

## **CUSC - SECTION 4**

### **BALANCING SERVICES**

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## CUSC - SECTION 4

### BALANCING SERVICES

#### 4.1 MANDATORY ANCILLARY SERVICES

##### 4.1.1 Application

- 4.1.1.1 The provisions of this Paragraph 4.1 shall apply to **Users** which are **Generators** in respect of **Generating Units, DC Converters** and **Power Park Modules** from which they are required to provide the **Mandatory Ancillary Services** to **The Company** in accordance with the **Grid Code** (for the avoidance of doubt, as determined by any direction in force from time to time and issued by the **Authority** relieving any such **User** from the obligation under its **Licence** to comply with such part or parts of the **Grid Code** or any **Distribution Code** or, in the case of **The Company**, the ~~Transmission~~ ESO **Licence**, as may be specified in such direction).
- 4.1.1.2 In respect of **Generating Unit(s), DC Converter(s)** and **Power Park Modules** which are required to provide **Mandatory Ancillary Services** to **The Company** in accordance with the **Grid Code** and which are not registered as **BM Unit(s)**, the **Mandatory Service Agreement** shall detail how the provisions of Section 4 and Schedule 3 of the **CUSC** which refer to **BM Unit(s)** shall (notwithstanding such **Generating Unit(s), DC Converter(s)** and **Power Park Module(s)** are not registered as **BM Unit(s)**) apply.

##### 4.1.2 Reactive Power

- Schedule 3, Part I*
- 4.1.2.1 **The Company** and each **User** shall, as between **The Company** and that **User**, comply with the provisions regarding the **Obligatory Reactive Power Service** and any **Enhanced Reactive Power Service** contained in Schedule 3, Part I.
- Provision of Obligatory Reactive Power Service*
- 4.1.2.2 Subject as herein provided, each **User** hereby agrees, as between **The Company** and that **User**, to provide the **Obligatory Reactive Power Service** from each of the **BM Units** specified in a **Mandatory Services Agreement**.

- 4.1.2.3 In respect of **Generating Unit(s)** located **Offshore** where the **Obligatory Reactive Power Service** is provided to **The Company** by an **Offshore Transmission Licensee** in accordance with the **STC**, the **Mandatory Ancillary Services Agreement** shall detail the payments that **The Company** shall make to the **User** (notwithstanding that the **Obligatory Reactive Power Service** is provided to **The Company** by an **Offshore Transmission Licensee**).

*Redeclarations*

- 4.1.2.4 (a) For the avoidance of doubt, nothing in this Paragraph 4.1.2.4 or any **Mandatory Services Agreement** shall affect the provisions of **Grid Code OC 2** and/or **BC 1** concerning the redeclaration in relation to any **BM Unit** (or where applicable, any **CCGT Unit** or **Power Park Unit**) of a revised capability to provide **Leading** and/or **Lagging** Mvar, where applicable at the generator stator terminals.
- (b) All such redeclarations at the generator stator terminals submitted pursuant to **Grid Code OC2** and/or **BC 1** may include the revised capability (in the case of **CCGT Units** and **Power Park Units** of the relevant **BM Unit**) at **Rated MW** at the **Commercial Boundary**. Such capability shall be derived from the capability at the generator stator terminals by application of the applicable formulae set out in Parts 1, 2 or 3 of Appendix 8 to Schedule 3, Part I.
- (c) Where a redeclaration of capability to provide **Leading** and/or **Lagging** Mvars at **Rated MW** does not specify such revised capability at the **Commercial Boundary**, then **The Company** shall calculate the revised capability at **Rated MW** at the **Commercial Boundary** by application of the applicable formulae set out in Parts 1, 2 or 3 of Appendix 8 to Schedule 3, Part I.
- (d) Any revised capability of a **BM Unit** at **Rated MW** at the **Commercial Boundary** shall constitute the respective values of  $QR_{lead}$  and  $QR_{lag}$  as referred to in Section 2 of Appendix 3 of Schedule 3, Part I.
- (e) In order to calculate any payments which fall due in accordance with this Paragraph 4.1.2 and a **Mandatory Services Agreement**, following commencement of the relevant clause of the **Mandatory Services Agreement**,

**The Company** shall calculate the values of  $QR_{lead}$  and  $QR_{lag}$  in accordance with the applicable formulae contained in Parts 1, 2 or 3 of Appendix 8 to Schedule 3, Part I.

*Utilisation*

- 4.1.2.5 **The Company** shall have the right (but shall not be obliged) at any time to instruct a **User** by the issue of a **Reactive Despatch Instruction** to provide **Leading** and/or **Lagging** Mvars from some or all of the **BM Units** specified in a **Mandatory Services Agreement**.

*Monitoring*

- 4.1.2.6 In order to comply with its obligations contained in **Grid Code OC 5**, **The Company** may use **Operational Metering Equipment** owned by a **Relevant Transmission Licensee** in accordance with Paragraph 6.7.3 to ensure that, in respect of each **BM Unit**, a **User** is complying with its obligations to provide the **Obligatory Reactive Power Service** both in accordance with the **Grid Code** and in accordance with the terms of the **Mandatory Services Agreement**.

- 4.1.2.7 Each **User** acknowledges that **The Company** may wish to install additional monitoring equipment at a **Power Station** to monitor the ability of any or all of the **BM Units** of that **User** to provide the **Obligatory Reactive Power Service**, such monitoring equipment to be installed on terms to be agreed with that **User** (such agreement not to be unreasonably withheld or delayed). The cost of such additional monitoring equipment and its installation shall be borne by **The Company**.

*Reactive Testing*

- 4.1.2.8 Where, in accordance with **Grid Code OC 5.4.2.4**, **The Company** shall be entitled to require a **Reactive Test**, such test shall be in addition to, and shall not prejudice **The Company's** right to require, the two annual **Reactive Tests** referred to in **Grid Code OC 5.5.1.1**. If a **BM Unit** or a **CCGT Unit** (as the case may be) fails a **Reactive Test**, then **The Company** shall advise the **User** that the **BM Unit** or **CCGT Unit** (as appropriate) has so failed whereupon, subject always to resolution of any dispute in accordance with **Grid Code OC 5.5.4** and (where applicable) **OC 5.5.5**, the **User** shall immediately advise **The Company** of the revised capability of that **BM Unit** or **CCGT Unit** (as appropriate) to provide **Leading** and/or **Lagging** Mvars (as the case may be) in

accordance with the terms of the **Mandatory Services Agreement**.

*Grid Code*

- 4.1.2.9 It is acknowledged by **The Company** and each **User** that the provision by that **User** of the **Obligatory Reactive Power Service** in accordance with the terms of the **CUSC** and the **Mandatory Services Agreement** shall not relieve it of any of its obligations set out in the **Grid Code** including without limitation its obligation set out in **Grid Code CC 8.1** to provide **Reactive Power** (supplied otherwise than by means of synchronous or static compensators) except in the case of a **Power Park Module** where synchronous or static compensation within the **Power Park Module** may be used to provide **Reactive Power** in accordance with **Grid Code CC 6.3.2**.

*Disclosure and Use of Information*

- 4.1.2.10 Each **User** hereby consents to the disclosure and use by **The Company** of data and other information relating to the provision by that **User** of the **Obligatory Reactive Power Service** and the relevant provisions of the **Mandatory Services Agreement** relating thereto to the extent necessary to enable **The Company** to comply with its obligations set out in the **CUSC**. Each **User** hereby consents to the disclosure and use by **The Company** of data and other information from any year relating to the provision by that **User** of the **Balancing Service** to the extent necessary to enable **The Company** to carry out its **EMR Functions**.

*Hierarchy*

- 4.1.2.11 If any provision of the **Mandatory Services Agreement** to the extent relating to the **Obligatory Reactive Power Service** shall be inconsistent with the provisions of Schedule 3, Part I, the provisions of Schedule 3, Part I shall prevail to the extent of such inconsistency.

### 4.1.3 Frequency Response

*Introduction*

- 4.1.3.1 Each applicable **User** is obliged to provide (for the avoidance of doubt, as determined by any direction in force from time to time and issued by the **Authority** relieving that **User** from the obligation under its **Licence** to comply with such part or parts of the **Grid Code** or any **Distribution Code** or, in the case of **The Company**, the **Transmission-ESO Licence**, as may be

specified in such direction) the **Mandatory Ancillary Service of Frequency Response** referred to in **Grid Code CC 8.1** by means of **Frequency** sensitive generation in accordance with the terms of this Paragraph 4.1.3 and a **Mandatory Services Agreement** but subject always to and in accordance with the relevant part or parts of the **Grid Code** applicable thereto.

#### *Definitions*

4.1.3.2 For the purposes of this Paragraph 4.1.3:

- (i) **“Frequency Response Service”** means the **Mandatory Ancillary Service of Frequency Response** and any **Commercial Ancillary Service of Frequency Response** as may be agreed to be provided by a **User** from time to time;
- (ii) the **Mandatory Ancillary Service of Frequency Response** shall constitute operation of a **BM Unit** in accordance with **Grid Code CC 6.3.7** and **BC 3.5** (with the exception of **BC 3.5.2**), including, without limitation, under normal operating conditions with the speed governor set so that it operates with an overall speed droop of between 3% and 5% so as to provide the applicable levels of **Response** referred to in Paragraph 4.1.3.7;
- (iii) the term "instruction" means a communication whether by telephone or automatic logging device or facsimile from **The Company** to the **User** instructing a **User** in accordance with **Grid Code BC 2.8** and this Paragraph 4.1.3 to provide any **Frequency Response Service**, and derivations of the term shall be construed accordingly;
- (iv) the amendment of an existing instruction shall be deemed to be a new instruction;
- (v) an instruction will prevail until either it is countermanded by **The Company** or until the **BM Unit** to which the instruction relates is **De-synchronised** (whichever is first to occur).

#### ***The Company’s Instructions to provide Mode A Frequency Response***

4.1.3.3 For the purposes of instructions and calculation of payments, the **Mandatory Ancillary Service of Frequency Response**

as described in this Paragraph 4.1.3 shall be referred to as **“Mode A Frequency Response”**.

4.1.3.4 **The Company** may at any time instruct a **User** to operate any one or more **BM Unit(s)** so as to provide the following components of **Mode A Frequency Response**:-

- (a) **Primary Response**;
- (b) **Secondary Response**;
- (c) **High Frequency Response**,

in any of the permissible combinations set out in the relevant table in the **Mandatory Services Agreement**.

4.1.3.5 **The Company** shall not instruct a **User** to provide **Mode A Frequency Response** and any **Commercial Ancillary Service of Frequency Response** simultaneously.

4.1.3.6 In the event that any instruction to provide **Frequency Response** does not state whether the instruction is to provide **Mode A Frequency Response** or any **Commercial Ancillary Service of Frequency Response**, such instruction shall be deemed to be an instruction to provide **Mode A Frequency Response**.

***User’s Obligation to Provide Response***

4.1.3.7 When a **User** is instructed in accordance with Paragraphs 4.1.3.4 and/or 4.1.3.6 to operate a **BM Unit** so as to provide any component(s) of **Mode A Frequency Response**, that **User** shall operate that **BM Unit** so as to provide, for any **Frequency Deviation** and at any level of **De-Load**, at least the amount of **Primary Response** and/or **Secondary Response** and/or **High Frequency Response** set out respectively in the relevant **Frequency Response Capability Data** tables in the **Mandatory Services Agreement** (as such tables are to be interpreted in accordance with Paragraph 4.1.3.11).

4.1.3.7A For the avoidance of doubt a **User** shall ensure that the **Transmission Entry Capacity**, and if relevant the **STTEC** and/or **LDTEC** and/or any **Temporary Received TEC** less any **Temporary Donated TEC**, for the relevant **Connection Site** shall be sufficient to enable it to comply with its

obligations under Paragraph 4.1.3.7 above at all times and in respect of all **BM Units**.

#### Calculation of Payments

- 4.1.3.8 The payments to be made by **The Company** to a **User** hereunder in respect of the provision of any **Mode A Frequency Response** from a **BM Unit** shall be comprised of **Holding Payments** and **Response Energy Payments** and shall be determined in accordance with the formulae in, respectively, Paragraphs 4.1.3.9 and 4.1.3.9A and in accordance with Paragraphs 4.1.3.10 to 4.1.3.12 inclusive.

#### *Payment Formulae - Holding Payments*

- 4.1.3.9 The **Holding Payments** for a **BM Unit** to be made by **The Company** to a **User** referred to in Paragraph 4.1.3.8 shall be calculated in accordance with the following formula:-

$$HP_M = P_M + H_M + S_M$$

Where:

$HP_M$  is the **Holding Payment** to be made to the **User** calculated in £ per minute.

$P_M$  is the payment per minute to be made by **The Company** to the **User** for the **Ancillary Service of Primary Response** provided by the **User** from the **BM Unit** concerned pursuant to an instruction from **The Company** to provide **Mode A Frequency Response**, and is calculated as follows:-

$$P_M = (P_{PR} \times P_{MW} (1 - SF_P)) \times K_T \times K_{GRC} \times \left[ \frac{1}{60} \right]$$

$H_M$  is the payment per minute to be made by **The Company** to the **User** for the **Ancillary Service of High Frequency Response** provided by the **User** from the **BM Unit** concerned pursuant to an instruction from **The Company** to provide **Mode A Frequency Response**, and is calculated as follows:-

$$H_M = (H_{PR} \times H_{MW} (1 - SF_H)) \times K_T \times K_{GRC} \times \left[ \frac{1}{60} \right]$$



$S_M$  is the payment per minute to be made by **The Company** to the **User** for the **Ancillary Service** of **Secondary Response** provided by the **User** from the **BM Unit** concerned pursuant to an instruction from **The Company** to provide **Mode A Frequency Response**, and is calculated as follows:-

$$S_M = (S_{PR} \times S_{MW} (1 - SF_S)) \times K_T \times K_{GRC} \times \left[ \frac{1}{60} \right]$$

In this Paragraph 4.1.3.9, the following terms shall have the following meanings:-

- $P_{PR}$  = the appropriate payment rate for **Primary Response** determined in accordance with Paragraph 4.1.3.13;
- $P_{MW}$  = the **Primary Response** capability (expressed in MW) for the level of **De-Load** of the **BM Unit** concerned at the end of the minute in which the service is provided. In the case of **Power Park Modules** this component will not exceed the value of the cap on the level of **Primary Response** capability ( $P_{CAP}$ ) as calculated in 4.1.3.9.1;
- $H_{PR}$  = the appropriate payment rate for **High Frequency Response** determined in accordance with Paragraph 4.1.3.13;
- $H_{MW}$  = the **High Frequency Response** capability (expressed in MW) for the level of **De-Load** of the **BM Unit** concerned at the end of the minute in which the service is provided. In the case of **Power Park Modules** this component will not exceed the value of the cap on the level of **High Frequency Response** capability ( $H_{CAP}$ ) as calculated in 4.1.3.9.2;
- $S_{PR}$  = the appropriate payment rate for **Secondary Response** determined in accordance with Paragraph 4.1.3.13;
- $S_{MW}$  = the **Secondary Response** capability (expressed in MW) for the level of **De-Load** of the **BM Unit** concerned at the end of the minute in which the service is provided. In the case of **Power Park Modules** this component will not exceed the value of the cap on the level of **Secondary Response** capability ( $S_{CAP}$ ) as calculated in 4.1.3.9.3;
- $K_T$  = the ambient temperature adjustment factor. **The Company** and each **User** acknowledge and agree,

as between **The Company** and that **User**, that  $K_T$  shall be deemed to be 1 for the purposes of calculating payments until such time as they agree upon an appropriate formula and a suitable method of measuring the ambient temperature on a minute by minute basis which shall be set out in the **Mandatory Services Agreement**. In the event that any agreed method of measuring the ambient temperature on a minute by minute basis should fail following its implementation, then **The Company** and each **User** acknowledge and agree, as between **The Company** and that **User**, that  $K_T$  shall be deemed to be 1 until the method of measuring the ambient temperature on a minute by minute basis is restored;

$K_{GRC} =$  where the **BM Unit** is a **CCGT Module**, the plant configuration adjustment factor set out in the relevant table in the **Mandatory Services Agreement** for the configuration of the **BM Unit** concerned at the time at which the capability to provide the service is carried, otherwise 1;

$SF_P =$  0, subject to Paragraph 4.1.3.21 (e);

$SF_S =$  0, subject to Paragraph 4.1.3.21 (e);

$SF_H =$  0, subject to Paragraph 4.1.3.21 (e).

#### 4.1.3.9.1 Calculation of the **Primary Response** cap for **Power Park Modules**

A cap on the level of **Primary Response** capability for the purposes of the **Holding Payment** calculation is calculated as follows:

$$P_{CAP} = \frac{\text{Current MEL}}{\text{Registered Capacity}} \times \text{Response Capability}$$

Where in this Paragraph the following terms have the following meaning:

Current MEL is the **Maximum Export Limit** as submitted in respect of the **Power Park Module** by the relevant **Generator** to **The Company**.

**Registered Capacity** is that as declared by the **Generator** in respect of the **Power Park Module**.

Response Capability is that which is set out in the relevant **Frequency Response Capability Data** tables in the **Mandatory Services Agreement** for the applicable level of **De-load**.

#### 4.1.3.9.2 Calculation of the **High Frequency Response** cap for **Power Park Modules**

A cap on the level of **High Frequency Response** capability for the purposes of the **Holding Payment** calculation is calculated as follows:

$$H_{CAP} = \frac{\text{Current MEL}}{\text{Registered Capacity}} \times \text{Response Capability}$$

Where in this Paragraph the following terms have the following meaning:

Current MEL is the **Maximum Export Limit** as submitted in respect of the **Power Park Module** by the relevant **Generator to The Company**.

**Registered Capacity** is that as declared by the **Generator** in respect of the **Power Park Module**.

Response Capability is that which is set out in the relevant **Frequency Response Capability Data** tables in the **Mandatory Services Agreement** for the applicable level of **De-load**.

#### 4.1.3.9.3 Calculation of the **Secondary Response** cap for **Power Park Modules**

A cap on the level of **Secondary Response** capability for the purposes of the **Holding Payment** calculation is calculated as follows:

$$S_{CAP} = \frac{\text{Current MEL}}{\text{Registered Capacity}} \times \text{Response Capability}$$

Where in this Paragraph the following terms have the following meaning:

Current MEL is the **Maximum Export Limit** as submitted in respect of the **Power Park Module** by the relevant **Generator to The Company**.

**Registered Capacity** is that as declared by the **Generator** in respect of the **Power Park Module**.

Response Capability is that which is set out in the relevant **Frequency Response Capability Data** tables in the **Mandatory Services Agreement** for the applicable level of **De-load**.

*Payment Formulae – Response Energy Payment*

4.1.3.9A (a) The **Response Energy Payments** for **BM Unit i** in **Settlement Period j** to be made by **The Company** to a **User** referred to in Paragraph 4.1.3.8 shall be calculated in accordance with the following formulae:-

$$REP_{ij} = RE_{ij} \times \text{Reference Price}$$

But so that where  $REP_{ij}$  is negative such amount shall be paid by the **User** to **The Company**.

Where:

$REP_{ij}$  is the **Response Energy Payment** to be made to or, as the case may be, by the **User**; and

$RE_{ij}$  is the expected response energy for **BM Unit i** in **Settlement Period j** calculated as follows:-

$$RE_{ij} = \int_0^{SPD} \left[ \max(FR_{ij}(t), 0) \times (1 - SF_{LF}) + \min(FR_{ij}(t), 0) \times (1 - SF_H) \right] \times K_T \times K_{GRC} dt$$

Where:

$\int_0^{SPD} dt$  is the integral at times  $t$ , over the **Settlement Period** duration.

$SF_{LF}$  is equal to  $SF_P$  in the case of a **BM Unit** being instructed to deliver **Primary Response** without **Secondary Response** or the mean of  $SF_P$  and  $SF_S$  in the case of a **BM Unit** being instructed to deliver **Primary Response** and **Secondary Response**.

$SF_P$ ,  $SF_S$ ,  $SF_H$ ,  $K_T$  and  $K_{GRC}$  have the meanings ascribed to them in Paragraph 4.1.3.9.

$FR_{ij}(t)$  is the expected change in **Active Power** output for **BM Unit i**, at time  $t$  (resolved to the nearest integer minute), expressed in MW derived from the relevant **Frequency Response Power Delivery Data** table in the **Mandatory Services Agreement** (as such table is

interpreted in accordance with Paragraph 4.1.3.11) by reference to the level of **De-Load** of the **BM Unit** concerned at the end of the minute and the mean **Frequency Deviation** over that minute when that **BM Unit** is providing **Mode A Frequency Response** and zero at all other times.

For this purpose:-

- (i) for a positive **Frequency Deviation** the expected change in **Active Power** output of **BM Unit** i shall be derived from the table entitled “**High Frequency Response Power Delivery – Mode A**” set out in the **Mandatory Services Agreement** and shall be signed negative; and
- (ii) for a negative **Frequency Deviation**, the expected change in **Active Power** output of **BM Unit** i shall be derived from:
  - A) the table entitled “Primary Response Power Delivery – Mode A” in the case of a **BM Unit** being instructed to deliver **Primary Response** without **Secondary Response**; or
  - B) the table entitled “Primary and Secondary Response Power Delivery – Mode A” in the case of a **BM Unit** being instructed to deliver **Primary Response** and **Secondary Response**,

in each case set out in the **Mandatory Services Agreement** and shall be signed positive.

A User with a “CfD BMU” (a BM Unit registered in respect of a Power Station whose operator is a party to an agreement with the CfD Counterparty) the User can elect, at the outset of the agreement with the CfD Counterparty, to set the Reference Price to Max for Response Energy Payments for that CfD BMU for the duration of that agreement. Until such election, which can only be made once by reference to that CfD agreement, the Reference Price shall be 0 by default.

Where:  $RE_{ij}$  is positive then:

Reference Price =  $\max \left( \sum_s \{ \mathbf{PXP}_{sj} \times \mathbf{QXP}_{sj} \} / \sum_s \{ \mathbf{QXP}_{sj} \} \times 1.25, 0 \right)$  except in the case of (a) a non-fuel cost **BM Unit** or (b) a BM Unit registered in respect of a Power Station whose operator is a party to an agreement with the CfD Counterparty still in effect during the relevant Settlement Period, where it = 0  
 where  $\sum_s$  represents the sum over all **Market Index Data Providers**.

Where  $RE_{ij}$  is negative then:

Reference Price =  $\max \left( \sum_s \{ \mathbf{PXP}_{sj} \times \mathbf{QXP}_{sj} \} / \sum_s \{ \mathbf{QXP}_{sj} \} \times 0.75, 0 \right)$  except in the case of (a) a non-fuel cost **BM Unit** or (b) a BM Unit which relates to a Power Station whose operator is a party to an agreement with the CfD Counterparty, still in effect during the relevant Settlement Period, where it = 0

where  $\sum_s$  represents the sum over all **Market Index Data Providers**

Where for the purposes of this Paragraph:

a non-fuel cost **BM Unit** means a **BM Unit** [associated with] [registered in respect of] a non-fuel cost **Power Station**

a non-fuel cost **Power Station** means:

a **Power Station** of the following type which does not have the facility to store the energy produced)

Onshore wind  
 Offshore wind  
 Solar  
 Tidal  
 Wave

- (b) In this Paragraph 4.1.3.9A, the following terms shall have the meanings ascribed to them in the **Balancing and Settlement Code**:-

“ $\mathbf{PXP}_{sj}$ ”  
 “ $\mathbf{QXP}_{sj}$ ”

## “SPD”

## “Market Index Data Provider”

- 4.1.3.10 **The Company** and each **User** acknowledge and agree, as between **The Company** and that **User**, that no **Holding Payment** or **Response Energy Payment** shall be payable except in relation to periods in respect of which instructions have been issued by **The Company** pursuant to this Paragraph 4.1.3.

*Interpretation of Tables – Levels of **Response***

- 4.1.3.11 The figures for **Response** set out in the Frequency Response Capability Data tables and Frequency Response Power Delivery Data tables in the **Mandatory Services Agreements** shall be given in relation to specific **Frequency Deviations** and to specific levels of **De-Load** for a **BM Unit**. Such tables shall, for the purposes of Paragraphs 4.1.3.7 and 4.1.3.9A(a), be construed in accordance with this Paragraph 4.1.3.11. Subject to Paragraphs 4.1.3.11(d) and (e):-

- (a) for a **Frequency Deviation** at a given time differing from the figures given in a table, the level of **Response** shall be calculated by linear interpolation from the figures specified in the table in respect of **Frequency Deviations**;
- (b) for a level of **De-Load** at a given time differing from the figures given in a table, the level of **Response** shall be calculated by linear interpolation from the figures specified in the table in respect of levels of **De-Load**. For the avoidance of doubt, **Frequency Sensitive Mode** shall not be instructed for any **De-Load** greater than the maximum level of **De-Load** given in the relevant Frequency Response Capability Data table;
- (c) in respect of any time in relation to which both Paragraphs 4.1.3.11(a) and (b) apply, the level of **Response** shall be calculated by dual linear interpolation from the figures specified in the table in respect of **Frequency Deviations** and in respect of levels of **De-Load**;

and

- (d) for any **Frequency Deviation** greater than the greatest **Frequency Deviation** given in a table (whether

positive or negative), the level of **Response** shall be calculated by reference to the greatest **Frequency Deviation** (positive or negative, as the case may be) given in that table; and

- (e) for the purposes of calculating levels of **Response** in respect of **Frequency Deviations** lower than those specified in a table, the relevant table(s) shall be deemed to specify a level of zero **Response** for a **Frequency Deviation** of zero.

*Interpretation of Tables – Levels of Holding Payment*

- 4.1.3.12 The Frequency Response Summary Data table in the **Mandatory Services Agreement** shall set out figures in respect of given levels of **De-Load** for the purposes of calculating payment in accordance with the formulae in Paragraph 4.1.3.9. Where the level of **De-Load** of the **BM Unit** is other than one of the levels given in such table, then, the figure for  $P_{MW}$ ,  $S_{MW}$  or  $H_{MW}$  as the case may be, shall be calculated by linear interpolation from the figures in such table in respect of levels of **De-Load**.

*User's submission of Holding Payment Rates*

- 4.1.3.13 The following terms shall apply to determine the payment rates for **Primary Response**, **High Frequency Response** and **Secondary Response** used in the calculation of **Holding Payments** in accordance with Paragraph 4.1.3.9 which shall apply in respect of the provision of **Mode A Frequency Response** by the **User** to **The Company** from one or more **BM Units** in a calendar month (and, for the purposes thereof, all dates specified in this Paragraph 4.1.3.13 unless stated otherwise refer to the immediately preceding calendar month):-

- (a) By the fifth **Business Day** of the calendar month, **The Company** shall publish on its web-site information relating to **The Company's** requirement for **Mode A Frequency Response** (in MW) in the next following calendar month.
- (b) By the fifteenth **Business Day** of the calendar month, the **User** may in relation to any of its **BM Units** identified in a **Mandatory Services Agreement** to which the **User** is a party submit a single notification to **The Company** (in a form and by such method as shall be prescribed by **The Company** from time to time) specifying in respect



of that **BM Unit** the payment rates to apply in determining the **Holding Payments** for the provision of **Mode A Frequency Response** during the next following calendar month, each such notification to specify:-

- (i) the **BM Unit** in question;
  - (ii) the payment rate for **Primary Response**;
  - (iii) the payment rate for **High Frequency Response**; and
  - (iv) the payment rate for **Secondary Response**.
- (c) Payment rates submitted by the **User** in accordance with Paragraph 4.1.3.13(b) must be:-
- (i) quoted in pounds sterling to the nearest penny;
  - (ii) quoted in units of £/MW/h; and
  - (iii) no greater than £[9999.99].
- (d) Upon receipt of a notification from the **User** made in accordance with Paragraph 4.1.3.13(b), **The Company** shall publish details of such notification in a report issued in accordance with Paragraph 4.1.3.13(A)(a) and, subject always to rectification (if any) of payment rates pursuant to Paragraph 4.1.3.13(e), **The Company** shall apply published payment rates for **Primary Response**, **High Frequency Response** and **Secondary Response** in calculating the **Holding Payments** for the relevant **BM Unit** in the next following calendar month.
- (e) The **User** shall have the right, to be exercised within one **Business Day** of the publication of payment rates in respect of a **BM Unit** in accordance with Paragraph 4.1.3.13(d), to notify **The Company** (in a form and by such method as shall be prescribed by **The Company** from time to time) of any discrepancy between those payment rates and the actual payment rates submitted by the **User** in respect of that **BM Unit** in accordance with Paragraph 4.1.3.13(b). Upon receipt of any such notification, **The Company** shall rectify the report issued

in accordance with Paragraph 4.1.3.13A(a) and shall publish the rectified report in accordance with Paragraph 4.1.3.13A(b).

- (f) In the absence of a notification from a **User** in accordance with Paragraph 4.1.3.13(b) in respect of the provision by a **BM Unit** of **Mode A Frequency Response** in the next following calendar month, then the payment rates for **Primary Response**, **High Frequency Response** and **Secondary Response** to apply in determining the **Holding Payments** for that **BM Unit** in respect of that calendar month shall be determined as follows:-
  - (i) where the **User** has never in respect of any previous calendar month submitted a notification in accordance with Paragraph 4.1.3.13(b) in respect of the provision by that **BM Unit** of **Mode A Frequency Response**, the payment rate to apply to the provision of each of **Primary Response**, **High Frequency Response** and **Secondary Response** from that **BM Unit** in that calendar month shall be deemed to be either:-
    - (aa) the payment rates for **Primary Response**, **High Frequency Response** and **Secondary Response** prevailing immediately prior to the date of implementation of **Amendment Proposal CAP047**; or
    - (bb) where no payment rates as referred to in paragraph (aa) above subsisted at the date of implementation of **Amendment Proposal CAP047**, £00.00/MW/h; or
  - (ii) in all other cases, the payment rates for **Primary Response**, **High Frequency Response** and **Secondary Response** which shall apply in respect of the provision by that **BM Unit** of **Mode A Frequency Response** in that calendar month shall be the payment rates most recently published in accordance with Paragraph 4.1.3.13A(a) or (b) (as the case may be) for that **BM Unit** in respect of a previous calendar month;

- (g) Paragraph 4.4.2.2 shall not apply to the payment rates for **Primary Response**, **High Frequency Response** and **Secondary Response** determined in accordance with this Paragraph 4.1.3.13.

*Publication of **Holding Payment** Rates and other information*

- 4.1.3.13A (a) **The Company** shall use reasonable endeavours to publish on its web-site by the 16th **Business Day** of each calendar month, a report containing the following information in respect of each applicable **User's BM Unit(s)** to apply in respect of the next following calendar month:-
- (i) the payment rates for **Primary Response**, **High Frequency Response** and **Secondary Response** to apply in determining the **Holding Payments** for the next following calendar month as determined in accordance with Paragraph 4.1.3.13;
  - (ii) the available **Response** volume (in such form and manner as shall be prescribed by **The Company** from time to time).
- (b) Where any payment rates published in a report issued in accordance with Paragraph 4.1.3.13A(a) are rectified by **The Company** in accordance with Paragraph 4.1.3.13(e), **The Company** shall as soon as reasonably practicable thereafter publish the rectified report on its web-site.
- (c) In respect of each day in a calendar month, **The Company** shall use reasonable endeavours to publish on its web-site by the third **Business Day** of the calendar month following that calendar month, provisional data in respect of all **BM Units** details of instructions issued by **The Company** in accordance with Paragraph 4.1.3.4 for each of **Primary Response**, **High Frequency Response** and **Secondary Response** (in such form and manner as shall be prescribed by **The Company** from time to time). The **Users** recognise that the provisional data may differ from the data to be provided under Paragraph 4.1.3.13A (d) and therefore any reliance upon this provisional data is entirely at the **User's** risk.

- (d) In respect of each day in a calendar month, **The Company** shall, by the ninth **Business Day** of the calendar month following that calendar month, publish on its web-site in respect of all **BM Units** details of instructions issued by **The Company** in accordance with Paragraph 4.1.3.4 for each of **Primary Response**, **High Frequency Response** and **Secondary Response** (in such form and manner as shall be prescribed by **The Company** from time to time).
- (e) Each **User** consents to the disclosure by **The Company** of the information referred to in Paragraphs 4.1.3.13A(a) and (b) in so far as it relates the provision of **Mode A Frequency Response** from its **BM Unit(s)**, provided always that **The Company** shall not be bound to comply with the provisions of Paragraphs 4.1.3.13A(a) and (b) with regard to the provision of information to the extent that to do so would be likely to restrict, distort or prevent competition in the provision of **Mode A Frequency Response**.

*Requests to Amend Levels of **Response***

- 4.1.3.14 Where either the **User** or **The Company** reasonably considers in light of operating experience that the levels of **Response** set out in the Frequency Response Capability Data tables and / or the Frequency Power Delivery Data tables in the **Mandatory Services Agreement** do not represent the true operating capabilities of a **BM Unit(s)**, the **User** or **The Company** (as the case may be) shall have the right not more than once every two months (or otherwise at any time with the specific agreement of the other party to the **Mandatory Services Agreement**) to request (provided always that such request be accompanied by a reasonable justification therefor) that the levels of **Response** set out in the relevant response table(s) in the **Mandatory Services Agreement** be reviewed and, if appropriate, amended by agreement with such other party, such agreement not to be unreasonably withheld or delayed.

*Procedure for Amendments to Levels of **Response***

- 4.1.3.15 Any amendments agreed by **The Company** and a **User** pursuant to Paragraph 4.1.3.14 or determined by an arbitrator or panel of arbitrators under the **Dispute Resolution Procedure** in the circumstances referred to in Paragraph

4.1.3.16 shall not become effective until (in the case of agreed amendments) a date at least five **Business Days** after an amending agreement is entered into between **The Company** and the **User** in accordance with the **Mandatory Services Agreement** or, in the case of determined amendments, such other date as may be determined by an arbitrator or panel of arbitrators under the **Dispute Resolution Procedure** subject always to Paragraphs 4.1.3.17 and 4.1.3.18.

*Failure to Agree Amendments*

- 4.1.3.16 If **The Company** and a **User** are unable to agree any amendments requested pursuant to Paragraph 4.1.3.14 within 28 days of either of them serving on the other notice of its intention to invoke the **Dispute Resolution Procedure** then either party may initiate the procedure for resolution of the issue as an **Other Dispute** in accordance with Paragraph 7.4.

*Dispute Resolution Procedure*

- 4.1.3.17 **The Company** and each **User** acknowledge and agree, as between **The Company** and that **User**, that rule 12.1(p) of the **Electricity Arbitration Association** shall apply to any arbitration proceedings initiated pursuant to Paragraph 7.4 in the circumstances referred to in Paragraph 4.1.3.16, but that the changes determined by any arbitrator or panel of arbitrators shall not apply in respect of any period prior to the date on which the **Dispute Resolution Procedure** is invoked.

*Implementation of Determinations*

- 4.1.3.18 Any amendments to levels of **Response** determined by an arbitrator or panel of arbitrators under the **Dispute Resolution Procedure** in the circumstances referred to in Paragraph 4.1.3.16 shall take effect from the date five **Business Days** following the relevant determination.

*Implementation of Continuous Monitoring System*

- 4.1.3.19 To the extent the same shall be acceptable to **The Company** and a **User** on the basis of a cost benefit analysis, **The Company** and a **User** agree, as between **The Company** and that **User**, to the implementation of a continuous monitoring system as soon as is reasonably practicable. The continuous monitoring system shall be in accordance with the relevant principles set out in Paragraph 4.1.3.21 for the purposes of confirming performance of the **BM Units** and adjusting payments pursuant to this Paragraph 4.1.3.

*Incident Based Monitoring System*

- 4.1.3.20 Pending implementation of the continuous monitoring system, **The Company** and each **User** agree, as between **The Company** and that **User**, to implement an incident based monitoring scheme for the purpose of confirming the performance of the **BM Units** pursuant to this Paragraph 4.1.3. Such incident based monitoring scheme shall be in accordance with the relevant principles set out in Paragraph 4.1.3.21. Neither **The Company** nor the **User** shall unreasonably withhold or delay such agreement and/or implementation.

*Genset Response Monitoring**Introduction*

- 4.1.3.21 (a) This Paragraph 4.1.3.21 sets out the principles relating to:
- (i) the proposed continuous monitoring system to be implemented pursuant to Paragraph 4.1.3.19; and
  - (ii) the incident based monitoring system to apply until such time as implementation of the continuous monitoring system takes place.

Some elements of the continuous monitoring system are currently undergoing testing and development and it is accepted that if final testing of these elements proves unsatisfactory alternatives will need to be developed. Further, implementation of the continuous monitoring system shall be subject to its acceptability to **The Company** and **Users** on the basis of a cost benefit analysis.

Wherever possible the technical specification of both the incident based monitoring system and the continuous monitoring system will be designed so as to enable future development or enhancement.

*Aims of Project*

- (b) The aim of the monitoring project (which includes, without limitation, the development of the incident based monitoring system and the continuous monitoring system) is to develop a response monitoring system which will measure the response performance of generators against the levels of

**Frequency Response** required to be provided under **Mandatory Services Agreements**.

*Incident Based Monitoring Scheme*

- (c) Details of the incident based monitoring scheme (including without limitation the definitions of Shortfall Period and Incident, the calculation of service delivery and the determination of Incident start and end times) will be more particularly set out in a document entitled "Procedure for Incident Based Response Monitoring" ("the PIRM Document") to be produced by **The Company** and agreed by all relevant **Users** (such agreement not to be unreasonably withheld or delayed).

For the avoidance of doubt during the period during which the incident based monitoring scheme applies, and prior to the implementation of the continuous monitoring system, for the purposes of the formulae in Paragraphs 4.1.3.9 and 4.1.3.9A, the values of  $SF_P$ ,  $SF_S$  and  $SF_H$  shall be zero, such that no payment reduction shall apply during such period in respect of shortfall.

*Continuous Based Monitoring Scheme – Confirmation of Response Delivery*

- (d) The main objective of the continuous monitoring scheme is to provide a quantitative measure of **Frequency Response** delivery against which payment can be justifiably made and to reduce payments if delivery does not comply with the **CUSC** and the **Mandatory Services Agreement**. As the capability of a **BM Unit** to provide the level of **Response** required pursuant to this Paragraph 4.1.3 for any change in **System Frequency** occurring during the period of delivery of Response pursuant to a prior change in **System Frequency** will be affected by the level of **Response** then being delivered, relevant fluctuations in **System Frequency** should to this extent be taken into account by the continuous monitoring scheme for the purpose of calculating payment levels.

*Determination of Response Shortfall*



(e) For the purposes of the continuous monitoring system, the **Response** shortfall may take three forms:-

- (i) average **Primary Response** under-delivery;
- (ii) average **Secondary Response** under-delivery;
- (iii) average **High Frequency Response** under-delivery,

in each case over a Shortfall Period (such term to be defined prior to implementation of the continuous monitoring system).

Upon the implementation of the continuous monitoring system, for the purposes of determining any such average under-delivery,  $SF_P$ ,  $SF_S$  and  $SF_H$  shall be the average under-delivery of **Primary Response**, **Secondary Response** and **High Frequency Response** respectively during the Shortfall Period in which the **Ancillary Service** was, or should have been, provided. For the purposes of the formulae in Paragraphs 4.1.3.9 and 4.1.3.9A, such average under-delivery will be determined using a continuous plant response assessment algorithm which is under development and which will be agreed with the **User** prior to its implementation and expressed in terms of  $0 \leq SF \leq 1$ .

#### *Measurement of System Variables*

(f) In relation to the continuous monitoring system measurement of **System Frequency** and generator output power will be required local to the **BM Unit**. **Synchronised** time tagging of both power and **Frequency** will be required.

**Frequency** is required as the fundamental driving variable of the contract model software. Access to a voltage source to enable **Frequency** to be measured is not expected to cause any difficulty. The measurement of generator output power will also be required every second. Cost effective access to this measurement is, however, less straight forward. Covered below are two options describing how this will be achieved. It is expected that normally the FMS interface unit will be the method used; however, where



the **BM Unit** concerned has derogations from FMS, method two may be used.

*FMS Interface Unit*

- (g) The use of the Final Metering System (FMS) represents a logical method of measurement since it eliminates the high cost associated with running cables to access CTs and VTs.

The high accuracy integrated data from FMS will be used to re-generate a power profile and curve fitting techniques will be applied to improve accuracy. This instantaneous power curve will then be sampled every second to obtain the required values.

*Direct Measurement*

- (h) Where for the reasons detailed in Paragraph 4.1.3.21(f) it is not possible to use the FMS interface unit, the use of 'ISAT' type transducers will be employed to interface between the monitoring equipment and the measurement transformers' secondary circuit.

It is envisaged that generators seeking derogations from FMS will be supportive in establishing convenient VT and CT secondary connections for this purpose.

*Contract Model*

- (i) The contract model is the heart of the continuous monitoring system and it is crucial to the philosophy behind the system, namely that of modelling the **Mandatory Services Agreement** and not the **BM Unit** itself.

Given the difficulty in measuring **Frequency Response** directly on loaded plant, the need to compare changes in power delivery against expectation is evident. Comparison against this model output, which in turn is based on agreed and legally binding contracts, permits an identifiable quantity of non conformity to be measured and payments to be suitably reduced.

Therefore, since the **Mandatory Services Agreement** itself is the quantifying factor, there can be no redress due to assumptions regarding the technical attributes

of the **BM Unit** other than those taken into account in setting the levels of **Response**.

*Functional Objective*

- (j) In relation to the continuous monitoring system, the model will comprise software which uses system and instructed variables to access the contract look-up tables. The look-up tables used will precisely mimic the response tables set out in **Mandatory Services Agreements**. These variables in turn will be processed using an algorithm to determine the levels of **Response** expected at any instant in time.

It is intended that this process will be effective during both small and large **Frequency Deviations**. Indeed with regard to reduction in payment and estimated **Response** capability, response to small **Frequency Deviations** is extremely important.

*Input Data*

- (k) In relation to the continuous monitoring system, inputs to the contract model will include **Frequency**, all contract table data, target load, **Target Frequency**, the latest genset availability, the response instruction, LF setting (if electronically despatched) and any other information required which may be specified in the **Mandatory Services Agreement**.

*Comparator*

- (l) In relation to the continuous monitoring system, the comparator will determine the difference between the measured change in the level of **Output** from the **BM Unit** by way of **Frequency Response** and the change in **Output** level that is specified in the **Mandatory Services Agreement**.

- 4.1.3.22 If, at any time during the term of a **Mandatory Services Agreement**, there is a variation in the security standards with which **The Company** is obliged to comply and such variation would, in a **User's** reasonable opinion, materially affect the operation of the services to be provided under that **Mandatory Services Agreement**, **The Company** and that **User** shall negotiate in good faith with a view to agreeing and implementing appropriate amendments to any relevant **Mandatory Services Agreement**. If they are unable to reach agreement within 28 days of either of them serving on the other

notice of its intention to invoke the **Dispute Resolution Procedure**, either of them may initiate the procedure for resolution of the issue as an **Other Dispute** in accordance with Paragraph 7.4.

- 4.1.3.23 Each **User** hereby consents to the disclosure and use by **The Company** of data and other information from any year relating to the provision by that **User** of the **Balancing Service** to the extent necessary to enable **The Company** to carry out its **EMR Functions**.

## 4.2 MAXIMUM GENERATION

### 4.2.1 Application

The provisions of this Paragraph 4.2 shall apply to **The Company** and a **User** in respect of the provision by that **User** to **The Company** of **Maximum Generation** where a **Maximum Generation Service Agreement** has been entered into and is in force between **The Company** and that **User**.

### 4.2.2 Provision of Maximum Generation

Each **User** hereby agrees, as between **The Company** and that **User**, to use reasonable endeavours to make available and provide **Maximum Generation** from each of the **Maximum Generation BM Unit(s)** in accordance with the terms of this Paragraph 4.2 in respect of each **Operational Day** during the term of the **Maximum Generation Service Agreement**.

### 4.2.3 Availability of Maximum Generation

- 4.2.3.1 By 15.00 hours on each Wednesday, the **User** may notify **The Company** by facsimile in the form set out in Schedule 1 to this Section 4 (a "**Weekly Maximum Generation Declaration**") of the availability of **Maximum Generation** in relation to each of the **Maximum Generation BM Unit(s)** in the following **Week**. Failure to submit a **Weekly Declaration** in accordance with this Paragraph 4.2.3 shall be deemed to be an indication of availability or unavailability (as the case may be) of **Maximum Generation** for each **Operational Day** in the following **Week** as notified by the **User** in the last **Weekly Maximum Generation Declaration** submitted in accordance with this Paragraph 4.2.3, if any, or if no previous **Weekly Maximum Generation Declaration** has been submitted, in the amount of the **Indicative Maximum Generation Capability** specified in the **Maximum Generation Service Agreement** between **The Company** and that **User**.

- 4.2.3.2 The **User** may indicate in the **Weekly Maximum Generation Declaration** its best estimate of the amount of **Maximum Generation** available (the “**Indicative Maximum Generation Capability**”). If no such indication is given, the **User** shall be deemed to have notified **The Company** of the amount of **Indicative Maximum Generation Capability** set out in the **Maximum Generation Service Agreement** between **The Company** and that **User**.
- 4.2.3.3 If at any time the **User** becomes aware that, in respect of any **Maximum Generation BM Unit(s)**, there are changes to the availability of **Maximum Generation** and/or the **Indicative Maximum Generation Capability** for all or part of any **Operational Day** as specified in the relevant **Weekly Maximum Generation Declaration** of any **Maximum Generation Redeclaration** (as the case may be), it shall notify **The Company** forthwith by facsimile in the form set out in Schedule 2 to this Section 4 (a “**Maximum Generation Redeclaration**”).
- 4.2.3.4 Each **Maximum Generation BM Unit** in respect of which **Maximum Generation** is (or is deemed to be) declared or redeclared to be available in all or part of an **Operational Day** in accordance with this Paragraph 4.2.3 is hereinafter referred to in respect of such **Operational Day** (or part thereof) as “an **Available BM Unit**”.
- 4.2.4 **Utilisation of Maximum Generation**
- 4.2.4.1 **The Company** may, as between **The Company** and that **User**, at any time instruct the **User** to provide **Maximum Generation** from an **Available BM Unit** (a “**Maximum Generation Instruction**”) and the **User** shall use reasonable endeavours to provide **Maximum Generation** from such **Available BM Unit**.
- 4.2.4.2 **The Company** shall only issue a **Maximum Generation Instruction** where an **Available BM Unit** has been instructed to generate or is already generating (in each case) at the prevailing **Maximum Export Limit** for that **Available BM Unit**.
- 4.2.4.3 If, following the issue by **The Company** of a **Maximum Generation Instruction** in respect of an **Available BM Unit**, the **User** submits to **The Company** (in accordance with **Grid Code BC 1**) a revised **Maximum Export Limit** for that **Available BM Unit**, that **Available BM Unit** shall be deemed to have ceased providing **Maximum Generation** immediately upon receipt by **The Company** of such revised **Maximum Export Limit**.

4.2.4.4 Any **Maximum Generation Instruction** issued by **The Company** shall be an **Emergency Instruction**. The method of issuing any **Maximum Generation Instruction** shall be specified in the **Maximum Generation Service Agreement**.

4.2.4.5 **The Company** may instruct the **User** to cease the provision of **Maximum Generation** from the instructed **Available BM Unit** at any time.

4.2.4.6 On receipt of a **Maximum Generation Instruction** the **User** shall use reasonable endeavours to provide **Maximum Generation** from the **Available BM Unit** continuously until the earlier of:-

- (a) the expiry of a period of 120 minutes; and
- (b) the time of issue by **The Company** of an instruction to cease provision

4.2.4.7 The provision of **Maximum Generation** from an **Available BM Unit** shall not be achieved by the transfer of the **Station Demand** of the **Power Station** to the **Station Transformer(s)**.

#### 4.2.5 Payment for Maximum Generation

4.2.5.1 The **Maximum Generation Energy Payment** to be made by **The Company** to the **User** following the issue of a **Maximum Generation Instruction** by **The Company** for the provision of **Maximum Generation** in **Operational Days** in calendar month  $m$ , ( $UF_m$ ) shall be calculated in accordance with the following formula:-

$$UF_m = \sum_{i=1}^{Units} UF_{im}$$

Where;

$$UF_{im} = \sum_{j \in M_m} \text{Min} \left( (Q_{\max_{ij}} \times EP_{ij}), \left( X \times \frac{CEC}{2} \times EP_{ij} \right) \right)$$

In this Paragraph 4.2.5.1, the following terms shall have the following meanings:-

$$\sum_{i=1}^{Units}$$

the summation over all **Available BM Units** /

$\sum_{j \in M_m}$	the summation over all <b>Settlement Periods</b> $j$ , in the set $M_m$ of <b>Settlement Periods</b> in <b>Operational Days</b> in calendar month $m$
$Q_{\max ij}$	$\text{Max} \left( QM_{ij} - \left( FPN_{ij} + \sum_n (QAO_{ij}^n + QAB_{ij}^n) \right), 0 \right)$
$EP_{ij}$	the <b>Maximum Generation Energy Fee</b> (£/MWh), applicable in <b>Settlement Period</b> $j$ , for <b>Available BM Unit</b> $i$
CEC	<b>Connection Entry Capacity</b> for the <b>Available BM Unit</b>
X	0.03 (or such other figure as may be either (i) set out in the <b>Maximum Generation Service Agreement</b> for the <b>Available BM Unit</b> or (ii) agreed or determined in accordance with Paragraphs 4.2.5.3 to 4.2.5.5 (inclusive))
$QM_{ij}$ , $FPN_{ij}$ , $QAO_{ij}$ and $QAB_{ij}$	the meanings ascribed to them in the <b>Balancing and Settlement Code</b>

4.2.5.2 Where an **Available BM Unit** is at the time of issue of a **Maximum Generation Instruction** generating at a level below **Connection Entry Capacity** but the amount of MW delivered as **Maximum Generation** by such **Available BM Unit** is greater than 3% (or such other figure as **The Company** and the **User** may agree in the **Maximum Generation Service Agreement**) of the **Connection Entry Capacity** of that **Available BM Unit**, the **User** shall have the right to raise a dispute in accordance with the provisions of Paragraph 4.2.5.3 as to the amount of MW (represented by the value of factor X) by reference to which payment for provision of **Maximum Generation** shall be determined.

4.2.5.3 Where the provisions of Paragraph 4.2.5.2 apply:-

- (a) the **User** may notify **The Company** in writing that it disagrees with the amount of MW (represented by the value of factor X) by reference to which **The Company** has determined the **Maximum Generation Energy Payment** set out in the **Provisional Statement** and the **User** shall specify in such notification the value of factor X which it considers represents the amount of MW by reference to which payment for provision of **Maximum**

**Generation** should be determined in accordance with Paragraph 4.2.5.1, provided always that any such notification shall be given within ten **Business Days** of receipt by the **User** of the **Provisional Monthly Statement**; and

- (b) this Paragraph 4.2.5.3 and Paragraphs 4.2.5.4 and 4.2.5.5 shall apply to such matter in the place of Paragraphs 4.3.2.3, 4.3.2.7 and 4.3.2.8, and Paragraph 4.3.2 shall be read and construed accordingly.

The parties shall discuss and endeavour to resolve the matter prior to **The Company** sending out the **Final Monthly Statement**. If **The Company** and the **User** reach agreement, **The Company** shall set out in the **Final Monthly Statement** the adjustments required but, if it cannot be resolved, the calculations set out in the **Provisional Statement** and in the **Provisional Adjustments Statement** shall be binding upon the parties until such time as they are reversed or revised by agreement between the parties or otherwise (in accordance with Paragraphs 4.2.5.4 and 4.2.5.5) pursuant to the **Dispute Resolution Procedure**.

- 4.2.5.4 If a **User** and **The Company** fail to reach an agreement within ten **Business Days** of receipt by **The Company** of the **User's** written notification in accordance with Paragraph 4.2.5.5, then either party may, within twenty **Business Days** of receipt by **The Company** of the **User's** written notification, refer the matter to the **Authority** for determination as a **Charging Dispute** in accordance with Paragraph 7.3.
- 4.2.5.5 Where a dispute is resolved by issuance of a decision of the **Authority** pursuant to the **Dispute Resolution Procedure** in accordance with Paragraph 4.2.5.4 above, **The Company** shall (where appropriate) adjust the account between itself and the **User** accordingly in the next **Provisional Adjustments Statement** required to be issued under Paragraph 4.3.2.1. If such decision of the **Authority** is subsequently reversed or modified following judicial review of the **Authority's** decision, **The Company** shall adjust the account between itself and the **User** accordingly in the next **Provisional Adjustments Statement** which it issues.
- 4.2.5.6 The **Maximum Generation Energy Fee** for each **Available BM Unit** of a **User** will be that detailed in the **Maximum Generation Service Agreement** between **The Company** and that **User**.
- 4.2.5.7 The **User** shall have the right to notify **The Company** of a revised **Maximum Generation Energy Fee**, as between **The Company** and that **User**, not more than once every month. Such notification must be



in writing and must be received by **The Company** no later than the fifteenth day of the calendar month. The revised **Maximum Generation Energy Fee** shall apply, as between **The Company** and that **User**, with effect on and from the first **Operational Day** of the calendar month following such notification.

#### 4.2.6 **ABSVD Methodology Statement**

It is a condition of a **User** entering into a **Maximum Generation Service Agreement** that **Maximum Generation** is included in the determination of the **Applicable Balancing Services Volume Data** in respect of each **Contracted BM Unit** for the purposes of the **ABSVD Methodology Statement** and Section Q.6.4 of the **Balancing and Settlement Code**.

#### 4.2.7 **Maximum Generation Event of Default**

Any failure by the **User** during the term of the **Maximum Generation Service Agreement** to comply with its obligations pursuant to Paragraph 4.2.6 in respect of any **Available BM Unit** and any **Settlement Period** shall constitute an event of default to which the terms of Paragraph 4.2.8 shall apply.

#### 4.2.8 **Consequences of Maximum Generation Event of Default**

In respect of any event of default incurred by the **User** in respect of an **Available BM Unit** pursuant to Paragraph 4.2.7, **The Company** shall be entitled to withhold the **Maximum Generation Energy Payment** (if any) applicable to the relevant **Available BM Unit** and the **Settlement Period** in which such event of default occurred.

#### 4.2.9 **Grid Code**

The provision by the **User** of **Maximum Generation** shall not relieve it of any of its obligations (where applicable) set out in the **Grid Code**.

#### 4.2.10 **Safety**

Notwithstanding Paragraph 4.2.11, **The Company** accepts that any decision to keep an **Available BM Unit** operating above the prevailing **Maximum Export Limit** for that **Available BM Unit** is one for the **User** alone, and accepts that the **User** may change generation on the **Available BM Unit** if it believes it is necessary for safety reasons (whether relating to personnel or **Plant** or **Apparatus**). The responsibility for injury to personnel and damage to **Plant** and **Apparatus** owned and/or operated by the **User** caused by operation of an **Available BM Unit** following the issue by **The Company** of **Maximum Generation Instruction** pursuant to Paragraph 4.2.4 therefore rests with the **User** and **The Company** shall



have no liability whatsoever in connection therewith. The **User** shall indemnify and keep indemnified **The Company** in respect of liability for death or personal injury and/or damage to **Plant** and **Apparatus** owned and/or operated by **The Company** and arising out of or in connection with such operation of one or more **Available BM Unit(s)** above the prevailing **Maximum Export Limit** for such **Available BM Unit(s)** from time to time, save to the extent that:-

4.2.10.1 the **User** has operated the **Available BM Unit** in accordance with **Good Industry Practice**; and/or

4.2.10.2 such death or personal injury and/or damage to **Plant** and **Apparatus** is caused by **The Company's** negligent act or omission.

#### 4.2.11 Warranty

The **User** warrants to **The Company** that it believes that operation of each of its **Maximum Generation BM Unit(s)** above the prevailing **Maximum Export Limit** for such **Maximum Generation BM Unit(s)** will be within its safe operating parameters (whether relating to personnel or **Plant** or **Apparatus**).

#### 4.2.12. Publication of Maximum Generation Information

4.2.12.1 **The Company** shall use reasonable endeavours to publish on its web-site within five **Business Days** of signature of a **Maximum Generation Service Agreement**, or within five **Business Days** of receipt of any updated information in accordance with this Paragraph 4.2, details of the following information in respect of each **Maximum Generation BM Unit** specified in such **Maximum Generation Service Agreement**:-

- (a) the **Maximum Generation Energy Fee**;
- (b) the **Indicative Maximum Generation Capability**;
- (c) the amount of factor X (as defined in Paragraph 4.2.5.1) if other than 0.03,

in such form and manner as shall be prescribed by **The Company** from time to time.

4.2.12.2 In respect of each **Operational Day** in a calendar month, **The Company** shall, by the tenth **Business Day** of the calendar month following that calendar month, publish on its web-site in respect of each relevant **Maximum Generation BM Unit(s)** the following details of each **Maximum Generation Instruction** (if any) issued by **The Company** in accordance with Paragraph 4.2.4:-

- (a) the **Maximum Generation Energy Fee**;
- (b) the period(s) for which **Maximum Generation** has been provided;
- (c) the MW level(s) delivered as **Maximum Generation**,

in such form and manner as shall be prescribed by **The Company** from time to time.

- 4.2.12.3 Each **User** consents to the disclosure by **The Company** of the information referred to at Paragraphs 4.2.12.1 and 4.2.12.2 above in so far as it relates the provision of **Maximum Generation** from its **Maximum Generation BM Unit(s)**, provided always that **The Company** shall not be bound to comply with the provisions of this Paragraph with regard to the provision of information to the extent that to do so would be likely to restrict, distort or prevent competition in the provision of **Maximum Generation**.
- 4.2.12.4 Each **User** hereby consents to the disclosure and use by **The Company** of data and other information from any year relating to the provision by that **User** of the **Balancing Service** to the extent necessary to enable **The Company** to carry out its **EMR Functions**.

## 4.2A SYSTEM TO GENERATOR OPERATIONAL INTERTRIPPING

### 4.2A.1 Application

The provisions of this Paragraph 4.2A shall apply to **The Company** and a **User** in respect of the provision by that **User** to **The Company** of **System to Generator Operational Intertripping** where details of a **System to Generator Operational Intertripping Scheme** are set out in Appendix F3 of the relevant **Bilateral Agreement**.

### 4.2A.2 Provision of System to Generator Operational Intertripping

4.2A.2.1 Each **User** hereby agrees, as between **The Company** and that **User**, to:-

- (a) (save where **Force Majeure** applies) make available its **System to Generator Operational Intertripping Scheme** for arming at all times when **Active Power** is being exported to the **National Electricity Transmission System** from the **Connection Site** at which such **System to Generator Operational Intertripping Scheme** is located;
- (b) arm, or permit the arming of, the **System to Generator Operational Intertripping Scheme** in accordance with the terms of the relevant **Bilateral Agreement** when instructed by **The Company** (in accordance with **Grid Code BC 2.8**) by telephone (such instruction to be confirmed by facsimile substantially in the form set out in Schedule 3, Part I to this Section 4);

- (c) (where an instruction from **The Company** has been confirmed by facsimile in accordance with Paragraph 4.2A.2.1(b) above) following the tripping of the **Circuit Breaker(s)** upon receipt of a signal from the **System to Generator Operational Intertripping Scheme**:-
  - (i) restrict the export of **Active Power** from the **Connection Site** to the **National Electricity Transmission System** to the level of MW specified in such facsimile confirmation (or such increased level(s) as **The Company** may subsequently notify pursuant to Paragraph 4.2A.2.2(c)(i)) (“the **Restricted MW Export Level**”); and
  - (ii) maintain such restricted export until such time as the **User** is notified by **The Company** in accordance with Paragraph 4.2A.2.2(c)(ii) that the **Restricted MW Export Level** no longer applies, whereupon the **User** shall be permitted to increase the export of **Active Power** from the **Connection Site** above the **Restricted MW Export Level**;
- (d) comply with any special instructions given by **The Company** in the performance of its obligations under Paragraph 4.2A.2.1(c); and
- (e) disarm the **System to Generator Operational Intertripping Scheme** when instructed by **The Company** (in accordance with **Grid Code BC2.8**) by telephone (such instruction to be confirmed by facsimile substantially in the form set out in Schedule 3, Part I to this Section 4).

4.2A.2.2 **The Company** hereby agrees to:-

- (a) notify the **User** as soon as reasonably practicable following **The Company** becoming aware of the requirement for arming of the **System to Generator Operational Intertripping Scheme**;
- (b) (where relevant) take any steps necessary to arm the **System to Generator Operational Intertripping Scheme** in accordance with the terms of the relevant **Bilateral Agreement**;
- (c) following the tripping of the **Circuit Breaker(s)** upon receipt of a signal from the **System to Generator Operational Intertripping Scheme**, notify the **User**:-

- (i) as soon as the **Restricted MW Export Level**, whilst still applying, can be increased; and/or
- (ii) as soon as the **Restricted MW Export Level** (as may be increased from time to time pursuant to (i) above) no longer applies

each such notification to be in accordance with **Grid Code BC 2.8** and to be made by telephone (such notification to be confirmed by facsimile substantially in the form set out in Schedule 3, Part II to this Section 4); and

- (d) issue an instruction to disarm, referred to in Paragraph 4.2A.2.1(e), as soon as reasonably practicable following **The Company** becoming aware that the requirement for arming of the **System to Generator Operational Intertripping Scheme** has ceased (and such an instruction shall be deemed to have been issued for the purposes of this Paragraph 4.2A upon tripping of the **Circuit Breaker(s)** upon receipt of a signal from the **System to Generator Operational Intertripping Scheme**).

#### 4.2A.3 Intertrip Volume

Following the tripping of a **Circuit Breaker(s)** following receipt of a signal from a **System to Generator Operational Intertripping Scheme**, the resulting reduction in **Output** for each tripped **BM Unit i** or (where relevant) any tripped **Generating Unit(s)** comprised in a **BM Unit** shall be determined in accordance with the relevant formula set out in the **ABSVD Methodology Statement**, where such resulting reduction in **Output** is termed  $SE_{sj}$ .

#### 4.2A.4 Payments to the User

**The Company** shall make the following payments to the **User** in respect of **System to Generator Intertripping Schemes**:

- (a) a **Capability Payment** shall be paid in respect of each **Category 2 Intertripping Scheme** and each **Category 4 Intertripping Scheme** as follows:-
  - (i) **The Company** shall pay to the **User** an amount ("the **Capability Payment**") in consideration of the installation of the **System to Generator Operational Intertripping Scheme** and the **User's** obligations under Paragraphs 4.2A.2.1(a) and (b), being an amount per month determined by reference to the number of **Settlement**

**Periods** during the month in question (and in respect of which the requirement for **System to Generator Operational Intertripping** is stated in Appendix F3 of the relevant **Bilateral Agreement**) and the payment rate (£/**Settlement Period**) specified in Schedule 4 to this Section 4; and

- (ii) for the avoidance of doubt, where a **System to Generator Operational Intertripping Scheme** comprises both a **Category 2 Intertripping Scheme** and a **Category 4 Intertripping Scheme**, only one **Capability Payment** shall be payable by **The Company** to the **User** in respect thereof;
- (b) subject always to Paragraph 4.2A.5, a **Restricted Export Level Payment** shall be paid in respect of each **Category 2 Intertripping Scheme**, each **Category 3 Intertripping Scheme** and each **Category 4 Intertripping Scheme** as follows:-
  - (i) the payment shall only be made where, following the tripping of the **Circuit Breaker(s)** upon receipt of a signal from the **System to Generator Operational Intertripping Scheme**, restrictions on the export of **Active Power** from the **Connection Site** apply in accordance with the terms of Paragraph 4.2A.2.1(c) above at any time after the period of 24 hours has elapsed following such tripping; and
  - (ii) in such a case, **The Company** shall pay to the **User** upon request the **Restricted Export Level Payment**, by reference to the period from expiry of such 24 hour period until the time when **The Company** notifies the **User** in accordance with Paragraph 4.2A.2.2(c)(ii) that the **Restricted MW Export Level** no longer applies (“the **Restricted Export Level Period**”); and
- (c) subject always to Paragraph 4.2A.5, in respect of each **Category 2 Intertripping Scheme** and **Category 4 Intertripping Scheme**, where the **Circuit Breaker(s)** are tripped upon receipt of a signal from the **System to Generator Operational Intertripping Scheme**, **The Company** shall pay to the **User** an amount (“the **Intertrip Payment**”) being an amount (£/**Intertrip Contracted Unit/trip**) specified in Schedule 4 to this Section 4.

#### 4.2A.5 Withholding of payments

**The Company** shall not be obliged to make any **Restricted Export Level Payment** or **Intertrip Payment** pursuant to Paragraph 4.2A.4 where the tripping of **BM Unit(s)** or (where relevant) **Generating Unit(s)** comprised in a **BM Unit** occurs:-

- (a) during any period where the **System to Generator Operational Intertripping Scheme** is not instructed by **The Company** to be armed in accordance with Paragraphs 4.2A.2.2(a) and 4.2A.2.2(d); and/or
- (b) where the **User** has failed to arm, or permit the arming of, the **System to Generator Operational Intertripping Scheme** in accordance with the terms of Paragraph 4.2A.2.1(b); and/or
- (c) where the **User** has failed to exercise **Good Industry Practice** to restrict the export of **Active Power** from the **Connection Site** to the **Restricted MW Export Level** as required by Paragraph 4.2A.2.1(c) (ignoring any export above **Restricted MW Export Level** where pursuant to an instruction from **The Company** to provide any **Balancing Service(s)**); and/or
- (d) where no signal is received by the **Circuit Breaker(s)** from the **System to Generator Operational Intertripping Scheme**.

#### 4.2A.6 Revisions to Appendix F3 of the Bilateral Agreement

Where **The Company** requires **Routine Change(s)** (as defined below) to be made to Appendix F3 of the **Bilateral Agreement**, then the **User** shall not unreasonably withhold or delay providing to **The Company** written consent to any such **Routine Changes** and hereby authorises **The Company**, following receipt of such written consent, to make amendments on its behalf to Appendix F3 of the **Bilateral Agreement** to reflect such **Routine Change(s)** and undertakes not to withdraw qualify or revoke such authority or instruction at any time. For the purposes of this Paragraph 4.2A.6, "**Routine Change(s)**" shall mean changes to the nomenclature of transmission circuits associated with a **System to Generator Operational Intertripping Scheme** specified in Appendix F3 of the relevant **Bilateral Agreement** which do not necessitate replacement, renovation, modification, alteration or construction to the **User's Plant** or **Apparatus**.

#### 4.2A.7 No payments for Category 1 Intertripping Schemes

For the avoidance of doubt, no payment shall be made by **The Company** hereunder in respect of a **Category 1 Intertripping Scheme**.

#### 4.2A.8 **Disclosure and Use of Information**

Each **User** hereby consents to the disclosure and use by **The Company** of data and other information from any year relating to the provision by that **User** of the **Balancing Service** to the extent necessary to enable **The Company** to carry out its **EMR Functions**.

### 4.2B **OTHER BALANCING SERVICES**

#### 4.2B.1 **Application**

The provisions of this Paragraph 4.2B shall apply to **The Company** and a **User** or other person in respect of the provision by that **User** or other person to **The Company** of **Balancing Services** other than **Mandatory Ancillary Services, Maximum Generation** and **System to Generator Operational Intertripping**.

#### 4.2B.2 **Form of Agreement**

Any agreement between **The Company** and a **User** or other person in respect of the provision by that **User** or other person to **The Company** of **Balancing Services** other than **Mandatory Ancillary Services, Maximum Generation** and **System to Generator Operational Intertripping** shall be in a form to be agreed between them (but, in respect of **Commercial Services Agreements**, subject always to Paragraph 4.2B.3 where applicable).

#### 4.2B.3 **Agreed Ancillary Services**

Each **User** and **The Company** shall enter into a **Commercial Services Agreement** providing for the payment for and provision of the **Agreed Ancillary Services** (other than **Maximum Generation**) and **System to Generator Operational Intertripping** (if any) set out in Appendix F1 of the relevant **Bilateral Agreement**. If, after a period which appears to **The Company** to be reasonable for the purpose, **The Company** has failed to enter into a **Commercial Services Agreement** with such **User**, **The Company** shall be entitled to initiate the procedure for resolution of the issue as an **Other Dispute** in accordance with Paragraph 7.4 to settle the terms of the said **Commercial Services Agreement**.

#### 4.2B.4 **Disclosure and Use of Information**



Each **User** or other person who provides **Balancing Services** to **The Company** hereby consents to the disclosure and use by **The Company** of data and other information from any year relating to the provision by that **User** or other person of the **Balancing Service** to the extent necessary to enable **The Company** to carry out its **EMR Functions**.

#### 13.1.1 4.2B.5 EBR Article 18

Where and to the extent that:-

- (a) contractual arrangements for the provision of and payment for **Balancing Services** which are not set out in **CUSC** contain **EBR Article 18 Terms and Conditions**; and
- (b) an **EBR Amendment** to such contractual arrangements is proposed which under the **Electricity Balancing Regulation** is subject to consultation and prior approval by the **Authority**,

then, to the extent and from such date as is required by the **Electricity Balancing Regulation**,, such **EBR Amendment** shall be effective only after appropriate consultation and prior approval by the **Authority**. Accordingly, **The Company** shall ensure that the amendment processes contained within such contractual arrangements provide for appropriate consultation and prior approval by the **Authority** before any **EBR Amendment** becomes effective.



## 4.3 PAYMENTS FOR BALANCING SERVICES

### 4.3.1 Application

The provisions of this Paragraph 4.3 shall apply to payments made by **The Company** to a **User** (and by a **User** to **The Company**) pursuant to:-

- 4.3.1.1 **Mandatory Services Agreements** in respect of the provision of **Mandatory Ancillary Services**; and/or
- 4.3.1.2 (save as provided in Paragraphs 4.2.5.3 to 4.2.5.5 (inclusive)) **Maximum Generation Service Agreements** in respect of the provision of **Maximum Generation**; and/or
- 4.3.1.3 Paragraph 4.2A.4 in respect of the provision of **System to Generator Operational Intertripping**,

and (if agreed between **The Company** and a **User**) may also be incorporated by reference into a **Balancing Services Agreement** as a term thereof so as to apply in respect of the provision of other **Balancing Services** (but for the avoidance of doubt not so as to thereby create any obligations on **The Company** and that **User** under the **CUSC** in respect thereof).

### 4.3.2 Payment Procedure

- 4.3.2.1 On the third **Business Day** following receipt from the **Settlement Administration Agent** of the **Interim Information Settlement Run** issued in respect of the final day of the previous calendar month **The Company** shall send to the **User** a statement ("**Provisional Monthly Statement**") consisting of:-
  - (a) a statement ("**Provisional Statement**") incorporating:-
    - (i) detailed daily technical reports of all **Balancing Services** supplied by the **User** pursuant to the relevant **Balancing Services Agreement** during the previous calendar month;
    - (ii) a summary of each **Balancing Service** so supplied; and
  - (b) if relevant a statement showing adjustments to be made (net of interest) in relation to disputes for **Balancing Services** concerning any month prior to the

previous month ("**Provisional Adjustments Statement**"),

in each case showing the payments due to or from the **User** as a result thereof.

- 4.3.2.2 If the **User** has failed to supply any **Balancing Service** in accordance with the **Grid Code** or any instructions validly and properly issued under the **Grid Code** or as required by the **CUSC** or any **Balancing Services Agreement**, **The Company** shall set out the times and dates upon which it considers such failure of supply to have occurred and the facts or evidence which it relies upon as constituting such failure in the **Provisional Monthly Statement** next following the date of such failure or next following the date when **The Company** first becomes aware of the facts which constitute such failure.
- 4.3.2.3 If the **User** disagrees with any dates, times, facts or calculations set out in the **Provisional Statement** and/or the **Provisional Adjustments Statement**, it shall state by notice in writing to **The Company** the reasons and facts which it relies upon in support of such disagreement. The parties shall discuss and endeavour to resolve the matter prior to **The Company** sending out the **Final Monthly Statement**. If they reach agreement **The Company** shall set out in the **Final Monthly Statement** the adjustments required but if it cannot be resolved the dates times facts and calculations set out in the **Provisional Statement** and in the **Provisional Adjustments Statement** shall be binding upon the parties until such time as they are reversed or revised by agreement between the parties or otherwise (in accordance with Paragraph 4.3.2.8) pursuant to the **Dispute Resolution Procedure**.
- 4.3.2.4 Notwithstanding the provisions of Paragraphs 4.3.2.2 and 4.3.2.3, if any fact or matter set out in the **Provisional Statement** and/or in the **Provisional Adjustments Statement** shall be inconsistent with any fact or matter set out in a final run (if any) of the settlement calculation issued by the **Settlement Administration Agent**, or any change to a previous final run (if any) of a settlement calculation, the facts and matters set out in the settlement calculation or which, following a dispute and subject to Paragraph 4.3.2.5, it is found or agreed should be set out therein shall be binding upon both parties.

- 4.3.2.5 If either **The Company** or the **User** intends to dispute any fact or matter contained in a final run (if any) of a settlement calculation which is inconsistent with any fact or matter contained in a **Provisional Statement** and/or a **Provisional Adjustments Statement** it shall serve notice in writing on the other party to that effect in order that the other party may make such representations as it wishes to the **Settlement Administration Agent** or exercise such rights as it may have under the **Balancing and Settlement Code** in relation to such fact or matter.
- 4.3.2.6 On the eighteenth **Business Day** of each calendar month, **The Company** shall send to the **User** a statement ("**Final Monthly Statement**") consisting of:-
- (a) a statement ("**Final Statement**") incorporating:-
    - (i) in the case of an undisputed **Provisional Statement** (or where any dispute has been resolved and no changes have been effected to the calculations contained in the **Provisional Statement**) a further monthly summary of the **Balancing Services** provided together with an invoice for the amount shown as being due to the **User** or **The Company** (as the case may be); or
    - (ii) in the case of a disputed **Provisional Statement** such that changes are required as a result thereof, a further copy of the detailed daily technical reports referred to at Paragraph 4.3.2.1(a)(i), a revised monthly summary of the **Balancing Services** provided and an invoice for the amount shown as being due to the **User** or **The Company** (as the case may be); and
  - (b) if a **Provisional Adjustments Statement** has been issued in accordance with Paragraph 4.3.2.1(b), a statement ("**Final Adjustments Statement**") showing adjustments to be made in relation to disputes for **Balancing Services** concerning any month prior to the previous month together with interest thereon up to and including the date of payment referred to in Paragraph 4.3.2.10. Such adjustments will be reflected in the invoice referred to at Paragraph 4.3.2.6(a)(i) above.

## 4.3.2.7 Where:-

- (a) either **The Company** or the **User** discovers that any previous **Provisional Monthly Statement** or **Final Monthly Statement** contains an arithmetic error or omission; or
- (b) any change is made to a previous final run (if any) of a settlement calculation which includes a change in any of the facts or matters upon which the final settlement run was based which facts or matters formed the basis upon which any previous **Provisional Monthly Statement** or **Final Monthly Statement** was prepared; or
- (c) either **The Company** or the **User** becomes aware of any facts concerning matters provided by this Paragraph 4.3 (other than facts falling within Paragraphs 4.3.2.7(a) and (b)) which show that the payment made by or to the **User** was incorrect; or
- (d) the **User** establishes to **The Company's** reasonable satisfaction that it was entitled to receive any additional payment;

then **The Company** and the **User** shall agree an adjustment to the account between **The Company** and the **User** which adjustment shall be reflected in the next **Provisional Adjustments Statement** which **The Company** issues, and the provisions of Paragraphs 4.3.2.3 to 4.3.2.5 shall apply mutatis mutandis to such adjustments. Failing agreement as to the amount of any such adjustment, **The Company** or the **User** may refer the matter to an expert for determination (if both of them agree) or otherwise may initiate the procedure for resolution of the issue as an **Other Dispute** in accordance with Paragraph 7.4.

- 4.3.2.8 Where a dispute is resolved by issuance of a decision by an expert or an arbitrator or panel of arbitrators pursuant to the **Dispute Resolution Procedure**, **The Company** shall adjust the account between itself and the **User** accordingly in the next **Provisional Adjustments Statement** required to be issued under Paragraph 4.3.2.1. If such decision of an expert or an arbitrator or panel of arbitrators is subsequently reversed or modified by a final judicial decision after exhaustion of all appeals if this opportunity is taken, **The**

**Company** shall adjust the account between itself and the **User** accordingly in the next **Provisional Adjustments Statement** which it issues.

- 4.3.2.9 Subject to Paragraph 4.3.2.13, the due date of payment for the purposes of Paragraph 4.3.2.12 in respect of any disputed amount subsequently determined or agreed to be payable to the **User** or to **The Company** shall be the date for payment of the relevant **Provisional Statement** from which the dispute arises.
- 4.3.2.10 **The Company** shall pay to the **User** the amount shown as due from **The Company** in the **Final Monthly Statement** within three **Business Days** of the date on which such statement is or should be issued. The **User** shall pay to **The Company** the amount shown as due from the **User** in such statement within three **Business Days** of the date on which such statement is issued.
- 4.3.2.11 If either party ("**Defaulting Party**"), in good faith and/or with reasonable cause fails to pay under Paragraph 4.3.2.10 any amount properly due in respect of **Balancing Services** under the **CUSC** and the relevant **Balancing Services Agreement**, then such **Defaulting Party** shall pay to the other party interest on such overdue amount from and including the due date of such payment to (but excluding) the date of actual payment (as well after as before judgment or determination by an arbitrator or panel of arbitrators) at the **Base Rate**. Provided that should the **Defaulting Party** otherwise fail to pay any amount properly due under the **CUSC** and the relevant **Balancing Services Agreement** on the due date then the **Defaulting Party** shall pay to the other party interest on such overdue amount at the **Enhanced Rate** from the due date on which such payment was properly due to (but excluding) the date of actual payment. Any interest shall accrue from day to day.
- 4.3.2.12 If following a dispute or by virtue of Paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, 4.3.2.7 or 4.3.2.8 it is determined or agreed that the **User** was entitled to a further payment from **The Company**, the **User** shall be entitled to interest at the **Base Rate** on the amount of such further payment from the due date calculated in accordance with Paragraph 4.3.2.9 until the date of payment.
- 4.3.2.13 If following a dispute or by virtue of the provisions of

Paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, 4.3.2.7 or 4.3.2.8 it is determined or agreed that **The Company** or the **User** was not entitled to any payment it has received, the other party shall be entitled to interest at the **Base Rate** on the amount so paid from the date of payment until the date of repayment or the date when **The Company** makes a payment to the **User** which takes such payment into account.

- 4.3.2.14 Notwithstanding any other provision of the **CUSC** and any **Balancing Services Agreement**, **The Company** and a **User** shall not be limited in any way as to the evidence they may rely upon in any proceedings arising out of or in connection with payment for any **Balancing Service** under the **CUSC** and the relevant **Balancing Services Agreement** and the parties agree that in the event and to the extent that either party succeeds in proving in any such proceedings that any **Balancing Service** was or was not provided, the successful party shall (without prejudice to any liquidated damages provision of the **CUSC** and/or the relevant **Balancing Services Agreement**) be entitled to repayment of the sums already paid or payment of sums not paid as the case may be in respect of such **Balancing Service**.
- 4.3.2.15 Save as otherwise expressly provided in the **CUSC** or in any **Balancing Services Agreement**, sums payable by **The Company** or a **User** to the other in respect of **Balancing Services** pursuant to the **CUSC** or any **Balancing Services Agreement** whether by way of charges, interest or otherwise shall (except to the extent otherwise required by law) be paid in full, free and clear of and without deduction, set-off or deferment in respect of any disputes or claims whatsoever save for sums the subject of a final award or judgement (after exhaustion of all appeals if this opportunity is taken) or which by agreement between **The Company** and the relevant **User** may be so deducted or set off.
- 4.3.2.16 **The Company** represents and warrants to each relevant **User**, as between **The Company** and that **User**, that it enters into each **Balancing Services Agreement** as principal and not as agent for any other person.
- 4.3.2.17 All amounts specified hereunder shall be exclusive of any **Value Added Tax** or other similar tax and **The Company** shall pay to the **User Value Added Tax** at the rate for the time being and from time to time properly chargeable in respect of the making available and/or supply of **Balancing Services**

under the **CUSC**, the relevant **Balancing Services Agreement**, the **Grid Code**, or any **Bilateral Agreement**.

- 4.3.2.18 All payments by **The Company** to the **User** (or by the **User** to **The Company**) in respect of the provision of **Balancing Services** will be made by payment to the parties' bank accounts details of which may be set out in the relevant **Balancing Services Agreement** or otherwise notified by **The Company** to the **User** (or by the **User** to **The Company**) from time to time.
- 4.3.2.19 The submission of all **Provisional Monthly Statements** and all **Final Monthly Statements** and facts and other evidence in support thereof and any questions in connection therewith from **The Company** to the **User** and vice versa in accordance with this Paragraph 4.3.2 must be made, in the absence of agreement to the contrary between the parties, by 19.00 hours on the **Business Day** concerned.
- 4.3.2.20 For the purpose of the regulations of HM Revenue and Customs as regards self-billing of **Balancing Services** and the submission of **Value Added Tax** invoices, the **User** hereby consents to the operation of a self-billing system by **The Company** with regard to the payment for **Balancing Services** to be provided pursuant to the **CUSC** and the relevant **Balancing Services Agreement** and will at all times throughout the term of the relevant **Balancing Services Agreement** maintain such consent. The **User** hereby undertakes, as between **The Company** and that **User**, to do (at **The Company's** cost) all acts and things reasonably necessary to enable **The Company** to comply with the regulations of HM Customs and Excise as regards the self-billing of **Balancing Services**.
- 4.3.2.21 Payment of any sum or the submission of any **Provisional Monthly Statement** or **Final Monthly Statement** by **The Company** to a **User** under this Paragraph 4.3.2 shall not operate to impair or be construed as a waiver of any right, power, privilege or remedy **The Company** may have against the **User** under the **CUSC** and/or any **Balancing Services Agreement** and/or the **Grid Code** and/or any **Bilateral Agreement**.
- 4.3.2.22 For the avoidance of doubt, **The Company** shall issue a **Provisional Monthly Statement** to the **User** for the calendar month following the calendar month in which any **Balancing**



**Services Agreement** to which the **User** is a party shall expire or terminate, setting out details of the **Balancing Services** supplied by the **User** in respect thereof during that calendar month until expiry or termination, and in respect thereof the provisions of this Paragraph 4.3.2 shall continue to apply notwithstanding such expiry or termination.

## 4.4 CHARGING PRINCIPLES

### 4.4.1 Application

The provisions of this Paragraph 4.4 shall apply to payments made by **The Company** to a **User** pursuant to **Mandatory Services Agreements** in respect of the provision of the **Mandatory Ancillary Service of Frequency Response**, and (if agreed between **The Company** and a **User**) may also be incorporated by reference into any other **Ancillary Services Agreement** as a term thereof so as to apply in respect of payments made by **The Company** to that **User** in respect of the provision of other **Ancillary Services** (but for the avoidance of doubt not so as to thereby create any obligations on **The Company** and that **User** under the **CUSC** in respect thereof).

### 4.4.2 Charging Principles - General

- 4.4.2.1 These principles are to be used to establish the basic arrangements but are not intended to stifle innovation in the development of new services or the giving of appropriate economic signals.
- 4.4.2.2 Save where otherwise expressly provided in this Paragraph 4.4, the charges shall be "cost reflective" ie. based and founded upon the actual or estimated costs directly incurred or to be incurred by the **User** for the purpose of providing the service or capability concerned.
- 4.4.2.3 Where a capability to provide an **Ancillary Service** is required by the **Grid Code** from all **BM Units** or **CCGT Units** (as opposed to a capability made available by agreement between **The Company** and a **User** from some only of the **User's BM Units** or **CCGT Units**), no **Ancillary Service** capability payment shall be made.
- 4.4.2.4 The cost of "Grandfathering" **User's** Equipment (i.e. bringing equipment owned by the **User** on 30<sup>th</sup> March 1990 to a

condition of compliance with the **Grid Code**) shall not be included in **Ancillary Services** payments. Where a **Derogation** is withdrawn or reduced in scope then, except in relation to **Frequency Response**, the **User** shall be entitled to take the cost of meeting the withdrawal or reduction in the scope of the **Derogation** into account in its charges.

- 4.4.2.5 Subject to the other provisions of this Paragraph 4.4.2, the charges shall take due account of any change in or amendments to the **Grid Code** or any other statutory or regulatory obligation coming into force after 30<sup>th</sup> March 1990 affecting the provision of **Ancillary Services**.
- 4.4.2.6 If as a result of any changes to the **Balancing and Settlement Code** the **User** ceases to be entitled to receive payment under the **Balancing and Settlement Code** in respect of any elements of **Ancillary Services** provided by it which are expressed in this Paragraph 4.4 to be paid for under the **Balancing and Settlement Code**, the **User** shall be entitled to charge for such elements under an **Ancillary Services Agreement**. Where, however, such change entitles the **User** to be paid for any elements of **Ancillary Services** which are expressed in this Paragraph 4.4 to be paid for under an **Ancillary Services Agreement** the **User** shall cease to be entitled to charge for such elements under an **Ancillary Services Agreement**.

#### 4.4.3 Charging Principles – Frequency Response

**Holding Payments** shall be determined in accordance with Paragraph 4.1.3.13 and, as specified in Paragraph 4.1.3.13(g), therefore need not be cost reflective.

- 4.4.3.1 Part-loading of a **BM Unit** at a level other than that specified in a **Physical Notification** in order to provide **Frequency Response** will normally be achieved by the issue of a **Bid-Offer Acceptance**.
- 4.4.3.2 In recognition of the energy production costs likely to be incurred or avoided when providing **Frequency Response**, an additional amount based upon an expected delivery of **Frequency Response** energy shall be payable under Paragraph 4.1.3.9A.

## 4.5 INDEXATION

#### 4.5.1 Application

The provisions of this Paragraph 4.5 shall apply to payments made by **The Company** to a **User** pursuant to Paragraphs 4.2A.4(a) and (c) in respect of the provision of **System to Generator Operational Intertripping**, and (if agreed between **The Company** and a **User**) may be incorporated by reference into any other **Balancing Services Agreement** (other than a **Mandatory Services Agreement**) as a term thereof so as to apply in respect of payments made by **The Company** to that **User** in respect of the provision of other **Balancing Services** (other than **Mandatory Ancillary Services**) (but for the avoidance of doubt not so as to thereby create any obligations on **The Company** and that **User** under the **CUSC** in respect thereof).

#### 4.5.2 Indexation provisions

4.5.2.1 The rates and/or prices to be indexed shall be specified in the **Balancing Services Agreement** or (in the case of **System to Generator Operational Intertripping**) in Schedule 4 to this Section 4 as applicable for a 12 month period commencing 1<sup>st</sup> April (“the base year”), and these rates and/or prices will be adjusted annually to take account of general price inflation. The index used will be the Retail Prices Index (RPI) with 1987 = 100 base.

4.5.2.2 The source of the RPI index is to be the monthly Office for National Statistics “Business Monitor MM23.”

4.5.2.3 The rates and/or prices to be indexed shall be increased (or reduced as appropriate) for the subsequent 12 month period commencing 1<sup>st</sup> April by the following factor:-

$$\frac{RPI_2}{RPI_1}$$

Where

$RPI_2$  is the RPI for March immediately prior to commencement of that 12 month period

$RPI_1$  is the RPI for March immediately prior to commencement of the base year.

- 4.5.2.4 In subsequent years indexation will continue in accordance with the above, with always the numerator of the factor representing the RPI of the 12 month period in question and the denominator of the factor being the RPI for March immediately prior to the base year.
- 4.5.2.5 In the event that RPI ceases to be published or is not published in respect of any relevant month or it is not practicable to use RPI because of a change in the method of compilation or some other reason, indexation for the purposes of this Paragraph 4.5 shall be calculated by **The Company** using an index agreed between **The Company** and the relevant **User** with a view to determining the relevant price after indexation that would be closest to the relevant price after indexation if RPI had continued to be available. If **The Company** and a relevant **User** are unable to agree a suitable index, either of them may initiate the **Dispute Resolution Procedure** for resolution of the issue as an **Other Dispute** in accordance with Paragraph 7.4.
- 4.5.2.6 For the avoidance of doubt, the provisions of Paragraph 11.3 with regard to determination of an alternative index should the **Retail Prices Index** not be published or there is a material change to the basis of such index shall not apply with respect to the rates and/or prices the subject of this Paragraph 4.5.

**SCHEDULE 1****WEEKLY MAXIMUM GENERATION DECLARATION OF AVAILABILITY****[NAME OF GENERATOR]***Optional Logo*

Station .....Telephone:

Standby Tel:

Fax:

Standby Fax:

Maximum Generation shall be available for the week commencing [ ] from  
 Maximum Generation BM Unit(s) as follows:-

Operational Day (dd/mm/yy)	Maximum Generation BM Unit	Indicative Maximum Generation Capability	Available? (YES/NO)

**ADDITIONAL RELEVANT INFORMATION**

--

Fax Sent By (Print name):

Signature: .....

Date: .....

Time: .....

Acknowledged by **The Company:**

Signature: .....

Date: .....

Time: .....

~~National Grid Control Centre~~NESO

Standby Fax:

[ ]

Fax:

[ ]

**SCHEDULE 2****MAXIMUM GENERATION REDECLARATION OF AVAILABILITY****[NAME OF GENERATOR]***Optional Logo*

Station ..... Telephone:

Standby Tel:

Fax:

Standby Fax:

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The availability of Maximum Generation is revised as follows:

<b>OPERATIONAL DAY (dd/mm/yy)</b>	<b>Maximum Generation BM Unit</b>	<b>Indicative Maximum Generation Capability</b>	<b>Available (YES/NO)</b>

**ADDITIONAL RELEVANT INFORMATION**

--

Fax Sent By (Print name):

Signature: .....

Date: .....

Time: .....



---

Acknowledged by **The Company**:

Signature: .....

Date: .....

Time: .....

~~National Grid Control Centre~~NESO

Standby Fax:

[ ]

Fax:

[ ]

**SCHEDULE 3****SYSTEM TO GENERATOR OPERATIONAL INTERTRIPPING - FACSIMILE FORMS****Part I**

Instruction to arm and disarm System to Generator Operational Intertripping Scheme

*From: [    ]*

*To: [    ]*

*Time and date instruction issued: [    ]*

Category of Intertrip	
Connection Site	
Time and date of arming	
Restricted MW Export Level (MW) post trip	
Special instructions (if any)	
Reason(s) for arming	
Relevant fault(s)	
Generating Unit(s)/BM Unit(s)/Intertrip Contacted Unit(s) to be armed (delete as appropriate)	

Anticipated duration of arming	
--------------------------------	--

Category of Intertrip	
Connection Site	
Time and date of arming	

**Part II**

## Confirmation of Withdrawal of Restricted MW Export Level

*From : [    ]**To: [    ]**Time and date confirmation issued: [    ]*

Connection Site	
Restricted MW Export Level (MW)	
No longer applies	<i>Tick if applicable</i>
Has been increased to (MW)	

Special instructions (if any) if Restricted MW Export Level has been increased	
--	--

**SCHEDULE 4****SYSTEM TO GENERATOR OPERATIONAL INTERTRIPPING - PAYMENT RATES**

	<b>Category 1</b>	<b>Category 2</b>	<b>Category 3</b>	<b>Category 4</b>
<b>Capability Payment (£/Settlement Period)</b>	N/A	£ 1.72	N/A	£ 1.72
<b>Intertrip Payment (£/Intertrip Contracted Unit/Trip)</b>	N/A	£ 400,000	N/A	£ 400,000

All rates in this Schedule 4 are specified at April 2005 base and shall be subject to indexation in accordance with Paragraph 4.5 with effect from 1st April 2006.

END OF SECTION 4