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17 June 2013

Clerk to Public Works Subcommittee
Legislative Council
Legislative Council Complex
1 Legislative Council Road,
Central, Hong Kong
(Attn.: Ms Annette LAM)

Dear Ms Lam,

Public Works Subcommittee
Meeting on 28 May 2013

45CG – District Cooling System at the Kai Tak Development

I refer to your letter of 3 June 2013, seeking the following information of the project **45CG** – "District Cooling System at the Kai Tak Development" –

(a) information relevant to the estimated tariff of the proposed District Cooling System (DCS) at the Kai Tak Development (KTD) based on the current estimated construction cost;

(b) information on the estimated savings in construction cost of Government's public works projects at KTD with the adoption of the DCS;

(c) information on the financial viability of the DCS under different scenarios (e.g. depreciation set at 15 years, 20 years

and 30 years respectively); and

(d) the impact of the DCS on the recurrent expenditure of the Hospital Authority (HA).

The relevant information is set out in the following paragraphs.

Estimated tariff

2. The DCS tariff will be set at a competitive level comparable to the cost of individual water-cooled air-conditioning systems (WACS) using cooling towers, which is one of the most cost-effective air-conditioning systems available in the market. We also intend to recover both the capital and operating costs from users over the project life, which is estimated to be 30 years, as taxpayers should not subsidise such air-conditioning charges.

3. The Electrical and Mechanical Services Department (EMSD) has commissioned consultancy studies to develop the charging mechanism having regard to international practices and features of the DCS at the KTD; and to conduct surveys on the cost of individual WACS using cooling towers. Our current assessment is that the tariff is unlikely to deviate significantly from the cost of individual WACS using cooling towers, as the costs of both the DCS and the WACS will move largely in tandem with construction prices.

4. Implementation of a DCS in the KTD will bring about significant environmental benefits. Due to better energy efficiency, the maximum annual saving in electricity consumption upon completion of the entire DCS project is estimated to be 85 million kilowatt-hour (kWh), with a corresponding reduction of 59 500 tonnes of carbon dioxide emission per annum.

Estimated savings in construction cost

5. The reduction in upfront capital cost for installing chiller plants at DCS user buildings is estimated to be around 5% to 10% of the total building cost.

6. As far as Government's public works projects at KTD are concerned, the estimated savings in construction costs against the total building costs (i.e. the costs of building works and building services works) for the Trade and Industry (TI) Tower, the Centre of Excellence in Paediatrics (CEP), Kai Tak Cruise Terminal (KTCT) building and non-residential area of the public housing sites are around 8.8%, 3.2%, 2.4% and 11.9% respectively according to the latest project estimates.

7. The estimated percentage saving in CEP is lower than other types of buildings, such as office buildings, due to its higher total building costs necessary for the fitting out of the wards, operating theatres, laboratories, etc. to meet the specific operational needs of the hospital. Moreover, the estimated percentage saving in KTCT is lower than other types of buildings due to the high portion of non air-conditioned floor area and public area. The estimated percentage saving of non-residential area of the two public housing sites, which refers to the shopping centres there, is higher due to its lower total building costs which excluded the costs of the fitting-out works for individual shops.

8. Apart from the above projects, the two primary schools at Sites 1A-3 and 1A-4 will also adopt DCS under a pilot scheme. With regard to the outcome of the scheme, the Administration will consider whether it should be extended to other schools in KTD as appropriate.

Financial viability of DCS under different scenarios

9. The DCS tariff will be set at a competitive level comparable to the cost of individual WACS using cooling towers. We also intend to recover both the capital and operating costs from DCS users over the project life, which is estimated to be 30 years, as taxpayers should not subsidise such air-conditioning charges.

10. The 30-year cost-recovery basis has been adopted to fully reflect the expected service life of the DCS. There is no practical need for setting a shorter depreciation period for the project.

Impact of DCS on the recurrent expenditure of HA

11. As stated in the PWSC (2013-14)6, the annual recurrent expenditure arising from the CEP project is estimated to be $977.0 million. The Hospital Authority will earmark funding to meet the operational

requirement of the CEP which will commence services by phases starting from mid-2018.

Yours sincerely,

(Mrs Dorothy MA)
for the Secretary for the Environment