

ITEM FOR FINANCE COMMITTEE

**HEAD 44 – ENVIRONMENTAL PROTECTION DEPARTMENT
Subhead 700 General non-recurrent
New Item " Pilot Green Transport Fund "**

Members are invited to approve the creation of a new commitment of \$300 million for setting up a Pilot Green Transport Fund to encourage the transport sector to test out green and low-carbon transport technology.

PROBLEM

We need to encourage the transport sector to test out green and low-carbon transport technology so as to improve roadside air quality and avert global climate change.

PROPOSAL

2. The Director of Environmental Protection, with the support of the Secretary for the Environment, proposes to create a new commitment of \$300 million to set up a Pilot Green Transport Fund (the Fund) to encourage the transport sector to test out green and low-carbon transport technology.

3. Subject to the funding approval by the Finance Committee, we plan to establish the Fund in March 2011 for application by the transport trades.

/JUSTIFICATION

JUSTIFICATION

Improvement to Roadside Air Quality

4. The transport sector (including road and marine transport) is the second largest air pollution source in Hong Kong, accounting for about 37% of the local emissions of respirable suspended particulates and nitrogen oxides each and 6% of sulphur dioxide. The exhaust emissions of motor vehicles are also the main cause of roadside air pollution. In respect of greenhouse gases, the share of the transport sector is about 18% of local emissions. Promoting green transport will therefore not only improve air quality, but also reduce carbon emissions, thereby helping to avert global climate change. Furthermore, it will open up business opportunity for green transport technologies.

5. To this end, the Financial Secretary proposed in his 2010-11 Budget Speech setting up a \$300 million Fund to encourage the transport sector to test out green and low-carbon transport technologies. This will help improve roadside air quality, promote a low-carbon economy and help nurture the development of green technologies in Hong Kong.

Coverage of the Fund

6. The Fund will be deployed to support the testing of green and innovative technologies applicable to the public transport sector including ferries, taxis, public light buses, vehicles of charitable/non-profit making organisations providing services to their clients, franchised buses and non-franchised public buses, as well as goods vehicles (including special purpose vehicles).

7. In general, the green and innovative technology to be supported under the Fund can be a new vehicle type, equipment or machinery related to transport activities, or a new retrofit system resulting in substantially better emission performance compared with the existing model. Broadly speaking, it may involve one or more of the following products –

- (a) alternative-fueled vehicles such as hybrid vehicles, plug-in hybrid vehicles, electric vehicles, etc.;
- (b) after-treatment emission reduction devices such as diesel particulate filters, selective catalytic reduction devices, exhaust gas recirculation systems, wet scrubbers, etc.;

/(c)

- (c) fuel saving devices; or
- (d) conversion of in-use conventional vehicles to alternative-fueled vehicles.

Guiding Principles on the Operation of the Fund

8. To meet the objectives of encouraging the introduction of green and innovative transport technologies that can help improve our air quality and/or reduce greenhouse gas emissions, the Fund should only accept a technology that stands a good chance of coping with the local operation demands and being adopted by the relevant transport trade should the trial be successful. As such, we propose the following guiding principles for determining the eligibility of an application under the Fund –

- (a) the Fund should subsidize the capital cost of the hardware (including installation cost if applicable) of the innovative green product proposed for trial on a cost-sharing basis as detailed in paragraph 15, but should not subsidize the associated recurrent expenditure, such as the operation, repair and maintenance costs;
- (b) the innovative green product should work on sound scientific principles. It should outperform significantly the emission or fuel economy performance of its conventional counterpart in respect of air pollutant or greenhouse gas emissions or fuel economy, or bring along significant emission or fuel economy benefits in the case of retrofit or add-on devices. The extent of performance improvement should at least be comparable with that achieved by advanced technologies for similar applications;
- (c) the technology of the innovative green product should not already be commonly or widely in use for day-to-day application locally in the targeted transport trades. It should also likely be affordable to the transport trades in respect of capital and operation costs;
- (d) the innovative green product should likely be able to cope with the operating conditions in Hong Kong such as the hilly terrain, hot and humid climate, intensity of operation, etc.;

/(e)

- (e) new fossil fuel engine technology that involves a substantial degree of innovativeness in engine design or construction to achieve significant improvement in emission control performance or fuel economy should be eligible for application to the Fund. However, regular upgrading of emission performance of conventional fossil fuel vehicles in accordance with the prevailing international standards (for example, European standards) should not generally be eligible;
- (f) the use of the innovative green product must not violate any statutory requirements such as roadworthiness, fire safety, etc. and can satisfy the approval requirements of the relevant regulatory authorities;
- (g) the innovative green product under application should not be receiving or have received funding from other Government sources, public bodies or charitable organisations for the same purpose. For avoidance of doubt, applicants should continue to be eligible for the prevailing incentive scheme on replacement of Euro II commercial vehicles and the tax incentive schemes to encourage the use of environment-friendly commercial vehicles so long as the relevant criteria for the subsidy under the respective schemes are fulfilled; and
- (h) the Fund is not intended for supporting research of new green technologies.

Modus Operandi

(a) Steering Committee

9. The Fund will be administered by the Environmental Protection Department (EPD) which will accept applications year round. Given the diversity and continuous evolution of technologies, a Steering Committee (the Committee) will be set up to assess and advise on individual applications. The Committee will be chaired by a non-official member and include, inter alia, members appointed in their personal capacity but drawn from academic institutions and the transport trades, as well as representatives of concerned Government departments.

10. At this stage we do not intend to set any restriction on the number of applications that may be submitted by any individual transport operator. However, the total amount of fund granted will be subject to an upper limit as detailed in paragraph 15 and Enclosure 1. The Committee will also set a limit on the number of applications from a transport trade on any single type of innovative transport

Encl. 1

/technology

technology, as well as on the number of units of such green product per application. This is to enable a thorough trial of a technology by a transport trade for which an application has been made, and encourage effective sharing of the trial experience within the relevant transport trade.

11. In case several applications are received from the same transport trade for the same type of technology and the relevant limits are exceeded, the Committee will decide on the priorities of the applications based on the following underlying considerations –

- (a) whether the application will cover the operation modes of a specific trade, which can be quite diverse even within the trade; and
- (b) whether the completion of the trial under application, if successful, can help encourage the transport trade to use the innovative green product.

12. As technology continues to develop, innovative green products other than the categories in paragraph 7 above may also be available for trial by the transport trades. The Committee will consider such applications on a case-by-case basis.

(b) Potential Applicants

13. The applicant should be an existing operator in the transport sector with operation based in Hong Kong (including cross-boundary transport) who –

- (a) has been in the relevant transport service for more than one year;
- (b) will likely remain in the service after the trial to bear fruit;
- (c) has the potential to put the new technology under test into wider use in his/her own operation upon successful trial; and
- (d) is willing to share the findings of the test with other operators.

14. An application will be considered with reference to how likely the applicant can conduct the proposed trial in a proper manner but not the size of his/her company or organisation. As such, the applicant will be required to provide the information/undertaking at Enclosure 2 in the application for the Committee's consideration. The operator is encouraged to pair up with potential suppliers of green transport technologies, research institutes or other relevant stakeholders in putting up applications.

Encl. 2

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(c) Level of Subsidy

15. To cater for the variety of technologies covered by the Fund, the following subsidy levels are proposed, taking into account views expressed by stakeholders during the consultation –

Green technology product	Level of subsidy	Cap per application	Cap per operator
<i>(a) Alternative-fueled vehicles</i>			
(i) subsidy per vehicle	(i) Price premium between the alternative-fueled vehicle and the conventional vehicle or 50% of the cost of the alternative-fueled vehicle, whichever is higher Cap: \$3 million for each vehicle	\$9 million	\$12 million
(ii) related support systems	(ii) 50% of setting up cost		
<i>(b) Conventional vehicles</i>			
(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 the device including installation or the vehicle conversion cost Cap: \$1.5 million for each device	\$9 million	\$12 million

Green technology product	Level of subsidy	Cap per application	Cap per operator
<p><i>(c) Ferries</i></p> <p>Engine retrofit or testing of alternative-fueled engine</p>	<p>75% of the device or engine including installation</p> <p>Cap: \$3 million for each device or engine</p>	<p>\$9 million</p>	<p>\$12 million</p>

More details concerning the level of subsidy are provided at Enclosure 1.

(d) Procurement of Innovative Green Products

16. To ensure value for money, the procurement of the innovative green product(s) to be tested, the supporting facilities and associated installation services must comply with procurement requirements stipulated by EPD. The Committee may impose suitable conditions in addition to the fulfillment of commitments and undertakings as stipulated in Enclosure 2 when recommending the approval of an application. Failure to fulfill these conditions may lead to withdrawal of the subsidy and recovery of the fund to the Government.

(e) Assessment by Independent Third-Party

17. To ensure that trials conducted under the Fund comply with the application and approval conditions, and to verify the environmental performance of the new technology under test, we will engage an independent third-party assessor to evaluate the environmental performance of the innovative green product(s) under trial, including conducting visits to approved applicants, collating data and reporting to us. The cost of this independent assessment will be met from the Fund.

/FINANCIAL

FINANCIAL IMPLICATIONS

18. We propose to create a new commitment of \$300 million for the proposed Fund. We do not propose to restrict the number of applications to be processed each year. Actual cash flow will depend on the number of applications received and approved. For planning and budgetary purpose, the estimated cash flow is as follows –

2011-12	2012-13	2013-14	2014-15	2015-16	Total
(\$ million)	(\$ million)				
60	60	60	60	60	300

19. EPD plans to create additional time-limited posts to administer the proposed Fund, serve the Committee, liaise with the transport industry to encourage their participation, process the applications, etc. The additional manpower resources involved will be included in the 2011-12 Draft Estimates.

PUBLIC CONSULTATION

20. We sought the views of the Legislative Council Panel on Environmental Affairs (the Panel) on 26 April 2010 on the operation of the Fund for drawing up its implementation details. Taking account of the views of the Panel and other stakeholders, we subsequently worked out a proposed implementation framework of the Fund and consulted the relevant stakeholders comprising the relevant transport trades, vehicle suppliers, green technology providers, academics, professional bodies, chambers of commerce, as well as the Advisory Council on the Environment. Overall, they are supportive of the proposed Fund as a positive step to encourage the wider use of green transport technologies in Hong Kong. Some have suggested a higher subsidy level and greater flexibility for processing the applications. In the light of the views so collected from the consultation, we have drawn up the implementation framework and consulted the Panel at its meeting on 20 December 2010. The Panel agreed for us to proceed to seek funding approval from this Committee.

BACKGROUND

21. To reduce air pollutants from the transport sector, we have been pursuing a combination of measures as follows –

/Motor

Motor vehicles

- (a) introduce clean alternatives to diesel vehicles where practicable;
- (b) adopt the most stringent vehicle emission and fuel standards where practicable;
- (c) provide one-off grant to encourage vehicle owners to replace their old vehicles with new ones complying with the prevailing emission requirements;
- (d) provide tax incentives to encourage the use of environment-friendly vehicles;
- (e) mandate pre-Euro diesel vehicles to be equipped with emission reduction device for licence renewal;
- (f) adopt practical technology to reduce emissions from the existing vehicle fleet;
- (g) ensure proper maintenance of in-use vehicles through a combination of voluntary and regulatory measures; and
- (h) introduce the Motor Vehicle Idling (Fixed Penalty) Bill through the Legislative Council for statutory prohibition against idling vehicles with running engines;

Marine Vessels

- (a) complete a trial of local ferries using ultra low sulphur diesel. The findings of the trial are being reviewed with reference to the impacts on operations and cost of the trade, with a view to mapping out a way forward to encourage local vessels to use cleaner fuels or adopt other pollution control measures;
- (b) implement the requirements of MARPOL Annex VI to reduce emission of air pollution from ocean-going vessels, local vessels and other vessels within Hong Kong waters. Relevant requirements include imposing a cap on the fuel sulphur content, controlling on onboard incineration and ozone depletion substances, etc.; and
- (c) monitor worldwide development of maritime emission control policies, technologies and measures with a view to introducing them to Hong Kong, if applicable.

Proposed Level of Subsidy for Various Types of Green Technology Products

(a) *Alternative-fueled vehicles*

- (i) The subsidy level will be set as the price premium between the alternative-fueled vehicle and the conventional vehicle or 50% of the cost of the alternative-fueled vehicle, whichever is higher. Though it is difficult to quote reliable estimates on the innovative green products of all types of transport uses, to better ensure effective allocation of resources and avoid abuses, a cap of \$3 million is proposed for each alternative-fueled vehicle with an upper limit of \$9 million for each application. The proposed funding cap of \$3 million per alternative-fueled vehicle will be translated into a cost of \$6 million per product, which would allow sufficient scope to cater for innovative products which have yet to be widely used. Where the applicant proposes to conduct test on more than one vehicle of the same technology, he may try out different suppliers under the same application to compare performance. Should there be more than one vehicle under application, be they from one or more suppliers, the overall cap for the vehicles under application will be increased proportionally (i.e. \$6 million for two vehicles and \$9 million for three vehicles), subject to the upper limit of \$9 million per application and an upper limit of \$12 million on the total amount of fund granted to any individual transport operator.
- (ii) Test of electric vehicles or other alternative-fueled vehicles may require the setting up of dedicated charging facilities or refilling facilities or other related support systems. The Fund will cover 50% of the setting up cost that is necessary for and directly related to the trial subject to the proposed upper limit for each application and for each transport operator in (i) above.

(b) *Conventional vehicles – After-treatment emission reduction devices, fuel saving devices, or conversion of in-use conventional vehicles to alternative-fueled vehicles*

The subsidy will be set at meeting 75% of the cost of the device(s) including installation or the vehicle conversion cost. To guard against abuse, a cap of \$1.5 million will be imposed for each device or vehicle conversion under test with an upper limit of \$9 million for each application. Where the applicant proposes to test more than one device of the same technology, he

may try out different device suppliers under the same application to compare performance. Should there be more than one device under application, be they from one or more suppliers, the overall cap for the devices under application will be increased proportionally and as in the case of (a)(i), subject to the above proposed upper limit of \$9 million for each application and an upper limit of \$12 million on the total amount of fund granted to any individual transport operator.

(c) *Ferries*

In the case of ferries, the Fund will consider applications for testing the retrofitting of their engines with devices to reduce air pollutant and/or carbon emissions. Subject to funding availability and priority as recommended by the Committee, applications for testing alternative-fueled ferry engines may also be considered. The subsidy will be set at a ceiling of 75% of the cost of the device(s) or engine(s) including installation. As retrofitting devices and engines for ferries are much more expensive than that for vehicles, a cap of \$3 million will be imposed for each device or engine under test with upper limits of \$9 million for each application and \$12 million for each applicant.

Enclosure 2 to FCR(2010-11)58

Information/undertaking to be provided by the applicant for the Steering Committee's consideration includes –

- (a) an account of his/her experience in the relevant transport service;
- (b) an outline of the technology to be tried together with the necessary supporting technical information and, if available, trial data done;
- (c) the expected environmental benefits in respect of carbon and air pollutant emission reduction with supporting technical data and the evaluation method for the environmental benefits during the trial;
- (d) an implementation plan for the trial including a trial schedule, in which the applicant should commit to starting the trial within a certain period from the approval of the application. The period will normally not be more than 12 months;
- (e) an undertaking to accept the checking by an independent third party to be appointed by EPD to verify the conduct and findings of the test for report to EPD and other requirements such as procurement procedures, etc.;
- (f) a commitment to making public the trial findings and sharing them with interested parties as directed by EPD;
- (g) an undertaking to ensure that the innovative green product so procured will be put to good use throughout its usable life as far as it is economically feasible to do so. Any decision to discontinue the usage of the green product will have to be reported to the Committee and the report will be made open to the public;
- (h) an explanation on the reasonableness of the price of the product should it be a proprietary product from a single supplier; and
- (i) information and declaration on other funds/incentives received and applied.
