

**For discussion
on 19 January 2018**

Legislative Council Panel on Transport New Generation of Parking Meter System

PURPOSE

The Government plans to install a new generation of parking meters starting from 2019-20. This paper aims to seek Members' views on the proposals in relation to the following:

- (a) functions of, and procurement arrangements for, the new generation of parking meters and ancillary facilities;
- (b) adjustment to the maximum fee of parking meters; and
- (c) relevant legislative amendments.

BACKGROUND

2. On-street parking spaces are provided to cater for the short-term parking needs of motorists. These parking spaces are normally metered to discourage prolonged parking. Pursuant to section 8 of the Road Traffic (Parking) Regulations (Cap. 374C), any person who parks a vehicle in a parking place for a continuous period of more than 24 hours commits an offence and is liable to a fine of \$2,000. This provision is intended to make on-street parking spaces available to more motorists. As of September 2017, some 9 800 parking meters accepting only Octopus card for payment of parking fees are installed across the territory to control 18 000 on-street parking spaces. These parking meters, which were put in use since 2003-04, will soon approach the end of their serviceable life and need to be replaced.

3. The Chief Executive's 2017 Policy Address set out that a new generation of on-street parking meters will be installed starting from 2019-20. To assess the technical performance and community acceptance of the new generation of parking meters, the Transport Department ("TD"), in collaboration with the Electrical and Mechanical Services Department ("EMSD"), launched a

new parking meter trial scheme (“Trial Scheme”) in 2015¹. Under the Trial Scheme, apart from Octopus card payment, contactless credit cards are accepted as a mode of off-line transaction for payment of parking fees. Through the use of wireless networks, the new parking meters can upload parking meter transaction data in real time. According to the outcome of the Trial Scheme, the major functions of the new parking meters performed stably and the new parking meters operated smoothly. As reflected in the user questionnaire surveys conducted in Yuen Long and Mong Kok in the first phase of field trial with public participation, close to 60% of the respondents did not see any areas in need of improvement or had no comments on the areas in need of improvement for the new parking meter system. Some 25% of the respondents suggested that instructions on how to use the parking meters should be improved. The other comments from respondents include: information on vacancy of parking spaces should be provided to motorists via mobile applications; the arrangement whereby one parking meter controls two parking spaces² should be maintained; the time required to process credit card transactions through the card reader should be shortened; a wider range of payment methods should be offered; and the aesthetic design of the meters should be enhanced, etc.

PROPOSAL

New Functions of New Generation Parking Meters

4. The TD, in conjunction with the EMSD, conducted thorough market research, including collecting information on the latest technological application and technical specifications from local and overseas suppliers, and paying visits to overseas cities. Having taken into account the information gathered, the TD

¹ The Trial Scheme consists of two phases. The first phase, lasting for nine months, involving field trials in Yuen Long and Mong Kok with public participation, was completed in July 2017. The second phase, involving field trials in Sai Kung and Wan Chai with public participation, commenced in August 2017 and is expected to be completed in the first quarter of 2018. Moreover, for the field trials in the second phase, the management contractor engaged by the TD will conduct field trials on the buying of parking time for the parking meter through mobile applications. However, as payment by mobile applications requires legislative amendments, this part of tests will not be open for public participation. The whole Trial Scheme is scheduled for completion by May 2018.

² The field trial included the use of the parking meters which control four parking spaces at the same time.

proposed that the new generation of parking meters should contain the following functions and features :

- (i) support payment of parking fees through multiple means;
- (ii) support remote payment of parking fees through mobile applications; and
- (iii) be equipped with vehicle sensors to detect whether a parking space is occupied, and provide real-time information to assist motorists in finding vacant parking spaces.

(i) Payment of parking fees through multiple means

5. The new parking meter will be equipped with a card reader to provide several choices of physical payment methods, such as contactless stored value cards, contactless credit cards and mobile electronic wallet. The physical payment methods available for the new parking meter will depend on the results of the open tender for engaging the “clearing service contractor” (see paragraph 13 of this paper for details). This is to ensure that the physical payment methods for the new parking meters could reflect the status of the electronic payment market and the latest technical developments.

(ii) Remote payment through mobile application

6. In view of the rapid development of mobile applications and virtual payments, the new parking meter system will also include a “parking meter mobile application” to allow remote payment by motorists through the use of mobile phones.

7. To discourage prolonged parking at on-street parking spaces, parking meters have provided for a “longest parking period” for each transaction. The longest parking period allowed for each transaction is currently fixed at 30 minutes, 1 hour or 2 hours having regard to the traffic situation and parking demand in the area where the parking spaces are located. The parking fee is calculated in units of 15 or 30 minutes. Under the new parking meter system, if a motorist would like to use the “parking meter mobile application” to pay the parking fee through his or her mobile phone or buy additional parking time later, a motorist may pair his or her mobile phone with the parking meter via the “parking meter mobile application”, so as to link his or her account up with the parking meter and then make fee payment. After the pairing and linking is validated, a motorist may pay for additional parking time remotely through mobile phone. A motorist can purchase up to a total of two sessions of

“longest parking period”. For example, if a motorist parks his or her vehicle at a parking space with the “longest parking period” being 1 hour, and that he or she buys half an hour parking time after parking the vehicle through physical payment at the parking meter or through the “parking meter mobile application”, the motorist may buy **additional** parking time remotely through “parking meter mobile application” from 15 minutes to 90 minutes (in units of 15 minutes) as he or she deems necessary, i.e. up to a cumulative maximum of 2 hours of parking time.

8. We consider the above arrangement offers convenience to motorists on the one hand, and on the other hand, aligns with the policy intent of providing on-street parking spaces to cater for short-term parking needs and prevents motorists or other persons from prolonged occupation of parking spaces through repeated remote payment of parking fees.

9. As the new parking meter is connected to the backend central computer in real time through wireless networks, the configurations for the parking meters such as the “longest parking period”, operating period (normally from 8 am or 10 am to 8 pm, 10 pm or midnight at present) and unit of payment (15 or 30 minutes at present) can be adjusted through the central computer. This will help the TD monitor the utilisation rate of parking meters at different locations and adjust the configurations of parking meters having regard to the data collected.

(iii) Vehicle Sensors

10. New parking meters will each be fitted with a vehicle sensor to detect whether the relevant on-street parking space is occupied or not. The real-time data will be disseminated to motorists for reference through the TD’s mobile application and website. This will assist the motorists in finding parking spaces and also reduce the traffic generated by vehicles circulating in search of vacant parking spaces. The TD will make available the data through the Government’s public information website “DATA.GOV.HK” for reference and use by members of the public and the information technology sector, etc. The information to be collected by vehicle sensors will be limited to whether the parking spaces are occupied. Vehicle information will not be collected.

11. In addition, the backend computer will consolidate the utilisation situation and payment information collected by vehicle sensors and compile information on the locations of parking meters with parking spaces being occupied but without payment of parking fees. The information will facilitate the Hong Kong Police Force to deploy as far as practicable frontline law enforcement officers to the concerned parking spaces to take enforcement actions. This will enhance the efficiency of enforcement actions.

Proposed Arrangements for Procurement and Management

12. The new generation of parking meters will no longer be standalone on-street fee collecting devices. Instead, they will form a computer system where all individual units, including on-street parking meters, card readers fitted into the meters, the “parking meter mobile application”, vehicle sensors and the backend central system, are integrated through wireless networks. Drawing reference to prevailing arrangements in overseas cities, the TD proposes a one-stop approach for procurement to ensure sustainable and seamless integration, with proper management and maintenance services, upon the installation of the new parking meter system. The items to be procured include:

- (i) hardware of the parking meter system;
- (ii) software licences for the parking meter system;
- (iii) management services for the parking meter system, including collecting the settled amounts of parking fees from the “clearing service contractor” (see paragraph 13 of this paper) on behalf of the Government, continuously updating the software to meet the latest security requirements of different modes of payment, and developing and continuously updating the “parking meter mobile application” having regard to the latest market situation; and
- (iv) maintenance service for the parking meter system.

“Supply, management, operation and maintenance contractors” will be selected through open tender in accordance with the established procedures.

13. In addition, the new generation of parking meter system will provide motorists with multiple payment means. In accordance with the established procedures, the Government will select, by open tender, “clearing service contractors”. The successful tenderers will be responsible for providing clearing service in respect of parking fees paid. In view of the availability of various means and systems of payment on the market, the bidders should set out in their tenders the means or systems through which payments will be accepted. Similar to the contractors for the existing parking meter system and the “stop-and-go” system for government tunnels, the “clearing service contractors” will earn their revenues by charging transaction fees at a certain percentage of the parking fees received, as proposed in their tenders.

Raising Maximum Fee for Metered Parking

14. The maximum fee for use of on-street metered parking spaces has been set at \$2 per 15 minutes since 1994. At the Government's invitation, the Transport Advisory Committee ("TAC") has examined and identified various factors contributing to road traffic congestion at the territorial level. The TAC submitted the "Report on Study of Road Traffic Congestion in Hong Kong" to the Government in December 2014 in which 12 short, medium and long-term additional mitigation measures were suggested for consideration by the Government. One of the measures set out in the report is to increase metered parking fee, which has remained the same during the past 20 odd years. Increasing metered parking fee can discourage motorists from circulating/double parking on roads waiting for metered parking spaces. This will have the added benefit of discouraging prolonged parking.

15. Since the the maximum fee for metered parking has not been adjusted for many years, we propose that the maximum fee should initially be raised to \$4 or \$5 per 15 minutes. Depending on the traffic conditions and parking demands in individual areas, the TD will determine a level of parking fee at not more than \$4 or \$5 per 15 minutes for on-street parking spaces, i.e. a maximum fee of \$16 or \$20 per hour.

16. In the next stage, the TD will look into the feasibility of setting up an objective parking fee adjustment mechanism. Under this mechanism, the level of parking fee for a particular area will be set having regard to the utilisation rate of parking spaces recorded by the new parking meters over a period of time, so as to encourage the turnover or utilisation of on-street parking spaces. This aims to achieve the policy intent of providing on-street parking spaces to cater for the short-term parking needs of motorists. The Government will also examine the need to further raise the maximum fee so as to facilitate the operation of such a parking fee adjustment mechanism.

LEGISLATIVE AMENDMENTS

17. To provide a legal basis for the proposed operational arrangement and new functions of the new generation of parking meter system, as well as the proposed adjustment to the maximum fee for metered parking spaces, the Government will make amendments to the Road Traffic Ordinance (Cap. 374), the Road Traffic (Parking) Regulations (Cap. 374C) and the Road Traffic (Parking) (Approved Cards) Notice (Cap. 374V). As parking meters will not accept cash payment, we also suggest that relevant outdated provisions be repealed. In addition, we will amend the relevant traffic signs and make

consequential amendments to other relevant ordinances (e.g. the reference to “approved card” be deleted).

18. Major proposed legislative amendments are as follows:

- (i) To empower the Commissioner for Transport (“the Commissioner”) to approve any payment means, electronic platform or other system for use in payment (including remote mobile payment) of a parking fee in conjunction with any parking meter or “pay and display” machine³. The Commissioner will announce the outcome of the open tenders of “clearing service contractors” through various publicity channels;
- (ii) To replace the term “approved card” by “approved payment means” and provide a legal basis for different payment means;
- (iii) To include vehicle sensor as an integral part of the new parking meter so that interfering with a vehicle sensor is regarded as committing an existing offence in relation to interfering with a parking meter, and is liable to a fine of \$5,000 and to imprisonment for 3 months;
- (iv) To state any person who without law authority or reasonable excuse interfere with any parking platform and facilities is regarded as committing an offence in relation to interfering with the parking cards and display tickets of “pay and display” machine and is liable to a fine of \$500;
- (v) To adjust the maximum fee for parking at a metered parking space to \$4 or \$5 per 15 minutes; and
- (vi) To repeal the interpretation of “parking card”, “card operated parking meter” and “coin operated parking meter”, as well as outdated provisions such as using cash (including bank notes and coins) for payment of parking fee and replace references to “card operated

³ “Pay and display” machine is a type of electronic parking system which was installed and used by motorists in Hong Kong. Motorists could make use of specific cards to buy parking time. Although the TD currently does not have any plan to accept payment of parking fees through “pay and display” machines, we cannot preclude the possibility of introducing relevant payment arrangement in future due to technical advancement. Hence, the relevant provisions are retained.

parking meter” and “coin operated parking meter” with “parking meter”.

The Government plans to introduce the proposed legislative amendments into the Legislative Council in the 2018-19 legislative session, with a view to commencing the installation of the new parking meters to replace the existing ones progressively from 2019-20.

FINANCIAL IMPLICATIONS

Non-recurrent Expenditure

19. The TD estimates that a total of 12 300 new generation of parking meters are required to be purchased for the full replacement of existing meters and provision of additional meters at more suitable locations⁴. The EMSD estimated the total non-recurrent expenditure for procuring the new generation of parking meters to be \$304 million. The Government will seek funding from the Legislative Council. The breakdown for the estimate is as follows:

	Total (\$'000)
(i) Procurement of new generation of parking meters with vehicle sensors	219,000
(ii) Related computer system	13,000
(iii) EMSD Trading Fund project management charges	37,000
(iv) Contingency (15% of the sum of items (a) and (b))	35,000
Total	304,000

⁴ At present, there are 10 250 parking meters in total. Normally, only about 95% of the parking meters (i.e. approximately 9 800) could be put in daily operation due to the need for maintenance and for conducting various kinds of tests. The fact that all meters have their specific uses has led to the undesirable situation whereby no meters are immediately available for installation at locations with parking demand. As such, the TD proposed to raise the total number of parking meters to be procured by 20% to 12 300 to cope with the demand.

20. On item (i) in paragraph 19 above, the estimate of \$219,000,000 is for the manufacturing, testing, trial runs and on-site installation of 12 300 new generation of parking meters.

21. On item (ii) in paragraph 19 above, the estimate of \$13,000,000 is for the development, testing, trial runs, and installation of the computer system for supporting the new parking meter system, including the backend central computer, back-up management system and the “parking meter mobile application”.

22. On item (iii) in paragraph 19 above, the estimate of \$37,000,000 is for the charges by EMSD Trading Fund for project management, including the preparation and development of specifications and functions of, and tender documents for, new parking meter system, conducting of the tendering exercise, on-site monitoring of the manufacturing of parking meters, as well testing and trial runs.

23. Lastly, on item (iv) of paragraph 19 above, the estimate of \$35,000,000 represents a 15% contingency on items set out in items (i) and (ii) in paragraph 19 above, to respond to uncertainty in relation to market price and currency exchange.

24. The estimated cash flow is as follows:

Financial Year	(\$'000)
2018-19	10,000
2019-20	113,000
2020-21	88,000
2021-22	61,000
2022-23	32,000
Total	<u>304,000</u>

Recurrent Expenditure

25. A rough estimate of \$47,000,000 per annum (actual expenditure subject to the results of open tender) is for the recurrent cost of management, operation and maintenance of new generation of parking meter systems, as well as employment of “clearing service contractors” for providing clearing service in respect of parking fees paid. At present, the Road Traffic Ordinance (Cap. 374) allows the direct deduction of related expenditure incurred under the parking meter management agreement from the revenue of parking fees. As

such, the relevant recurrent costs will be directly deducted from the revenue of parking fees.

IMPLEMENTATION PLAN

26. Upon approval of funding, the TD and EMSD will proceed to conduct an open tender for selecting “supply, management, operation and maintenance contractors” as well as “clearing service contractors” for the new generation of parking meter system. It is envisaged that the new generation of parking meters will commence service by phases from 2019-20. The planned schedule is as follows:

Task	Target Completion Date
<p>(i) The TD and EMSD will prepare the tender document for engaging “supply, management, operation and maintenance contractors”.</p> <p>The TD will prepare the tender document for engaging “clearing service contractors”.</p>	Mid 2018
<p>(ii) For selecting “supply, management, operation and maintenance contractors”, the TD and EMSD will call for tender, assess tender submissions and award the contracts.</p> <p>For selecting “clearing service contractors”, the TD will call for tender, assess tender submissions and award the contracts.</p>	End 2018
<p>(iii) The “supply, management, operation and maintenance contractors” will design and produce the new generation of parking meters and related computer system while the TD and EMSD will conduct tests and trial runs.</p> <p>The “clearing service contractors” will install the card readers for the new generation of parking meters to tie in with the work of the “supply, management, operation and maintenance</p>	Q4 2019

Task	Target Completion Date
contractors” while the TD and EMSD will conduct tests and trial runs	
(iv) Commencement of service of the new generation of parking meters by phases	2019-20
(v) Completion of installation work for the new generation of parking meters to fully replace existing ones	End 2021

ADVICE SOUGHT

27. Members are invited to offer advice on the proposals.

**Transport and Housing Bureau
Transport Department
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