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 Communication Channels		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	

Name	Term	Relevant Units	Validation Registration Data
Previously Registered Flag		All Generator Units	Yes
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 Agreement Reference ID		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_u	All Generator Units except Interconnector Error Units, Dispatchable Demand 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)	qCR_u	All Generator Units except Interconnector Error Units, Interconnector Residual Capacity Units, Demand Side Units, Assetless Units and Trading Units	Yes
Unit Load Scalar	ULS_u	All Generator Units except Interconnector Error Units, Dispatchable Demand 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.

APPENDIX I: OFFER DATA

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 0 to 0 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 0 and 0 of this Appendix; and

(b) before Gate Closure 2 in respect of the Imbalance Settlement Period, in accordance with paragraphs 0 and 0 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

Data Element	Energy Limited Unit	Demand Side Unit	Other Generator Units not included in paragraph 0 of this Appendix
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

Comment [A1]: DDU falls in under "Other Generators"

Comment [A2]: Start up cost, in the negative range. Set to zero in TSC D.4.3.3

Comment [A3]: Shut down cost not needed for Day-One. Maybe in future years.

Comment [A4]: Can the system accept negative number for a DDU?

Comment [A5]: Can the system accept negative number for a DDU?

Comment [A6]: Can the system accept negative number for a DDU?

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 0 to 0 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 0 to 0 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 0 to 0 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 0 to 0 of this Appendix inclusive and paragraph 0 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 0 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 0 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 0 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 0 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 0 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 0 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 0 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 0 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 0 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 0 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 0 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 0 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 0 to 0 of this Appendix:

    (a) From MW Level;

    (b) From MW Time;

    (c) To MW Level;

    (d) To MW Time; and

    (e) Under Test Flag.

Comment [A7]: Can the system accept negative values for DDU?

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 0 and 0 of this Appendix;

    (b) before Gate Closure 2 in respect of the Imbalance Settlement Period, in accordance with paragraphs 0 and 0 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 0 to 0 of this Appendix inclusive and paragraph 0 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 thirty minute period, starting on each hour, and half 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

Data Element	Supplier Unit	Unit Under Test	Other Generator Unit not included in paragraph 0 of this Appendix
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	

Appendix O : INSTRUCTION PROFILING CALCULATIONS

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 φ;

   (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 γ;

   (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 ($QD_{uγ}$)

   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 0.

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 Market Operator shall, for each Settlement Day, use the following Registration Data and Accepted Technical Offer Data for each Trading Day which falls within that Settlement Day in whole or in part, provided in accordance with Appendix H: “Data Requirements for Registration” and Appendix I: “Offer Data” respectively, to calculate all Instruction Profile types for that Settlement Day:

    (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 DownTrigger 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

Instruction Code	Instruction Combination Code	Description
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 or Solar Power Unit to reduce Output due to a Local Network Constraint at the specified Instruction Effective Time.

Comment [A8]: Should DDU be included here?

Instruction Code	Instruction Combination Code	Description
WIND	LCLO	Instruction for a Wind Power Unit or Solar Power Unit to cease the reduction of Output due to a Local Network Constraint at the specified Instruction Effective Time.
WIND	CURL	Instruction for a Wind Power Unit or Solar 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 or Solar 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	**Step 1**: 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 order to comply with the Generator Unit's Accepted Technical Offer Data, whichever is later; **Step 2**: with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities, or if at the time that profile would have reached the Final Physical Notification Quantities the Physical Notification Instruction Profile associated with a previous SYNC Dispatch Instruction has not achieved Step 1 in accordance with the SYNC Instruction Code entry in Table 2, then adjust Target Instruction Level to the Physical Notification Instruction Profile associated with the SYNC Dispatch Instruction; 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

Instruction Code	Instruction Combination Code	Description
		appropriate.
GOOP	PGEN	**Step 1**: 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 order to comply with the Generator Unit's Accepted Technical Offer Data, whichever is later; **Step 2**: with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities, or if at the time that profile would have reached the Final Physical Notification Quantities the Physical Notification Instruction Profile associated with a previous SYNC Dispatch Instruction has not achieved Step 1 in accordance with the SYNC Instruction Code entry in Table 2, then adjust Target Instruction Level to the Physical Notification Instruction Profile associated with the SYNC Dispatch Instruction; 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.
MXON	n/a	**Step 1**: 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 order to comply with the Generator Unit's Accepted Technical Offer Data, whichever is later; **Step 2**: with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities, or if at the time that profile would have reached the Final Physical Notification Quantities the Physical Notification Instruction Profile associated with a previous SYNC Dispatch Instruction has not achieved Step 1 in accordance with the SYNC Instruction Code entry in Table 2, then adjust Target Instruction Level to the Physical Notification Instruction Profile associated with the SYNC Dispatch Instruction; 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.
MXOF	n/a	**Step 1**: Instruction to de-activate a Maximisation Instruction at the specified Instruction Effective Time and adjust the Generator Unit Output to MWOF issued with MXOF or the last valid MWOF prior to the Maximisation instruction until

Comment [A9]: Should DDU be included here?

Instruction Code	Instruction Combination Code	Description
		specified Effective Until Time or until the Target Instruction Level must be maintained in order to comply with the Generator Unit's Accepted Technical Offer Data, whichever is later; **Step 2**: with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities, or if at the time that profile would have reached the Final Physical Notification Quantities the Physical Notification Instruction Profile associated with a previous SYNC Dispatch Instruction has not achieved Step 1 in accordance with the SYNC Instruction Code entry in Table 2, then adjust Target Instruction Level to the Physical Notification Instruction Profile associated with the SYNC Dispatch Instruction; 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.
SYNC	n/a	If there is no MWOF Dispatch Instruction issued with the same Instruction Effective Time, and the Target Instruction Level for the SYNC Dispatch Instruction is less than or equal to the Registered Minimum Stable Generation: **Step 1**: Synchronise the Generator Unit at the specified Instruction Effective Time and adjust the Generator Unit Output to a Target Instruction Level equal to the Registered Minimum Stable Generation until a specified Effective Until Time or until the Target Instruction Level must be maintained in order to comply with the Generator Unit's Accepted Technical Offer Data, whichever is later; **Step 2**: 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. Otherwise if there is no MWOF Dispatch Instruction issued with the same Instruction Effective Time, and the Target Instruction Level for the SYNC Dispatch Instruction is greater than the Registered Minimum Stable Generation, then follow Step 3: **Step 3**: Synchronise the Generator Unit at the specified Instruction Effective Time and adjust the Generator Unit Output as described in Steps 1 and 2. For the purposes of calculating Physical Notification Instruction Profiles, create an additional Dispatch Instruction with Instruction Code "MWOF" with the same Instruction Effective Time and Instruction Issue Time as the associated SYNC Dispatch

Instruction Code	Instruction Combination Code	Description
		Instruction, and for the Physical Notification Instruction Profile applicable to this Dispatch Instruction adjust the Generator Unit Output as described in Steps 1 and 2 of the MWOF Instruction Code entry in Table 2.

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	**Continuous open acceptance after SYNC.** At Instruction Effective Time set as the later of: - 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 - the corresponding SYNC Instruction Effective Time plus Min On Time; or - if the MW value of the Registered Minimum Stable Generation corresponds to the MW value of a Soak Time Trigger Point in the applicable Accepted Technical Offer Data, then the time when the corresponding SYNC Instruction Profile reaches Registered Minimum Stable Generation plus the applicable Soak Time, **Step 1**: create a PSYN to maintain Generator Unit Output to the specified SYNC Target Instruction Level until next Dispatch Instruction or Pseudo Dispatch Instruction; **Step 2**: with an Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities. PSYN is not created where the Target Instruction Level

Pseudo Dispatch Instruction Code	Pseudo Dispatch Instruction Combination Code	Corresponding Instruction Code or Instruction Combination Code	Description
			of the associated SYNC Dispatch Instruction is greater than the Registered Minimum Stable Generation, or where there is a MWOF Dispatch Instruction issued at the same Instruction Effective Time as the associated SYNC Dispatch Instruction with a Target Instruction Level which is not equal to the Registered Minimum Stable Generation.
PMWO	n/a	MWOF	**Continuous open acceptance after MWOF**. At Instruction Effective Time set as: - the time when the corresponding MWOF Instruction Profile reaches the specified Target Instruction Level, **Step 1**: create a PMWO to maintain the Generator Unit Output to the specified MWOF Target Instruction Level until next Dispatch Instruction or Pseudo Dispatch Instruction; **Step 2**: with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities, or if at the time that profile would have reached the Final Physical Notification Quantities the Physical Notification Instruction Profile associated with a previous SYNC Dispatch Instruction has not achieved Step 1 in accordance with the SYNC Instruction Code entry in Table 2, then adjust Target Instruction Level to the Physical Notification Instruction Profile associated with the SYNC Dispatch Instruction.
PDES	n/a	DESY	**Continuous open acceptance after DESY.** At Instruction Effective Time set as: - the time when the corresponding DESY Instruction Profile reaches the Target Instruction Level plus Min Off Time, **Step 1**: create a PDES to maintain the Generator Unit Output to the specified DESY Target Instruction Level until next Dispatch Instruction or Pseudo Dispatch Instruction; **Step 2**: with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities, or if at the time that profile would have reached the Final Physical Notification Quantities the Physical Notification Instruction Profile associated with a previous SYNC

Pseudo Dispatch Instruction Code	Pseudo Dispatch Instruction Combination Code	Corresponding Instruction Code or Instruction Combination Code	Description
			Dispatch Instruction has not achieved Step 1 in accordance with the SYNC Instruction Code entry in Table 2, then adjust Target Instruction Level to the Physical Notification Instruction Profile associated with the SYNC Dispatch Instruction.
GOOP	PPGE	PGEN	**Continuous open acceptance after PGEN**. At Instruction Effective Time set as: - the time when the corresponding PGEN Instruction Profile reaches the specified Target Instruction Level, **Step 1**: create a PPGE to maintain the Generator Unit Output to the specified PGEN Target Instruction Level until next Dispatch Instruction or Pseudo Dispatch Instruction; **Step 2**: with the Instruction Effective Time set equal to the time Step 1 is achieved, Target Instruction Level to Final Physical Notification Quantities, or if at the time that profile would have reached the Final Physical Notification Quantities the Physical Notification Instruction Profile associated with a previous SYNC Dispatch Instruction has not achieved Step 1 in accordance with the SYNC Instruction Code entry in Table 2, then adjust Target Instruction Level to the Physical Notification Instruction Profile associated with the SYNC Dispatch Instruction.
PMXN	n/a	MXON	**Continuous open acceptance after MXON**. At Instruction Effective Time set as: - the time when the corresponding MXON Instruction Profile reaches the Short Term Maximisation Capability, **Step 1**: create a PMXN to maintain the Generator Unit Output to the specified MXON Target Instruction Level until next Dispatch Instruction or Pseudo Dispatch Instruction; **Step 2**: with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities, or if at the time that profile would have reached the Final Physical Notification Quantities the Physical Notification Instruction Profile associated with a previous SYNC Dispatch Instruction has not achieved Step 1 in accordance with the SYNC Instruction Code entry in

Pseudo Dispatch Instruction Code	Pseudo Dispatch Instruction Combination Code	Corresponding Instruction Code or Instruction Combination Code	Description
			Table 2, then adjust Target Instruction Level to the Physical Notification Instruction Profile associated with the SYNC Dispatch Instruction.
PMXF	n/a	MXOF	**Continuous open acceptance after MXOF**. At Instruction Effective Time set as: - the time when the corresponding MXON Instruction Profile reaches the last effective MWOF Target Instruction Level prior to the corresponding MXON, **Step 1**: create a PMXF to maintain the Generator Unit Output to the specified MXOF Target Instruction Level until next Dispatch Instruction or Pseudo Dispatch Instruction; **Step 2**: with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities, or if at the time that profile would have reached the Final Physical Notification Quantities the Physical Notification Instruction Profile associated with a previous SYNC Dispatch Instruction has not achieved Step 1 in accordance with the SYNC Instruction Code entry in Table 2, then adjust Target Instruction Level to the Physical Notification Instruction Profile associated with the SYNC Dispatch Instruction.
POFF	n/a	n/a	**Continuous open acceptance keeping unit off**. At Instruction Effective Time set as: - the time where the Final Physical Notification Quantity profile rises from zero **Step 1**: create a POFF to maintain the Generator Unit Output to the specified Target Instruction Level (zero) until next Dispatch Instruction or Pseudo Dispatch Instruction; **Step 2**: with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities, or if at the time that profile would have reached the Final Physical Notification Quantities the Physical Notification Instruction Profile associated with a previous SYNC Dispatch Instruction has not achieved Step 1 in accordance with the SYNC Instruction Code entry in Table 2, then adjust Target Instruction Level to the Physical Notification Instruction Profile associated with

Pseudo Dispatch Instruction Code	Pseudo Dispatch Instruction Combination Code	Corresponding Instruction Code or Instruction Combination Code	Description
			the SYNC Dispatch Instruction. POFF is created where the preceding Dispatch Instruction is not one of the following: MWOF, MXON, SYNC, PGEN, MXOF, DESY.
PCOD	n/a	n/a	**Continuous open acceptance after COD change.** At Instruction Effective Time set as: - the effective time of a revised set of Unit's Commercial Offer Data set out in sub-paragraphs 0 and 0 **Step 1**: 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; **Step 2**: with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities, or if at the time that profile would have reached the Final Physical Notification Quantities the Physical Notification Instruction Profile associated with a previous SYNC Dispatch Instruction has not achieved Step 1 in accordance with the SYNC Instruction Code entry in Table 2, then adjust Target Instruction Level to the Physical Notification Instruction Profile associated with the SYNC Dispatch Instruction. PCOD is created where the preceding Dispatch Instruction is not one of the following: MWOF, MXON, SYNC, PGEN, MXOF, DESY.
PISP	n/a	n/a	**Continuous open acceptance after Imbalance Settlement Period boundary**, At Instruction Effective Time set as: - the Imbalance Settlement Period boundary time, **Step 1**: create a PISP to maintain the Generator Unit Output to the preceding Target Instruction Level until next Dispatch Instruction or Pseudo Dispatch Instruction; **Step 2**: with the Instruction Effective Time set equal to the time Step 1 is achieved, adjust Target Instruction Level to Final Physical Notification Quantities, or if at the time that profile would have reached the Final Physical Notification Quantities the Physical Notification Instruction Profile associated with a previous SYNC Dispatch Instruction has not achieved Step 1 in

Pseudo Dispatch Instruction Code	Pseudo Dispatch Instruction Combination Code	Corresponding Instruction Code or Instruction Combination Code	Description
			accordance with the SYNC Instruction Code entry in Table 2, then adjust Target Instruction Level to the Physical Notification Instruction Profile associated with the SYNC Dispatch Instruction. PISP is created where the preceding Dispatch Instruction is not one of the following: MWOF, MXON, SYNC, PGEN, MXOF, DESY.

DISPATCH INSTRUCTION AND PSEUDO DISPATCH INSTRUCTION VALIDATION

17. Dispatch Instructions for a Settlement 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, Instruction Issue Time and the MW value of the Target Instruction Level (in order of increasing quantity). 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 0, paragraph 0 first sentence relating to MWOF Instruction Codes only, paragraph 0, paragraph 0, paragraph 0 first sentence relating to all Instruction Codes, paragraph 0 second sentence, paragraph 0, paragraph 0.

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) MWOF;

    (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) The Pseudo Dispatch Instruction corresponding to the latest Dispatch Instruction or Instruction Combination Code ordered in accordance with paragraph 0;

(b) PISP;

(c) POFF; and

(d) PCOD.

21. For Dispatch Instructions having a MWOF Instruction Code or new Dispatch 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, MWOF(x) is defined as Dispatch Instruction having an Instruction Code of MWOF 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
MWOF(x)	n/a	SYNC	n/a	SYNC(x)	n/a
SYNC	n/a	MWOF(x)	n/a	SYNC(x)	n/a
MWOF(x)	n/a	DESY	n/a	DESY(x)	n/a
DESY	n/a	MWOF(x)	n/a	DESY(x)	n/a
MWOF(x)	n/a	GOOP	PGEN	MWOF(x)	n/a

Instruction Code A	Instruction Combination Code A	Instruction Code B	Instruction Combination Code B	Resultant Instruction Code	Resultant Instruction Combination Code
GOOP	PGEN	MWOF(x)	n/a	MWOF(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	MWOF(x)	n/a	WIND	CURL(x)
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
MWOF	x > Maximum Generation	Set x to > Maximum Generation
MWOF	x in Restricted Range	Profile MWOF(x)
SYNC[1]	x > Maximum Generation	Set x to > Maximum Generation
SYNC	x in Restricted Range	Profile MWOF(x)
SYNC	x = Registered Minimum Stable Generation	**Step 1**: Remove the MWOF Dispatch Instruction as part of validation in accordance with Table 4. For the Physical Notification Instruction Profile related to the SYNC Dispatch Instruction, synchronise the Generator Unit at the specified Instruction Effective Time and adjust the Generator Unit Output to a Target Instruction Level equal to the Registered Minimum Stable Generation until a specified Effective Until Time or until the Target Instruction Level must be maintained in order to comply with the Generator Unit's Accepted Technical Offer Data, whichever is later; **Step 2**: 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.

[1] 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.

Instruction Code	MWOF(x)	Action
SYNC	x ≠ Registered Minimum Stable Generation	Synchronise the Generator Unit at the specified Instruction Effective Time and adjust the Generator Unit Output as described in Steps 1 and 2 of the SYNC with x = Registered Minimum Stable Generation entry to Table 6. For the purposes of calculating Physical Notification Instruction Profiles, keep the associated MWOF Dispatch Instruction rather than removing it as part of validation in accordance with Table 4, create an additional Physical Notification Instruction Profile for the MWOF Dispatch Instruction, and adjust the Generator Unit Output as described in Steps 1 and 2 of the MWOF Instruction Code entry to Table 2.
MWOF	0 < x < Registered Minimum Stable Generation	Profile MWOF(x)
SYNC	x = NULL	Set x = Registered Minimum Stable Generation
DESY[2]	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 de-activate the Maximisation Instruction.

[2] 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

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.

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, negative output range ramp down mode and negative output range ramp up 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. The Technical Offer Data used to determine the piecewise linear Operating Trajectory shall be the Accepted Technical Offer Data for the Trading Day containing the Instruction Effective Time of the Dispatch Instruction.

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.

(c) Possible need for a new paragraph for Negative Output Range Ramp Up Mode, which if new TOD is created would include Negative Range Ramp Up Rate 1-5, Negative Range Ramp Up Rate Break Point 1-4, possibly soak times? Not 100% sure, may need to split out into upward and downward dwell times. Also, Minimum Off Time

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.

(c) Possible need to add a new paragraph for negative output range ramp down mode, which if new TOD is created would include Registered Minimum Output, Negative Output Range Ramp Down Rate (hot warm cold 1-5), Negative Output Range Ramp Down Rate break point (hot warm cold 1-4), negative output range block load (hot warm cold), Negative Range Minimum On Time, Negative Range Soak Time (hot warm cold 1 and 2), Negative range soak time trigger point (hot warm cold 1 and 2), and same b point as all the others.

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 0 to 0 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 0 to 0; and

(ii) Pseudo Instruction Profile using input data in paragraphs 0 to 13 plus paragraphs 0 to 0.

(b) In order to derive Dispatch Quantities ($QD_{u\gamma}$) for each Generator Unit, u, in Imbalance Settlement Period, γ, for the purpose of Undelivered Quantity calculation and Uninstructed Imbalance calculation, an Uninstructed Imbalance Instruction Profile shall be created using input data in paragraphs 0 to 0.

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 Settlement 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 00:00 on the Settlement 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 Quantity from previous segment of Instruction Profile	Instruction Code for active Dispatch Instruction or Pseudo Dispatch Instructions	Target Instruction Level	Action

Instructed Quantity from previous segment of Instruction Profile	**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 MWOF to Registered Minimum Stable Generation.
0	SYNC	< Registered Minimum Stable Generation	Set Target Instruction Level of accompanying Dispatch Instruction having Instruction Code MWOF to Registered Minimum Stable Generation. except for Dispatchable Demand Units and Battery Storage Units.
0	MWOF	0	Ignore Dispatch Instruction.
0	MWOF	> 0	Use Cold Start Up Operating Characteristics.
0	DESY		Ignore Dispatch Instruction.
>0	SYNC		Ignore Dispatch Instruction.
>0	MWOF	0	Profile to zero.
>0	DESY	>0	Profile to MWOF(0).
0	TRIP		Ignore Dispatch Instruction.
Any	PSYN	$qFPN_{uh}(t)$	Profile to $qFPN_{uh}(t)$
Any	PSYN	Null or <> $qFPN_{uh}(t)$	Maintain the Generator Unit Output to the specified SYNC Target Instruction Level
Any	PMWO	$qFPN_{uh}(t)$	Profile to $qFPN_{uh}(t)$
Any	PMWO	Null or <> $qFPN_{uh}(t)$	Maintain the Generator Unit Output to the specified SYNC Target Instruction Level
Any	PDES	$qFPN_{uh}(t)$	Profile to $qFPN_{uh}(t)$

Instructed Quantity from previous segment of Instruction Profile	Instruction Code for active Dispatch Instruction or Pseudo Dispatch Instructions	Target Instruction Level	Action
Any	PDES	Null or <> $qFPN_{uh}(t)$	Maintain the Generator Unit Output to the specified DESY Target Instruction Level
Any	PMXN	$qFPN_{uh}(t)$	Profile to $qFPN_{uh}(t)$
Any	PMXN	Null or <> $qFPN_{uh}(t)$	Maintain the Generator Unit Output to the specified MXON Target Instruction Level
Any	PMXF	$qFPN_{uh}(t)$	Profile to $qFPN_{uh}(t)$
Any	PMXF	Null or <> $qFPN_{uh}(t)$	Maintain the Generator Unit Output to the specified MXOF Target Instruction Level
Any	POFF	$qFPN_{uh}(t)$	Profile to $qFPN_{uh}(t)$
Any	POFF	Null or <> $qFPN_{uh}(t)$	Maintain the Generator Unit Output to 0MW
Any	PCOD	$qFPN_{uh}(t)$	Profile to $qFPN_{uh}(t)$
Any	PCOD	Null or <> $qFPN_{uh}(t)$	Maintain the Generator Unit Output to preceding Target Instruction Level
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 Code for active Dispatch Instruction	Instruction Combination Code	Action.
0	SYNC	n/a	Profile to Instructed Quantity.

Instructed Quantity from previous segment of Instruction Profile	Instruction Code for active Dispatch Instruction	Instruction Combination Code	Action.
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.
< 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. Create PPGE Pseudo Dispatch Instruction in accordance with the GOOP PGEN entry of Table 3.

Instructed Quantity from previous segment of Instruction Profile	**Instruction Code for active Dispatch Instruction**	**Instruction Combination Code**	**Action.**
< 0	GOOP MWOF(NULL)	PGEN	Set Target Instruction Level associated with MWOF Instruction Code to Registered Minimum Stable Generation.
< 0	GOOP MWOF(NOT= (0 OR NULL))	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 MWOF 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 or Solar Power Unit or a Generator Unit which has Priority Dispatch and which is not Dispatchable, shall be set to its Final Physical Notification Quantity ($qFPN_{uh}(t)$). Where a CURL and/or a LOCL Instruction Combination Code is issued for the Generator Unit, a Physical Notification Instruction Profile shall be created for each Instruction Combination Code type. When a CRLO Dispatch Instruction is issued, any preceding issued CURL Dispatch Instructions shall be deemed to be no longer applicable, and when a LCLO Dispatch Instruction is issued, any preceding issued LOCL Dispatch Instructions shall be deemed to be no longer applicable. For the purposes of the Physical Notification Instruction Profile the Instructed Quantity shall be the minimum of the Outturn Availability of the Generator Unit and the Target Instruction Level of the latest Dispatch Instruction of that Instruction Combination Code type effective from the Instruction Effective Time of that Dispatch Instruction, and for the purposes of the Uninstructed Imbalance Instruction Profile the Instructed Quantity for the Generator Unit shall be the minimum of the Outturn Availability of the Generator Unit and the Target Instruction Levels of all Dispatch Instructions issued for the Generator Unit. Where Dispatch Instructions are deemed to be no longer applicable, the Instructed Quantity of the Physical Notification Instruction Profile relating to those Dispatch Instructions shall be the minimum of the Instructed Quantity of the latest Dispatch Instruction still applicable and the default Instructed Quantity. Ramp Up and Ramp Down Rates, Load Up Rates and Deloading Rates are assumed to be infinite (creating stepwise linear curves), and Dwell Times and Soak Times are assumed to have a value equal to zero, in the calculation of the Instruction Profile.

(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 MWOF 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. The Dispatch Quantity (QD_{uy}) for a Generator Unit, u, shall be calculated as a time weighted MWh value for the Generator Unit for each Imbalance Settlement Period, set to be equal to the calculated time-weighted 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 and Battery Storage in Charging Mode shall be calculated as set out in Paragraph 39.