

**For discussion  
28 October 2008**

**Legislative Council Panel on Development**

**Supplementary Note on  
Dongjiang Water Supply**

**PURPOSE**

This paper provides Members with supplementary information on the paper numbered as CB(1)90/08-09(03).

**RELIABLE AND FLEXIBLE WATER SUPPLY**

2. The local water resource of Hong Kong is inadequate to meet our needs. Its supply quantity is also unstable. Since 1884 when the Hong Kong Observatory has begun to keep rainfall record, the highest and lowest annual rainfall records are 3 343 mm in 1997 and 901 mm in 1963 respectively. The highest annual rainfall is almost four times the lowest. Separately, the amount of rainfall affects our local yield and hence the required supply quantity of Dongjiang water. Taking the past few years as examples, we imported 810 million cubic metres (mcm) and 620 mcm of Dongjiang water in 2004 and 2006 respectively to meet the actual needs of Hong Kong. The difference in the amount of supply quantity is almost 200 mcm. Dongjiang water supply which now meets about 70-80% of our demand is able to deal with the situation of inadequate local rainfall and reservoir storage for increase in water supply quantity. Therefore, a reliable and stable water supply arrangement from Dongjiang is of great importance to us.

3. The previous Dongjiang water supply agreements are not flexible as they have adopted the unit water price and fixed annual supply quantity approach. In wet years, it is unavoidable that we have to discharge surplus Dongjiang water. It is not until the current agreement in 2006 when the Guangdong (GD) and Hong Kong sides have agreed to adopt a package deal lump sum approach for greater flexibility in the daily supply rate of Dongjiang water to tie in with the seasonal fluctuations in the local yield. As a result of this, we have avoided wastage of the precious water resources and saved pumping cost. With the new arrangement under the current agreement, it has no longer been necessary to discharge excess Dongjiang water in the past two years, thereby saving precious water resources as well as pumping cost.

4. On the other hand, there is growing demand for water resources from the Mainland cities. GD Province promulgated in August 2008 the <東江流域水資源分配方案> which set the upper limit of extracting water from Dongjiang at 10 700 mcm per annum, including 1 100 mcm of annual supply quantity reserved for Hong Kong.

5. In order to meet the pledge for water supply at 99% reliability, the Water Supplies Department has estimated that the required annual supply quantity of Dongjiang water would be about 820 mcm for 2009 to 2011. This is to ensure that Hong Kong will have adequate and reliable Dongjiang water supply during the new agreement period to maintain round-the-clock supply even under a 1-in-100 year drought. Built upon the current agreement, the proposed annual lump sum to purchase Dongjiang water is based on the annual supply ceiling of 820 mcm. The supply quantity of 1 100 mcm reserved for Hong Kong under the <東江流域水資源分配方案> is the ultimate annual supply quantity. We do not need to commit to the time of achieving this target supply quantity at present.

6. There is a view that we should agree with the GD side a unit water price and pay for the actual annual supply quantity to reduce our expenditure for purchasing Dongjiang water. This is not a feasible approach because we are unable to advise the GD side of our actual required annual supply quantity when negotiating the unit water price. The GD side will certainly take into account this uncertainty in fixing the unit water price in order to ensure a stable income. On the other hand, in the absence of an agreed annual water supply quantity, the GD side cannot guarantee adequate water supply to meet the sudden surge in water demand of Hong Kong in the event of severe drought. We will then have to face the risk of water rationing.

## **ENHANCED WATER QUALITY**

7. The GD side has continuously strived to enhance the quality of Dongjiang water supply to Hong Kong. The following works have been completed -

- (a) relocation of the water intake point at Dongjiang in 1998;
- (b) commissioning of the bionitrification plant at Shenzhen Reservoir in 1999;
- (c) full commissioning of the dedicated aqueduct in 2003;

- (d) implementation of wastewater interception schemes at Shenzhen Reservoir and Sha Wan to safeguard water quality in the reservoir ; and
- (e) implementation of the Shima River wastewater diversion scheme to discharge wastewater through the East Canal instead of immediately downstream of the water intake point at Taiyuan pumping station.

8. Following the full commissioning of the dedicated aqueduct in 2003, the quality of Dongjiang water supplied to Hong Kong has shown remarkable improvement in various aspects. The water quality complies with the national standard “Environmental Quality Standards for Surface Water, GB3838-2002” Type II value. This standard is mainly applicable for abstraction for human consumption in class one protection zone, habitats for rare and precious aquatic species etc.

9. To monitor the quality of water supply and promote transparency, the Water Supplies Department regularly monitors the quality of Dongjiang water received at Muk Wu Pumping Station and publishes the water quality data at its web site. The Advisory Committee on Quality of Water Supplies<sup>1</sup> (ACQWS) also regularly appraises the water quality data. In addition, ACQWS will annually visit Dongjiang and its tributaries to inspect the works and measures undertaken to protect Dongjiang water. In recent years, ACQWS is satisfied with the quality of Dongjiang water supplied to Hong Kong. Separately, since 2001, the GD authorities have annually provided the water quality data in the east bank section upstream of Taiyuan pumping station (intake point of Dongjiang water supply to Hong Kong) to the Water Supplies Department for publication on the website.

## **REASONABLE WATER PRICE**

10. Adjustment of water price is based on operation costs having regard to the exchange rate between Renminbi (RMB) and Hong Kong dollar (HKD) as well as the relevant price indices of both sides.

11. When we negotiated the current water supply agreement with the GD side in 2005, the exchange rate between RMB and HKD was relatively stable. For the three subsequent years from mid 2005 to

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<sup>1</sup> ACQWS which was set up in 2000 is an independent body with membership consisting of academics, district councilors, green advocates, professionals, community leaders and government officials. Its terms of reference is to keep under review and to advise the Government of the Hong Kong Special Administrative Region through the Director of Water Supplies on matters relating to water quality.

mid 2008, RMB has significantly appreciated against HKD. The cumulative increase in exchange rate is about 14%. The GD side has borne the impact of this significant appreciation of RMB in the past few years since the water supply agreement does not contain any price adjustment provision. In the negotiation for the 2009 water price, both sides considered it necessary to reasonably adjust the water price to account for the change in exchange rate in the past three years.

12. As regards the relevant price indices of both sides, widely used and regularly updated medium term forecast of inflation for GD is not at present available in the market. The average forecast for the nationwide inflation of the Mainland by private institutions (mainly investment banks) is 3.6% per annum for 2010 and 2011. As for Hong Kong, the inflation forecast is 4% per annum on average in 2010 and 2011, based on the 2009 – 2012 forecast trend promulgated in the 2008-09 Budget in February 2008.

13. In the first 9 months of this year, RMB has already appreciated by 5.7% against HKD. Some institutions carrying out research of the Mainland have recently forecast that the rate of appreciation of RMB against US Dollar in 2009 would slightly slow down as compared to that of this year, but the increasing trend would prevail in the medium term. We envisage that the appreciation of RMB against HKD will continue.

14. In negotiating for the 2009 water price, we have taken into consideration the factors mentioned in paragraph 11 above and the trend of changes of inflation and exchange rate in that year. We consider the proposed increase of 18.61% in water price reasonable. In negotiating for the 2010 and 2011 water prices, we have taken account of the medium term inflation forecast and the change in exchange rate. We also consider the respective increase in water price of 6.32% and 6.29% for the two years reasonable.