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Bills Committee on District Cooling Services Bill

Background brief
prepared by the Legislative Council Secretariat

Purpose

1. This paper provides background information on the District Cooling Services Bill ("the Bill"), and gives a brief account of the views and concerns expressed by Members on the proposed charging arrangements for the District Cooling System ("DCS") at the Kai Tak Development ("KTD").

Background

2. DCS is one of the major infrastructure facilities in support of the sustainable and environmentally-friendly development at Kai Tak which has a planned total of about 1.73 million square metres ("m²") of non-domestic air-conditioned gross floor areas, requiring 284 megawatt of refrigeration cooling capacity. Since DCS is an energy-efficient air-conditioning system ("ACS") which consumes 35% and 20% less electricity as compared with traditional air-cooled ACS and individual water-cooled air-conditioning systems ("WACSS") using cooling towers respectively, the DCS at KTD will bring about significant environmental benefits. It is estimated that upon completion of the DCS at KTD, the maximum annual saving in electricity consumption will be 85 million kilowatt-hour, with a corresponding reduction of 59 500 tonnes of carbon dioxide emission per annum.

3. The DCS at KTD will provide services to public and private non-domestic developments in the district. All public developments in the region, which account for around 35% of the total air-conditioned floor area in KTD

will subscribe to the services. All private non-domestic projects in KTD will also be required to construct and maintain DCS substation for connection to the DCS in accordance with the guidelines issued by the Electrical and Mechanical Services Department ("EMSD"). Such requirement will be prescribed in appropriate provisions in the conditions of land sale. The Lands Department ("LandsD") will consult EMSD to ensure that the requirement for connection to the DCS has been complied with to the satisfaction of EMSD before the issuance of Certificate of Compliance.

Charging principles

4. All public and private non-domestic developments that use district cooling services will be required to pay charges to the Government. As DCS is to provide chilled water for central ACS on a building basis, district cooling services charges will be collected from building owners of the central ACSs or their authorized agents such as building management offices on a monthly basis. The charging arrangements for the use of the central ACS by occupants/tenants within a building will be worked out between building owners/authorized agents and the occupants/tenants. The district cooling services charges 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 to be stipulated in the Bill, occupants/tenants will be able to monitor and assess the reasonableness of the charges imposed by their building owners or building management offices.

5. The district cooling services charges will be set at a competitive level comparable to the cost of individual WACSs using cooling towers, which is one of the most cost-effective air-conditioning systems available in the international market. Both the capital and operating costs of the DCS will be recovered 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. 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 consumers regardless of their load profiles.

6. Unlike private non-domestic developments, Government buildings using district cooling services will not be subject to the charging regime provided in the Bill and EMSD will work out with user departments the administrative arrangements for recovering the utility costs arising from the provision of district cooling services in the form of allocation warrants. Notwithstanding this, the notional "revenue" from Government departments will be incorporated into

the financial model for assessing the DCS's financial performance and for calculating the appropriate tariff that can achieve full cost recovery.

The Bill

7. The Administration introduced the Bill to provide for matters relating to district cooling services, including the imposition of charges for the services and other related matters.

8. The key provisions of the Bill are set out in the ensuing paragraphs –

(a) *Application to become an approved consumer (clauses 4 to 9)*

The Bill proposes that an owner or occupier of a building or a person responsible for the management of a building may apply to the Director of Electrical and Mechanical Services ("DEMS") to be an approved consumer of DCS if certain conditions are satisfied. Such conditions include an undertaking given by the applicant to be responsible for the construction, installation and maintenance of the facilities for the building concerned to receive district cooling services as specified by DEMS and to comply with any condition imposed by DEMS relating to the provision of district cooling services. If the application is successful, DEMS may provide district cooling services to the approved consumer and charge according to the proposed provisions.

(b) *District cooling services charges (clauses 10 to 17)*

An approved consumer would be charged in respect of district cooling services on a monthly basis in accordance with the proposed tariff¹. The proposed tariff comprises of capacity charge, consumption charge, capacity overrun charge and surcharges for unpaid charges. The respective rates of the capacity charge and consumption charge are proposed to be adjusted annually². The Administration will conduct tariff review at least once every five years. Further, DEMS may require an approved consumer to pay a deposit to cover any charge or fee that is or may be payable in

¹ Members may refer to the Legislative Council Brief (File Ref.: ENB CR 4/2061/08) issued by the Environment Bureau dated 24 September 2014 and the proposed Schedule 2 for further information on the calculation of the charges and components of the tariff.

² The capacity charge rate is proposed to be adjusted based on the Composite Consumer Price Index. The consumption charge rate is proposed to be adjusted to take into account the change in electricity tariff rate.

respect of the building concerned. In addition, a charge or fee which is proposed to be payable under the Bill is recoverable as a civil debt due to the Government³. Subject to the approval of the Financial Secretary, the parts of the charges and fees which are proposed to be received by the Government under the Bill that are required for the purpose of settling a payment that a person who has entered into an agreement with the Government for the management, operation and maintenance of DCS is entitled to receive under the agreement or settling any other expenses arising from or in connection with the provision of district cooling services do not form part of the general revenue⁴.

(c) *Administration of district cooling services (clauses 18 to 21)*

The Bill proposes that DEMS may issue improvement notice to an approved consumer if DEMS 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 DCS. Further, a public officer who is authorized by DEMS may enter a building for inspection or maintenance in respect of DCS or district cooling services. The Bill further provides for the offences of obstructing an authorized officer and tampering with a facility maintained for the provision of district cooling services. A person who commits any of the offences is liable on conviction to a fine at level three, i.e. \$10,000 and to imprisonment for six months.

(d) *Appeal (clauses 22 to 30)*

The Bill proposes that, in relation to the provision of district cooling services, a person who is aggrieved by a specified decision or direction made by DEMS may appeal to an appeal board. The Secretary for the Environment is required to appoint an appeal board from a panel consisting of four categories of members, including legally qualified persons and engineers, to hear the appeal. The hearing of the appeal must be open to the public unless the appeal board determines that there is a good reason for the hearing to be held in camera.

³ See clause 16 of the Bill.

⁴ See clause 17 of the Bill. According to section 3(1) of the Public Finance Ordinance (Cap. 2), any moneys raised or received for the purposes of the Government shall, except otherwise provided by or in Cap. 2 or any other enactment, form part of the general revenue. Further, section 4 of Cap. 2 provides that no expenditure shall be charged on the general revenue except as provided by or under Cap. 2 or any other enactment.

Commencement

9. The Bill, if passed, will come into operation on the day on which the Bill is published in the Gazette as an Ordinance.

Deliberation by the Panel on Environmental Affairs

10. The Panel on Environmental Affairs was consulted on the legislative framework of the proposed charging arrangements for the DCS at KTD at its meetings on 4 July 2012 and 17 July 2014. The major views and concerns expressed by members are summarized below.

Charging arrangements for DCS

11. While members were supportive of the implementation of the DCS at KTD, some of them expressed concern that building owners or their authorized agents might set the air-conditioning charges of their buildings well above the district cooling services charges collected by the Administration and make a profit out of the district cooling services. There were also concerns about whether objective criteria were in place for estimating the contract cooling capacity of a user building to discourage an owner from deliberately under-estimating the contract cooling capacity of his building.

12. The Administration responded that the level of district cooling services charges and the adjustment formula were public information to be stipulated in the Bill. Occupants/tenants of a building using the district cooling services would be able to monitor and assess the reasonableness of the air-conditioning charges imposed by the building owners/building management offices. Besides, professionals would be engaged in estimating the contract cooling capacity of a user building in order to arrive at reasonably accurate estimations and the contract cooling capacity of the building would require mutual agreement of the building owner and DEMS. There would also be a mechanism in place for setting and revising the contract cooling capacity.

Mandatory use of district cooling services

13. As the use of district cooling services by private non-domestic developments in the district was not mandatory, some members expressed concern that if the subscription rate of the cooling service was low, the Administration might not be able to achieve full cost recovery within the project life of the cooling system and the running cost would be shouldered by a few

cooling system users. To achieve cost-effectiveness, the Administration should mandate the use of district cooling services by private non-domestic developments at KTD by stipulating the requirement in the land sale conditions. The Administration advised that private non-domestic developments would be required by the conditions of land sale to be connected to DCS. Given such a requirement and the competitive level of district cooling services charges, there should not be economic incentive for private non-domestic building owners to install separate chiller plants and associated electrical equipment in their buildings. The chances of under-subscription were slim.

Operation of DCS

14. Some members expressed concern about the project life and the stability of the underground pipe network of the DCS at KTD. They were worried that the repair and maintenance cost of DCS might be exorbitant, thus posing heavy financial burden on the Administration. Since DEMS might suspend or terminate the provision of district cooling services to a user building in case of non-payment of charges or failure to comply with the improvement notices issued by DEMS, they were also concerned that the occupiers/tenants of the building might be seriously affected. Some other members were of the view that DCS users might not proactively reduce energy use in air-conditioning as DCS would be a centralized cooling system, and the capacity charge would be shared amongst different DCS users in the building concerned. They asked if the Administration planned to implement DCS in other new development areas.

15. The Administration assured members that with proper maintenance and repair, the life of the large-scale electrical and mechanical facilities to be used in the DCS at KTD could be up to 30 years. In case of power failure, the Administration would deploy temporary mobile power generators to provide chilled water to user buildings for cooling purpose and would not suspend or terminate the provision of district cooling services to a user building arbitrarily. DCS would be developed and operated under a "Design, Build and Operate" contract which included not only the building and engineering works but also the necessary maintenance to support the smooth operation of the entire DCS. The Administration also explained that the implementation of DCS would depend on a multitude of factors which included engineering considerations, site constraints and infrastructure provisions. While DCS might be implemented in new districts under planning should the necessary environmental and engineering requirements be met, the Administration had no plan to develop DCS in any new development area at this stage.

Legal backing for the collection of district cooling services charges

16. A member doubted the need for legislation to provide the legal backing for the collection of charges for using district cooling services, rather than prescribing the charging arrangements in the conditions of land sale.

17. According to the Administration, the Department of Justice had advised that there should be clear and explicit statutory authority for the Administration to impose a charge or a fee. Section 3(1) of the Public Finance Ordinance (Cap. 2) provided that any charges received for the purposes of the Government would form part of the general revenue unless there were express statutory provisions to provide for alternative arrangements. To empower EMSD to make use of the district cooling services charges to settle payment to the DCS operator as well as the utility costs arising from the operation of DCS, the Administration would need to introduce relevant statutory provisions to provide for this offsetting arrangement.

Latest development

18. The Bill was gazetted on 26 September 2014 and introduced into the Council on 15 October 2014. At the House Committee meeting on 17 October 2014, Members agreed that a bills committee should be formed to examine the Bill.

Relevant papers

19. A list of relevant papers is set out in the **Appendix**.

List of relevant papers

Council/ Committee	Date of meeting	Paper
Panel on Environmental Affairs	15 December 2008	<p>Administration's paper on "District Cooling System at the Kai Tak Development" (LC Paper No. CB(1)363/08-09(03)) http://www.legco.gov.hk/yr08-09/english/panels/ea/papers/ea1215cb1-363-3-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1)604/08-09) http://www.legco.gov.hk/yr08-09/english/panels/ea/minutes/ea20081215.pdf</p>
Panel on Environmental Affairs	28 June 2010	<p>Administration's paper on "District Cooling System at the Kai Tak Development" (LC Paper No. CB(1)2324/09-10(05)) http://www.legco.gov.hk/yr09-10/english/panels/ea/papers/ea0628cb1-2324-5-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1)2956/09-10) http://www.legco.gov.hk/yr09-10/english/panels/ea/minutes/ea20100628.pdf</p>
Panel on Environmental Affairs	21 July 2010	<p>Administration's paper on "District Cooling System at the Kai Tak Development" (LC Paper No. CB(1)2564/09-10(03)) http://www.legco.gov.hk/yr09-10/english/panels/ea/papers/ea0721cb1-2564-3-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1)31/10-11) http://www.legco.gov.hk/yr09-10/english/panels/ea/minutes/ea20100721.pdf</p>

Council/ Committee	Date of meeting	Paper
<p>Panel on Environmental Affairs</p>	<p>20 December 2010</p>	<p>Administration's paper on "District Cooling System at the Kai Tak Development" (LC Paper No. CB(1)782/10-11(05)) http://www.legco.gov.hk/yr10-11/english/panels/ea/papers/ea1220cb1-782-5-e.pdf</p> <p>Updated background brief on the provision of a District Cooling System at the Kai Tak Development prepared by the Legislative Council Secretariat (LC Paper No. CB(1)782/10-11(06)) http://www.legco.gov.hk/yr10-11/english/panels/ea/papers/ea1220cb1-782-6-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1)1229/10-11) http://www.legco.gov.hk/yr10-11/english/panels/ea/minutes/ea20101220.pdf</p>
<p>Panel on Environmental Affairs</p>	<p>4 July 2012</p>	<p>Administration's paper on "Legislative framework of the proposed charging arrangements for the District Cooling System at the Kai Tak Development" (LC Paper No. CB(1)2256/11-12(03)) http://www.legco.gov.hk/yr11-12/english/panels/ea/papers/ea0704cb1-2256-3-e.pdf</p> <p>Updated background brief on the provision of a District Cooling System at the Kai Tak Development prepared by the Legislative Council Secretariat (LC Paper No. CB(1)2256/11-12(04)) http://www.legco.gov.hk/yr11-12/english/panels/ea/papers/ea0704cb1-2256-4-e.pdf</p>

Council/ Committee	Date of meeting	Paper
		<p>Minutes of meeting (LC Paper No. CB(1)2560/11-12) http://www.legco.gov.hk/yr11-12/english/panels/ea/minutes/ea20120704.pdf</p>
<p>Panel on Development</p>	<p>22 January 2013</p>	<p>Administration's paper on PWP Item No. 45CG - District Cooling System at the Kai Tak Development (LC Paper No. CB(1)428/12-13(06)) http://www.legco.gov.hk/yr12-13/english/panels/dev/papers/dev0122cb1-428-6-e.pdf</p> <p>Updated background brief on the provision of a District Cooling System at the Kai Tak Development prepared by the Legislative Council Secretariat (LC Paper No. CB(1)428/12-13(07)) http://www.legco.gov.hk/yr12-13/english/panels/dev/papers/dev0122cb1-428-7-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1)735/12-13) http://www.legco.gov.hk/yr12-13/english/panels/dev/minutes/dev20130122.pdf</p>
<p>Public Works Subcommittee</p>	<p>28 May 2013</p>	<p>Funding proposal on Head 705 – Civil Engineering 45CG - District Cooling System at the Kai Tak Development (LC Paper No. PWSC(2013-14)12) http://www.legco.gov.hk/yr12-13/english/fc/pwsc/papers/p13-12e.pdf</p> <p>Minutes of meeting (LC Paper No. PWSC73/12-13) http://www.legco.gov.hk/yr12-13/english/fc/pwsc/minutes/pwsc20130528.pdf</p>

Council/ Committee	Date of meeting	Paper
Finance Committee	21 June 2013	<p>Recommendations of the Public Works Subcommittee made on 28 May 2013 (LC Paper No. FCR(2013-14)19) http://www.legco.gov.hk/yr12-13/english/fc/fc/papers/f13-19e.pdf</p> <p>Minutes of meeting at 3:30 pm (LC Paper No. FC23/13-14) http://www.legco.gov.hk/yr12-13/english/fc/fc/minutes/fc20130621.pdf</p>
Panel on Environmental Affairs	17 July 2014	<p>Administration's paper on "Collection of charges for District Cooling System at the Kai Tak Development" (LC Paper No. CB(1)1785/13-14(01)) http://www.legco.gov.hk/yr13-14/english/panels/ea/papers/ea0717cb1-1785-1-e.pdf</p> <p>Updated background brief on "Provision of a District Cooling System at the Kai Tak Development" prepared by the Legislative Council Secretariat (LC Paper No. CB(1)1785/13-14(02)) http://www.legco.gov.hk/yr13-14/english/panels/ea/papers/ea0717cb1-1785-2-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1)179/14-15) http://www.legco.gov.hk/yr13-14/english/panels/ea/minutes/ea20140717.pdf</p>