

**Legislative Council
Panel on Development**

**PWP Item No. 45CG -- District Cooling System at Kai Tak
Development**

Follow-up Actions to Meeting on 28 April 2015

The Administration provides the supplementary information as required by the Panel as follows:

Maintenance cost for the District Cooling System (DCS) at Kai Tak Development (KTD) in the next 30 years (i.e. the expected payback period), including the amount of the cost per year; how the cost would be funded, the proportion of the maintenance cost in the operation cost, the operation cost for the System per year, etc.

- When the DCS at KTD operates in full capacity upon completion of the remaining works under Phase III¹ of the project, the annual operation and maintenance (O&M) cost until the end of its project life is roughly estimated to be equivalent to about 1.6% of the total capital cost of the project (i.e. \$4,945.5 million in money-of-the-day prices).
- As provided in the District Cooling Services Ordinance (Cap. 624) passed by the Legislative Council in March 2015, capacity charges will be imposed. The purpose is to cover the capital cost of the DCS (including the plants, pipes and heat exchanges for individual consumers of buildings) and operation and maintenance cost to be paid to contractor. The level of the capacity charge is set out in Schedule 2 to Cap. 624. A copy of Schedule 2 to Cap. 624 is at **Annex**.
- The charge has been set at a competitive level comparable to the cost of individual water-cooled air-conditioning systems using cooling towers, which is one of the most energy-efficient air-conditioning systems available in the international market. The charges should recover both the capital and operating costs of the DCS users over the project life which is estimated to be 30 years.

¹ Subject to the progress and development programme of KTD, we will consider the need and the programme for the remaining works under Phase III in due course, and seek approval from the Public Works Subcommittee and Finance Committee for further increasing the approved project estimate to cover those works.

Schedule:	2	Charges for District Cooling Services	7 of 2015	27/03/2
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[sections 10 & 34]

1. Calculation of charges for district cooling services

- (1) This Schedule applies to the calculation of the following charges for a district cooling system—
- capacity charge and capacity overrun charge (see section 2 of this Schedule);
 - consumption charge (see section 3 of this Schedule);
 - surcharge and further surcharge (see section 4 of this Schedule).
- (2) Section 5 of this Schedule sets out the following rates that are applicable to a building to which district cooling services are provided by a district cooling system referred to in that section—
- capacity charge rate;
 - consumption charge rate.

2. Capacity charge and capacity overrun charge

- (1) The amount of capacity charge payable under section 10(1)(a) in respect of a building for a month is to be calculated according to the following formula—

$$\text{capacity charge} = C \times CR$$

where—

C = contract cooling capacity of the building; and
 CR = capacity charge rate applicable to the building.

- (2) The amount of capacity overrun charge, if payable under section 10(1)(b) in respect of a building for a month, is to be calculated according to the following formula—

$$\text{capacity overrun charge} = (AC - C) \times CR \times 110\%$$

where—

AC = highest actual cooling capacity of the building in the month;
 C = contract cooling capacity of the building; and
 CR = capacity charge rate applicable to the building.

- (3) If district cooling services are provided to a building in a month for a period of less than 1 month, the amount of capacity charge, and that of any capacity overrun charge, payable for that month are to be calculated on a pro-rata basis according to the number of days for which the services are provided to the building in that month.

3. Consumption charge

The amount of consumption charge payable under section 10(1)(c) in respect of a building for a month is to be calculated according to the following formula—

$$\text{consumption charge} = AE \times ER$$

where—

AE = actual cooling energy consumption of the building in the month; and
 ER = consumption charge rate applicable to the building.

4. Surcharge and further surcharge

- (1) The amount of surcharge, if payable under section 10(2)(a) in respect of a primary charge or fee, is to be calculated according to the following formula—

$$\text{surcharge} = (\text{PC} - \text{PCP}) \times 5\%$$

where—

PC = the primary charge or fee that is payable as at the due date; and

PCP = the part of the primary charge or fee that has been paid, if any, as at the end of the due date.

- (2) The amount of further surcharge, if payable under section 10(2)(b) in respect of a primary charge, fee or surcharge, is to be calculated according to the following formula—

$$\text{further surcharge} = (\text{PCS} - \text{PCSP}) \times 10\%$$

where—

PCS = the primary charge, fee or surcharge that is payable as at the due date; and

PCSP = the part of the primary charge, fee or surcharge that has been paid, if any, as at the expiry of the period of 6 months beginning on the day after the due date.

5. Capacity charge rate and consumption charge rate

- (1) For a building to which district cooling services are provided by a district cooling system specified in column 1 of the following table—

- (a) the capacity charge rate applicable is specified in paragraph (a) in column 2 opposite that system; and
 (b) the consumption charge rate applicable is specified in paragraph (b) in column 2 opposite that system.

Table

Column 1	Column 2
District cooling system	Rate of charge
1. Kai Tak District Cooling System	<p>(a) Capacity charge rate (CR)—</p> <p>(i) for the initial period— $CR = \\$112.11$ per kilowatt refrigeration (kW_r);</p> <p>(ii) for each subject period— $CR = CR_{n-1} \times (1 + CCPI_r)$ where— CR_{n-1} = capacity charge rate applicable immediately before the subject period; and $CCPI_r$ = rate of change in CCPI applicable for the subject period.</p> <p>(b) Consumption charge rate (ER)—</p> <p>(i) for the initial period— $ER = \\$0.19$ per kilowatt-hour refrigeration (kW_{rh});</p> <p>(ii) for each subject period— $ER = ER_{n-1} \times (1 + ET_r)$ where— ER_{n-1} = consumption charge rate applicable immediately before the subject period; and ET_r = rate of change in electricity tariff applicable for the subject period.</p>

(2) In this section—

initial period (初始期間), for the Kai Tak District Cooling System, means the period beginning on the commencement date of this Ordinance up to and including the first 31 March that follows;

rate of change in CCPI (物價指數變動率), in relation to a subject period beginning in a year, means the annual rate of change in the Composite Consumer Price Index recorded for the preceding year, after removing the effects of all one-off relief measures of the Government, if any, as compiled and published by the Commissioner for Census and Statistics;

rate of change in electricity tariff (電費變動率), in relation to a subject period beginning in a year, means the annual rate of change in electricity tariff applied to the year, as announced by the supplier of electricity to the district cooling system and publicized through the Internet by the Director;

subject period (收費計算期), for the Kai Tak District Cooling System, means any 12-month period beginning on 1 April of a year up to and including 31 March in the following year that is after the initial period.