

CONFIDENTIAL

**DISTRICT COOLING SERVICES
SUPPLY CODE**

Energy Market Authority of Singapore

2009

DISTRICT COOLING SERVICES SUPPLY CODE

DOCUMENT NAME: *DISTRICT COOLING SERVICES SUPPLY CODE_V1*
DATE CREATED: *MARCH 2008*
STATUS: *IN USE*
VERSION INFORMATION: *V1*

Version Number	Version Date
1	March 2008

DISTRICT COOLING SERVICES SUPPLY CODE

TABLE OF CONTENTS

- 1. GENERAL AND ADMINISTRATIVE PROVISIONS**
 - 1.1 Purpose of the Code
 - 1.2 Definitions
 - 1.3 Hierarchy of Documents
 - 1.4 Modifications to this Code
- 2. GENERAL OBLIGATIONS**
 - 2.1 General Obligations of the Licensee
 - 2.2 General Obligations of the Consumer
- 3. DISTRICT COOLING SERVICE SPECIFICATIONS**
 - 3.1 Supply Temperature
 - 3.2 Supply Availability and Reliability
- 4. APPLICATION FOR SUPPLY CONNECTION**
- 5. TECHNICAL REQUIREMENTS**
 - 5.1 Connection Scheme
 - 5.2 Intake Station
 - 5.3 Service Connection Facilities
 - 5.4 Consumer Installation
- 6. METERING OF SUPPLY**
- 7. BILLING**
- 8. PAYMENT SECURITY AND DEFAULT**
- 9. DISCONNECTION AND DISCONTINUANCE OF SUPPLY**
- 10. CONDITIONS OF SUPPLY**

DISTRICT COOLING SERVICES SUPPLY CODE

1. GENERAL AND ADMINISTRATIVE PROVISIONS

1.1 Purpose of this Code

- 1.1.1 This Code sets forth the following with respect to the District Cooling Service in the service area gazetted under the Act:
- (a) The minimum standards of performance in accordance with which the Licensee is required to supply the service.
 - (b) The rights and obligations of the Licensee and a Consumer.
 - (c) The technical requirements and arrangement for supply connection.
- 1.1.2 This Code applies to the Licensee and the Consumers of the District Cooling Services in the service area gazetted under the Act.

1.2 Interpretation

- 1.2.1 Unless the context otherwise requires or the term is otherwise defined in this Code, all terms defined in the Act shall have the same meaning when used in this Code and words and expressions used in this Code shall be construed as if the Interpretation Act (Cap. 1) applies to them.
- 1.2.2 Headings are for convenience only and shall not affect the interpretation of this Code.
- 1.2.3 A reference in this Code to any statute, subsidiary legislation, proclamation, ordinance, by-law, resolution, rule, order, supplements, gazette notification or directive includes all statutes, subsidiary legislation, proclamations, ordinances, by-laws or resolutions, rules, orders, supplements, gazette notifications or directives varying, consolidating, re-enacting, extending or replacing it.
- 1.2.4 A reference in this Code to a document or provision of a document includes a modification or supplement to, or replacement or novation of, that document or that provision of that document, as well as any exhibit, schedule, appendix or other annexure thereto.
- 1.2.5 A reference in this Code to a body, whether statutory or not, which ceases to exist or whose functions are transferred to another body includes a reference to the body which replaces it or which substantially succeeds to its functions, powers or duties.
- 1.2.6 A reference in this Code to the word “including” or a grammatical variation thereof means “including but not limited to”.

1.3 Definitions

- 1.3.1 In this Conditions, unless the context otherwise requires:
- “**Act**” means the District Cooling Act 2001 (Cap. 84A).
- “**Authority**” means the Energy Market Authority of Singapore established under the Energy Market Authority of Singapore Act (Cap 92B).
- “**Availability of Supply**” with respect to any calendar year, means the ratio the hours in that year during which the Supply is available to the Consumer, bears to the total number of hours in that year.
- “**business day**” means any day other than a Saturday, a Sunday or public holiday as defined in the Interpretation Act.
- “**Consumer Installation**” means the Consumer’s chilled water reticulation system and associated equipment constructed and installed by the Consumer at the Premises and connected to the secondary side of the Heat Exchangers.
- “**Consumer**” means a person who has a subsisting Supply Agreement with the Licensee.
- “**Contract Capacity**” means the Supply capacity that the Consumer has requested and the Licensee has agreed to provide, as stated in the Supply Agreement.
- “**District Cooling Service**” means the supply of chilled water for space cooling by the Licensee at the Premises.

DISTRICT COOLING SERVICES SUPPLY CODE

“District Cooling System” means the whole of the facility used or operated by the Licensee for or in connection with the provision of District Cooling Service comprising the district cooling plant(s), the distribution pipes, Heat Exchangers and other apparatus including metering equipment but excluding the Consumer Installation.

“Heat Exchanger(s)” means heat transfer equipment installed by the Licensee at the Intake Station.

“Intake Station” means the site within the Premises in which the Heat Exchangers shall be housed.

“Nominal Flow Rate” in respect of any Heat Exchanger means the flow rate of chilled water at the secondary side of the Heat Exchanger corresponding to the Contract Capacity at a Supply Temperature of 6°C and Return Temperature of 14°C.

“Normal Operating Conditions” means all of the following conditions:

- i) the Consumer’s demand for District Cooling Service is within the Contract Capacity; and
- ii) the chilled water flow rate at the secondary side of each Heat Exchanger is greater than 10%, but not more than 100%, of the Nominal Flow Rate of the Heat Exchanger.

“Normal Usage Hours” means the period from 7am to 7pm every day excluding Sundays and public holidays.

“Parties” means the Service Provider and the Consumer.

“Premises” means the premises within the Service Area at which the Licensee has a Supply Agreement with the Consumer.

“Professional Engineer” means a professional engineer registered under the Professional Engineers Act (Cap 253).

“Return Temperature” means the temperature of the water returning from the Consumer Installation to the Heat Exchanger, as measured at the secondary inlet of the Heat Exchanger.

“Service Connection Facilities” means the Heat Exchangers, the connection pipes to the district cooling distribution pipes and associated valves, fittings, meters, monitoring and control devices for the provision of District Cooling Service at the Premises.

“Licensee” means Singapore District Cooling Pte Ltd.

“Supply” means the provision of District Cooling Service at the Premises.

“Supply Agreement” means the contract between the Consumer and the Licensee for the provision of District Cooling Service.

“Supply Temperature” means the temperature of the chilled water as measured at the secondary outlet of the Heat Exchangers.

“System” means the District Cooling System.

1.4 Hierarchy of Documents

- 1.4.1 Nothing in this Code shall be construed as affecting the rights and obligations of the Licensee under the provisions of relevant legislation and, in the event of an inconsistency between the provisions of relevant legislation and the provisions of these Conditions, the provisions of relevant legislation shall prevail to the extent of the inconsistency.

1.5 Modifications to this Code

- 1.5.1 The Authority may from time to time modify or approve proposed modification to this Code.
- 1.5.2 The process by which this Code may be modified by the Authority shall be as follows:
 - a) Before making any modification to this Code, the Authority shall:
 - i) state that the Authority proposes to make a modification in the manner specified in the notice;

DISTRICT COOLING SERVICES SUPPLY CODE

- ii) state the reasons why the Authority proposes to make the modification, including whether the need for the modification was the subject of a prior representation made by a Licensee or third party; and
 - iii) specify the period from the date of the giving of notice (not being less than 28 days) within which written representations with respect to the proposed modification may be made.
- b) If no written representation is received by the Authority within the period specified in the notice referred to in section 1.5.2(a) or if all written representations made in response to such notice are subsequently withdrawn, the Authority may modify this Code as specified in such notice.
- c) Where the Authority receives any written representation under section 1.5.2(a), the Authority shall consider all such representations, as a whole, and may:
 - i) reject the representations;
 - ii) amend the proposed modification in accordance with the representations;
 - iii) withdraw the proposed modification.
- d) The Authority shall, before modifying this Code, respond with reasons to all written representations received in respect of the modification that were not subsequently withdrawn, and advise the outcome of the Authority's deliberations in respect of the modification; and
- e) A modification to this Code shall not come into force until such time as the Authority has complied with section 1.5.2(d), where applicable, and 10 business days, or such longer period of time as may be specified by the Authority, have elapsed since the date on which the Authority gave notice of the modification under 1.5.2(d).

1.5.3 The Process by which the Authority shall consider Licensee's proposed modification to this Code shall be as follows:

- a) The Licensee shall apply to the Authority of any proposed modification to this Code and shall with the approval of the Authority consult all its consumers, URA and other persons likely to be affected by the proposed modification by way of a written notice. The Licensee shall:
 - i) state that the proposed modification;
 - ii) state the reasons for the proposed modification, including whether the need for the modification was the subject of a prior representation made by a consumer or third party; and
 - iii) specify the period from the date of the giving of notice (not being less than 28 days) within which written representations with respect to the proposed modification may be made.
- b) The Licensee shall then submit to the Authority the proposed modification to this Code, all the written representation received and its response and deliberations to all written representation received in respect of the modification that were subsequently not withdrawn.
- c) The Authority shall consider the Licensee's application to modify this Code together with all representations received and the Licensee's response and deliberations to the written representations as a whole, and may:
 - i) reject the proposed modification to this Code;
 - ii) reject the representations;
 - iii) direct the Licensee to amend the proposed modification in accordance with the representations;
 - iv) approve the Licensee's application to modify this Code.
- d) In the event that the Licensee's proposed modification to this Code is approved by the Authority under 1.5.3(c)(iv), the Licensee shall, before modifying this Code, respond with reasons to all written representations received in respect of the modification that were not subsequently withdrawn, and advise the

DISTRICT COOLING SERVICES SUPPLY CODE

outcome of the deliberations in respect of the shall, before modifying this Code, respond with reasons to all written representations received in respect of the modification that were not subsequently withdrawn, and advise the outcome of the Authority's deliberations in respect of the modification.

- e) A modification to this Code shall not come into force until such time as the Licensee has complied with section 1.5.3(d), where applicable and 10 business days, or such longer period of time as may be specified by the Authority, have elapsed since the date on which the Licensee gave notice of the modification under 1.5.3(d).

- 1.5.4 Nothing contained in section 1.5 shall prohibit any other party from notifying the Authority of suggested Code changes.

2. GENERAL OBLIGATIONS

2.1 General Obligations of the Licensee

- 2.1.1 The Licensee shall, at its own costs, be solely responsible for planning, designing, constructing, installing, testing, commissioning, operating and maintaining the District Cooling System ("the System").
- 2.1.2 The Licensee shall, in committing to provide District Cooling Service to a new consumer, ensure that there is adequate capacity in the System and the new supply connection will not cause any adverse impact to existing consumers and the stability, security and reliability of the System.

2.2 General Obligations of the Consumer

- 2.2.1 The Consumer shall use the District Cooling Service for the purpose of space cooling in accordance to this Code.
- 2.2.2 The Consumer shall not install any independent chilled water production facilities in the Premises and cause such facilities to operate in parallel with the System unless otherwise agreed to in writing by the Licensee.
- 2.2.3 The Consumer shall not under any circumstances supply District Cooling Service received from the Licensee to any building or premises other than the Premises.
- 2.2.4 The Consumer shall at its own cost make suitable standby arrangements (including the installation of standby chiller facilities) for the cooling need of the Premises if the operations of the Premises cannot tolerate any failure, reduction, interruption, variation or inconsistency in the Supply.

3. DISTRICT COOLING SERVICE SPECIFICATIONS

3.1 Supply Temperature

- 3.1.1 The Licensee shall operate the System and Service Connection Facilities to regulate the Supply Temperature within $6^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$ under Normal Operating Conditions.
- 3.1.2 The Consumer shall use its best efforts to ensure that the Return Temperature shall be 14°C or higher.

3.2 Supply Availability and Reliability

- 3.2.1 Subject to Section 3.2.3, the Supply shall be provided at all times on a 24 hourly basis.
- 3.2.2 The Licensee shall operate and maintain the System such that the Availability of Supply with respect to any calendar year shall be at least 99.5%.

DISTRICT COOLING SERVICES SUPPLY CODE

- 3.2.3 The Licensee may schedule interruptions to the provision of District Cooling Service at the Premises for the purpose of maintenance, repair, connection, disconnection, extension and other work in the System (“**Planned Interruption**”) provided that:
- (a) Except for operational emergency arising from any fault in the System, the Licensee shall give the Consumer at least 14 days' prior written notice stating the date(s) on which the Planned Interruption will occur; the duration of the Planned Interruption;
 - (b) the Licensee shall to the extent possible, carry out the Planned Interruption outside the Normal Usage Hours.

4. APPLICATION FOR SUPPLY CONNECTION

- 4.1 Any person within the service area applying for supply connection to the System is required to submit a formal application through a Professional Engineer to the Licensee. The application shall contain the following information:
- (a) Location and type of the development;
 - (b) Target supply date;
 - (c) Projected demand growth;
 - (d) Typical daily load pattern; and
 - (e) Typical annual usage pattern
- 4.2 Upon receipt of an application for supply connection, the Licensee:
- (a) May require additional information to be submitted by the Applicant;
 - (b) Shall advise the Applicant of the connection scheme, technical requirements and the indicative connection charges.
 - (c) shall use its best endeavour to respond to an application for supply connection within 14 days.
- 4.3 The Licensee may, as a condition of supply, require the Consumer to commit to a Contract Capacity for an initial period not exceeding 5 years.
- 4.4 The Licensee shall endeavour to make supply available upon 12 months of the Consumer accepting the commercial terms of supply.

5. TECHNICAL REQUIREMENTS

5.1 Connection Scheme

- 5.1.1 Heat exchangers are used as interfacing equipment between the System and the Consumer Installation. The typical connection scheme is illustrated in Schedule A.

5.2 Intake Station

- 5.2.1 The Consumer shall at its own cost provide and construct the Intake Station in accordance with the plans and specifications agreed by the Parties. Such plans and specifications shall not be altered without the agreement in writing of the Parties. The Consumer shall ensure that the Intake Station shall be used for plant and equipment linked to the provision of District Cooling Service at the Premises.
- 5.2.2 The Consumer shall at its own cost maintain the Intake Station inclusive of the building structure, infrastructure, mechanical and electrical services within the Intake Station and general cleanliness of the Intake Station.

5.3 Service Connection Facilities

DISTRICT COOLING SERVICES SUPPLY CODE

5.3.1 The Consumer shall pay for the cost of the Service Connection Facilities. Notwithstanding the payment by the Consumer, the Service Connection Facilities shall be the property of the Licensee, and the Licensee shall be solely responsible for the operation, maintenance and repair of the Service Connection Facilities.

5.4 Consumer Installation

5.4.1 The Consumer shall arrange for a Professional Engineer to design and install the Consumer Installation in accordance to the technical guidance issued by the Licensee and which shall incorporate the following minimum requirements:

- (a) A control arrangement, via a variable flow system or otherwise, to maintain the Return Temperature at or higher than 14°C.
- (b) A filtration system for the return water to the exchanger with a minimum filtration performance of no more than 1.5mm. .
- (c) A pressure relief device at the interfacing connection set to operate at a pressure at 16 barg or such other pressures that may be agreed between the Parties.

6. METERING OF SUPPLY

6.1 The District Cooling Service shall be measured by metering equipment with accuracy no less than 3% at the nominal flow of chilled water. The accuracy of the metering equipment shall be verified at first installation and subsequently at intervals not exceeding 5 years by an independent testing laboratory.

6.2 The metering equipment shall be supplied, installed and maintained by the Licensee.

6.3 If the Consumer disputes the accuracy of the metering equipment, the Consumer may on payment of a reasonable fee based on expenses incurred by the Licensee, request the Licensee to have the metering equipment tested and calibrated by an independent testing agency.

6.4 If, on testing, the metering equipment is found to be inaccurate (within the meaning of subsection 6.1), the Licensee shall refund the fee stated in subsection 6.3 to the Consumer and cause the metering equipment to be repaired or replaced. The Licensee shall also make a fair and reasonable assessment of the amount of District Cooling Service provided to the Consumer during the period when the meter equipment was faulty or inaccurate by using historical validated data of an equivalent period from the most recent previous like day (e.g. business day for a business day, Saturday for a Saturday, Sunday or public holiday for a Sunday or public holiday).

7. BILLING

7.1 The Licensee shall invoice its customers at least once a month in accordance to its published tariffs approved by the Authority.

7.2 An invoice to the Consumer shall, at a minimum, include information on the following:

- (a) The published tariffs approved by the Authority;
- (b) Details on Contract Capacity, maximum demand and usage;
- (c) Taxes and other government related charges;
- (d) Payment due date;
- (e) Contact details of the Licensee for invoice clarification.

8. PAYMENT SECURITY AND DEFAULT

DISTRICT COOLING SERVICES SUPPLY CODE

8.1 Power to Require Security

- 8.1.1** The Licensee may mitigate the risk of non-payment by the Consumer by requiring the Consumer to provide reasonable security for the payment to it of all money which may become due, which may include:
 - (a) Cash deposits;
 - (b) Bankers' guarantee; or
 - (c) A combination of the above.
- 8.1.2** The maximum amount of security that the Licensee may require from the Consumer shall be based on the Licensee's estimate of the financial exposure faced by it and shall not exceed two times the estimated monthly payment by the Consumer.

8.2 Default Process

- 8.2.1** In the event of a default in the payment by the Consumer, the Licensee shall not realise on any security held until 8 days have elapsed from the date of notification given pursuant to section 8.2.2.
- 8.2.2** The Licensee shall, on the business day following a default of payment by the Consumer, notify the Consumer that payment was not received and to remedy the situation. If the amount owing remains unpaid 16 days after the date of the giving such notice, the Licensee may notify the Consumer that it shall discontinue the supply of District Cooling Service and subsequently disconnect the supply connection from the System.
- 8.2.3** The Licensee may charge interest on any overdue payment at such rate stipulated in the Supply Agreement or, in the absence of such stipulation at a rate as may be approved by the Authority from time to time.

9. DISCONNECTION AND DISCONTINUANCE OF SUPPLY

- 9.1** The Licensee shall not disconnect any supply connection or discontinue the supply or District Cooling Service to any installation except as permitted by, and in accordance with, the Act, its licence, this Code or Supply Agreement.
- 9.2** The Licensee shall report to the Authority any incidence of discontinuance of service, other than on mutual agreement between the Consumer and Licensee.

10. CONDITIONS OF SUPPLY

- 10.1** The Licensee shall develop Conditions of Supply that describes the terms and conditions under which the District Cooling Service will be provided.
- 10.2** The Conditions of Supply shall comply and be consistent with the Code, and such other requirements as notified by the Authority to the Licensee.

The Licensee shall file a copy of its Conditions of Supply with the Authority, make its Conditions of Supply available for public inspection and provide a copy of its Conditions of Supply to any person who requests it.