

# Trading and Settlement Code Part B v1.0

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## APPENDIX A: STANDARD LETTER OF CREDIT

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1. This Appendix A contains a standard template for a Letter of Credit.

### TEMPLATE FOR STANDARD LETTER OF CREDIT

Form of Doc Credit: IRREVOCABLE STANDBY LETTER OF CREDIT

Documentary Credit Number:

Date of Issue:

Applicable Rules: UCP [LATEST VERSION NO]

Date and Place of Expiry:

Applicant [insert Participant's name] or [insert company name] on behalf of [insert Participant's name]

Beneficiary: EirGrid plc and SONI Limited, trading as "SEMO", being the Market Operator under the SEM Trading and Settlement Code. [address]

Currency Code, Amount (Maximum total amount):

Available With (ADVISING BANK IE SEMO'S BANK BY PAYMENT)

Partial Shipments/Drawings: Allowed

Documents required:

Beneficiary Statement, as detailed below, must be on Market Operator letterhead

QUOTE:

"We, the Market Operator under the Trading and Settlement Code (the "Beneficiary") hereby state that [insert Participant's name] is in default of its obligation to pay pursuant to the Trading and Settlement Code (to which the Participant is a party) under paragraph [ insert details] and as a result we hereby demand .....[insert amount being claimed] under Standby Letter of Credit number..... issued by .....[insert name of Issuing Bank]. Payment in respect of this Beneficiary Statement shall be effected immediately to [insert relevant account details]. We confirm that the signatory(ies) to this Beneficiary Statement are empowered to sign and make this Beneficiary Statement on behalf of the Beneficiary.

Terms defined in the Standby Letter of Credit referred to above have the same meaning when used in this Beneficiary Statement."

SIGNED FOR AND ON BEHALF OF THE MARKET OPERATOR.

NAME..... TITLE.....

UNQUOTE

Additional Conditions:

1. Not Used.
2. This irrevocable Standby Letter of Credit is available by payment at sight against presentation to the Advising Bank of a Beneficiary Statement as detailed in Documents required.
3. The Beneficiary Statement must be made on original letterhead paper of the Beneficiary and signed on its behalf, and must be presented to the Advising Bank on or before the Expiry Date.
4. Upon receipt of a signed Beneficiary Statement in compliance with the above conditions the Advising Bank is required promptly to notify us by SWIFT of receipt of such Beneficiary Statement and inform us of the relevant details of such Beneficiary Statement. Provided such notification is received by us no later than 14:00 hrs on any weekday on which banks are open for business in Dublin and Belfast, we shall make payment under this Standby Letter of Credit for Same Day Value on that day or if received after 14.00hrs on the next such weekday in accordance with such notification and shall confirm payment by notifying the Advising Bank by SWIFT.
5. Where we, the Issuing Bank are also the Advising Bank, we may revise the above notification requirements as appropriate provided that this shall in no way affect the obligation on us to make payment under this Standby Letter of Credit.
6. We the Issuing Bank hereby waive any right to set off or counterclaim whatsoever against any amounts payable under this Standby Letter of Credit in respect of any claims we may have against the Beneficiary and such amounts shall be paid free and clear of all deductions or withholdings whatsoever.
7. Effective From:
8. This Standby Letter of Credit is personal to you and your rights hereunder including the right to receive proceeds to this Standby Letter of Credit, are not assignable.

This Letter of Credit shall be governed by and construed in accordance with the laws of Northern Ireland and the parties submit to the jurisdiction of the Courts of Ireland and the Courts of Northern Ireland (and no other court) for all disputes arising under, out of, or in relation to this Letter of Credit.

**Charges:**

All Issuing Bank charges are for the account of the Applicant.

All Advising Bank charges are for the account of the Beneficiary.

**Confirmation:**

CONFIRMATION WITH OR WITHOUT? (THIS INSTRUCTION IS TO SEMO'S BANK TO ADD CONFIRMATION OR NOT)

**Instruction to Pay:**

PLEASE REFER TO ADDITIONAL CONDITIONS.

ADVISING BANK TO CLAIM REIMBURSEMENT BY SWIFT AND RETAIN BENEFICIARY STATEMENT ON FILE.

**APPENDIX**

[Market Operator letterhead]

We, the Market Operator under the Trading and Settlement Code (the "Beneficiary") hereby state that [insert Participant's name] is in default of its obligation to pay pursuant to the Trading and Settlement Code (to which the Participant is a party) under paragraph [ insert details]

and as a result we hereby demand .....[insert amount being claimed] under Standby Letter of Credit number..... issued by .....[insert name of Issuing Bank]. Payment in respect of this Beneficiary Statement shall be effected immediately to [insert relevant account details]. We confirm that the signatory(ies) to this Beneficiary Statement are empowered to sign and make this Beneficiary Statement on behalf of the Beneficiary.

Terms defined in the Standby Letter of Credit referred to above have the same meaning when used in this Beneficiary Statement.

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## **APPENDIX B: DISPUTE RESOLUTION AGREEMENT**

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1. This Appendix B contains the template for a Dispute Resolution Agreement.
2. Words in square brackets should be deleted as appropriate depending on whether there is a one member DRB or a three member DRB.

### **TEMPLATE FOR DISPUTE RESOLUTION AGREEMENT**

#### **DISPUTE RESOLUTION AGREEMENT**

#### **GENERAL CONDITIONS OF DISPUTE RESOLUTION AGREEMENT FOR A DISPUTE RESOLUTION BOARD**

BETWEEN:-

1 THE DISPUTING PARTIES, REFERRED TO IN ANNEX 1

AND

2 EACH MEMBER OF THE DISPUTE RESOLUTION BOARD, REFERRED TO IN ANNEX 2 ("MEMBER" OR "THE MEMBERS" AS APPLICABLE)

#### **RECITALS**

- A. The Disputing Parties are, directly or via the Accession Deed, adhering parties to the Framework Agreement dated xxx, by which they agree to be bound by the terms of the Trading and Settlement Code ("Code").
- B. The Disputing Parties are parties to a Dispute within the meaning of the Code.
- C. The Dispute has, in accordance with section B.19 of the Code, been referred to a [single member / three member] Dispute Resolution Board ("DRB") for resolution.
- D. In order to facilitate the resolution of the Dispute by the DRB, the Disputing Parties wish to enter into this Agreement with each of the Members, setting out the terms and conditions upon which each Member is engaged to hear and determine the Dispute.

#### **1. Definitions and Interpretation**

1.1 Unless the context requires otherwise, words and expressions which are not otherwise defined in this Dispute Resolution Agreement (including the Recitals) shall have the meanings assigned to them in the Code.

1.2 Where the DRB is comprised of a single member, references to “the Members” shall be construed as references to “the Member” and references to “each Member” shall be construed as references to “the Member”.

## **2. General Provisions**

2.1 Each Disputing Party engages each Member to constitute a Dispute Resolution Board to hear and determine the Dispute.

2.2 Each Member accepts that engagement.

2.3 Each Member agrees to hear and determine the Dispute:

1. in accordance with the Code, the Framework Agreement and Applicable Laws; and
2. on the terms and conditions set out in this Agreement.

2.4 This Agreement shall take effect when signed by all parties to this Agreement, on the last date of signature by a party.

2.5 The appointment of the Members pursuant to this Agreement is a personal appointment. At any time, the Members may give not less than 14 days’ notice of resignation to the Disputing Parties and to the Market Operator, and, where the Market Operator is a Disputing Party, to the Regulatory Authorities, and the Dispute Resolution Agreement shall terminate upon the expiry of this period.

2.6 No assignment or subcontracting of the Dispute Resolution Agreement is permitted without the prior written agreement of all the Disputing Parties to it and of the Members.

2.7 When appointing each Member, the Disputing Parties shall request of the relevant Member and shall be entitled to rely upon the Member’s representations that he/she:

1. is experienced in and familiar with alternative dispute resolution procedures; or
2. has appropriate experience of the electricity industry, or the particular matters the subject of the dispute,

and that he/she is familiar with, or shall, prior to the commencement of the hearing of the Dispute, be familiar with, the provisions of the Code.

## **3. Warranties**

3.1 The Members warrant and agree that they are and shall be impartial and independent of the Market Operator and the Disputing Parties. Each Member shall promptly disclose, to each Disputing Party and to the other Members, any fact or circumstance which might appear inconsistent with his/her warranty and agreement of impartiality and independence.

## **4. Objectives of the Dispute Resolution Procedure**

4.1 It is intended that procedures effected under this Dispute Resolution Agreement should to the extent possible:

1. be simple, quick and inexpensive;
2. preserve or enhance the relationship between the Disputing Parties;

3. without prejudice to the obligations of each of the Disputing Parties pursuant to the Code and in particular paragraph B.19.1.7 thereof, preserve and allow for the continuing and proper operation of the Code and the Single Electricity Market;
4. resolve disputes on an equitable basis in accordance with the provisions of the Code; and
5. encourage resolution of disputes without formal legal representation or reliance on legal procedures.

## **5. General Obligations of the Members**

### **5.1 Each Member shall:**

1. have no interest financial or otherwise in the Disputing Parties, nor any financial interest in the Code except for payment under the Dispute Resolution Agreement;
2. not previously have been employed as a consultant or otherwise by any of the Disputing Parties, except in such circumstances as were disclosed in writing to all of the Disputing Parties before they signed the Dispute Resolution Agreement;
3. have disclosed in writing to the Disputing Parties and the other Members, before entering into the Dispute Resolution Agreement and to his/her best knowledge and recollection, any professional or personal relationships with any director, officer or employee of the Disputing Parties, and any previous involvement in the SEM;
4. not, for the duration of the Dispute Resolution Agreement, be employed as a consultant or otherwise by any of the Disputing Parties, except as may be agreed in advance in writing by the Disputing Parties and the other Members;
5. comply with the applicable provisions of section B.19 of the Code;
6. not, while a Member, enter into discussions or make any agreement with any of the Disputing Parties regarding employment by any of them, whether as a consultant or otherwise, after ceasing to act under the Dispute Resolution Agreement;
7. ensure his/her availability for all site visits and hearings as are necessary;
8. be knowledgeable of the Code and all elements of the Dispute by studying all documents received prior to commencement of the hearing of the Dispute; and
9. treat the details of the DRB's activities and hearings as private and confidential, and not publish or disclose them without the prior written consent of the Disputing Parties and the other Members.

## **6. General Obligations of the Disputing Parties**

- 6.1 The Disputing Parties and the Disputing Parties' employees, officers, servants or agents shall not request advice from or consult with the Members regarding the Code, otherwise than in accordance with the procedures determined by the DRB under the Code and the Dispute Resolution Agreement, and except to the extent that prior agreement is given by all other Disputing Parties and the other Members. The Disputing Parties shall be responsible for compliance with this provision by the Disputing Parties' employees, officers, servants or agents.



6.2 The Disputing Parties undertake to each other and to the Members that the Members shall not, except as otherwise agreed in writing by the Disputing Parties and the Members, be liable for any claims for anything done or omitted in the discharge or purported discharge of the Members' functions, unless the act or omission is shown to be in bad faith.

6.3 The Disputing Parties hereby jointly and severally indemnify and hold each Member harmless from and against claims from which he/she is relieved from liability under the preceding clause 6.2.

## **7. Breach of this Agreement**

7.1 The parties acknowledge that the failure by a Disputing Party to comply with a requirement or determination of the Dispute Resolution Board:

1. does not constitute a breach of this Agreement; but
2. is a breach of the Code that may be referred to the Market Operator as an alleged breach of the Code, to be dealt with in accordance with the terms of the Code.

## **8. Payment**

8.1 The Members' basis for charging shall be [insert basis for charging].

8.2 The Disputing Parties hereby agree to share equally the costs of the Members amongst them, subject to the terms of the Code and, in particular, any decision of the Dispute Resolution Board including as to costs.

## **9. Termination**

9.1 At any time:

1. the Disputing Parties may jointly terminate the Dispute Resolution Agreement by giving 21 days' notice to the Members; or
2. the Members may resign as provided for in clause 2.

9.2 If any of the Members fails to comply with the Dispute Resolution Agreement, the Disputing Parties may, without prejudice to their other rights, jointly terminate it by notice to the Members. The notice shall take effect when received by the Members.

9.3 Any such notice, resignation and termination shall be final and binding on the Disputing Parties and the Members. However, a notice for the purposes of clause 9.1(1) or 9.2 by a Disputing Party, but not by all, shall be of no effect.

9.4 Termination of this Agreement shall be without prejudice to the rights and obligations of the parties having accrued prior to the date of termination.

## **10. Default of the Members**

10.1 If a Member fails to comply with any obligation under clause 5, he/she shall not be entitled to any fees or expenses hereunder and shall, without prejudice to their other rights, reimburse each of the Disputing Parties for any fees and expenses received by the Member and the other Members, for proceedings or decisions (if any) of the DRB which are rendered void or ineffective.

## **11. Severability**

11.1 If any part of this Agreement becomes invalid, illegal or unenforceable the parties shall in such an event negotiate in good faith in order to agree the terms of a mutually satisfactory provision to be substituted for the invalid, illegal or unenforceable provision which as nearly as possible gives effect to their intentions as expressed in this Agreement. Failure to agree on such a provision within one month of commencement of those negotiations shall result in automatic termination

of this Agreement. The obligations of the parties under any invalid, illegal or unenforceable provision of the Agreement shall be suspended during such a negotiation.

**12. Waiver**

12.1 The failure of a party to exercise or enforce any right under this Agreement shall not be deemed to be a waiver of that right nor operate to bar the exercise or enforcement of it at any time or times thereafter.

**13. Entire Agreement**

13.1 This Agreement and the Code, constitute the entire, complete and exclusive agreement between the parties in relation to the subject matter hereof, being the terms of engagement of the Members by the Disputing Parties.

**14. Governing Law and Jurisdiction**

14.1 Any dispute or claim arising out of or in connection with this Dispute Resolution Agreement shall be governed by the laws of Northern Ireland and the parties hereby submit to the jurisdiction of any of the Courts of Ireland and the Courts of Northern Ireland (and no other court) for all disputes arising out of, under or in relation to this Dispute Resolution Agreement, in accordance with the terms of the Code.

EXECUTED THIS DAY OF

BY

.....

DISPUTING PARTY

.....

DISPUTING PARTY

...

.....

DRB MEMBER

.....

DRB MEMBER

.....

DRB MEMBER

---

## APPENDIX C: FORM OF AUTHORITY

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1. This Appendix C contains a standard template for a Form of Authority for Appointment of an Intermediary.

### TEMPLATE FOR FORM OF AUTHORITY FOR APPOINTMENT OF AN INTERMEDIARY

THIS FORM OF AUTHORITY dated the [ ] day of [ ] [20 ] is entered into as a deed between:

- (I) [Insert name of generator (if a company, please give full corporate name)]:

("Licensed Generator")

having its place of business at [Insert address of Licensed Generator]

being a [registered company/partnership/sole trader etc.] registered under the laws of [insert country of registration if a company] and whose company registration number is [insert if a company];

and

- (II) [Insert name of proposed intermediary (if a company, please give full corporate name)]

("Intermediary")

having its place of business at [Insert address of Intermediary]

being a [registered company/partnership/sole trader etc.] registered under the laws of [insert country of registration if a company] and whose company registration number is [insert if a company].

In respect of

[Insert description of generator unit or units to which this Form of Authority applies]

("Units")

Whereas:

1. The Licensed Generator legally controls the Units and is the subject of [a [licence/authorisation/exemption] issued by the CER to use the Units for the purpose of generation of electricity in Ireland] [and] [a [licence/authorisation/exemption] issued by the NIAUR to use the Units for the purpose of generation of electricity in Northern Ireland].
2. The Licensed Generator and the Intermediary are parties to a contract (“the Contract”) which satisfies criteria for appointment of an Intermediary pursuant to Regulatory Authorities’ Decision Paper SEM/17/025. The Licensed Generator wishes to appoint the Intermediary to act as the Participant in respect of the Units under (i) the Trading and Settlement Code, and (ii) the Capacity Market Code, and the Intermediary wishes to accept such appointment, in accordance with the following terms.
3. By letter dated [x] (“the Consent”) addressed to the Licensed Generator and the Intermediary the Regulatory Authorities consent to the appointment by the Licensed Generator of the Intermediary to act as such.

## **1. Interpretation**

- 1.1 In this Form of Authority, “Trading and Settlement Code” or “TSC” means the code of that name that governs the balancing market and settlement arrangements for the capacity market in Ireland and Northern Ireland, as modified, amended, varied or replaced from time to time.
- 1.2 In this Form of Authority, “Capacity Market Code” or “CMC” means the code of that name that governs the capacity market in Ireland and Northern Ireland, as modified, amended, varied or replaced from time to time.
- 1.3 Capitalised terms which are not defined in this Form of Authority shall have the meanings ascribed thereto in the Trading and Settlement Code.

## **2. Authorisation under the Trading and Settlement Code**

- 2.1 The Licensed Generator hereby appoints and authorises the Intermediary to register the Units as Generator Units for the purposes of participation in the Balancing Market, and to participate in the Balancing Market in respect of the Units, under the Trading and Settlement Code, and the Intermediary accepts such appointment.
- 2.2 The Licensed Generator authorises the Intermediary, subject to the Intermediary becoming a Party to the Trading and Settlement Code and successfully registering the Units under the TSC, to undertake all of the obligations, covenants, undertakings, duties and liabilities of a Participant in respect of the Units under the TSC [for the duration of the Contract] [insert alternative period], and the Intermediary agrees to such.
- 2.3 The Licensed Generator authorises the Intermediary, subject to the Intermediary becoming a Party to the Trading and Settlement Code and successfully registering the Units under the TSC, to benefit from all of the rights of a Participant under the TSC, including the right to receive payments in respect of the Units under the TSC [for the duration of the Contract] [insert alternative period], and the Intermediary agrees to such.

**EITHER:**

**3. Full Authorisation under the Capacity Market Code**

- 3.1 The Licensed Generator hereby appoints and authorises the Intermediary to register or provisionally register the Units for the purposes of participation in the Capacity Market, and to participate in respect of the Units in the Capacity Market, under the Capacity Market Code, and the Intermediary accepts such appointment.
- 3.2 The Licensed Generator authorises the Intermediary, subject to (1) the Intermediary becoming a Party to the Capacity Market Code and (2)(i) successfully registering the Units under the TSC, or (2)(ii) registering or provisionally registering the Units under the CMC, to undertake all of the obligations, covenants, undertakings, duties and liabilities of a Participant in respect of the Units under the CMC [for the duration of the Contract] [insert alternative period], and the Intermediary agrees to such.
- 3.3 The Licensed Generator authorises the Intermediary, subject to (1) the Intermediary becoming a Party to the Capacity Market Code and (2)(i) successfully registering the Units under the TSC, or (2)(ii) registering or provisionally registering the Units under the CMC, to benefit from all of the rights of a Participant in respect of the Units under the CMC (including the right to participate in Capacity Auctions) [for the duration of the Contract] [insert alternative period], and the Intermediary agrees to such.]

**OR:**

**3. Restricted Authorisation under the Capacity Market Code**

The Licensed Generator hereby appoints and authorises the Intermediary to register the Units for the purposes of the Capacity Market Code, but does not authorise the Intermediary to participate in Capacity Auctions or Secondary Trade Auctions under the CMC in respect of the Units.]

**4 Other matters**

- 4.1 This Form of Authority, and any disputes arising under, out of, or in relation to, this Form of Authority shall be interpreted, construed and governed in accordance with the laws of Northern Ireland.
- 4.2 The parties hereby submit to the jurisdiction of the Courts of Ireland and the Courts of Northern Ireland (and no other court) for all disputes arising out of, under or in relation to this Form of Authority.
- 4.3 The Market Operator under the TSC and the System Operators under the CMC are entitled to rely on this Form of Authority.
- 4.4 The Registered Generator may revoke this Form of Authority by giving [20] Working Days notice in writing.
- 4.5 Where the Regulatory Authorities consider that the basis on which the Regulatory Authorities gave the Consent no longer applies, they may revoke the Consent and this Form of Authority by giving 20 Working Days notice in writing to the Registered Generator and the Intermediary. If the Regulatory Authorities revoke this Form of Authority, the Intermediary shall promptly notify the Market Operator under the TSC and, if applicable, the System Operators under the CMC.

[To be executed as a Deed and (where appropriate to the legal form of the Licensed Generator) under seal]

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## APPENDIX D: LIST OF AGREED PROCEDURES

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1. This Appendix D describes, and sets out the scope of, each Agreed Procedure.
2. **Agreed Procedure 1 “Registration”**: sets out the detailed procedures applying to the Market Operator, Parties and (where applicable) Applicants in relation to:
  - (a) the data requirements set out in Appendix H;
  - (b) the operation of the registration process under sections B.7 to B.11;
  - (c) the operation of the data validation process set out in Chapter C (Data and Information Systems); and
  - (d) the Data Transaction (timelines and format) under which the Market Operator shall inform a Participant of the Required Credit Cover for a Unit prior to the registration of that Unit.
3. **Agreed Procedure 2**: Not used
4. **Agreed Procedure 3 “Communication Channel Qualification”**: sets out the detailed procedures applying to the Participants in relation to the obtaining and maintenance of a functioning Type 2 Channel or Type 3 Channel, and the security required for these Communication Channels, and also sets out the manner in which Participants and (in the case of suspension of Communication Channel Qualification) the Market Operator shall perform the following functions in order that Participants may "issue", "submit", "send" or "receive" Data Transactions and to maintain a secure IT system:
  - (a) registering Type 2 Channel and Type 3 Channel communications;
  - (b) testing Participant qualification in respect of Type 2 Channel and Type 3 Channel communications;
  - (c) accessing the Market Operator's Isolated Market System;
  - (d) maintaining Communication Channel Qualification status in respect of both Type 2 Channel and Type 3 Channel; and
  - (e) suspension of Communication Channel Qualification status in respect of Type 2 Channel and Type 3 Channel.
5. **Agreed Procedure 4 “Transaction Submission and Validation”**: sets out the detailed obligations of the Parties in relation to the submission of data under Chapter D “Balancing Market Data Submission” and Settlement Reallocation Agreements.
6. **Agreed Procedure 5 “Data Storage and IT Security”**: sets out the detailed procedures applying to the Market Operator and Parties in relation to:
  - (a) the technical security, data storage and data access specifications and standards with which the Isolated Market System of the Market Operator and of each Participant must comply;
  - (b) the technical security specifications and standards that must be maintained in order to gain access to the Market Operator’s Isolated Market System;
  - (c) the security standards for data communications that must be complied with in respect of Type 2 Channel and Type 3 Channel communications;
  - (d) computational machine precision and methods of rounding; and
  - (e) other relevant matters under Chapter C “Data and Information Systems”.



7. **Agreed Procedure 6 “Data Publication and Data Reporting”**: sets out the detailed procedures applying to the Market Operator and Parties in relation to:
  - (a) the method of publication of data, and the updating of published data;
  - (b) the data listed in Appendix E “Data Publication” that must be provided by the Market Operator in response to a request made by a Participant, and the method of such response;
  - (c) the data that must be provided by the Market Operator to certain Participants only (or all of them), and the method by which the Market Operator must make such data available;
  - (d) the matters set out in paragraphs A.4.1.1(o), A.4.2.1(l), B.17.22.2, B.32.4.1, C.2.4.2 and C.4.1.3 and sections B.28, B.29 and C.7.
8. **Agreed Procedure 7 “Emergency Communications”**: sets out the detailed procedures applying to the Market Operator and Parties that arise in the event of and for the duration of a General Communication Failure, a General System Failure or a Limited Communication Failure in relation to:
  - (a) the processes for communication of data required for market settlement;
  - (b) the process to be followed by the Market Operator in notifying the market that a General Communication Failure or a General System Failure is in effect;
  - (c) general responsibilities of Parties;
  - (d) updates to be issued by the Market Operator;
  - (e) estimation to be carried out by the Market Operator as to how long the emergency situation will remain in effect; and
  - (f) the matters set out in paragraphs C.3.1.5, C.3.1.10 and sections C.4 and C.5.
9. **Agreed Procedure 8**: Not used
10. **Agreed Procedure 9 “Management of Credit Cover and Credit Default”**: sets out the detailed procedures applying to the Market Operator and Participants in relation to:
  - (a) the processes for managing the Credit Cover that is required to be maintained by Participants;
  - (b) the process that is to be invoked in the event of a default by a Participant in relation to Credit Cover; and
  - (c) other relevant matters under Chapter G (Financial and Settlement).
11. **Agreed Procedure 10 “Settlement Reallocation”**: sets out the detailed procedures applying to the Market Operator and Participants in relation to Settlement Reallocation Agreements and the cancellation of Settlement Reallocation Agreements, and the matters set out in section G.17.
12. **Agreed Procedure 11 “Market System Operation, Testing, Upgrading and Support”**: sets out the detailed procedures applying to the Market Operator in relation to the:
  - (a) provision of advice to Parties in relation to the operation of the Market Operator’s Isolated Market System and Communication Channels;
  - (b) provision to Parties of a facility for the reporting of incidents;

- (c) implementation and coordination of the Market Operator’s Isolated Market System and its interfaces to Communication Channels;
  - (d) scheduled testing and down-time of the Market Operator’s Isolated Market System or its interfaces to Communication Channels;
  - (e) commissioning of an externally-audited report in the event of a General Communication Failure or General System Failure;
  - (f) restoration of the Market Operator’s Isolated Market System in the event of a General System Failure; and
  - (g) the matters set out in paragraphs C.2.2.5, C.2.5.1, C.2.5.3, C.5.4.4 and C.5.5.1.
13. **Agreed Procedure 12 “Modifications Committee Operation”**: sets out the detailed procedures applying to the Market Operator and Parties in relation to the rules and proceedings of the Modifications Committee under section B.17.
  14. **Agreed Procedure 13 “Settlement Queries”**: sets out the detailed procedures applying to the Market Operator and Parties in relation to the raising and processing of Settlement Queries raised in accordance with section G.3.
  15. **Agreed Procedure 14 “Disputes”**: sets out the detailed obligations of the Market Operator and Parties in relation to the procedures governing Disputes under section B.19.
  16. **Agreed Procedure 15 “Settlement and Billing”**: sets out the detailed procedures applying to the Market Operator and Parties in relation to the issuing of Market Operator invoices, Settlement Statements and Settlement Documents in accordance with Chapter G (Financial and Settlement) and Appendix G “Settlement Statements, Settlement Reports and Settlement Documents”.
  17. **Agreed Procedure 16 “Provision of Meter Data”**: sets out the detailed procedures applying to Meter Data Providers in relation to the grouping of Meter Data for provision to the Market Operator, and the timing of such provision.
  18. **Agreed Procedure 17 “Banking and Participant Payments”**: sets out the detailed procedures applying to the Participants and the Market Operator in relation to the banking arrangements required under the Code for Settlement, including the manner in which Participants are required to make payments to the Market Operator, and the manner in which the Market Operator is required to make payments to Participants. Agreed Procedure 17 “Banking and Participant Payments” also sets out the detailed obligations of the Parties in relation to the management of SEM Collateral Reserve Accounts.
  19. **Agreed Procedure 18 “Suspension and Termination”**: sets out the detailed timings and procedures regarding the operation of section B.18.

## APPENDIX E: DATA PUBLICATION

1. A list of data items that the Market Operator shall be required to publish, and the timing with which the Market Operator shall be required to publish them, is contained in the tables in this Appendix E. Procedures for the updating of publications and the method of publication are contained in Agreed Procedure 6 “Data Publication and Data Reporting”.
2. All data received by the Market Operator over a Type 2 or Type 3 Communication Channel, or calculated by the Market Operator, shall be published according to the specific timelines set out in this Appendix.
3. Agreed Procedure 6 “Data Publication and Data Reporting”, sets out the manner in which the Market Operator shall be required to comply with requests by Participant for reports with any data detailed in paragraph 2 of this Appendix above to be made available for communication over Type 2 or Type 3 Communication Channels. Further details of data publication will be available in technical specification documents which will be published on the Market Operator’s website. Subject to data confidentiality, and the timelines set out in this Appendix, all such reports will be published on the Market Operator’s website and/or the Balancing Market Interface as defined in Agreed Procedure 6 “Data Publication and Data Reporting”.
4. Agreed Procedure 6 “Data Publication and Data Reporting”, will follow the following principles set out in the following sections, paragraphs or sub-sections of the Code: A.4.1.1(o), A.4.1.1(p), B17.22.2, B.28.1.3, B.29.1.1, B.32.4.1, C.2.4.2, C.4.1.3 and C.7.1 to C.7.5.

**Table 1 – Data publication list part 1: updated periodically as required**

Time	Item / Data Record	Term	Subscript
<b>Periodically as required</b>			
No less frequently than twice yearly in line with the Scheduled Release	The Code (including Agreed Procedures)		
At least once a year and no later than two weeks prior to the first meeting in the schedule	Schedule of Modification Panel meetings		
As soon as practical but no later than two Working Days after receipt of Modification Proposal	Modification Proposal		
As soon as practical but no later than two Working Days after receipt of consultation on Modification Proposal	Public Consultation on Modification Proposal		
As soon as practical but no later than two Working Days after closing of consultation on Modification Proposal	Responses to Public Consultation on Modification Proposal		
As soon as practical but no later than two Working Days after receipt of further information on Modification Proposal	Further information on Modification Proposal		
As soon as practical but no later than two Working Days after	Final Recommendation Report		

<b>Time</b>	<b>Item / Data Record</b>	<b>Term</b>	<b>Subscript</b>
issue of Final Recommendation Report to the Regulatory Authorities			
As soon as practical but no later than two Working Days after receipt of Regulatory Authority decision on Final Modification Recommendation	Regulatory Authority decision on Final Modification Recommendation		
As updated and at least within five Working Days of a successful application for Registration or Deregistration	List of Parties, Participants and each of their Generator Units and Supplier Units		
As soon as practical after being issued and at least within two Working Days of issue	Making or lifting of a Suspension Order		
As soon as practical after being issued and at least within two Working Days of issue	Termination Order		
As received and at least within two Working Days of issue	Generator Unit Under Test Notice		
As soon as practical after being updated	Proposed Market Operator Isolated Market System Testing Schedule		
As updated and at least within five Working Days of update	Details of the Accession Fees and Participation Fees		
As updated and at least two weeks in advance of the Meeting	Date of the next meeting of the Modifications Committee		
Within one Working Day of receipt from the Regulatory Authorities	Supplier Suspension Delay Period		e
Within one Working Day of receipt from the Regulatory Authorities	Generator Suspension Delay Period		e
As updated and at least within two Working Days of update	Members and chairperson of the Modification Committee		
As soon as possible after calculation	Calculations and methodology used by the Market Operator during Administered Settlement		
As required	REMIT Data Transaction		h
Updated as required from time to time	Price Materiality Threshold		
Updated as required from time to time	Settlement Recalculation Threshold		
Within five Working Days of receipt from the Regulatory Authorities approval	Imbalance Weighting Factor	WFIMB	yy

Time	Item / Data Record	Term	Subscript
Within five Working Days of receipt from the Regulatory Authorities approval or two months before effective day whichever is later	De Minimis Acceptance Threshold		
At least four Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever is later	Full Administered Scarcity Price	PFAS	
Within five Working Days of receipt from the Regulatory Authorities approval or two months before effective day whichever is later	Reserve Scarcity Price Curve	PRSC	Θ
Within five Working Days of receipt from the Regulatory Authorities approval or two months before effective day whichever is later	Price Average Reference Quantity		
Within five Working Days of receipt from the Regulatory Authorities approval	Information Imbalance Quantity Weighting Factor	WFQII	uβy
Within five Working Days of receipt from the Regulatory Authorities approval	Information Imbalance Tolerance	TOLII	uβy
Within five Working Days of receipt from the Regulatory Authorities approval	Information Imbalance Price	PII	uy
Within five Working Days of receipt from the Regulatory Authorities approval	Tracked Difference Payment Shortfall Amount	CSHORTDIFFPTR ACK	vd
Within five Working Days of receipt from the Regulatory Authorities approval	Carbon Price	PCARBON	m
Within five Working Days of receipt from the Regulatory Authorities approval	Natural Gas Fuel Price	PFUELNG	m
Within five Working Days of receipt from the Regulatory Authorities approval	Oil Fuel Price	PFUELO	m
Within five Working Days of receipt from the Regulatory Authorities approval	Peaking Unit Theoretical Efficiency	FTHEORYPU	y
Within five Working Days of receipt from the Regulatory Authorities approval	Natural Gas Carbon Intensity Factor	FCARBONING	y
Within five Working Days of receipt from the Regulatory Authorities approval	Oil Carbon Intensity Factor	FCARBONIO	y
Within five Working Days of receipt from the Regulatory Authorities determination	Aggregated Settlement Period	α	

Time	Item / Data Record	Term	Subscript
At least two Months before start of the Capacity Auction, or within five Working Days of its approval from the Regulatory Authorities, whichever is later	Annual Stop-Loss Limit Factor	FSLLA	uy
At least two Months before start of the Capacity Auction, or within five Working Days of its approval from the Regulatory Authorities, whichever is later	Billing Period Stop-Loss Limit Factor	FSLLB	ub
After every Capacity Auction	Total Capacity Awarded	CCP	Ωc
Within five Working Days of receipt from the Regulatory Authorities	Response Period Duration		

**Table 2 – Data publication list part 2: updated annually and as required**

Time	Item / Data Record	Term	Subscript
<b>Annual</b>			
At least two Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever is later	Annual Capacity Charge Exchange Rate	XRCCA	y
At least two Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever is later	Capacity Duration Exchange Rate	XRCD	ny
At least two Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever is later	Capacity Charge Metered Quantity Factor	FQMCC	y
At least two Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever is later	Supplier Capacity Charge Price	PCCSUP	y
At least two Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever is later	Difference Payment Socialisation Multiplier	FSOCDIFFP	y
At least four Months before start of Year	Annual Load Forecast		
At least four Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever later	Market Price Cap	PCAP	y
At least four Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever later	Market Price Floor	PFLOOR	y

Time	Item / Data Record	Term	Subscript
Days of its receipt from the Regulatory Authorities, whichever later			
At least four Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever is later	Residual Meter Volume Interval Proportion	RMVIP	ey
At least two Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever is later	Residual Error Volume Price	PREV	y
At least one Month before start of Year	Fixed Market Operator Charge (Supplier Unit)	CMOAV	vy
At least one Month before start of Year	Fixed Market Operator Charge (Generator Unit)	CMOAU	uy
At least one Month before start of Year	Variable Market Operator Price	PVMO	y
At least two Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever later	Engineering Tolerance	TOLENG	
At least two Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever later	MW Tolerance	TOLMW	t
At least two Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever later	System per Unit Regulation Factor	FUREG	
At least two Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever later	Discount for Over Generation Factor	FDOG	uy
At least two Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever later	Premium for Under Generation Factor	FPUG	uy
Four Weeks before start of Audit, or within one Working Day of its receipt from the Regulatory Authorities, whichever later	Terms of Reference for Market Operator Audit		
Within five Working Days after delivery of Audit Report in its final form to the Regulatory Authorities, or within one Working Day of its receipt from the Regulatory Authorities, whichever later	Audit Report		

<b>Time</b>	<b>Item / Data Record</b>	<b>Term</b>	<b>Subscript</b>
At least two Months before start of Tariff Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever is later	Transmission Loss Adjustment Factors	FTLAF	uy for Generator Units, ly for Interconnector
At least two Months before start of Tariff Year, or within five Working Days of its receipt from the relevant System Operator, whichever is later	Distribution Loss Adjustment Factors	FDLAF	uy for Generator Units, ly for Interconnector
At least two weeks before start of Tariff Year, or within five Working Days of its receipt from the relevant System Operator, whichever is later	Combined Loss Adjustment Factors	FCLAF	uy for Generator Units, ly for Interconnector
At least two Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever later	Imperfections Price	PIMP	y
At least two Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever later	Imperfections Charge Factor	FCIMP	yy
Four Months before start of Year	Testing Tariff	PTESTTARIFF	uy
Four Months before start of Year	Settlement Calendar		
Four Months before start of Year, and as updated	Schedule of Testing Tariffs		
At least two Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever later	Fixed Credit Requirement, in respect of Generator and/or Supplier Units	FCR	py
At least two Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever later	Days in Historical Assessment Period	DINHAP	
At least two Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever later	Analysis Percentile Parameter	AnPP	
At least two Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever later	Credit Cover Adjustment Trigger		
At least two Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever later	Currency Cost Price	PCC	y
At least two Months before start of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever later	Currency Cost Charge Factor	FCCA	y



Time	Item / Data Record	Term	Subscript
of Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever later			
In April of each Year	Annual Maintenance Schedule - Transmission Line Outages		
At least two Months before start of Year	Two Year Maintenance Schedule - Generator Outages Schedule		

**Table 3 – Data publication list part 3: updated Monthly**

Time	Item / Data Record	Term	Subscript
<b>Monthly</b>			
Within five Working Days of its creation	Market Operator Performance Report		
At least one Working Day before start of Month	Monthly Maintenance Schedule - Generator Unit outages	--	--
At least one Working Day before start of Month	Monthly Maintenance Schedule - Transmission System line outages	--	--
At least one Working Day before start of Month	Monthly Load Forecast and assumptions	--	--
At least once every Month	Registered Capacity	RC	u

**Table 4 – Data publication list part 4: updated daily in advance of the Trading Day**

Time	Item / Data Record	Term	Subscript
<b>Daily, in advance of the the Trading Day</b>			
By 17:00 on the day prior to the Gate Closure 1 in respect of the Trading Day	Trading Day Exchange Rate between euro (€) and pounds sterling (£)	-	-
By 17:00 on the day prior to the Trading Day, plus as updated	Unit Under Test		
By 17:00 on the day prior to the Trading Day, plus as updated	Net Transfer Capacity		
By 17:00 on the day prior to the Trading Day, plus as updated	Four Day Load Forecast	-	-
By 17:00 on the day prior to the Trading Day, plus as updated	Four Day Rolling Wind Power Unit Forecast by Unit		
By 17:00 on the day prior to the Trading Day, plus as updated	Four Day Rolling Wind Power Unit Forecast aggregated by Jurisdiction	-	-
By 17:00 on the day prior to the Trading Day, plus as updated	Four Day Rolling Wind Power Unit Forecast by Market	-	-
By 17:00 on the day prior to the	OUTAGE ADJUSTED WIND UNIT		

Trading Day, plus as updated	FORECAST – 36 hours lookout
By 17:00 on the day prior to the Trading Day	Daily Transmission Outage Schedule Report

**Table 5 – Data publication list part 5: updated hourly or half hourly prior to the Imbalance Settlement Period (ISP)**

Time	Item / Data Record	Term	Subscript
<b>Hourly or half hour prior to each ISP</b>			
Every hour prior to each ISP	Forecast Imbalance		γ
Every half hour prior to each ISP	Net Imbalance Volume Forecast		γ

**Table 6 – Data publication list part 6: updated following each Gate Closure 1**

Time	Item / Data Record	Term	Subscript
<b>Following each Gate Closure 1</b>			
After each Gate Closure 1	Aggregated Final Physical Notifications		γ

**Table 7 – Data publication list part 7: updated following each Imbalance Pricing Period (IPP) or Imbalance Settlement Period (ISP)**

Time	Item / Data Record	Term	Subscript
<b>Following each IPP or ISP</b>			
Following each IPP	Imbalance Price by IPP	PIMB	φ
Following each ISP	Imbalance Settlement Price by ISP	PIMB	γ
Following each IPP	Net Imbalance Volume Quantity by IPP	QNIV	φ
Following each ISP	Net Imbalance Volume Quantity by ISP	QNIV	γ
Following each IPP	Net Imbalance Volume Tag	TNIV	ukφ
Following each IPP	Demand Control Quantity	QDC	φ
Following each IPP	Marginal Energy Action Price	PMEA	φ
Following each IPP	Price Average Reference Tag	TPAR	ukφ
Following each IPP	Bid Offer Price	PBO	ukφ
Following each IPP	Accepted Bid Quantity	QAB	ukφ
Following each IPP	Accepted Offer Quantity	QAO	ukφ
Following each IPP	System Operator Flag	FSO	ukφ

Following each IPP	Non-Marginal Flag	FNM	ukφ
Following each ISP	Anonymised Incremental/ Decremental Price Quantity Pairs		

**Table 8 – Data publication list part 8: updated daily post Trading Day or Settlement Day**

Time	Item	Term	Subscript
<b>Daily, post Trading Day or Settlement Day</b>			
By 16:00 Trading Day +1	Technical Offer Data Accepted		ut
By 16:00 Trading Day +1	Forecast Availability		uy
By 16:00 Trading Day +1	Outturn Availability		uy
By 16:00 Trading Day +1	Final Physical Notifications		uy
By 16:00 Trading Day +1	Commercial Offer Data Accepted		uy
By 16:00 Trading Day +1	Daily Generator Outage Schedules		
By 16:00 Trading Day +1	Demand Control Data Transaction	QDC	φ
By 16:00 Trading Day +1 and by 17:00 Trading Day +5	Dispatch Instructions	-	-
By 16:00 Trading Day +1	SO Interconnector Trades	PBO, QAO, QAB	u
By 16:00 Trading Day +1	Market Back Up Prices	PMBU	y
By 17:00 Trading Day +5	Initial Interconnector Flows and Residual Capacity		
By 16:00 Trading Day +1	Generator Unit Technical Characteristics Data Transaction		
By 16:00 Trading Day +1	Nominal System Frequency	FRQNOR	y
By 16:00 Trading Day +1	Average System Frequency	FRQAVG	y
By 16:00 Working Day +1 and by 17:00 Trading Day +5	Metered Generation by Unit	QM	uy, vy
By 16:00 Working Day +1 and by 17:00 Trading Day +5	Metered Generation by Jurisdiction	QM,	ue or ve
By 16:00 each Working Day	Credit Assessment Price for the Undefined Exposure Period for Billing Periods	PCA	g
By 16:00 each Working Day	Dispatch Quantity	DQ	uy
By 16:00 each Working Day	Billing Period Undefined Potential Exposure Quantity	QUPEB	pg
By 16:00 on Two Working Days after Trading Day and by 17:00 Five Working	Tolerance for Over Generation	TOLOG	uy

Time	Item	Term	Subscript
Days after Trading Day			
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Tolerance for Under Generation	TOLUG	uy
By 16:00 Two Working Days after Trading Day, by 17:00 Five Working Days after end Trading Day and as updated at 17:00 the day of recalculation	Trading Payments and Charges D+1	CIMB, CPREMIUM, CDISCOUNT, CAOPO, CABBPO, CCURL, CUNIMB, CII, CFC, CIMP, CTEST, CREV, CCA	uy, uk or vy as appropriate
By 16:00] Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Capacity Quantity Scaling Factor	FSQC	y
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Required Capacity Quantity	qCREQ	y
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Reserve Adjustment Capacity	qCREQAR	y
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Net Capacity Quantity	QCNET	Ωy
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Obligated Capacity Quantity	QCOB	Ωy
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Loss-Adjusted Commissioned Capacity Quantity	qCCOMMISSLF	Ωy
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	De-Rating Factor	FDERATE	Ω
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Above De-Rated Capacity Factor	FCADERATE	Ωy
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Capacity Quantity	qC	Ωn
By 16:00 Two by Working Days after Trading Day and 17:00 Five Working Days after Trading Day	Initial Primary Auction Capacity Payment Price	PCPIPA	y
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Day-ahead Difference Quantity	QDIFFDA	Ωy
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Day-ahead Trade Quantity	qTDA	xuh
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Day-ahead Trade Price for Trade	PTDA	xuh

Time	Item	Term	Subscript
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Day-ahead Difference Charge	CDIFFCDA	Qy
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Day-ahead Difference Charge Metered Quantity	QMDIFFCDA	vY
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Strike Price for Month	PSTR	m
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Loss-Adjusted Accepted Offer Quantity	QAOLF	uoiy
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Loss-Adjusted Accepted Bid Quantity	QABLF	uoiy
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Loss-Adjusted Offer Price Only Accepted Offer Quantity	QAOOPOLF	uoiy
By 16:00 Two Working Days after Trading Day and 17:00 Five Working Days after Trading Day	Biased Accepted Offer Quantity	QAOBIAS	uoiy
B 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Loss-Adjusted Trade Opposite TSO Accepted Offer Quantity	QAOTOTSOLF	uoiy
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Within-day Trade Difference Quantity	QDIFFCTWD	Qyk
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Within-day Trade Difference Charge	CDIFFCTWD	Qyk
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Within-day Difference Charge Metered Quantity	QMDIFFCWD	sy
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	System Service Flag	FSS	uy
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	System Service Difference Quantity	QDIFFCSS	uy
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Non-performance Difference Quantity	QDIFFCNP	Qy
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Loss-Adjusted Maximum Import Capacity Market Availability Quantity for Interconnector	qCMAMAXILF	ly
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Annual Cumulative Non-performance Difference Charge	CDIFFCNPA	Q(y-1)
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Billing Period Cumulative Non-performance Difference Charge	CDIFFCNPB	Q(y-1)

<b>Time</b>	<b>Item</b>	<b>Term</b>	<b>Subscript</b>
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Total Difference Charge	CDIFFTOT	py
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Day-ahead Difference Payment	CDIFFPDA	vd
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Intraday Trade Quantity for Trade	qTID	xuhk
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Intraday Trade Price for Trade	PTID	xvhk
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Intraday Trade Difference Quantity	QDIFFPTID	vyk
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Intraday Trade Difference Payment	CDIFFPTID	vyk
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Tracked Difference Quantity	QDIFFTRACK	vyk
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Imbalance Difference Quantity	QDIFFPIMB	vy
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Total Difference Payment	CDIFFTOT	vd
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Daily Total Difference Payment	CDIFFTOTD	d
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Difference Payment Shortfall Amount	CSHORTDIFFP	vd
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Difference Payment Socialisation Balance in Settlement Day	CBSOCDIFFP	d
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Difference Payment Reimbursement Payment	CREIMDIFFP	v(d-1)
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Tracked Difference Payment Shortfall Charge	CSHORTDIFFPTRACK	vd
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Achievable Difference Payment	CDIFFPACHIEVE	vd
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Total Achievable Difference Payment	CDIFFPACHIEVE TOT	pd
By 16:00 Two Working Days after Trading Day and by 17:00 Five Working Days after Trading Day	Initial Socialisation Balance	CBSOCI	d

**Table 9 – Data publication list part 9: updated on a Capacity Period basis, post end of Capacity Period (all variables Capacity Period+3 WD and Capacity Period +7WD)**

Time	Item	Term	Subscript
<b>Each Capacity Period, post end of Capacity Period</b>			
By 17:00] Three Working Days and by 12:00 Seven Working Days after end of Capacity Period,	Capacity Payment Price	PCP	Ωn
By 17:00 Three Working Days and by 12:00 Seven Working Days after end of Capacity Period,	Capacity Payments to each Capacity Market Unit	CCP	Ωc
By 17:00 Three Working Days and by 12:00 Seven Working Days after end of Capacity Period,	Supplier Capacity Charge Price	PCCSUP	y
By 17:00] Three Working Days and by 12:00 Seven Working Days after end of Capacity Period,	Difference Payment Socialisation Multiplier	FSOCDIFFP	y
By 17:00 Three Working Days and by 12:00 Seven Working Days after end of Capacity Period,	Capacity Charge Metered Quantity Factor	FQMCC	y
By 17:00 Three Working Days and by 12:00 Seven Working Days after end of Capacity Period,	Capacity Charge	CCC	vc
By 17:00 Three Working Days and by 12:00 Seven Working Days after end of Capacity Period,	Total Capacity Charge	CCCTOT	pc
By 17:00 Three Working Days and by 12:00 Seven Working Days after end of Capacity Period,	Difference Payment Socialisation Charge	CSOCDIFFP	vc
By 17:00 Three Working Days and by 12:00 Seven Working Days after end of Capacity Period,	Total Difference Payment Socialisation Charge	CSOCDIFFPTOT	pc

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## APPENDIX F: OTHER COMMUNICATIONS

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### INTRODUCTION

1. This Appendix F outlines the detailed Data Record requirements for miscellaneous Data Transactions under the Code not related to Notices of Dispute, Suspension or Termination, or operation of the Modifications Committee.
2. Agreed Procedure 13 "Settlement Queries" sets out the detail of Notices related to the Query process.
3. Agreed Procedure 7 "Emergency Communications" and Agreed Procedure 11 "Market System Operation, Testing, Upgrading, and Support" set out the detail of Notices related to Limited Communication Failures, General Communication Failures, General System Failures.
4. Agreed Procedure 12 "Modifications Committee Operation" sets out the detail of all Notices related to the process of raising Modification Proposals, impact assessing Modification Proposals, seeking consultation on Modification Proposals, publishing the Modifications Committee's Final Modification Recommendation and the decision of the Regulatory Authorities.
5. Chapter B of the Code sets out the treatment of Suspension Orders and Termination Orders.

### Generator Unit Under Test Notice

6. Agreed Procedure 4 "Transaction Submission and Validation" sets out the detail of all Generator Unit Under Test Notices, following the principles in paragraphs 7 and 8 of this Appendix below.
7. Each Participant shall submit a Generator Unit Under Test Request to the Market Operator in accordance with the Grid Code in advance of Unit Under Test Start Date. The Generator Unit Under Test Request will specify in all cases Unit Under Test Start Date and time, Unit Under Test End Date and time and the Generator Unit Under Test and any such requirements as specified in the Grid Code.
8. Participants shall submit a Generator Unit Under Test Notice to the Market Operator in accordance with the Grid Code. The Generator Unit Under Test Notice will specify in all cases the Unit Under Test Start Date and time and the Unit Under Test End Date and time, and the Generator Unit Under Test. The Market Operator will ensure that Generator Unit Under Test Notices can be submitted by Participants through a Type 2 Channel or Type 3 Channel.

### Maintenance Schedules Data Transactions

9. Each System Operator shall submit an annual Maintenance Schedule Data Transaction to the Market Operator in April each Year, and whenever it is updated. The following shall also apply:
  - (a) The annual Maintenance Schedule Data Transaction shall contain the Outage Schedule for each line in the Transmission System in the relevant Jurisdiction over the year commencing at the submission of the original version of that Data Transaction.
  - (b) The Market Operator shall only provide for Type 1 Channel for the communication of such annual Maintenance Schedule Data Transaction from the System Operator during normal operation of the Market Operator's Isolated Market System and the Type 1 Channel.



10. Each System Operator shall submit a two year Maintenance Schedule Data Transaction to the Market Operator at least two months before the start of each Year, and whenever it is updated. The following shall also apply:
  - (a) The Maintenance Schedule Data Transaction shall contain the Maintenance Schedule for each Generator and Interconnector, identified by the System Operator as part of the Grid Code operational planning process in the relevant Jurisdiction over the next two Years.
  - (b) The Market Operator shall only provide for Type 1 Channel for the communication of such Maintenance Schedule Data Transaction from the System Operator during normal operation of the Market Operator's Isolated Market System and the Type 1 Channel.
  
11. Each System Operator shall submit a monthly Maintenance Schedule Data Transaction to the Market Operator at least one Working Day before the start of each Month, and whenever it is updated. The following shall also apply:
  - (a) The monthly Maintenance Schedule Data Transaction shall contain the Maintenance Schedule of each Generator connected to the Transmission System in the relevant Jurisdiction over the next two Months, and the Maintenance Schedule of each line on the Transmission System in the relevant Jurisdiction over the next two Months.
  - (b) The Market Operator shall only provide for Type 1 Channel for the communication of monthly Maintenance Schedule Data Transactions from the System Operator during normal operation of the Market Operator's Isolated Market System and the Type 1 Channel.

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## **APPENDIX G: SETTLEMENT STATEMENTS, SETTLEMENT REPORTS AND SETTLEMENT DOCUMENTS**

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1. This Appendix G sets out the detailed Data Record requirements for the Settlement Data Transactions (as defined in paragraph 2 of this Appendix), and the relevant Submission Protocols for the Market Operator to follow in respect of such Data Transactions.
2. The Settlement Data Transactions comprise the Data Records that the Market Operator shall be obliged to include in:
  - (a) Settlement Statements and Settlement Reports for Trading Payments and Trading Charges per Participant in respect of their Supplier Units and Generator Units;
  - (b) Settlement Statements and Settlement Reports for Capacity Payments and Capacity Charges per Participant in respect of their Capacity Market Units and Supplier Units;
  - (c) Market Operator Charge invoices; and
  - (d) Participant Settlement Documents.
3. The Fixed Market Operator Charge will be part of the Fixed Market Operator Charge invoice.
4. The Variable Market Operator Charge will be part of the Variable Market Operator Charge invoice.
5. The Market Operator may include a Participant's Fixed Market Operator Charge and Variable Market Operator Charge in a single invoice.
6. The Market Operator shall denominate each Data Record in this Appendix G which contains Currency amounts in the designated Currency of the relevant Participant.
7. The Market Operator shall include the following identifying Data Records in each Settlement Statement, Settlement Report and Settlement Document, along with sufficient information for a Participant to reasonably determine the provisions of the Code under which the Settlement Statement, Settlement Report or Settlement Document was created, and to uniquely identify the Settlement Statement, Settlement Report or Settlement Document during correspondence with the Market Operator:
  - (a) Settlement Day (if applicable);
  - (b) Imbalance Settlement Period (if applicable);
  - (c) Start and End Date of the relevant Billing Period and, if relevant, Capacity Period;
  - (d) Participant ID;
  - (e) Unit ID(s) (if applicable); and
  - (f) Settlement amounts.
8. The Market Operator shall, in relation to each Billing Period and Capacity Period, issue at least four Settlement Statements and Settlement Reports to each Participant comprising settlement data in respect of each of their registered Units: one arising from the Indicative Settlement run, one arising from the Initial

Settlement run, one arising from the first Timetabled Settlement Rerun and one arising from the second Timetabled Settlement Rerun.

9. The Market Operator shall issue Settlement Statements and Settlement Reports to each Participant comprising settlement data in respect of each of their registered Units in the event of any ad hoc Settlement Rerun arising from a Settlement Query or Dispute.
10. The Market Operator shall, in relation to each Billing Period, issue to each Participant one Settlement Document. When provided for in paragraph G.2.5.3, the Settlement Document for a Billing Period will also include Capacity Payments and Capacity Charges in respect of a Capacity Period. Settlement Documents will be based on the Settlement Statements arising from the Initial Settlement run for that Billing Period and/or Capacity Period.
11. The Market Operator shall issue to each Participant a further Settlement Document based on the Settlement Statements arising from each Settlement Rerun.
12. Participants may query the content of the Settlement Statements and Settlement Reports by raising a Settlement Query under section G.3 or a Dispute under section B.19.
13. The timings under which the Market Operator shall be obliged to issue all Settlement Statements, Settlement Reports, Settlement Documents and invoices are set out in sections G.2.5, G.2.9 and paragraphs G.7.2.2 and G.7.3.4, or as appropriate depending on the outcomes of a Settlement Query or a Dispute.
14. The Market Operator shall ensure that a Settlement Statement and Settlement Reports for Trading Payments and Trading Charges issued to a Participant for its Generator Units provides to Participants, when considered in conjunction with other supplementary reports made available to the Participant under the same timeframes and over the same Communication Channels, inter alia, for the relevant Generator Unit  $u$  in each Imbalance Settlement Period  $\gamma$  for the relevant Settlement Day in Billing Period  $b$ , values of:
  - (a) total Daily Amounts for the Participant (Settlement Day value);
  - (b) the Imbalance Component Payment or Charge for the Generator Unit;
  - (c) the Premium Component Payment for the Generator Unit;
  - (d) the Discount Component Payment for the Generator Unit;
  - (e) the Offer Price Only Accepted Offer Payment or Charge for the Generator Unit;
  - (f) the Bid Price Only Accepted Bid Payment or Charge for the Generator Unit;
  - (g) the Curtailment Payment or Charge for the Generator Unit;
  - (h) the Uninstructed Imbalance Charge for the Generator Unit;
  - (i) the Information Imbalance Charge for the Generator Unit;
  - (j) the Fixed Cost Payment or Charge for the Generator Unit (where calculable over the Billing Period and included in the last Settlement Day of the Billing Period);
  - (k) the Testing Charge for the Generator Unit;
  - (l) Metered Quantity for the Generator Unit;
  - (m) Actual Availability Quantity for the Generator Unit;

- (n) Ex-Ante Quantity for the Generator Unit;
- (o) Dispatch Quantity for the Generator Unit;
- (p) Loss-Adjusted Accepted Offer Quantities, with corresponding Bid Offer Prices, for the Generator Unit;
- (q) Loss-Adjusted Accepted Bid Quantities, with corresponding Bid Offer Prices, for the Generator Unit;
- (r) Loss-Adjusted Offer Price Only Accepted Offer Quantities for the Generator Unit;
- (s) Loss-Adjusted Bid Price Only Accepted Bid Quantities for the Generator Unit;
- (t) Biased Accepted Offer Quantities for the Generator Unit;
- (u) Biased Accepted Bid Quantities for the Generator Unit;
- (v) Loss-Adjusted Non-Firm Accepted Bid Quantities for the Generator Unit;
- (w) Loss-Adjusted Trade Opposite TSO Accepted Offer Quantities for the Generator Unit;
- (x) Loss-Adjusted Trade Opposite TSO Accepted Bid Quantities for the Generator Unit;
- (y) Curtailment Quantities for the Generator Unit;
- (z) System Service Flag for each Generator Unit;
- (aa) System Service Difference Quantity for each Generator Unit;
- (bb) Start Up Costs for the Generator Unit;
- (cc) No Load Costs for the Generator Unit;
- (dd) Imbalance Settlement Price;
- (ee) Curtailment Price; and
- (ff) Market Back Up Price.

The Settlement Statement version will be indicated.

15. The Market Operator shall ensure that Settlement Statements and Settlement Reports for Trading Payments and Trading Charges issued to a Participant for their Capacity Market Units, provides to the Participant, when considered in conjunction with other supplementary reports made available to the Participant under the same timeframes and over the same Communication Channels, inter alia, for the relevant Capacity Market Unit  $u$  in each Imbalance Settlement Period  $\gamma$  for the relevant Settlement Day in Billing Period  $b$ , values of:
- (a) Obligated Capacity Quantity for the Capacity Market Unit;
  - (b) Day-ahead Difference Quantity for the Capacity Market Unit;
  - (c) Day-ahead Difference Charge for the Capacity Market Unit;
  - (d) Within-day Trade Difference Quantities for the Capacity Market Unit;
  - (e) Within-day Trade Difference Charges for the Capacity Market Unit;
  - (f) Within-day Difference Charge Metered Quantity for the Capacity Market Unit;
  - (g) Final Tracked Difference Quantity for the Capacity Market Unit;

- (h) Non-performance Difference Quantity for the Capacity Market Unit;
- (i) Non-performance Difference Charge for the Capacity Market Unit;
- (j) Loss-Adjusted Maximum Import Capacity Market Availability Quantity for Interconnector for the Capacity Market Unit;
- (k) Billing Period Stop-Loss Limit for the Capacity Market Unit;
- (l) Annual Stop-Loss Limit for the Capacity Market Unit;
- (m) Annual Cumulative Non-performance Difference Charge for the Capacity Market Unit;
- (n) Billing Period Cumulative Non-performance Difference Charge for the Capacity Market Unit; and
- (o) Total Difference Charge for the Capacity Market Unit.

The Settlement Statement version will be indicated.

16. The Market Operator shall ensure that Settlement Statements and Settlement Reports for Trading Payments and Trading Charges issued to a Participant for its Supplier Units provides to the Participant, when considered in conjunction with other supplementary reports made available to the Participant under the same timeframes and over the same Communication Channels, inter alia, for the relevant Supplier Unit  $v$  in each Imbalance Settlement Period  $\gamma$  as appropriate for the relevant Settlement Day in Billing Period  $b$ , values of:

- (a) Total Daily Amounts for the Participant (Settlement Day value);
- (b) the Imbalance Component Payment or Charge for the Supplier Unit;
- (c) the Imperfections Charge for the Supplier Unit;
- (d) the Residual Error Volume Charge for the Supplier Unit;
- (e) the Currency Adjustment Charge for the Supplier Unit;
- (f) Metered Quantity for the Supplier Unit;
- (g) Ex-Ante Quantity for the Supplier Unit;
- (h) Non Interval Energy Proportion Factor for the Supplier Unit;
- (i) Imbalance Settlement Price;
- (j) Total Difference Payment for the Supplier Unit;
- (k) Daily Total Difference Payment for the Supplier Unit;
- (l) Day-ahead Difference Quantity for the Supplier Unit;
- (m) Day-ahead Difference Payment for the Supplier Unit;
- (n) Intraday Trade Difference Quantity for the Supplier Unit;
- (o) Intraday Trade Difference Payment for the Supplier Unit;
- (p) final Tracked Difference Quantity for the Supplier Unit;
- (q) Imbalance Difference Quantity for the Supplier Unit;
- (r) Imbalance Difference Payment for the Supplier Unit;
- (s) Difference Payment Shortfall Amount for the Supplier Unit;
- (t) Difference Payment Reimbursement Payment for the Supplier Unit;
- (u) Tracked Difference Payment Shortfall Charge for the Supplier Unit; and

- (v) Achievable Difference Payment for the Supplier Unit.  
The Settlement Statement version will be indicated.
17. The Market Operator shall ensure that Settlement Statements and Settlement Reports for Capacity Payments issued to a Participants for its Capacity Market Units, provides to the Participant, when considered in conjunction with other supplementary reports made available to the Participant under the same timeframes and over the same Communication Channels, inter alia, for the relevant Capacity Market Unit  $u$  in each Imbalance Settlement Period  $\gamma$  in the Capacity Period  $c$ , values of:
- (a) Total Capacity Payment for the Capacity Market Unit (Capacity Period value);
  - (b) Capacity Payment for the Capacity Market Unit; and
  - (c) Capacity Quantities, with corresponding Capacity Payment Prices, for the Capacity Market Unit.
- The Settlement Statement version will be indicated.
18. The Market Operator shall ensure that Settlement Statements and Settlement Reports for Capacity Charges issued to a Participant for its Supplier Units provides to the Participant, when considered in conjunction with other supplementary reports made available to the Participant under the same timeframes and over the same Communication Channels, inter alia, for each Supplier Unit  $v$  in each Imbalance Settlement Period  $\gamma$  in the Capacity Period  $c$ , values of:
- (a) Capacity Charge for the Supplier Unit (Capacity Period value);
  - (b) Difference Payment Socialisation Charge for the Supplier Unit (Capacity Period value); and
  - (c) Metered Quantity for the Supplier Unit.
- The Settlement Statement version will be indicated.
19. The Market Operator shall issue Market Operator Charge invoices over the Billing Period to each Participant, and shall ensure that each such invoice shall contain, inter alia, for each Billing Period  $b$ , values of:
- (a) Fixed Market Operator Charge;
  - (b) Any applicable interest; and
  - (c) Applicable VAT applied in the invoice and applicable VAT owing/owed by/to Revenue Authorities.
- The invoice version will be indicated.
20. The Market Operator shall issue Variable Market Operator Charge invoices over the Billing Period to each Participant, and shall ensure that each such invoice shall contain, inter alia, for each Billing Period  $b$ , values of:
- (a) Variable Market Operator Charge;
  - (b) Amount from the previous run where the invoice is in respect of a Settlement Rerun;
  - (c) Any applicable interest; and
  - (d) Applicable VAT applied in the Invoice and applicable VAT owing/owed by/to Revenue Authorities.

- The invoice version will be indicated.
21. The Market Operator shall issue Debit Notes in respect of any Unsecured Bad Energy Debt over the Billing Period to each applicable Participant identifying that the Debit Note is in respect of a particular Unsecured Bad Energy Debt event, and shall ensure that each such Debit Note shall contain, inter alia, for each Billing Period b, values of:
- (a) Unsecured Bad Energy Debt Charge; and
  - (b) Any applicable interest.
- The Settlement Document version will be indicated.
22. The Market Operator shall issue Debit Notes in respect of any Unsecured Bad Capacity Debt over the Capacity Period to each applicable Participant identifying that the Debit Note is in respect of a particular Unsecured Bad Capacity Debt event, and shall ensure that each such Debit Note shall contain, inter alia, for each Capacity Period c, values of:
- (a) Unsecured Bad Capacity Debt Charge; and
  - (b) Any applicable interest.
- The Settlement Document version will be indicated.
23. The Market Operator shall ensure that Settlement Documents or Debit Notes issued by it to Participants in respect of their Units shall contain, inter alia:
- (a) Payment amount for the relevant Generator Units for relevant Billing Period or Capacity Period;
  - (b) Charge amount for the relevant Supplier Units for relevant Billing Period or Capacity Period;
  - (c) Sum of Settlement Reallocation Amounts in respect of that period;
  - (d) Any applicable interest;
  - (e) Total payment amount; and
  - (f) Applicable VAT applied in the Settlement Document or Debit Note and applicable VAT owing/owed by/to Revenue Authorities.
24. Agreed Procedure 15 "Settlement and Billing" sets out more detail as to the obligations of the Market Operator set out in this Appendix G in relation to the process of issuing Settlement Statements, Settlement Reports, Settlement Documents, invoices and Debit Notes, but nothing in that Agreed Procedure shall preclude the issue of any such item over any particular Communication Channel.

## APPENDIX H: DATA REQUIREMENTS FOR REGISTRATION

### INTRODUCTION

1. This Appendix H sets out the data requirements for the registration and deregistration of Participants and of Units. It should be noted that a Party becomes a Participant upon the registration of the first Unit to that Party.

### PARTICIPATION NOTICE

2. In completing a Participation Notice, a Party (or an Applicant as applicable) shall include the Registration Data required by paragraph B.7.2.1(o) as set out in Table 1 below. Certain Registration Data items shall be classified as Validation Registration Data as outlined in Table 1.

**Table 1 – Data, required from Party (or Applicant as applicable) registering the Unit**

Name	Term	Relevant Units	Validation Registration Data
Data Exchange Test Flag		All Units	Yes
Effective Date		All Units	Yes
Expiry Date		All Units	Yes
Jurisdiction		All Units	Yes
Qualified Channels	Communication	All Units	Yes
Regulatory License ID		All Units	
REMIT Reporting Flag		All Units	
Resource Name		All Units	Yes
Short Name		All Units	Yes
TUoS Agreement		All Units	
Unit Type		All Units	
NEMO Market Resource Name		All Units	
Capacity Market Resource Name		All Units	
First Participation Information Notice		All Units	
Combined Cycle Unit Flag		All Generator Units	
Controllable/Non-controllable Flag		All Generator Units	
Dispatchable Generator Unit Flag		All Generator Units	
Non-Dispatchable Capacity		All Generator Units	
Previously Registered Flag		All Generator Units	Yes



<b>Name</b>	<b>Term</b>	<b>Relevant Units</b>	<b>Validation Registration Data</b>
Previously Registered Participant Name		All Generator Units	Yes
Previously Registered Unit Name		All Generator Units	Yes
Short Notice Unit Flag		All Generator Units	
Synchronous/Asynchronous		All Generator Units	
Connection Agreement		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Assetless Units and Trading Units	Yes
Connection Reference ID	Agreement	All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Assetless Units and Trading Units	
Connection Point		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Assetless Units and Trading Units	Yes
Connection Type		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Assetless Units and Trading Units	Yes
DUoS Agreement		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Assetless Units and Trading Units	
Firm Access Quantity (Site) (MW)	qFAQst	All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Assetless Units and Trading Units	Yes
Fuel Type		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Assetless Units and Trading Units	Yes
Licence Expiry Date		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Assetless Units and Trading Units	Yes
Non-Firm Access Quantity		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Assetless Units and Trading Units	Yes

Name	Term	Relevant Units	Validation Registration Data
Physical Location ID		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Assetless Units and Trading Units	Yes
Station Address		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Assetless Units and Trading Units	Yes
Station ID		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Assetless Units and Trading Units	Yes
Station Name		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Assetless Units and Trading Units	Yes
Unit Location ID		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Assetless Units and Trading Units	Yes
Acting as Intermediary Flag		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Demand Side Units, Assetless Units and Trading Units	
Commission Test Certificate		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Demand Side Units, Assetless Units and Trading Units	Yes
Droop	%	All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Demand Side Units, Assetless Units and Trading Units	Yes
Dual Rated Unit Flag		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Demand Side Units, Assetless Units and Trading Units	Yes
End Point of Start Up Period		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Demand Side Units, Assetless Units and Trading Units	Yes
Fixed Unit Load (MW)	FUL <sub>u</sub>	All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Demand Side Units, Assetless Units and Trading Units	Yes

Name	Term	Relevant Units	Validation Registration Data
Licence Effective Date		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Demand Side Units, Assetless Units and Trading Units	Yes
Licence Reference Number		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Demand Side Units, Assetless Units and Trading Units	Yes
Registered Minimum Output		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Demand Side Units, Assetless Units and Trading Units	Yes
Maximum Generation		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Demand Side Units, Assetless Units and Trading Units. The Maximum Generation shall be submitted equal to the Registered Capacity of the Generator Unit.	Yes
Priority Dispatch Flag		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Demand Side Units, Assetless Units and Trading Units	Yes
Pumped Storage and Battery Storage Flag		All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Demand Side Units, Assetless Units and Trading Units	Yes
Registered Capacity (MW)	qRC <sub>u</sub>	All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Demand Side Units, Assetless Units and Trading Units	Yes
Unit Load Scalar	ULS <sub>u</sub>	All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Demand Side Units, Assetless Units and Trading Units	Yes
AoLR Active		Only Generator Units availing of AoLR service	

### AGREED PROCEDURE

3. Agreed Procedure 1 "Registration" sets out the detail of the registration process and must include all requirements set out in this Appendix H.
4. Agreed Procedure 1 "Registration" shall set out the detail of the process of data flow between the Market Operator and the Party (or Applicant as appropriate) to register new Units.

5. Agreed Procedure 1 "Registration" shall provide for the validation of the data flows.

### **CURRENCY**

6. All data comprising currency amounts submitted as part of registration shall be submitted by the relevant Party to the Market Operator in the Currency of the designated Currency Zone of the Unit.

### **MISSING DATA**

7. The Market Operator shall not apply any default rules in the event that any Registration Data is missing or incomplete. The Party (or Applicant as applicable) shall be obliged to provide such data before the registration of the Unit can become effective.

### **COMMUNICATIONS CHANNELS**

8. For Parties that have completed Communication Channel Qualification, the Market Operator will facilitate receipt of data for the purposes of registration of new Units over Type 2 Channel or Type 3 Channel. The Market Operator will facilitate a Type 1 Channel for other Parties or Applicants as applicable. The Market Operator will similarly facilitate receipt of any clarification or additional information required pursuant to paragraph B.7.6.3.

### **REGISTRATION WITHDRAWAL**

9. Where a Unit Registration is deemed withdrawn under paragraphs B.7.6.4, B.7.6.8 or B.7.6.14, the Market Operator shall send a Notice to the relevant Party or Applicant as appropriate. The Notice shall include sufficient information to identify the Unit concerned, and shall provide a reason for the Unit Registration withdrawal.

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## **APPENDIX I: OFFER DATA**

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### **INTRODUCTION**

1. This Appendix I sets out the components of Commercial Offer Data and Technical Offer Data in respect of each relevant category of Generator Unit and refers to the Code obligations relating to such data. In addition, this Appendix I sets out the requirements to be met by Agreed Procedure 4 "Transaction Submission and Validation".

### **COMMERCIAL OFFER DATA**

#### **Commercial Offer Data Elements**

2. Commercial Offer Data in respect of Generator Units shall comprise one or more of the following data components and shall be submitted in accordance with paragraphs 3 to 5 of this Appendix:
  - (a) Simple Bid Offer Data:
    - (i) Incremental Price Quantity Pairs; and
    - (ii) Decremental Price Quantity Pairs;
  - (b) Complex Bid Offer Data:
    - (i) Incremental Price Quantity Pairs;
    - (ii) Decremental Price Quantity Pairs;
    - (iii) No Load Costs;
    - (iv) Start Up Costs; and
    - (v) Shut Down Cost;
  - (c) Forecast Availability Profile;
  - (d) Forecast Minimum Output Profile;
  - (e) Forecast Minimum Stable Generation Profile; and
  - (f) Energy Limit.

#### **Commercial Offer Data Submission**

3. Each Participant may submit Commercial Offer Data to the Market Operator in respect of each of its Generator Units as follows:
  - (a) before Gate Closure 1 in respect of the Trading Day, in accordance with paragraphs 4 and 5 of this Appendix; and
  - (b) before Gate Closure 2 in respect of the Imbalance Settlement Period, in accordance with paragraphs 4 and 5 of this Appendix.

#### **Commercial Offer Data for Generator Units**

4. Participants shall not submit Commercial Offer Data in respect of each of the following Generator Units:
  - (a) Trading Unit;
  - (b) Assetless Unit;
  - (c) Interconnector Residual Capacity Unit;

- (d) Interconnector Error Unit; or
  - (e) Generator Unit which is not Dispatchable.
5. A Participant shall only submit Commercial Offer Data to the Market Operator in respect of its Generator Units, as provided for in Table 1.

**Table 1 – Commercial Offer Data Elements**

<b>Data Element</b>	<b>Energy Limited Unit</b>	<b>Demand Side Unit</b>	<b>Other Generator Units not included in paragraph 4 of this Appendix</b>
Simple Incremental Price Quantity Pairs (MW quantities and € / MWh or £ / MWh prices)	Yes	Yes	Yes
Simple Decremental Price Quantity Pairs (MW quantities and € / MWh or £ / MWh prices)	Yes	Yes	Yes
Complex Incremental Price Quantity Pairs (MW quantities and € / MWh or £/ MWh prices)	Yes	Yes	Yes
Complex Decremental Price Quantity Pairs (MW quantities and € / MWh or £ / MWh prices)	Yes	Yes	Yes
No Load Costs (€ / hr or £ / hr)	Yes		Yes
Start Up Costs (€ or £)	Yes		Yes
Shut Down Cost (€ or £)		Yes	
Energy Limit (MWh)	Yes		
Forecast Availability Profile (MW)	Yes	Yes	Yes
Forecast Minimum Output Profile (MW)	Yes	Yes	Yes
Forecast Minimum Stable Generation Profile (MW)	Yes	Yes	Yes

### **TECHNICAL OFFER DATA**

6. Each Participant shall submit Technical Offer Data to the Market Operator in respect of each of its Generator Units in accordance with paragraphs 7 to 12 of this Appendix.

### **Technical Offer Data Submission**

7. Each Participant shall submit Technical Offer Data to the Market Operator in respect of each Trading Day and each of its Generator Units in accordance with section D.5, and in accordance with paragraphs 10 to 12 of this Appendix inclusive.
8. Each Participant may submit a Data Transaction identifying a Validation Data Set Number for a given Trading Day to the Market Operator in respect of a Generator Unit before Gate Closure 1 in respect of that Trading Day, in accordance with paragraphs D.5.2.1 to D.5.5.2 inclusive and paragraphs 10 to 12 of this Appendix inclusive.
9. If a Participant submits a Data Transaction identifying a Validation Data Set Number for a given Trading Day to the Market Operator in respect of a Generator Unit after Gate Closure 1 in respect of that Trading Day, except as allowed in accordance with paragraph D.3.4.1 and Agreed Procedure 7 “Emergency Communications”, the Market Operator shall reject that Data Transaction.

### **Restrictions on Technical Offer Data Submission**

10. Each Participant shall submit Technical Offer Data to the Market Operator in respect of each of its Generator Units in accordance with paragraphs 7 to 9 of this Appendix inclusive and paragraph 12 of this Appendix, subject to the following requirements:
  - (a) Data shall be submitted to reflect the actual capabilities of the relevant Generator Unit net of Unit Load as set out in paragraph D.5.1.2;
  - (b) Data shall be submitted in respect of a Generator Unit such that it is consistent with data submitted for that Unit under the applicable Grid Code, scaled, where appropriate, by the appropriate Distribution Loss Adjustment Factor as set out in paragraph D.5.1.3;
  - (c) Technical Offer Data items shall be submitted as either Validation Technical Offer Data or Validation Registration Data as set out in paragraph 12 of this Appendix.
11. Participants shall not submit Technical Offer Data in respect of each of the following Generator Units:
  - (a) Trading Unit;
  - (b) Assetless Unit;
  - (c) Interconnector Residual Capacity Unit;
  - (d) Interconnector Error Unit; or
  - (e) Generator Unit which is not Dispatchable.

### **Technical Offer Data for Generator Units**

12. A Participant shall only submit Technical Offer Data to the Market Operator in respect of its Generator Units as provided for in Table 2.

**Table 2 – Technical Offer Data Elements**

	TYPE OF DATA		SUBMISSION REQUIREMENT BY UNIT			
	Validation Technical Offer Data	Validation Registration Data	Battery Storage Unit	Pumped Storage Unit	Demand Side Unit	Other Generator Units not included in paragraph 11 of this Appendix
Minimum On Time (hours)	Yes		Yes	Yes		Yes
Minimum Off Time (hours)	Yes		Yes	Yes		Yes
Maximum On Time (hours)	Yes		Yes	Yes		Yes
Synchronous Start Up Time Hot (hours)	Yes		Yes	Yes		Yes
Synchronous Start Up Time Warm (hours)	Yes		Yes	Yes		Yes
Synchronous Start Up Time Cold (hours)	Yes		Yes	Yes		Yes
Block Load Cold (MW)	Yes		Yes	Yes		Yes
Block Load Hot (MW)	Yes		Yes	Yes		Yes
Block Load Warm (MW)	Yes		Yes	Yes		Yes
Deload Break Point (MW)	Yes		Yes	Yes		Yes
Deloading Rate 1 (MW / minute)	Yes		Yes	Yes		Yes



	TYPE OF DATA		SUBMISSION REQUIREMENT BY UNIT			
	Validation Technical Offer Data	Validation Registration Data	Battery Storage Unit	Pumped Storage Unit	Demand Side Unit	Other Generator Units not included in paragraph 11 of this Appendix
Deloading Rate 2 (MW / minute)	Yes		Yes	Yes		Yes
Dwell Time Up 1 (minutes)	Yes		Yes	Yes		Yes
Dwell Time Up 2 (minutes)	Yes		Yes	Yes		Yes
Dwell Time Up 3 (minutes)	Yes		Yes	Yes		Yes
Dwell Time Down 1 (minutes)	Yes		Yes	Yes		Yes
Dwell Time Down 2 (minutes)	Yes		Yes	Yes		Yes
Dwell Time Down 3 (minutes)	Yes		Yes	Yes		Yes
Dwell Time Up Trigger Point 1 (MW)	Yes		Yes	Yes		Yes
Dwell Time Up Trigger Point 2 (MW)	Yes		Yes	Yes		Yes
Dwell Time Up Trigger Point 3 (MW)	Yes		Yes	Yes		Yes

	TYPE OF DATA		SUBMISSION REQUIREMENT BY UNIT			
	Validation Technical Offer Data	Validation Registration Data	Battery Storage Unit	Pumped Storage Unit	Demand Side Unit	Other Generator Units not included in paragraph 11 of this Appendix
Dwell Time Down Trigger Point 1 (MW)	Yes		Yes	Yes		Yes
Dwell Time Down Trigger Point 2 (MW)	Yes		Yes	Yes		Yes
Dwell Time Down Trigger Point 3 (MW)	Yes		Yes	Yes		Yes
End Point of Start Up Period (MW)	Yes		Yes	Yes		Yes
Load Up Break Point Cold 1 (MW)	Yes		Yes	Yes		Yes
Load Up Break Point Cold 2 (MW)	Yes		Yes	Yes		Yes
Load Up Break Point Hot 1 (MW)	Yes		Yes	Yes		Yes
Load Up Break Point Hot 2 (MW)	Yes		Yes	Yes		Yes
Load Up Break Point Warm 1 (MW)	Yes		Yes	Yes		Yes

	TYPE OF DATA		SUBMISSION REQUIREMENT BY UNIT			
	Validation Technical Offer Data	Validation Registration Data	Battery Storage Unit	Pumped Storage Unit	Demand Side Unit	Other Generator Units not included in paragraph 11 of this Appendix
Load Up Break Point Warm 2 (MW)	Yes		Yes	Yes		Yes
Loading Rate Cold 1 (MW / minute)	Yes		Yes	Yes		Yes
Loading Rate Cold 2 (MW / minute)	Yes		Yes	Yes		Yes
Loading Rate Cold 3 (MW / minute)	Yes		Yes	Yes		Yes
Loading Rate Hot 1 (MW / minute)	Yes		Yes	Yes		Yes
Loading Rate Hot 2 (MW / minute)	Yes		Yes	Yes		Yes
Loading Rate Hot 3 (MW / minute)	Yes		Yes	Yes		Yes
Loading Rate Warm 1 (MW / minute)	Yes		Yes	Yes		Yes

	TYPE OF DATA		SUBMISSION REQUIREMENT BY UNIT			
	Validation Technical Offer Data	Validation Registration Data	Battery Storage Unit	Pumped Storage Unit	Demand Side Unit	Other Generator Units not included in paragraph 11 of this Appendix
Loading Rate Warm 2 (MW / minute)	Yes		Yes	Yes		Yes
Loading Rate Warm 3 (MW / minute)	Yes		Yes	Yes		Yes
Ramp Down Break Point 1 (MW)	Yes		Yes	Yes		Yes
Ramp Down Break Point 2 (MW)	Yes		Yes	Yes		Yes
Ramp Down Break Point 3 (MW)	Yes		Yes	Yes		Yes
Ramp Down Break Point 4 (MW)	Yes		Yes	Yes		Yes
Ramp Down Rate 1 (MW / minute)	Yes		Yes	Yes		Yes
Ramp Down Rate 2 (MW / minute)	Yes		Yes	Yes		Yes
Ramp Down Rate 3 (MW / minute)	Yes		Yes	Yes		Yes
Ramp Down Rate 4 (MW / minute)	Yes		Yes	Yes		Yes

	TYPE OF DATA		SUBMISSION REQUIREMENT BY UNIT			
	Validation Technical Offer Data	Validation Registration Data	Battery Storage Unit	Pumped Storage Unit	Demand Side Unit	Other Generator Units not included in paragraph 11 of this Appendix
Ramp Down Rate 5 (MW / minute)	Yes		Yes	Yes		Yes
Ramp Up Break Point 1 (MW)	Yes		Yes	Yes		Yes
Ramp Up Break Point 2 (MW)	Yes		Yes	Yes		Yes
Ramp Up Break Point 3 (MW)	Yes		Yes	Yes		Yes
Ramp Up Break Point 4 (MW)	Yes		Yes	Yes		Yes
Ramp Up Rate 1 (MW / minute)	Yes		Yes	Yes		Yes
Ramp Up Rate 2 (MW / minute)	Yes		Yes	Yes		Yes
Ramp Up Rate 3 (MW / minute)	Yes		Yes	Yes		Yes
Ramp Up Rate 4 (MW / minute)	Yes		Yes	Yes		Yes
Ramp Up Rate 5 (MW / minute)	Yes		Yes	Yes		Yes
Soak Time Cold 1 (minutes)	Yes		Yes	Yes		Yes

	TYPE OF DATA		SUBMISSION REQUIREMENT BY UNIT			
	Validation Technical Offer Data	Validation Registration Data	Battery Storage Unit	Pumped Storage Unit	Demand Side Unit	Other Generator Units not included in paragraph 11 of this Appendix
Soak Time Cold 2 (minutes)	Yes		Yes	Yes		Yes
Soak Time Trigger Point Cold 1 (MW)	Yes		Yes	Yes		Yes
Soak Time Trigger Point Cold 2 (MW)	Yes		Yes	Yes		Yes
Soak Time Hot 1 (minutes)	Yes		Yes	Yes		Yes
Soak Time Hot 2 (minutes)	Yes		Yes	Yes		Yes
Soak Time Trigger Point Hot 1 (MW)	Yes		Yes	Yes		Yes
Soak Time Trigger Point Hot 2 (MW)	Yes		Yes	Yes		Yes
Soak Time Warm 1 (minutes)	Yes		Yes	Yes		Yes
Soak Time Warm 2 (minutes)	Yes		Yes	Yes		Yes

	TYPE OF DATA		SUBMISSION REQUIREMENT BY UNIT			
	Validation Technical Offer Data	Validation Registration Data	Battery Storage Unit	Pumped Storage Unit	Demand Side Unit	Other Generator Units not included in paragraph 11 of this Appendix
Soak Time Trigger Point Warm 1 (MW)	Yes		Yes	Yes		Yes
Soak Time Trigger Point Warm 2 (MW)	Yes		Yes	Yes		Yes
Start of Restricted Range 1 (MW)	Yes		Yes	Yes		Yes
End of Restricted Range 1 (MW)	Yes		Yes	Yes		Yes
Start of Restricted Range 2 (MW)	Yes		Yes	Yes		Yes
End of Restricted Range 2 (MW)	Yes		Yes	Yes		Yes
Hot Cooling Boundary (hours)	Yes		Yes	Yes		Yes
Warm Cooling Boundary (hours)	Yes		Yes	Yes		Yes
Block Load Flag (True or False)	Yes		Yes	Yes		Yes

	TYPE OF DATA		SUBMISSION REQUIREMENT BY UNIT			
	Validation Technical Offer Data	Validation Registration Data	Battery Storage Unit	Pumped Storage Unit	Demand Side Unit	Other Generator Units not included in paragraph 11 of this Appendix
Short-Term Maximisation Capability (MW)	Yes		Yes	Yes		Yes
Short-Term Maximisation Time (minutes)	Yes		Yes	Yes		Yes
Registered Minimum Stable Generation (MW)	Yes		Yes	Yes		Yes
Registered Minimum Output (MW)		Yes	Yes	Yes		Yes
Pumped Storage Cycle Efficiency (percentage)	Yes			Yes		
Battery Storage Efficiency (percentage)	Yes		Yes			
Pumping Capacity (MW)	Yes			Yes		
Off to Generating Time (minutes)	Yes			Yes		



	TYPE OF DATA		SUBMISSION REQUIREMENT BY UNIT			
	Validation Technical Offer Data	Validation Registration Data	Battery Storage Unit	Pumped Storage Unit	Demand Side Unit	Other Generator Units not included in paragraph 11 of this Appendix
Off to Spin Pump Time (minutes)	Yes			Yes		
Spin Pump to Pumping Energy Time (minutes)	Yes			Yes		
Battery Storage Capacity (MW)	Yes		Yes			
Minimum Battery Storage Quantity (MWh)		Yes	Yes			
Maximum Battery Storage Quantity (MWh)		Yes	Yes			
Maximum Storage Quantity (MWh)		Yes		Yes		
Minimum Storage Quantity (MWh)		Yes		Yes		
Maximum Ramp Down Rate (MW / minute)	Yes				Yes	

	TYPE OF DATA		SUBMISSION REQUIREMENT BY UNIT			
	Validation Technical Offer Data	Validation Registration Data	Battery Storage Unit	Pumped Storage Unit	Demand Side Unit	Other Generator Units not included in paragraph 11 of this Appendix
Maximum Ramp Up Rate (MW / minute)	Yes				Yes	
Minimum Down Time (hours)	Yes				Yes	
Maximum Down Time (hours)	Yes				Yes	

## PHYSICAL NOTIFICATION DATA

### Physical Notification Data Elements

13. Physical Notification Data in respect of Generator Units shall comprise one or more of the following data components and shall be submitted in accordance with paragraphs 14 to 17 of this Appendix:
- (a) From MW Level;
  - (b) From MW Time;
  - (c) To MW Level;
  - (d) To MW Time; and
  - (e) Under Test Flag.

### Physical Notification Data Submission

14. Each Participant may submit Physical Notification Data to the Market Operator in respect of each of its Generator Units and Supplier Units as follows:
- (a) before Gate Closure 1 in respect of the Trading Day, in accordance with paragraphs 16 and 17 of this Appendix;
  - (b) before Gate Closure 2 in respect of the Imbalance Settlement Period, in accordance with paragraphs 16 and 17 of this Appendix.
15. Participants shall not submit Physical Notification Data in respect of each of the following Generator Units:
- (a) Trading Unit;
  - (b) Assetless Unit;
  - (c) Interconnector Residual Capacity Unit; or

- (d) Interconnector Error Unit.

### **Physical Notification Data for Generator Units and Supplier Units**

16. A Participant submitting Physical Notification Data to the Market Operator in respect of each of its Generator Units and Supplier Units in accordance with paragraphs 13 to 15 of this Appendix inclusive and paragraph 17 of this Appendix, shall do so subject to the following requirements:
- (a) Data shall be submitted to reflect the Output intended by the Participant for each of its Generator Units, excluding Accepted Offers and Accepted Bids, as set out in paragraph D.7.1.3;
  - (b) Data submitted in respect of a Generator Unit shall be submitted such that it is consistent with the Technical Offer Data for that Generator Unit as set out in paragraph D.7.1.4;
  - (c) A Participant submitting Physical Notification Data for a Generator Unit must do so in the following way, except as required under subparagraph (d):
    - (i) Each From MW Level and From MW Time must have the same values as the immediately previous To MW Level and To MW Time, with the exception of the first From MW Level and From MW Time for a Trading Day; and
    - (ii) Each From MW Level and To MW Level submitted in respect of a Dispatchable Generator Unit cannot be less than the Registered Minimum Output for the Unit, and cannot be greater than the Maximum Generation for the Unit, submitted in accordance with Appendix H “Data Requirements for Registration”.
  - (d) A Participant submitting Physical Notification Data shall submit Physical Notification Data for a Supplier Unit, for a Generator Unit which has a Registered Capacity of less than the De Minimis Threshold, or a Generator Unit which is not Dispatchable, and the Aggregator of Last Resort submitting Physical Notification Data shall submit Physical Notification Data on behalf of Generator Units, in the following way while being deemed to be compliant with the requirements in paragraphs D.7.1.3 and D.7.1.4:
    - (i) Each From MW Time and To MW Time must be at the start of a minute which corresponds to the start of a fifteen minute period, starting on each hour, quarter past the hour, half hour and quarter to the hour;
    - (ii) Each From MW Time must have the same value as the immediately previous To MW Time, with the exception of the first From MW Time for a Trading Day;
    - (iii) Each From MW Level must have the same value as the To MW Level;
    - (iv) Each From MW Level and To MW Level submitted in respect of a Dispatchable Generator Unit cannot be less than the Registered Minimum Output for the Unit, and cannot be greater than the Maximum Generation for the Unit, submitted in accordance with Appendix H “Data Requirements for Registration”; and

- (v) All Physical Notification Data for a Trading Day must be submitted in this way if Physical Notification Data for any time within that Trading Day is submitted in this way.

17. A Participant shall only submit Physical Notification Data to the Market Operator in respect of its Generator Units and Supplier Units as provided for in Table 3.

**Table 3 – Physical Notification Data Elements**

<b>Data Element</b>	<b>Supplier Unit</b>	<b>Unit Under Test</b>	<b>Other Generator Unit not included in paragraph 15 of this Appendix</b>
From MW Level	Yes	Yes	Yes
From MW Time	Yes	Yes	Yes
To MW Level	Yes	Yes	Yes
To MW Time	Yes	Yes	Yes
Under Test Flag		Yes	

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## **APPENDIX J: DATA TRANSACTIONS FROM MARKET OPERATOR TO SYSTEM OPERATOR**

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1. This Appendix J sets out the data that the Market Operator is required to send to the System Operators, and the rules relating to the sending of such data, as well as certain validation obligations of the System Operators.
2. Agreed Procedure 4 "Transaction Submission and Validation" sets out further detail in relation to the data transfer obligations set out in this Appendix J.

### **REGISTRATION DATA**

3. The Market Operator shall submit to the System Operators within two Working Days of receipt from a Participant, but no later than 13:00 one Day before the Trading Day on which it is to become effective, any update to the Registration Data of any of that Participant's Units. Similarly, the Market Operator shall submit to the System Operators within two Working Days of receipt from the Interconnector Owner or the Interconnector Administrator as appropriate, but no later than 13:00 one Day before the Trading Day on which it is to become effective, any update to the Interconnector Registration Data of the relevant Interconnector.
4. The full set of registration details are set out in Appendix H "Data Requirements for Registration".
5. The System Operator for the Currency Zone in which the Participant is registered shall validate the registration details and confirm to the Market Operator whether the registration information is accurate with respect to the data that such System Operator holds under the applicable Grid Code.
6. The Market Operator shall submit all Generator Unit Under Test Notices to the System Operators in accordance with Grid Code requirements.
7. The System Operator for the Currency Zone in which the Participant is registered shall validate the Generator Unit Under Test Notice and confirm to the Market Operator whether the Generator Unit is Under Test in accordance with Appendix F "Other Communications".

### **COMMERCIAL OFFER DATA, TECHNICAL OFFER DATA AND PHYSICAL NOTIFICATIONS**

8. The Market Operator shall share with the System Operators the full set of Accepted Technical Offer Data, Accepted Commercial Offer Data and Physical Notifications for all Generator Units for all Imbalance Settlement Periods for the relevant Gate Closure as soon as technical validations set out in section C.3 are completed.
9. The Data Transactions associated with Technical Offer Data, Commercial Offer Data and Physical Notifications, and the rules for the submission of such data by Participants to the Market Operator, are set out in sections D.4, D.5 and D.7 and Appendix I "Offer Data".
10. The System Operators shall not be required to validate any Commercial Offer Data or Technical Offer Data, other than as set out in paragraph D.5.3.
11. The Market Operator shall submit all currency values to the System Operators in the Participant's designated Currency.

## **SUSPENSION ORDERS**

12. The Market Operator shall submit to the System Operators a copy of any Suspension Order, any notice of the lifting of a Suspension Order, or any Termination Order at the same time as such Suspension Order, notice of the lifting of a Suspension Order or Termination Order is submitted to the relevant Participant as described under paragraphs B.18.3.6, B.18.4.9 and B.18.7.2.
13. The System Operators shall not be required to validate any Termination Order or Suspension Order.

## **COMMENCEMENT NOTICE**

14. In accordance with paragraph B.7.6.12, the Market Operator shall copy, to each System Operator and relevant External Data Provider, any Commencement Notice issued, as soon as reasonably practicable and at least 4 Working Days prior to the Effective Date for the relevant Unit.
15. The System Operators shall not be required to validate any Commencement Notice.

## **COMMUNICATION CHANNELS**

16. During normal operation of the Market Operator's Isolated Market System, the Market Operator shall only utilise a Type 3 Channel for the communication of the data in this Appendix to the System Operators, with the exception of Suspension Orders, notice of the lifting of Suspension Orders, and Termination Orders, for which the Market Operator shall utilise a Type 1 Channel. If the Type 3 Channel is unavailable for communication of any data to a System Operator as required by this Appendix, the Market Operator shall utilise a Type 1 Channel for the communication of such data.

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## APPENDIX K: OTHER MARKET DATA TRANSACTIONS

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### INTRODUCTION

1. This Appendix K outlines the detailed Data Record requirements for Data Transactions sent by the System Operator to Market Operator and by the Interconnector Administrator to the Market Operator, which are not defined in other Appendices, and the associated high-level Data Transaction Submission Protocols.

### DATA TRANSACTIONS

2. The Data Transactions in this Appendix K include:

#### **Data Transactions from System Operator to Market Operator**

- (a) System Parameters (FCLAF)
- (b) Loss Adjustment Factors (FTLAF and FDLAF)
- (c) Generator Unit Technical Characteristics
- (d) Short Term Reserves (qSTR and qORR)
- (e) System Operator Flags (FSO, FNM and FSS)
- (f) Demand Control (QDC)
- (g) System Characteristics (FRQAVG and FRQNOR)
- (h) Dispatch Instructions
- (i) SO Interconnector Trades
- (j) SO Interconnector Physical Notifications
- (k) Annual Load Forecast
- (l) Monthly Load Forecast
- (m) Four Day Load Forecast
- (n) Wind Power Unit Forecast
- (o) Uninstructed Imbalance Parameters (FPUG, FDOG, FUREG, TOLMW, TOLENG)
- (p) Testing Tariffs
- (q) Strike Price Parameters (PCARBON, PFUELNG and PFUELO)

#### **Data Transactions from Interconnector Administrator to Market Operator**

- (r) Interconnector Capacity Market Availability
3. Each Data Record in this Appendix K which contains Currency amounts will be denominated in the Participant's designated Currency.

### CONTINGENCY DATA

4. Contingency Data rules for these Market Data Transactions are summarised in Table 1.
5. The Market Operator shall use Contingency Data in the event that the following Data Transactions are not received within the timescales required under the Code:

### Data Transactions from System Operator to Market Operator

- (a) Four Day Load Forecast
  - (b) Wind Power Unit Forecast
6. Contingency Data only applies to Data Transactions that are listed in paragraph 5 of this Appendix K.
7. Table 1 sets out the Contingency Data values for the Data Transaction listed in respect of each Ex-ante Gate Closure.

**Table 1 – Contingency Data Rules for Market Data Transactions**

Transaction	Associated Ex-ante Gate Closure	Contingency Data
Wind Power Unit Forecast	DAM	Most recent Wind Forecast Accepted by DAM Gate Closure
Wind Power Unit Forecast	IDM	Most recent Wind Forecast Accepted by each IDM Gate Closure

8. Agreed Procedure 4 “Transaction Submission and Validation” will describe the detail of the Data Transactions listed within this Appendix K, noting the requirements for the appropriate scaling of submitted data outlined in paragraphs D.6.2.1, D.6.2.5 and F.4.1.2.

### DATA TRANSACTION AND DATA RECORDS

#### System Parameters Data Transaction

9. The Data Records for the System Parameters Data Transaction are described in Table 2 and the Submission Protocol in Table 3.

**Table 2 – System Parameters Data Transaction Data Records**

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Participant Name
Unit ID
Trading Day
Imbalance Settlement Period
Combined Loss Adjustment Factor, $FCLAF_{uy}$

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**Table 3 – System Parameters Data Transaction Submission Protocol**

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Sender	System Operators
Recipient	Market Operator
Number of Data Transactions	One, containing data for each Generator Unit for each Imbalance Settlement Period in the Tariff Year.



Frequency of Data Transactions	Annually
First Submission time	As available
Last Submission time	At least two months prior to the start of each Tariff Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever is later, or prior to the registration of a new Generator Unit.  As required to resolve a Data or Settlement Query where the Data records in the Data Transaction are discovered to be in error.
Permitted frequency of resubmission prior to last submission time	Unlimited
Required resubmission subsequent to last submission time	Resubmission will occur within 10 Working Days of notification to the System Operator of an upheld Settlement Query or Dispute if the error has High Materiality or if the last Timetabled Settlement Rerun had occurred.  If the error has Low Materiality resubmission will occur by the deadline for data provision for Timetabled Settlement Rerun as specified in the Settlement Calendar.
Valid Communication Channels	Type 3 (computer to computer)
Process for data validation	None

10. The Data Records for the Loss Adjustment Factors Data Transaction are described in Table 4 and the Submission Protocol in Table 5.

**Table 4 – Loss Adjustment Factors Data Transaction Data Records**

Participant Name
Unit ID
Trading Day
Imbalance Settlement Period
Transmission Loss Adjustment Factor, $FTLAF_{uy}$
Distribution Loss Adjustment Factor, $FDLAF_{uy}$

**Table 5 – Loss Adjustment Factors Data Transaction Submission Protocol**

Sender	System Operators
Recipient	Market Operator
Number of Data Transactions	One containing data for each Generator Unit that is not a Demand Side Unit
First Submission time	As available
Last Submission time	At least two months prior to the start of each Tariff Year, or within five Working Days of its receipt from the Regulatory Authorities, whichever is later, or prior to the registration of a new Generator Unit.  As required to resolve a Settlement Query or a Dispute where the Data Records in the Data Transaction are discovered to be in error.
Permitted frequency of resubmission	Unlimited
Valid Communication Channels	Type 1 (manual), to be provided in electronic format
Process for data validation	None

**Generator Unit Technical Characteristics Data Transaction**

11. The Data Records for the Generator Unit Technical Characteristics Data Transaction are described in Table 6 and the Submission Protocol in Table 7.

**Table 6 – Generator Unit Technical Characteristics Data Transaction Data Records**

Trading Day
Participant Name
Unit ID
Effective Time
Issue Time
Outturn Availability (Primary Fuel Type Outturn Availability for Dual Rated Generator Units)
Secondary Fuel Type Outturn Availability

Rating Flag  
 Outturn Minimum Stable Generation  
 Outturn Minimum Output

---

**Table 7 – Generator Unit Technical Characteristics Data Transaction Submission Protocol**

Sender	System Operators
Recipient	Market Operator
Number of Data Transactions	One containing spot data for each change in Outturn Availability (Primary Fuel Type Outturn Availability for Dual Rated Generator Units), Secondary Fuel Type Outturn Availability, Rating Flag, Outturn Minimum Stable Generation or Outturn Minimum Output per Generator Unit (excluding Interconnector Error Units and Interconnector Residual Capacity Units) during the day
Frequency of Data Transactions	Daily
First Submission time	After end of Imbalance Pricing Period
Last Submission time	Prior to Imbalance Price Calculation. As required to resolve a Settlement Query or a Dispute where the Data Records in the Transaction are discovered to be in error.
Permitted frequency of resubmission prior to last submission time	Unlimited
Valid Communication Channels	Type 3 (computer to computer)
Process for data validation	None

**Short Term Reserve Data Transaction**

12. The Data Records for the Short Term Reserve Data Transaction are described in Table 8 and the Submission Protocol in Table 13.

**Table 8 – Short Term Reserve Data Transaction Data Records**

Trading Day

Imbalance Pricing Period  
Short Term Reserve Quantity ( $qSTR_{\varphi}$ )  
Operating Reserve Requirement Quantity ( $qORR_{\varphi}$ )

---

**Table 9 – Short Term Reserve Data Transaction Submission Protocol**

Sender	System Operators
Recipient	Market Operator
Number of Data Transactions	One, containing a value for Short Term Reserve Quantity ( $qSTR_{\varphi}$ ) and Operating Reserve Requirement Quantity ( $qORR_{\varphi}$ ) for the Imbalance Pricing Period
Frequency of Data Transactions	One for every Imbalance Pricing Period
First Submission time	After end of Imbalance Pricing Period
Last Submission time	Prior to Imbalance Price Calculation. As required to resolve a Settlement Query or a Dispute where the Data Records in the Transaction are discovered to be in error.
Permitted frequency of resubmission prior to last submission time	Unlimited
Valid Communication Channels	Type 3 (computer to computer)
Process for data validation	None

**System Operator Flags Data Transaction**

13. The Data Records for the System Operator Flags Data Transaction are described in Table 10 and the Submission Protocol in Table 11.

**Table 10 –System Operator Flags Data Transaction Data Records**

Trading Day
Imbalance Pricing Period
Participant Name
Unit ID

---

System Operator Flag ( $FSO_{u\phi}$ )

Non-Marginal Flag ( $FNM_{u\phi}$ )

System Service Flag ( $FSS_{u\phi}$ )

---

**Table 11 – System Operator Flags Data Transaction Submission Protocol**

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Sender	System Operators
Recipient	Market Operator
Number of Data Transactions	One, containing a System Operator Flag ( $FSO_{u\phi}$ ), a Non-Marginal Flag ( $FNM_{u\phi}$ ) and a System Service Flag ( $FSS_{u\phi}$ ) for each Generator Unit for the Imbalance Pricing Period.
Frequency of Data Transactions	Imbalance Pricing Period
First Submission time	After end of Imbalance Pricing Period
Last Submission time	Prior to Imbalance Price Calculation. As required to resolve a Settlement Query or a Dispute where the Data Records in the Transaction are discovered to be in error.
Permitted frequency of resubmission prior to last submission time	Unlimited
Valid Communication Channels	Type 3 (computer to computer)
Process for data validation	None

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**Demand Control Data Transaction**

14. The Data Records for the Demand Control Data Transaction are described in Table 12 and the Submission Protocol in Table 13.

**Table 12 – Demand Control Data Transaction Data Records**

---

Jurisdiction

Trading Day

Imbalance Pricing Period

Quantity of any reduction in demand ( $QDC_{\phi}$ ) as a consequence of Demand Control, i.e. load shedding

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**Table 13 – Demand Control Data Transaction Submission Protocol**

Sender	System Operator
Recipient	Market Operator
Number of Data Transactions	One, only submitted when non-zero, containing data for each Imbalance Pricing Period in the Trading Day
First Submission time	After end of Imbalance Pricing Period
Last Submission time	Prior to Imbalance Price Calculation. . As required to resolve a Settlement Query or a Dispute where the Data Records in the Transaction are discovered to be in error.
Permitted frequency of resubmission prior to last submission time	Unlimited
Valid Communication Channels	Type 1 (manual)
Process for data validation	None

**System Characteristics Data Transaction**

15. The Data Records for the System Characteristics Data Transaction are described in Table 14 and the Submission Protocol in Table 15.

**Table 14 – System Characteristics Data Transaction Data Records**

System Operator
Trading Day
Imbalance Settlement Period
Average System Frequency, $FRQAVG_y$
Nominal System Frequency, $FRQNOR_y$

**Table 15 – System Characteristics Data Transaction Submission Protocol**

Sender	Relevant System Operator(s)
Recipient	Market Operator
Number of Data Transactions	One containing data for each Imbalance Settlement Period in the

	relevant Trading Day.
Frequency of Data Transactions	Daily
First Submission time	After end of Trading Day
Last Submission time	Prior to Imbalance Settlement Calculation
Permitted frequency of resubmission prior to last submission time	Unlimited
Required resubmission subsequent to last submission time	None
Valid Communication Channels	Type 3 (computer to computer)
Process for data validation	None

#### **Dispatch Instruction Data Transaction**

16. The Data Records for the Dispatch Instruction Data Transaction are described in Table 16 and the Submission Protocol in Table 17.

**Table 16 – Dispatch Instruction Data Transaction Data Records**

Participant Name
Participant ID
Unit ID
Instruction Timestamp
Instruction Issue Time
Instruction Effective Time
Instruction Effective Until Time
Instruction Code
Instruction Combination Code
Dispatch Ramp Up Rate
Dispatch Ramp Down Rate
Dispatch Instruction MW

**Table 17 – Dispatch Instruction Data Transaction Submission Protocol**

Sender	System Operator(s)
Recipient	Market Operator
Number of Data Transactions	One, per Dispatch Instruction per Generator Unit and Interconnector during the relevant Imbalance Pricing Period
Frequency of Data Transactions	Every Imbalance Pricing Period
First Submission time	After end of Imbalance Pricing Period
Last Submission time	Prior to Imbalance Pricing Calculation. As required to resolve a Dispute or Settlement Query where the Data Records in the Transaction are discovered to be in error
Permitted frequency of resubmission prior to last submission time	Unlimited
Required resubmission subsequent to last submission time	For Settlement Purposes anytime prior to Imbalance Settlement Calculation and within 10 Working Days of notification to the System Operator of an upheld Dispute or Settlement Query if the error has High Materiality, or if the last Timetabled Settlement Rerun has occurred  If the error has Low Materiality resubmission will occur by the deadline for data provision for Timetabled Settlement Rerun as specified in the Settlement Calendar
Valid Communication Channels	Type 3 (computer to computer)
Process for data validation	None

### SO Interconnector Trade Data Transaction

17. The Data Records for the SO Interconnector Trade Data Transaction are described in Table 18 and the Submission Protocol in Table 19.

**Table 18 – SO Interconnector Trade Data Transaction Data Records**

Interconnector
Trading Day



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Imbalance Pricing Period/Imbalance Settlement Period

Interconnector Bid Offer Price ( $PBO_{uoih}$ )

Interconnector Accepted Offer Quantity, ( $QAO_{uoih}$ )

Interconnector Accepted Bid Quantity, ( $QAB_{uoih}$ )

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**Table 19 – SO Interconnector Trade Data Transaction Submission Protocol**

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Sender	Relevant System Operator(s)
Recipient	Market Operator
Number of Data Transactions	One, containing data for the relevant Interconnector, for each Imbalance Pricing Period/Imbalance Settlement Period as appropriate for the Trading Day.
Frequency of Data Transactions	Imbalance Pricing Period/Imbalance Settlement Period
First Submission time	After end of Imbalance Pricing Period
Last Submission time	Prior to Imbalance Price Calculation. As required to resolve a Settlement Query or a Dispute where the Data Records in the Transaction are discovered to be in error
Permitted frequency of resubmission prior to last submission time	Unlimited
Required resubmission subsequent to last submission time	Prior to Imbalance Settlement Calculation and within 10 Working Days of notification to the System Operator of an upheld Settlement Query or Dispute if the error has High Materiality, or if the last Timetabled Settlement Rerun has occurred. If the error has Low Materiality resubmission will occur by the deadline for data provision for Timetabled Settlement Rerun as specified in the Settlement Calendar.
Valid Communication Channels	Type 3 (computer to computer)
Process for data validation	None

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**SO Interconnector Physical Notifications Transaction for IRCU**

18. The Data Records for the IRCU Interconnector Physical Notifications Data Transaction are described in Table 20 and the Submission Protocol in Table 21.

**Table 20 – SO Interconnector Physical Notifications Data Transaction Data Records**

Interconnector
Interconnector Residual Capacity Unit
Trading Day
Imbalance Settlement Period
Final Physical Notification Quantity ( $qFPN_{IV}(t)$ )

**Table 21 – SO Interconnector Physical Notifications Data Transaction Submission Protocol**

Sender	Relevant System Operator(s)
Recipient	Market Operator
Number of Data Transactions	One, containing data for the relevant Interconnector, for each Imbalance Settlement Period for the Trading Day.
Frequency of Data Transactions	Imbalance Settlement Period
First Submission time	At the end of the Trading Day
Last Submission time	Prior to Imbalance Settlement Calculation.  As required to resolve a Settlement Query or a Dispute where the Data Records in the Transaction are discovered to be in error
Permitted frequency of resubmission prior to last submission time	Unlimited
Required resubmission subsequent to last submission time	Within 10 Working Days of notification to the System Operator of an upheld Settlement Query or Dispute if the error has High Materiality, or if the last Timetabled Settlement Rerun has occurred.  If the error has Low Materiality resubmission will occur by the

	deadline for data provision for Timetabled Settlement Rerun as specified in the Settlement Calendar.
Valid Communication Channels	Type 3 (computer to computer)
Process for data validation	None

### Annual Load Forecast Data Transaction

19. The Data Records for the Annual Load Forecast Data Transaction are described in Table 22 and the Submission Protocol in Table 23.

**Table 22 – Annual Load Forecast Data Transaction Data Records**

Period Type (A for Annual, M for Monthly or D for Daily)
Trading Day
Imbalance Settlement Period
Jurisdiction
Annual Load Forecast value, in MW
Assumptions

**Table 23 – Annual Load Forecast Data Transaction Submission Protocol**

Sender	Relevant System Operator(s)
Recipient	Market Operator
Number of Data Transactions	One per Jurisdiction, containing data for each Imbalance Settlement Period in the calendar Year
Frequency of Data Transactions	Annually, plus as updated
First Submission time	As available
Last Submission time	Four Months before the start of the Year
Permitted frequency of resubmission prior to last submission time	Unlimited
Required resubmission subsequent to last submission time	None
Valid Communication Channels	Type 3 (computer to computer)

Process for data validation	None
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### Monthly Load Forecast Data Transaction

20. The Data Records for the Monthly Load Forecast Data Transaction are described in Table 24 and the Submission Protocol in Table 25.

**Table 24 – Monthly Load Forecast Data Transaction Data Records**

Period Type (A for Annual, M for Monthly or D for Daily)
Trading Day
Imbalance Settlement Period
Jurisdiction
Monthly Load Forecast value, in MW
Assumptions

**Table 25 – Monthly Load Forecast Data Transaction Submission Protocol**

Sender	System Operator(s)
Recipient	Market Operator
Number of Data Transactions	One per Jurisdiction, containing data for each Imbalance Settlement Period in the relevant calendar Month
Frequency of Data Transactions	Monthly, plus as updated
First Submission time	Four Working Days before the start of the relevant Month
Last Submission time	One Working Day before the start of the relevant Month
Permitted frequency of resubmission prior to last submission time	Unlimited
Required resubmission subsequent to last submission time	None
Valid Communication Channels	Type 3 (computer to computer)
Process for data validation	None

**Four Day Load Forecast Data Transaction**

21. The Data Records for the Four Day Load Forecast Data Transaction are described in Table 26 and the Submission Protocol in Table 27.

**Table 26 – Four Day Load Forecast Data Transaction Data Records**

---

Period Type (A for Annual, M for Monthly or D for Daily)
Trading Day
Imbalance Settlement Period
Jurisdiction
Daily Load Forecast value, in MW
Assumptions

---

**Table 27 – Four Day Load Forecast Data Transaction Submission Protocol**

---

Sender	System Operators
Recipient	Market Operator
Number of Data Transactions	One per Jurisdiction, containing data for each Imbalance Settlement Period in the following 4 complete calendar days
Frequency of Data Transactions	Daily
First Submission time	As available prior to the DAM Gate Closure
Last Submission time	At least one submission prior to the DAM Gate Closure, plus as updated
Permitted frequency of resubmission prior to last submission time	Unlimited
Required resubmission subsequent to last submission time	None
Valid Communication Channels	Type 3 (computer to computer)
Process for data validation	None

---

**Wind Power Unit Forecast Data Transaction**

22. The Data Records for the Wind Power Unit Forecast Data Transaction are described in Table 28 and the Submission Protocol in Table 29.

**Table 28 – Wind Power Unit Forecast Data Transaction Data Records**

---

Period Type (A for Annual, M for Monthly or D for Daily)
Unit ID
Trading Day
Imbalance Settlement Period
Jurisdiction
Output Forecast for each Wind Power Unit, in MW
Assumptions

---

**Table 29 – Wind Power Unit Forecast Data Transaction Submission Protocol**

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Sender	System Operator(s)
Recipient	Market Operator
Number of Data Transactions	At least once for each Jurisdiction in each of the following timescales in respect of the relevant Trading Day:  By the DAM Gate Closure and as updated;  Data Transactions should contain data for each Wind Power Unit in a given Jurisdiction for each Imbalance Settlement Period in the following two complete Trading Days
Frequency of Data Transactions	At least once prior to the DAM Gate Closure, plus as updated
First Submission time	As updated
Last Submission time	Unlimited, at least one Data Transaction shall be submitted by the DAM Gate Closure, plus as updated
Permitted frequency of resubmission prior to last submission time	Unlimited
Required resubmission subsequent to last submission time	None
Valid Communication Channels	Type 3 (computer to computer)
Process for data validation	None

---

### Uninstructed Imbalance Parameter Data Transaction

23. The Data Records for the Uninstructed Imbalance Parameter Data Transaction are described in Table 30 and the Submission Protocol in Table 31.

**Table 30 – Uninstructed Imbalance Parameter Data Transaction Data Records**

Engineering Tolerance (TOLENG)
MW Tolerance (TOLMW <sub>t</sub> ) for each Trading Day t
System per Unit Regulation parameter (UREG)
Discount for Over Generation Factor (FDOG <sub>uy</sub> ) for each Generator Unit u in each Imbalance Settlement Period y
Premium for Under Generation Factor (FPUG <sub>uy</sub> ) for each Generator Unit u in each Imbalance Settlement Period y

**Table 31 – Uninstructed Imbalance Parameter Data Transaction Submission Protocol**

Sender	Relevant System Operator(s)
Recipient	Market Operator
Number of Data Transactions	One per Year, and within Year with the approval of the Regulatory Authorities
Frequency of Data Transactions	Annually
First Submission time	As available
Last Submission time	On receipt of the Regulatory Authorities' determination on the values of the Uninstructed Imbalance Parameters and no later than two months before the start of the Year or within 5 Working Days of receipt whichever is the later
Permitted frequency of resubmission prior to last submission time	Unlimited
Required resubmission subsequent to last submission time	None
Valid Communication Channels	Type 1 (manual)
Process for data validation	None

**Testing Tariffs Data Transaction**

24. The Data Records for the Testing Tariffs Data Transaction are described in Table 32 and the Submission Protocol in Table 33.

**Table 32 – Testing Tariffs Data Transaction Data Records**

---

Jurisdiction
Unit ID
Trading Day
Imbalance Settlement Period
Testing Tariff Price (PTESTTARIFF <sub>uy</sub> )

---

**Table 33 – Testing Tariffs Data Transaction Submission Protocol**

---

Sender	System Operator(s)
Recipient	Market Operator
Number of Data Transactions	One per Year, and within Year with the approval of the Regulatory Authorities, containing data for each Generator Unit in the Jurisdiction for each Imbalance Settlement Period in the relevant Year
Frequency of Data Transactions	Annually
First Submission time	As available
Last Submission time	On receipt of the Regulatory Authorities' determination on the values of the Testing Tariffs and no later than two months before the start of the Year or within 5 Working Days of receipt whichever is the later
Permitted frequency of resubmission prior to last submission time	Unlimited
Required resubmission subsequent to last submission time	None
Valid Communication Channels	Type 1 (manual)
Process for data validation	None

---



### Strike Price Parameters Data Transaction

25. The Data Records for the Strike Price Parameters Data Transaction are described in Table 34 and the Submission Protocol in Table 35.

**Table 34 – Strike Price Parameters Data Transaction Data Records**

---

The data source or methodology for determining the Carbon Price (PCARBON<sub>m</sub>) for Month, m;

The data source or methodology for determining the Natural Gas Fuel Price (PFUELNG<sub>m</sub>) for Month, m

The data source or methodology for determining the Oil Fuel Price (PFUELO<sub>m</sub>) for Month, m.

---

**Table 35 – Strike Price Parameters Data Submission Protocol**

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Sender	System Operator(s)
Recipient	Market Operator
Number of Data Transactions	On request by the Regulatory Authority
Frequency of Data Transactions	As Available
First Submission time	As available
Last Submission time	Within 5 Working Days of receipt of the Regulatory Authorities' approval
Permitted frequency of resubmission prior to last submission time	Unlimited
Required resubmission subsequent to last submission time	None
Valid Communication Channels	Type 1 (manual)
Process for data validation	None

---

### Interconnector Capacity Market Availability Data Transaction

26. The Data Records for the Interconnector Capacity Market Availability Data Transaction are described in Table 36 and the Submission Protocol in Table 37.

**Table 36 – Interconnector Capacity Market Availability Data Transaction Data Records: Average values per Imbalance Settlement Period**

---

Interconnector

Trading Day

Imbalance Settlement Period

Maximum Import Capacity Market Availability ( $qCMAMAXI_{IV}$ )

Maximum Export Capacity Market Availability

---

**Table 37 – Interconnector Capacity Market Availability Data Transaction Submission Protocol**

Sender	Interconnector Administrator
Recipient	Market Operator
Number of Data Transactions	One containing: Maximum Import Capacity Market Availability and Maximum Export Capacity Market Availability for each Imbalance Settlement Period in the relevant Trading Day for the relevant Interconnector.
Frequency of Data Transactions	Daily and as updated
First Submission time	As available
Last Submission time	Unlimited, prior to Imbalance Settlement Calculation
Permitted frequency of resubmission prior to last submission time	Unlimited
Required resubmission subsequent to last submission time	In the event of a change in the magnitude of Capacity Market Availability in either direction, resubmission is possible prior to Imbalance Settlement Calculation or as required to resolve a Settlement Query or a Dispute where the Data Records in the Transaction are discovered to be in error.
Valid Communication Channels	Type 3 (computer to computer)
Process for data validation	None

---

## APPENDIX L: METER DATA TRANSACTIONS

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1. Agreed Procedure 16 "Provision of Meter Data" describes how Meter Data Providers shall be required to group Meter Data into Data Transactions for receipt by the Market Operator, in accordance with the requirements set out in this Appendix L.
2. The timing of these Meter Data Transactions is described in Agreed Procedure 16 "Provision of Meter Data", in accordance with the requirements set out in this Appendix L.
3. The Meter Data required for the creation of Settlement Statements are the Metered Generation of all Generator Units, the Net Inter-Jurisdictional Import, the Interconnector Metered Data, and all other Supplier Units.
4. Each System Operator in its role as a Meter Data Provider shall provide to the Market Operator Meter Data required for the creation of Settlement Statements for which the System Operator has been recorded as the Meter Data Provider as appropriate in its Jurisdiction.
5. The System Operators shall agree a process with the Market Operator to determine which one System Operator is responsible for the provision of the Net Inter-Jurisdictional Import Meter Data to the Market Operator.
6. The System Operator in Ireland shall have responsibility for the installation, commissioning and maintenance of metering systems to such standards as are applicable under and set out in the Grid Code or Metering Code for all Transmission Connected Generation Sites in Ireland.
7. The Distribution System Operator responsible for the installation, commissioning and maintenance of metering systems at a Unit's site, shall provide reasonable access to that site and to data polled at that site to the relevant System Operator with responsibility for the provision of that Unit's Meter Data to the Market Operator as appropriate in its Jurisdiction (to the extent that the relevant Distribution System Operator has access under their individual customer connection agreements).
8. Each Distribution System Operator in its role as Meter Data Provider shall provide to the Market Operator all Meter Data required for the creation of Settlement Statements as appropriate in its Jurisdiction.
9. Subject to paragraph 6, in respect of all Units under the Code, the Distribution System Operators shall be responsible for the installation, commissioning and maintenance of metering systems within their Jurisdiction to such standards as are applicable in and set out in the Grid Code or Metering Code.
10. Where a Distribution System Operator is responsible for the provision of a Unit's Meter Data to the Market Operator and a System Operator is responsible for the installation, commissioning and maintenance of metering systems at those Unit's sites, the relevant System Operator shall provide reasonable access to that site or polled data to the relevant Distribution System Operator (to the extent that the relevant Distribution System Operator has access under their individual customer connection agreements).
11. Meter Data Providers shall provide the Meter Data listed in paragraph 3 to the Market Operator required for each Settlement Day by 14:00 on the first Week Day after the Settlement Day as described in Agreed Procedure 16 "Provision of Meter Data".

12. Meter Data Providers shall provide the Meter Data listed in paragraph 3 to the Market Operator required for each Settlement Day by 17:00 on the fourth Week Day after the Settlement Day as described in Agreed Procedure 16 "Provision of Meter Data".
13. Meter Data Providers shall provide to the Market Operator the Meter Data listed in paragraph 3 in sufficient time to permit the Timetabled Settlement Reruns to be performed by the Market Operator in accordance with the Settlement Calendar.
14. If a System Operator in its role as Meter Data Provider has provided data for a Unit as described in paragraph 12, this fulfils that System Operator's requirement to send that data again as described in paragraph 13, unless there are known corrections required to the data arising from the resolution of Settlement Queries or Disputes.
15. In the event of a Settlement Query in respect of Meter Data and where the Meter Data is discovered to be in material error, the Meter Data Provider shall send the updated Meter Data for the Units, Interconnector, or Net Inter-Jurisdictional Import as appropriate for the Settlement Day or Settlement Days to which the Settlement Query relates as described in Agreed Procedure 16 "Provision of Meter Data".
16. In the event of a Dispute in respect of Meter Data and where the Meter Data is discovered to be in material error, the Meter Data Provider shall send the updated Meter Data for the Units, Interconnector, or Net Inter-Jurisdictional Import as appropriate in a manner and form determined by the Dispute Resolution Board.

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## APPENDIX M: CAPACITY MARKET DATA TRANSACTIONS

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### INTRODUCTION

1. This Appendix M outlines the detailed Data Record requirements for Data Transactions sent by the System Operators to the Market Operator, which are not defined in other Appendices, which are required for the settlement of the Capacity Market, and the associated high-level Data Transaction Submission Protocols.

### DATA TRANSACTIONS

2. The Data Transactions in this Appendix M include:
  - (a) The Demand Side Non-Delivery Percentage (FNDDS);
  - (b) The Contract Register Data;
  - (c) The Commissioned Capacity Quantity (qCCOMMISS);
  - (d) The De-Rating Factor (FDERATE); and
  - (e) The Gross De-Rated Capacity Quantity (qCDERATEG).
3. Each Data Record in this Appendix M which contains Currency amounts will be denominated in the Participant's designated Currency.

### DATA TRANSACTION AND DATA RECORDS

#### Demand Side Non-Delivery Percentage Data Transaction

4. The Data Records for the Demand Side Non-Delivery Percentage Parameters Data Transaction are described in Table 1 and the Submission Protocol in Table 2.

**Table 1 – Demand Side Non-Delivery Percentage Data Transaction Data Records**

---

Participant Name
Capacity Market Unit ID
Trading Day
Imbalance Settlement Period
Demand Side Non-Delivery Percentage, FNDDS <sub>QY</sub>

---

**Table 2 – Demand Side Non-Delivery Percentage Data Transaction Submission Protocol**

---

Sender	System Operators
Recipient	Market Operator
Number of Data Transactions	One, containing data for each Capacity Market Unit which represents one or more Generator Units that are Demand Side Units, for

	each Imbalance Settlement Period in the relevant Trading Day.
Frequency of Data Transactions	Daily
First Submission time	After end of Trading Day
Last Submission time	Prior to Imbalance Settlement Calculation
Permitted frequency of resubmission prior to last submission time	Unlimited
Required resubmission subsequent to last submission time	<p>Prior to Imbalance Settlement Calculation and within 10 Working Days of notification to the System Operator of an upheld Settlement Query or Dispute if the error has High Materiality, or if the last Timetabled Settlement Rerun has occurred.</p> <p>If the error has Low Materiality resubmission will occur by the deadline for data provision for Timetabled Settlement Rerun as specified in the Settlement Calendar.</p> <p>As available prior to the deadline for data provision for Timetabled Settlement Rerun as specified in the Settlement Calendar.</p>
Valid Communication Channels	Type 2 (human to computer)/ Type 3 (computer to computer)
Process for data validation	None

### Contract Register Data Transaction

5. The Data Records for the Contract Register Data Transaction are described in Table 3 and the Submission Protocol in Table 4.

**Table 3 – Contract Register Data Transaction Data Records**

---

Participant Name
Capacity Market Unit ID
Trading Day
The Capacity Quantity ( $qC_{\Omega n}$ )
Primary or Secondary Trade Flag

The Annual Stop-Loss Limit Factor (FSLLA<sub>n</sub>)

The Billing Period Stop-Loss Factor (FSLLB<sub>n</sub>)

The Capacity Payment Price (PCP<sub>Ωn</sub>)

The Capacity Duration Exchange Rate (XRCD<sub>n</sub>)

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**Table 4 – Contract Register Data Transaction Submission Protocol**

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Sender	System Operators
Recipient	Market Operator
Number of Data Transactions	One containing data for each Capacity Market Unit, for each Imbalance Settlement Period in the Capacity Year.
Frequency of Data Transactions	Daily
First Submission time	After end of Trading Day
Last Submission time	Prior to Imbalance Settlement Calculation
Permitted frequency of resubmission prior to last submission time	Unlimited
Required resubmission subsequent to last submission time	Prior to Imbalance Settlement Calculation and within 10 Working Days of notification to the System Operator of an upheld Settlement Query or Dispute if the error has High Materiality, or if the last Timetabled Settlement Rerun has occurred.  If the error has Low Materiality resubmission will occur by the deadline for data provision for Timetabled Settlement Rerun as specified in the Settlement Calendar.
Valid Communication Channels	Type 3 (computer to computer)
Process for data validation	None

---

**Commissioned Capacity Quantity Data Transaction**

6. The Data Records for the Commissioned Capacity Quantity Data Transaction are described in Table 5 and the Submission Protocol in Table 6.

**Table 5 – Commissioned Capacity Quantity Data Transaction Data Records**

---

Participant Name
Capacity Market Unit ID
Trading Day
Imbalance Settlement Period
Commissioned Capacity Quantity (qCCOMMISS <sub>QY</sub> )

---

**Table 6 – Commissioned Capacity Quantity Data Transaction Submission Protocol**

---

Sender	System Operators
Recipient	Market Operator
Number of Data Transactions	One containing data for each Capacity Market Unit, for each Imbalance Settlement Period in the Capacity Year.
Frequency of Data Transactions	At least once per Capacity Year, plus as updated
First Submission time	As available
Last Submission time	Prior to Imbalance Settlement Calculation.  As required to resolve a Settlement Query or a Dispute where the Data Records in the Transaction are discovered to be in error.
Permitted frequency of resubmission prior to last submission time	Unlimited
Required resubmission subsequent to last submission time	Prior to Imbalance Settlement Calculation and within 10 Working Days of notification to the System Operator of an upheld Settlement Query or Dispute if the error has High Materiality, or if the last Timetabled Settlement Rerun has occurred.  If the error has Low Materiality resubmission will occur by the deadline for data provision for

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	Timetabled Settlement Rerun as specified in the Settlement Calendar.
Valid Communication Channels	Type 2 (human to computer)/ Type 3 (computer to computer)
Process for data validation	None

### De-Rating Factor Data Transaction

7. The Data Records for the De-Rating Factor Data Transaction are described in Table 7 and the Submission Protocol in Table 8.

**Table 7 – De-Rating Factor Data Transaction Data Records**

Participant Name
Capacity Market Unit ID
Trading Day
Imbalance Settlement Period
De-Rating Factor (FDERATE <sub>Ω</sub> )

**Table 8 – De-Rating Factor Data Transaction Submission Protocol**

Sender	System Operators
Recipient	Market Operator
Number of Data Transactions	One containing data for each Capacity Market Unit
Frequency of Data Transactions	At least once per Capacity Year, plus as updated
First Submission time	As available
Last Submission time	Prior to Imbalance Settlement Calculation. As required to resolve a Settlement Query or a Dispute where the Data Records in the Transaction are discovered to be in error.
Permitted frequency of resubmission prior to last submission time	Unlimited
Required resubmission subsequent to last submission time	Prior to Imbalance Settlement Calculation and within 10 Working

	Days of notification to the System Operator of an upheld Settlement Query or Dispute if the error has High Materiality, or if the last Timetabled Settlement Rerun has occurred.
	If the error has Low Materiality resubmission will occur by the deadline for data provision for Timetabled Settlement Rerun as specified in the Settlement Calendar.
Valid Communication Channels	Type 2 (human to computer)/ Type 3 (computer to computer)
Process for data validation	None

### **Gross De-Rated Capacity Quantity Data Transaction**

8. The Data Records for the Gross De-Rated Capacity Quantity Data Transaction are described in Table 9 and the Submission Protocol in Table 10.

**Table 9 – Gross De-Rated Capacity Quantity Data Transaction Data Records**

Participant Name
Capacity Market Unit ID
Trading Day
Imbalance Settlement Period
Gross De-Rated Capacity Quantity ( $qCDERATEG_{\Omega Y}$ )

**Table 10 – Gross De-Rated Capacity Quantity Data Transaction Submission Protocol**

Sender	System Operators
Recipient	Market Operator
Number of Data Transactions	One containing data for each Capacity Market Unit for each Imbalance Settlement Period in the Capacity Year.
Frequency of Data Transactions	At least once per Capacity Year, plus as updated
First Submission time	As available
Last Submission time	Prior to Imbalance Settlement Calculation. As required to resolve a Settlement

---

	Query or a Dispute where the Data Records in the Transaction are discovered to be in error.
Permitted frequency of resubmission prior to last submission time	Unlimited
Required resubmission subsequent to last submission time	<p>Prior to Imbalance Settlement Calculation and within 10 Working Days of notification to the System Operator of an upheld Settlement Query or Dispute if the error has High Materiality, or if the last Timetabled Settlement Rerun has occurred.</p> <p>If the error has Low Materiality resubmission will occur by the deadline for data provision for Timetabled Settlement Rerun as specified in the Settlement Calendar.</p>
Valid Communication Channels	Type 1 (manual)/ Type 3 (computer to computer)
Process for data validation	None

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## APPENDIX N: FLAGGING AND TAGGING

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### SYSTEM OPERATOR AND NON-MARGINAL FLAGGING

1. For each Imbalance Pricing Period,  $\varphi$ , the System Operators shall use information from the most recent Indicative Operations Schedule to identify whether a Generator Unit's scheduled output is bound by the presence of an Operational Constraint and where they determine that the Generator Unit is so bound, shall set the System Operator Flag ( $FSO_{u\varphi}$ ) for that Generator Unit,  $u$ , equal to zero for that Imbalance Pricing Period,  $\varphi$ . Otherwise, the System Operators shall set the System Operator Flag ( $FSO_{u\varphi}$ ) for that Generator Unit,  $u$ , equal to one for that Imbalance Pricing Period,  $\varphi$ .
2. For each Imbalance Pricing Period,  $\varphi$ , the System Operators shall use information from the most recent Indicative Operations Schedule to identify whether a Generator Unit's scheduled output is bound by the presence of an Operational Constraint relating to the provision of Replacement Reserve, and where they determine that the Generator Unit is so bound, shall set the System Service Flag ( $FSS_{u\varphi}$ ) for that Generator Unit,  $u$ , equal to zero for that Imbalance Pricing Period,  $\varphi$ . Otherwise, the System Operators shall set the System Service Flag ( $FSS_{u\varphi}$ ) for that Generator Unit,  $u$ , equal to one for that Imbalance Pricing Period,  $\varphi$ .
3. For each Imbalance Pricing Period,  $\varphi$ , the System Operators shall use information from the most recent Indicative Operations Schedule to identify whether a Generator Unit's scheduled output is bound by the presence of a Unit Constraint and where they determine that the Generator Unit is so bound, shall set the Non-Marginal Flag ( $FNM_{u\varphi}$ ) for that Generator Unit,  $u$ , equal to zero for that Imbalance Pricing Period,  $\varphi$ . Otherwise, the System Operators shall set the Non-Marginal Flag ( $FNM_{u\varphi}$ ) for that Generator Unit,  $u$ , equal to one for that Imbalance Pricing Period,  $\varphi$ .
4. The System Operators shall publish a "Methodology for determining System Operator and Non-Marginal Flags" including detailed information on how System Operator Flags and Non-Marginal Flags are determined for each Operational Constraint and Unit Constraint in accordance with paragraphs 1-3, including the process for determining whether an Operational Constraint is binding and the process for determining whether a Generator Unit is bound by a Unit Constraint or a binding Operational Constraint.
5. The System Operators shall publish updates to the "Methodology for determining System Operator and Non-Marginal Flags" as soon as practicable to reflect relevant changes to Operational Constraints, Unit Constraints, underlying processes related to the determination of the Indicative Operations Schedule, or any other relevant change.

### NET IMBALANCE VOLUME TAGGING

#### Setting the Value of the Initial Net Imbalance Volume Tag

6. For each Imbalance Pricing Period  $\varphi$ , where the Net Imbalance Volume Quantity ( $QNIV_{uk\varphi}$ ) is a positive value, the Market Operator shall set the value of each Initial Net Imbalance Volume Tag ( $TINIV_{uk\varphi}$ ) to zero for each rank  $k$  from 1 to  $M$  and to the value of the Imbalance Price Flag ( $FIP_{uk\varphi}$ ) for each rank  $k$  from  $M+1$  to  $N$ .
7. For each Imbalance Pricing Period  $\varphi$ , where the Net Imbalance Volume Quantity ( $QNIV_{uk\varphi}$ ) is a negative value, the Market Operator shall set the value of each Initial Net Imbalance Volume Tag ( $TINIV_{uk\varphi}$ ) to the value of the Imbalance Price

Flag ( $FIP_{uk\varphi}$ ) for each rank k from 1 to M and to zero for each rank k from M+1 to N.

### Calculation of the Residual Tagged Quantity

8. The Market Operator shall calculate the Residual Tagged Quantity for each Imbalance Pricing Period ( $QRTAG_{\varphi}$ ) as follows:

$$QRTAG_{\varphi} = - \sum_k QAB_{uk\varphi} \times (1 - TINIV_{uk\varphi}) - \sum_k QAO_{uk\varphi} \times (1 - TINIV_{uk\varphi})$$

where:

- (a)  $\sum_k$  is the sum of values over all k;
- (b)  $QAB_{uk\varphi}$  is the Accepted Bid Quantity for Generator Unit u and rank k;
- (c)  $QAO_{uk\varphi}$  is the Accepted Offer Quantity for Generator Unit u and rank k; and
- (d)  $TINIV_{uk\varphi}$  is the value of the Initial Net Imbalance Volume Tag for Generator Unit u and rank k.

### Setting the Net Imbalance Volume Tag in the Case of a Positive Net Imbalance Volume Quantity

9. For each Imbalance Pricing Period  $\varphi$ , where the Net Imbalance Volume Quantity ( $QNIV_{uk\varphi}$ ) is a positive value, the Market Operator shall:

- (a) Where the Residual Tagged Quantity ( $QRTAG_{\varphi}$ ) is a negative value:
  - (i) determine the value of b and  $\beta$  to satisfy the following equation:

$$\sum_{k < b} QAO_{uk\varphi} \times (1 - TINIV_{uk\varphi}) + \beta_{k=b} \times QAO_{uk\varphi} \times (1 - TINIV_{uk\varphi}) = -QRTAG_{\varphi}$$

where:

- (A) b is a positive integer ( $1 \leq b \leq N$ ) and  $\beta$  is a positive real number ( $0 \leq \beta < 1$ );
  - (B)  $QAO_{uk\varphi}$  is the Accepted Offer Quantity for Generator Unit u and rank k; and
  - (C)  $TINIV_{uk\varphi}$  is the Initial Net Imbalance Volume Tag for each Generator Unit u and rank k.
- (ii) set the value of each Net Imbalance Volume Tag ( $TNIV_{uk\varphi}$ ) to a value equal to the value of each corresponding Initial Net Imbalance Volume Tag for each rank from 1 to M and b+1 to N, to a value of one for each rank k from M+1 to b-1 and to a value of  $\beta$  for rank k = b.
- (b) Where the Residual Tagged Quantity ( $QRTAG_{\varphi}$ ) is a positive value:
    - (i) determine the value of b and  $\beta$  to satisfy the following equation:

$$\sum_{k>b} QAO_{uk\varphi} \times TINIV_{uk\varphi} + \beta_{k=b} \times QAO_{uk\varphi} \times TINIV_{uk\varphi} = QRTAG_{\varphi}$$

where:

- (A)  $b$  is a positive integer ( $1 \leq b \leq N$ ) and  $\beta$  is a positive real number between ( $0 \leq \beta < 1$ );
  - (B)  $QAO_{uk\varphi}$  is the Accepted Offer Quantity for Generator Unit  $u$  and rank  $k$ ; and
  - (C)  $TINIV_{uk\varphi}$  is the Initial Net Imbalance Volume Tag for each Generator Unit  $u$  and rank  $k$ .
- (ii) set the value of each Net Imbalance Volume Tag ( $TNIV_{uk\varphi}$ ) to a value equal to the value of each corresponding Initial Net Imbalance Volume Tag for each rank from 1 to  $b-1$ , to a value of  $1-\beta$  for  $k = b$  and to a value of zero for each rank  $k$  from  $b+1$  to  $N$ .

### Setting the Net Imbalance Volume Tag in the Case of a Negative Net Imbalance Volume Quantity

10. For each Imbalance Pricing Period  $\varphi$ , where the Net Imbalance Volume Quantity ( $QNIV_{uk\varphi}$ ) is a negative value, the Market Operator shall:

- (a) Where the Residual Tagged Quantity ( $QRTAG_{\varphi}$ ) is a positive value:
  - (i) determine the value of  $b$  and  $\beta$  to satisfy the following equation:

$$\sum_{k>b} QAB_{uk\varphi} \times (1 - TINIV_{uk\varphi}) + \beta_{k=b} \times QAB_{uk\varphi} \times (1 - TINIV_{uk\varphi}) = -QRTAG_{\varphi}$$

where:

- (A)  $b$  is a positive integer ( $1 \leq b \leq N$ ) and  $\beta$  is a positive real number between ( $0 \leq \beta < 1$ );
  - (B)  $QAB_{uk\varphi}$  is the Accepted Bid Quantity for Generator Unit  $u$  and rank  $k$ ; and
  - (C)  $TINIV_{uk\varphi}$  is the Initial Net Imbalance Volume Tag for each Generator Unit  $u$  and rank  $k$ .
- (ii) set the value of each Net Imbalance Volume Tag ( $TNIV_{uk\varphi}$ ) to a value equal to the value of each corresponding Initial Net Imbalance Volume Tag for each rank from 1 to  $b-1$  and  $M+1$  to  $N$ , to a value of  $\beta$  for  $k = b$  and to a value of one for each rank  $k$  from  $b+1$  to  $M$ .
- (b) Where the Residual Tagged Quantity ( $QRTAG_{\varphi}$ ) is a negative value:
    - (i) determine the value of  $b$  and  $\beta$  to satisfy the following equation:

$$\sum_{k<b} QAB_{uk\varphi} \times TINIV_{uk\varphi} + \beta_{k=b} \times QAB_{uk\varphi} \times TINIV_{uk\varphi} = QRTAG_{\varphi}$$

where:

- (A)  $b$  is a positive integer ( $1 \leq b \leq N$ ) and  $\beta$  is a positive real number ( $0 \leq \beta < 1$ );
  - (B)  $QAB_{uk\phi}$  is the Accepted Bid Quantity for Generator Unit  $u$  and rank  $k$ ; and
  - (C)  $TINIV_{uk\phi}$  is the Initial Net Imbalance Volume Tag for each Generator Unit  $u$  and rank  $k$ .
- (ii) set the value of each Net Imbalance Volume Tag ( $TNIV_{uk\phi}$ ) to a value of zero for each rank  $k$  from 1 to  $b-1$ , to a value of  $1 - \beta$  for  $k = b$  and to a value equal to the value of each corresponding Initial Net Imbalance Volume Tag for each rank from  $b+1$  to  $N$ .

## PRICE AVERAGE REFERENCE TAGGING

### Setting the Price Average Reference Tag if $-QPAR \leq QNIV_{\phi} \leq QPAR$

11. For each Imbalance Pricing Period  $\phi$  where the Net Imbalance Volume Quantity ( $QNIV_{\phi}$ ) is greater than or equal to the negative of the Price Average Reference Quantity ( $-QPAR$ ) and less than or equal to the Price Average Reference Quantity ( $QPAR$ ), the Market Operator shall set the value of the Price Average Reference Tag ( $TPAR_{uk\phi}$ ) equal to one for all  $k$ .

### Setting the Price Average Reference Tag if $QNIV_{\phi} > QPAR$

12. For each Imbalance Pricing Period  $\phi$  where the Net Imbalance Volume Quantity ( $QNIV_{\phi}$ ) is greater than the Price Average Reference Quantity ( $QPAR$ ), the Market Operator shall:
- (a) Determine the value of  $b$  and  $\beta$  to satisfy the following equation:

$$\sum_{k>b} QAO_{uk\phi} \times TNIV_{uk\phi} + \beta_{k=b} \times QAO_{uk\phi} \times TNIV_{uk\phi} = QPAR$$

where:

- (i)  $b$  is a positive integer and  $\beta$  is a positive real number between zero and one;
  - (ii)  $QAO_{uk\phi}$  is the Accepted Offer Quantity for Generator Unit  $u$  and rank  $k$ ; and
  - (iii)  $TNIV_{uk\phi}$  is the Net Imbalance Volume Tag for Generator Unit  $u$  and rank  $k$ .
- (b) Set the value of the Price Average Reference Tag ( $TPAR_{uk\phi}$ ) equal to zero for all  $k = M+1$  to  $b-1$ , to a value of  $\beta$  for  $k = b$ , and equal to one for  $k = 1$  to  $M$  and  $k = b+1$  to  $N$ .

### Setting the Price Average Reference Tag if $QNIV_{\phi} < -QPAR$

13. For each Imbalance Pricing Period  $\phi$  where the Net Imbalance Volume Quantity ( $QNIV_{\phi}$ ) is less than the negative of the Price Average Reference Quantity ( $QPAR$ ), the Market Operator shall:
- (a) Determine the value of  $b$  and  $\beta$  to satisfy the following equation:

$$\sum_{k < b} QAB_{uk\varphi} \times TNIV_{uk\varphi} + \beta_{k=b} \times QAB_{uk\varphi} \times TNIV_{uk\varphi} = -QPAR$$

where:

- (i)  $b$  is a positive integer and  $\beta$  is a positive real number between zero and one;
  - (ii)  $QAB_{uk\varphi}$  is the Accepted Bid Quantity for Generator Unit  $u$  and rank  $k$ ; and
  - (iii)  $TNIV_{uk\varphi}$  is the Net Imbalance Volume Tag for Generator Unit  $u$  and rank  $k$ .
- (b) Set the value of the Price Average Reference Tag ( $TPAR_{uk\varphi}$ ) equal to zero for all  $k = b+1$  to  $M$ , to a value of  $\beta$  for  $k = b$ , and equal to one for  $k = 1$  to  $b-1$  and  $k = M+1$  to  $N$ .



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## APPENDIX O: INSTRUCTION PROFILING CALCULATIONS

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1. The following timing conventions applies to provisions within this Appendix O, in line with their use in the Code:
  - (a) The Imbalance Pricing Period is the period within an Imbalance Settlement Period relevant to the execution of the Imbalance Pricing Process, as per Chapter E “Imbalance Pricing”, and represented by the subscript  $\phi$ ;
  - (b) An Imbalance Settlement Period is the period relevant to the execution of Settlement calculations, as outlined in Chapter F “Calculation of Payments and Charges”, and represented by the subscript  $\gamma$ ;
  - (c) Provisions that applies to both Imbalance Pricing Periods and Imbalance Settlement Periods, are indicated by the subscript for a generalised period,  $h$ .
2. This Appendix O sets out detailed provisions in relation to three types of Instruction Profiles:
  - (a) Physical Notification Instruction Profile that shall be used by the Market Operator to determine the values of Dispatch Quantity ( $qD_{uoh}(t)$ ) for Bid Offer Acceptances resulting from Dispatch Instructions;
  - (b) Pseudo Instruction Profile that shall be used by the Market Operator to determine the values of Dispatch Quantity ( $qD_{uoh}(t)$ ) for Bid Offer Acceptances resulting from Pseudo Dispatch Instructions; and
  - (c) Uninstructed Imbalance Instruction Profile that shall be used by the Market Operator to determine values of Dispatch Quantity ( $QD_{uy}$ ) as required by Chapter F “Calculation of Payments and Charges” for each Dispatchable Generator Unit for each period,  $h$ .
3. Physical Notification Instruction Profiling and Pseudo Instruction Profiling for the purpose of Bid Offer Acceptance Quantity calculation, as set out in section F.6.2, shall be performed after each Imbalance Pricing Period for the purpose of being used in the Imbalance Price calculation and on D+1 and D+4 for the purpose of Imbalance Settlement Calculation.
4. Uninstructed Imbalance Instruction Profiling for the purpose of Undelivered Quantity calculation and Uninstructed Imbalance calculation as set out in sections F.6.6 and F.9, shall be performed on D+1 and D+4 for each Imbalance Settlement Period.
5. Instruction Profiling shall be calculated prior to any additional Imbalance Pricing Software Run performed by the Market Operator as required for Imbalance Pricing and Settlement purposes respectively.
6. Instruction Profiling shall not be performed for Generator Units which are not Dispatchable and not Controllable, Assetless Units or Interconnector Residual Capacity Units, and the values of Dispatch Quantity for these Generator Units, where applicable, shall be calculated as set out in section F.2.4.
7. All Dispatch Instructions shall be provided by the relevant System Operator to the Market Operator in accordance with Appendix K: “Other Market Data Transactions” and the Market Operator shall procure to publish the Dispatch Instructions within the Central Market Systems.

## CAPTURE INPUT DATA

8. To calculate each type of Instruction Profile, a different combination of inputs from Appendix H: “Data Requirements for Registration”, Appendix I: “Offer Data”, Appendix K: “Other Market Data Transactions”, Dispatch Instructions issued by the System Operator and Pseudo Dispatch Instructions, created by the Market Operator as per Table 3, shall be used for each period, h, for each Dispatchable Generator Unit in accordance with paragraph 31.
9. The following Commercial Offer Data, Technical Offer Data and Physical Notification Data provided in accordance with Appendix I: “Offer Data”, shall be used by the Market Operator to calculate Physical Notification Instruction Profiles and Pseudo Instruction Profiles:
  - (a) Complex Bid Offer Data;
  - (b) Simple Bid Offer Data;
  - (c) Minimum On Time;
  - (d) Minimum Off Time;
  - (e) Maximum On Time;
  - (f) Minimum Down Time (applicable to Demand Side Units);
  - (g) Maximum Down Time (applicable to Demand Side Units); and
  - (h) Final Physical Notification Quantities ( $qFPN_{uh}(t)$ ).
10. The following Registration Data and Technical Offer Data, provided in accordance with Appendix H: “Data Requirements for Registration” and Appendix I: “Offer Data” respectively, shall be used by the Market Operator to calculate all Instruction Profile types:
  - (a) Registered Capacity / Maximum Generation;
  - (b) Hot Cooling Boundary;
  - (c) Warm Cooling Boundary;
  - (d) Block Load Flag;
  - (e) Block Load Cold, Block Load Warm and Block Load Hot;
  - (f) Loading Rate Hot 1, 2 & 3;
  - (g) Loading Rate Warm 1, 2 & 3;
  - (h) Loading Rate Cold 1, 2 & 3;
  - (i) Load Up Break Point Hot 1 & 2;
  - (j) Load Up Break Point Warm 1 & 2;
  - (k) Load Up Break Point Cold 1 & 2;
  - (l) Soak Time Hot 1 & 2;
  - (m) Soak Time Warm 1 & 2;
  - (n) Soak Time Cold 1 & 2;
  - (o) Soak Time Trigger Point Hot 1 & 2;
  - (p) Soak Time Trigger Point Warm 1 & 2;
  - (q) Soak Time Trigger Point Cold 1 & 2;
  - (r) Ramp Up Rate 1, 2, 3, 4 & 5;

- (s) Ramp Up Break Point 1, 2, 3 & 4;
  - (t) Dwell Time Up 1, 2 & 3;
  - (u) Dwell Time Down 1, 2 & 3;
  - (v) Dwell Time Up Trigger Point 1, 2 & 3;
  - (w) Dwell Time Down Trigger Point 1, 2 & 3;
  - (x) Ramp Down Rate 1, 2, 3, 4 & 5;
  - (y) Ramp Down Break Point 1, 2, 3 & 4;
  - (z) Deloading Rate 1 & 2;
  - (aa) Deload Break Point;
  - (bb) Maximum Ramp Up Rate (applicable to Demand Side Units);
  - (cc) Maximum Ramp Down Rate (applicable to Demand Side Units);
  - (dd) Dispatchable Quantity (Maximum Generation applicable to Demand Side Units);
  - (ee) Start of Restricted Range 1;
  - (ff) End of Restricted Range 1;
  - (gg) Start of Restricted Range 2;
  - (hh) End of Restricted Range 2;
  - (ii) Short Term Maximisation Capability;
  - (jj) Registered Minimum Stable Generation;
  - (kk) Registered Minimum Output;
  - (ll) Pumping Capacity;
  - (mm) Pumped Storage and Battery Storage Flag;
  - (nn) Battery Storage Capacity; and
  - (oo) Fuel Type.
11. The following Outturn Data, provided by the relevant System Operator to the Market Operator in accordance with Appendix K: "Other Market Data Transactions", shall be used by the Market Operator to create all Instruction Profile types:
- (a) Outturn Minimum Stable Generation;
  - (b) Outturn Minimum Output;
  - (c) Outturn Availability (Primary Fuel Type Outturn Availability for Dual Rated Generator Units);
  - (d) Secondary Fuel Type Outturn Availability;
  - (e) Rating Flag; and
  - (f) Last Status Change Time.
12. The following Dispatch Instructions Data Records provided by the relevant System Operator to the Market Operator in accordance with Appendix K: "Other Market Data Transactions" shall be used by the Market Operator to create all Instruction Profile types for each Generator Unit for the applicable period, h:
- (a) Instruction Issue Time;

- (b) Instruction Effective Time;
- (c) Target Instruction Level;
- (d) Instruction Code;
- (e) Instruction Combination Code;
- (f) Dispatch Ramp Up Rate;
- (g) Dispatch Ramp Down Rate; and
- (h) Instruction Effective Until Time for MWOF.

13. The Instruction Codes and Instruction Combination Codes that are used for the calculation of all Instruction Profile types, except as provided in Table 3, are listed and described in Table 1.

**Table 1 – Instruction Codes and Instruction Combination Codes for Dispatch Instructions issued by the System Operator**

<b>Instruction Code</b>	<b>Instruction Combination Code</b>	<b>Description</b>
SYNC	n/a	Synchronise the Generator Unit at the specified Instruction Effective Time.
MWOF	n/a	Adjust the Generator Unit Output to the specified Target Instruction Level at the specified Instruction Effective Time.
DESY	n/a	Desynchronise the Generator Unit at the specified Instruction Effective Time.
GOOP	PGEN	Instruct positive Output from a Pumped Storage Unit or a Battery Storage Unit at the specified Instruction Effective Time.
GOOP	PUMP	Instruct negative Output from a Pumped Storage Unit or a Battery Storage Unit at the specified Instruction Effective Time.
GOOP	SCT	Instruct Synchronisation in generating mode and 0MW Output for a Pumped Storage Unit or a Battery Storage Unit at the specified Instruction Effective Time.
GOOP	SCP	Instruct Synchronisation in Pumping Mode and 0MW Output from a Pumped Storage Unit or a Battery Storage Unit at the specified Instruction Effective Time.
TRIP	n/a	Retrospectively issued Dispatch Instruction to indicate that a Generator Unit Desynchronised unexpectedly.
WIND	LOCL	Instruction for a Wind Power Unit to reduce Output due to a Local Network Constraint at the specified Instruction Effective Time.
WIND	LCLO	Instruction for a Wind Power Unit to cease the reduction of Output due to a Local Network Constraint at the specified

Instruction Code	Instruction Combination Code	Description
		Instruction Effective Time.
WIND	CURL	Instruction for a Wind Power Unit to reduce Output due to an All-Island Curtailment at the specified Instruction Effective Time.
WIND	CRLO	Instruction for a Wind Power Unit to cease the reduction of Output due to an All-Island Curtailment at the specified Instruction Effective Time.
MXON	n/a	Instruction to a Generator Unit to adjust its Output to the registered Short Term Maximisation Capability at the specified Instruction Effective Time.
MXOF	n/a	Instruction to de-activate a Maximisation Instruction at the specified Instruction Effective Time.
FAIL	n/a	Retrospectively-issued Dispatch Instruction to indicate that a Generator Unit failed to Synchronise as instructed.

14. How the Instruction Codes and Instruction Combination Codes are used for the calculation of Physical Notification Instruction Profiles is described in Table 2.

**Table 2 – Instruction Codes and Instruction Combination Codes as used for Physical Notification Instruction Profile**

Instruction Code	Instruction Combination Code	Description
MWOF	n/a	<p><b>Step 1:</b> Adjust the Generator Unit Output to the specified Target Instruction Level until a specified Effective Until Time or until the Target Instruction Level must be maintained in accordance with Technical Offer Data, whichever is later;</p> <p><b>Step 2:</b> with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities; however if a new Dispatch Instruction is issued by the System Operator with an Instruction Effective Time equal to or before the time Step 1 is achieved, profile the new Dispatch Instruction as per Table 1 or Table 2 as appropriate.</p>
GOOP	PGEN	<p><b>Step 1:</b> Instruct positive Output from a Pumped Storage Unit or a Battery Storage Unit at the specified Instruction Effective Time and Adjust the Generator Unit Output to the specified Target Instruction Level until a specified Effective Until Time or until the Target Instruction Level must be maintained in accordance with Technical Offer Data, whichever is later;</p> <p><b>Step 2:</b> with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities; however if a new</p>

Instruction Code	Instruction Combination Code	Description
		Dispatch Instruction is issued by the System Operator with an Instruction Effective Time equal to or before the time Step 1 is achieved, profile the new Dispatch Instruction as per Table 1 or Table 2 as appropriate.
MXON	n/a	<p><b>Step 1:</b> Instruction to a Generator Unit to adjust its Output to the registered Short Term Maximisation Capability at the specified Instruction Effective Time until a specified Effective Until Time or until the Target Instruction Level must be maintained in accordance with Technical Offer Data, whichever is later;</p> <p><b>Step 2:</b> with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities; however if a new Dispatch Instruction is issued by the System Operator with an Instruction Effective Time equal to or before the time Step 1 is achieved, profile the new Dispatch Instruction as per Table 1 or Table 2 as appropriate.</p>
MXOF	n/a	<p><b>Step 1:</b> Instruction to de-activate a Maximisation Instruction at the specified Instruction Effective Time and adjust the Generator Unit Output to MWOFF issued with MXOF or the last valid MWOFF prior to the Maximisation instruction until specified Effective Until Time or until the Target Instruction Level must be maintained in accordance with Technical Offer Data, whichever is later;</p> <p><b>Step 2:</b> with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities; however if a new Dispatch Instruction is issued by the System Operator with an Instruction Effective Time equal to or before the time Step 1 is achieved, profile the new Dispatch Instruction as per Table 1 or Table 2 as appropriate.</p>

15. In addition to Dispatch Instructions issued by the System Operator, Pseudo Dispatch Instructions, corresponding to a subset of the Dispatch Instructions listed in Table 1, shall also be created by the Market Operator and used in accordance to the description in Table 3 to calculate Pseudo Instruction Profiles.
16. A Pseudo Dispatch Instruction shall not be created for a corresponding Dispatch Instruction where the System Operator issues a subsequent Dispatch Instruction with Instruction Effective Time at or before the time at which the first Target Instruction Level is reached.

**Table 3 – Instruction Codes and Instruction Combination Codes for Pseudo Dispatch Instructions**

Pseudo Dispatch Instruction Code	Pseudo Dispatch Instruction Combination Code	Corresponding Instruction Code or Instruction Combination Code	Description
PSYN	n/a	SYNC	<p><b>Continuous open acceptance after SYNC.</b></p> <p>At Instruction Effective Time set as the later of:</p> <ul style="list-style-type: none"> <li>- the time when the corresponding SYNC Instruction Profile reaches Registered Minimum Stable Generation if the time to ramp up is greater than the Minimum On Time; or</li> <li>- the corresponding SYNC Instruction Effective Time plus Min On Time,</li> </ul> <p><b>Step 1:</b> create a PSYN to maintain Generator Unit Output to the specified SYNC Target Instruction Level until next Dispatch Instruction or Pseudo Dispatch Instruction;</p> <p><b>Step 2:</b> with an Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities.</p>
PMWO	n/a	MWOFF	<p><b>Continuous open acceptance after MWOFF.</b></p> <p>At Instruction Effective Time set as:</p> <ul style="list-style-type: none"> <li>- the time when the corresponding MWOFF Instruction Profile reaches the specified Target Instruction Level,</li> </ul> <p><b>Step 1:</b> create a PMWO to maintain the Generator Unit Output to the specified MWOFF Target Instruction Level until next Dispatch Instruction or Pseudo Dispatch Instruction;</p> <p><b>Step 2:</b> with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities.</p>
PDES	n/a	DESY	<p><b>Continuous open acceptance after DESY.</b></p> <p>At Instruction Effective Time set as:</p> <ul style="list-style-type: none"> <li>- the corresponding DESY Instruction Effective Time plus Min Off Time,</li> </ul> <p><b>Step 1:</b> create a PDES to maintain the Generator Unit Output to the specified DESY Target Instruction Level until next Dispatch Instruction or Pseudo Dispatch Instruction;</p> <p><b>Step 2:</b> with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities.</p>

Pseudo Dispatch Instruction Code	Pseudo Dispatch Instruction Combination Code	Corresponding Instruction Code or Instruction Combination Code	Description
GOOP	PPGE	PGEN	<p><b>Continuous open acceptance after PGEN.</b></p> <p>At Instruction Effective Time set as:</p> <ul style="list-style-type: none"> <li>- the time when the corresponding PGEN Instruction Profile reaches the specified Target Instruction Level,</li> </ul> <p><b>Step 1:</b> create a PPGE to maintain the Generator Unit Output to the specified PGEN Target Instruction Level until next Dispatch Instruction or Pseudo Dispatch Instruction;</p> <p><b>Step 2:</b> with the Instruction Effective Time set equal to the time Step 1 is achieved, Target Instruction Level to Final Physical Notification Quantities.</p>
PMXN	n/a	MXON	<p><b>Continuous open acceptance after MXON.</b></p> <p>At Instruction Effective Time set as:</p> <ul style="list-style-type: none"> <li>- the time when the corresponding MXON Instruction Profile reaches the Short Term Maximisation Capability,</li> </ul> <p><b>Step 1:</b> create a PMXN to maintain the Generator Unit Output to the specified MXON Target Instruction Level until next Dispatch Instruction or Pseudo Dispatch Instruction;</p> <p><b>Step 2:</b> with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities.</p>
PMXF	n/a	MXOF	<p><b>Continuous open acceptance after MXOF.</b></p> <p>At Instruction Effective Time set as:</p> <ul style="list-style-type: none"> <li>- the time when the corresponding MXON Instruction Profile reaches the last effective MWOFF Target Instruction Level prior to the corresponding MXON,</li> </ul> <p><b>Step 1:</b> create a PMXF to maintain the Generator Unit Output to the specified MXOF Target Instruction Level until next Dispatch Instruction or Pseudo Dispatch Instruction;</p> <p><b>Step 2:</b> with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities.</p>
POFF	n/a	n/a	<p><b>Continuous open acceptance keeping unit off.</b></p>



Pseudo Dispatch Instruction Code	Pseudo Dispatch Instruction Combination Code	Corresponding Instruction Code or Instruction Combination Code	Description
			<p>At Instruction Effective Time set as:</p> <ul style="list-style-type: none"> <li>- the time where the Final Physical Notification Quantity profile rises from zero</li> </ul> <p><b>Step 1:</b> create a POFF to maintain the Generator Unit Output to the specified Target Instruction Level (zero) until next Dispatch Instruction or Pseudo Dispatch Instruction;</p> <p><b>Step 2:</b> with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities.</p> <p>NOTE: POFF is created where the preceding Dispatch Instruction is not one of the following: MWOF, MXON, SYNC, PGEN, MXOF, DESY.</p>
PCOD	n/a	n/a	<p><b>Continuous open acceptance after COD change.</b></p> <p>At Instruction Effective Time set as:</p> <ul style="list-style-type: none"> <li>- the effective time of a revised set of Unit's Commercial Offer Data set out in sub-paragraphs 9(a) and 9(b)</li> </ul> <p><b>Step 1:</b> create a PCOD to maintain the Generator Unit Output to the preceding Target Instruction Level associated with the Accepted Bid Offer Quantity until next Dispatch Instruction or Pseudo Dispatch Instruction;</p> <p><b>Step 2:</b> with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities.</p> <p>NOTE: PCOD is created where the preceding Dispatch Instruction is not one of the following: MWOF, MXON, SYNC, PGEN, MXOF, DESY.</p>
PISP	n/a	n/a	<p><b>Continuous open acceptance after Imbalance Settlement Period boundary,</b></p> <p>At Instruction Effective Time set as:</p> <ul style="list-style-type: none"> <li>- the Imbalance Settlement Period boundary time,</li> </ul> <p><b>Step 1:</b> create a PISP to maintain the Generator Unit Output to the preceding Target Instruction Level until next Dispatch Instruction or Pseudo Dispatch Instruction;</p> <p><b>Step 2:</b> with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities.</p> <p>NOTE: PISP is created where the preceding Dispatch Instruction is not one of the following: MWOF, MXON,</p>

Pseudo Dispatch Instruction Code	Pseudo Dispatch Instruction Combination Code	Corresponding Instruction Code or Instruction Combination Code	Description
			SYNC, PGEN, MXOF, DESY.

## DISPATCH INSTRUCTION AND PSEUDO DISPATCH INSTRUCTION VALIDATION

17. Dispatch Instructions for a Trading Day available to the Market Operator at the time of applying the process for the calculation of the Imbalance Price, or the time of applying the process for the calculation of settlement quantities, as applicable, shall be sorted by Generator Unit, Instruction Effective Time and Instruction Issue Time. Unless otherwise specified, Instruction Issue Time for Pseudo Dispatch Instructions shall be set equal to the Instruction Effective Time. The rules for the validation and merging of Dispatch Instructions shall be applied in the following order: paragraph 18, paragraph 19 first sentence relating to MWOFF Instruction Codes only, paragraph 21, paragraph 22, paragraph 19 first sentence relating to all Instruction Codes, paragraph 19 second sentence, paragraph 32(d), paragraph 23.
18. A Dispatch Instruction shall cancel a Pseudo Dispatch Instruction with the same Instruction Effective Time, where that Pseudo Dispatch Instruction is created as a result of a previous corresponding Dispatch Instruction.
19. If multiple Dispatch Instructions with the same Instruction Effective Time but different Instruction Issue Times are issued for a Generator Unit, then the Dispatch Instruction with the latest Instruction Issue Time shall be used. For Dispatch Instructions having the same Instruction Issue Time and Instruction Effective Time, the Dispatch Instructions shall be ordered based on the following sequence of Instruction Codes:
  - (a) TRIP;
  - (b) GOOP+PUMP;
  - (c) MWOFF;
  - (d) MXON;
  - (e) SYNC;
  - (f) GOOP;
  - (g) WIND;
  - (h) MXOF; and
  - (i) DESY.
20. If multiple Pseudo Dispatch Instructions are created with the same Instruction Effective Time and Instruction Issue Time, they shall be ordered based on the following sequence of Instruction Codes:
  - (a) PCOD;
  - (b) PISP;

- (c) POFF; and
  - (d) The Pseudo Dispatch Instruction corresponding to the latest Dispatch Instruction or Instruction Combination Code ordered in accordance with paragraph 19.
21. For Dispatch Instructions having a MWOFF Instruction Code, equal Instruction Effective Times and equal Instruction Issue Times, the Dispatch Instruction with the largest Target Instruction Level shall be used.
22. For any two Dispatch Instructions, having the same Instruction Effective Time, where the first Dispatch Instruction is defined as Dispatch Instruction A and the second Dispatch Instruction is defined as Dispatch Instruction B, the Instruction Code and Instruction Combination Code that shall be used for the resultant Dispatch Instruction are shown in Table 4. For the avoidance of doubt, MWOFF(x) is defined as Dispatch Instruction having an Instruction Code of MWOFF and a Target Instruction Level of x MW. SYNC(x) is defined as Dispatch Instruction having an Instruction Code of SYNC and a Target Instruction Level of x MW. DESY(x) is defined as Dispatch Instruction having an Instruction Code of DESY and a Target Instruction Level of x MW. PUMP(x) is defined as a Dispatch Instruction having an Instruction Code of GOOP, an Instruction Combination Code of PUMP and a Target Instruction Level of x MW. CURL(x) is defined as a Dispatch Instruction having an Instruction Code of WIND, an Instruction Combination Code of CURL and a Target Instruction Level of x MW. CRLO(x) is defined as a Dispatch Instruction having an Instruction Code of WIND, an Instruction Combination Code of CRLO and a Target Instruction Level of x MW. LOCL(x) is defined as a Dispatch Instruction having an Instruction Code of WIND, an Instruction Combination Code of LOCL and a Target Instruction Level of x MW. LCLO(x) is defined as a Dispatch Instruction having an Instruction Code of WIND, an Instruction Combination Code of LCLO and a Target Instruction Level of x MW.

**Table 4 – Validation Rules for two Dispatch Instructions issued by the System Operator having the same Effective Time**

Instruction Code A	Instruction Combination Code A	Instruction Code B	Instruction Combination Code B	Resultant Instruction Code	Resultant Instruction Combination Code
MWOFF(x)	n/a	SYNC	n/a	SYNC(x)	n/a
SYNC	n/a	MWOFF(x)	n/a	SYNC(x)	n/a
MWOFF(x)	n/a	DESY	n/a	DESY(x)	n/a
DESY	n/a	MWOFF(x)	n/a	DESY(x)	n/a
MWOFF(x)	n/a	GOOP	PGEN	MWOFF(x)	n/a
GOOP	PGEN	MWOFF(x)	n/a	MWOFF(x)	n/a
GOOP	PUMP	Any type(x)	n/a	GOOP	PUMP(x)
Any type(x)	n/a	GOOP	PUMP	GOOP	PUMP(x)
WIND	CURL	MWOFF(x)	n/a	WIND	CURL(x)

Instruction Code A	Instruction Combination Code A	Instruction Code B	Instruction Combination Code B	Resultant Instruction Code	Resultant Instruction Combination Code
WIND	CRLO	MWOF(x)	n/a	WIND	CRLO(x)
WIND	LOCL	MWOF(x)	n/a	WIND	LOCL(x)
WIND	LCLO	MWOF(x)	n/a	WIND	LCLO(x)

23. The sorted Dispatch Instructions for each Generator Unit shall be validated by the Market Operator using the rules in Table 5, Table 6 and Table 7.

**Table 5 – Validation Rules for Dispatch Instructions issued by the System Operator**

Preceding Instruction Code	Current Instruction Code	Action
SYNC	SYNC	Ignore Dispatch Instruction linked to current Instruction Code.
DESY	DESY	Ignore Dispatch Instruction linked to current Instruction Code.
TRIP	TRIP	Ignore Dispatch Instruction linked to current Instruction Code.
SYNC	FAIL	If Instruction Effective Time for Dispatch Instruction having FAIL Instruction Code is up to and including 1 hour after the Instruction Effective Time for a Dispatch Instruction having SYNC Instruction Code, the Dispatch Instruction having the preceding SYNC Instruction Code shall be ignored. Dispatch Instructions having Instruction Effective Times between the Instruction Effective Times for the Dispatch Instructions having the FAIL and the preceding SYNC Instruction Codes shall be ignored.
SYNC	FAIL	If Instruction Effective Time for Dispatch Instruction having FAIL Instruction Code is over 1 hour after the Instruction Effective Time for the Dispatch Instruction having SYNC Instruction Code, profile the Dispatch Instruction having SYNC Instruction Code as normal and discard the Dispatch Instruction having FAIL Instruction Code.
FAIL	SYNC	Ignore Dispatch Instructions having FAIL Instruction Code, if this Dispatch Instruction is not matched with previous Dispatch Instruction having a SYNC Instruction Code. Profile Dispatch Instruction having SYNC Instruction Code as per normal.

**Table 6 – Validation Rules for Dispatch Instructions issued by the System Operator for all Generator Units**

Instruction Code	MWOF(x)	Action

Instruction Code	MWOF(x)	Action
MWOF	x > Maximum Generation	Set x to > Maximum Generation
MWOF	x in Restricted Range	Profile MWOF(x)
SYNC <sup>1</sup>	x > Maximum Generation	Set x to > Maximum Generation
SYNC	x in Restricted Range	Profile MWOF(x)
MWOF	0 < x < Registered Minimum Stable Generation	Profile MWOF(x)
SYNC	x = NULL	Set x = Registered Minimum Stable Generation
DESY <sup>2</sup>	x = NULL	Set x = 0

**Table 7 – Validation Rules for Maximisation Instructions**

Instructed Quantity	Instruction Code	MWOF(x)	Action
Any	MXON	x = NULL	Maximisation starts. Profile to Short Term Maximisation Capability.
NULL	MWOF (after MXON)	x = ANY	Maximisation ends. Profile to Target Instruction Level associated with new MWOF Instruction Code.
NULL	MXOF (after MXON)	x = NULL	Maximisation ends. Profile back to Target Instruction Level associated with last MWOF Instruction Code at the latest Ramp Down Rate.

24. A Dispatch Instruction having a MWOF or DESY Instruction Code which follows a Dispatch Instruction having an Instruction Code MXON shall be taken to deactivate the Maximisation Instruction.
25. A Dispatch Instruction having a GOOP Instruction Code and having a SCP Instruction Combination Code may precede a Dispatch Instruction having a GOOP Instruction Code and a PUMP Instruction Combination Code. Validation rules for Pumped Storage Units and Battery Storage Units are detailed in Table 9.

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<sup>1</sup> A Dispatch Instruction with a SYNC Instruction Code is accompanied by a Dispatch Instruction having a MWOF Instruction Code and an Instructed Quantity greater than or equal to Registered Minimum Stable Generation.

<sup>2</sup> A Dispatch Instruction with a DESY Instruction Code is accompanied by a Dispatch Instruction having a MWOF Instruction Code and an Instructed Quantity of 0MW

## PROFILE OPERATING MODES

26. The normal operating modes for a Synchronised Generator Unit are load up mode, ramp up mode, ramp down mode and deload mode. Each operating mode of a Generator Unit is described by a piecewise linear Operating Trajectory that describes the theoretical Output of a Generator Unit over time.
27. The load up trajectory of a Generator Unit is a piecewise linear curve that describes the theoretical Output of a Generator Unit over time from Start Up to Registered Minimum Stable Generation determined by:
- (a) The following Technical Offer Data:
    - (i) Block Load Cold, Block Load Warm and Block Load Hot;
    - (ii) Loading Rate Hot 1, 2 & 3;
    - (iii) Loading Rate Warm 1, 2 & 3;
    - (iv) Loading Rate Cold 1, 2 & 3;
    - (v) Load Up Break Point Hot 1 & 2;
    - (vi) Load Up Break Point Warm 1 & 2;
    - (vii) Load Up Break Point Cold 1 & 2;
    - (viii) Soak Time Hot 1 & 2;
    - (ix) Soak Time Warm 1 & 2;
    - (x) Soak Time Cold 1 & 2;
    - (xi) Soak Time Trigger Point Hot 1 & 2;
    - (xii) Soak Time Trigger Point Warm 1 & 2; and
    - (xiii) Soak Time Trigger Point Cold 1 & 2.
  - (b) Each segment of the piecewise linear load up trajectory for the Generator Unit which is identified by start MW, end MW, rate in MW/min and the time from start MW to end MW.
28. The ramp up trajectory of a Generator Unit is a piecewise linear curve that describes the theoretical Output of a Generator Unit over time from Registered Minimum Stable Generation to the Maximum Generation for the Generator Unit determined by:
- (a) The following Technical Offer Data:
    - (i) Maximum Generation;
    - (ii) Registered Minimum Stable Generation;
    - (iii) Ramp Up Rates 1, 2, 3, 4 & 5;
    - (iv) Ramp Up Break Point 1, 2, 3 & 4;
    - (v) Dwell Time Up 1, 2 & 3; and
    - (vi) Dwell Time Up Trigger Point 1, 2 & 3.
  - (b) Each segment of the piecewise linear ramp up trajectory for the Generator Unit which is identified by start MW, end MW, rate in MW/min and the time from start MW to end MW.
29. The ramp down trajectory of a Generator Unit is a piecewise linear curve that describes the theoretical Output of a Generator Unit over time from the Maximum

Generation for the Generator Unit to Registered Minimum Stable Generation determined by:

- (a) The following Technical Offer Data:
    - (i) Maximum Generation;
    - (ii) Registered Minimum Stable Generation;
    - (iii) Ramp Down Rate 1, 2, 3, 4 & 5;
    - (iv) Ramp Down Break Point 1, 2, 3 & 4;
    - (v) Dwell Time Down 1, 2 & 3; and
    - (vi) Dwell Time Down Trigger Point 1, 2 & 3.
  - (b) Each segment of the piecewise linear ramp down trajectory for the Generator Unit which is identified by start MW, end MW, rate in MW/min and the time from start MW to end MW.
30. The deloading trajectory of a Generator Unit is a piecewise linear curve that describes the theoretical Output of a Generator Unit over time from Registered Minimum Stable Generation to 0MW determined by:
- (a) The following Technical Offer Data:
    - (i) Registered Minimum Stable Generation;
    - (ii) 0MW;
    - (iii) Deloading Rate 1 & 2; and
    - (iv) Deload Break Point.
  - (b) Each segment of the piecewise linear deloading trajectory for the Generator Unit which is identified by start MW, end MW, rate in MW/min and the time from start MW to end MW.

### **CREATE INSTRUCTION PROFILES**

31. The Instruction Profile function calculates a piecewise linear trajectory over time, for each Dispatch Instruction, taking into account a subset of the Generator Unit's input data listed in paragraphs 9 to 16 with the following criteria:
- (a) In order to derive Dispatch Quantities ( $qD_{uoh}(t)$ ) for each Generator Unit,  $u$ , for each Bid Offer Acceptance,  $o$ , in Period,  $h$ , the following profiles shall be created:
    - (i) Physical Notification Instruction Profile using input data in paragraphs 9 to 14; and
    - (ii) Pseudo Instruction Profile using input data in paragraphs 9 to 13 plus paragraphs 15 to 16.
  - (b) In order to derive Dispatch Quantities ( $QD_{u\gamma}$ ) for each Generator Unit,  $u$ , in Imbalance Settlement Period,  $\gamma$ , for the purpose of Undelivered Quantity calculation and Uninstructed Imbalance calculation, an Uninstructed Imbalance Instruction Profile shall be created using input data in paragraphs 10 to 13.
32. Each section of the piecewise linear Instruction Profile for a Generator Unit shall be produced in sequence by stepping through the sequence of Dispatch Instructions and/or Pseudo Dispatch Instructions, for the Generator Unit as follows:

- (a) The MW/Time Co-ordinates from the previous segment of the Instruction Profile shall be retrieved. For the initial segment of the Instruction Profile the MW/Time Co-ordinate is the end MW/Time Co-ordinate from the end segment of the Instruction Profile calculated for the previous Trading Day.
- (b) Where an initial MW/Time Co-ordinate is not available for the Generator Unit from the previous Instruction Profiling run, the Target Instruction Level for the latest Dispatch Instruction for the Generator Unit prior to 23:00 on the Trading Day shall be used as the initial Instructed Quantity for the Generator Unit.
- (c) The active Dispatch Instruction or Pseudo Dispatch Instruction shall be identified using the MW/Time Co-ordinates from the previous segment of the Instruction Profile and the Instruction Effective Time that corresponds to that Dispatch Instruction or Pseudo Dispatch Instruction.
- (d) The active Dispatch Instruction or Pseudo Dispatch Instruction shall be validated by the Market Operator using the MW/Time Co-ordinates from the previous segment of the Instruction Profile, the Target Instruction Level, the Instruction Code and Instruction Combination Code using the rules specified in Table 8 and Table 9.

**Table 8 – Instruction Profiling Validation Rules for Generator Units that are not Pumped Storage Units or Battery Storage Units**

Instructed from segment of Instruction Profile	Quantity previous of	Instruction Code for active Dispatch Instruction or Pseudo Dispatch Instructions	Target Instruction Level	Action
0		SYNC	Null	Set Target Instruction Level of accompanying Dispatch Instruction having Instruction Code MWOFF to Registered Minimum Stable Generation.
0		SYNC	< Registered Minimum Stable Generation	Set Target Instruction Level of accompanying Dispatch Instruction having Instruction Code MWOFF to Registered Minimum Stable Generation.
0		MWOFF	0	Ignore Dispatch Instruction.
0		MWOFF	> 0	Use Cold Start Up Operating Characteristics.
0		DESY		Ignore Dispatch Instruction.
>0		SYNC		Ignore Dispatch Instruction.
>0		MWOFF	0	Profile to zero.



Instructed from segment Instruction Profile	Quantity previous of	Instruction Code for active Dispatch Instruction or Pseudo Dispatch Instructions	Target Instruction Level	Action
>0		DESY	>0	Profile to MWOFF(0).
0		TRIP		Ignore Dispatch Instruction.
Any		PSYN	qFPN <sub>uh</sub> (t)	Profile to qFPN <sub>uh</sub> (t)
Any		PSYN	Null or <> qFPN <sub>uh</sub> (t)	Maintain the Generator Unit Output to the specified SYNC Target Instruction Level
Any		PMWO	qFPN <sub>uh</sub> (t)	Profile to qFPN <sub>uh</sub> (t)
Any		PMWO	Null or <> qFPN <sub>uh</sub> (t)	Maintain the Generator Unit Output to the specified SYNC Target Instruction Level
Any		PDES	qFPN <sub>uh</sub> (t)	Profile to qFPN <sub>uh</sub> (t)
Any		PDES	Null or <> qFPN <sub>uh</sub> (t)	Maintain the Generator Unit Output to the specified DESY Target Instruction Level
Any		PMXN	qFPN <sub>uh</sub> (t)	Profile to qFPN <sub>uh</sub> (t)
Any		PMXN	Null or <> qFPN <sub>uh</sub> (t)	Maintain the Generator Unit Output to the specified MXON Target Instruction Level
Any		PMXF	qFPN <sub>uh</sub> (t)	Profile to qFPN <sub>uh</sub> (t)
Any		PMXF	Null or <> qFPN <sub>uh</sub> (t)	Maintain the Generator Unit Output to the specified MXOF Target Instruction Level
Any		POFF	qFPN <sub>uh</sub> (t)	Profile to qFPN <sub>uh</sub> (t)
Any		POFF	Null or <> qFPN <sub>uh</sub> (t)	Maintain the Generator Unit Output to 0MW
Any		PCOD	qFPN <sub>uh</sub> (t)	Profile to qFPN <sub>uh</sub> (t)
Any		PCOD	Null or <> qFPN <sub>uh</sub> (t)	Maintain the Generator Unit Output to preceding Target Instruction Level

Instructed from segment Instruction Profile	Quantity previous of	Instruction Code for active Dispatch Instruction or Pseudo Dispatch Instructions	Target Instruction Level	Action
Any		PISP	$qFPN_{uh}(t)$	Profile to $qFPN_{uh}(t)$
Any		PISP	Null or $qFPN_{uh}(t) <>$	Maintain the Generator Unit Output to preceding Target Instruction Level

**Table 9 – Instruction Profiling Validation Rules for Pumped Storage Units and Battery Storage Units**

Instructed Quantity from previous segment of Instruction Profile	Instruction for Dispatch Instruction	Code active	Instruction Combination Code	Action.
0	SYNC		n/a	Profile to Instructed Quantity.
0	MWOF(0)		n/a	Ignore Dispatch Instruction.
0	DESY		n/a	Ignore Dispatch Instruction.
0	GOOP		SCP	Ignore Dispatch Instruction.
0	GOOP		SCT	Ignore Dispatch Instruction.
0	GOOP		PUMP	Profile to MWOF(Pumping Capacity or Battery Storage Capacity, as applicable).
> 0	SYNC		n/a	Ignore Dispatch Instruction.
> 0	MWOF(0)		n/a	Profile to zero.
> 0	GOOP		PGEN	Ignore Dispatch Instruction.
> 0	GOOP		PUMP	Profile to MWOF(Pumping Capacity or Battery Storage Capacity, as applicable).
< 0	SYNC		n/a	Ignore Dispatch Instruction.
< 0	MWOF(0)		n/a	Profile to zero.
< 0	GOOP		PUMP	Ignore Dispatch Instruction.

Instructed Quantity from previous segment of Instruction Profile	Instruction for Dispatch Instruction	Code active	Instruction Combination Code	Action.
< 0	MWOF(> 0)		n/a	Profile to zero, then profile to Target Instruction Level associated with MWOF Instruction Code.
0	MWOF(> 0)		n/a	Profile to Target Instruction Level associated with MWOF Instruction Code.
< 0	GOOP MWOF (0)		PGEN	Set Target Instruction Level associated with MWOF Instruction Code to Registered Minimum Stable Generation.
< 0	GOOP MWOF(NULL)		PGEN	Set Target Instruction Level associated with MWOF Instruction Code to Registered Minimum Stable Generation.
< 0	GOOP MWOF(NOT= OR NULL))	(0	PGEN	Profile to zero, then profile to Target Instruction Level associated with MWOF Instruction Code.
0	TRIP		n/a	Ignore Dispatch Instruction.
Any	GOOP		PGEN	maintain the Generator Unit Output to the specified PGEN Target Instruction Level until next Dispatch Instruction or Pseudo Dispatch Instruction;  then adjust Target Instruction Level to Final Physical Notification Quantities.

33. The Warm Cooling Boundary, Hot Cooling Boundary, the Instructed Quantity from the previous segment of the piecewise linear Instruction Profile and the Target Instruction Level for the current Dispatch Instruction shall be used to determine the appropriate operating mode of the Generator Unit. (The normal operating modes for a synchronised Generator Unit are load up mode, ramp up mode, ramp down mode and deload mode).
34. The appropriate segment from the piecewise linear Operating Trajectory shall be selected.
35. Where a Dispatch Ramp Up Rate accompanies a Dispatch Instruction, the Dispatch Ramp Up Rate shall be used in place of the Ramp Up Rates submitted as part of Technical Offer Data in the Ramp Up Operating Trajectory for the Generator Unit.

36. Where a Dispatch Ramp Down Rate accompanies a Dispatch Instruction the Dispatch Ramp Down Rate shall be used in place of the Ramp Down Rates submitted as part of Technical Offer Data in the Ramp Down Operating Trajectory for the Generator Unit.
37. The MW/Time Co-ordinates for the current segment of the piecewise linear Instruction Profile shall be calculated based on the MW/Time Co-ordinates from the previous segment of the Instruction Profile, the Instruction Code, the Instruction Combination Code, the Target Instruction Level, and the appropriate segment from the piecewise linear Operating Trajectory and the Imbalance Pricing Period and Imbalance Settlement Period Boundaries subject to the following rules:
- (a) In the case of a Dispatch Instruction having a GOOP Instruction Code and PUMP Instruction Combination Code, the Instructed Quantity for a Pumped Storage Unit or Battery Storage Unit will remain at the specified Target Instruction Level until a DESY Instruction Code is issued at which time the Instructed Quantity will go instantaneously to 0MW.
  - (b) The MW/Time Co-ordinates for a Dispatch Instruction having a GOOP Instruction Code and SCT Instruction Combination Code will be determined in the same manner as if a Dispatch Instruction having a MWOFF Instruction Code and a very low positive Target Instruction Level were issued.
  - (c) A Dispatch Instruction having a GOOP Instruction Code and a SCP Instruction Combination Code shall have no actual effect on the Instruction Profile of the Generator Unit except that a PUMP Instruction Code may follow.
  - (d) The Instructed Quantity at the Instruction Effective Time specified with the Dispatch Instruction having a TRIP Instruction Code will be zero. Ramp Rates, Deloading Rates and Dwell Times will be ignored in the calculation of the Instruction Profile.
  - (e) The default Instructed Quantity for a Wind Power Unit shall be set to its Output based on its Meter Data. The Instructed Quantity for a Wind Power Unit having a WIND Instruction Code and a LOCL or CURL Instruction Combination Code shall be set to the minimum of the Outturn Availability of the Wind Power Unit and the Target Instruction Level of the Wind Power Unit.
  - (f) The Target Instruction Level for a Generator Unit with a Dispatch Instruction having a MXON Instruction Code shall be the Short Term Maximisation Capability. The Instruction Profile shall be calculated from the last Ramp Up Rate specified for the Generator Unit.
  - (g) The Target Instruction Level for a Generator Unit with a Dispatch Instruction having a MXOF Instruction Code shall be the Target Instruction Level associated with the last Dispatch Instruction having a MWOFF Instruction Code. The Instruction Profile shall be calculated from Ramp Down Rate 1 for the Generator Unit.
38. A Lag Time shall be applied when defining the MW/Time Co-ordinates for all Dispatch Instructions except Dispatch Instructions having SYNC, TRIP or FAIL Instruction Codes. No Lag Time shall apply to Pseudo Dispatch Instructions. The Lag Time shall be included in the Instruction Profile to account for the time required for a Generator Unit to make the control adjustments necessary to implement a Dispatch Instruction. The Lag Time shall be set to 0.

## **CALCULATE DISPATCH QUANTITY FOR UNINSTRUCTED IMBALANCE CALCULATION**

39. A time weighted MW value for the Generator Unit for each Imbalance Settlement Period shall be set to be equal to double the calculated area per Imbalance Settlement Period between the piecewise linear Uninstructed Imbalance Instruction Profile for the Generator Unit and 0 MW. Areas calculated between the piecewise linear Uninstructed Imbalance Instruction Profile with negative MW values are negative.
40. The Dispatch Quantity ( $QD_{uy}$ ) for Pumped Storage Units in Pumping Mode shall be calculated as set to Metered Quantity ( $QM_{uy}$ ), and the Dispatch Quantity ( $QD_{uy}$ ) for Battery Storage Units in Charging Mode shall be calculated as set to Metered Quantity ( $QM_{uy}$ ).