

SULTANATE OF OMAN



الشركة العُمانية لنقل الكهرباء ش.م.ع.م
OMAN ELECTRICITY TRANSMISSION COMPANY S.A.O.C



GRID CODE REVIEW PANEL
مجلس مراجعة قواعد الشبكة

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The Grid Code

Preface

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This document is the Grid Code referred to in the Sector Law [(Articles 22 & 23)] and the Transmission and Dispatch Licence granted by the Regulatory Authority to the Oman Electricity Transmission Company SAOC ("OETC") under that Law. It contains rules in relation to the planning, development, Connection to, Operation and maintenance of and changes to OETC's Transmission System.

The Grid Code applies to all entities that are connected to and/or use the Transmission System. However, individual parts of the Grid Code may be applicable to only some parties who have acceded to the Grid Code as a whole. Each constituent part of the Grid Code specifies which Person it applies to.

Terms and expressions used in the Grid Code are defined either in the relevant section of the Grid Code entitled "Abbreviations and Definitions" or, in some cases, in individual Grid Code sections.

The Grid Code contains the following constituent parts;

- General Conditions;
- Data Transfer Code;
- Alerts Summary Code;
- Planning Code;
- Connection Conditions Code;
- Operating Codes;
 - OC1 Demand Forecasting;
 - OC2 Operational Planning;
 - OC3 Operating Margin;
 - OC4 Demand Control;
 - OC5 Notice of Operations & Incidents, & Significant Incident Reporting;
 - OC6 Safety Coordination;
 - OC7 Contingency Planning;
 - OC8 Numbering and Nomenclature of HV Plant;
 - OC9 Operational Tests & Site Investigations;
- Scheduling and Dispatch Codes;
 - SDC1 Generation and Desalination Scheduling;
 - SDC2 Generation and Desalination Dispatch;
 - SDC3 Frequency Control;
- Ancillary Services Code;
- Metering and Data Exchange Code;
- Abbreviations and Definitions;



This Grid Code shall not constitute a contract between any of the parties to it. All Licensees (including OETC, Licensed Generators, Licensed Generators/Desalinators, Licensed Distribution System Operators and RAEC when connected to the Transmission System) will be party to it as will other parties Connected to the Transmission System. Some of these parties may have contractual obligations, created by separate documents (including Connection Agreements), to each other to comply with the Grid Code.

Nothing in this Grid Code shall entitle any party to it or any other person to any contractual or other general Law right or remedy of whatsoever kind and howsoever arising in respect of this Grid Code. Each party's liability to each other party shall be limited to one (1) Omani Rial.

However, nothing in this Grid Code (including this paragraph) shall affect any legal right or remedy that may exist between any two parties to this Grid Code under any such separate agreement between or any duty arising under the terms of any Licence granted pursuant to the [title of Sector Law] or pursuant to that Law. In particular, nothing in this Grid Code shall preclude the Regulatory Authority from taking such enforcement action in relation to it, the Sector Law or any Licence granted there under as it sees fit.

Each party to this Grid Code shall at all times deal with all other parties in good faith. All parties to the Grid Code shall at all times perform all of their obligations in accordance with Good Industry Practice.



General Conditions

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General Conditions

GC.1 Introduction

The individual sections of the Grid Code contain the rules and provisions relating specifically to that individual section of the Grid Code. There are also provisions of a more general application, which need to be included in the Grid Code to allow the various sections of the Grid Code to work together. Such provisions are included in these General Conditions.

GC.2 Objective

The objectives of the General Conditions are as follows

- To ensure, insofar as it is possible, that the various sections of the Grid Code work together for the benefit of OETC and all Users; and
- To provide a set of principles governing the status and development of the Grid Code and related issues as approved by the Regulatory Authority.

GC.3 Scope of Grid Code and General Conditions

The General Conditions apply to OETC and to all Parties to the Grid Code.

GC.4 Grid Code Review Panel

OETC shall establish and maintain the Grid Code Review Panel, which shall be a standing body, constituted;

- to generally review, discuss and develop the Grid Code and its implementation;
- to review and discuss suggestions for amendments to the Grid Code which OETC, the Regulatory Authority or any User may wish to submit to OETC for consideration from time to time;
- to discuss what changes are necessary to the Grid Code arising out of any unforeseen circumstances referred to it by OETC;
- to review existing Oman Electrical Standards relevant to OETC's Transmission System and make recommendations to the Regulatory Authority concerning modifications to existing Oman Electrical Standards or proposals for new Oman Electrical Standards relevant to OETC's Transmission System;
- to publish recommendations and ensure that User consultation upon such recommendations has occurred through Members; and
- Issue guidance in relation to the Grid Code and its implementation, performance and interpretation when asked to by a User.

The Grid Code Review Panel shall be governed by a constitution (given as Appendix A) which defines its scope, Membership, duties, and rules of conduct, operation and further development of the Grid Code as approved by the Regulatory Authority.

The Panel shall consist of;

- a chairman and up to 2 persons appointed by OETC;
- a person appointed by the Regulatory Authority;
- a person appointed by PWP;
- a person appointed by PAEW;
- 2 persons representing all Power Producers that each have Production Facilities with a total Registered Capacity in excess of 100 MW;



- 2 persons representing all Power Producers that each having Centrally Dispatched Production Facilities with a total Registered Capacity of 100 MW or less;
- 1 person representing each Licensed Distributor;
- 1 person representing Internally Interconnected Parties;
- 1 person representing International Interconnected Parties; and
- 1 person representing RAEC.

GC.5 Grid Code Revisions

All revisions to the Grid Code must be reviewed by the Grid Code Review Panel prior to application to the Regulatory Authority by the Chairman. All proposed revisions from Users, the Regulatory Authority or OETC shall be brought before the Grid Code Review Panel by the Chairman for consideration. The Chairman will advise the Grid Code Review Panel, all Users, and the Regulatory Authority of all proposed revisions to the Grid Code with notice of no less than 20 Business Days in advance of the next scheduled meeting of the Grid Code Review Panel.

Following review of a proposed revision by the Grid Code Review Panel, the Chairman will apply to the Regulatory Authority for revision of the Grid Code based on the Grid Code Review Panel recommendation. The Chairman, in applying to the Regulatory Authority, shall also notify each User of the proposed revision and other views expressed by the Grid Code Review Panel and Users so that each User may consider making representations directly to the Regulatory Authority regarding the proposed revision.

The Regulatory Authority shall consider the proposed revision, other views, and any further representations and shall determine whether the proposed revision should be made and, if so, whether in the form proposed or in an amended form.

Having been so directed by the Regulatory Authority that the revision shall be made, the Chairman shall notify each User of the revision at least 10 Business Days prior to the revision taking effect, and the revision shall take effect (and this Grid Code shall be deemed to be amended accordingly) from (and including) the date specified in such notification or other such date as directed by the Regulatory Authority.

GC.6 Derogations

If a User finds that it is, or will be, unable to comply with any provision of the Grid Code, then it shall, without delay, report such non-compliance to OETC and the Regulatory Authority and shall make such reasonable efforts as are required to remedy such non-compliance as soon as reasonably practicable. Non-compliance may result;

- with reference to Plant Connected to the Transmission System and is caused solely or mainly as a result of a revision to the Grid Code; and
- with reference to Plant which is Connected, approved to Connect or for which approval to Connect to the Transmission System is being sought.

When a User believes either that it would be unreasonable (including on the grounds of cost and technical considerations) to require it to remedy such non-compliance or that it should be granted an extended period to remedy such non-compliance, it shall promptly submit to the Regulatory Authority a request for derogation from such provision and shall provide OETC and PWP with a copy of such application.

If OETC finds that it is, or will be, unable to comply with any provision of the Grid Code at any time, then it shall make such reasonable efforts as are required to remedy such non-compliance as soon as reasonably practicable.



In the case where OETC requests derogation, OETC shall submit the information set out in paragraph GC.6.1 to the Regulatory Authority.

GC.6.1 Requests for Derogation

A request for derogation from any provision of the Grid Code shall contain;

- (a) The reference number and the date of the Grid Code provision against which the non-compliance or predicted non-compliance was identified;
- (b) The detail of the Plant in respect of which derogation is sought and, if relevant, the nature and extent of non-compliance;
- (c) The provision of the Grid Code with which the User is, or will be, unable to comply;
- (d) The reason for the non-compliance; and
- (e) The date by which compliance could be achieved (if remedy of the non-compliance is possible).

On receipt of any request for derogation, the Regulatory Authority shall promptly consider such a request. Provided that the Regulatory Authority considers that the grounds for the derogation are reasonable, the Regulatory Authority shall grant such derogation unless the derogation would, or is likely to;

- Have a material adverse impact on the security and/or stability of the Total System; or
- Impose unreasonable costs on the Operation of the Total System or on other Users.

In its consideration of a derogation request by a User, the Regulatory Authority may contact the relevant User and/or OETC to obtain clarification of the request or to discuss changes to the request.

Derogations from any provision of the Grid Code shall contain;

- (a) The reference number and the date of the Grid Code provision against which the derogation applies;
- (b) The detail of the Plant in respect of which a derogation applies and, if relevant, the nature and extent to which the derogation applies including alternative compliance provisions;
- (c) The identification of the provision with which the derogation applies;
- (d) The reason for the non-compliance requiring derogation; and
- (e) The date by which the derogation shall expire.

To the extent of any derogation granted in accordance with this paragraph GC.6.1, OETC and/or the User (as the case may be) shall be relieved from any obligation to comply with the applicable provision of the Grid Code and shall not be liable for failure to so comply but shall comply with any alternative provisions identified in the derogation.

OETC shall;

- (a) Keep a register of all derogations which have been granted, identifying the name of the person and User in respect of whom the derogation has been granted, the relevant provision of the Grid Code and the period of the derogation; and
- (b) On request from any User, provide a copy of such register of derogations to such User.

The Regulatory Authority may initiate at the request of OETC or Users a review of any existing derogations, and any derogations under consideration where a relevant and material change in circumstance has occurred.



GC.7 Unforeseen Circumstances

If circumstances arise which the provisions of the Grid Code have not foreseen, OETC shall to the extent reasonably practicable in the circumstances, consult all affected Users in an effort to reach agreement as to what should be done and submit a proposal to the Grid Code Review Panel for consideration.

If OETC and affected Users are not able to agree, OETC will take any action necessary to ensure that it meets its License conditions wherever practical taking into account the views expressed by the Users.

Thereafter, OETC shall refer the matter relating to the unforeseen circumstances and any such determinations to the Grid Code Review Panel with a proposal for consideration.

GC.8 Hierarchy

In the event of any irreconcilable conflict between the provisions of the Grid Code and any contract, agreement, or arrangement between OETC and a User;

- (a) If the contract agreement or arrangement exists at the date this Grid Code first comes into force, it shall, unless and to the extent (1) specifically provided for in the Grid Code or in the contract agreement or arrangement or (2) that the User has agreed to comply with the Grid Code, prevail over this Grid Code for two years from the date upon which this Grid Code is first in effect; and
- (b) In all other cases, the provisions of the Grid Code shall prevail unless the Grid Code expressly provides otherwise.

GC.9 Illegality and Partial Invalidity

If any provision of the Grid Code should be found to be unlawful or wholly or partially invalid for any reason, the validity of all remaining provisions of the Grid Code shall not be affected.

If part of a provision of the Grid Code is found to be unlawful or invalid but the rest of such provision would remain valid if part of the wording were deleted, the provision shall apply with such minimum modification as may be;

- (a) necessary to make it valid and effective; and
- (b) most closely achieves the result of the original wording,

but without affecting the meaning or validity of any other provision of the Grid Code. OETC shall prepare a proposal to correct the default for consideration by the Grid Code Review Panel.

GC.10 Time of Effectiveness

This Grid Code shall have effect, as regards a new User, at the time at which its Connection Agreement comes into effect.

GC.11 Code Notices

Any notice to be given under the Grid Code shall be in writing and shall be duly given if signed by or on behalf of a Person duly authorised to do so by the party giving the notice and delivered by hand at, or sent by post, or facsimile transmission or e-mail to the relevant address, facsimile number or e-mail address last established pursuant to these General Conditions.

OETC shall maintain a list of contact details for itself and all Users containing the telephone, facsimile, e-mail and postal addresses for all Users. OETC shall provide these details to any User in respect of any other User as soon as practicable after receiving a request.



Both OETC and all Users shall be entitled to amend in any respect their contact details previously supplied and OETC shall keep the list up to date accordingly.

Any notice required to be given by this Grid Code shall be deemed to have been given or received;

- if sent by hand, at the time of delivery;
- if sent by post, from and to any address within Oman, 4 Business Days after posting unless otherwise proven; or
- if sent by facsimile, subject to confirmation of uninterrupted transmission report, or by e-mail, one hour after being sent, provided that any transmission sent after 14:00 hours on any day shall be deemed to have been received at 8:00 hours on the following Business Day unless the contrary is shown to be the case.

GC.12 Code Disputes

If any dispute arises between Users or between OETC and any User in relation to this Grid Code, either party may by notice to the other seek to resolve the dispute by negotiation in good faith.

If the parties fail to resolve any dispute by such negotiations within 14 days of the giving of a notice under the previous paragraph then;

- (a) Either party shall be entitled by written notice to the other to require the dispute to be referred to a meeting of Members of the boards of directors of the parties or, if no such directors are present in Oman, the most senior executive of each party present in Oman;
- (b) If either party exercises its right under the sub-clause 12(a) each party shall procure that the relevant senior executives consider the matter in dispute and meet with senior executives of the other party within 14 days of receipt of the written notice of referral to attempt to reach agreement on the matter in question; or
- (c) If the parties fail to resolve any dispute which has been referred to directors/senior executives under the sub-clause 12(a), either party may refer the matter to the Regulatory Authority for determination as the Regulatory Authority sees fit. All parties shall be bound by any decision of the Regulatory Authority. If it sees fit the Regulatory Authority may;
determine the dispute itself; or
Refer the dispute for determination by arbitration.

If the dispute is referred by the Regulatory Authority to arbitration, the Regulatory Authority shall serve a written notice on the parties to the dispute to that effect and the Rules of Conciliation and Arbitration of the International Chamber of Commerce (the "ICC Rules") shall govern such arbitration save to the extent that the same are inconsistent with the express provisions of the Grid Code.

Any arbitration conducted in accordance with the preceding paragraph shall be conducted;

- (a) in the city of Muscat in Oman;
- (b) in English; and
- (c) by a panel comprising an odd number of arbitrators provided that (i) there shall be not fewer than three arbitrators (ii) each of the parties to the dispute shall appoint an arbitrator and (iii) the Regulatory Authority shall appoint one arbitrator if there is an even number of parties to the dispute (in which case, the Regulatory Authority's appointee shall act as chairman of the panel) or two arbitrators if there



is an uneven number of parties to the dispute are (in which case the Regulatory Authority shall nominate one of its appointees to act as chairman of the panel).

Where the Grid Code provides that any dispute or difference of the parties in relation to a particular matter should be referred to an expert for resolution, such difference or dispute may not be referred to arbitration unless and until such expert determination has been sought and obtained.

The Regulatory Authority shall have the right to require that all disputes which are referred to it in accordance with paragraph GC12(c) above and are related, whether between the same parties or not, shall be consolidated and determined together either by the Regulatory Authority or by any arbitrator to which the Regulatory Authority has referred any dispute.

Any arbitral award shall be final and binding on the parties.

GC.13 Code Confidentiality

Several parts of the Grid Code specify the extent of confidentiality, which applies to data supplied by Users to OETC. Unless otherwise specifically stated in the Grid Code, OETC shall be at liberty to share all data with Users likely to be affected by the matters concerned and with the PWP. In all cases, OETC is at liberty, and may be required, to share the data with the Regulatory Authority.

GC.14 Interim Transitional Provisions

It is known (as at the date that this Grid Code is first established) that a contract has been awarded for the design, construction and commissioning of a new load dispatch centre. This event may give rise to the need for changes to the Grid Code.

As soon as practicable, OETC will propose changes to the Grid Code which it considers necessary or expedient in order to take account of the relevant circumstances referred to above. Whilst the rules for changes to the Grid Code described elsewhere in this Grid Code shall apply to these proposals for changes OETC, PWP, and all Users shall co-operate fully with a view to agreeing the necessary changes. No such Person shall be entitled to prevent the implementation of any change which is necessary or expedient and approved by the Regulatory Authority.

GC.15 Interpretation

In this Grid Code, unless the context otherwise requires;

- references to "this Grid Code" or "the Grid Code" are reference to the whole of the Grid Code, including any schedules or other documents attached to any part of the Grid Code;
- the singular includes the plural and vice versa;
- any one gender includes the others;
- references to Code sections, paragraphs, clauses or schedules are to Code sections, paragraphs, clauses or schedules of this Grid Code;
- code, paragraph and schedule headings are for convenience of reference only and do not form part of and shall neither affect nor be used in the construction of this Grid Code;
- reference to any law, regulation made under any law, standard, secondary legislation, contract, agreement or other legal document shall be to that item as amended, modified or replaced from time to time. In particular, any reference to any licence shall be to that licence as amended, modified or replaced from time to time and to any rule, document, decision or arrangement promulgated or established under that Licence;



- references to the consent or approval of the Regulatory Authority shall be references to the approval or consent of the Regulatory Authority in writing, which may be given subject to such conditions as may be determined by the Regulatory Authority, as that consent or approval may be amended, modified, supplemented or replaced from time to time and to any proper order, instruction or requirement or decision of the Regulatory Authority given, made or issued under it;
- all references to specific dates or periods of time shall be calculated according to the Gregorian calendar and all references to specific dates shall be to the day commencing on such date at 00:00 hours;
- where a word or expression is defined in this Grid Code, cognate words and expressions shall be construed accordingly;
- references to "person" or "persons" include individuals, firms, companies, government agencies, committees, departments, ministries and other incorporate and unincorporated bodies as well as to individuals with a separate legal personality or not;
- the words "include", "including" and "in particular" shall be construed as being by way of illustration or emphasis and shall not limit or prejudice the generality of any foregoing words; and
- Terms and expressions defined in the [insert title of Sector Law] shall have the same meanings in this Grid Code. In particular, the following words and expressions shall have the meanings ascribed to them in that Sector Law.



Appendix A Constitution Of The Grid Code Review Panel

1. Definitions and Interpretation

1.1 The following words and expressions shall have the following meanings in this Constitution;

"**Chairman**" means the person appointed by OETC under Clause 6 of this Constitution to act as the chairperson of the Panel;

"**Constitution**" means the constitution and rules of the Panel as set out herein and as may be amended from time to time with the approval of the Regulatory Authority;

"**Grid Code**" means the Grid Code drawn up pursuant to Condition 3 of OETC's Transmission Licence;

"**Licence**" has the meaning given it in the Sector Law;

"**Member**" means a person appointed to act as a representative of the persons or groups referred to in Clause 3 on the Panel;

"**Panel**" means the Grid Code Review Panel established by the OETC in accordance with the Grid Code (section GC.4) and governed by this Constitution;

"**Secretary**" means the person appointed by OETC pursuant to Clause 7 and named as such;

"**Sector Law**" means Sultani Decree No. [/2003] promulgating the law governing the privatisations and regulation of the electricity sector in Oman;

"**OETC**" means the Oman Electricity Transmission Company in its capacity as holder of a Transmission Licence;

"**Transmission Licence**" means a Licence to transmit electricity granted pursuant to the Sector Law;

1.2 Except as otherwise provided herein and unless the context otherwise admits, words and expressions used herein shall have the meanings given to them in the Grid Code.

1.3 Words importing the singular only also include the plural and vice versa where the context requires. Words importing the masculine only also include the feminine.

1.4 Headings and titles shall not be taken into consideration in the interpretation or construction of the words and expressions used herein.

1.5 Unless otherwise stated, any reference to a Clause is a reference to a Clause of this Constitution.

2. Principal objects

2.1 The Panel has been established by OETC to further the objectives set out below and such other objectives as the Regulatory Authority may stipulate from time to time;

- (a) to generally review, discuss and develop the Grid Code and its implementation;
- (b) to review and discuss suggestions for amendments to the Grid Code which OETC, the Regulatory Authority or any User may wish to submit to OETC for consideration from time to time;
- (c) to discuss what changes are necessary to the Grid Code arising out of any unforeseen circumstances referred to it by OETC;
- (d) to review existing Oman Electrical Standards relevant to OETC's Transmission System and make recommendations to the Regulatory Authority concerning



modifications to existing Oman Electrical Standards or proposals for new Oman Electrical Standards relevant to OETC's Transmission System;

- (e) to determine which contractors should be approved to work on OETC's Transmission System;
- (f) to approve equipment that may be used on or form part of OETC's Transmission System;
- (g) to publish recommendations and ensure that User consultation upon such recommendations has occurred through Members; and
- (h) issue guidance in relation to the Grid Code and its implementation, performance and interpretation when asked to by a User.

3. Membership and Appointment

3.1 The Panel shall comprise;

- (a) the Chairman and up to 2 persons appointed by OETC;
- (b) a person appointed by the Regulatory Authority;
- (c) a person appointed by PWP;
- (d) a person appointed by PAEW;
- (e) 2 persons representing all Power Producers that each have Production Facilities with a total Registered Capacity in excess of 100 MW;
- (f) 2 persons representing all Power Producers that each have Centrally Dispatched Production Facilities with a total Registered Capacity of 100 MW or less;
- (g) 1 person representing each Licensed Distributor;
- (h) 1 person representing Internally Interconnected Parties;
- (i) 1 person representing International Interconnected Parties; and
- (j) 1 person representing RAEC.

3.2 Each person appointed as specified at Clause 3.1 shall be a Member of the Panel. If at any time any of the persons or groups identified at Clauses 3.1(a) to (j) are unable to agree on a representative to act as their Member, the Chairman shall contact (insofar as he is reasonably able) the person(s) or group(s) unable to agree and seek to encourage appointment or, as appropriate, unanimous agreement between relevant persons as to their prospective Member. If no such agreement is reached at least 21 Business Days prior to the next meeting of the Panel (or the first meeting of the Panel, as the case may be) the Chairman shall request the Regulatory Authority to make such appointment and the Regulatory Authority shall have the right, until the relevant person or group of persons has decided upon an appointment and notified the Regulatory Authority and the Chairman accordingly, to appoint a Member or Members on behalf of that person or group of persons, and to remove (if appropriate) any person so appointed by it.

3.3 No person other than an individual shall be appointed a Member or his alternate.

3.4 After the Panel has been established for one year;

- (a) each Member shall retire automatically at the beginning of the meeting of the Panel held on the first Business Day in the month of February each year (or if no meeting is held on such day, at the meeting which is held on the date falling closest after that day) but shall be eligible for re-appointment.



- (b) Each person or group of persons entitled to appoint a Member (or a person within such group of persons) may, by notice in writing to the Chairman, indicate its wish to re-appoint the retiring Member or to appoint a new person as a Member in his place.
- (c) The relevant person(s) must deliver such notifications for re-appointment or appointment to the Chairman at least 21 Business Days in advance of the relevant meeting of the Panel or group(s) entitled to appoint a Member. A notification for re-appointment in respect of an existing Member shall be deemed to be given if no notification is delivered to the Chairman at least 21 Business Days in advance of the relevant meeting of the Panel.
- (d) If only one notification is received for the re-appointment of a Member or appointment of a new person as a Member (or if all notifications received are unanimous), the person named in the notifications(s) will become the Member with effect from the beginning of the relevant meeting of the Panel. If the notifications are not unanimous, the provisions of Clause 3.2 of this Appendix A shall govern the appointment of the Member.
- (e) These provisions shall apply equally to persons or groups of persons entitled to appoint more than one Member, with any necessary changes to reflect that more than one Member is involved.

4. Alternates

- 4.1 Each Member (and the Chairman) shall have the power to appoint any individual to act as his alternate and remove (at his discretion) any alternate Member or Chairman (as the case may be) so appointed. Any appointment or removal of an alternate Member or Chairman shall be effected by notice in writing executed by the appointor and delivered to the Secretary or tendered at a meeting of the Panel.
- 4.2 If his appointor so requests, an alternate Member or Chairman (as the case may be) shall be entitled to receive notice of all meetings of the Panel or of sub-committees or working groups of which his appointor is a Member. He shall also be entitled to attend and vote as a Member or Chairman (as the case may be) at any such meeting at which the Member or Chairman (as the case may be) appointing him is not personally present and at any such meeting to exercise and discharge all the functions, powers and duties of his appointor as a Member or Chairman (as the case may be) and for the purpose of the proceedings at the meeting the provisions of this Constitution shall apply as if he were a Member or Chairman (as the case may be).
- 4.3 Every person acting as an alternate Member or Chairman (as the case may be) shall have one vote for each Member or Chairman (as the case may be) for whom he acts as alternate, in addition to his own vote if he is also a Member or Chairman (as the case may be). Execution by an alternate Member or Chairman (as the case may be) of any resolution of the Panel shall, unless the notice of his appointment provides to the contrary, be as effective as execution by his appointor.
- 4.4 An alternate Member or Chairman (as the case may be) shall ipso facto cease to be an alternate Member or Chairman (as the case may be) if his appointor ceases for any reason to be a Member or Chairman (as the case may be).
- 4.5 References in this Constitution to a Member or Chairman (as the case may be) shall, unless the context otherwise requires, include his duly appointed alternate.

5. Representation and voting

- 5.1 The Chairman and each other Member shall be entitled to attend and be heard at every meeting of the Panel. One adviser (or such greater number as the Chairman shall permit) shall be entitled to attend any meeting of the Panel with each Member



- and shall be entitled to speak at any meeting but shall not be entitled to vote on any issue.
- 5.2 Each Member (including the Chairman) shall be entitled to cast one vote. In the event of an equality of votes, the Chairman shall have a second or casting vote.
- 6. The Chairman**
- 6.1 Upon retirement or removal by OETC of the first and each successive Chairman, OETC shall appoint a person to act as Chairman.
- 6.2 OETC may at any time remove the Chairman from office.
- 6.3 The Chairman shall preside at every meeting of the Panel at which he is present. If the Chairman is unable to be present at a meeting, he may appoint an alternate pursuant to Clause 4.1 of this Appendix A to act as Chairman. If neither the Chairman nor any other person appointed to act as Chairman is present within half an hour after the time appointed for holding the meeting, the Members present appointed by OETC, may appoint one of their number to be Chairman of the meeting.
- 6.4 The Chairman, or the person appointed to act as Chairman by the Chairman shall be entitled to cast one vote. Where a Member is acting in the capacity of both Member and Chairman, he shall be entitled to cast one vote as Chairman, in addition to his one vote as Member.
- 7. The Secretary**
- 7.1 OETC shall have power to appoint and dismiss a Secretary and such other staff for the Panel as it may deem necessary. The Secretary may, but need not be, a Member, but shall not be a Member by virtue only of being Secretary. The Secretary shall have the right to speak at, but, unless a Member, no right to cast a vote at any meeting.
- 7.2 The Secretary's duties shall be to attend to the day to day operation of the Panel and, in particular, to;
- i) attend to the requisition of meetings and to serve all requisite notices;
 - ii) maintain a register of names and addresses of Members and the Chairman and such alternates as may be appointed from time to time;
 - iii) maintain a register of names and addresses of persons in each of the groups of persons described in sub-clauses 3.1(a) to (j) of this Appendix A; and
 - iv) keep minutes of all meetings.
- 7.3 The Secretary shall make available the register of names and addresses referred to in sub-clauses 7.2(ii) and (iii) above, to Licensed Distributors, Distribution System Users and/or the Regulatory Authority for inspection within a reasonable period of being requested to do so.
- 7.4 If the office of a Member is vacated the Secretary shall notify (insofar as he is reasonably able) the group or person whom the Member represented and they shall appoint a new Member as provided in Clause 3 of this Appendix A.
- 8. Meetings**
- 8.1 Subject always to the direction of OETC and the Regulatory Authority, the Panel meetings shall operate as follows:
- (a) the Panel shall meet on the first Monday in the months of May, August, November and February and as necessary for the transaction of business whenever convened by the Chairman at such times as may be determined by the Regulatory Authority, and in any event shall meet not less than 4 times each year; If the first Monday of that month



happens to be a holiday, then alternate date will be communicated by the Chairman of the Panel.

- (b) notwithstanding the right of the Chairman to call a meeting of the Panel whenever appropriate, the Chairman shall call a meeting when requested by a notice in writing to do so by two or more Members;
- (c) unless agreed by all Members, not less than 14 Business Days prior written notice shall be given to all Members of all meetings of the Panel;
- (d) the quorum of Members required for the Panel meetings shall not be less than 7 of the Members;
- (e) if within an hour of the time appointed for a meeting of the Panel a quorum is not present, the meeting shall stand adjourned for at least 2 Business Days. The re-adjourned meeting shall be deemed quorate and its proceedings valid notwithstanding there being fewer than seven Members present; and
- (f) subject to sub-paragraphs (d) and (e) above the following circumstances shall not (of themselves) invalidate proceedings of the Panel;
 - i) vacancies amongst the Panel;
 - ii) any defects in the appointment of Members; orthe accidental omission to give notice of a Meeting to, or the non-receipt of notice of a meeting by a person entitled to receive notice.

9. Grid Code Revisions

- 9.1 All proposed revisions to the Grid Code must be reviewed by the Panel prior to their implementation. All revisions proposed by Users, the Regulatory Authority or OETC should be brought before the Panel by the Chairman for consideration. The Chairman will advise the Panel, Users, and the Regulatory Authority of all proposed revisions to the Grid Code with notice of no less than 20 Business Days in advance of the next scheduled meeting of the Panel
- 9.2 Following review of a proposed revision by the Panel, the Chairman will, if appropriate, apply to the Regulatory Authority to approve the revision of the Grid Code based on the Panel recommendation. The Chairman, in applying to the Regulatory Authority, shall also notify each User of the proposed revision and other views expressed by the Panel and Users so that each User may consider making representations directly to the Regulatory Authority regarding the proposed revision.
- 9.3 The Regulatory Authority shall consider the proposed revision, other views, and any further representations and shall determine whether the proposed revision should be made and, if so, whether in the form proposed or in an amended form.
- 9.4 If the Panel is directed by the Regulatory Authority that the revision shall be made, the Chairman shall notify each User of the revision at least 10 Business Days prior to the revision taking effect, and the revision shall take effect (and the Grid Code shall be deemed to be amended accordingly) from (and including) the date specified in such notification or other such date as directed by the Regulatory Authority.

10. Resolutions

- 10.1 A resolution of the Panel shall be passed by a simple majority of votes cast.
- 10.2 A resolution in writing signed by all Members shall be as valid and effective as if it had been passed at a meeting of the Panel duly convened and held. One or more counterparts may produce written resolutions.
- 10.3 A meeting of the Panel may consist of a conference between Members who are not all in one place but who are able (directly or by telephonic communication) to speak to



each of the others and to be heard by each of the others simultaneously. The word "meeting" shall be construed accordingly.

11. Minutes

- 11.1 The Secretary shall circulate copies of the minutes of each meeting of the Panel to each Member as soon as practicable (and in any event within 15 Business Days) after the relevant meeting has been held.
- 11.2 Each Member shall notify the Secretary of his approval or disapproval of the minutes of each meeting within 15 Business Days of receipt of the minutes. A Member who fails to do so will be deemed to have approved the minutes. The approval or disapproval of the minutes aforesaid will not affect the validity of decisions taken by the Panel at the meeting to which the minutes relate.
- 11.3 If the Secretary receives any comments on the minutes, the Secretary shall circulate revised minutes as soon as practicable following the expiry of the period referred to in Clause 11.2 of this Appendix A, incorporating those comments which are of a typographical nature and indicating, where necessary, that Members disagree with certain aspects of the minutes. The Secretary shall then incorporate those aspects of the minutes upon which there is disagreement, into the agenda for the next following meeting of the Panel, as the first item for discussion, and, if possible, resolution.

12. Guidance from the Panel

- 12.1 The Panel may at any time, and from time to time, issue guidance in relation to the Grid Code and its implementation, performance and interpretation, and it may establish subcommittees and working groups to carry out such work.

13. Sub-committees and working groups

- 13.1 The Panel may establish such sub-committees from time to time consisting of such persons as it considers desirable. Each sub-committee shall be subject to such written terms of reference and shall be subject to such procedures as the Panel may determine. The meetings of sub-committees shall so far as possible be arranged so that the minutes of such meetings can be presented to the Members in sufficient time for consideration before the next following meeting of the Panel.
- 13.2 The Panel may further establish working groups to advise it on any matter from time to time. Such working groups may consist of Members and/or others as the Panel may determine for the purpose.
- 13.3 Resolutions of sub-committees and working groups shall not have binding effect unless approved by resolution of the Panel.

14. Removal of Members and Chairman and vacation of office

- 14.1 The office of a Member shall be vacated if;
 - (a) he resigns his office by notice delivered to the Secretary;
 - (b) he becomes bankrupt or compounds with his creditors generally;
 - (c) he becomes of unsound mind or a patient for any purpose of any statute relating to mental health; or



- (d) he or his alternate fails to attend more than three consecutive meetings of the Panel without submitting an explanation to the Chairman which is reasonably acceptable to the Chairman.
- 14.2 Further, any person or persons entitled to appoint a Member or the Chairman, as the case may be, pursuant to Clause 3 may at any time remove that Member or the Chairman, as the case may be, from office and appoint another person to be a Member or the Chairman, as the case may be, in its place. A person or persons will only have the right to remove from office the Member or the Chairman, as the case may be, that it or they have appointed, and will have no right to remove from office any Member or the Chairman, as the case may be, appointed by another person. Whenever any individual Member or the Chairman changes, the person or group of persons entitled to appoint that Member or the Chairman shall notify the Secretary in writing within seven days of the change taking effect.
- 15. Members on the panel's responsibilities and protections**
- 15.1 In the exercise of its powers and the performance of its duties and responsibilities, the Panel shall have due regard for the need to promote the attainment of the principal objects of the Panel set out in Clause 2 of this Appendix A.
- 15.2 In the exercise of its powers and the performance of its duties and responsibilities as a Member, a Member shall represent the interests of that person or persons by whom he is for the time being appointed pursuant to Clause 3, provided that such obligation of representation shall at all times be subordinate to the obligations of the Member as a Member of the Panel set out in Clause 15.1 of this Appendix A.
- 15.3 The Panel, each Member and the Secretary;
- i) shall be entitled to rely upon any communication or document reasonably believed by it or him to be genuine and correct and to have been communicated or signed by the person by whom it purports to be communicated or signed; and
 - ii) may in relation to any act, matter or thing contemplated by this Constitution act on the opinion or advice of, or any information from, any chartered engineer, lawyer, or expert in any other field, and shall not be liable for the consequences of so acting.
- 15.4 The Panel shall enjoy no status, immunity or privilege of the Sultanate of Oman. However, Members shall not be personally liable in respect of the performance of the functions of the Grid Code Review Panel.
- 16. Group representatives' addresses**
- 16.1 Each Member shall from time to time communicate his address to the Secretary and all notices sent to such address shall be considered as having been duly given to such Member.
- 17. Confidentiality**
- 17.1 Each Member shall keep confidential all information, which that Member might reasonably be expected to understand to be confidential.

The Grid Code

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The Grid Code

Preface

Issued April 2010

This document is the Grid Code referred to in the Sector Law [(Articles 22 & 23)] and the Transmission and Dispatch Licence granted by the Regulatory Authority to the Oman Electricity Transmission Company SAOC ("OETC") under that Law. It contains rules in relation to the planning, development, Connection to, Operation and maintenance of and changes to OETC's Transmission System.

The Grid Code applies to all entities that are connected to and/or use the Transmission System. However, individual parts of the Grid Code may be applicable to only some parties who have acceded to the Grid Code as a whole. Each constituent part of the Grid Code specifies which Person it applies to.

Terms and expressions used in the Grid Code are defined either in the relevant section of the Grid Code entitled "Abbreviations and Definitions" or, in some cases, in individual Grid Code sections.

The Grid Code contains the following constituent parts;

- General Conditions;
- Data Transfer Code;
- Alerts Summary Code;
- Planning Code;
- Connection Conditions Code;
- Operating Codes;
 - OC1 Demand Forecasting;
 - OC2 Operational Planning;
 - OC3 Operating Margin;
 - OC4 Demand Control;
 - OC5 Notice of Operations & Incidents, & Significant Incident Reporting;
 - OC6 Safety Coordination;
 - OC7 Contingency Planning;
 - OC8 Numbering and Nomenclature of HV Plant;
 - OC9 Operational Tests & Site Investigations;
- Scheduling and Dispatch Codes;
 - SDC1 Generation and Desalination Scheduling;
 - SDC2 Generation and Desalination Dispatch;
 - SDC3 Frequency Control;
- Ancillary Services Code;
- Metering and Data Exchange Code;
- Abbreviations and Definitions;



This Grid Code shall not constitute a contract between any of the parties to it. All Licensees (including OETC, Licensed Generators, Licensed Generators/Desalinators, Licensed Distribution System Operators and RAEC when connected to the Transmission System) will be party to it as will other parties Connected to the Transmission System. Some of these parties may have contractual obligations, created by separate documents (including Connection Agreements), to each other to comply with the Grid Code.

Nothing in this Grid Code shall entitle any party to it or any other person to any contractual or other general Law right or remedy of whatsoever kind and howsoever arising in respect of this Grid Code. Each party's liability to each other party shall be limited to one (1) Omani Rial.

However, nothing in this Grid Code (including this paragraph) shall affect any legal right or remedy that may exist between any two parties to this Grid Code under any such separate agreement between or any duty arising under the terms of any Licence granted pursuant to the [title of Sector Law] or pursuant to that Law. In particular, nothing in this Grid Code shall preclude the Regulatory Authority from taking such enforcement action in relation to it, the Sector Law or any Licence granted there under as it sees fit.

Each party to this Grid Code shall at all times deal with all other parties in good faith. All parties to the Grid Code shall at all times perform all of their obligations in accordance with Good Industry Practice.



General Conditions

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General Conditions

GC.1 Introduction

The individual sections of the Grid Code contain the rules and provisions relating specifically to that individual section of the Grid Code. There are also provisions of a more general application, which need to be included in the Grid Code to allow the various sections of the Grid Code to work together. Such provisions are included in these General Conditions.

GC.2 Objective

The objectives of the General Conditions are as follows

- To ensure, insofar as it is possible, that the various sections of the Grid Code work together for the benefit of OETC and all Users; and
- To provide a set of principles governing the status and development of the Grid Code and related issues as approved by the Regulatory Authority.

GC.3 Scope of Grid Code and General Conditions

The General Conditions apply to OETC and to all Parties to the Grid Code.

GC.4 Grid Code Review Panel

OETC shall establish and maintain the Grid Code Review Panel, which shall be a standing body, constituted;

- to generally review, discuss and develop the Grid Code and its implementation;
- to review and discuss suggestions for amendments to the Grid Code which OETC, the Regulatory Authority or any User may wish to submit to OETC for consideration from time to time;
- to discuss what changes are necessary to the Grid Code arising out of any unforeseen circumstances referred to it by OETC;
- to review existing Oman Electrical Standards relevant to OETC's Transmission System and make recommendations to the Regulatory Authority concerning modifications to existing Oman Electrical Standards or proposals for new Oman Electrical Standards relevant to OETC's Transmission System;
- to publish recommendations and ensure that User consultation upon such recommendations has occurred through Members; and
- Issue guidance in relation to the Grid Code and its implementation, performance and interpretation when asked to by a User.

The Grid Code Review Panel shall be governed by a constitution (given as Appendix A) which defines its scope, Membership, duties, and rules of conduct, operation and further development of the Grid Code as approved by the Regulatory Authority.

The Panel shall consist of;

- a chairman and up to 2 persons appointed by OETC;
- a person appointed by the Regulatory Authority;
- a person appointed by PWP;
- a person appointed by PAEW;
- 2 persons representing all Power Producers that each have Production Facilities with a total Registered Capacity in excess of 100 MW;



- 2 persons representing all Power Producers that each having Centrally Dispatched Production Facilities with a total Registered Capacity of 100 MW or less;
- 1 person representing each Licensed Distributor;
- 1 person representing Internally Interconnected Parties;
- 1 person representing International Interconnected Parties; and
- 1 person representing RAEC.

GC.5 Grid Code Revisions

All revisions to the Grid Code must be reviewed by the Grid Code Review Panel prior to application to the Regulatory Authority by the Chairman. All proposed revisions from Users, the Regulatory Authority or OETC shall be brought before the Grid Code Review Panel by the Chairman for consideration. The Chairman will advise the Grid Code Review Panel, all Users, and the Regulatory Authority of all proposed revisions to the Grid Code with notice of no less than 20 Business Days in advance of the next scheduled meeting of the Grid Code Review Panel.

Following review of a proposed revision by the Grid Code Review Panel, the Chairman will apply to the Regulatory Authority for revision of the Grid Code based on the Grid Code Review Panel recommendation. The Chairman, in applying to the Regulatory Authority, shall also notify each User of the proposed revision and other views expressed by the Grid Code Review Panel and Users so that each User may consider making representations directly to the Regulatory Authority regarding the proposed revision.

The Regulatory Authority shall consider the proposed revision, other views, and any further representations and shall determine whether the proposed revision should be made and, if so, whether in the form proposed or in an amended form.

Having been so directed by the Regulatory Authority that the revision shall be made, the Chairman shall notify each User of the revision at least 10 Business Days prior to the revision taking effect, and the revision shall take effect (and this Grid Code shall be deemed to be amended accordingly) from (and including) the date specified in such notification or other such date as directed by the Regulatory Authority.

GC.6 Derogations

If a User finds that it is, or will be, unable to comply with any provision of the Grid Code, then it shall, without delay, report such non-compliance to OETC and the Regulatory Authority and shall make such reasonable efforts as are required to remedy such non-compliance as soon as reasonably practicable. Non-compliance may result;

- with reference to Plant Connected to the Transmission System and is caused solely or mainly as a result of a revision to the Grid Code; and
- with reference to Plant which is Connected, approved to Connect or for which approval to Connect to the Transmission System is being sought.

When a User believes either that it would be unreasonable (including on the grounds of cost and technical considerations) to require it to remedy such non-compliance or that it should be granted an extended period to remedy such non-compliance, it shall promptly submit to the Regulatory Authority a request for derogation from such provision and shall provide OETC and PWP with a copy of such application.

If OETC finds that it is, or will be, unable to comply with any provision of the Grid Code at any time, then it shall make such reasonable efforts as are required to remedy such non-compliance as soon as reasonably practicable.



In the case where OETC requests derogation, OETC shall submit the information set out in paragraph GC.6.1 to the Regulatory Authority.

GC.6.1 Requests for Derogation

A request for derogation from any provision of the Grid Code shall contain;

- (a) The reference number and the date of the Grid Code provision against which the non-compliance or predicted non-compliance was identified;
- (b) The detail of the Plant in respect of which derogation is sought and, if relevant, the nature and extent of non-compliance;
- (c) The provision of the Grid Code with which the User is, or will be, unable to comply;
- (d) The reason for the non-compliance; and
- (e) The date by which compliance could be achieved (if remedy of the non-compliance is possible).

On receipt of any request for derogation, the Regulatory Authority shall promptly consider such a request. Provided that the Regulatory Authority considers that the grounds for the derogation are reasonable, the Regulatory Authority shall grant such derogation unless the derogation would, or is likely to;

- Have a material adverse impact on the security and/or stability of the Total System; or
- Impose unreasonable costs on the Operation of the Total System or on other Users.

In its consideration of a derogation request by a User, the Regulatory Authority may contact the relevant User and/or OETC to obtain clarification of the request or to discuss changes to the request.

Derogations from any provision of the Grid Code shall contain;

- (a) The reference number and the date of the Grid Code provision against which the derogation applies;
- (b) The detail of the Plant in respect of which a derogation applies and, if relevant, the nature and extent to which the derogation applies including alternative compliance provisions;
- (c) The identification of the provision with which the derogation applies;
- (d) The reason for the non-compliance requiring derogation; and
- (e) The date by which the derogation shall expire.

To the extent of any derogation granted in accordance with this paragraph GC.6.1, OETC and/or the User (as the case may be) shall be relieved from any obligation to comply with the applicable provision of the Grid Code and shall not be liable for failure to so comply but shall comply with any alternative provisions identified in the derogation.

OETC shall;

- (a) Keep a register of all derogations which have been granted, identifying the name of the person and User in respect of whom the derogation has been granted, the relevant provision of the Grid Code and the period of the derogation; and
- (b) On request from any User, provide a copy of such register of derogations to such User.

The Regulatory Authority may initiate at the request of OETC or Users a review of any existing derogations, and any derogations under consideration where a relevant and material change in circumstance has occurred.



GC.7 Unforeseen Circumstances

If circumstances arise which the provisions of the Grid Code have not foreseen, OETC shall to the extent reasonably practicable in the circumstances, consult all affected Users in an effort to reach agreement as to what should be done and submit a proposal to the Grid Code Review Panel for consideration.

If OETC and affected Users are not able to agree, OETC will take any action necessary to ensure that it meets its License conditions wherever practical taking into account the views expressed by the Users.

Thereafter, OETC shall refer the matter relating to the unforeseen circumstances and any such determinations to the Grid Code Review Panel with a proposal for consideration.

GC.8 Hierarchy

In the event of any irreconcilable conflict between the provisions of the Grid Code and any contract, agreement, or arrangement between OETC and a User;

- (a) If the contract agreement or arrangement exists at the date this Grid Code first comes into force, it shall, unless and to the extent (1) specifically provided for in the Grid Code or in the contract agreement or arrangement or (2) that the User has agreed to comply with the Grid Code, prevail over this Grid Code for two years from the date upon which this Grid Code is first in effect; and
- (b) In all other cases, the provisions of the Grid Code shall prevail unless the Grid Code expressly provides otherwise.

GC.9 Illegality and Partial Invalidity

If any provision of the Grid Code should be found to be unlawful or wholly or partially invalid for any reason, the validity of all remaining provisions of the Grid Code shall not be affected.

If part of a provision of the Grid Code is found to be unlawful or invalid but the rest of such provision would remain valid if part of the wording were deleted, the provision shall apply with such minimum modification as may be;

- (a) necessary to make it valid and effective; and
- (b) most closely achieves the result of the original wording,

but without affecting the meaning or validity of any other provision of the Grid Code. OETC shall prepare a proposal to correct the default for consideration by the Grid Code Review Panel.

GC.10 Time of Effectiveness

This Grid Code shall have effect, as regards a new User, at the time at which its Connection Agreement comes into effect.

GC.11 Code Notices

Any notice to be given under the Grid Code shall be in writing and shall be duly given if signed by or on behalf of a Person duly authorised to do so by the party giving the notice and delivered by hand at, or sent by post, or facsimile transmission or e-mail to the relevant address, facsimile number or e-mail address last established pursuant to these General Conditions.

OETC shall maintain a list of contact details for itself and all Users containing the telephone, facsimile, e-mail and postal addresses for all Users. OETC shall provide these details to any User in respect of any other User as soon as practicable after receiving a request.



Both OETC and all Users shall be entitled to amend in any respect their contact details previously supplied and OETC shall keep the list up to date accordingly.

Any notice required to be given by this Grid Code shall be deemed to have been given or received;

- if sent by hand, at the time of delivery;
- if sent by post, from and to any address within Oman, 4 Business Days after posting unless otherwise proven; or
- if sent by facsimile, subject to confirmation of uninterrupted transmission report, or by e-mail, one hour after being sent, provided that any transmission sent after 14:00 hours on any day shall be deemed to have been received at 8:00 hours on the following Business Day unless the contrary is shown to be the case.

GC.12 Code Disputes

If any dispute arises between Users or between OETC and any User in relation to this Grid Code, either party may by notice to the other seek to resolve the dispute by negotiation in good faith.

If the parties fail to resolve any dispute by such negotiations within 14 days of the giving of a notice under the previous paragraph then;

- (a) Either party shall be entitled by written notice to the other to require the dispute to be referred to a meeting of Members of the boards of directors of the parties or, if no such directors are present in Oman, the most senior executive of each party present in Oman;
- (b) If either party exercises its right under the sub-clause 12(a) each party shall procure that the relevant senior executives consider the matter in dispute and meet with senior executives of the other party within 14 days of receipt of the written notice of referral to attempt to reach agreement on the matter in question; or
- (c) If the parties fail to resolve any dispute which has been referred to directors/senior executives under the sub-clause 12(a), either party may refer the matter to the Regulatory Authority for determination as the Regulatory Authority sees fit. All parties shall be bound by any decision of the Regulatory Authority. If it sees fit the Regulatory Authority may;
determine the dispute itself; or
Refer the dispute for determination by arbitration.

If the dispute is referred by the Regulatory Authority to arbitration, the Regulatory Authority shall serve a written notice on the parties to the dispute to that effect and the Rules of Conciliation and Arbitration of the International Chamber of Commerce (the "ICC Rules") shall govern such arbitration save to the extent that the same are inconsistent with the express provisions of the Grid Code.

Any arbitration conducted in accordance with the preceding paragraph shall be conducted;

- (a) in the city of Muscat in Oman;
- (b) in English; and
- (c) by a panel comprising an odd number of arbitrators provided that (i) there shall be not fewer than three arbitrators (ii) each of the parties to the dispute shall appoint an arbitrator and (iii) the Regulatory Authority shall appoint one arbitrator if there is an even number of parties to the dispute (in which case, the Regulatory Authority's appointee shall act as chairman of the panel) or two arbitrators if there



is an uneven number of parties to the dispute are (in which case the Regulatory Authority shall nominate one of its appointees to act as chairman of the panel).

Where the Grid Code provides that any dispute or difference of the parties in relation to a particular matter should be referred to an expert for resolution, such difference or dispute may not be referred to arbitration unless and until such expert determination has been sought and obtained.

The Regulatory Authority shall have the right to require that all disputes which are referred to it in accordance with paragraph GC12(c) above and are related, whether between the same parties or not, shall be consolidated and determined together either by the Regulatory Authority or by any arbitrator to which the Regulatory Authority has referred any dispute.

Any arbitral award shall be final and binding on the parties.

GC.13 Code Confidentiality

Several parts of the Grid Code specify the extent of confidentiality, which applies to data supplied by Users to OETC. Unless otherwise specifically stated in the Grid Code, OETC shall be at liberty to share all data with Users likely to be affected by the matters concerned and with the PWP. In all cases, OETC is at liberty, and may be required, to share the data with the Regulatory Authority.

GC.14 Interim Transitional Provisions

It is known (as at the date that this Grid Code is first established) that a contract has been awarded for the design, construction and commissioning of a new load dispatch centre. This event may give rise to the need for changes to the Grid Code.

As soon as practicable, OETC will propose changes to the Grid Code which it considers necessary or expedient in order to take account of the relevant circumstances referred to above. Whilst the rules for changes to the Grid Code described elsewhere in this Grid Code shall apply to these proposals for changes OETC, PWP, and all Users shall co-operate fully with a view to agreeing the necessary changes. No such Person shall be entitled to prevent the implementation of any change which is necessary or expedient and approved by the Regulatory Authority.

GC.15 Interpretation

In this Grid Code, unless the context otherwise requires;

- references to "this Grid Code" or "the Grid Code" are reference to the whole of the Grid Code, including any schedules or other documents attached to any part of the Grid Code;
- the singular includes the plural and vice versa;
- any one gender includes the others;
- references to Code sections, paragraphs, clauses or schedules are to Code sections, paragraphs, clauses or schedules of this Grid Code;
- code, paragraph and schedule headings are for convenience of reference only and do not form part of and shall neither affect nor be used in the construction of this Grid Code;
- reference to any law, regulation made under any law, standard, secondary legislation, contract, agreement or other legal document shall be to that item as amended, modified or replaced from time to time. In particular, any reference to any licence shall be to that licence as amended, modified or replaced from time to time and to any rule, document, decision or arrangement promulgated or established under that Licence;



- references to the consent or approval of the Regulatory Authority shall be references to the approval or consent of the Regulatory Authority in writing, which may be given subject to such conditions as may be determined by the Regulatory Authority, as that consent or approval may be amended, modified, supplemented or replaced from time to time and to any proper order, instruction or requirement or decision of the Regulatory Authority given, made or issued under it;
- all references to specific dates or periods of time shall be calculated according to the Gregorian calendar and all references to specific dates shall be to the day commencing on such date at 00:00 hours;
- where a word or expression is defined in this Grid Code, cognate words and expressions shall be construed accordingly;
- references to "person" or "persons" include individuals, firms, companies, government agencies, committees, departments, ministries and other incorporate and unincorporated bodies as well as to individuals with a separate legal personality or not;
- the words "include", "including" and "in particular" shall be construed as being by way of illustration or emphasis and shall not limit or prejudice the generality of any foregoing words; and
- Terms and expressions defined in the [insert title of Sector Law] shall have the same meanings in this Grid Code. In particular, the following words and expressions shall have the meanings ascribed to them in that Sector Law.



Appendix A Constitution Of The Grid Code Review Panel

1. Definitions and Interpretation

1.1 The following words and expressions shall have the following meanings in this Constitution;

"**Chairman**" means the person appointed by OETC under Clause 6 of this Constitution to act as the chairperson of the Panel;

"**Constitution**" means the constitution and rules of the Panel as set out herein and as may be amended from time to time with the approval of the Regulatory Authority;

"**Grid Code**" means the Grid Code drawn up pursuant to Condition 3 of OETC's Transmission Licence;

"**Licence**" has the meaning given it in the Sector Law;

"**Member**" means a person appointed to act as a representative of the persons or groups referred to in Clause 3 on the Panel;

"**Panel**" means the Grid Code Review Panel established by the OETC in accordance with the Grid Code (section GC.4) and governed by this Constitution;

"**Secretary**" means the person appointed by OETC pursuant to Clause 7 and named as such;

"**Sector Law**" means Sultani Decree No. [/2003] promulgating the law governing the privatisations and regulation of the electricity sector in Oman;

"**OETC**" means the Oman Electricity Transmission Company in its capacity as holder of a Transmission Licence;

"**Transmission Licence**" means a Licence to transmit electricity granted pursuant to the Sector Law;

1.2 Except as otherwise provided herein and unless the context otherwise admits, words and expressions used herein shall have the meanings given to them in the Grid Code.

1.3 Words importing the singular only also include the plural and vice versa where the context requires. Words importing the masculine only also include the feminine.

1.4 Headings and titles shall not be taken into consideration in the interpretation or construction of the words and expressions used herein.

1.5 Unless otherwise stated, any reference to a Clause is a reference to a Clause of this Constitution.

2. Principal objects

2.1 The Panel has been established by OETC to further the objectives set out below and such other objectives as the Regulatory Authority may stipulate from time to time;

- (a) to generally review, discuss and develop the Grid Code and its implementation;
- (b) to review and discuss suggestions for amendments to the Grid Code which OETC, the Regulatory Authority or any User may wish to submit to OETC for consideration from time to time;
- (c) to discuss what changes are necessary to the Grid Code arising out of any unforeseen circumstances referred to it by OETC;
- (d) to review existing Oman Electrical Standards relevant to OETC's Transmission System and make recommendations to the Regulatory Authority concerning



modifications to existing Oman Electrical Standards or proposals for new Oman Electrical Standards relevant to OETC's Transmission System;

- (e) to determine which contractors should be approved to work on OETC's Transmission System;
- (f) to approve equipment that may be used on or form part of OETC's Transmission System;
- (g) to publish recommendations and ensure that User consultation upon such recommendations has occurred through Members; and
- (h) issue guidance in relation to the Grid Code and its implementation, performance and interpretation when asked to by a User.

3. Membership and Appointment

3.1 The Panel shall comprise;

- (a) the Chairman and up to 2 persons appointed by OETC;
- (b) a person appointed by the Regulatory Authority;
- (c) a person appointed by PWP;
- (d) a person appointed by PAEW;
- (e) 2 persons representing all Power Producers that each have Production Facilities with a total Registered Capacity in excess of 100 MW;
- (f) 2 persons representing all Power Producers that each have Centrally Dispatched Production Facilities with a total Registered Capacity of 100 MW or less;
- (g) 1 person representing each Licensed Distributor;
- (h) 1 person representing Internally Interconnected Parties;
- (i) 1 person representing International Interconnected Parties; and
- (j) 1 person representing RAEC.

3.2 Each person appointed as specified at Clause 3.1 shall be a Member of the Panel. If at any time any of the persons or groups identified at Clauses 3.1(a) to (j) are unable to agree on a representative to act as their Member, the Chairman shall contact (insofar as he is reasonably able) the person(s) or group(s) unable to agree and seek to encourage appointment or, as appropriate, unanimous agreement between relevant persons as to their prospective Member. If no such agreement is reached at least 21 Business Days prior to the next meeting of the Panel (or the first meeting of the Panel, as the case may be) the Chairman shall request the Regulatory Authority to make such appointment and the Regulatory Authority shall have the right, until the relevant person or group of persons has decided upon an appointment and notified the Regulatory Authority and the Chairman accordingly, to appoint a Member or Members on behalf of that person or group of persons, and to remove (if appropriate) any person so appointed by it.

3.3 No person other than an individual shall be appointed a Member or his alternate.

3.4 After the Panel has been established for one year;

- (a) each Member shall retire automatically at the beginning of the meeting of the Panel held on the first Business Day in the month of February each year (or if no meeting is held on such day, at the meeting which is held on the date falling closest after that day) but shall be eligible for re-appointment.



- (b) Each person or group of persons entitled to appoint a Member (or a person within such group of persons) may, by notice in writing to the Chairman, indicate its wish to re-appoint the retiring Member or to appoint a new person as a Member in his place.
- (c) The relevant person(s) must deliver such notifications for re-appointment or appointment to the Chairman at least 21 Business Days in advance of the relevant meeting of the Panel or group(s) entitled to appoint a Member. A notification for re-appointment in respect of an existing Member shall be deemed to be given if no notification is delivered to the Chairman at least 21 Business Days in advance of the relevant meeting of the Panel.
- (d) If only one notification is received for the re-appointment of a Member or appointment of a new person as a Member (or if all notifications received are unanimous), the person named in the notification(s) will become the Member with effect from the beginning of the relevant meeting of the Panel. If the notifications are not unanimous, the provisions of Clause 3.2 of this Appendix A shall govern the appointment of the Member.
- (e) These provisions shall apply equally to persons or groups of persons entitled to appoint more than one Member, with any necessary changes to reflect that more than one Member is involved.

4. Alternates

- 4.1 Each Member (and the Chairman) shall have the power to appoint any individual to act as his alternate and remove (at his discretion) any alternate Member or Chairman (as the case may be) so appointed. Any appointment or removal of an alternate Member or Chairman shall be effected by notice in writing executed by the appointor and delivered to the Secretary or tendered at a meeting of the Panel.
- 4.2 If his appointor so requests, an alternate Member or Chairman (as the case may be) shall be entitled to receive notice of all meetings of the Panel or of sub-committees or working groups of which his appointor is a Member. He shall also be entitled to attend and vote as a Member or Chairman (as the case may be) at any such meeting at which the Member or Chairman (as the case may be) appointing him is not personally present and at any such meeting to exercise and discharge all the functions, powers and duties of his appointor as a Member or Chairman (as the case may be) and for the purpose of the proceedings at the meeting the provisions of this Constitution shall apply as if he were a Member or Chairman (as the case may be).
- 4.3 Every person acting as an alternate Member or Chairman (as the case may be) shall have one vote for each Member or Chairman (as the case may be) for whom he acts as alternate, in addition to his own vote if he is also a Member or Chairman (as the case may be). Execution by an alternate Member or Chairman (as the case may be) of any resolution of the Panel shall, unless the notice of his appointment provides to the contrary, be as effective as execution by his appointor.
- 4.4 An alternate Member or Chairman (as the case may be) shall ipso facto cease to be an alternate Member or Chairman (as the case may be) if his appointor ceases for any reason to be a Member or Chairman (as the case may be).
- 4.5 References in this Constitution to a Member or Chairman (as the case may be) shall, unless the context otherwise requires, include his duly appointed alternate.

5. Representation and voting

- 5.1 The Chairman and each other Member shall be entitled to attend and be heard at every meeting of the Panel. One adviser (or such greater number as the Chairman shall permit) shall be entitled to attend any meeting of the Panel with each Member



- and shall be entitled to speak at any meeting but shall not be entitled to vote on any issue.
- 5.2 Each Member (including the Chairman) shall be entitled to cast one vote. In the event of an equality of votes, the Chairman shall have a second or casting vote.
- 6. The Chairman**
- 6.1 Upon retirement or removal by OETC of the first and each successive Chairman, OETC shall appoint a person to act as Chairman.
- 6.2 OETC may at any time remove the Chairman from office.
- 6.3 The Chairman shall preside at every meeting of the Panel at which he is present. If the Chairman is unable to be present at a meeting, he may appoint an alternate pursuant to Clause 4.1 of this Appendix A to act as Chairman. If neither the Chairman nor any other person appointed to act as Chairman is present within half an hour after the time appointed for holding the meeting, the Members present appointed by OETC, may appoint one of their number to be Chairman of the meeting.
- 6.4 The Chairman, or the person appointed to act as Chairman by the Chairman shall be entitled to cast one vote. Where a Member is acting in the capacity of both Member and Chairman, he shall be entitled to cast one vote as Chairman, in addition to his one vote as Member.
- 7. The Secretary**
- 7.1 OETC shall have power to appoint and dismiss a Secretary and such other staff for the Panel as it may deem necessary. The Secretary may, but need not be, a Member, but shall not be a Member by virtue only of being Secretary. The Secretary shall have the right to speak at, but, unless a Member, no right to cast a vote at any meeting.
- 7.2 The Secretary's duties shall be to attend to the day to day operation of the Panel and, in particular, to;
- i) attend to the requisition of meetings and to serve all requisite notices;
 - ii) maintain a register of names and addresses of Members and the Chairman and such alternates as may be appointed from time to time;
 - iii) maintain a register of names and addresses of persons in each of the groups of persons described in sub-clauses 3.1(a) to (j) of this Appendix A; and
 - iv) keep minutes of all meetings.
- 7.3 The Secretary shall make available the register of names and addresses referred to in sub-clauses 7.2(ii) and (iii) above, to Licensed Distributors, Distribution System Users and/or the Regulatory Authority for inspection within a reasonable period of being requested to do so.
- 7.4 If the office of a Member is vacated the Secretary shall notify (insofar as he is reasonably able) the group or person whom the Member represented and they shall appoint a new Member as provided in Clause 3 of this Appendix A.
- 8. Meetings**
- 8.1 Subject always to the direction of OETC and the Regulatory Authority, the Panel meetings shall operate as follows:
- (a) the Panel shall meet on the first Monday in the months of May, August, November and February and as necessary for the transaction of business whenever convened by the Chairman at such times as may be determined by the Regulatory Authority, and in any event shall meet not less than 4 times each year; If the first Monday of that month



happens to be a holiday, then alternate date will be communicated by the Chairman of the Panel.

- (b) notwithstanding the right of the Chairman to call a meeting of the Panel whenever appropriate, the Chairman shall call a meeting when requested by a notice in writing to do so by two or more Members;
- (c) unless agreed by all Members, not less than 14 Business Days prior written notice shall be given to all Members of all meetings of the Panel;
- (d) the quorum of Members required for the Panel meetings shall not be less than 7 of the Members;
- (e) if within an hour of the time appointed for a meeting of the Panel a quorum is not present, the meeting shall stand adjourned for at least 2 Business Days. The re-adjourned meeting shall be deemed quorate and its proceedings valid notwithstanding there being fewer than seven Members present; and
- (f) subject to sub-paragraphs (d) and (e) above the following circumstances shall not (of themselves) invalidate proceedings of the Panel;
 - i) vacancies amongst the Panel;
 - ii) any defects in the appointment of Members; orthe accidental omission to give notice of a Meeting to, or the non-receipt of notice of a meeting by a person entitled to receive notice.

9. Grid Code Revisions

- 9.1 All proposed revisions to the Grid Code must be reviewed by the Panel prior to their implementation. All revisions proposed by Users, the Regulatory Authority or OETC should be brought before the Panel by the Chairman for consideration. The Chairman will advise the Panel, Users, and the Regulatory Authority of all proposed revisions to the Grid Code with notice of no less than 20 Business Days in advance of the next scheduled meeting of the Panel
- 9.2 Following review of a proposed revision by the Panel, the Chairman will, if appropriate, apply to the Regulatory Authority to approve the revision of the Grid Code based on the Panel recommendation. The Chairman, in applying to the Regulatory Authority, shall also notify each User of the proposed revision and other views expressed by the Panel and Users so that each User may consider making representations directly to the Regulatory Authority regarding the proposed revision.
- 9.3 The Regulatory Authority shall consider the proposed revision, other views, and any further representations and shall determine whether the proposed revision should be made and, if so, whether in the form proposed or in an amended form.
- 9.4 If the Panel is directed by the Regulatory Authority that the revision shall be made, the Chairman shall notify each User of the revision at least 10 Business Days prior to the revision taking effect, and the revision shall take effect (and the Grid Code shall be deemed to be amended accordingly) from (and including) the date specified in such notification or other such date as directed by the Regulatory Authority.

10. Resolutions

- 10.1 A resolution of the Panel shall be passed by a simple majority of votes cast.
- 10.2 A resolution in writing signed by all Members shall be as valid and effective as if it had been passed at a meeting of the Panel duly convened and held. One or more counterparts may produce written resolutions.
- 10.3 A meeting of the Panel may consist of a conference between Members who are not all in one place but who are able (directly or by telephonic communication) to speak to



each of the others and to be heard by each of the others simultaneously. The word "meeting" shall be construed accordingly.

11. Minutes

- 11.1 The Secretary shall circulate copies of the minutes of each meeting of the Panel to each Member as soon as practicable (and in any event within 15 Business Days) after the relevant meeting has been held.
- 11.2 Each Member shall notify the Secretary of his approval or disapproval of the minutes of each meeting within 15 Business Days of receipt of the minutes. A Member who fails to do so will be deemed to have approved the minutes. The approval or disapproval of the minutes aforesaid will not affect the validity of decisions taken by the Panel at the meeting to which the minutes relate.
- 11.3 If the Secretary receives any comments on the minutes, the Secretary shall circulate revised minutes as soon as practicable following the expiry of the period referred to in Clause 11.2 of this Appendix A, incorporating those comments which are of a typographical nature and indicating, where necessary, that Members disagree with certain aspects of the minutes. The Secretary shall then incorporate those aspects of the minutes upon which there is disagreement, into the agenda for the next following meeting of the Panel, as the first item for discussion, and, if possible, resolution.

12. Guidance from the Panel

- 12.1 The Panel may at any time, and from time to time, issue guidance in relation to the Grid Code and its implementation, performance and interpretation, and it may establish subcommittees and working groups to carry out such work.

13. Sub-committees and working groups

- 13.1 The Panel may establish such sub-committees from time to time consisting of such persons as it considers desirable. Each sub-committee shall be subject to such written terms of reference and shall be subject to such procedures as the Panel may determine. The meetings of sub-committees shall so far as possible be arranged so that the minutes of such meetings can be presented to the Members in sufficient time for consideration before the next following meeting of the Panel.
- 13.2 The Panel may further establish working groups to advise it on any matter from time to time. Such working groups may consist of Members and/or others as the Panel may determine for the purpose.
- 13.3 Resolutions of sub-committees and working groups shall not have binding effect unless approved by resolution of the Panel.

14. Removal of Members and Chairman and vacation of office

- 14.1 The office of a Member shall be vacated if;
 - (a) he resigns his office by notice delivered to the Secretary;
 - (b) he becomes bankrupt or compounds with his creditors generally;
 - (c) he becomes of unsound mind or a patient for any purpose of any statute relating to mental health; or



- (d) he or his alternate fails to attend more than three consecutive meetings of the Panel without submitting an explanation to the Chairman which is reasonably acceptable to the Chairman.
- 14.2 Further, any person or persons entitled to appoint a Member or the Chairman, as the case may be, pursuant to Clause 3 may at any time remove that Member or the Chairman, as the case may be, from office and appoint another person to be a Member or the Chairman, as the case may be, in its place. A person or persons will only have the right to remove from office the Member or the Chairman, as the case may be, that it or they have appointed, and will have no right to remove from office any Member or the Chairman, as the case may be, appointed by another person. Whenever any individual Member or the Chairman changes, the person or group of persons entitled to appoint that Member or the Chairman shall notify the Secretary in writing within seven days of the change taking effect.
- 15. Members on the panel's responsibilities and protections**
- 15.1 In the exercise of its powers and the performance of its duties and responsibilities, the Panel shall have due regard for the need to promote the attainment of the principal objects of the Panel set out in Clause 2 of this Appendix A.
- 15.2 In the exercise of its powers and the performance of its duties and responsibilities as a Member, a Member shall represent the interests of that person or persons by whom he is for the time being appointed pursuant to Clause 3, provided that such obligation of representation shall at all times be subordinate to the obligations of the Member as a Member of the Panel set out in Clause 15.1 of this Appendix A.
- 15.3 The Panel, each Member and the Secretary;
- i) shall be entitled to rely upon any communication or document reasonably believed by it or him to be genuine and correct and to have been communicated or signed by the person by whom it purports to be communicated or signed; and
 - ii) may in relation to any act, matter or thing contemplated by this Constitution act on the opinion or advice of, or any information from, any chartered engineer, lawyer, or expert in any other field, and shall not be liable for the consequences of so acting.
- 15.4 The Panel shall enjoy no status, immunity or privilege of the Sultanate of Oman. However, Members shall not be personally liable in respect of the performance of the functions of the Grid Code Review Panel.
- 16. Group representatives' addresses**
- 16.1 Each Member shall from time to time communicate his address to the Secretary and all notices sent to such address shall be considered as having been duly given to such Member.
- 17. Confidentiality**
- 17.1 Each Member shall keep confidential all information, which that Member might reasonably be expected to understand to be confidential.



Data Transfer Code

Issued April 2010

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Data Transfer Code

DTC.1 Introduction

The Data Transfer Code provides a unified listing of all data that Users are required by the Grid Code to provide to OETC and that OETC is required to provide to Users.

In the event of inconsistencies between this DTC and other sections of the Grid Code the provisions in individual sections of the Grid Code shall prevail.

The relevant section of the Grid Code, under which any item of data is required, specifies the procedures, timing, and routing for the supply of that data and the updating and recording of temporary or permanent changes to that data.

DTC.2 Objective

The objectives of the DTC are as follows;

- to list and collate all requirements in respect of data to be provided by each category of User to OETC under the Grid Code;
- to list requirements in respect of all the data to be provided by OETC to each category of User under the Grid Code; and
- to provide an overview of the data requirements of certain sections of the Grid Code.

DTC.3 Scope

In addition to OETC, the DTC applies to;

- Power Producers;
- Licensed Distributors;
- Licensed Suppliers;
- Directly Connected Consumers;
- International Interconnected Parties
- Internally Interconnected Parties;
- PWP; and
- PAEW.



DTC.4 Data categories

The DTC groups data into a number of categories;

- **Standard Planning Data:** is that data listed in Appendix B to the Planning Code required for the purpose of determining any requirements to reinforce the Transmission System;
- **Detailed Planning Data:** is that data listed in Appendix C to the Planning Code required of carry out detailed stability studies as necessary;
- **System data:** is that data listed in Appendix D to the Planning Code required to enable Users to conduct their own studies as necessary;
- **Operational data:** is data related to Operating Code (OC) and Scheduling and Despatch Code (SDC) of the Grid Code. Within the DTC, Operational Data is sub-categorised according to the relevant Operating Code, namely OC1, OC2 or SDC, and;
- **Metering and Data Exchange Code data:** is that data listed in Appendix E Metering data.

DTC.5 Procedures and responsibilities

DTC.5.1. Responsibility for submission and updating of data

Users shall record, exchange and record data listed in the DTC in accordance with the provisions of relevant sections of the Grid Code.

DTC.5.2. Methods of submitting data

The data schedules to the DTC are structured, where possible, to serve as standard formats for submission of data to OETC and from OETC to Users. Unless agreed with OETC, all data provided by Users to OETC and by OETC to Users shall be provided in accordance with the DTC schedule formats where such formats are given.

Data submitted to OETC must include the name of the User representative submitting each schedule of data. The data is preferred in electronic format and may be submitted via a computer link if such a data link exists between a User and OETC or utilising a data transfer media, such as floppy diskette, magnetic tape, CD ROM etc after obtaining the prior written consent from OETC. If electronic means are not available, subject to OETC's prior agreement, data to be provided to OETC on a daily basis may be submitted by fax.

DTC.5.3. Changes to Users' data

All Users must notify OETC promptly of any change to an item of data that is registered with OETC in accordance with the relevant section of the Grid Code.

DTC.5.4. Data not supplied

Users and OETC are obliged to provide data as set out in and in accordance with the individual sections of the Grid Code. If a User fails to supply OETC with data required by a section of the Grid Code, OETC shall use its best estimate of the required data. OETC will advise a User in writing of any estimated data it intends to use concerning a User's Plant in the event that a User has not provided the required data.



If OETC fails to provide data required by a section of the Grid Code, the User to whom that data ought to have been supplied will use an estimate of the data not provided by OETC when, in that User's view, it is necessary to do so. A User will advise OETC in writing of any estimated data it intends to use in the event of data not being supplied.

OETC and User estimates of data not supplied will, in each case, be based upon data supplied previously for the same Plant or upon corresponding data for similar Plant or upon such other information as OETC or a User, as the case may be, deems appropriate.

Corrections to estimates of data not supplied shall be made by OETC or the User post event, where the data affects Operating Parameters,



DTC.6 Grid Code data exchanged between OETC and Users

Table 6.1 provides details of Schedules A to N of the DTC. OETC is a party to each Schedule, PWP is the recipient of the data in Schedules A to E and G and I

Table 6.1:

Schedule	Data type	Comprising	User	Grid Code section
A	Genset And Desalination Unit technical data.	Genset, Desalination Unit and Production Facility fixed Operating Parameters.	PP	PC SDC1
B	Generation/Operational Planning data.	Genset Operating Parameters required for Operational Planning.	PP	OC 2 SDC1
C	Scheduling And Despatch data.	Operating Parameters required for Scheduling and Despatch.	PP	SDC1
D	Generation Schedule data.	Data required for the preparation of the Generation Schedule.	PP	OC 1 & 2 SDC1 & 2
E	Genset and Desalination Unit Outage data	Genset and Production Facility equipment Outage planning data.	PP	OC 2
F	User System data.	Electrical parameters relating to Plant Connected to OETC Transmission System	PP, LD, DCC, OCP	PC
G	Load characteristics data	The estimated parameters of Loads in respect of harmonic content, sensitivity etc.	LD, DCC, OCP	PC
H	User Demand profiles & Active Energy data.	Data related to Demand profiles.	LD, DCC, OCP	PC OC1
I	Connection Point data.	Data related to Demand and Demand transfer capability.	PP, LD, DCC, OCP	PC OC 1
J	Demand Control data.	Data related Demand Control.	LD, LS, DCC, OCP	OC 1
K	Fault infeed data.	Data related to short circuit contribution to OETC Transmission System.	LD, DCC, OCP	PC
L	OETC data to Users	All relevant data	PP, LD, DCC, OCP	PC OC1, 2 & 6
M	Metering data	All relevant data	PP, LD, DCC, OCP	MDEC

**Key to Users**

	User
PWP	Power and Water Procurer
PP	Power Producers with Generating and Desalination Plant
LD	Licensed Distributors
LS	Licensed Suppliers
DCC	Directly Connected Consumers
OCP	Other Connected Parties: Users Connected to the Transmission System excluding PP, LD, LS, and DCC

Abbreviations used in all schedules:

MDEC	Metering and Data Exchange Code
OC	Operating Codes
PC B	Planning Code - Appendix B Standard Planning Data
PC C	Planning Code - Appendix C Detailed Planning Data
PC D	Planning Code - Appendix D System Data
SDC	Scheduling and Dispatch Codes

Notes:

- 1 The data marked with "+" is required with an application for a Connection Agreement (to facilitate an early assessment by OETC of the need for more detailed studies).



Schedule A: Genset And Desalination Unit technical data

The following details are required from each User with existing or proposed CDGensets, Directly Connected, or to be Directly Connected, to the Transmission System and/or with existing, or proposed Embedded CDGensets.

Production Facility name:.....

Ref.	Data description	Units	Grid Code	Genset/ Desalination Unit/ Production Facility (PF) data					
				FY0	FY1	FY2	FY3	FY4	FY5
1. Production Facility Demand:									
Demand associated with the Production Facility supplied through Transmission System or in addition to Demand supplied through Genset unit transformer;									
1.1	Maximum Demand that could occur;	MW Mvar	PC C+						
1.2	Demand at the time of peak OETC Demand;	MW Mvar	PC C						
1.3	Demand at the time of minimum OETC Demand;	MW Mvar	PC C						
2. CDGenset Demand		Units	Grid Code	U1	U2	U3	U4	U5	PF
Demand supplied through unit transformer when CDGenset is at Rated MW output		MW Mvar	PC C+						

Provide details of point of Connection to the Transmission System of each CDGenset (in terms of geographical and electrical location and System voltage) (PC B +)

Unit 1

Unit 2

etc



	Units	Grid Code	U1	U2	U3	U4	U5	PF
3. CDGenset performance and parameters:								
General								
3.1.2	Type of CDGenset (e.g. Steam Turbine Genset, Gas Turbine Genset, Cogeneration, etc);		PC C +					
3.2.1	Rated terminal voltage;	kV	PC B					
3.3.4	Registered Capacity;	MW	PC B SDC 1					
3.4.8	Rated Active Power;	MW	PC B/C+					
3.5.9	Rated VA;	MVA	PC B/ C +					
3.6.5	System constrained Capacity (for Embedded CDGensets only);	MW	PC B					
3.7.7	Minimum Generation;	MW	PC B/C					
3.8.6	Active Power obtained in excess of Registered Capacity;	MW	PC B					
3.9.3	Expected running regime(s);		PC B					
3.10	Generator Performance Chart at stator terminals;	Chart						
3.11	Short circuit ratio;		PC B/C+					
3.12	Genset inertia constant; (alternator plus prime mover);	MWs/ MVA	PC B +					
3.13	Rated field current at rated MW and Mvar output and at rated terminal voltage;	A	PC C					
3.14	Field current open circuit saturation curve test certificate); 120% rated terminal voltage; 110% rated terminal voltage; 100% rated terminal voltage; 90% rated terminal voltage; 80% rated terminal voltage; 70% rated terminal voltage; 60% rated terminal voltage; 50% rated terminal voltage;	A A A A A A A A	PC C					
4. Impedances								
4.1.1	Direct axis synchronous reactance;	% on MVA	PC C					
4.2.2	Direct axis transient reactance;	% on MVA	PC B +					
4.3.3	Direct axis sub-transient; reactance;	% on MVA	PC C					



		Units	Grid Code	U1	U2	U3	U4	U5	PF
4.4	Quadrature axis synchronous reactance;	% on MVA	PC C						
4.5	Quadrature axis sub-transient reactance;	% on MVA	PC C						
4.6	Stator leakage reactance;	% on MVA	PC C						
4.7	Armature winding direct-current resistance;	% on MVA	PC C						
5. Time constants:									
5.1	Direct axis short-circuit transient time constant;	s	PC C						
5.2	Direct axis short-circuit sub-transient time constant;	s	PC C						
5.3	Quadrature axis short-circuit sub-transient time constant;	s	PC C						
5.4	Stator time constant;	s	PC C						
6. Generator transformer:									
6.1	Rated VA;	MVA	PC B +						
6.2	Rated voltage ratio;		PC C+						
6.3	Winding arrangement;		PC C						
6.4	Vector group;		PC C						
6.5	Positive sequence resistance;								
	- @ maximum tap;	% on MVA	PC B/C						
	- @ minimum tap;	% on MVA	PC C						
	- @ nominal tap;	% on MVA	PC B/C						
6.6	Positive sequence reactance;								
	- @ maximum tap;	% on MVA	PC B/C+						
	- @ minimum tap;	% on MVA	PC C +						
	- @ nominal tap;	% on MVA	PC B/C+						
6.7	Zero phase sequence reactance;	% on MVA	PC C						
6.8	Tap changer range;	±%	PC C						
6.9	Tap changer step size;	±%	PC C						
6.10	Tap changer type; (i.e. on-load or off-circuit);	On/ Off	PC C						
7. Excitation control system parameters:									
7.1	Exciter category (e.g. rotating or static);	Text	PC C +						



		Units	Grid Code	U1	U2	U3	U4	U5	PF
7.2.2	Details of excitation system described in block diagram showing transfer functions of individual elements (including PSS if fitted);	Diagram	PC C						
7.3.3	Rated field voltage;	V	PC C						
7.4.4	Generator no-load field voltage;	V	PC C						
7.5.5	Excitation system on-load; positive ceiling voltage;	V	PC C						
7.6.6	Excitation system no-load negative ceiling voltage;	V	PC C						
7.7.7	Power system stabiliser fitted?	Yes /No	PC C +						
7.8.8	Details of over excitation limiter described in block diagram; showing transfer functions of individual elements;	Diagram	PC C						
7.9.9	Details of under excitation limiter described in block diagram showing transfer functions of individual elements;	Diagram	PC C						
8. Governor parameters (All Gensets):									
	Governor system block diagram showing transfer function of individual elements;	Diagram	PC C						
9. Prime mover parameters (Steam Turbines Genset):									
	Prime mover system block diagram showing transfer function of individual elements and controllers;	Diagram	PC C						
10. Prime mover parameters (Gas Turbines Genset):									
	Prime mover system block diagram showing transfer function of individual elements and controllers;	Diagram	PC C						
11. Desalination Unit parameters:									
	Registered Capacity;	Ml/gpd							
	Desalination Unit auxiliary Power;	MW							



		Units	Grid Code	U1	U2	U3	U4	U5	PF
12. Genset flexibility performance:									
Details required with respect to Gensets;									
12.1	Rate of loading following a weekend (72 hour) shut- down (CDGenset and Production Facility);	MW/ Min	PC C						
12.2	Rate of loading following an overnight (8 hour) shut- down (CDGenset and Production Facility);	MW/ Min	PC C						
12.3	Block load following Synchronising;	MW	PC C						
12.4	Rate of De-loading from Rated MW;	MW/ Min	PC C						
12.5	Regulating range;	MW	PC C						
12.6	Load rejection capability while still Synchronised and able to Supply Load;	MW	PC C						

Note: The data marked with "+" is required with an application for a Connection Agreement (to facilitate an early assessment by OETC of the need for more detailed studies).



Schedule B: Generation/Operational Planning data

Production Facility name:.....

The following details are required from each User in respect of each CDGenset and Desalination Unit.

	Data description	Units	Data category	CDGenset, Desalination Unit and Production Facility (PF) data						
				U 1	U 2	U 3	U 4	U 5	U 6	PF
1. Steam Turbine Gensets:										
1.1	Minimum notice required to synchronise under following conditions; Hot start; Warm start; Cold start;	Min Min Min) OC2) SDC1)							
1.2	Minimum time between synchronising different CDGensets at a Production Facility;	Min) OC2) SDC1							
1.3	Minimum block Load requirement on synchronising;	MW) OC2) SDC1							
1.4	Maximum CDGenset loading rates from synchronising under following conditions; Hot start; Warm start; Cold start;	Min /MW) OC2) SDC1							
1.5	Maximum CDGenset de-loading rate;	MW/ Min) OC2) SDC1							
1.6	Minimum interval between de-synchronising and synchronising a CDGenset (off Load time);	Min) OC2) SDC1							
1.7	Maximum allowable starts per Operational Year from; Hot; Warm; Cold;	No. No. No.) OC2) SDC1							



	Data description	Units	Data category	CDGenset, Desalination Unit and Production Facility (PF) data						
				U 1	U 2	U 3	U 4	U 5	U 6	PF
2. Scheduling And Despatch parameters:										
2.1	CDGenset inflexibility description; Start date; End date; Active Power;	Text date/ time date/ time MW	SDC 1 SDC 1 SDC 1							
2.2	CDGenset synchronising intervals; Hot time interval; Off-load time interval;	hrs hrs	SDC 1 SDC 1							
2.3	Desalination Unit start-up intervals; Hot time interval; Off-load time interval;	hrs hrs	SDC 1 SDC 1							
2.4	Genset De-synchronising intervals;	hrs	SDC 1							
2.5	Desalination Unit shutdown intervals;	hrs	SDC 1							
2.6	CDGenset basic data; Minimum Generation; Minimum shutdown;	MW hrs	SDC 1 SDC 1							
2.7	Desalination Unit basic data; Minimum production; Maximum production;	m3/h m3/h	SDC 1 SDC 1							
2.8	Genset two shifting limitation;		SDC 1							
2.9	Genset minimum on time;	hrs	SDC 1							
2.10	Genset Synchronising Generation;	MW	SDC 1							
2.11	Genset Synchronising groups;		SDC 1							
2.12	Genset Loading Rates with breakpoints;	MW/ min	SDC 1							
2.13	Genset De-loading Rates with breakpoints;	MW/ min	SDC 1							
2.14	Genset Loading Rates covering the range from Minimum Generation to Available Capacity;	MW/ min	SDC 1							
2.15	Genset De-loading Rates covering the range from Available Capacity to Minimum Generation;	MW/ min	SDC 1							



Schedule E: Genset Outage data

Production Facility name:.....

The following details are required from each User in respect of each CDGenset.

	Data description	Units	Time covered	Update time	Data category
1. Provisional Outage Programme:					
1.1	CDGensets concerned;	ID	Year 2 to 3	End of January	OC2
1.2	Active Power not Available as a result of Outage;	MW	Year 2 to 3	End of January	OC2
1.3	Remaining Active Power of the Genset;	MW	Year 2 to 3	End of January	OC2
1.4	Duration of Outage;	Weeks	Year 2 to 3	End of January	OC2
1.5	Start date and time or a range of start dates and times;	Date hrs	Year 2 to 3	End of January	OC2
1.6	Flexible Outage or Inflexible Outage;	Flexible/ Inflexible	Year 2 to 3	End of January	OC2
1.7	Flexible Outage; Period for which the Outage could be deferred (not less than 30 days in length); Period for which the Outage could be advanced (not less than 10 days in length);	Days	Year 2 to 3	End of January	OC2
		Days	Year 2 to 3	End of January	OC2
	OETC issue Proposed System Outage Schedule to Users;		Year 2 to 3	End of July	OC2
	Agreement on Proposed System Outage Schedule;	Text	Year 2 to 3	End of September	OC2



2. Final Outage Programme:					
2.1	Gensets concerned;		Year 2 to 3	End of January	OC2
2.2	Active Power not Available as a result of Outage;	MW	Year 1 to 2	End of January	OC2
2.3	Remaining Active Power of the Genset;	MW	Year 1 to 2	End of January	OC2
2.4	Duration of Outage;	Weeks	Year 1 to 2	End of January	OC2
2.5	Start date and time or a range of start dates and Times;	Date hrs	Year 1 to 2	End of January	OC2
2.6	Flexible Outage or Inflexible Outage;	Flexible/ Inflexible	Year 1 to 2	End of January	OC2
2.7	Flexible Outage; Period for which the Outage could be deferred (not less than 30 days in length); Period for which the Outage could be advanced (not less than 10 days in length);	Days	Year 1 to 2	End of January	OC2
		Days	Year 1 to 2	End of January	OC2
	OETC issue draft Final Outage Programme to Users;		Year 1 to 2	End of June	OC2
	OETC issue Final Outage Programme to Users;	Text	Year 1 to 2	End of Sept	OC2
3. Short Term Planned Outage:					
3.1	Gensets concerned;	ID	Year 0	7 Days before	OC2
3.2	Active Power not Available as a result of Outage;	MW	Year 0	7 Days before	OC2
3.3	Remaining Active Power of the Genset;	MW	Year 0	7 Days before	OC2
3.4	Duration of Outage;	Weeks	Year 0	7 Days before	OC2
3.5	Start date and time or a range of start dates and times;	Date hrs	Year 0	7 Days before	OC2



Schedule F: User System data

The following current and forecast details that relate to the Connection Site containing the Connection Point are required from each User on its User System.

	Data description	Units	Data category
1. Single line diagram:			
	Single line diagram showing all existing and proposed HV equipment and Connections together with equipment ratings and any third party Embedded within its User System;	Drawing	PC B PC C
2. Reactive compensation equipment:			
	For all reactive compensation equipment Connected to the User System at 11 kV and above, other than Power Factor correction equipment associated directly with a Consumer Plant, the following details;		
2.1	Type of equipment (e.g. fixed or variable);	Text	PC B
2.2	Capacitive rating;	MVA _r	PC B
2.3	Inductive rating;	MVA _r	PC B
2.4	Operating range;	MVA _r	PC B
2.5	Details of any automatic control logic to enable operating characteristics to be determined;	Text and/or Diagrams	PC B
2.6	Point of Connection to the User System in terms of electrical location and System voltage;	Text	PC B
3. Switchgear:			
	For all switchgear (i.e. circuit breakers, switch disconnectors and isolators) on all circuits Directly Connected to the Connection Point including those at Production Facilities;		
3.1	Rated voltage;	kV	PC B
3.2	Operating voltage;	kV	PC B
3.3	Rated short-circuit breaking current; Single phase; Three phase;	kA kA	PC B PC B
3.4	Rated load breaking current; Single phase; Three phase;	kA kA	PC B PC B
3.5	Rated peak short-circuit making current; Single phase; Three phase;	kA kA	PC B PC B



	Data description	Units	Data category
4. User HV Connecting System data:			
Circuit Parameters (for all circuits);			
For all Systems at 11 kV and above Connecting the User System to the Transmission System, the following details are required relating to that HV Connection Point;			
4.1	Rated voltage;	kV	PC B
4.2	Operating voltage;	kV	PC B
4.3	Positive phase sequence; Resistance; Reactance; Susceptance;	% on 100 % on 100 % on 100	PC B PC B PC B
4.4	Zero phase sequence; Resistance; Reactance; Susceptance;	% on 100 % on 100 % on 100	PC B PC B PC B
5. Interconnecting transformers:			
For transformers between the Transmission System and the User System, the following data is required;			
5.1	Rated Power;	MVA	PC B PC C
5.2	Rated voltage ratio; (i.e. primary/secondary/tertiary);		PC B PC C
5.3	Winding arrangement;		PC B PC C
5.4	Vector group;		PC B PC C
5.5	Positive sequence resistance; @ maximum tap; @ minimum tap; @ nominal tap;	% on MVA % on MVA % on MVA	PC C PC C PC C
5.6	Positive sequence reactance; @ maximum tap; @ minimum tap; @ nominal tap;	% on MVA % on MVA % on MVA	PC C PC C PC C
5.7	Zero phase sequence reactance;	% on MVA	PC C



	Data description	Units	Data category
5.8	Tap changer type (e.g. on-load or off-load);	On/Off	PC B PC C
5.9	Tap changer range;		PC B PC C
5.10	Tap changer step size;		PC B PC C
5.11	Impedance value (if not directly earthed);		PC C
6. HV motor drives:			
Following details are required for each HV motor drive connected to the User System;			
6.1	Rated VA;	MVA	PC C
6.2	Rated Active Power;	MW	PC C
6.3	Full Load current;	kA	PC C
6.4	Means of starting;	Text	PC C
6.5	Starting current;	kA	PC C
6.6	Motor torque/speed characteristics;		PC C
6.7	Drive torque/speed characteristics;		PC C
6.8	Motor plus drive inertia constant;		PC C
7. User Protection data:			
Following details relates only to protection equipment which can trip, inter-trip or close any Connection Point circuit breaker or any OETC circuit breaker;			
7.1	A full description including estimated settings, for all relays and Protection systems installed or to be installed on the User System;	Text	PC C
7.2	A full description of any auto-reclose facilities installed on the User System, including type and time delays;	Text	PC C
7.3	A full description including estimated settings, for all relays and Protection systems installed or to be installed on the Genset, Genset transformer, Production Facility transformer and their associated connections;	Text	PC C
7.4	For Genset having or intended to have a circuit breaker at the Genset terminal voltage, clearance times for electrical faults within the Genset zone;	ms	PC C
7.5	The most probable fault clearance time for electrical faults on any part of the User System Directly Connected to the Transmission System;	ms	PC C



	Data description	Units	Data category
8. Transient over-voltage assessment data:			
When requested by OETC, each User is required to submit data with respect to the Connection Site as follows (undertaking insulation co-ordination studies);			
8.1	Busbar layout, including dimensions and geometry together with electrical parameters of any associated current transformers, voltage transformers, wall bushings, and support insulators;	Diagram	PC C
8.2	Physical and electrical parameters of lines, cables, transformers, reactors and shunt compensator equipment Connected at that busbar or by lines or cables to that busbar (for the purpose of calculating surge impedances);	Text	PC C
8.3	Specification details of connected directly or by lines and cables to the busbar including basic insulation levels;	Text	PC C
8.4	Characteristics of over-voltage protection at the busbar and at the termination of lines and cables connected at the busbar;	Text	PC C
8.5	The following Genset or Production Facility transformer data is required; three or five limb cores or single phase units to be specified, and operating peak flux density at nominal voltage;	Text	PC C



Schedule H: User Demand profiles and Active Energy data

The following information is required from each User who is Directly Connected to the Transmission System with Demand.

Data description	FY 0	FY 1	FY 2	FY 3	FY 4	FY 5	Update time	Data category
Forecast daily Demand profiles in respect of each User System (summated over all Connection Points for a Licensed Distributor and at the Connection Point for Non Embedded Consumers);	1. Day of User maximum Demand (MW) at annual maximum Demand Conditions; 2. Day of peak OETC Demand (MW) at annual maximum Demand Conditions; 3. Day of minimum OETC Demand (MW) at Average Conditions;						End of January	PC B OC1
00:00 – 01:00								
01:00 – 02:00								
02:00 – 03:00								
03:00 – 04:00								
04:00 – 05:00								
05:00 – 06:00								
06:00 – 07:00								
07:00 – 08:00								
08:00 – 09:00								
09:00 – 10:00								
10:00 – 11:00								
11:00 – 12:00								
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14:00 – 15:00								
15:00 – 16:00								
16:00 – 17:00								
17:00 – 18:00								
18:00 – 19:00								
19:00 – 20:00								
20:00 – 21:00:								
21:00 – 22:00								
22:00 – 23:00								
23:00 – 24:00								



Schedule J: Demand Control data

The following information is required from each User;

	Data description	Units	Time covered	Update time	Data category
1.Programming Phase: (applicable to Licensed Distributors & Directly Connected Consumers)					
Demand Control which may result in a Demand change of 1 MW or more on an hourly and Connection Point basis;					
1.1	Demand profile MW;	Weeks 1 to 8		10:00 Saturday	OC1
1.2	Duration of proposed Demand Control hrs;	Weeks 1 to 8		10:00 Saturday	OC1
2. Control Phase: (applicable to Licensed Distributors & Directly Connected Consumers)					
2.1	Demand Control which may result in a Demand change of 1 MW or more averaged over any hour on any Connection Point which is planned after 10:00 hours;	MW	Now to 7 Days	Immediate	OC1
2.2	Any changes to planned Demand Control notified to OETC prior to 10:00 hours;	hours	Now to 7 Days	Immediate	OC1
3. Post Control Phase:					
Demand reduction achieved on previous calendar day of 1 MW or more averaged over any Connection Point, on an hourly and Connection Point basis;					
3.1	Active Power profiles;	MW	Previous Day	06:00 Daily	OC1
3.2	Duration;	hours	Previous Day	06:00 Daily	OC1



Schedule K: Fault infeed data

The following information is required from each User who is Connected to the Transmission System via a Connection Point and the User System contains CDGenset(s) and/or motor loads.

Short circuit Infeed to OETC Transmission System from a User System at a Connection Point

Name of Connection Point:.....

	Data description	Units	FY 0	FY 1	FY 2	FY 3	FY 4	FY 5	Data category
1	Symmetrical three-phase short circuit current infeed; At instant of fault; After sub-transient fault current contribution has substantially decayed;	kA kA							PC B
2	Zero sequence source impedance values as seen from the Connection Point consistent with the maximum infeed above; Resistance (R); Reactance (X);	% on 100 % on 100							PC B
3	Positive sequence X/R ratio at instance of fault;								PC B



Schedule L: Data supplied by OETC to Users

OETC will provide Users and potential Users the following data related to the OETC Transmission System.

Name of Connection Point:.....

	Data description	Data category
1. Operation Diagram:		OCB
1.1	OETC will notify each User no later than the end of October, for the current calendar year and for each of the following 5 calendar years; The date and time of annual peak of OETC Demand at annual maximum Demand conditions;	OC1
1.2	The date and time of annual minimum OETC Demand at average conditions;	OC1
2. Network Data:		
2.1	Transmission System data; including Network topology and ratings of principal items of equipment; Positive, negative and zero sequence data of lines, cables, transformers, etc; CDGenset electrical and mechanical parameters Relay and protection data;	PC D
2.2	Following network data as an equivalent 220kV and 132kV source at the HV point of Connection to the User System;	
2.2.1	Symmetrical three-phase short circuit current infeed at the instant of fault from the Transmission System;	PC D
2.2.2	Symmetrical three-phase short circuit current from the Transmission System after the sub-transient fault current contribution has substantially decayed;	PC D
2.2.3	Zero sequence source resistance and reactance values at the Connection Point, consistent with the maximum infeed below;	PC D
2.2.4	Pre-fault voltage magnitude at which the maximum fault currents were calculated;	PC D
2.2.5	Positive sequence X/R ratio at the instant of fault PC;	PC D
2.2.6	Appropriate interconnection transformer data;	PC D
3	Names of Safety Coordinators;	OC6
4.1	Provisional Outage programme showing the CDGensets expected to be withdrawn from service during each week of Years 2 and 3 for Planned Outages;	OC2
4.2	Draft Final Outage programme showing the CDGensets expected to be withdrawn from service during each week of year 1 for Planned Outages;	OC2



Schedule M: Metering Data

The Metering Registration System forms the Metering database and holds Metering data relating to Metering Systems defined by the Metering and Data Exchange Code.

Timing: All data shall be submitted promptly after Connection or any other event that causes a change to the data.

Abbreviations:

MO Meter Owner

PO Plant Owner

	Data	Responsible party	Data category
1	Connection and Metering Point reference details for both Delivery Point and Actual Metering Point:		
1.1	Location and reference details;	PO	MDEC
1.2	Participant details at the Connection Point;	PO	MDEC
1.3	Site identification nomenclature;	PO	MDEC
1.4	Meter Owner;	PO	MDEC
1.5	Loss compensation calculation details where Actual Metering Point and Delivery Point differ;	PO	MDEC
2	Main and Check Meter installation details;		
2.1	Meter serial numbers;	MO	MDEC
2.2	Metering installation identification name;	MO	MDEC
2.3	Meter types and models;	MO	MDEC
2.4	Instrument transformer serial numbers;	PO	MDEC
2.5	Instrument transformer ratios;	PO	MDEC
2.6	Test and calibration programme details; test results and reference test certificates for Meters and Measurement Transformers;	MO	MDEC
2.7	Asset management plan and testing schedule;	MO	MDEC
2.8	Calibration tables, where applied to achieve Meter installation accuracy;	MO	MDEC



2.9	Meter summation scheme values and multipliers;	MO	MDEC
2.10	Data register coding details;	PO MO	MDEC
3	Data communication details (when communication systems are used):		
3.1	Telephone number for access to data;	PO MO	MDEC
3.2	Communication equipment type and serial numbers;	MO	MDEC
3.3	Communication protocol details or references;	MO	MDEC
3.4	Data conversion details;	MO	MDEC
3.5	User identifications and access rights;	MO	MDEC
4	Data validation and substitution processes agreed between affected parties, including:		
4.1	Algorithm;	MO	MDEC
4.2	Data comparison technique;	MO	MDEC
4.3	Processing and alarms (i.e. voltage source limits, phase-angle limits);	MO	MDEC
4.4	Check Metering compensation details;	MO	MDEC