563	256,965
			Lorry Crane	257,245	265,701	274,156	282,612	291,067
			(A)General Open Body and Enclosed Body	219,365	228,300	237,236	246,172	255,107
			(B)Body with Equipment	220,678	229,359	238,040	246,720	255,401

Classes of DCVs			Body Types	Ex-gratia payment level# for scrapped vehicles of different ages* (HKD) [Figures in the blanket represent the ex-gratia payment level based on % of average taxable values of new vehicles]				
				15 years or above [31%]	14 years [32.5%]	13 years [34%]	12 years [35.5%]	11 years or below [37%]
Medium Goods Vehicles	16 tonnes<pgvw≦24 tonnes		Tractor	317,865	333,246	348,626	364,007	379,387
			Tractor Crane	389,236	408,070	426,904	445,738	464,572
			Lorry Crane	312,896	324,044	335,192	346,340	357,488
			(A)General Open Body and Enclosed Body	270,568	282,993	295,418	307,843	320,269
			(B)Body with Equipment	292,562	304,721	316,880	329,039	341,198
Heavy Goods Vehicles	24 tonnes<pgvw≦30 tonnes		Lorry Crane	394,864	407,075	419,287	431,498	443,709
			(A)General Open Body and Enclosed Body	299,973	312,909	325,845	338,780	351,715
			(B)Body with Equipment	313,181	325,646	338,111	350,576	363,041
	pgvw>30 tonnes		Lorry Crane	522,502	540,889	559,276	577,663	596,050
			(A)General Open Body and Enclosed Body	408,134	427,054	445,974	464,894	483,814
			(B)Body with Equipment	435,176	453,544	471,912	490,280	508,648
Non-franchised Buses	Single-deck	17-30 seats	---	250,716	262,848	274,979	287,111	299,242
	Single-deck	≧31seats	---	423,170	443,646	464,122	484,598	505,074
	Double-deck		---	961,000	1,007,500	1,054,000	1,100,500	1,147,000
Light Buses			---	214,120	224,481	234,841	245,202	255,563

* Counting from the first registration date of the vehicle to the date of cancellation of its vehicle registration.
# The ex-gratia payment includes the provision of 31% to 37% of the average taxable values of new vehicles and an extra 15% of average vehicle body prices to goods vehicles assembled with additions.

Annex D

Phasing out Deadlines of Euro IV DCVs

First Registration Year	2006	2007	2008	2009	2010	2011	2012
Application Deadlines for Ex-gratia Payment	31 December 2021	31 December 2022	31 December 2023	31 December 2024	31 December 2025	31 December 2026	31 December 2027

Annex E

Victoria Harbour Passenger Ferry Services

Ferry Route	Ferry Operator	Expiry of the Licence or Franchise
North Point – Hung Hom	New World First Ferry Services Ltd.	2021
North Point – Kowloon City		2021
North Point – Kwun Tong (via Kai Tak)	Fortune Ferry Co. Ltd.	2024
Sai Wan Ho – Kwun Tong	Coral Sea Ferry Service Co. Ltd.	2024
Sai Wan Ho – Sam Ka Tsuen		2024
Central – Tsim Sha Tsui	The "Star" Ferry Co. Ltd.	2033
Wan Chai – Tsim Sha Tsui		2033

Annex F

Initial Budget for the Pilot Scheme for Electric Ferries

Items	Estimated cost ($)
Capital cost for the four new electric ferries	About $240 million (Note 1)
Capital and installation costs for the charging facilities	About $60 million (Note 2)
Operating and maintenance costs of the electric ferries during the trial operation	About $50 million (Note 3)
Total	**About HK$ 350 million**

Note:

1. Capital cost of a new electric ferry with 250 to 450 seat capacity ranges from $40 to $50 million. The estimated cost includes a reserve of 30%.
2. The estimated cost includes a reserve for pier enhancement works required for the installation of charging facilities at existing piers but the actual cost is subject to the detailed design of the charging facilities.
3. The estimated cost includes a reserve for the repair and replacement of batteries and key components of the electric ferries during trial operation.

Annex G

Current Eligibility Criteria for Application under the Pilot Green Transport Fund

Eligibility

An applicant must be an existing transport operator based in Hong Kong (including cross-boundary transport) who:

(i) operates ferries, taxis, public light buses, vehicles of charitable / non-profit making organisations providing services, franchised buses and non-franchised public buses, or goods vehicles (including special purpose vehicles);
(ii) has been in the relevant transport service for more than one year;
(iii) will likely remain operating in the relevant transport service after the trials for the trials to produce result;
(iv) has the potential to put the new technology under the trial into wider use in its own operation upon successful trial;
(v) is willing to share the findings of the trial with other operators; and
(vi) is not receiving or has not received funding from other Government sources, public bodies or charitable organisations for the same purpose of the application, except the tax incentive schemes to encourage the use of electric vehicles and environment-friendly commercial vehicles.

Technologies subsidised

The Pilot Green Transport Fund supports a green and innovative technology which:

(i) works on sound scientific principles;
(ii) outperforms its conventional counterpart by emitting significantly less air pollutants or greenhouse gases, or demonstrating much better fuel economy. However, regular upgrading of emission performance of conventional fossil fuel vehicles in accordance with the prevailing international standards (e.g. European standards) should not generally be qualified for application;
(iii) is not commonly or widely used for day-to-day operation in the relevant transport trade locally;
(iv) the capital and operation costs are affordable to the transport trades;
(v) is likely able to cope with the local operating conditions such as hilly terrain, hot and humid climate, intensity of operation, etc.;

(vi) does not violate any statutory requirements such as roadworthiness and fire safety, and can satisfy the approval requirements of the relevant regulatory authorities; and
(vii) is not for research purpose.

Products to be tested may be:

(i) alternative-fueled vehicles such as hybrid vehicles, plug-in hybrid vehicles, and electric vehicles;
(ii) after-treatment emission reduction devices applicable to conventional vehicles;
(iii) fuel saving devices applicable to conventional vehicles; or
(iv) conversion of in-use conventional vehicles to alternative-fueled vehicles.

Annex H

Current Subsidy Levels and Caps of the Pilot Green Transport Fund

Currently, the Fund only subsidises the capital cost of the hardware (including installation cost if applicable) of green innovative technology products proposed for trial, but not the associated recurrent expenditure such as costs of operation, maintenance and repair.

2. Each applicant is subject to a total subsidy cap of $12 million, and is allowed to submit more than one application to test different technologies or the same technology with products from different suppliers. The subsidy levels and caps of different products are as below –

Green innovative technology product	Subsidy level	Subsidy cap
(a) *Alternative-fueled vehicles*		
(i) Subsidy per vehicle	(i) Price premium between the alternative-fueled vehicle and conventional vehicle, or 50% of the cost of the alternative-fueled vehicle, whichever is higher	$3 million per vehicle; and $9 million per application
(ii) Related support systems	(ii) 50% of setting up cost	
(b) *Conventional vehicles*		
(i) After-treatment emission reduction devices; (ii) Fuel saving devices; or (iii) Conversion of in-use conventional vehicles to alternative-fueled vehicles	75% of the cost of device (including installation costs) or vehicle conversion	$1.5 million per device or vehicle conversion; and $9 million per application
(c) *Ferries*		
(i) Engine retrofit or testing of alternative-fueled engine	75% of the device or engine (including installation cost)	$3 million per device or engine; and $9 million per application

3. As technology continues to develop, other green and innovative technology products apart from the above categories may also be available for the transport trades to test. Such applications will be considered on a case-by-case basis. Subsidy levels and caps will be the same as above.