

## LCQ14: Water supply arrangements and management of water resources

Following is a question by the Hon Wu Chi-wai and a written reply by the Secretary for Development, Mr Michael Wong, in the Legislative Council today (June 20):

Question:

Regarding the water supply arrangements and management of water resources in Hong Kong, will the Government inform this Council:

(1) of the time limit, prescribed under the Agreement for the supply of Dongjiang water to Hong Kong signed between the Hong Kong Government and the Guangdong Provincial Government, within which the Guangdong provincial authorities must notify the Hong Kong Government upon the occurrence of incidents (such as insufficient water quantity, pollution of water sources or damages to water supply facilities) on the Mainland which may lead to an interruption to the supply of Dongjiang water to Hong Kong;

(2) whether the Water Supplies Department (WSD) has formulated a contingency plan to cope with the situation of a tight supply of fresh water in Hong Kong; if so, of the details (including the circumstances under which the plan will be activated);

(3) whether various government departments have formulated plans and administrative arrangements for implementing water conservation measures (such as reducing the use of fresh water for street cleaning by the Food and Environmental Hygiene Department (FEHD)) when fresh water supply is tight; if so, of the details;

(4) of the respective annual water consumption of the top five government departments in water consumption (including the water consumption of their outsourced service contractors) in the past three years, with a breakdown by use of the water;

(5) whether various government departments have formulated (i) short-term and long-term water conservation targets as well as (ii) guidelines on water consumption; if so, of the details; as the Government said in reply to a question raised by a Member of this Council in 2013 that the WSD was reviewing the water consumption practices in the Leisure and Cultural Services Department's parks and swimming pools as well as the FEHD's markets, street cleaning and refuse collection points, and would gradually extend the scope of the review to other government departments that have relatively high water consumption, of the latest progress of such work;

(6) whether it reviewed the water tariff structure in the past three years with a view to encouraging water conservation; if so, of the details and

follow-up work;

(7) as the Government has taken forward the Inter-Reservoirs Transfer Scheme since as early as 2004, of the reasons why the Scheme still remains at the stage of reviewing and refining the detailed design, method statements and related environmental impact assessments at present; why it has not yet submitted funding applications to the Finance Committee of this Council in respect of the major works under the Scheme; and

(8) apart from the Tseung Kwan O Desalination Plant which is under construction, whether the Government has studied the implementation of other seawater desalination projects; if so, of the details; if not, the reasons for that?

Reply:

President,

The Government is committed to ensuring the reliability of water supply in Hong Kong. Currently, fresh water supply for Hong Kong comprises imported Dongjiang (DJ) water from Guangdong and rainwater from local catchments, meeting 70 to 80 per cent and 20 to 30 per cent of our total fresh water consumption respectively. The "package deal lump sum" approach has been adopted for DJ water supply agreements since 2006. This approach enables us to import DJ water as needed according to the amount of local yield collected each year up to an annual supply ceiling. The annual supply ceiling in the current supply agreement is set at 820 million cubic metres based on fresh water demand analysis conducted by the WSD to ensure water supply reliability of 99 per cent, such that water supply can be maintained round-the-clock even under extreme drought condition with a return period of one in 100 years.

The WSD has promulgated the Total Water Management Strategy in 2008 to ensure sustainable and reliable water supply in Hong Kong. The Strategy puts an emphasis on containing the growth of water demand through water conservation, and supplementing the three existing water sources, being local yield, DJ water and seawater for flushing by three new water sources, namely desalinated seawater, reclaimed water and recycled grey water/harvested rainwater.

My response to the eight parts of Hon Wu's question is as follows:

(1) The Guangdong authorities and the WSD of Hong Kong have established a notification mechanism for serious incidents regarding the supply of DJ water to Hong Kong. In case of serious incidents, the designated contact person of Guangdong authorities would immediately notify the designated contact person of the WSD by phone. Furthermore, the Guangdong authorities would hold regular meetings with the Development Bureau and WSD in Hong Kong to discuss issues regarding the supply of DJ water to Hong Kong (including the quantity and quality of DJ water). These meetings include the Hong Kong/Guangdong Water Supply Operation and Management Technical Cooperation Sub-Group Meeting, the Hong Kong/Guangdong Water Supply Business Meeting and the

Special Panel on the Protection of DJ Water Quality under the Expert Group of the Hong Kong/Guangdong Joint Working Group on Sustainable Development and Environmental Protection.

(2) & (3) As mentioned above, water supply can be maintained round-the-clock even under extreme drought condition with a return period of one in 100 years under the current water supply arrangement in Hong Kong. If Hong Kong suffers from persistent extremely dry weather, we will take into account a host of factors including fresh water demand, supply situation of various water resources, rainfall forecast for implementing appropriate responsive actions, such as imposing restriction on non-essential supplies including landscape irrigation, filling of swimming pools and street cleansing.

(4) & (5) The five government departments with the highest water consumption in the past three years are tabulated below:

Government department		Water consumption (million cubic metres)*		
		2015	2016	2017
1	Leisure and Cultural Services Department	13.05	12.51	12.38
2	Correctional Services Department	4.49	4.30	4.34
3	Food and Environmental Hygiene Department	3.42	3.63	3.52
4	Hong Kong Police Force	2.88	2.47	2.47
5	Drainage Services Department	1.92	2.12	2.22
Total Water Consumption		25.76	25.03	24.93

\* The figures include water consumed by service providers at the premises of the respective government departments.

The WSD has prepared best practice guidelines for the top three government departments in water consumption, namely the Leisure and Cultural Services Department, the Correctional Services Department and the Food and Environmental Hygiene Department. All of them are progressively taking forward the water conservation measures recommended in the guidelines. In addition, the WSD has been carrying out the installation of water saving devices (such as water taps and showers) in suitable government venues and schools in phases since 2009. Currently, more than 50 000 devices have been installed. We target to complete the installation work by 2022. Besides, the installation of flow controllers in government venues and schools was substantially completed with about 53 000 pieces installed.

(6) Domestic consumers are usually billed for their water charges at quad-monthly intervals. Currently, the water charges payable are calculated using a tariff structure which consists of four tiers:

first tier: free of charge for the first 12 cubic metres;

second tier: \$4.16 per cubic metre for the next 31 cubic metres;  
third tier: \$6.45 per cubic metre for the next 19 cubic metres  
fourth tier: \$9.05 per cubic metre for any consumption above the level of 62 cubic metres

The above tier tariff structure encourages the public to conserve water. The Government reviews the tariff rates and the tariff structure on a regular basis.

(7) The Government takes forward the Inter-Reservoirs Transfer Scheme, under which a tunnel connecting the Kowloon Byewash Reservoir and the Lower Shing Mun Reservoir will be built to reduce flood risks in the West Kowloon region and reduce overflow from the Kowloon Group of Reservoirs, thereby increasing water resources at the same time. We have obtained support on the project from the Legislative Council Public Works Subcommittee on May 28. We are now seeking funding approval from the Finance Committee. If the funding is approved, the Drainage Services Department plans to commence the construction works in the first quarter of 2019 for completion in the fourth quarter of 2022.

(8) Tenders are being invited for the "Design, Build and Operate" contract of the first stage of the Tseung Kwan O (TKO) desalination plant for commissioning in 2022. The first stage of the desalination plant will have a water production capacity of 135 000 cubic metres per day to meet about five per cent of the fresh water demand in Hong Kong. There is also provision for future expansion to the ultimate water production capacity of up to 270 000 cubic metres per day if necessary. The Government will study the programme for implementing the second stage of TKO desalination plant having regard to the supply situation of various water resources, the fresh water demand forecast, the desalination technology development, etc.