

# 立法會 *Legislative Council*

LC Paper No. CB(1)89/14-15(08)

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## **Panel on Development**

**Meeting on 28 October 2014**

### **Updated background brief on the supply of Dongjiang water**

#### **Purpose**

This paper provides background information on the supply of Dongjiang ("DJ") water and summarizes the views and concerns expressed by Members on the subject at the meetings of the Legislative Council and its committees since the 2011-2012 legislative session.

#### **Supply of Dongjiang water**

2. At present, about 20% to 30% of Hong Kong's fresh water supply is collected from rainfall and the remaining 70% to 80% is DJ water imported from the Guangdong Province ("GD"). The long-term supply of DJ water is secured under the "Agreement for the supply of Dongjiang water to Hong Kong" ("the Supply Agreement") entered between the Hong Kong Government and the GD Provincial Government, which is subject to periodic review of water prices and supply quantities. Prior to 2006, the Supply Agreements were based on a unit water price and annual supply quantities agreed with the GD side. From 2006 onwards, the Supply Agreements have adopted a package deal lump sum approach, under which an annual lump sum payment is made to the GD side for supply of an annual agreed quantity of DJ water to meet the needs of Hong Kong. The current Supply Agreement covers the period from 2012 to 2014.

### Arrangements for the supply of Dongjiang water to Hong Kong between 2012 and 2014

3. The Administration briefed the Panel on Development ("DEV Panel") in October 2011 on the proposed arrangement for the supply of DJ water to Hong Kong between 2012 and 2014 and its financial implications. To ensure 99% reliability<sup>1</sup> in water supply to Hong Kong, the Administration estimated that an annual quantity of 820 million cubic metres ("mcm") would be required in the period from 2012 to 2014. Taking into account the changes in Renminbi and Hong Kong dollar exchange rate, as well as inflation in GD and Hong Kong, the two sides agreed that the water purchase cost for the years of 2012, 2013 and 2014 would be increased at the rates of 5.82%, 5.78% and 5.77% respectively. Hence, as compared with the annual sum of water purchase cost of \$3,344 million for 2011, the annual sum of water purchase cost for 2012, 2013 and 2014 was adjusted to \$3,538 million, \$3,743 million and \$3,959 million respectively.

4. The Administration also sought the approval of the Finance Committee ("FC") for a supplementary provision of \$35.4 million to meet additional purchase cost for DJ water in 2011-2012. The funding proposal was approved on 18 November 2011.

### The package deal lump sum approach versus the unit water price approach

5. At the aforesaid meetings of DEV Panel and FC held in 2011, some members expressed concerns that the current package deal lump sum approach for purchase of DJ water was not conducive to water conservation and urged the Administration to pay for DJ water according to the actual annual consumption based on the unit water price to be agreed with the GD authorities.

6. According to the Administration, the package deal lump sum approach for purchase of DJ water adopted since 2006 would ensure reliable and flexible water supply to Hong Kong. This approach allowed greater flexibility in the daily supply rate of DJ water to tie in with the seasonal fluctuations in the quantity of surface water collected from local water

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<sup>1</sup> "99%" reliability means that water supply is maintained round-the-clock even under extreme drought condition with a return period of one in 100 years. "Return period" is the average number of years during which a certain severity of drought will occur once, statistically. A longer return period means a rarer chance of occurrence of a more severe drought. (Source: LC Paper No. CB(1)137/11-12(03))

gathering grounds. Under this approach, Hong Kong would inform the GD side the actual demand of the territory on a monthly basis, thereby achieving a better control of the storage level in Hong Kong, minimizing water overflow and saving pumping costs.

7. The Administration explained that, in contrast, if the water purchase price was based on the actual quantity of water delivered without any pre-determined agreed quantities, there would be difficulties in ensuring adequate water supply for Hong Kong's use. The situation could become critical during drought years as there would be no guarantee that the GD side could meet a sudden surge in demand from Hong Kong given the competitive needs of other GD cities, such as Shenzhen and Guangzhou. In addition, due to the difficulty for the Administration to advise the GD side of Hong Kong's actual required annual water supply quantity during the negotiation for the unit water price, the GD side would take into account such uncertainty and fix a high unit water price in order to ensure a stable income. The unit price approach would also put the reliability of water supply at risk unless Hong Kong was prepared to reserve a specific annual quantity and pay a retention fee for the reserved quantity to compensate for under-utilizing the DJ water supply system.

#### Quantity of supply

8. Under the current Supply Agreement and the "Water Resources Distribution Plan in the Dongjiang River Basin of Guangdong Province" promulgated by the GD authorities setting out the maximum amount of water which cities in GD and Hong Kong may draw from DJ, the annual DJ water supply ceiling to Hong Kong is set at 820 mcm for the three years from 2012 to 2014, while the GD side maintains an ultimate annual supply quantity of 1 100 mcm, which, according to the Administration, will be adequate to meet the actual needs of Hong Kong beyond 2030.

9. In view of the increase in the price of DJ water, some Members have requested the Administration to reduce the quantity of water to be purchased from DJ by further developing the water catchment system in Hong Kong or building more reservoirs in Hong Kong or the Mainland. The Administration has advised that, due to scarcity of land and the difficulty in identifying suitable sites, building more reservoirs in Hong Kong or the Mainland is not a viable option.

10. According to the Administration, as a measure to lower the dependency on DJ water, it has explored new water resources, including seawater desalination and use of reclaimed water for non-potable uses. A planning and investigation study has been carried out for the construction of a desalination plant at Tseung Kwan O Area 137 ("the Study") with an output capacity of 50 mcm per annum (expandable to 90 mcm per annum in future), which will account for about 5% (10% if expanded) of the total water supply in Hong Kong.

11. At the meetings of DEV Panel and the Public Works Subcommittee in 2012, some members expressed the view that it was not worthwhile to conduct the Study or construct the desalination plant at that stage, taking into account the high estimated cost of the Study and the insignificant output capacity. Some other members supported the proposal in view of the continuous advancement in desalination technology, which might lower the cost of desalinated water in the long term. The Administration stressed that it was important to explore other sources of potable water supply in Hong Kong in view of severe droughts in some Mainland provinces and the low local rainfall in recent years.

#### Price of Dongjiang water

12. Some Members have expressed concerns that Hong Kong is paying a higher unit water price than other GD cities for the use of DJ water, thus subsidizing those cities in the use of water. The Administration has advised that it is difficult to draw direct comparison between the unit prices paid by Hong Kong and other GD cities. Although the unit price paid by other GD cities for the use of DJ water is notionally lower than that paid by Hong Kong, other cities are facing higher rates of cost increase.

13. As regards Members' enquiries about the unit cost of drinking water produced from various sources, the Administration has advised that the unit cost is \$4, \$8 and \$12 per cubic metre respectively for drinking water produced from local catchment, DJ water and desalination.

#### Quality of Dongjiang water

14. Under the current Supply Agreement, the GD authorities maintain the existing DJ water quality supplied to Hong Kong in compliance with the latest

national standard, which is currently set for Type II<sup>2</sup> waters in the Environmental Quality Standards for Surface Water (GB 3838-2002). According to the Administration's water quality monitoring data, the quality of DJ water meets the relevant standard<sup>3</sup>. The Administration has advised DEV Panel that following the implementation of water pollution prevention and control measures undertaken by the GD authorities, including relocation of the intake point of DJ water supply to Hong Kong for better water quality and commissioning of the dedicated aqueduct for DJ water, the quality of DJ water supplied to Hong Kong has shown significant improvement.

15. In addition, a designated institutional mechanism has been set up for the GD and Hong Kong sides to meet regularly to discuss issues relating to DJ water<sup>4</sup>. There is also an established notification mechanism manned by designated liaison officers of both Hong Kong and GD authorities. In case of major contamination incidents affecting the quality of DJ water supplied to Hong Kong, the GD authorities will immediately notify the Water Supplies Department over the telephone followed by supplementary detailed information. According to the Administration, so far there has been no major contamination incident in DJ.

### **Latest development**

16. The current Supply Agreement is due to expire at the end of 2014. The Administration will brief DEV Panel on 28 October 2014 on the arrangement for the supply of DJ water to Hong Kong between 2015 and 2017 and its financial implications, as well as the proposal of seeking a supplementary provision from FC to meet the additional water purchase cost in 2014-2015.

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<sup>2</sup> According to the Administration (LC Paper No. CB(1)137/11-12(03)), there are five types of surface water standards designated for specific functions and purposes of protection. Type I standard is only applicable to source water and national nature reserve, while Type II is applicable to first class protection area for the abstraction for human consumption. As DJ water does not fall into the category of source water and national nature reserve, DJ water supplied to Hong Kong applies Type II standard, which is the highest applicable water quality standard.

<sup>3</sup> Source: LC Paper No. CB(1)734/12-13(03)

<sup>4</sup> For example, the GD/HK Water Supply Business Meeting is convened at the time when a new Supply Agreement is signed between the GD and Hong Kong sides. The GD's delegation led by the Director of Guangdong Water Resources Department and the Hong Kong's delegation led by the Secretary for Development will discuss issues relating to DJ water supply. (Source: LC Paper No. CB(1)734/12-13(03))

## **Relevant papers**

17. A list of relevant papers with their hyperlinks is in the **Appendix**.

Council Business Division 1  
Legislative Council Secretariat  
21 October 2014

## Appendix

### Supply of Dongjiang water

#### List of relevant papers

Council/Committee	Date of meeting	Paper
Panel on Development	25 October 2011	Administration's paper on "Management of water resources" (LC Paper No. CB(1)137/11-12(03)) <a href="http://www.legco.gov.hk/yr11-12/english/panels/dev/papers/dev1025cb1-137-3-e.pdf">http://www.legco.gov.hk/yr11-12/english/panels/dev/papers/dev1025cb1-137-3-e.pdf</a>  Minutes of meeting (LC Paper No. CB(1)600/11-12) <a href="http://www.legco.gov.hk/yr11-12/english/panels/dev/minutes/dev20111025.pdf">http://www.legco.gov.hk/yr11-12/english/panels/dev/minutes/dev20111025.pdf</a>
Council meeting	9 November 2011	Hansard -- written question (No. 9) on "Water Supplies in Hong Kong" (p. 1759 - 1763) <a href="http://www.legco.gov.hk/yr11-12/english/counmtg/hansard/cm1109-translate-e.pdf">http://www.legco.gov.hk/yr11-12/english/counmtg/hansard/cm1109-translate-e.pdf</a>
Finance Committee ("FC")	18 November 2011	Administration's paper on "Head 194 -- Water Supplies Department Subhead 223 Purchase of water" (FCR(2011-12)51) <a href="http://www.legco.gov.hk/yr11-12/english/fc/fc/papers/f11-51e.pdf">http://www.legco.gov.hk/yr11-12/english/fc/fc/papers/f11-51e.pdf</a>  Minutes of meeting (LC Paper No. FC95/11-12) <a href="http://www.legco.gov.hk/yr11-12/english/fc/fc/minutes/fc20111118a.pdf">http://www.legco.gov.hk/yr11-12/english/fc/fc/minutes/fc20111118a.pdf</a>
Council meeting	27 February 2013	Hansard -- written question (No. 20) on "Water Supply for Hong Kong" (p. 7381 - 7386) <a href="http://www.legco.gov.hk/yr12-13/english/counmtg/hansard/cm0227-translate-e.pdf">http://www.legco.gov.hk/yr12-13/english/counmtg/hansard/cm0227-translate-e.pdf</a>

Council/Committee	Date of meeting	Paper
Council meeting	20 March 2013	<p>Hansard -- written question (No. 13) on "Supply of Safe Drinking Water" (p. 7577 - 7582)</p> <p><a href="http://www.legco.gov.hk/yr12-13/english/counmtg/hansard/cm0320-translate-e.pdf">http://www.legco.gov.hk/yr12-13/english/counmtg/hansard/cm0320-translate-e.pdf</a></p>
Panel on Development	26 March 2013	<p>Administration's paper on "Quality of Dongjiang Water and Water Quality Monitoring by the Water Supplies Department" (LC Paper No. CB(1)734/12-13(03))</p> <p><a href="http://www.legco.gov.hk/yr12-13/english/panels/dev/papers/dev0326cb1-734-3-e.pdf">http://www.legco.gov.hk/yr12-13/english/panels/dev/papers/dev0326cb1-734-3-e.pdf</a></p> <p>Minutes of meeting (LC Paper No. CB(1)1334/12-13)</p> <p><a href="http://www.legco.gov.hk/yr12-13/english/panels/dev/minutes/dev20130326.pdf">http://www.legco.gov.hk/yr12-13/english/panels/dev/minutes/dev20130326.pdf</a></p>
FC special meeting	10 April 2013	<p>Report on the examination of the Estimates of Expenditure 2013-2014 (Paragraphs 8.11 - 8.16 of Chapter VIII)</p> <p><a href="http://www.legco.gov.hk/yr12-13/english/fc/fc/minutes/sfc_rpt.pdf">http://www.legco.gov.hk/yr12-13/english/fc/fc/minutes/sfc_rpt.pdf</a></p>
Council meeting	17 April 2013	<p>Hansard -- written question (No. 17) on "Implementation of Total Water Management Strategy and Related Measures" (p. 8259 - 8267)</p> <p><a href="http://www.legco.gov.hk/yr12-13/english/counmtg/hansard/cm0417-translate-e.pdf">http://www.legco.gov.hk/yr12-13/english/counmtg/hansard/cm0417-translate-e.pdf</a></p>
Council meeting	22 May 2013	<p>Hansard -- oral question (No. 6) on "Water Supply for Hong Kong" (p. 12021 - 12032)</p> <p><a href="http://www.legco.gov.hk/yr12-13/english/counmtg/hansard/cm0522-translate-e.pdf">http://www.legco.gov.hk/yr12-13/english/counmtg/hansard/cm0522-translate-e.pdf</a></p>

<b>Council/Committee</b>	<b>Date of meeting</b>	<b>Paper</b>
Council meeting	22 May 2013	Hansard -- written question (No. 14) on "Cost for Production of Potable Water by Desalination" (p. 12058 - 12061) <a href="http://www.legco.gov.hk/yr12-13/english/counmtg/hansard/cm0522-translate-e.pdf">http://www.legco.gov.hk/yr12-13/english/counmtg/hansard/cm0522-translate-e.pdf</a>
FC special meeting	2 April 2014	Report on the examination of the Estimates of Expenditure 2014-2015 (Paragraphs 9.15 - 9.28 of Chapter IX) <a href="http://www.legco.gov.hk/yr13-14/english/fc/fc/minutes/sfc_rpt.pdf">http://www.legco.gov.hk/yr13-14/english/fc/fc/minutes/sfc_rpt.pdf</a>