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**Legislative Council**

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**Paper for the House Committee meeting on 28 June 2019**

**Report of Subcommittee on Telecommunications (Method for Determining  
Spectrum Utilization Fee) (Spectrum for Auction) Regulation and  
Telecommunications (Designation of Frequency Bands  
subject to Payment of Spectrum Utilization Fee) (Amendment) Order 2019**

**Purpose**

This paper reports on the deliberations of the Subcommittee on Telecommunications (Method for Determining Spectrum Utilization Fee) (Spectrum for Auction) Regulation and the Telecommunications (Designation of Frequency Bands subject to Payment of Spectrum Utilization Fee) (Amendment) Order 2019 ("the Subcommittee").

**Background**

Spectrum management policy

2. Under the Telecommunications Ordinance (Cap. 106), the Communications Authority ("CA") has the statutory duty to promote the efficient allocation and use of the radio spectrum as a public resource, and the power to assign radio spectrum and to designate which of them is subject to the payment of spectrum utilization fee ("SUF") following consultation with the telecommunications industry and other affected parties. Cap. 106 also empowers the Secretary for Commerce and Economic Development ("SCED") to prescribe the method for determining SUF and to specify the minimum fee of SUF.
3. In accordance with the Radio Spectrum Policy Framework promulgated by the then Commerce, Industry and Technology Bureau in April 2007, a

market-based approach in spectrum management will be adopted wherever CA considers that there are likely to be competing demands from providers of non-Government services, unless there are overriding public policy reasons to do otherwise.

#### Spectrum allocation for fifth generation mobile services

4. Following public consultations, SCED and CA announced in December 2018 that a total of 4 100 MHz of spectrum in the 26/28 GHz bands would be made available for the development of the fifth generation ("5G") mobile services in Hong Kong, by way of administrative assignment, whilst another 380 MHz of spectrum in the 3.5 GHz, 3.3 GHz and 4.9 GHz bands would be assigned by auctions.

5. To effect such decision, L.N.s 74 and 75 of 2019 were gazetted on 17 May 2019 to designate the 3.5 GHz, 3.3 GHz and 4.9 GHz bands as frequency bands which are subject to payment of SUF and to specify the method for determining the SUF of these bands by auctions. Subject to the enactment of these two pieces of subsidiary legislation, SCED and CA will, respectively, specify by notices published in the Gazette the minimum fees of the respective spectrum (i.e. the auction reserve prices), and the terms and conditions of the auctions, prior to the auctions scheduled for the second half of 2019.

#### **The subsidiary legislation**

6. The Telecommunications (Designation of Frequency Bands subject to Payment of Spectrum Utilization Fee) (Amendment) Order 2019 (L.N. 75 of 2019) ("the Order") is made by CA under section 32I (1) of Cap. 106 after carrying out the consultation required under section 32G (2) of Cap. 106. It adds a new Part 8 to the Schedule to the Telecommunications (Designation of Frequency Bands subject to Payment of Spectrum Utilization Fee) Order (Cap. 106Y) in order to designate three additional frequency bands (namely 3300-3400 MHz, 3400-3600 MHz and 4840-4920 MHz) ("the three additional frequency bands") in which the use of spectrum is subject to the payment of SUF by the users of the spectrum.

7. The Telecommunications (Method for Determining Spectrum Utilization Fee) (Spectrum for Auction) Regulation (L.N. 74 of 2019) ("the Regulation") is a new regulation made by SCED under section 32I of Cap. 106 to:

- (a) provide for the determination by auctions, and the payment, of SUF for using the spectrum that falls within the three additional frequency

bands set out in the Schedule to the Regulation;

- (b) exempt from payment of SUF for using the spectrum that falls within a frequency band specified in section 8 of the Regulation for the sole purpose of certain functions related to the use, maintenance, operation and control of space objects;
- (c) specify the payment of SUF by way of a lump sum payment or in 15 annual instalments at the time and in the way required by CA;
- (d) empower SCED to specify the minimum amount of SUF to be determined under the Regulation; and
- (e) empower CA to arrange for an auction and specify the terms and conditions of the auction.

### **Commencement**

8. The Order and the Regulation were gazetted on 17 May 2019 and tabled before the Legislative Council at its meeting of 22 May 2019 for negative vetting. They will come into operation on 12 July 2019.

### **The Subcommittee**

9. At the House Committee meeting held on 24 May 2019, Members agreed that a subcommittee should be formed to examine the two pieces of subsidiary legislation in detail. The membership list of the Subcommittee is in the **Appendix**.

10. Under the chairmanship of Dr Hon Elizabeth QUAT, the Subcommittee held two meetings with the Administration on 3 June 2019 and 11 June 2019.

11. To allow more time for scrutiny, the Chairman of the Subcommittee gave notice to move a motion at the Council meeting of 19 June 2019 to extend the scrutiny period of the Regulation and Order to the Council meeting of 10 July 2019. However, the motion was not dealt with before adjournment of the said Council meeting. As such, the period for amending the Regulation and Order expired at the Council meeting of 19 June 2019.

## **Deliberations of the Subcommittee**

### Provision of mobile services in restriction zones

12. According to the Administration, satellite operators have set up telemetry, tracking and control ("TT&C") stations to control and manoeuvre the licensed satellites in orbit. To protect the existing TT&C stations, CA decided in March 2018 to impose two restriction zones in Tai Po and Stanley respectively in order to constrain the deployment of mobile base stations of public mobile services operating in the 3.5 GHz band.

13. Members have expressed concerns about the provision of 5G mobile services in the restriction zones if the use of the 3.5 GHz band, being most widely used for 5G mobile services, would be restricted. Members have asked whether the permissions for satellite operators to use the spectrum in the 3.5 GHz band within the restricted zones would expire before those for MNOs offering 5G mobile services. They have also asked whether the 3.5 GHz band would then be used exclusively by mobile network operators ("MNOs") for provision of 5G mobile services.

14. The Administration has informed members that MNOs concerned would normally be entitled to use the 3.5 GHz band for 15 years from April 2020 to March 2035. The corresponding periods for the satellite operators to use the 3.5 GHz band vary from satellite to satellite, some of which would straddle beyond 2035. That said, only those satellites which use the 3.5 GHz band simultaneously with the 5G mobile services would be affected.

15. The Administration has further advised that radio base stations ("RBSs") operating in the 3.5 GHz band may be allowed within the restriction zones under a maximum permissible interference limit, so that 5G mobile services may still be provided with use of the band. MNOs may also offer 5G mobile services using other frequency bands, such as 4.9 GHz, 26 GHz or 28 GHz. They may even refarm the spectrum currently used for provision of 2G, 3G, or 4G services to offer 5G services in the restriction zones. In the long term, the Administration would make available additional spectrum for mobile services use.

16. Some members have commented that the Administration should formulate a policy on the choice of locating satellite communications facilities and should identify remote locations for their installation so as to prevent similar interferences with mobile communications services in future. Rather than awaiting satellite operators to relocate their facilities, members have suggested that the Administration should play a more active role and consider paying satellite operators compensation to relocate their facilities.

17. The Administration has responded that if satellite operators had plans to relocate their facilities, the Administration stood ready to render assistance. As to whether the Administration should require satellite operators to relocate their facilities to a remote area, the Administration has stated that the interests of different stakeholders have to be considered and balanced, and that due consideration has to be given to maintaining Hong Kong's position as an international telecommunications hub. To contain the problem of interference between satellite operations and 5G mobile communications, the Administration has informed members that no licence for satellite operators to use the 3.5 GHz band for new satellites will be issued.

#### Auction prices for 5G spectrum

18. Members have asked the Administration to respond to the industry's appeal to keep the spectrum auction reserve prices low in order to reduce initial investment and the cost of providing 5G mobile services. Members are concerned that the high cost would be passed on to end-users. They have asked if the Administration could lower the spectrum auction reserve prices and bid increments so as to lower SUF. The Administration has responded that, taking into consideration MNOs' substantial upfront investment on 5G mobile services infrastructure, SCED has stated in the Joint Statements issued in December 2018 that the auction reserve price would be set at a level that would represent the minimum base value of the spectrum for the purpose of kick-starting the competitive bidding process. SUF would ultimately reflect the market price of the spectrum which would be determined through the bidding process.

#### Installation of radio base stations

19. Members have noted that the Administration has launched the Pilot Scheme for Installation of Radio Base Stations at Selected Government Premises ("the Pilot Scheme") in March 2019 to facilitate MNOs to set up the mobile services infrastructure. Under the Pilot Scheme, the Administration would open up more than 1 000 suitable government premises for the installation of RBSs by MNOs through streamlined application processes.

20. Some members have commented that not all of the government premises identified and made available under the Pilot Scheme turned out to be feasible. They have asked the Administration to review the premises and ensure that they are workable before offering them to MNOs; if there are concerns from the relevant department staff over possible radiation hazards arising from the installation of RBSs, the Administration should take appropriate steps to allay such fears.

21. The Administration has responded that the 1 000 government premises made available under the Pilot Scheme are considered suitable for installation of RBSs in terms of the available floor space and electricity supply. The Administration would look into individual locations where MNOs claimed they encountered problems, and would follow up with the relevant departments to resolve the difficulties, if any. As regards radiation safety of RBSs, the Administration has informed the Subcommittee that it has conducted about 1 500 site inspections and measurements of radiation level over the past three years with no adverse findings. They have also explained the measurement results to members of the public. The Administration would continue to conduct measurements at Government premises or other locations on a need basis. Meanwhile, the Administration would continue to explore other suitable venues or street furniture for installation of RBSs, such as public telephone booths and sheltered bus stops.

22. Members have asked how the Administration would coordinate the installation of RBSs for the provision of 5G mobile services along MTR lines. The Administration has advised members that engineering works to upgrade existing mobile services in MTR have been underway, but relevant works can only be carried out for not more than two hours each night and have to be prioritized among various other upgrade and maintenance works. The Administration has further advised members that, if 3.5 GHz is not available along MTR lines, MNOs could refarm existing spectrum to provide 5G mobile services for passengers.

#### Section-by-section examination of the two pieces of subsidiary legislation

23. In examining the Telecommunications (Method for Determining Spectrum Utilization Fee) (Spectrum for Auction) Regulation (L.N. 74 of 2019), members have discussed with the Administration on the definitions of "connected bidder" in section 7 and "space object" in section 8.

24. The Administration has informed members that "connected bidder" generally refers to two or more bidders who have material interests between each other. Detailed meaning will be specified in the terms and conditions of an auction to be made by CA and published in the Gazette prior to an auction. As per usual practice, bidders will be required to declare whether they are connected with any other bidders before the auction.

25. The Administration has also informed members that "space object" has the meaning given by section 2(1) of the Outer Space Ordinance (Cap. 523) and

this term in section 8 of the Regulation generally refers to artificial communications satellites.

### **Recommendation**

26. The Subcommittee has completed the scrutiny of the two pieces of subsidiary legislation and members support the Administration's proposals.

### **Advice sought**

27. Members are invited to note the deliberations of the Subcommittee.

Council Business Division 1  
Legislative Council Secretariat  
27 June 2019

**Report of Subcommittee on Telecommunications (Method for Determining Spectrum Utilization Fee) (Spectrum for Auction) Regulation and Telecommunications (Designation of Frequency Bands subject to Payment of Spectrum Utilization Fee) (Amendment) Order 2019**

**Membership list**

**Chairman** Dr Hon Elizabeth QUAT, BBS, JP

**Members** Hon WONG Ting-kwong, GBS, JP  
Hon Steven HO Chun-yin, BBS  
Hon Charles Peter MOK, JP  
Dr Hon KWOK Ka-ki  
Hon Martin LIAO Cheung-kong, SBS, JP  
Hon Alvin YEUNG  
Hon Vincent CHENG Wing-shun, MH

(Total: 8 members)

**Clerk** Mr Daniel SIN

**Legal Adviser** Mr Alvin CHUI