

LEGISLATIVE COUNCIL BRIEF

District Cooling Services Bill

INTRODUCTION

A At the meeting of the Executive Council on 26 August 2014, the Council **ADVISED** and the Chief Executive **ORDERED** that the District Cooling Services Bill (the Bill), at Annex A, should be introduced into the Legislative Council (LegCo) in the beginning of the 2014-15 legislative session.

JUSTIFICATIONS

District Cooling System at the Kai Tak Development

2. District Cooling System (DCS) is one of the major infrastructure facilities in support of the sustainable and environmentally-friendly development at Kai Tak. To promote energy efficiency and conservation, and with the support of the LegCo, the Government is constructing a first-of-its-kind DCS at the Kai Tak Development (KTD) with a planned total of about 1.73 million square metres (m²) of non-domestic air-conditioned gross floor areas, requiring about 284 megawatt of refrigeration cooling capacity.

3. The DCS is an energy-efficient air-conditioning system as it consumes 35% and 20% less electricity as compared with traditional air-cooled air-conditioning systems and individual water-cooled air-conditioning systems (WACS) using cooling towers respectively. The technology has been widely adopted in other parts of the world, such as Singapore, Europe and the United States. 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, with a corresponding reduction of 59 500 tonnes of carbon dioxide emission per annum.

4. Apart from energy saving, the DCS would bring about the following benefits for individual users –

- (a) reduction in upfront capital cost for installing chiller plants at their buildings; the reduction is about 5-10% of the total building cost;
- (b) more flexible building designs for user buildings as they do not need to install their own chillers and the associated electrical equipment;
- (c) reduced heat island effects in KTD and no noise and vibration arising from the operation of heat rejection equipment and chillers of air-conditioning plants in buildings, as such equipment will no longer be necessary for buildings subscribing to district cooling services. Also, DCS can contribute to air quality improvement and the vision of achieving low carbon economy; and
- (d) a more adaptable air-conditioning system to the varying demand as compared to individual air-conditioning systems. For each individual building, cooling capacity can be increased by requesting additional cooling capacity from the DCS without carrying out extensive modification works for the building in question.

5. The DCS at KTD will provide services to public and private non-domestic developments at KTD. All public developments in the region, which account for around 35% of the total air-conditioned floor area in KTD, will subscribe to the district cooling services. Heeding to the request of the LegCo Panel on Environmental Affairs at its meeting in June 2010, we will require private non-domestic projects in KTD to connect to the DCS with a view to maximising the environmental benefits of the project. This connection requirement will be implemented by

prescribing the appropriate provisions in the conditions of land sale to require the lessee to construct and maintain DCS substations for connection to DCS in accordance with the guidelines issued by Electrical and Mechanical Services Department (EMSD). As a general practice for new developments on sale sites, Lands Department (LandsD) will check compliance with the positive obligations in the conditions of sale on completion of the new development on the sale site before the issuance of Certificate of Compliance. Insofar as the requirement to connect to the DCS is concerned, LandsD will consult EMSD to ensure that the requirement for connection to DCS has been complied with to the satisfaction of EMSD.

Charging Principles for District Cooling Services at KTD

6. The Administration has undertaken to set the district cooling services tariff at a competitive level comparable to the cost of individual WACS using cooling towers, which is one of the most energy-efficient air-conditioning systems available in the international market. We also intend to recover both the capital and operating costs of the DCS from building owners or their authorized agents over the project life, which is estimated to be 30 years, as taxpayers should not subsidize such air-conditioning charges. Apart from the above principles, the proposed charging mechanism is designed towards achieving the objectives of providing price stability and a simple charging regime with common charge rates for all buildings regardless of their load profiles.

7. As DCS is to provide chilled water for central air-conditioning system on building basis, the district cooling services tariff will be collected from the building owners of the central air-conditioning system or their authorized agents such as the building management offices (known as “approved consumers” in the Bill) on a monthly basis. The charging arrangements for the use of central air-conditioning services by occupants/tenants within a building will be worked out between building owners/authorized agents and the occupants/tenants. As with the current practices being adopted by most commercial buildings, the charge may form part of the rent or management fee, or may be separately charged on a metered basis. Since the level of district cooling services charges and the adjustment formula are public information to be stipulated in the Bill, occupants/tenants would be able to monitor and assess the reasonableness

of the air-conditioning charges imposed by the owners or management offices of the buildings using the district cooling services.

Charging Mechanism

8. The key tariff components which have been drawn up with reference to international practices were reported and agreed by the LegCo Panel on Environmental Affairs in July 2012 and July 2014. They are -

(a) Capacity Charge

- to cover the capital cost of the DCS (including the plants, pipes and heat exchangers for individual consumers of buildings) and operation and maintenance cost to be paid to contractor. It will be levied according to the contract cooling capacity (i.e. an estimation of the maximum cooling capacity for the building) as agreed between consumers and the Director of Electrical and Mechanical Services (DEMS) before provision of district cooling services.

(b) Consumption Charge

- to cover costs that vary with the actual consumption of district cooling services by occupiers/tenants. The major part of the charge is the cost of electricity used to provide district cooling services.

(c) Capacity Overrun Charge

- this will be levied if the highest actual cooling capacity demand exceeds the contract cooling capacity to discourage consumers of buildings from deliberately under-estimating their contract cooling capacity for the purpose of driving down the capacity charge. Consumers will have to pay an extra 10% for the capacity charges for the overrun part; and

(d) Surcharges for Unpaid Charges

- a surcharge equal to 5% of the unpaid amount will be charged after the payment due date. If the amount remains unpaid for six months after the payment due date, a further surcharge equal to 10% of the total unpaid amount will be imposed.

9. A deposit shall be paid by consumers to cover any charge or fee that is or may be payable. The amount of deposit will be determined by EMSD with reference to practices applicable to other utilities such as water supply, and will be twice the estimated monthly tariff which will be based on the contract cooling capacity as agreed between consumers and DEMS before provision of district cooling services.

10. EMSD has commissioned a consultancy study to advise on the initial tariff and future review mechanism having regard to international practices and features of the DCS at the KTD. The opening tariff at 2012/13¹ as recommended by the consultant and the charging level for 2013/14 and 2014/15 calculated from the opening tariff are as follows –

Type of charge	Charging level ²		
	Opening at 2012/13	2013/14	2014/15
Capacity Charge (\$/kilowatt per month)	102.96	107.80	112.11
Consumption Charge (\$/kilowatt-hour)	0.17	0.18	0.19

¹ 2012/13 is chosen as the base year as it marks the commencement of operation of the DCS.

² The tariff levels for 2013/14 and 2014/15 are estimated by applying the auto-adjustment formulae set out in paragraph 15 of this paper to the opening tariff at 2012/13. The tariff in 2014/15 is the latest available figure and will be adopted in the Bill when it is introduced to the LegCo. We will keep in view any possible need for updating the proposed tariff as a result of movements in Composite Consumer Price Index and electricity charges before the passage of the Bill.

11. The proposed tariff seeks to achieve full cost recovery of the DCS over its project life in 30 years.

12. We have also made a comparison between the costs (including capital and recurrent costs) of DCS and the costs under WACS per unit of cooling energy in order to confirm that the DCS tariff is set at a competitive level comparable to the cost of WACS. When drawing this comparison, it should be noted that while the Government has undertaken to apply common charging rates for all buildings regardless of their load profiles, there is no single or uniform unit cost for both the DCS and the WACS. Reasons are set out below -

- (a) different types of buildings require different designs of WACS, and hence there will be variations in the unit costs of WACS across different types of buildings; and
- (b) there are also variations in the DCS unit costs among different types of buildings. The differences are largely the result of differences in the capacity charges for different types of building as well as the hours of operation. The capacity charge varies with the maximum cooling capacity of the building and tends to be higher for buildings which require higher cooling load, and the unit cost of DCS tends to be higher if the hours of operation of the cooling service are short.

13. A comparison of the unit costs of DCS and those of WACS for Government premises and public facilities, as well as commercial developments in KTD at the price level of 2012/13 is summarized below.

Types of buildings (weighted average)	% of air-conditioned floor area in KTD	Unit Cost of DCS³	Unit Cost of WACS⁴
All building types	100	0.635	0.791
Government premises	24	0.714	1.053
Facilities of public bodies	12	0.489	0.621
Commercial developments (e.g. private retail and offices⁵ and hotels)	64	0.632	0.722

³ The cost of DCS is equivalent to the capacity charge and consumption charge to be paid by a consumer for the use of the district cooling services. The unit cost of DCS is worked out by dividing the total annual charges paid by the consumer for a building (i.e. the capacity charge and the consumption charge) by the building's annual consumption of the cooling energy (i.e. the cooling energy, in the unit of kilowatt-hour refrigeration (kWh), actually used for generating chilled water to be supplied to the building over a year.

⁴ The cost of WACS is the life-cycle cost, which is the present value of the current and future expenditures for the procurement, replacement, operation and maintenance of building materials and building services installation throughout the life span of the self-generated WACS for a particular building type in the KTD. The cost items include construction cost of plant rooms and equipment (i.e. chillers, pumps, cooling towers, transformers and low voltage switchboards) and pipework, operation cost (i.e. electricity cost, water cost and sewage cost) and maintenance cost (i.e. annual maintenance cost and maintenance staff cost). The WACS is assumed to have a project life of 20 years.

The unit cost of WACS is worked out by dividing the total discounted cash flow of the costs by the required cooling energy (i.e. the quantity of heat removed per second in the unit of kWh, actually demanded for generating chilled water to be supplied to the building).

⁵ For a typical office building of 60,000 m² of gross floor area and 7,000 kW of cooling capacity, the monthly air-conditioning charge currently varies from \$3 to \$5 per square foot at the 2014/15 price level. On the other hand, the same for district cooling is estimated to be about \$2 per square foot.

However, the amount of air-conditioning charges to be paid by the air-conditioning user needs to take into account the operation and maintenance fee to be set by the building owners or their authorized agents for the remaining parts of the central air-conditioning system for the building concerned.

14. The unit cost of DCS is lower than the unit cost of an individual WACS, which is in line with the expectation that long-term energy savings would translate into a reduction in cooling costs.

Tariff adjustment mechanism

15. The capacity charge rate is proposed to be adjusted annually based on the Composite Consumer Price Index while the consumption charge rate is proposed to be adjusted annually to take into account the change in electricity tariff rate. As the actual cost and revenue may deviate from the forecast, apart from the annual tariff adjustments to be provided in the Bill, we will conduct tariff review at least once every five years. If the review outcome indicates that the discrepancy between the actual cost and revenue and the forecast is significant and will have a permanent impact on the cost and the revenue, the capacity charge rate stipulated in section 5 of Schedule 2 to the Bill will be adjusted in the light of the review outcome by notice published in the Gazette as provided in Clause 34 of the Bill.

Offsetting arrangement for EMSD's expenses

16. The provision of DCS will incur substantial expenses on the part of EMSD for settling the operation and maintenance fees for the DCS operator as well as utility charges for operating the DCS plants. However, according to section 3(1) of the Public Finance Ordinance (Cap. 2), any charges received for the purposes of the Government will form part of the General Revenue unless there are express legal provisions to provide for alternative arrangements. In this context, EMSD cannot utilize the district cooling services charges collected to support the provision of DCS unless it is empowered by the law to do so. We therefore propose to stipulate in the Bill that charges collected from consumers may be used to cover such operating expenses incurred by EMSD.

OTHER OPTIONS

17. Legal advice indicates that explicit statutory authority is required for the Government to impose a charge, fee or levy. The introduction of a new piece of legislation is the only option that can provide legal certainty for the Government's power to collect district cooling services charges from non-Government users of district cooling services at KTD and to use the revenue collected to offset the operating costs incurred by EMSD. To prepare for the collection of charges from the non-Government users which are expected to subscribe to the district cooling services in July 2015, we would need to have the legislation in place within the 2014-15 legislative year.

THE BILL

18. The Bill will contain the following main provisions –

- (a) Part 1 (Clauses 1 to 3) contains preliminary provisions. In particular, it provides for the application of the Bill in relation to the district cooling system(s) specified in Schedule 1;
- (b) Part 2 (Clauses 4 to 9) deals with matters relating to the provision of district cooling services. It specifies the conditions under which DEMS may approve a consumer, as well as the circumstances under which district cooling services to a building may be provided, refused, suspended or terminated. It also provides for the contract cooling capacity.
- (c) Part 3 (Clauses 10 to 17) contains provisions relating to charges for district cooling services. It stipulates that a consumer is liable for any charge, fee or deposit payable under the proposed charging arrangement. DEMS may reduce, waive or refund a charge, fee or deposit as provided under Clause 15. Clause 17 provides for the offsetting arrangement for EMSD's expenses. Subject to the approval of the Financial Secretary, those parts of

the charges and fees received by the Government under the Bill that are required for the purposes of settling payment to the DCS operator or other expenses arising from the provision of district cooling services do not form part of the general revenue and may be applied for those purposes.

- (d) Part 4 (Clauses 18 to 21) contains provisions relating to the administration of district cooling services. Clauses 18 and 19 empower DEMS to issue improvement notices and appoint authorized officers. Clause 20 stipulates the powers of an authorized officer. Clause 21 provides for offences.
- (e) Part 5 (Clauses 22 to 30) contains provisions relating to appeals against certain decisions or direction. It provides for the composition of the appeal board panel and the proceedings of an appeal board. It empowers an appeal board to confirm, vary or revoke the decision or direction appealed against. The appeal board is also empowered to substitute its own decision or direction for the decision or direction appealed against.
- (f) Part 6 (Clauses 31 to 34) contains miscellaneous provisions. It empowers the Secretary for the Environment to amend the Schedules by notice published in the Gazette. It also empowers DEMS to specify forms and delegate functions.
- (g) Schedule 1 specifies the district cooling system(s) in relation to which the Bill applies.
- (h) Schedule 2 provides for details of charges.

LEGISLATIVE TIMETABLE

19. The legislative timetable will be as follows –

Publication in the Gazette	26 September 2014
First Reading and commencement of Second Reading debate	8 October 2014
Resumption of Second Reading debate, Committee Stage and Third Reading	To be notified

IMPLICATIONS OF THE PROPOSAL

20. The legislative proposal has economic, environmental, sustainability, financial and civil service implications as set out at Annex B. The proposal is in conformity with the Basic Law, including the provisions concerning human rights. The Bill does not contain any express binding effect provision. The legislative proposal has no family and productivity implications.

B

PUBLIC CONSULTATION

21. We consulted various stakeholders including professional bodies, developer associations, business chambers and advisory committee from April to July 2012 on the district cooling services tariff charging mechanism and relevant arrangements. The parties consulted welcomed the implementation of the DCS at KTD and did not raise any objection to the proposed charging mechanism.

22. We consulted the Panel on Environmental Affairs of the LegCo in July 2014. Members welcomed the implementation of the DCS at KTD, and did not raise objection to the proposed charging mechanism and the legislative proposals, though there were concerns about possible upward pressure on the proposed tariff if developers choose not to subscribe to the district cooling services. We consider that

the chances of under-subscription are slim in view of the requirement for non-residential developments to be connected to the DCS to be stipulated in the conditions of land sale; the significant additional cost to be incurred by developers in pursuing an alternative air-conditioning system; the competitiveness of the district cooling services charges as well as the environmental benefits brought about by the DCS. On the charging arrangement, there were concerns that building owners or their authorised agents may set the air-conditioning charges well above the district cooling services charges collected by the Administration and make a profit out of the district cooling services. However, as the level of district cooling services charges and the adjustment formula are, unlike the cost of conventional air-conditioning systems, public information to be stipulated in the Bill, occupants/tenants would be able to monitor and assess the reasonableness of the air-conditioning charges imposed by the owners or management offices of the buildings using the district cooling services.

PUBLICITY

23. A press release will be issued on 24 September 2014. A spokesperson will be available to handle enquiries.

BACKGROUND

24. As reported to the Finance Committee in June 2013, on the basis of the latest development schedule of KTD, the project cost for all phases (including the remaining works under Phase III⁶) is estimated to be \$4,945.5 million in money-of-the-day (MOD) prices. Funding approval from LegCo has been secured for Phases I, II and IIIA of the project at an Approved Project Estimate of \$3,145.9 million in MOD prices. We plan to seek funding approval from LegCo for the remaining works under Phase III, which are estimated to be \$1,799.6 million in MOD prices, by phases from 2015 to 2017 depending on the development schedule of KTD.

⁶ The scope of the remaining works under Phase III includes the installation of electrical and mechanical equipment and pipe laying for remaining KTD Packages II and III.

25. Works for Phase I were completed in early 2013, while works for Phase II and Phase III (Package A) are expected to complete by end of 2014 and end of 2017 respectively. District cooling services to two primary schools are expected to commence in July 2015. With the completion of the Phase I project in early 2013, district cooling services to Kai Tak Cruise Terminal building and Ching Long Shopping Centre under the Hong Kong Housing Authority (HA) commenced in February 2013 and May 2013 respectively. As for the remaining works under Phase III, subject to the progress and development programme of KTD, we will consider the funding need and the programme in due course.

ENQUIRIES

26. Any enquiries on this brief can be addressed to Miss Sheena Yap, Assistant Secretary for the Environment (Energy), Environment Bureau (Tel: 3509 8659) or Mr. M.K. Yip, Senior Engineer/Professional Support, Electrical and Mechanical Services Department (Tel: 2808 3355).

Environment Bureau
24 September 2014

District Cooling Services Bill

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A BILL

To

Provide for matters relating to district cooling services provided by the Government, including the imposition of charges for the services; and to provide for other related matters.

Enacted by the Legislative Council.

Part 1

Preliminary

1. Short title

This Ordinance may be cited as the District Cooling Services Ordinance.

2. Interpretation

In this Ordinance—

actual cooling capacity (實際製冷量), in relation to a building to which district cooling services are provided by a district cooling system, means the rate of heat removal, in the unit of kilowatt refrigeration (kW_r), that is actually demanded by the building for the system to generate the chilled water supplied to the building for the services;

actual cooling energy consumption (實際耗冷量), in relation to a building to which district cooling services are provided by a district cooling system, means the cooling energy, in the unit of kilowatt-hour refrigeration (kW_{rh}), that is actually used by

the building for the system to generate the chilled water supplied to the building for the services;

appeal board (上訴委員會) means a District Cooling Services Appeal Board appointed under section 25;

appeal board panel (上訴委員會) means the appeal board panel referred to in section 24;

approved consumer (獲准用戶), in relation to a building, means a person who is approved under section 4 as the consumer of district cooling services for the building;

authorized officer (獲授權人員) means a public officer authorized under section 19;

building (建築物) includes part of a building;

capacity charge (製冷量收費) means the capacity charge referred to in section 10(1)(a);

capacity overrun charge (超額製冷量收費) means the capacity overrun charge referred to in section 10(1)(b);

charge (收費) means a primary charge, surcharge or further surcharge;

consumption charge (耗冷量收費) means the consumption charge referred to in section 10(1)(c);

contract cooling capacity (合約製冷量), in relation to a building, means the contract cooling capacity as provided or revised under section 5 for the building;

deposit (按金) means a deposit payable under section 13;

Director (署長) means the Director of Electrical and Mechanical Services;

district cooling services (區域供冷服務) means the supply of chilled water for air-conditioning purposes by a district cooling system owned by the Government, and other related services;

district cooling system (區域供冷系統) means a system in which chilled water is supplied from one or more central chiller plants to user buildings within the area served by the system through a network of pipes for air-conditioning in the buildings;

due date (到期日)—see section 14;

estimated maximum cooling capacity (估計最高製冷量), in relation to a building to which district cooling services are to be provided by a district cooling system, means an estimation of the maximum rate of heat removal, in the unit of kilowatt refrigeration (kW_r), that would be demanded by the building for the system to generate the chilled water to be supplied to the building for the services;

fee (費用) means the fee for testing referred to in section 12(4);

function (職能) includes a power and a duty;

further surcharge (額外附加費) means the further surcharge referred to in section 10(2)(b);

improvement notice (敦促改善通知書) means an improvement notice issued or amended under section 18;

primary charge (基本收費) means a capacity charge, a capacity overrun charge or a consumption charge;

Secretary (局長) means the Secretary for the Environment;

specified form (指明表格) means a form specified by the Director under section 33;

surcharge (附加費) means the surcharge referred to in section 10(2)(a).

3. District cooling system in relation to which this Ordinance applies

This Ordinance applies in relation to a district cooling system specified in Schedule 1.

Part 2

Provision of District Cooling Services

4. Approval of consumer of district cooling services

- (1) Any of the following persons may apply to the Director in a specified form for approval as the consumer of district cooling services for a building—
 - (a) an owner or occupier of the building;
 - (b) a person responsible for the management of the building.
- (2) The applicant must include in the specified form—
 - (a) the estimated maximum cooling capacity of the building;
 - (b) the intended starting date for district cooling services to be provided to the building; and
 - (c) an undertaking given by the applicant in accordance with subsection (3).
- (3) The undertaking to be given by the applicant under subsection (2)(c) is an undertaking—
 - (a) to pay any charge, fee or deposit payable in respect of the district cooling services provided to the building in accordance with this Ordinance;
 - (b) to be responsible for, and to bear the cost of, the design, provision, construction, installation and maintenance of the facilities for the building to receive district cooling services as specified by the Director; and
 - (c) to comply with any other conditions imposed by the Director relating to the provision or use of district cooling services.

- (4) The Director may approve the applicant as the consumer of district cooling services for a building if—
 - (a) the application complies with subsections (1) and (2); and
 - (b) the Director agrees to—
 - (i) the estimated maximum cooling capacity provided under subsection (2)(a) or otherwise by the applicant; and
 - (ii) the intended starting date provided under subsection (2)(b) or otherwise by the applicant.
- (5) If the Director decides not to approve the applicant as the consumer of district cooling services for a building under subsection (4), the Director must notify the applicant of the decision and the reasons for the decision.

5. Contract cooling capacity

- (1) On the approval of the consumer of district cooling services for a building under section 4, the estimated maximum cooling capacity agreed by the Director under section 4(4)(b)(i) becomes the contract cooling capacity of the building.
- (2) The approved consumer for a building may revise the contract cooling capacity of the building only if the Director has agreed to the revision.

6. Provision of district cooling services

- (1) After the consumer of district cooling services for a building has been approved under section 4, the Director may provide district cooling services to the building from—
 - (a) the intended starting date agreed by the Director under section 4(4)(b)(ii); or

- (b) a later date as proposed by the approved consumer and agreed by the Director.
- (2) Nevertheless, the Director may refuse to provide district cooling services to a building from the date specified in subsection (1) if the approved consumer for the building fails to fulfil, or is in breach of, the undertaking given by the approved consumer under section 4(2)(c) in respect of the building.
- (3) If the Director decides to refuse to provide district cooling services to a building under subsection (2), the Director must notify the approved consumer for the building of the decision and the reasons for the decision.

7. Suspension or termination of district cooling services

- (1) The Director may suspend or terminate district cooling services to a building if—
 - (a) there is no approved consumer for the building;
 - (b) the approved consumer for the building fails to fulfil, or is in breach of, the undertaking given by the approved consumer under section 4(2)(c) in respect of the building;
 - (c) the approved consumer for the building fails to comply with a direction contained in an improvement notice;
 - (d) in the Director's opinion, work is required to be carried out for the installation, inspection, testing, operation, maintenance, regulating, alteration, repair, replacement or removal of any part of the district cooling system;
 - (e) in the Director's opinion, work is required to be carried out in the event of an operational emergency arising from a fault in the district cooling system;

- (f) in the Director's opinion, it is necessary to do so to protect life or property; or
- (g) in the Director's opinion, the behaviour of, or an installation of the building by, the approved consumer for the building is jeopardizing or will jeopardize the operation or reliability of the district cooling services.
- (2) If the Director decides to suspend or terminate district cooling services to a building under subsection (1)(b), (c), (d), (e), (f) or (g), the Director must notify the approved consumer for the building of the decision and the reasons for the decision.

8. Application for resumption of suspended district cooling services

- (1) If the Director has suspended district cooling services to a building under section 7(1)(b), (c), (d), (e), (f) or (g), the approved consumer for the building may apply to the Director for the services to be resumed.
- (2) On an application under subsection (1), the Director may resume district cooling services to the building if the approved consumer demonstrates to the satisfaction of the Director that the ground on which the services were suspended no longer exists.
- (3) If the Director decides not to resume district cooling services to a building under subsection (2), the Director must notify the approved consumer for the building of the decision and the reasons for the decision.

9. Ceasing to be approved as consumer of district cooling services

- (1) A person who is the approved consumer for a building may apply to the Director for the cessation of the approval.
- (2) The application must—
 - (a) state the intended date of the cessation; and

- (b) be made at least 1 month before that date.
 - (3) The Director must allow the application if—
 - (a) the application complies with subsection (2); and
 - (b) all outstanding charges and fees payable by the approved consumer in respect of the district cooling services provided to the building have been settled before the intended date of the cessation.
 - (4) If the Director allows the application, then, on the intended date of the cessation—
 - (a) the person ceases to be approved as the consumer of district cooling services for the building; and
 - (b) the undertaking given by the person under section 4(2)(c) in respect of the building ceases to be in force.
 - (5) If the Director decides to refuse the application, the Director must notify the person of the decision and the reasons for the decision.
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Part 3

Charges for District Cooling Services

10. Charges for district cooling services

- (1) The approved consumer for a building connected to a district cooling system specified in Schedule 1 must pay to the Government the following charges for the district cooling services provided to the building during a month—
 - (a) a capacity charge for the month, calculated according to section 2(1) and (3) of Schedule 2;
 - (b) if the highest actual cooling capacity of the building in the month exceeds the contract cooling capacity of the building—a capacity overrun charge for the month, calculated according to section 2(2) and (3) of Schedule 2; and
 - (c) a consumption charge for the month, calculated according to section 3 of Schedule 2.
- (2) The approved consumer for a building must also pay to the Government the following charges for an outstanding charge or fee—
 - (a) if a part of a primary charge or fee payable in respect of the building is not paid on or before its due date—a surcharge for the unpaid primary charge or fee, calculated according to section 4(1) of Schedule 2; and
 - (b) if a part of a primary charge, fee or surcharge payable in respect of the building remains unpaid as at the expiry of the period of 6 months beginning on the day after its due date—a further surcharge for the unpaid primary charge, fee or surcharge, calculated according to section 4(2) of Schedule 2.

- (3) The Director must inform the approved consumer for a building, by notice in writing, of the rates of primary charge applicable to the building for each subject period.
- (4) In addition, the Director must publicize the rates of primary charge applicable for each subject period by—
 - (a) publishing a notice that is accessible through the Internet; or
 - (b) placing a notice in any daily newspaper in circulation in Hong Kong.

(5) In this section—

rates of primary charge (基本收費額) means the capacity charge rate and consumption charge rate within the meaning of section 5 of Schedule 2;

subject period (收費計算期) has the meaning given by section 5(2) of Schedule 2.

11. Determination of actual cooling capacity and actual cooling energy consumption

- (1) The actual cooling capacity and actual cooling energy consumption of a building are to be measured by a meter owned by the Government and maintained by the Director in the building.
- (2) However, if the Director is of the opinion that it is impracticable or inappropriate to rely on a measurement under subsection (1) for a period, the actual cooling capacity and actual cooling energy consumption of the building for that period may be determined in the manner the Director thinks fit.

12. Testing of meter

- (1) An approved consumer for a building who doubts the accuracy of a meter that measures the actual cooling capacity and actual cooling energy consumption of the building may apply to the Director in a specified form to have the meter tested.
- (2) After receiving the application, the Director must arrange for the meter to be tested in the manner the Director thinks fit.
- (3) A meter is regarded as registering correctly despite any inaccuracy found in its measurement if the inaccuracy does not exceed 3% above or below the correct amount.
- (4) If the result of the test is that the meter is registering correctly, the approved consumer must pay to the Director a fee for testing in an amount equivalent to the cost involved in testing the meter.
- (5) However, if the result is that the meter is not registering correctly, no fee for testing is payable by the approved consumer.

13. Deposit

- (1) The Director may require the approved consumer for a building to pay a deposit, in the amount and by the date specified in a demand note issued to the approved consumer, to cover any charge or fee that is or may be payable in respect of the building.
- (2) Without limiting any other power under this Ordinance, the Director may apply a deposit paid in respect of a building to the payment of a charge or fee payable in respect of the building.
- (3) A deposit paid under this section—
 - (a) does not bear interest; and

(b) is not transferable.

(4) Subject to subsection (2), a deposit paid by a person as the approved consumer for a building must be refunded to the person if—

- (a) the person has ceased to be approved as the consumer of district cooling services for the building; and
- (b) the Director is of the opinion that the deposit is no longer required for satisfying any liability owed by the person as the approved consumer to the Government in connection with the services.

14. Due date for charge, fee and deposit

(1) The due date for a charge or fee is—

- (a) for a primary charge or fee—the date by which the charge or fee must be paid as specified in a demand note issued by the Director for the charge or fee;
- (b) for a surcharge payable in respect of a primary charge or fee—the due date of the primary charge or fee; and
- (c) for a further surcharge payable in respect of a primary charge, fee or surcharge—the date on which the period of 6 months beginning on the day after the due date of the primary charge, fee or surcharge expires.

(2) The due date for a deposit is the date by which the deposit must be paid as specified in a demand note issued for the deposit under section 13(1).

(3) A charge, fee or deposit must be paid—

- (a) for a primary charge, fee or deposit—on or before the due date; or
- (b) for a surcharge or further surcharge—immediately after the due date.

15. Reduction etc. of charge, fee and deposit

- (1) The Director may, in a particular case, reduce, waive or refund, in whole or in part, a charge or fee payable or paid under this Ordinance.
- (2) The Director may, on the application by the approved consumer for a building in a particular case, reduce, waive or refund, in whole or in part, a deposit payable or paid in respect of the building.

16. Recovery of charge and fee

A charge or fee payable under this Ordinance is recoverable as a civil debt due to the Government.

17. Application of charge and fee received etc.

- (1) Subject to the approval of the Financial Secretary, those parts of the charges and fees received by the Government under this Ordinance that are required for either of the purposes specified in subsection (2) do not form part of the general revenue and may be applied for those purposes.
- (2) The purposes are—
 - (a) settling a payment that a person who has entered into an agreement with the Government for the management, operation and maintenance of a district cooling system is entitled to receive under the agreement; and
 - (b) settling any other expenses arising from or in connection with the provision of district cooling services.

Part 4**Administration of District Cooling Services****18. Improvement notice**

- (1) The Director may issue an improvement notice to the approved consumer for a building if the Director is of the opinion that the behaviour of, or an installation of the building by, the approved consumer is jeopardizing or will jeopardize the operation or reliability of district cooling services.
- (2) An improvement notice issued to an approved consumer must—
 - (a) state the Director's opinion referred to in subsection (1);
 - (b) specify the approved consumer's behaviour or installation that is jeopardizing or will jeopardize the operation or reliability of district cooling services; and
 - (c) direct the approved consumer to remedy the behaviour or installation within the period specified in the notice.
- (3) The Director may amend or withdraw an improvement notice by issuing a notice to the approved consumer.
- (4) An improvement notice issued to a person as the approved consumer for a building ceases to have effect if the person is no longer the approved consumer for the building.
- (5) Subsection (4) applies regardless of whether the person has complied with the direction contained in the improvement notice.

19. Authorized officers

- (1) The Director may, in writing, authorize a public officer attached to the Electrical and Mechanical Services

Department to be an authorized officer for the purposes of this Ordinance.

- (2) An authorized officer must, if so requested, produce written proof of that officer's authorization before performing a function under this Ordinance.

20. Access for inspection and maintenance

- (1) An authorized officer may, at all reasonable times, enter a building to do any or all of the following—
 - (a) to inspect the building for the purposes of verifying information that is needed in determining a charge payable in respect of the building;
 - (b) to install, inspect, test, operate, maintain, regulate, alter, repair, replace or remove any part of the district cooling system in the building;
 - (c) to suspend or terminate district cooling services to the building.
- (2) Subsection (1) does not empower an authorized officer to enter a part of the building that is for residential use without the consent of the occupier of that part.
- (3) An authorized officer may exercise any power under this section with the assistance of any other person the officer thinks fit.

21. Offences

- (1) A person commits an offence if the person—
 - (a) obstructs an authorized officer, or a person assisting the officer under section 20(3), in the officer's performance of a function under this Ordinance; or

- (b) tampers with a facility owned and maintained by the Government for any purpose relating to the provision of district cooling services.
 - (2) A person who commits an offence under subsection (1) is liable on conviction to a fine at level 3 and to imprisonment for 6 months.
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Part 5

Appeal

22. Appeal to appeal board

- (1) A person who is aggrieved by any of the following decisions and direction made in respect of the person may appeal to an appeal board against the decision or direction—
 - (a) a decision not to approve a person as the consumer of district cooling services for a building under section 4(4);
 - (b) a decision to refuse to provide district cooling services to a building under section 6(2);
 - (c) a decision to suspend or terminate district cooling services to a building under section 7(1)(b), (c) or (g);
 - (d) a decision not to resume district cooling services to a building under section 8(2) where the services were suspended under section 7(1)(b), (c) or (g);
 - (e) a decision to refuse an application for the cessation of the approval of a person as the consumer of district cooling services for a building under section 9;
 - (f) a decision to issue or amend an improvement notice under section 18;
 - (g) a direction contained in an improvement notice.
- (2) An appeal under subsection (1) against a decision or direction does not suspend the decision or direction unless the Director decides otherwise.

23. How to lodge an appeal

- (1) A person may lodge an appeal under section 22(1) by giving a notice of appeal to the Director.
- (2) A notice of appeal must be given within—
 - (a) 14 days after the date on which the person is notified of the decision or direction appealed against; or
 - (b) a longer period that the Director may allow.
- (3) A notice of appeal must—
 - (a) be in a specified form;
 - (b) be accompanied by a copy of any document on which the person intends to rely; and
 - (c) contain the particulars of any witness that the person intends to call at the hearing of the appeal.
- (4) As soon as reasonably practicable after receiving a notice of appeal, the Director must deliver it to the Secretary.

24. Appeal board panel

- (1) The Secretary is to appoint members to an appeal board panel consisting of the following numbers and categories of members—
 - (a) not more than 4 members, each of whom is—
 - (i) a barrister qualified to practise as such under the Legal Practitioners Ordinance (Cap. 159); or
 - (ii) a solicitor qualified to act as such under that Ordinance;
 - (b) not more than 4 members, each of whom is a corporate member of the Hong Kong Institution of Engineers in one or more of the electrical, mechanical and building services disciplines;

- (c) not more than 4 members, each of whom is a corporate member of the Hong Kong Institution of Engineers in a discipline other than those mentioned in paragraph (b); and
 - (d) not more than 4 members, each of whom is not, in the Secretary's opinion, from the engineering profession.
- (2) For an appointment under subsection (1)(b) or (c)—
 - (a) a person is ineligible if the person has less than 10 years' experience of practice in the engineering profession in Hong Kong; and
 - (b) if a person is a corporate member of the Hong Kong Institution of Engineers in more than one discipline, the person's membership is, for the purposes of subsections (1) and (6)(d), to be regarded as being only in the discipline designated by the Secretary for the appointment.
- (3) A public officer is ineligible for an appointment under subsection (1).
- (4) A member of the appeal board panel is to be appointed for a term of 3 years and may be reappointed where each reappointment is for a term of 3 years.
- (5) A member of the appeal board panel may, at any time, resign from his or her office by issuing a notice in writing to the Secretary.
- (6) The Secretary may terminate the office of a member of the appeal board panel if the Secretary is satisfied that the member—
 - (a) has become a public officer;
 - (b) has become bankrupt or has entered into a voluntary arrangement within the meaning of section 2 of the

Bankruptcy Ordinance (Cap. 6) with the member's creditors;

- (c) is incapacitated by physical or mental illness;
 - (d) has ceased to be of the capacity by virtue of which the member was appointed; or
 - (e) is otherwise unable or unfit to perform the functions of a member of the appeal board panel.
- (7) The Secretary must give notice in the Gazette of any appointment, reappointment, resignation or termination of office under this section.

25. Appeal board

- (1) Within 21 days after receiving a notice of appeal delivered under section 23(4), the Secretary must appoint from among the members of the appeal board panel a District Cooling Services Appeal Board to hear the appeal.
- (2) An appeal board is to consist of 5 members—
 - (a) one of whom is the Chairperson of the board, who must be appointed from the category of members specified in section 24(1)(a); and
 - (b) the remaining 4 members must be appointed from the 3 categories of members specified in section 24(1)(b), (c) and (d).
- (3) If a vacancy occurs in an appeal board before the hearing of the appeal begins, the Secretary must, as soon as reasonably practicable, make an appointment from among the members of the appeal board panel to fill the vacancy so that the board is composed in accordance with subsection (2).
- (4) The members of an appeal board may be paid out of the general revenue any remuneration the Financial Secretary determines.

26. Proceedings of appeal board

- (1) The quorum for a meeting of an appeal board is 3 members, one of whom must be the Chairperson of the board.
- (2) A question before an appeal board must be determined by a majority of those members present at the meeting at which the question is to be determined.
- (3) If there is an equality of votes in respect of a question before an appeal board, the Chairperson of the board has a casting vote in addition to his or her original vote.
- (4) An appeal board may perform any of its functions, and its proceedings are valid, despite—
 - (a) subject to section 28, a vacancy in the board; or
 - (b) a defect in the appointment or qualification of a person purporting to be a member of the board.
- (5) In performing their functions under this Ordinance, the members of an appeal board have the same privileges and immunities as a judge of the Court of First Instance has in civil proceedings in that Court.
- (6) A person appearing before an appeal board as a witness, a party to an appeal or a representative of a party to an appeal is entitled to the same privileges and immunities as he or she would have in civil proceedings in the Court of First Instance.
- (7) Subject to this Part, an appeal board may determine its own procedure.
- (8) In this section—

meeting (會議) includes a meeting to hear an appeal.

27. Hearing of appeal

- (1) The Chairperson of an appeal board must notify the appellant and the Director of the date, time and place of the hearing of the appeal at least 14 days before the hearing.
- (2) At the hearing of an appeal—
 - (a) the appellant may be represented by—
 - (i) a barrister or solicitor; or
 - (ii) (if the appellant is a body corporate) an individual authorized by the appellant; and
 - (b) the Director may be represented by—
 - (i) a barrister or solicitor; or
 - (ii) a public officer.
- (3) An appeal board may engage a barrister or solicitor to attend the hearing of an appeal to advise it on any matter relating to the appeal.
- (4) The hearing of an appeal must be open to the public unless the appeal board determines that there is a good reason for it to be held in camera.
- (5) An appeal board may, by a notice signed by the Chairperson of the board and issued to a person—
 - (a) direct the person to attend before the board and to give evidence; or
 - (b) direct the person to produce documents.
- (6) No person to whom a direction is given under subsection (5) is required to give any evidence, or produce any document, that tends to incriminate the person.
- (7) A person who fails to comply with a direction under subsection (5) commits an offence and is liable on conviction to a fine at level 3.

28. Reappointment of appeal board in case of certain vacancies

- (1) Subsection (2) applies if, after the hearing of an appeal has begun, a vacancy occurs in an appeal board and—
 - (a) as a result, fewer than 3 members of the board remain in office; or
 - (b) the vacancy is that of the Chairperson of the board.
- (2) On the occurrence of the vacancy—
 - (a) the appeal board is dissolved; and
 - (b) the Secretary must appoint an appeal board under section 25(1) as if the Secretary had received, on the date on which the vacancy occurred, the notice of appeal delivered under section 23(4) in relation to the subject matter of the appeal again.

29. Appeal board may authorize inspection of installation etc.

- (1) If an appeal board reasonably believes that an installation or facility is relevant to the determination of an appeal, the board may, by an authorization signed by the Chairperson of the board—
 - (a) authorize a person to inspect the installation or facility; and
 - (b) authorize the person to enter a building, except a part of the building that is for residential use, for the purposes of the inspection.
- (2) A person who obstructs a person authorized under subsection (1) in the inspection commits an offence and is liable on conviction to a fine at level 3 and to imprisonment for 6 months.

30. Determination of appeal

- (1) An appeal board may—

- (a) confirm, vary or revoke the decision or direction appealed against; or
 - (b) substitute its own decision or direction for the decision or direction appealed against.
- (2) An appeal board may make any order that it thinks fit with regard to the payment of—
- (a) costs and expenses of the appeal proceedings; or
 - (b) costs and expenses of the Director or any other person in the proceedings.
- (3) The costs and expenses ordered to be paid under subsection (2) are recoverable as a civil debt.
- (4) An appeal board must issue to the appellant and the Director a notice of its determination and the reasons for the determination.
-

Part 6

Miscellaneous Matters

31. Presumptions and evidence in writing

- (1) In any civil proceedings for the recovery of an unpaid charge or fee payable under this Ordinance, a document to which this subsection applies is admissible in evidence on production without further proof.
- (2) Subsection (1) applies to a document that—
 - (a) purports to be signed by the Director or an authorized officer; and
 - (b) states—
 - (i) the name of the person liable to pay the charge or fee;
 - (ii) the amount of the charge or fee;
 - (iii) the nature and other particulars of the charge or fee; and
 - (iv) that the charge or fee remains unpaid.
- (3) If a document is admitted in evidence under subsection (1)—
 - (a) the court must, in the absence of evidence to the contrary, presume—
 - (i) that it was signed by the Director or the authorized officer as stated in the document;
 - (ii) that the facts referred to in subsection (2)(b) as stated in the document are true; and
 - (iii) that the record of the facts stated in the document was made and compiled at the time stated in it; and

- (b) the document is evidence of all other matters contained in it.
- (4) If a document is admitted in evidence under subsection (1), the court may, if it thinks fit, on its own motion or on the application of a party to the proceedings—
 - (a) summon the person who signed the document; and
 - (b) examine that person as to the subject matter of the document.

32. Delegation by Director

The Director may, in writing, delegate any of his or her functions under this Ordinance to a public officer attached to the Electrical and Mechanical Services Department.

33. Director may specify forms

- (1) The Director may specify a form to be used for the purposes of any provision of this Ordinance.
- (2) If the Director specifies a form under subsection (1), the Director must make copies of the form available—
 - (a) at the office of the Electrical and Mechanical Services Department during normal office hours; and
 - (b) in any other manner the Director thinks fit.

34. Secretary may amend Schedules

The Secretary may, by notice published in the Gazette, amend Schedule 1 or 2.

Schedule 1

[ss. 3, 10 & 34]

**District Cooling System in relation to which this
Ordinance Applies**

1. Kai Tak District Cooling System, which serves the area that is delineated and edged red on Plan No. KM9180 signed by the Director of Lands on 12 August 2014 and deposited in the office of the Director of Electrical and Mechanical Services.

Schedule 2

[ss. 10 & 34]

Charges for District Cooling Services**1. Calculation of charges for district cooling services**

- (1) This Schedule applies to the calculation of the following charges for a district cooling system—
- (a) capacity charge and capacity overrun charge (see section 2 of this Schedule);
 - (b) consumption charge (see section 3 of this Schedule);
 - (c) 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 in a district cooling system referred to in that section—
- (a) capacity charge rate;
 - (b) 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 in a district cooling system specified in column 1 of the following table—
- the capacity charge rate applicable is specified in paragraph (a) in column 2 opposite that system; and
 - 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> <ol style="list-style-type: none"> for the initial period— CR = \$112.11 per kilowatt refrigeration (kW_r); for each subject period— CR = CR_{n-1} × (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>(b) Consumption charge rate (ER)—</p> <ol style="list-style-type: none"> for the initial period— ER = \$0.19 per kilowatt-hour refrigeration (kW_{rh}); for each subject period— ER = ER_{n-1} × (1 + ET_r) where— ER_{n-1} = consumption charge rate applicable immediately

Column 1

District
cooling
system

Column 2

Rate of charge

before the subject
period; and

ET_r = rate of change in
electricity tariff
applicable for the
subject period.

(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.

Explanatory Memorandum

The main object of this Bill is to provide for the imposition of charges for district cooling services provided by the Government and for other related matters.

2. The Bill is divided into 6 Parts and contains 2 Schedules.

Part 1—Preliminary

3. Part 1 contains preliminary provisions.

4. Clause 1 sets out the short title.

5. Clause 2 contains definitions that are necessary for the interpretation of the Bill. In particular, the following fundamental concepts are defined—

(a) **district cooling services**—basically means the supply of chilled water for air-conditioning purposes; and

(b) **district cooling system**—basically refers to a system in which chilled water is supplied from central chiller plants to user buildings within the area served by the system through a network of pipes.

6. Other technical concepts include—

(a) “cooling capacity”, i.e. the rate of heat removal that is demanded for generating the chilled water (see the definitions of **actual cooling capacity**, **contract cooling capacity** and **estimated maximum cooling capacity**); and

(b) “cooling energy consumption”, i.e. the cooling energy that is used for generating the chilled water (see the definition of **actual cooling energy consumption**).

7. Clause 3 provides that the Bill applies in relation to the district cooling systems specified in Schedule 1. Currently, only the Kai Tak District Cooling System is specified.

Part 2—Provision of district cooling services

8. Part 2 contains provisions relating to how district cooling services are provided.
9. Clause 4 provides for the approval of consumers of district cooling services. For each building, its owner or occupier, or a person responsible for its management, may apply to the Director of Electrical and Mechanical Services (*Director*) to be the consumer for the building. The applicant must, among other things, give an undertaking to observe requirements relating to the services, including the obligation to pay any charge, fee or deposit payable in respect of the services. Once approved, the applicant becomes an *approved consumer*.
10. Clause 5 provides for the contract cooling capacity of a building. This is a value representing the maximum cooling capacity demanded by the building as estimated by the approved consumer and agreed by the Director. The contract cooling capacity forms the basis on which certain charges will be calculated.
11. Clause 6 provides for when the Director may start to provide district cooling services to a building, and under what circumstance the provision may be refused.
12. Clause 7 sets out the circumstances under which the Director may suspend or terminate district cooling services to a building. These include the failure on the approved consumer's part to observe a requirement relating to the services, and the necessity in the Director's opinion to suspend or terminate the services for reasons concerning the operation, maintenance, safety, etc. of the services or district cooling system. Clause 8 provides for the application by

- an approved consumer for the resumption of the services suspended.
13. Clause 9 provides for the procedure for applying for the cessation of the approval of a person as a consumer of district cooling services for a building.

Part 3—Charges for district cooling services

14. Part 3 contains provisions concerning various charges (as well as the fee and deposit) that are payable by an approved consumer for district cooling services.
15. Clause 10 provides for the following charges to be paid on a monthly basis for any district cooling services provided—
- (a) a *capacity charge* and, if applicable, a *capacity overrun charge*;
 - (b) a *consumption charge*; and
 - (c) if a charge or fee is not paid on time, a *surcharge* and, in case of further default in payment, a *further surcharge*.
16. The methods of calculating the charges are specified in Schedule 2. In summary—
- (a) capacity charge and capacity overrun charge are calculated by reference to the contract and actual cooling capacities of the building and a capacity charge rate;
 - (b) consumption charge is calculated by reference to the actual cooling energy consumption of the building and a consumption charge rate; and
 - (c) a surcharge or further surcharge is calculated by reference to the amount outstanding and a specified percentage.
17. The capacity charge rate and consumption charge rate will be adjusted annually according to the mechanism set out in section 5

of Schedule 2. The Director is required to publicize and inform approved consumers of the rates applicable for each period.

18. The actual cooling capacity and actual cooling energy consumption of a building are normally measured by meters (clause 11). The approved consumer for a building may apply to the Director to have a meter the accuracy of which is in doubt tested. A testing fee is however payable if the meter is found to register correctly (clause 12).
19. Clause 13 provides for deposits to be paid to cover any charge or fee that is or may be payable.
20. Clause 14 provides for the due dates for a charge, fee and deposit payable.
21. Clause 15 empowers the Director to reduce, waive or refund a charge, fee or deposit payable.
22. The charges and fees payable are recoverable as a civil debt due to the Government (clause 16). Those parts of the charges and fees received that are required for settling expenses of the Government arising from or in connection with the provision of district cooling services may be applied for such purpose (clause 17).

Part 4—Administration of district cooling services

23. Part 4 contains provisions relating to the administration of district cooling services.
24. Clause 18 empowers the Director to issue an *improvement notice* to an approved consumer directing the approved consumer to remedy any behaviour or installation that may affect the operation of district cooling services.
25. Clause 19 enables the Director to authorize public officers attached to the Electrical and Mechanical Services Department (*EMSD officers*) to be *authorized officers* for the purposes of the Bill. In

particular, clause 20 empowers an authorized officer to enter a building for the purposes of inspection and maintenance.

26. Clause 21 provides for the offences of obstructing an authorized officer and of tampering with a facility maintained for the provision of district cooling services.

Part 5—Appeal

27. Part 5 provides for a mechanism for appealing to a District Cooling Services Appeal Board (*appeal board*) against certain decisions made under the Bill.
28. Decisions subject to appeal include a decision not to approve a person as a consumer of district cooling services, a decision to refuse to provide, suspend or terminate district cooling services, and a decision relating to an improvement notice issued (including a direction contained in it) (clause 22).
29. An appeal is to be lodged by giving a notice of appeal to the Director, who is to deliver the notice to the Secretary for the Environment (*Secretary*) (clause 23). The Secretary is then to appoint an appeal board from a panel consisting of 4 categories of members, including legally qualified persons and engineers, to hear the appeal. Each appeal board consists of 5 members, one of whom is the Chairperson who must be a legally qualified person (clauses 24 and 25).
30. Clause 26 outlines the basic rules and procedure for the proceedings of an appeal board. Clauses 27 to 30 provide for details of the hearing of an appeal, including the powers of an appeal board to direct a person to give evidence and produce documents (clause 27) and to authorize inspection of installation or facilities (clause 29), the reappointment of an appeal board in certain cases (clause 28), and in what ways an appeal board may determine an appeal (clause 30).

Part 6—Miscellaneous matters

31. Part 6 contains miscellaneous provisions.
32. Clause 31 provides for evidential matters relating to recovery of an unpaid charge or fee in civil proceedings. Clause 32 empowers the Director to delegate any of his or her functions to EMSD officers and clause 33 empowers the Director to specify a form to be used for the purposes of the Bill. Clause 34 empowers the Secretary to amend Schedule 1 or 2 by notice published in the Gazette.

Schedules 1 and 2—District cooling systems and charges

33. Schedule 1 specifies the district cooling systems in relation to which the Bill applies. Schedule 2 provides for the methods of calculating charges for district cooling services. See also paragraphs 7, 16, 17 and 32 for more elaboration.

Implications of the Proposal

ECONOMIC IMPLICATIONS

Given that District Cooling System (DCS) is more energy efficient than traditional air-cooled air-conditioning systems and individual water-cooled air-conditioning systems (WACS), it would enable consumers of buildings to benefit from savings in the cost of using air-conditioning, including savings in electricity consumption and reduction in upfront capital cost for installing individual chiller plants at their buildings, estimated to be around 5% to 10% of the total building cost.

2. The wider use of DCS can contribute to cleaner air through more efficient use of electricity, thus benefiting the society as a whole. This in turn should be conducive to sustainable development of the Hong Kong economy. The recommendation relating to imposition of charges has no competition implication.

ENVIRONMENTAL IMPLICATIONS

3. While the legislative proposal itself does not have any environmental implications, implementation of DCS through the setting of the DCS charges at a competitive level will have positive implications on the environment. The annual saving in electricity consumption upon completion of the entire DCS project is estimated to be 85 million kilowatt-hour, with a corresponding reduction of 59 500 tonnes of carbon dioxide emission per annum.

4. By setting the tariff of using district cooling services at a competitive level, as compared with using traditional air-conditioning systems, more potential consumers of buildings may be incentivised to use the district cooling services and contribute to a greener environment in Kai Tak Development (KTD), as the building will not need to install

their own chillers and heat rejection equipment for providing central air-conditioning, thereby reducing noises and vibration arising from the operation of such equipment. The adoption of DCS will also allow more flexible building designs and provide more greening opportunities such as green roof.

SUSTAINABILITY IMPLICATIONS

5. The implementation of DCS is in line with the sustainability principle of minimizing the use of non-renewable resources and seeking opportunities to enhance the environmental quality for present and future generations. The proposed legislation will enable the Government's provision of the DCS to be supported and sustained by charges collected from consumers of the district cooling services.

FINANCIAL AND CIVIL SERVICE IMPLICATIONS

6. The proposed capacity charge and consumption charge as stipulated in the Schedule 2 to the Bill are intended to achieve full cost recovery of the DCS within the project life of the system, i.e. within 30 years. The automatic annual adjustment mechanism as provided in the Bill helps ensure that the level of the charges will move in tandem with the costs of providing the district cooling services.

7. On the cost side, the estimated cost of the entire project, including Phases I and II (\$1,861.8 million), Phase III (Package A) (\$1,284.1 million) and remaining works under Phase III¹ (\$1,799.6 million) is \$4,945.5 million in money-of-the-day prices. We have already obtained funding approval from the Legislative Council for Phases I, II and III (Package A) projects at the estimated cost of \$3,145.9 million. Although the finalized cost of the entire project may be affected by uncertainty about the cost of future phases, significant

¹ The latest estimated cost and implementation program for the remaining works under Phase III is subject to the implementation programme of other projects/developments in KTD. The funding required will be sought according to the established resource allocation mechanism in due course.

deviation from the estimated project cost of \$4,945.5 million is not expected given that the estimated cost of the remaining works only constitutes 36% of the total project cost and Phase I of the project has been completed, and contracts for Phases II and III (Package A) have already been awarded.

8. As for revenue that may be collected following the passage of the Bill, it depends on the subscription rate of the district cooling services by private non-residential developments. In view of the requirement for non-domestic developments to connect to DCS to be stipulated in the conditions of sale, the competitiveness of the level of district cooling services charges² and the substantial benefits of subscribing to the district cooling services, including savings in electricity consumption for air-conditioning as well as the design flexibility and 5-10% reduction in construction costs made possible by eliminating the need for buildings to be equipped with their own chillers and heat rejection equipment for providing central air-conditioning, it is expected that district cooling services should be able to achieve a reasonably high subscription rate from private users. The initial charging level has been worked out on the basis of 100% subscription rate.

9. We shall conduct tariff review if there are significant changes to the costs of and revenue from DCS by not less than once every five years. If the review outcome indicates that the discrepancy between the actual cost and revenue and the forecast is significant and will have a permanent impact on the cost and the revenue, the capacity charge rate stipulated in section 5 of Schedule 2 to the Bill will be adjusted in the light of the review outcome by notice published in the Gazette as provided in Clause 34 of the Bill.

10. With the proposed offsetting arrangement set out in Clause 17 of the District Cooling Services Bill, the consumption and capacity charges collected from non-Government consumers should be able to cover the expenditure incurred by Electrical and Mechanical Services Department (EMSD) in running the DCS starting from 2017-18. The capacity and

² The proposed charging level is 100%, 72% and 94% of the cost of individual WACS using cooling towers for building of private offices, hotel and private retail respectively.

consumption charges that can be collected by EMSD will depend on the development schedule of non-Government developments (including the completion of the Hong Kong Children's Hospital and private developments) in KTD. The development schedule is subject to changes which will be closely monitored by EMSD.

11. Environment Bureau and EMSD will endeavor to absorb additional workload arising from the implementation of the legislation within their existing resources as far as possible and where necessary, justify and seek additional resources required for the administration and enforcement of the new legislation in accordance with the established mechanism.