

**For discussion
28 October 2008**

Legislative Council Panel on Development

Dongjiang Water Supply

PURPOSE

The current agreement for the supply of Dongjiang (DJ) water to Hong Kong is due to expire at the end of 2008. This paper briefs Members on arrangements for the supply of DJ water between 2009 and 2011, its financial implications and our proposal of seeking a supplementary provision of \$84.4 million from the Finance Committee to meet additional water purchase cost in 2008-09.

PROPOSAL

2. Following extensive discussions with the Guangdong (GD) authorities and taking account of Hong Kong's requirements, the proposed essential features of the arrangements for DJ water supply in the next three years are as follows -

- (a) To meet the actual needs¹ of Hong Kong with 99% reliability² in water supply for the three-year period between 2009 and 2011, the package deal lump sum approach used in the current DJ water supply agreement is retained with the annual sum of water purchase cost³ for 2009 to 2011 adjusted to \$2,959 million, \$3,146 million and \$3,344 million respectively;
- (b) The ultimate annual DJ water supply quantity of 1 100 million cubic metres (mcm) is maintained whilst the target date for achieving this objective will be subject to future review; and
- (c) The GD side will strive to maintain the existing DJ water quality which has been upgraded to meet the latest

¹ To ensure 99% reliability of water supply, the Water Supplies Department estimates that an annual quantity of 820 mcm will be required in the period 2009 to 2011.

² "99%" reliability means that water supply is maintained round-the-clock even under extreme drought condition with a return period of 1 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.

³ The annual sum of water purchase cost for 2006 to 2008 is \$2,494.8 million.

national Type II Standard of GB 3838-2002.

3. As the proposed annual sum of water purchase cost for 2009 is higher than the current sum (i.e. \$2,494.8 million) for 2008, the provision allowed for in the 2008-09 Estimates for the purchase of DJ water is inadequate to meet anticipated expenditure in the year. We therefore need to apply for supplementary provision of **\$84.4 million** from the Finance Committee in November 2008 to meet the additional water purchase cost.

JUSTIFICATION

4. Since early 2008, we have commenced discussions with the GD side on the arrangements for DJ water supply between 2009 and 2011. The objective is to continue to ensure reliable and flexible supply of DJ water to meet our needs. We aim to enter into agreement with the GD side by the end of 2008. The major considerations in arriving at the proposed water supply arrangements are detailed in paragraphs 5 to 11 below.

Package Deal Lump Sum

5. The current arrangements for the supply of DJ water have adopted a package deal lump sum approach. We propose to retain this approach for the water supply arrangements between 2009 and 2011 on account of the following -

(i) Guaranteed water supply up to 2011

The competition with other GD cities (including Heyuan, Huizhou, Dongguan, Shenzhen and Guangzhou) on the scarce fresh water supply from DJ has become increasingly acute. In view of this, the GD authorities have recently promulgated the < 廣東省東江流域水資源分配方案 > which specifies fixed limits for these cities, including Hong Kong, to draw water from DJ. If the water purchase price is based on the actual quantity of water delivered without any pre-determined agreed quantities, there will be difficulties in ensuring adequate water supply for Hong Kong's use. The situation will become critical during drought years as there will be no guarantee that GD could meet a sudden surge in demand from Hong Kong given the competitive needs in the region. A unit price approach therefore puts reliability at risk unless we are 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 and depriving other cities of their right to make better use of the scarce water resources.

(ii) Flexibility in water supply to minimize wastage

Adequate water supply aside, the package deal approach allows flexibility in water supply to meet our needs. This would enable us to have better control of our reservoir storage level thus minimizing overflow more effectively and saving pumping costs. Similar to the current agreement, we will continue to enjoy flexibility in the daily supply rate to tie in with seasonal fluctuations in the local yield. We will inform the GD side on a monthly basis our demand for DJ water according to the actual requirements.

Water Price

6. The GD side has highlighted their increasing operating expenses in the supply of DJ water to Hong Kong due to increase in salary, electricity and fuel costs. According to the GD side, there has been widespread reform of the water price framework in the Mainland resulting in upward adjustment of water prices in many cities. Against this background, the GD side is under tremendous pressure to increase water prices in order to regulate the water demand in the region⁴.

7. It is noted that there has been significant appreciation of Renminbi (RMB) against Hong Kong dollar (HKD) in the past three years between mid-2005 and mid-2008. The actual cumulative change of the RMB/HKD exchange rate is about 14% over this period. The rising trend is widely expected to prevail at least in the near term. Besides, the average annual inflation of GD and HK has also increased by about 3%⁵ over the same period.

8. Taking into account changes in RMB/HKD exchange rate and inflations in GD and Hong Kong, the two sides have tentatively agreed that water purchase cost for the year 2009 be increased by **18.61%** over the current annual sum. For years 2010 and 2011, the proposed annual increase over the preceding year is **6.32%** and **6.29%** respectively. We consider the proposed increases are reasonable.

⁴ By way of illustration, we have been advised that water prices in Shenzhen, Dongguan, Guangzhou, Zhongshan and Zhuhai have increased by an average of about 29.7% from 2004 to 2007.

⁵ The cumulative change in the Consumer Price Index (CPI) of GD is about 10.4% between mid-2005 and mid-2008. The cumulative change in the Composite CPI of Hong Kong is about 7.4% over the same period.

Water Quantity

9. The new water supply agreement will guarantee adequate supply of DJ water between 2009 and 2011 to achieve the 99% reliability. This will cater for our needs even under extreme drought conditions with a return period of one in 100 years.

10. With regard to the ultimate annual supply quantity of 1 100 mcm, our latest estimate indicates that the target date for reaching this quantity will likely be deferred to 2030 assuming an average annual growth rate of 1.3% on water demand. Given that the water demand within the region has been increasing sharply, we will retain this long-term supply capacity without committing to the time of achieving this target or paying an additional retention fee for this purpose.

Water Quality

11. The quality of DJ water supply has shown marked improvement upon commissioning of the closed aqueduct in mid 2003. Based on past monitoring data, the DJ water has met the national Type II Standard of GB 3838-2002 for surface water. Compared to the current water supply agreement, the GD side will make a stronger commitment in the new agreement by undertaking to strive to maintain the water quality in compliance with the stated standard. We will benefit from reduced expenses in water treatment due to enhanced quality of DJ water.

FINANCIAL IMPLICATIONS

12. We estimate that the purchase costs of DJ water, on financial year basis, are as follows -

	\$ million
2008-09	2,579.2 ⁶
2009-10	2,993.0 ⁷
2010-11	3,182.0 ⁸

13. The 2008-09 Estimates has included a provision of \$2,494.8 million for purchase of DJ water. We plan to seek a

⁶ Water cost for April to December 2008 and February to March 2009 (\$2,494.8M x 9 / 11 + \$2,959M x 2 / 11). No payment is made in January because water is not drawn in December due to annual maintenance of the DJ water supply system.

⁷ Water cost for April to December 2009 and February to March 2010 (\$2,959M x 9 / 11 + \$3,146M x 2 / 11).

⁸ Water cost for April to December 2010 and February to March 2011 (\$3,146M x 9 / 11 + \$3,344M x 2 / 11).

supplementary provision of \$84.4 million⁹ from the Finance Committee in November 2008 to meet the additional water cost in 2008-09. The funding requirement in subsequent years i.e. 2009-10 and 2010-11 will be sought in the Annual Estimates Exercises.

IMPACT ON WATER CHARGES

14. The increased purchase costs of DJ water will not have an immediate impact on water charges. The Financial Secretary has already announced at the meeting of the LegCo Panel on Financial Affairs held on 10 June 2008 that water charges will be frozen for 2008-09 and 2009-10 as a means to assist various sectors of the community to cope with inflation. The Government will continue to take into consideration prevailing economic conditions and public affordability in determining water charges.

WATER CONSERVATION

15. Surface water collected locally from water gathering grounds provides 20 to 30 percent of water supply to Hong Kong at present. About 70 to 80 percent of water is imported from DJ to make up the shortfall. Importation of DJ water remains to be the only economical option available at present.

16. To reduce the reliance on DJ water, a Total Water Management (TWM) study to map out the long-term strategy for balanced supply and demand of raw water to support the sustainable development in Hong Kong has been completed. The TWM strategy to be adopted is to proactively manage demand and supply of water in an integrated, multi-sectoral and sustainable manner. On water demand management, we will step up public education on water conservation with particular focus on education programmes for the younger generation on the concept and details of water conservation. We will investigate the feasibility of developing a Water Efficiency Labelling Scheme to facilitate consumers to select, on a voluntary basis, plumbing fixtures and appliances that would help conserve water. In addition, Government will promote installation of water saving devices through incorporating them in its projects and buildings as far as practicable.

17. We are pressing ahead with our on-going effort to reduce water leakage through replacing and rehabilitating 3 000 km of aged watermains for completion by 2015. We will also implement comprehensive pressure management to optimize watermains pressure, and enhance leakage detection and monitoring so that

⁹ Additional water cost for February to March 2009 (\$2,959M x 2 / 11 - \$2,494.8M x 2 / 11).

leakage could be detected for early remedial actions. On the use of seawater instead of fresh water for toilet flushing, we have planned to extend the present supply network in metropolitan areas and most new town areas to Pokfulam, Yuen Long and Tin Shui Wai.

18. On water supply management, we are planning to start a major capital works project to improve the existing catchwater system for safe and effective collection of surface water. We will continue to explore diversification of resources. With the advancement in technology and hence reduction in production cost, desalination is an option that warrants further examination. We will keep abreast of the technology development in this field that could enhance the viability of such system. On the use of reclaimed water from sewage treatment works for non-potable purposes such as toilet flushing and landscape irrigation, we are investigating the feasibility of supplying reclaimed water to consumers in Sheung Shui and Fanling, subject to the final results of two pilot schemes in Ngong Ping and Shek Wu Hui.

19. We will continue to look for and adopt suitable measures to balance water supply and demand with a view to minimizing our exposure to the risk of water shortage.

BACKGROUND

20. The previous water supply agreements before 2005 were based on unit water price and annual supply quantities agreed with the GD side. During the negotiation of the current agreement, both sides reached agreement to adopt a package deal approach under which reliable and flexible supply of DJ water to meet the actual needs of Hong Kong was guaranteed with the water purchase cost paid on annual lump sum basis. Besides, the ultimate annual DJ water supply quantity of 1 100 mcm specified in previous water supply agreements was maintained. The GD side also undertook to strive to supply DJ water with quality up to the latest national Type II Standard of GB 3838-2002.

21. We submitted a paper No. CB(1)1305/05-06(01) to the then LegCo Panel on Planning, Lands and Works in April 2006 reporting the reaching of agreement between both sides, and the gist and benefits of the current water supply arrangements.

WAY FORWARD

22. Members are invited to note the proposed essential features and financial implications of the arrangements for the supply of DJ water between 2009 and 2011, and support the

application for a supplementary provision scheduled for discussion by the Finance Committee in November 2008 before the new water supply agreement comes into effect on 1 January 2009.

**Development Bureau
October 2008**