

**SCHEDULE 2 - EXHIBIT 1**

**DATED [ \_\_\_\_\_ ]**

**THE NATIONAL GRID COMPANY PLC (1)**

**and**

**[ \_\_\_\_\_ ] (2)**

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**THE CONNECTION AND USE OF SYSTEM CODE**

**BILATERAL CONNECTION AGREEMENT**

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**[FOR A DIRECTLY CONNECTED POWER STATION]**

**[FOR A DIRECTLY CONNECTED DISTRIBUTION SYSTEM]**

**[FOR A NON-EMBEDDED CUSTOMER SITE]**

**[FOR AN INTERCONNECTOR OWNER]**

**At [ \_\_\_\_\_ ]**

**Reference: [ \_\_\_\_\_ ]**

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THIS **BILATERAL CONNECTION AGREEMENT** is made on the [ ] day of [ ] 200[ ]

**BETWEEN**

- (1) THE NATIONAL GRID COMPANY plc a company registered in England with number 2366977 whose registered office is at National Grid House, Kirby Corner Road, Coventry CV4 8JY ("**NGC**", which expression shall include its successors and/or permitted assigns); and
- (2) [ ] a company registered in [ ] with number [ ] whose registered office is at [ ] ("**User**", which expression shall include its successors and/or permitted assigns)

**WHEREAS**

- (A) Pursuant to the ~~NGC~~**Transmission Licence**, **NGC** is required to prepare a Connection and Use of System Code (**CUSC**) setting out the terms of the arrangements for connection to and use of the ~~NGC~~**GB Transmission System** and the provision of certain **Balancing Services**.
- (B) The **User** has applied for [**Connection to**] [and use of] [**Modification of its existing Connection to**] [and use of] the ~~NGC~~**GB Transmission System** and pursuant to the ~~NGC~~**Transmission Licence** **NGC** is required to offer terms in this respect.
- (C) The **User** has applied for connection [and use] in the capacity of a [ ] as set out in Paragraph 1.2.4 of the **CUSC**.
- (D) **NGC** and the **User** are parties to the **CUSC Framework Agreement** (being an agreement by which the **CUSC** is made contractually binding between **CUSC Parties**).
- (E) This **Bilateral Connection Agreement** is entered into pursuant to the **CUSC** and shall be read as being governed by it.
- [(F) The parties are also on even date herewith entering into a **Construction Agreement**.]

**NOW IT IS HEREBY AGREED** as follows:

**1. DEFINITIONS, INTERPRETATION AND CONSTRUCTION**

Unless the subject matter or context otherwise requires or is inconsistent therewith, terms and expressions defined in Section 11 of the **CUSC** have the same meanings, interpretations or constructions in this **Bilateral Connection Agreement** [and the following terms and expressions shall have the meaning set out below:-

- "Construction Agreement"** the agreement made between the parties of even date herewith for the carrying out of construction works;
- "Charging Date"** as defined in the **Construction Agreement.**]

## 2. COMMENCEMENT

This **Bilateral Connection Agreement** shall commence on [ ].

## 3. THE CONNECTION SITE AND ~~NGC~~ TRANSMISSION CONNECTION ASSETS

The **Connection Site** and ~~NGC~~ Transmission Connection Assets to which this **Bilateral Connection Agreement** relates is more particularly described in Appendix A.

## 4. CONNECTION CHARGES

The **Connection Charges** payable by the **User** in accordance with the **CUSC** in respect of ~~NGC~~ the Transmission Connection Assets set out in Appendix A [(including the **One-Off Charge** and **Land Charges**)] are set out in Appendix B. These **Connection Charges** shall be payable by the **User** from the [**CUSC Implementation Date**] [or] [**Charging Date.**]

## 5. [USE OF SYSTEM (*power station only*)

The right to use the ~~NGC~~ GB Transmission System shall commence on and **Use of System Charges** shall be payable by the **User** from the [**CUSC Implementation Date**] [or] [**Charging Date.**]

## 6. CREDIT REQUIREMENTS

The amount to be secured by the **User** from [date] is set out in the **Secured Amount Statement** issued from time to time and as varied from time to time in accordance with Section 2 of the **CUSC**.

## 7. CONNECTION ENTRY CAPACITY AND TRANSMISSION ENTRY CAPACITY

- 7.1 The **Connection Entry Capacity** in relation to the **Generating Units** and the **Connection Site** and the **Transmission Entry Capacity** in relation to the **Connection Site**, are specified in Appendix C.

- 7.2 Appendix C Part 3 will set out the **BM Unit Identifiers** of the **BM Units** registered at the **Connection Site** under the **Balancing and Settlement Code**. The **User** will provide **NGC** with the information needed to complete details of these **BM Unit Identifiers** as soon as practicable after the date hereof and thereafter in association with any request to modify the **Transmission Entry Capacity** and **NGC** shall prepare and issue a revised Appendix C incorporating this information. The **User** shall notify **NGC** prior to any alteration in the **BM Unit Identifiers** and **NGC** shall prepared and issue a revised Appendix C incorporating this information.
- 7.3 **NGC** shall monitor the **Users** compliance with its obligation relating to **Transmission Entry Capacity** against the sum of metered volumes of the **BM Units** set out in Part 3 of Appendix C submitted by the **User** for each **Settlement Period**.

## 8. COMPLIANCE WITH SITE SPECIFIC TECHNICAL CONDITIONS

The site specific technical conditions applying to the **Connection Site** are set out in Appendices F1 to F5 to this **Bilateral Connection Agreement** as modified from time to time in accordance with Paragraph 6.9 of the **CUSC**.

## 9. TERM

Subject to the provisions for earlier termination set out in the **CUSC** this **Bilateral Connection Agreement** shall continue until the **User's Equipment** is **Disconnected** from the **NGCGB Transmission System** at the **Connection Site** in accordance with Section 5 of the **CUSC**.

## 10. VARIATIONS

- 10.1 Subject to Clause 10.2, 10.3 and 10.4 below, no variation to this **Bilateral Connection Agreement** shall be effective unless made in writing and signed by or on behalf of both **NGC** and the **User**.
- 10.2 **NGC** and the **User** shall effect any amendment required to be made to this **Bilateral Connection Agreement** by the **Authority** as a result of a change in the **CUSC** or the **Transmission Licence**, an order or direction made pursuant to the **Act** or a **Licence**, or as a result of settling any of the terms hereof. The **User** hereby authorises and instructs **NGC** to make any such amendment on its behalf and undertakes not to withdraw, qualify or revoke such authority or instruction at any time.
- 10.3 **NGC** has the right to vary Appendices A and B in accordance with this **Bilateral Connection Agreement** and the **CUSC** including any variation

necessary to enable **NGC** to charge in accordance with the **Charging Statements**, or upon any change to the **Charging Statements**.

10.4 Appendices A and B shall be varied automatically to reflect any change to the **NGC Construction Works** or **NGC Transmission Connection Assets** as provided for in the **Construction Agreement**.

## 11. RESTRICTIVE TRADE PRACTICES ACT

Any restriction or information provision (as each of those terms are defined or construed in Section 43(1) of the Restrictive Trade Practices Act 1976) contained in this **Bilateral Connection Agreement** shall not take effect or shall cease to have effect:

11.1.1 if a copy of this **Bilateral Connection Agreement** is not provided to the Department of Trade and Industry (“**DTI**”) within 28 days of the date of this **Bilateral Connection Agreement**; or

11.1.2 if, within 28 days of the provision of that copy to the **DTI**, the **DTI** gives notice of objection to the party providing it.

## 12. GENERAL PROVISIONS

Paragraph 6.10 and Paragraphs 6.12 to 6.26 of the **CUSC** are incorporated into this **Bilateral Connection Agreement** *mutatis mutandis*.

**IN WITNESS WHEREOF** the hands of the duly authorised representatives of the parties hereto at the date first above written

SIGNED BY )  
**[name]** )  
for and on behalf of )  
THE NATIONAL GRID COMPANY plc )

SIGNED BY )  
**[name]** )  
for and on behalf of )  
**[User]** )

**APPENDIX A**

**NGC'S TRANSMISSION CONNECTION ASSET/CONNECTION SITE** |

Company: []

Connection Site: []

Type: []

Part 1 - Pre-Vesting Assets

<u>Allocation</u>	<u>Description</u>	<u>Age</u> (As at [ ])	<u>Year</u>
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Part 2 - Post-Vesting Assets

<u>Allocation</u>	<u>Description</u>	<u>Age</u> (As at [ ])	<u>Year</u>
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Part 3 - Energy Metering Systems (\*)

<u>Allocation</u>	<u>Description</u>	<u>Age</u> (As at [ ])	<u>Year</u>
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(\*) FMS, Energy Metering Systems - The Electronics components have a 15 year replacement period. The Non-Electronics components have a 40 year replacement period.

All the above are inclusive of civil engineering works. At double busbar type substations, ownership of main and reserve busbars follows ownership of section switches.

Diagram Reference: []

Appendix Reference: []

Agreement Reference: []

**APPENDIX B**

**CONNECTION CHARGES/PAYMENT**

Company: []

Connection Site: []

Type: []

(1) **Connection Charges**

The Connection Charges set out below may be revised in accordance with the terms of this Bilateral Connection Agreement and/or the Construction Agreement and/or the CUSC and/or the Charging Statements

**Part 1 - Pre-Vesting Assets**

The Connection Charge for those assets extant at 31st March 1990 and specified in Appendix A Part 1 will be at an annual rate for the period [] to [] of £[] where

*Rate of Return* = []%

*Transmission Costs*

Part A Site specific maintenance element = £[]  
Part B Other transmission costs element = £[]

**Part 2 - Post-Vesting Assets**

The Connection Charge for those assets installed for this agreement after 31st March 1990 and specified in Appendix A Part 2 will be at an annual rate for the period [] to [] of £[] where

*Rate of Return* = []%

*Transmission Costs*



Part A Site specific maintenance element = £[ ]  
Part B Other transmission costs element = £[ ]

### **Part 3 - Energy Metering Systems**

For FMS, Energy Metering Systems assets, installed for this agreement as specified in Appendix A Part 3 the Connection Charge will be at an annual rate for the period from [ ] to [ ] of £[ ]

### **Part 4 - Land Charges**

The Land Charge Base Amount is £[ ], based on a [ ] price base

The land charge shall be £[ ] in respect of the period from [ ] to [ ] payable as an estimated indexed charge in twelve monthly instalments subject to adjustment in accordance with the terms of this Bilateral Connection Agreement and/or the CUSC and/or the Charging Statements

### **Part 5 - Miscellaneous Charges**

The miscellaneous charge shall be £[ ] in respect of the period from [ ] to [ ] payable as an estimated indexed charge in twelve monthly instalments subject to adjustment in accordance with the terms of this Bilateral Connection Agreement and/or the CUSC and/or the Charging Statements

### **Part 6 - One-off / Transmission Charges**

The transmission charge shall be £[ ] in respect of the period from [ ] to [ ] payable as an estimated indexed charge in twelve monthly instalments subject to adjustment in accordance with the terms of this Bilateral Connection Agreement and/or the CUSC and/or the Charging Statements

#### (2) Payment

The Connection Charges for Parts 1 to 6 shall be payable in equal monthly instalments as specified in Paragraph 6.6 of the CUSC

Appendix Reference: [ ]

**APPENDIX C (Power Stations)**

**CONNECTION ENTRY CAPACITY AND TRANSMISSION ENTRY CAPACITY**

Company:

Grid Supply Point/Connection Site:

**Part 1 Connection Entry Capacity**

Connection Entry Capacity (CEC) expressed as an instantaneous MW figure

	CEC(MW)
Power Station	[       ]
Generating Unit	
Genset 1	[       ]
Genset 2	[       ]
Genset 3	[       ]
Genset 4	[       ]

**Part 2 Transmission Entry Capacity**

Transmission Entry Capacity (TEC) expressed in average MW taken over a half hour settlement period

TEC(MW)	
Power Station	[       ]

**Part 3 BM Units comprising Power Station**

T_BMU 1	(Associated with Genset 1)
T_BMU 2	(Associated with Genset 2)
T_BMU 3	(Associated with Genset 3)
T_BMU 4	(Associated with Genset 4)
T_BMU SD-1	(Station Demand)
T_BMU AD-1	(Additional Trading Site Demand)

**APPENDIX C (Interconnector Owners)**

**CONNECTION ENTRY CAPACITY AND TRANSMISSION ENTRY CAPACITY**

Company:

Connection Site:

**Part 1 Connection Entry Capacity**

Connection Entry Capacity (CEC) expressed as an instantaneous MW figure

	CEC(MW)
Interconnector	[       ]

**Part 2 Transmission Entry Capacity**

Transmission Entry Capacity (TEC) expressed in average MW taken over a half hour settlement period

Interconnector	[       ]
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**Part 3 BM Units comprising Interconnector**

All BMU's starting with an identifier [I\_FRA for example]. No need to list all individual BMU's

**Part 4 Figure for the Purposes of CUSC Paragraph 9.6**

**APPENDIX F1**

**SITE SPECIFIC TECHNICAL CONDITIONS:**

**AGREED ANCILLARY SERVICES**

**APPENDIX F2**

**[NOT USED]**

**APPENDIX F3**

**SITE SPECIFIC TECHNICAL CONDITIONS:**

**SPECIAL AUTOMATIC FACILITIES**

**APPENDIX F4**

**SITE SPECIFIC TECHNICAL CONDITIONS:**

**PROTECTION AND CONTROL RELAY SETTINGS**

**FAULT CLEARANCE TIMES**

**APPENDIX F5**

**SITE SPECIFIC TECHNICAL CONDITIONS:**

**LOAD SHEDDING FREQUENCY SENSITIVE RELAYS**

**END OF SCHEDULE 2 - EXHIBIT 1**



**SCHEDULE 2 - EXHIBIT 2**

**DATED [ \_\_\_\_\_ ]**

**THE NATIONAL GRID COMPANY PLC (1)**

**and**

**[ \_\_\_\_\_ ] (2)**

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**THE CONNECTION AND USE OF SYSTEM CODE  
BILATERAL EMBEDDED GENERATION AGREEMENT**

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**[USE OF SYSTEM FOR AN EMBEDDED POWER STATION]  
[USE OF SYSTEM FOR A SMALL POWER STATION TRADING PARTY]  
[DISTRIBUTION INTERCONNECTOR OWNER]**

**At [ \_\_\_\_\_ ]**

**Reference:[ \_\_\_\_\_ ]**

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- Appendix F5 Site Specific Technical Conditions - Other**

THIS **BILATERAL EMBEDDED GENERATION AGREEMENT** is made on the [ ] day of [ ] 200[ ].

## **BETWEEN**

- (1) THE NATIONAL GRID COMPANY plc a company registered in England with number 2366977 whose registered office is at National Grid House, Kirby Corner Road, Coventry CV4 8JY ("**NGC**", which expression shall include its successors and/or permitted assigns); and
- (2) [ ] a company registered in [ ] with number [ ] whose registered office is at [ ] ("**User**", which expression shall include its successors and/or permitted assigns).

## **WHEREAS**

- (A) Pursuant to the **NGC-Transmission Licence**, **NGC** is required to prepare a Connection and Use of System Code (**CUSC**) setting out the terms of the arrangements for connection to and use of the **NGCGB Transmission System** and the provision of certain **Balancing Services**.
- (B) The **User** has applied for use of the **NGC-GB Transmission System** and pursuant to the **NGC-Transmission Licence** **NGC** is required to offer terms for use of system.
- (C) The **User** has applied for use of the **NGC-GB Transmission System** in the capacity of [ ] as set out in Paragraph 1.2.4 of the **CUSC**.
- (D) As at the date hereof, **NGC** and the **User** are parties to the **CUSC Framework Agreement** (being an agreement by which the **CUSC** is made contractually binding between the parties). This **Bilateral Embedded Generation Agreement** is entered into pursuant to the **CUSC** and shall be read as being governed by it.

**NOW IT IS HEREBY AGREED** as follows:

### **1. DEFINITIONS, INTERPRETATION AND CONSTRUCTION**

Unless the subject matter or context otherwise requires or is inconsistent therewith, terms and expressions defined in Section 9 of the **CUSC** have the same meanings, interpretations or constructions in this **Bilateral Embedded Generation Agreement**.

### **2. COMMENCEMENT**

This **Bilateral Embedded Generation Agreement** shall commence on [ ].

### 3. THE SITE OF CONNECTION TO THE DISTRIBUTION SYSTEM

The site of **Connection** of the **Embedded Power Station [Distribution Interconnector]** to the **Distribution System** to which this **Bilateral Embedded Generation Agreement** relates is more particularly described in Appendix A.

[The sites of **Connection** of the **Embedded Power Stations [Distribution Interconnector]** to the relevant **Distribution Systems** to which this **Bilateral Embedded Generation Agreement** relates are more particularly described in Appendix A.]

### 4. CHARGING DATE

The date from which **Use of System Charges** shall be payable by the **User** (including **One-Off Charges** where applicable) shall be [ ].

### 5. USE OF SYSTEM

The right to use the **NGC-GB Transmission System** shall commence on and **Use of System Charges** shall be payable by the **User** from the date hereof.

### 6. CREDIT REQUIREMENTS

[The amount to be secured by the **User** from [date] is set out in the **Secured Amount Statement** issued from time to time and as varied from time to time in accordance with Section 3 of the **CUSC**.]

### 7. ENTRY ACCESS CAPACITY

7.1 The **Entry Access Capacity** of [each of the] site[s] of **Connection** is [are] and the[ir] value[s] for the purposes of Paragraph 3.2 of the **CUSC** are specified in Appendix C.

7.2 Appendix C Part 3 will set out the **BM Unit Identifiers** of the **BM Units** registered at the **Connection Site** under the **Balancing and Settlement Code**. The **User** will provide **NGC** with the information needed to complete details of these **BM Unit Identifiers** as soon as practicable after the date hereof and thereafter in association with any request to modify the **Transmission Entry Capacity** and **NGC** shall prepare and issue a revised Appendix C incorporating this information. The **User** shall notify **NGC** prior to any alteration in the **BM Unit Identifiers** and **NGC**

shall prepare and issue a revised Appendix C incorporating this information.

- 7.3 **NGC** shall monitor the **Users** compliance with its obligation relating to **Transmission Entry Capacity** against the sum of metered volumes of the **BM Units** set out in Part 3 of Appendix C and submitted by the **User** for each **Settlement Period**.

## 8. **COMPLIANCE WITH SITE SPECIFIC TECHNICAL CONDITIONS**

The site specific technical conditions applying to [each of] the site[s] of **Connection** are set out in Appendices F1 to F5 to this **Bilateral Embedded Generation Agreement** as modified from time to time in accordance with Paragraph 6.9 of the **CUSC**.

## 9. **TERM**

Subject to the provisions for earlier termination set out in the **CUSC**, this **Bilateral Embedded Generation Agreement** shall continue until all of the **User's** equipment [or **Equipment** for which the **User** is responsible (as defined in Section K of the **Balancing and Settlement Code**] is **Disconnected** from the relevant **Distribution System** at the site[s] of **Connection** as provided in Section 5 of the **CUSC**.

## 10. **VARIATIONS**

- 10.1 Subject to 10.2 and 10.3, no variation to this **Bilateral Embedded Generation Agreement** shall be effective unless made in writing and signed by or on behalf of both **NGC** and the **User**.
- 10.2 **NGC** and the **User** shall effect any amendment required to be made to this **Bilateral Embedded Generation Agreement** by the **Authority** as a result of a change in the **CUSC** or the **Transmission Licence**, an order or direction made pursuant to the **Act** or a **Licence**, or as a result of settling any of the terms hereof. The **User** hereby authorises and instructs **NGC** to make any such amendment on its behalf and undertakes not to withdraw, qualify or revoke such authority or instruction at any time.
- 10.3 **NGC** has the right to vary Appendix B in accordance with this **Bilateral Embedded Generation Agreement** and the **CUSC** including any variation necessary to enable **NGC** to charge in accordance with the **Charging Statements** or upon any change to the **Charging Statements**.

**11. RESTRICTIVE TRADE PRACTICES ACT**

Any restriction or information provision (as each of those terms are defined or construed in Section 43(1) of the Restrictive Trade Practices Act 1976) contained in this **Bilateral Embedded Generation Agreement** shall not take effect or shall cease to have effect:

11.1.1 if a copy of this **Bilateral Embedded Generation Agreement** is not provided to the Department of Trade and Industry (“**DTI**”) within 28 days of the date of this **Bilateral Embedded Generation Agreement**; or

11.1.2 if, within 28 days of the provision of that copy to the **DTI**, the **DTI** gives notice of objection to the party providing it.

**12. GENERAL PROVISIONS**

Paragraph 6.10 and Paragraphs 6.12 to 6.26 of the **CUSC** are incorporated into this **Bilateral Embedded Generation Agreement** *mutatis mutandis*.

**IN WITNESS WHEREOF** the hands of the duly authorised representatives of the parties hereto at the date first above written

SIGNED BY )  
**[name]** )  
for and on behalf of )  
THE NATIONAL GRID COMPANY plc )

SIGNED BY )  
**[name]** )  
for and on behalf of )  
[User] )

**APPENDIX A**

**THE SITE OF CONNECTION**

**1. SITE[s] OF CONNECTION**

**Company**

**:**

**Site[s] of Connection :**

**Owner[s] / Operator[s] of Distribution System:**

**APPENDIX B**  
**CHARGES AND PAYMENT**

Company :

Site of Connection:

1. PART 1: ONE-OFF CHARGES
  
2. PART 2: MISCELLANEOUS CHARGE(S)



**APPENDIX C**

**TRANSMISSION ENTRY CAPACITY**

**Part 1 Transmission Entry Capacity**

Transmission Entry Capacity (TEC) expressed in average MW taken over a half hour settlement period

	TEC(MW)
Power Station	[       ]

**Part 2 BM Units comprising Power Station**

E_BMU 1	(Associated with Genset 1)
E_BMU 2	(Associated with Genset 2)
E_BMU 3	(Associated with Genset 3)
E_BMU 4	(Associated with Genset 4)
E_BMU SD-1	(Station Demand) if applicable
E_BMU AD-1	(Additional Trading Site Demand) if applicable

**APPENDIX FI**

**SITE SPECIFIC TECHNICAL CONDITIONS:**

**AGREED BALANCING SERVICES**

**APPENDIX F2**

**[NOT USED]**

**APPENDIX F2**

**SITE SPECIFIC TECHNICAL CONDITIONS:**

**SPECIAL AUTOMATIC FACILITIES**

**APPENDIX F3**

**SITE SPECIFIC TECHNICAL CONDITIONS: PROTECTION**

**AND CONTROL RELAY SETTINGS**

**FAULT CLEARANCE TIMES**

**APPENDIX F4**

**SITE SPECIFIC TECHNICAL CONDITIONS:**

**OTHER**

**END OF SCHEDULE 2 - EXHIBIT 2**

**[SCHEDULE 2 EXHIBIT 3]**

**INDICATIVE**

**DATED [ ] 200[1]**

**THE NATIONAL GRID COMPANY PLC (1)**

**and**

**[ ] (2)**

---

**THE CONNECTION AND USE OF SYSTEM CODE**

**CONSTRUCTION AGREEMENT**

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Appendix M	Security Arrangements
Appendix N	Third Party Works

**THIS CONSTRUCTION AGREEMENT** is made on the [ ] day of [ ] 200[1]

## **BETWEEN**

- (1) THE NATIONAL GRID COMPANY plc a company registered in England with number 2366977 whose registered office is at National Grid House, Kirby Corner Road, Coventry CV4 8JY (“**NGC**”, which expression shall include its successors and/or permitted assigns); and
- (2) [ ] a company registered in [ ] with number [ ] whose registered office is at [ ] (“**User**”, which expression shall include its successors and/or permitted assigns)

## **WHEREAS**

- (A) Pursuant to the **Transmission Licence**, **NGC** has prepared a Connection and Use of System Code (**CUSC**) setting out the terms of the arrangements for connection to and use of the **NGC-GB Transmission System** and the provision of certain **Balancing Services**.
- (B) The **User** has applied for [connection to] [and use of] [modification to its connection to] [or use of] the **NGC-GB Transmission System** and pursuant to [Standard Condition C7D] of the **Transmission Licence**, **NGC** is required to offer terms in accordance with the **CUSC** in this respect **or** [specific recital to reflect that the **Construction Agreement** is an amendment of an existing signed offer pursuant to the **CUSC** amending documents]
- (C) **NGC** and the **User** are parties to the **CUSC Framework Agreement** (being an agreement by which the **CUSC** is made contractually binding between the parties).
- (D) Certain works are required as part of this offer as set out in this **Construction Agreement**.
- (E) This **Construction Agreement** is entered into pursuant to the terms of the **CUSC**.

**NOW IT IS HEREBY AGREED** as follows:

### **1.1. DEFINITIONS, INTERPRETATION AND CONSTRUCTION**

Unless the subject matter or context otherwise requires or is inconsistent therewith, terms and expressions defined in Section 11 of the **CUSC** and in the

DRAFT GB CUSC V2.0 Based on Schedule 2 Exhibition 3 of CUSC version 1.1  
Bilateral Connection Agreement have the same meanings, interpretations or constructions in this **Construction Agreement**.

"Authority"	as defined in the <b>CUSC</b> .
"Bilateral Connection Agreement"	the <b>Bilateral Connection Agreement</b> entered into between the parties on even date herewith.
"Bilateral Embedded Generation Agreement"	the <b>Bilateral Embedded Generation Agreement</b> entered into between the parties on even date herewith.
"Charging Date"	the date upon which the <b>NGC Construction Works</b> are first <b>Commissioned</b> and available for use by the User or if the <b>Independent Engineer</b> before, on or after the <b>Commissioning Programme Commencement Date</b> shall have certified in writing that the <b>NGC Transmission Connection Assets</b> , are completed to a stage where NGC could commence commissioning and by such date the <b>User's Works</b> shall not have been so certified then the date falling [ ] days after the date of such certification, provided that the <b>NGC Transmission Reinforcement Works</b> are <b>Commissioned</b> and <b>Seven Year Statement Works</b> are completed as at that date. In the event that the <b>NGC Transmission Reinforcement Works</b> are not so <b>Commissioned</b> and/or the <b>Seven Year Statement Works</b> are not so completed the <b>Charging Date</b> shall be the date on which they are <b>Commissioned</b> and/or completed as appropriate.
"Commissioning Programme Commencement Date"	the date specified in the <b>Construction Programme</b> for the commencement of the <b>Commissioning Programme</b> or any substituted date fixed under the terms of this <b>Construction Agreement</b>

“Commissioning Programme”	the sequence of operations/tests necessary to connect the <b>User’s Works</b> and the <a href="#"><u>NGC-Transmission Connection Asset Works</u></a> to the <a href="#"><u>NGC-GB Transmission System</u></a> for the purpose of making the <b>User’s Works</b> available for operation to be determined pursuant to Clause 2.10 of this <b>Construction Agreement</b> .
“Completion Date”	[ ] or such other date as may be agreed in terms of this <b>Construction Agreement</b> .
“Connected Planning Data”	data required pursuant to the <b>Planning Code</b> which replaces data containing estimated values assumed for planning purposes by validated actual values and updated estimates for the future and by updated forecasts for forecast data items.
“Consents”	in relation to any <b>Works</b> :-  (a) all such planning and other statutory consents; and (b) all wayleaves, easements, rights over or interests in land or any other consent; or (c) permission of any kind as shall be necessary for the construction of the <b>Works</b> and for commencement and carrying on of any activity proposed to be undertaken at or from such <b>Works</b> when completed.
“Construction Programme”	the agreed programme for the <b>Works</b> to be carried out by <b>NGC</b> and the <b>User</b> set out in detail in Appendix [J] to this <b>Construction Agreement</b> or as amended from time to time pursuant to Clauses 2.3 and 3.2 of this <b>Construction Agreement</b> .

<u>"Construction Site"</u>	<u>the site where the <b>Transmission Connection Asset Works</b> are being undertaken by or on behalf of <b>NGC</b>;</u>
<u>"Construction Works"</u>	<u>the <b>Transmission Connection Asset Works, Transmission Reinforcement Works, Seven Year Statement Works and One Off Works</b> and such additional works as are required in order to comply with any relevant <b>Consents</b> relating to any such works but excluding for the avoidance of doubt any <b>Third Party Works</b>.</u>
"Dispute Resolution Procedure"	the procedure for referral to arbitration set out in Paragraph 7.4 of the <b>CUSC</b> .
"Event of Default"	any of the events set out in Clause 10 of this <b>Construction Agreement</b> as constituting an event of default.
"Final Sums"	the amount payable by the <b>User</b> on termination of this <b>Construction Agreement</b> being the aggregate from time to time and for the time being of:-  <ol style="list-style-type: none"><li>(1) all <b>NGC Engineering Charges</b> arisen prior to the date of termination;</li><li>(2) fees, expenses and costs (excluding costs on account of interest charges incurred by <b>NGC</b>) of whatever nature reasonably and properly incurred or due by <b>NGC</b> in respect of any part of the <b>NGC Construction Works</b> carried out prior to the date of termination of this <b>Construction Agreement</b>;</li><li>(3) fees, expenses and costs properly payable by <b>NGC</b> in respect of, or arising from the termination by it or</li></ol>

any third party of any contract for or relating to the carrying out of any **NGC—Construction Works** provided it is negotiated on an arms length basis (including any such arising under the system operator and transmission owner code between NGC and Relevant Transmission Licensees);

- (4) a sum equal to the reasonable costs of removing any **NGC Transmission Connection Assets** and of making good the remaining **Plant** and **Apparatus** following such removal; and
- (5) interest on any such amounts from the date they were paid by NGC to the date of NGC's invoice at 2% over **Base Rate** from time to time and for the time being.

Provided that no sum shall be due in respect of **Final Sums** in respect of fees, expenses and costs associated with (a) the **Seven Year Statement Works** and/or (b) **NGC—Transmission Reinforcement Works** required for wider system reasons and specified in Part 2 of Appendix H.

Any dispute as to the amount of **Final Sums** shall be referred to arbitration in accordance with the **Dispute Resolution Procedure**.

"Independent Engineer"

the engineer specified in Appendix L to this **Construction Agreement**. Provided that:-

- (a) where the parties fail to agree on a suitable engineer within 120 days of the date of this **Construction**

**Agreement;** or

- (b) where any **Independent Engineer** appointed from time to time shall fail, refuse or cease to act in the capacity set out herein and no substitute engineer of suitable standing and qualification can be agreed by the parties within 30 days;

then such engineer as the President of the Institution of Electrical Engineers shall, on the application of either party, nominate shall be the **Independent Engineer**.

“Liquidated Damages”

the sums specified in or calculated pursuant to Appendix K to this **Construction Agreement**.

~~“NGC Assets”~~

~~the assets specified in Appendix A to the **Bilateral Connection Agreement**.~~

~~“NGC Asset Works”~~

~~The works necessary for construction and installation of the **NGC Assets** at the **Connection Site** specified in Appendix G to this **Construction Agreement**.~~

~~“NGC Works”~~

~~the **NGC Asset Works, NGC Reinforcement Works, Seven Year Statement Works and One Off Works** and such additional works as are required in order to comply with any relevant **Consents** relating to any such works but excluding for the avoidance of doubt any **Third Party Works**.~~

“One Off Works”

the works described in Appendix B1 to this **Construction Agreement**.

“Seven Year Statement Works”

the works set out in Table B7 of the statement prepared by **NGC** pursuant to [Condition 10 paragraph 5] of the **Transmission Licence** and issued by

	<p><b>NGC</b> in [ ] which in <b>NGC's</b> reasonable opinion are required to be completed before the <b>Completion Date</b> to ensure that the <b>NGC-GB Transmission System</b> complies with the requirements of [Condition 12] of the <b>Transmission Licence</b> prior to the <b>Connection</b> of the <b>User's Equipment</b> in terms of Clause 7.1 [or 7.2] of this <b>Construction Agreement</b>.</p>
"Term"	the term of this <b>Construction Agreement</b> commencing on the date hereof and ending in accordance with Clause 12.
"Third Party Works"	the works specified in Appendix N.
<u>"Transmission Connection Assets"</u>	<u>the assets specified in Appendix A to the <b>Bilateral Connection Agreement</b>.</u>
<u>"Transmission Connection Asset Works"</u>	<u>the works necessary for construction and installation of the <b>Transmission Connection Assets</b> at the <b>Connection Site</b> specified in Appendix G to this <b>Construction Agreement</b>.</u>
<u>"Transmission Reinforcement Works"</u>	<u>means those works other than the <b>Transmission Connection Asset Works, Seven Year Statement Works and One Off Works</b>, which in the reasonable opinion of <b>NGC</b> are necessary to extend or reinforce the <b>GB Transmission System</b> in relation to and prior to the connection of the <b>User's Equipment</b> at [the] <b>Connection Site</b> and which are specified in Appendix H to this <b>Construction Agreement</b>, where Part 1 is works required for the <b>User</b> and Part 2 is works required for wider system reasons.</u>
"User's Works"	those works necessary for installation of the <b>User's Equipment</b> which are specified in Appendix I to this



**Construction Agreement.**

“Works”

the **NGC Construction Works** and the **User’s Works.**

**2. CARRYING OUT OF THE WORKS**

**2.1** Forthwith following the date of this **Construction Agreement NGC** and the **User** shall agree the **Safety Rules** and **Local Safety Instructions** to apply during the **Construction Programme** and **Commissioning Programme**. Failing agreement within three months of the date of this **Construction Agreement** the matter shall be referred to the **Independent Engineer** for determination in accordance with Clause 6 of the **Construction Agreement**.

**2.2** Subject to Clauses 2.3 and 2.4 of this **Construction Agreement** forthwith following the date of this **Construction Agreement NGC** shall use its best endeavours to obtain in relation to the **NGC Construction Works**, and the **User** shall use its best endeavours to obtain in relation to the **User's Works**, all **Consents**. Each shall give advice and assistance to the other to the extent reasonably required by the other in the furtherance of these obligations. Further, each party shall, so far as it is legally able to do so, grant to the other **or the Relevant Transmission Licensee** all such wayleaves, easements, rights over or interests (but not estates **as regards land in England and Wales and not heritable or leasehold interests as regards land in Scotland**) in land or any other consents reasonably required by the other **or the Relevant Transmission Licensee** in order to enable the **Works** to be expeditiously completed and to enable that other to carry out its obligations to the other under this **Construction Agreement** and in all cases subject to such terms and conditions as are reasonable.

**2.3** The following additional provisions shall apply in respect of the **Consents** and **NGC Construction Works**:-

**2.3.1** All dates specified in this **Construction Agreement** are subject to **NGC** obtaining **Consents** for the **NGC Construction Works** in a form acceptable to it within the time required ~~by them~~ to carry out the **NGC Construction Works** in accordance with the **Construction Programme**.

**2.3.2** In the event of:-

- (a) the **Consents** not being obtained by the required date; or

- (b) the **Consents** being subject to conditions which affect the dates;  
or
- (c) **NGC** wishing to amend the **NGC Construction Works** to facilitate the granting of the **Consents**,

**NGC** shall be entitled to revise the **NGC Construction Works** (and as a consequence Appendix A to the **Bilateral Connection Agreement**) and all dates specified in this **Construction Agreement** and the charges specified in Appendix B to the **Bilateral Connection Agreement**. For the avoidance of doubt such revisions shall be at **NGC's** absolute discretion and the consent of the **User** is not required.

**2.3.3** The **User** shall be regularly updated by **NGC** in writing or by such other means as the parties may agree as to progress made by **NGC** from time to time in the obtaining of relevant **Consents** pursuant to its obligations under Clause 2.2 or 2.3 of this **Construction Agreement**.

**2.4.1** The **User** shall be liable to pay to **NGC**:-

- (a) all **NGC's Engineering Charges** accrued; and
- (b) proper and reasonable out-of-pocket expenses incurred and/or paid or which **NGC** is legally bound to incur or pay

in seeking and obtaining the **Consents** the subject of Clause 2.2 of this **Construction Agreement** excluding any costs associated with the **Seven Year Statement Works** and the works specified in Part 2 of Appendix H.

The **User** acknowledges these out of pocket ancillary expenses may include planning inquiries or appeals and the capital costs together with reasonable legal and surveyors costs of landowners or occupiers in acquiring permanent easements or other rights in respect of any electric line or underground cable forming part of the **NGC Transmission Connection Asset Works**. This sum shall not include any capital costs incurred by **NGC**, in relation to Connection Sites in England and Wales, or any Relevant Transmission Licensee, in relation to Connection sites in Scotland, in the acquisition by it of the freehold of any land upon which a land charge is payable. **NGC** shall keep the **User** informed of the level of such charges and expenses being incurred. The **User** shall pay such sums within 28 (twenty eight) days of the date of **NGC's** invoice therefor.

2.4.2 Paragraphs 11.2.3 to 11.2.5 of the **CUSC** relating to **Consents** shall apply to the **Construction Agreement** as if set out here in full.

2.5 Prior to the commencement of the **NGC-Transmission Connection Asset Works** the **User** shall have the right to terminate this **Construction Agreement** upon giving not less than 7 (seven) days notice in writing to **NGC**. In the event of the **User** terminating this **Construction Agreement** in terms of this Clause 2.5 the **User** shall in addition to the payments for which it is liable under Clause 2.4 hereof be liable to pay to **NGC** a sum equal to **NGC's** estimate or if applicable revised estimate of **Final Sums**. The **User** shall pay such sums within 14 (fourteen) days of the date of **NGC's** invoice(s) therefor on termination where applicable **NGC** shall disconnect the **User's Equipment** at the **Connection Site** and: **NGC** and

(a) the **User** shall ~~by arrangement between them~~ remove any of the **User's Equipment** and **NGC Assets** on, in relation to **Connection Sites** in [England and Wales], the **NGC's** other party's or, in relation to **Connection Sites** in [Scotland], **Relevant Transmission Licensee's** land within 6 months of the date of termination or such longer period as may be agreed between **NGC** or the **Relevant Transmission Licensee** (as appropriate) and the **User**.

(b) in the case of **Connection Sites** in [England and Wales] **NGC** shall remove and in the case of **Connection Sites** in [Scotland] **NGC** shall procure that the **Relevant Transmission Licensee** removes any of the **Transmission Connection Assets** on the **User's** land within 6 months of the date of termination or such longer period as may be agreed between **NGC** or the **Relevant Transmission Licensee** (as appropriate) and the **User**.

2.6 If the **User** fails to obtain all **Consents** for the **User's Works** having complied with the obligations in Clause 2.2 of this **Construction Agreement** the obligation on the **User** to complete the **User's Works** shall cease and the **User** may by written notice to **NGC** terminate this **Construction Agreement** whereupon the **User** shall in addition to the sums for which it is liable under Clause 2.4 hereof be liable to pay to **NGC** a sum equal to **NGC's** estimate or if applicable revised estimate of **Final Sums**. The **User** shall pay such sums within 14 (fourteen) days of the date of **NGC's** invoice(s) therefor and (where applicable) on termination **NGC** shall disconnect the **User's Equipment** at the **Connection Site** and:

(a) ~~**NGC** and the **User** shall by arrangement between them~~ remove any of the **User's Equipment** and **NGC Assets** on, in relation to **Connection**

Sites in [England and Wales], ~~the other party's~~NGC's or, in relation to Connection Sites in [Scotland], Relevant Transmission Licensee's land within 6 months of the date of termination or such longer period as may be agreed between NGC or the Relevant Transmission Licensee (as appropriate) and the User.

(b) in the case of Connection Sites in [England and Wales] NGC shall remove and in the case of Connection sites in [Scotland] NGC shall procure that the Relevant Transmission Licensee removes any of the Transmission Connection Assets on the User's land within 6 months of the date of termination or such longer period as may be agreed between NGC or the Relevant Transmission Licensee (as appropriate) and the User.

- 2.7 Both parties shall be entitled to contract or sub-contract for the carrying out of their respective parts of the **Works** (which in the case of NGC shall include work carried out by a Relevant Transmission Licensee). The **User** or any contractor on its behalf shall be responsible for commencing and for carrying out the **User's Works** to such stage of completion as shall render them capable of being **Commissioned** in accordance with the **Construction Programme** and **NGC** or any contractor on its behalf shall be responsible for commencing and carrying out the NGC-Construction Works to such stage of completion as shall render them capable of being **Commissioned** in accordance with the **Construction Programme**.
- 2.8 The parties shall continuously liaise throughout the **Construction Programme** and **Commissioning Programme** and each shall provide to the other all information relating to its own **Works** reasonably necessary to assist the other in performance of that other's part of the **Works**, and shall use all reasonable endeavours to coordinate and integrate their respective part of the **Works**. There shall be on-site meetings between representatives of the parties at intervals to be agreed between the parties. Each party shall deliver to the other party a written report of progress during each calendar quarter within 7 days of the end of that quarter.
- 2.9 During the period of and at the times and otherwise as provided in the **Construction Programme** and the **Commissioning Programme** ~~NGC and the User~~ shall ~~each~~ allow the other User, its employees, agents, suppliers, contractors and sub-contractors necessary access to its own the Construction site-Site and the User shall allow NGC or, in the case of Connection Sites in Scotland, the Relevant Transmission Licensee and in either case their

employees, agents, suppliers, contractors and sub-contractors necessary access to its site to enable ~~that other~~reach to carry out the NGC Transmission Connection Asset Works and **One Off Works** or **User's Works** but not so as to disrupt or delay the construction and completion of the other's **Works** on the said sites or the operation of the other's **Plant** and **Apparatus** located thereon, such access to be in accordance with any reasonable regulations relating thereto made by the site owner or occupier.

- 2.10 Not later than six months prior to the **Commissioning Programme Commencement Date** **NGC** shall provide the **User** with a draft **Commissioning Programme** for the **Commissioning** of the NGC Transmission Connection Assets, and the **User's Equipment**. The **User** shall, as quickly as practicable and in any event within three months of receipt thereof, determine whether or not to approve the proposed **Commissioning Programme** (which approval shall not be unreasonably withheld or delayed) and shall within such three month period either notify **NGC** of its approval or, in the event that the **User** reasonably withholds its approval, notify **NGC** of any changes or variations to the proposed commissioning programme recommended by the **User**. If **NGC** does not accept such changes or variations submitted by the **User** any dispute shall be referred to the **Independent Engineer** for determination. The **Commissioning Programme** agreed between the parties or determined by the **Independent Engineer** as the case may be shall be implemented by the parties and their sub-contractors in accordance with its terms.
- 2.11 If at any time prior to the **Completion Date** it is necessary for **NGC** or **NGC** in its reasonable discretion wishes to make any addition to or omission from or amendment to the NGC Transmission Connection Asset Works and/or NGC Transmission Reinforcement Works and/or the **One Off Works** and/or the **Third Party Works** **NGC** shall notify the **User** in writing of such addition, omission or amendment and Appendices [B1 (One Off Works), G (NGC Transmission Connection Asset Works) H (NGC Transmission Reinforcement Works) and N (**Third Party Works**)] to this **Construction Agreement** and consequently Appendices [A (NGC Transmission Connection Assets) and B (**Connection Charges, One Off Charges and Land Charges**)] to the associated **Bilateral Connection Agreement** shall be automatically amended to reflect the change.
- 2.12 [The **User** shall apply to the Secretary of State for Trade and Industry as part of its application under Section 36 of the Act for its generating station, for deemed planning permission in relation to the substation forming part of the NGC Transmission Connection Asset Works. The **User** shall use its best endeavours to procure that the said deemed planning permission is so

DRAFT GB CUSC V2.0 Based on Schedule 2 Exhibition 3 of CUSC version 1.1 obtained. **NGC's** obligations under Clause 2.2 of this **Construction Agreement** shall not require it to obtain planning consent for the said substation unless and until the Secretary of State for Trade and Industry shall for whatever reason refuse to deem the grant of planning permission in respect of the same. The **User** shall liaise with **NGC** as to its construction and operational requirements and shall ensure that the said application meets **NGC's** requirements. **NGC** shall provide the **User** with all information reasonably required by it in relation to the application and the **User** shall ensure that all requirements of **NGC** are incorporated in the application for deemed planning consent.]

- 2.13 [The **NGC-Transmission Reinforcement Works** are conditional on any relevant nuclear generator British Energy Generation Limited and/or Magnox Electric plc (as the case may be) granting approval to the carrying out of the **NGC-Construction Works** in terms of the any Nuclear Site Licence Provisions Agreement being an agreement dated 30 March 1990 between NGC and Nuclear Electric plc (now called Magnox Electric plc) and an agreement dated 31 March 1996 between NGC and British Energy Generation Limited (and described as such). In the event of British Energy Generation Limited and/or Magnox Electric plc (as the case may be) the relevant nuclear generator not granting approval **NGC** shall be entitled to change the **NGC-Construction Works**, the **Construction Programme** and all dates specified in this **Construction Agreement**.]
- 2.14 [It is hereby agreed and declared for the purposes of the Construction (Design and Management) Regulations 1994 that the **User** is the only client in respect of the **User's Works** and **NGC** is the only client in respect of the **NGC-Construction Works** and each of the **User** and **NGC** shall accordingly discharge all the duties of clients under the said **Regulations**.]
- 2.15 [**NGC** and the **User** hereby agree and acknowledge that this **Construction Agreement** is not to be treated as a construction contract within the meaning of section 104 of the Housing Grants, Construction and Re-generation Act 1996 and sections 104 to 113 of the said Act shall have no application either to the **NGC-Construction Works** or the **User's Works** and the parties' rights and obligations with regard to matters of dispute resolution and payment procedures are as expressly set out herein.

### 3.3. DELAYS

- 3.1 If either party shall have reason to believe that it is being delayed or will be delayed in carrying out that party's **Works** for any reason (whether it is one entitling it to the fixing of a new date under Clause 3.2 of this **Construction**

**Agreement** or not) it shall forthwith notify the other party in writing of the circumstances giving rise to the delay and of the extent of the actual and/or anticipated delay.

- 3.2** If prior to the **Completion Date** a party (in this Clause 3.2 “the **Affected Party**”) shall be delayed in carrying out any of the **Affected Party’s Works** (including their commissioning) by reason of any act, default or omission on the part of the other Party (in this Clause the ‘**Defaulting Party**’) or the **Defaulting Party’s** employees, agents, contractors or sub-contractors or by reason of an event of **Force Majeure**, the **Affected Party** shall be entitled to have such later date or dates fixed as the **Commissioning Programme Commencement Date** and/or (as the case may be) the **Completion Date** as may be fair and reasonable in the circumstances provided that it shall have notified the **Defaulting Party** in writing of such act, default or omission or event of **Force Majeure** within 28 days of it becoming aware of the occurrence giving rise to the delay together with an estimate of the proposed delay which it will cause the **Affected Party**. In the event of a dispute between the parties over what is or are any fair and reasonable new date or dates to be fixed in the circumstances this shall be promptly referred to and determined by the **Independent Engineer**. Once the new date or dates are fixed the **Construction Programme** and/or **Commissioning Programme** shall be deemed automatically amended as appropriate.

#### **4. COMMISSIONING PROGRAMME AND LIQUIDATED DAMAGES**

- 4.1** Each party shall give written notice to the other declaring its readiness to commence the **Commissioning Programme** when this is the case.
- 4.2** The **Commissioning Programme** shall commence forthwith once both parties have given written notice to the other under Clause 4.1.
- 4.3** The **Works** shall be deemed to have been **Commissioned** on the date that the **Independent Engineer** certifies in writing to that effect.
- 4.4** In the event that the actual date of commencement of the **Commissioning Programme** is later than the **Commissioning Programme Commencement Date NGC** (if and to the extent that it is responsible for delayed commissioning beyond the **Commissioning Programme Commencement Date**, such responsibility and/or its extent to be determined by the **Independent Engineer** failing agreement between the parties) shall be liable to pay to the **User Liquidated Damages** for each day that the actual date of commencement of the **Commissioning Programme** is later than the **Commissioning Programme**

**Commencement Date.** It is declared and agreed that such **Liquidated Damages** shall cease to be payable in respect of any period after the date of actual commencement of the **Commissioning Programme**.

- 4.5 In the event that the actual date on which the **NGC Construction Works** are **Commissioned** is later than the **Completion Date NGC** (if and to the extent that it is responsible for delayed completion beyond the **Completion Date**, such responsibility and/or its extent to be determined by the **Independent Engineer** failing agreement between the parties) shall be liable to pay to the **User Liquidated Damages** for each day that the actual date on which the **NGC Construction Works** are **Commissioned** is later than the **Completion Date**. It is hereby agreed and declared that such **Liquidated Damages** shall cease to be payable in respect of any period after completion of the **NGC Construction Works**.
- 4.6 **Liquidated Damages** payable under Clauses 4.4 and 4.5 of this **Construction Agreement** shall accumulate on a daily basis but shall be payable calendar monthly. On or before the 15th day of each month the party entitled to receive the payment of **Liquidated Damages** shall send to the other party a statement of the **Liquidated Damages** which have accrued due in the previous calendar month. The party receiving such statement shall in the absence of manifest error pay the **Liquidated Damages** shown on the statement within 28 days of the date upon which the statement is received.
- 4.7 Without prejudice to and in addition to the obligation of the **User** pursuant to Clause 2.4 of this **Construction Agreement**, the payment or allowance of **Liquidated Damages** pursuant to this Clause 4 shall be in full satisfaction of **NGC's** liability for failure to perform its obligations by the **Commissioning Programme Commencement Date** and/or the **Completion Date** as appropriate.
- 4.8 In the event that the **User** shall have failed, in circumstances not entitling it to the fixing of a new date as the **Commissioning Programme Commencement Date** pursuant to Clause 3.2, to complete the **User's Works** by [ ] to a stage where the **User** is ready to commence the **Commissioning Programme**, **NGC** shall have the right to terminate this **Construction Agreement** upon giving notice in writing to the **User**. In the event of such termination the **User** shall in addition to the amounts for which it is liable under Clause 2.4 to this **Construction Agreement** be liable to **NGC** to pay to **NGC** a sum equal to **NGC's** estimate or revised estimate of **Final Sums**. The **User** shall pay such sums within 14 (fourteen) days of the date of **NGC's** invoice(s) therefor and on termination (where applicable) **NGC** shall disconnect the **User's Equipment** at the **Connection Site** and ~~(a) **NGC** and~~ the **User** shall ~~by arrangement between~~



~~them~~ remove any of the **User's Equipment and NGC Assets** on, in relation to Connection Sites in [England and Wales], the other party's NGC's or, in relation to Connection Sites in [Scotland], Relevant Transmission Licensee's land within 6 months of the date of termination or such longer period as may be agreed between NGC or the Relevant Transmission Licensee (as appropriate) and the User and (b) in the case of Connection Sites in [England and Wales] NGC shall remove and in the case of Connection Sites in [Scotland] NGC shall procure that the Relevant Transmission Licensee removes any Transmission Connection Assets on the User's land within 6 months of the date of termination or such longer period as may be agreed between NGC or the Relevant Transmission Licensee (as appropriate) and the User.

## 5. APPROVAL TO CONNECT/ENERGISE/BECOME OPERATIONAL

- 5.1 Not later than 4 months prior to the expected **Commissioning Programme Commencement Date** or by such other time as may be agreed between the parties the parties shall prepare and submit the **Operation Diagrams** required to be prepared and submitted by each of them respectively under [CC 7.4.7 and 7.4.10] and likewise the **Site Common Drawings** required under [CC 7.5.2 and 7.5.4] and, if necessary, **Gas Zone Diagrams** referred to in [CC 7.4.9 and 7.4.12].
- 5.2 Not later than 3 months prior to the expected **Commissioning Programme Commencement Date** or by such other time as may be agreed between the parties the parties shall prepare and submit the **Operation Diagrams** required to be prepared and submitted by each of them respectively under [CC 7.4.8 and 7.4.11] and likewise the **Site Common Drawings** required under [CC 7.5.3 and 7.5.5].
- 5.3 Not later than 3 months prior to the expected **Commissioning Programme Commencement Date** or by such other time as may be agreed between the parties:-
- 5.3.1 each party shall submit to the other data within its possession needed to enable the completion of Appendices F3 and F4 to the **Bilateral Connection Agreement**; and
- 5.3.2 the **User** shall submit to **NGC** evidence satisfactory to **NGC** that the **User's Equipment** complies or will on completion of the **User's Works** comply with Clause 8 of this **Construction Agreement** and Paragraphs [1.3.3(b), 2.9 and 6.7] of the **CUSC**.

- 5.4** Not later than 8 weeks prior to the expected **Commissioning Programme Commencement Date** or by such other time as may be agreed between the parties each party shall submit to the other:
- 5.4.1** for the **Connection Site** information to enable preparation of **Site Responsibility Schedules** complying with the provisions of Appendix 1 to the **Connection Conditions** together with a list of managers who have been duly authorised by the **User** to sign such **Site Responsibility Schedules** on the **User's** behalf;
  - 5.4.2** written confirmation as required under [CC.5.2(g)] that the list of **Safety Co-ordinators** are authorised and competent;
  - 5.4.3** a list of the telephone numbers for the facsimile machines referred to in [CC6.5.9].
- 5.5** If directly connected to the **NGC-GB Transmission System** not later than 3 months prior to the expected **Commissioning Programme Commencement Date** each party shall submit to the other a statement of readiness to complete the **Commissioning Programme** in respect of the **Works** and the statement submitted by the **User** shall in addition contain relevant **Connected Planning Data** and a report certifying to **NGC** that, to the best of the information, knowledge and belief of the **User**, all relevant **Connection Conditions** applicable to the **User** have been considered and complied with. If **NGC** considers that it is necessary, it will require this latter report to be prepared by the **Independent Engineer**. The report shall incorporate if requested by **NGC** type test reports and test certificates produced by the manufacturer showing that the **User's Equipment** meets the criteria specified in CC6.
- 5.6** If embedded not later than 3 months prior to the **Charging Date** or by such other time as may be agreed between the **Parties** the **User** shall submit to **NGC** a statement of readiness to use the **NGC-GB Transmission System** together with **Connected Planning Data** and a report certifying to **NGC** that, to the best of the information, knowledge and belief of the **User**:-
- (i) all relevant **Connection Conditions** applicable to the **User** have been considered;
  - (ii) CC 6 insofar as it is applicable to the **User** has been complied with; and
  - (iii) the site-specific conditions set out in Appendices [F1, F3, F4] and [F5] to the **Bilateral Embedded Generation Agreement** have been complied with.

If **NGC** considers that it is necessary, it will require this report to be prepared by the **Independent Engineer**. The report shall incorporate if requested by **NGC** type test reports and test certificates produced by the manufacturer showing that the **User's Equipment** meets the criteria.

## 6. INDEPENDENT ENGINEER

The parties agree and shall procure that the **Independent Engineer** shall act as an expert and not as an arbitrator and shall decide those matters referred or reserved to him under this **Construction Agreement** by reference to **Good Industry Practice** using his skill, experience and knowledge and with regard to such other matters as the **Independent Engineer** in his sole discretion considers appropriate. All references to the **Independent Engineer** shall be made in writing by either party with notice to the other being given contemporaneously as soon as reasonably practicable and in any event within 14 days of the occurrence of the dispute to be referred to the **Independent Engineer**. The parties shall promptly supply the **Independent Engineer** with such documents and information as he may request when considering such question. The **Independent Engineer** shall use his best endeavours to give his decision upon the question before him as soon as possible following its referral to him. The parties shall share equally the fees and expenses of the **Independent Engineer**. The parties expressly acknowledge that submission of disputes for resolution by the **Independent Engineer** does not preclude subsequent submission of disputes for resolution by arbitration as provided for in the **Dispute Resolution Procedure**. Pending any such submission the parties shall treat the **Independent Engineer's** decision as final and binding.

## 7. BECOMING OPERATIONAL

- 7.1 If directly connected to the **NGC-GB Transmission System** **NGC** shall connect and **Energise** the **User's Equipment** at the **Connection Site** during the course of and in accordance with the **Commissioning Programme** and thereafter upon compliance by the **User** with the provisions of Clause 5 and provided (1) the **NGC-Construction Works** excluding the **Seven Year Statement Works** shall be **Commissioned** and (2) the **Seven Year Statement Works** and **Third Party Works** shall be completed **NGC** shall forthwith notify the **User** in writing that the **Connection Site** shall become **Operational**.
- 7.2 If **Embedded** upon compliance by the **User** with the provisions of Sub-Clauses 4.1, 4.2 and 4.3 and subject, if **NGC** so requires, to the **NGC-Transmission Reinforcement Works** [and/or works for the **Modification**] being carried out and/or the [New] **Connection Site** being **Operational** (any or all as

appropriate) **NGC** shall forthwith notify the **User** ("**Operational Notification**") in writing that it has the right to use the **NGC-GB Transmission System**. It is an express condition of this **Construction Agreement** that in no circumstances, will the **User** use or operate the **User's Equipment** without receiving the **Operational Notification** from **NGC**.

7.3 If, on completion of the **User's Works** in accordance with the terms of this **Construction Agreement** the **Registered Capacity** of the **User's Equipment** is less than [ ]MW, **NGC** shall automatically have the right to amend Clause 7 and Appendix C to the **Bilateral Connection Agreement** to reflect the actual **Registered Capacity** of the **User's Equipment**.

## 8. COMPLIANCE WITH SITE SPECIFIC TECHNICAL CONDITIONS

The **User** shall ensure that on the **Completion Date** the **User's Equipment** complies with the site specific technical conditions set out in Appendix F 1-5 to the **Bilateral Connection Agreement** .

## 9. CREDIT REQUIREMENTS

Alternate provisions apply depending whether or not the **User** does (9A) or does not (9B) meet **NGC's** required credit rating on signing the **Construction Agreement**. Details of the credit requirements are set out in the **CUSC**.

### 9A1 PROVISION OF SECURITY

9A.1.1 The **User** shall as soon as possible after execution of this **Construction Agreement** and in any event no later than one (1) month after the date of such execution confirm to **NGC** whether it meets the **NGC Credit Rating**. Thereafter not less than 75 days before 1 April and 1 October in each year until (subject to Clause 9A.4) 28 days after the **Charging Date** the **User** shall confirm its **NGC Credit Rating** to **NGC** (which in the case of a long term private credit rating shall be confirmed by Standard and Poor's or Moody's within a period of 45 days prior to the date of confirmation). The **User** shall inform **NGC** in writing forthwith if it becomes aware of losing its **NGC Credit Rating** or if it is or is likely to be put on credit watch or any similar credit surveillance procedure which may give **NGC** reasonable cause to believe that the **User** may not be able to sustain its **NGC Credit Rating** for at least 6 months.

9A.1.2 In the event that the **User** has elected to provide **NGC** with an indicative credit rating and **NGC** is of the reasonable opinion that the **User** has ceased to comply with the requirements of Clause 9A.1.1 then **NGC** may require the **User** forthwith:-

- (i) to apply to Standard and Poor's and/or Moody's for a further indicative long term private credit rating; or
- (ii) to confirm to **NGC** that it shall provide the security referred to in Clause 9A.1.4 hereof.

9A.1.3 In the event of the **User**:-

- (i) not having an **NGC Credit Rating**; or
- (ii) having a credit rating below the **NGC Credit Rating**; or
- (iii) not having obtained from Standard and Poor's or Moody's within 30 days of the written notification under Clause 9A.1.2 above an indicative long term private credit rating,

or if **NGC** becomes aware that:

- (iv) the **User** ceases to have an **NGC Credit Rating**; or
- (v) the **User** is put on credit watch or other similar credit surveillance procedure as specified above which may give **NGC** reasonable cause to believe that the User may not be able to maintain an **NGC Credit Rating** for at least 6 months; or
- (vi) the **User** has not obtained from Standard and Poor's within 30 days of the written notification by **NGC** under Clause 9A.1.2(i) above a further indicative long term private credit rating,

the **User** shall (where appropriate on receipt of written notification from **NGC**) comply with the terms of Clause 9A.1.4.

9A.1.4 The **User** shall within 21 days of the giving of a notice under Clause 9A.1.3 or within 30 days of the **User** confirming to **NGC** under Clause 9A.1.2(ii) that it will provide the security specified below (whichever is the earlier), provide **NGC** with the security specified below to cover the **User's** payment obligations to **NGC** arising in the event of, or which have arisen prior to, termination of this **Construction Agreement**. The security to be provided shall be in an amount not greater than such sums payable on termination and specified in writing by **NGC** to the **User** from time to time as appropriate. Such security shall be provided by way of:-

- (i) an irrevocable on demand standby **Letter of Credit** or guarantee; or
- (ii) cash held in escrow [**Escrow Account/ Bank Account**]; or
- (iii) any other form included in **NGC's** then current policy and procedure

such letter of credit or guarantee or security to be in a form agreed in writing by **NGC** and to be given by a **Qualifying Bank**, or **Qualifying Company**. Cash deposited in [escrow] shall be deposited with a **Qualifying Bank**. The choice of such security shall be at the discretion of the **User**.

9A.1.5 The **User** shall in addition to providing the requisite security enter into an agreement with **NGC**, which shall be supplemental to this **Construction Agreement** (the "Amending Agreement"). The **Amending Agreement** shall be in such form as **NGC** shall reasonably require and shall contain such provisions in relation to the **User's** obligations to provide and maintain security as shall be consequential upon the requirement for security having arisen, in line with **NGC's** then current provisions to the like effect in its agreements with other parties. The **Amending Agreement** shall relate to the procedures required in obtaining and maintaining the security and shall not alter or amend the amount of security required in terms of this **Construction Agreement**.

9A.1.6 In the event of **NGC's** credit requirements being reviewed at any time **NGC** shall advise the **User** in writing of the new credit requirements and the **User** shall within 30 days of such notification confirm in writing to **NGC** whether it wishes to enter into an **Amending Agreement** to reflect the new credit requirements. Thereafter if the **User** has confirmed it wishes to accept the new credit requirements **NGC** and the **User** shall within 30 days of such notification enter into an **Amending Agreement**.

9A.1.7 In the event that the facts or circumstances giving rise to the obligations of the **User** to provide the security have ceased, then **NGC** shall release the security and provisions to that effect shall be included in the **Amending Agreement**.

### **Final Sums**

9A.2 Within 60 days of the date of termination of this **Construction Agreement** **NGC** shall:

- (a) furnish the **User** with a further statement showing a revised estimate of **Final Sums** and will provide as soon as practicable evidence of such costs having been incurred; and

- (b) by written notice to the **User** inform the **User** of all capital items which cost **NGC** in excess of £10,000 and in relation to which an amount on account of **Final Sums** shall have been paid and whether **NGC** (1) wishes to retain the said capital items or (2) dispose of them.

9A.3.1 In respect of all capital items which **NGC** wishes to retain (other than those which have been, or are proposed to be installed as a replacement for **NGC Transmission Plant** and **Transmission Apparatus**) **NGC** shall forthwith reimburse to the **User** the amount paid by the **User** on account of **Final Sums** in respect of the said capital items (including without limitation the amount paid on account of the design, purchase, installation and testing of the said capital item and also associated construction works and interest charges) together with interest calculated thereon on a daily basis from the date of termination of this **Construction Agreement** to the date of payment at **Base Rate** for the time being and from time to time provided that in the event that **NGC** wishes to retain any capital item which has been installed but wishes to remove it to storage or to another site then it shall only reimburse to the **User** the cost of the capital item and not the costs of such installation and shall deduct from any reimbursement due to the **User** the costs of removal and/or storage.

9A.3.2 In respect of all capital items which **NGC** wishes to dispose (other than those which have been, or are proposed to be installed as a replacement for **NGC Transmission Plant** and **Transmission Apparatus**) it shall forthwith (and subject to **NGC** obtaining the consent of the **Authority** under [condition 16] of the **NGC Transmission Licence** if required) sell or procure the sale of the said capital item on an arms-length basis as soon as reasonably practicable. Forthwith upon receipt of the sale proceeds **NGC** shall pay to the **User** the proceeds received from any such sale together with interest thereon calculated on a daily basis from the date of termination to the date of payment at **Base Rate** for the time being and from time to time less any reasonable costs associated with the sale including the costs and expenses reasonably incurred and/or paid and/or which **NGC** is legally bound to pay on removing the capital item, any storage charges and any costs reasonably incurred by **NGC** in respect of reinstatement associated with removal of the capital item. **NGC** shall provide the **User** with reasonably sufficient evidence of all such costs and expenses having been incurred. If the **Authority** does not agree to the disposal of the capital item the capital item shall be retained by **NGC** and **NGC** shall reimburse the **User** the notional current market value in situ of the said capital item as between a willing buyer and a willing seller as agreed between the parties and failing agreement as determined by reference to arbitration in accordance with the **Dispute Resolution Procedure** together with interest thereon calculated on a daily basis from

the date of termination of this **Construction Agreement** to the date of payment at **Base Rate** for the time being and from time to time.

9A.3.3 As soon as reasonably practicable after termination of this **Construction Agreement** **NGC** shall provide the **User** with a statement of and invoice for **Final Sums** together with evidence of such costs having been incurred and/or paid and/or having been committed to be incurred. If the **Final Sums** are greater than the payments made by the **User** in respect of **NGC's** estimate(s) of **Final Sums** the **User** shall within 28 days of the said statement and invoice prepared by **NGC** pay to **NGC** the additional payments due by the **User** together with interest calculated thereon on a daily basis at **Base Rate** for the time being and from time to time from the date of previous payment(s) sums equal to **NGC's** estimate of **Final Sums** to the date of the statement of and invoice for **Final Sums**. If the **Final Sums** is less than the payments made by the **User** in respect of **NGC's** estimate of **Final Sums** paid by the **User** following termination of this **Construction Agreement** **NGC** shall forthwith pay to the **User** the excess paid together with interest on a daily basis at **Base Rate** for the time being and from time to time from the date of payment of the fair and reasonable estimate of **Final Sums** to the date of reimbursement by **NGC** of the said excess paid.

9A.4 The obligations to provide security under this Clause 9A shall continue until either all sums due under this **Construction Agreement** have been paid in full or security arrangements have been put in place by the **User** under the **Bilateral Connection Agreement** in accordance with Section 2 Part III of the **CUSC**. Until such time as the security arrangements are put in place in accordance with Section 2 Part III of the **CUSC** **NGC** shall be entitled to call upon the security put in place under the terms of this **Construction Agreement** for payment of **Termination Amounts** when due under the provisions of the **CUSC**.

Or

9B.1 Provision of Security

9B.1.1 The **User** hereby agrees that it shall forthwith upon the signing of this **Construction Agreement** provide to **NGC** or procure the provision to **NGC** of, and the **User** shall until (subject to Clause 9B.8) 28 days after the **Charging Date** (unless and until this **Construction Agreement** shall be terminated and all sums due or which will or might fall due in respect of which security is to be provided shall have been paid) maintain or procure that there is maintained in full force and effect (including by renewal or replacement), a security arrangement from time to time and for the time being as set out in Appendix M hereto to provide security for the **User's** obligation to pay **NGC** any and all sums specified



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by **NGC** in accordance with Clause 9B.2 of this **Construction Agreement** as requiring to be secured in respect of:-

- (a) the **User's** liability to pay **NGC** amounts from time to time due under Clause 2.4 of this **Construction Agreement**; and
- (b) **Final Sums**.

## 9B.2 Provision of **Bi-annual Estimate** and **Secured Amount Statement**

9B.2.1 **NGC** shall provide to the **User** an estimate (“the **Bi-annual Estimate**”) in substantially the form set out in Part 2 of Appendix M to this **Construction Agreement** and showing the amounts of all payments required or which may be required to be made by the **User** to **NGC** in respect of **Final Sums** and **NGC Engineering Charges** and other expenses in relation to seeking **Consents** referred to in Clause 2.4 of this **Construction Agreement** at the following times and in respect of the following periods:-

- (a) forthwith on and with effect from the signing of this **Construction Agreement**, in respect of the period from and including the day of signing of this **Construction Agreement** until the next following 31st March or 30th September (whichever shall first occur); and
- (b) not less than 75 (seventy five) days (or if such day is not a Business Day the next following **Business Day**) prior to each 31st March and 30th September thereafter in respect of the period of six calendar months commencing on the immediately following 1st April or 1st October (as the case may be), until this **Construction Agreement** shall be terminated and all sums due or which will or might fall due in respect of which security is to be provided shall have been paid.

9B.2.2 Such **Bi-annual Estimate** shall be accompanied by a statement (in the form of the **Secured Amount Statement** set out in Part 3 of Appendix M to this **Construction Agreement**) (“**Secured Amount Statement**”) specifying the aggregate amount to be secured at the beginning of and throughout each such period.

9B.2.3 If **NGC** shall not provide any subsequent **Bi-annual Estimate** and **Secured Amount Statement** by the requisite date, then the **User** shall at the date it is next required to have in full force and effect security and whether by renewal or replacement or otherwise in respect of the following six calendar month period nonetheless provide security in accordance with the provisions of

this **Construction Agreement** in the same amount as the amount then in force in respect of the then current six calendar month period. Notwithstanding the foregoing, if **NGC** shall provide the **User** with any **Bi-annual Estimate** and **Secured Amount Statement** later than the date specified in Clause 9B.2.1 of this **Construction Agreement**, then the following shall apply. The **User** shall within 30 (thirty) days of receipt of the said **Secured Amount Statement** procure that to the extent that the amount in respect of which security has been or is to be provided pursuant to this Clause 9B.2.3 in respect of the relevant period (“**the Secured Amount**”) falls short of the amount stated in the **Secured Amount Statement** (“**the Required Amount**”) the Secured Amount shall be adjusted to the **Required Amount**.

### 9B.3 Entitlement to Estimate

If **NGC** is (for whatever reason) unable on any relevant date to calculate precisely any sum due or which has accrued due or in respect of which the **User** has a liability to **NGC** for payment under any of the provisions of this **Construction Agreement**, **NGC** shall be entitled to invoice the **User** for a sum equal to **NGC’s** fair and reasonable estimate of the sums due or which may become due or in respect of which the **User** has a liability to **NGC** for payment. **NGC** shall also be entitled to send the **User** further invoices for such sums not covered in previous invoices. The **User** shall pay **NGC** all sums so invoiced by **NGC**.

### 9B.4 Demands not Affected by Disputes

It is hereby agreed between **NGC** and the **User** that if there shall be any dispute between the **User** and **NGC** as to:-

9B.4.1 any amount certified by **NGC** in any **Secured Amount Statement** as requiring at any time and from time to time to be secured; or

9B.4.2 the fairness and reasonableness of **NGC’s** estimate; or

9B.4.3 whether there has been an **Event of Default** (under the **Construction Agreement** or the **CUSC**), or

9B.4.4 the lawfulness or otherwise of any termination or purported termination of this **Construction Agreement**

such dispute shall not affect the ability of **NGC** to make demands pursuant to the security arrangement to be provided pursuant to Clause 9B.1 of and Appendix M to this **Construction Agreement** and to recover the amount or amounts payable

thereunder, it being acknowledged by the **User** that but for such being the case **NGC's** security would be illusory by reason of the period of validity of the relevant security being likely to expire or capable of expiring before the final resolution of such dispute. The **User** accordingly covenants with **NGC** that it will not take any action, whether by way of proceedings or otherwise, designed or calculated to prevent, restrict or interfere with the payment to **NGC** of any amount secured under the security arrangement nor seek nor permit nor assist others to do so.

- 9B.5 If there shall be any dispute as mentioned in Clause 9B.4 of this **Construction Agreement** the same shall, whether **NGC** shall have terminated this **Construction Agreement** and recovered or sought to recover payment under the security arrangement or not, and without prejudice to **NGC's** right to recover or seek to recover such payment, be referred in the case of Clauses 9B.4.1 and 9B.4.2 to the **Independent Engineer** (and, for the avoidance of doubt the provisions of this **Construction Agreement** relating to the **Independent Engineer** for the purposes of this Clause 9B.5 shall survive termination) and, in the case of Clauses 9B.4.3 and 9B.4.4 be dealt with by referral to arbitration in accordance with the **Dispute Resolution Procedure**.

#### **Final Sums**

- 9B.6 Within 60 days of the date of termination of this **Construction Agreement** **NGC** shall:

- (a) furnish **the User** with a further statement showing a revised estimate of **Final Sums** and will provide as soon as practicable evidence of such costs having been incurred; and
- (b) by written notice to **the User** inform **the User** of all capital items which cost **NGC** in excess of £10,000 and in relation to which an amount on account of **Final Sums** shall have been paid and whether **NGC** (1) wishes to retain the said capital items or (2) dispose of them.

- 9B.7.1 In respect of all capital items which **NGC** wishes to retain (other than those which have been, or are proposed to be installed as a replacement for **NGC Transmission Plant** and **Transmission Apparatus**) **NGC** shall forthwith reimburse to the **User** the amount paid by the **User** on account of **Final Sums** in respect of the said capital items (including without limitation the amount paid on account of the design, purchase, installation and testing of the said capital item and also associated construction works and interest charges) together with interest calculated thereon on a daily basis from the date of termination of this **Construction Agreement** to the date of payment at **Base Rate** for the time being and from time to time provided that in the event that **NGC**

wishes to retain any capital item which has been installed but wishes to remove it to storage or to another site then it shall only reimburse to the **User** the cost of the capital item and not the costs of such installation and shall deduct from any reimbursement due to the **User** the costs of removal and/or storage.

9B.7.2 In respect of all capital items which **NGC** wishes to dispose (other than those which have been, or are proposed to be installed as a replacement for **NGC Transmission Plant** and **Transmission Apparatus**) it shall forthwith (and subject to **NGC** obtaining the consent of the **Authority** under [condition 16] of the **NGC Transmission Licence** if required) sell or procure the sale of the said capital item on an arms-length basis as soon as reasonably practicable. Forthwith upon receipt of the sale proceeds **NGC** shall pay to the **User** the proceeds received from any such sale together with interest thereon calculated on a daily basis from the date of termination to the date of payment at **Base Rate** for the time being and from time to time less any reasonable costs associated with the sale including the costs and expenses reasonably incurred and/or paid and/or which **NGC** is legally bound to pay on removing the capital item, any storage charges and any costs reasonably incurred by **NGC** in respect of reinstatement associated with removal of the capital item. **NGC** shall provide the **User** with reasonably sufficient evidence of all such costs and expenses having been incurred. If the **Authority** does not agree to the disposal of the capital item the capital item shall be retained by **NGC** and **NGC** shall reimburse the **User** the notional current market value in situ of the said capital item as between a willing buyer and a willing seller as agreed between the parties and failing agreement as determined by reference to arbitration in accordance with the **Dispute Resolution Procedure** together with interest thereon calculated on a daily basis from the date of termination of this **Construction Agreement** to the date of payment at **Base Rate** for the time being and from time to time.

9B.7.3 As soon as reasonably practicable after termination of this **Construction Agreement** **NGC** shall provide the **User** with a statement of and invoice for **Final Sums** together with evidence of such costs having been incurred and/or paid and/or having been committed to be incurred. If the **Final Sums** are greater than the payments made by the **User** in respect of **NGC's** estimate(s) of **Final Sums** the **User** shall within 28 days of the said statement and invoice prepared by **NGC** pay to **NGC** the additional payments due by the **User** together with interest calculated thereon on a daily basis at **Base Rate** for the time being and from time to time from the date of previous payment(s) sums equal to **NGC's** estimate of **Final Sums** to the date of the statement of and invoice for **Final Sums**.

If the **Final Sums** is less than the payments made by the **User** in respect of **NGC's** estimate of **Final Sums** paid by the **User** following termination of this **Construction Agreement NGC** shall forthwith pay to the **User** the excess paid together with interest on a daily basis at **Base Rate** for the time being and from time to time from the date of payment of the fair and reasonable estimate of **Final Sums** to the date of reimbursement by **NGC** of the said excess paid.

- 9B.8** The obligations to provide security under this Clause 9 B shall continue until either all sums due under this **Construction Agreement** have been paid in full or security arrangements have been put in place by the **User** under the **Bilateral Connection Agreement** in accordance with Section 2 Part III of the **CUSC**. Until such time as the security arrangements are put in place in accordance with Section 2 Part III of the **CUSC NGC** shall be entitled to call upon the security put in place under the terms of this **Construction Agreement** for payment of **Termination Amounts** where due under the provisions of the **CUSC**.

## **10. EVENT OF DEFAULT**

As before alternate provisions apply depending whether or not the User does (10A) or does not (10B) meet NGC's required credit rating on signing this **Construction Agreement**

### **10A. Event of Default**

Any of the following events shall constitute an **Event of Default**:-

- 10A.1** If the **User** fails to provide or procure that there is provided to **NGC** within the requisite time any relevant security satisfactory to **NGC**, or to enter into the **Amending Agreement** pursuant to Clauses 9A.1 or 10A.3 of this **Construction Agreement**.
- 10A.2** If having entered into the **Amending Agreement** and having provided security satisfactory to **NGC** pursuant to Clauses 9A.1 and 10A.3 of this **Construction Agreement**.
- (a) The **User** thereafter fails to provide or procure that there is provided to **NGC** or at any time fails to maintain or procure that there is maintained in full force and effect the relevant security arrangement required by this **Construction Agreement** as varied by the **Amending Agreement** or to revise or renew such security with the required replacement security or to maintain or procure that there is maintained in full force and effect any such renewed, revised or substituted security as so required, or if the

User shall otherwise be in breach of any of its obligations in respect of security under this **Construction Agreement** as varied by the **Amending Agreement**;

- (b) The **User** or any shareholder (whether direct or indirect) of the **User** or any other party who may at any time be providing security to **NGC** pursuant to the requirements of this **Construction Agreement** as varied by the **Amending Agreement** takes any action whether by way of proceedings or otherwise designed or calculated to prevent, restrict or interfere with the payment to **NGC** of any amount so secured whether or not there shall be a dispute between the parties;
- (c) Any party who may at any time be providing security to **NGC** pursuant to the provisions of this **Construction Agreement** as varied by the **Amending Agreement** fails to pay to **NGC** any sum demanded pursuant thereto.

10A.3 If

- (i) There is a material adverse change in the financial condition of the **User** such as to give **NGC** reasonable grounds for concluding that there is a substantial probability that the **User** will default in the payment of any sums due or to become due to **NGC** within the next following period of twelve (12) months in terms of or on termination of this **Construction Agreement**; or
- (ii) an event of default has occurred under any banking arrangements (as such may be more particularly described in the **Bilateral Connection Agreement**) (an event of default being any event described as such in the banking arrangements)] put in place by the **User** in connection with a project for which security under this Clause 10A is required by **NGC** and as a result the banks who are party to such banking arrangement have taken steps to declare the principle of the advances under such arrangement immediately due and payable; or
- (iii) any other indebtedness of the **User** for the repayment of borrowed money (in a principal outstanding amount of not less than £1,000,000 pounds sterling or such greater amount specified in the **Bilateral Connection Agreement**) has become due and payable prior to the stated date of maturity thereof by reason of any default or breach on the part of the **User** and the amount in question has not been paid by the **User** or refinanced within a period of 28 days following the date upon which it was so declared due and payable

and in (i) or (ii) or (iii) the **User** fails, within a period of 7 (seven) days following the date on which **NGC** gives the **User** notice in writing of one or other of the above events occurring to provide **NGC** with such security as **NGC** shall require to cover the **User's** payment obligations to **NGC** arising in the event of or which have arisen prior to termination of this **Construction Agreement** and which arise under this **Construction Agreement**. The security to be provided shall be in a form satisfactory to **NGC** in accordance with its then current policy and procedures and in such amount as **NGC** shall specify to the **User** in the aforesaid notice. The **User** shall if required by **NGC**, in addition to providing the requisite security, within a period of 30 days following the date on which **NGC** gives the **User** such notice enter into an **Amending Agreement**. Such **Amending Agreement** shall contain such provisions in relation to the **User's** obligations to provide and maintain security as shall be consequential upon the requirement for security having arisen and shall be in such form as **NGC** shall reasonably require in line with **NGC's** then current provisions to the like effect in its connection agreements with other parties.

Provided that (in relation to paragraphs (i) or (ii) or (iii) above) if at anytime after the putting in place of security under Clause 10A.3 the **User** shall produce to **NGC** evidence to **NGC's** reasonable satisfaction that there is not a substantial probability of the **User** not being able to make payment to **NGC** of such sums within the next following period of twelve (12) months, **NGC** shall not require the **User** to provide the aforesaid security and shall release any such security then in place. This waiver is without prejudice to **NGC's** right to require security at any time thereafter in the event of any of the circumstances set out in paragraph (i) and/or (ii), and/or (iii) subsequently occurring.

10A.4 Any of the **Events of Default** in Paragraph 5.3.1 of the **CUSC** have occurred and are occurring.

**Or**

10B **Event of Default**

Any of the following events shall constitute an **Event of Default**:-

10B.1 If

- (i) an event of default has occurred under any banking arrangements (as such may be more particularly described in the **Bilateral Connection Agreement**) (an event of default being any event described as such in the banking arrangements) put in place by the **User** in connection with a

project for which security under this Clause 10B is required by **NGC** and as a result the banks who are party to such banking arrangement have taken steps to declare the principle of the advances under such arrangement immediately due and payable; or

- (ii) there is a material adverse change in the financial condition of the **User** such as to give **NGC** reasonable grounds for concluding that there is a substantial probability that the **User** will default in the payment of any unsecured sum due or to become due to **NGC** within the next following period of 12 (twelve) months in terms of or on termination of this **Construction Agreement**;

(iii) any other indebtedness of the **User** for the repayment of borrowed money (in a principal amount of not less than £1,000,000 pounds sterling or such greater amount specified in the **Bilateral Connection Agreement**) has become due and payable prior to the stated date of maturity thereof by reason of any default or breach on the part of the **User** and the amount in question has not been paid by the **User** or refinanced within a period of 28 days following the date upon which it was so declared due and payable

and in either (i) or (ii) or (iii) the **User** fails:-

- (1) within a period of 14 (fourteen) days following the date on which **NGC** gives notice of such circumstances to provide to **NGC** a cash deposit in a **Bank Account**, a **Performance Bond** or **Letter of Credit** (as defined in Appendix M) in favour of **NGC** and **Valid** (as defined in Appendix M) at least up to the last day of the **Financial Year** in which the event occurs for such amount representing **NGC**'s reasonable estimate of all unsecured sums to become due to **NGC** in the period up to the end of the **Financial Year** in which the event occurs such sum to be specified in the said notice; or
- (2) to subsequently provide such cash deposit or renew such **Performance Bond** or **Letter of Credit** (or such renewed **Performance Bond** or **Letter of Credit** provided under this paragraph) not less than 45 days prior to its stated expiry date for such amount representing **NGC**'s reasonable estimate of the unsecured sums to become due to **NGC** in the next following **Financial Year** valid at least up to the last day of the next following **Financial Year** and to continue the provision of cash deposit a **Performance Bond** or **Letter of Credit** in a similar manner, to such estimate of unsecured sums.



Provided that regarding (i) or (ii) or (iii) if at any time after the putting in place of security under this Clause 10B.1 the **User** shall provide to **NGC** evidence to **NGC's** reasonable satisfaction that there is not a substantial probability of the **User** being unable to make payment to **NGC** of any unsecured sums within the next following period of twelve (12) months, **NGC** shall not require the **User** to provide the aforesaid security and shall release any such security then in place. This waiver is without prejudice to **NGC's** right to return security at any time thereafter in the event of any of the circumstances set out in paragraph (i) and/or (ii) and/or (iii) in this Clause 10B.1 subsequently occurring.

10B.2 If the **User** fails to provide or procure that there is provided to **NGC** or at any time fails to maintain or procure that there is maintained in full force and effect the relevant security arrangement required under Clauses 9B.1 or 10B.1 of and Appendix M to this **Construction Agreement** or to renew or revise such security or to substitute any security with the required replacement security or to maintain or procure that there is maintained in full force and effect any such renewed, revised or substituted security as so required or if the **User** is otherwise in breach of any of its obligations under Appendix M to this **Construction Agreement**.

10B.3 If the **User** or any shareholder (whether direct or indirect) of the **User** takes any action whether by way of proceedings or otherwise designed or calculated to prevent restrict or interfere with the payment to **NGC** of any amount so secured or seeks or permits or assists others to do so, whether or not there shall be a dispute between the parties.

10B.4 If any party who may at any time be providing or holding security in favour of **NGC** pursuant to Clauses 9B.1 or 10B.1 of and Appendix M to this **Construction Agreement** fails to pay **NGC** any sum demanded in any Notice of Drawing (as defined in Appendix M) pursuant thereto.

10B.5 Any of the **Events of Default** in Paragraph 5.3.1 of the **CUSC** have occurred and are occurring.

## 11. TERMINATION ON EVENT OF DEFAULT

11.1 Once an **Event of Default** pursuant to Clause 10 has occurred and is continuing **NGC** may give notice of termination to the **User** whereupon this **Construction Agreement** shall forthwith terminate and **NGC** shall disconnect all the **User's Equipment** at the **Connection Site** and;

(1) ~~NGC and the User shall by arrangement between them~~ remove any of the **User's Equipment and NGC Assets** on, in relation to **Connection Sites in [England and Wales]**, ~~the other party's~~**NGC's** or, in relation to **Connection Sites in [Scotland], Relevant Transmission Licensee's** land within 6 months of the date of termination or such longer period as may be agreed between ~~the parties~~**NGC or the Relevant Transmission Licensee** (as appropriate) and the **User**.

(2) in the case of **Connection Sites** in [England and Wales] **NGC** shall remove and in the case of **Connection Sites** in [Scotland] **NGC** shall procure that the **Relevant Transmission Licensee** removes any **Transmission Connection Assets** on the **User's** land within 6 months of the date of termination or such longer period as may be agreed between **NGC** or the **Relevant Transmission Licensee** (as appropriate) and the **User**.

11.2 The **User** shall (notwithstanding any longer time for payment which but for such termination the **User** may have for payment pursuant to this **Construction Agreement**) within 14 days from the date of termination pay to **NGC** all amounts already due and owing on the date this **Construction Agreement** so terminates and if this **Construction Agreement** terminates prior to the **Charging Date** the **User** shall be liable forthwith on the date this **Construction Agreement** so terminates to pay to **NGC**:-

(1) a sum equal to all liabilities arising under Clause 2.4 of this **Construction Agreement** which have not yet been invoiced by **NGC** to the **User**; and

(2) a sum equal to **NGC's** fair and reasonable estimate of **Final Sums**,

such payments in each case to be made within 14 days of the date of **NGC's** invoice(s) in respect thereof subject to adjustment in respect of **NGC's** estimate of **Final Sums** in accordance with Clause 9A.3.3. or 9B.7.3.

## 12. TERM

12.1 Subject to the provisions for earlier termination set out in the **CUSC** this **Construction Agreement** shall continue until terminated in accordance with Clause 2.5, 2.6, 4.8 or 11 hereof.

- 12.2 In addition this **Construction Agreement** shall terminate upon termination of the associated **Bilateral Connection Agreement** and in the event that this is prior to the **Charging Date** the **User** shall in addition to the amounts for which it is liable under Clause 2.4 hereof be liable to pay to **NGC Final Sums** and the provisions of Clause 11 shall apply.
- 12.3 The associated [**Bilateral Connection Agreements** or **Agreement to Vary the Bilateral Connection Agreement**] will automatically terminate upon termination of this **Construction Agreement** prior to the **Charging Date**.
- 12.4 Any provisions for payment shall survive termination of this Construction Agreement.

### 13. **CUSC**

The provisions of Sections 6.6 (Payment), 6.14 (Transfer and Subcontracting), 6.15 (Confidentiality), 6.18 (Intellectual Property), 6.19 (Force Majeure), 6.24 (Counterparts), 6.20 (Waiver), 6.21 (Notices), 6.22 (Third party Rights), 6.23 (Jurisdiction), 6.25 (Governing Law), 6.26 (Severance of Terms), 6.27 (Language) inclusive of the **CUSC** shall apply to this **Construction Agreement** as if set out in this **Construction Agreement**.

### 14. **DISPUTES**

Except as specifically provided for in this **Construction Agreement** any dispute arising under the terms of this **Construction Agreement** shall be referred to arbitration in accordance with the **Dispute Resolution Procedure**.

### 15. **VARIATIONS**

- 15.1 Subject to Clause 15.2 and 15.3 below, no variation to this **Construction Agreement** shall be effective unless made in writing and signed by or on behalf of both **NGC** and the **User**.
- 15.2 **NGC** and the **User** shall effect any amendment required to be made to this **Construction Agreement** by the **Authority** as a result of a change in the **CUSC** or the **Transmission Licence**, an order or direction made pursuant to the **Act** or a **Licence**, or as a result of settling any of the terms hereof. The **User** hereby authorises and instructs **NGC** to make any such amendment on its behalf and undertakes not to withdraw, qualify or revoke such authority or instruction at any time.
- 15.3 **NGC** has the right to vary Appendices in accordance with Clauses 2.3 and 2.11 and Paragraph 6.9 of the **CUSC**.

**16. RESTRICTIVE TRADE PRACTICES ACT**

Any restriction or information provision (as each of those terms are defined or construed in Section 43(1) of the Restrictive Trade Practices Act 1976) contained in this **Construction Agreement** shall not take effect or shall cease to have effect:-

- (a) if a copy of this **Construction Agreement** is not provided to the Department of Trade and Industry (“DTI”) within 28 days of the date of this **Construction Agreement**; or
- (b) if, within 28 days of the provision of that copy to the DTI, the DTI gives notice of objection to the party providing it.

**IN WITNESS WHEREOF** the hands of the duly authorised representatives of the parties hereto at the date first above written

SIGNED BY )  
**[name]** )  
for and on behalf of )  
THE NATIONAL GRID COMPANY plc )

SIGNED BY )  
**[name]** )  
for and on behalf of )  
**[User]** )

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**APPENDIX [J]**

**CONSTRUCTION PROGRAMME**

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**APPENDIX [H]**

**NGC-TRANSMISSION REINFORCEMENT WORKS**

|

**APPENDIX [L]**

**INDEPENDENT ENGINEER**

Company:

Connection site:

Type:

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The Independent Engineer will be a Member of the Association of Consulting Engineers (ACE) and shall be agreed between the parties within 120 days of execution of this Construction Agreement or such other period as may be agreed between the parties. Failing agreement it shall be referred to the President of the Institution of Electrical Engineers who shall nominate the Independent Engineer.

**APPENDIX [K]**

**LIQUIDATED DAMAGES**

Company:

Connection site:

Type:

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The amount of Liquidated Damages payable by NGC to the User pursuant to this Construction Agreement shall be:

Liquidated Damages under Clause [4] of this Construction Agreement shall be calculated on a daily basis at a rate of £XXXXXX per week subject to the limit that the total Liquidated Damages payable by NGC to the User under this Clause shall not exceed £XXXXXX.



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**APPENDIX [G]**

**NGC-TRANSMISSION CONNECTION ASSET WORKS**

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**APPENDIX [B]**  
**[Part 1]**

**ONE OFF WORKS**

**APPENDIX [M]**

**PART 1**

**SECURITY ARRANGEMENT**

1. **DEFINITIONS**

In this Appendix M, the following terms have the meanings set out next to them:-

“Bi-annual Estimate” means an estimate pursuant to Clause [9B.2.1] of this Construction Agreement of all payments to be made or which may be required to be made by the User in any relevant period, such estimate to be substantially in the form set out in Part 2 of this Appendix M;

“Bank Account” means a separately designated bank account in the name of NGC at such branch of Barclays Bank PLC, or such branch of any other bank, in the City of London as is notified by NGC to the User, bearing interest from (and including) the date of deposit of principal sums to (but excluding) the date of withdrawal of principal sums from such account, mandated for withdrawal of principal solely by NGC against delivery of a Notice of Drawing for the amount demanded therein and mandated for the transfer of any interest accrued to the Bank Account to such bank account as the User may specify;

- “Letter of Credit” means an irrevocable standby letter of credit in a form reasonably satisfactory to NGC but in any case expressed to be governed by the Uniform Customs and Practice for Documentary Credits 1993 Revision ICC Publication No. 500 or such other form as may be reasonably satisfactory to NGC and allowing for partial drawings and providing for the payment to NGC on demand forthwith on and against NGC’s delivery to the issuer thereof of a Notice of Drawing of the amount demanded therein;
- “Notice of Drawing” means a notice of drawing signed by or on behalf of NGC substantially in the form set out in Part 4 of this Appendix M;
- “Performance Bond” means an on first demand without proof or conditions irrevocable performance bond or performance guarantee executed as a deed in a form reasonably satisfactory to NGC but in any case allowing for partial drawings and providing for the payment to NGC on demand forthwith on and against NGC’s delivery to the issuer thereof of a Notice of Drawing of the amount demanded therein;
- “Qualified Bank” means a City of London branch of a bank, its successors and assigns, which has throughout the validity period of the Performance Bond or Letter of Credit it issues in favour of NGC, a rating of at least A- in Standard and Poor’s long term debt rating or A3

in Moody's long term debt rating provided that such bank is not during such validity period put on any credit watch or any similar credit surveillance which gives NGC reasonable cause to doubt that such bank may not be able to maintain the aforesaid rating throughout the validity period and no other event has occurred which gives NGC reasonable cause to have such doubt;

“Qualified Company”

means a company which is a public company or a private company within the meaning of S.1(3) of the Companies Act 1985 and which is either a shareholder of the User or any holding company of such shareholder (the expression holding company having the meaning assigned thereto by Section 736, Companies Act 1985 as supplemented by Section 144(3), Companies Act 1989) and which has throughout the validity period of the Performance Bond it gives in favour of NGC, a rating of at least A- in Standard and Poor's long term debt rating or A3 in Moody's long term debt rating or such lesser rating which NGC may in its absolute discretion allow by prior written notice given pursuant to a resolution of its board of directors for such period and on such terms as such resolution may specify provided that such company is not during such validity period put on any credit watch or any similar credit surveillance procedure which gives NGC reasonable cause to doubt that such company may not be able to maintain

the aforesaid rating throughout the validity period of the Performance Bond and no other event has occurred which gives NGC reasonable cause to have such doubt;

“Secured Amount Statement”

means a statement accompanying the Bi-annual Estimate setting out the amount of the User’s Obligation based on figures contained in the Bi-annual Estimate being the amount for which security shall be provided to NGC pursuant to Clause 9B of this Construction Agreement;

“User’s Obligation”

means the User’s obligation to pay under this Construction Agreement:-

- (i) all amounts in respect of which the User has a liability to pay to NGC pursuant to Clause 2.4 of this Construction Agreement Agreement;
- (ii) Final Sum

“Valid”

means valid for payment to be made thereunder against delivery of a Notice of Drawing given within the period stated therein.

## 2. **SECURITY REQUIREMENT**

The User’s Obligation shall be secured by any one of the following:-

- 2.1 A Performance Bond or Letter of Credit from a Qualified Bank for the amount stated in the Secured Amount Statement as the estimated

amount of the User's Obligation to be secured, such Performance Bond or Letter of Credit to be Valid for at least the period stated in such Secured Amount Statement and to be renewed periodically where applicable in the manner stated in paragraph 3.3 of this Appendix M; or

- 2.2 A cash deposit in a Bank Account at least for the amount stated in the Secured Amount Statement as the estimated amount of the User's Obligation to be secured, such cash deposit to be increased or reduced periodically where applicable in the manner stated in paragraph 3.4 of this Appendix M; or
- 2.3 A Performance Bond from a Qualified Company for the amount stated in the Secured Amount Statement as the estimated amount of the User's Obligation to be secured, such Performance Bond to be Valid for at least the period stated in such Secured Amount Statement and to be renewed periodically where applicable in the manner stated in paragraph 3.3 of this Appendix M.

### 3. **GENERAL PROVISIONS**

- 3.1 Any Notice of Drawing to be delivered to Barclays Bank PLC or any other bank at which the Bank Account shall have been opened or a Qualified Bank or a Qualified Company may be delivered by hand, by post or by facsimile transmission.
- 3.2 If the User becomes aware that the bank issuing the Performance Bond or Letter of Credit ceases to be a Qualified Bank or that the company giving the Performance Bond ceases to be a Qualified Company, the User shall so notify NGC in writing as soon as it becomes so aware. If

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NGC becomes aware that the bank issuing the Performance Bond or Letter of Credit ceases to be a Qualified Bank or that the company giving the Performance Bond ceases to be a Qualified Company, NGC may notify the User to that effect in writing. Where the bank or the company so ceases to be either a Qualified Bank or a Qualified Company (as the case may be) as a consequence of NGC having reasonable cause to doubt the continued rating of the said bank or company, such notice shall be accompanied by a statement setting out NGC's reasons for having such doubt. The User shall within 21 days of the giving of such notice by NGC or the User whichever is the earlier provide a replacement Performance Bond and/or Letter of Credit from a Qualified Bank or Qualified Company, as the case may be, and/or provide a cash deposit in the required amount in a Bank Account. From the date the replacement Performance Bond or Letter of Credit or Bank Account cash deposit is effectively and unconditionally provided and Valid, NGC will consent in writing to the security which it replaces being released.

3.3 The following provisions shall govern the issuance, renewal and release of the Performance Bond or Letter of Credit:-

3.3.1 The Performance Bond or Letter of Credit shall be Valid initially from the signing of this Construction Agreement at least to and including the following 31st March or 30th September whichever is the earlier date. Such Performance Bond or Letter of Credit shall be for an amount not less than that stated in the Secured Amount Statement as the amount of the User's Obligation to be secured during the period specified in the Secured Amount Statement.



- 3.3.2 On a date which is at least 45 days (or if such day is not a Business Day then on the immediately preceding Business Day) before the next following 31st March or 30th September whichever is the earlier date such Performance Bond or Letter of Credit shall be renewed so as to be Valid for not less than 6 months commencing from the immediately following 1st April or 1st October (as the case may be). Such renewed Performance Bond or Letter of Credit shall be for an amount not less than the amount of the User's Obligation stated in the Secured Amount Statement as the amount to be secured during the period that such renewed Performance Bond or Letter of Credit shall be Valid.
- 3.3.3 Thereafter, the renewed Performance Bond or Letter of Credit shall be further renewed in like manner every 6 months.
- 3.4 The following provisions shall govern the maintenance of cash deposits in the Bank Account:-
- 3.4.1 The amount of the cash deposit to be maintained in the Bank Account shall be maintained from the date of this Construction Agreement at least to and including the following 31st March or 30th September, whichever is the earlier date. Such cash deposit shall be in an amount as stated in the Secured Amount Statement as the amount of the User's Obligation to be secured during the period stated in the Secured Amount Statement.
- 3.4.2 If the amount stated in the Secured Amount Statement as the amount of the User's Obligation to be secured from the following 1st April to 30th September or from the following 1st October to 31st March (as the case may be) is an amount greater than the amount then secured, the cash deposit in the Bank Account shall be increased to such greater amount on

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a date which is 45 days before the following 31st March or 30th September (as the case may be) which immediately precedes the commencement of the relevant above mentioned period.

- 3.4.3 If such amount stated in the Secured Amount Statement is smaller than the amount then secured, the cash deposit in the Bank Account shall not be reduced to the amount so stated until the expiry of 7 days after the next following 31st March or 30th September (as the case may be) (“the Release Date”).
- 3.4.4 The sum equal to the amount of reduction in the cash deposit in the Bank Account shall be paid by NGC to the User from the Bank Account on the Release Date.
- 3.4.5 Any interest accruing to the Bank Account shall be for the account of and belong to the User absolutely, and NGC agrees to take any steps required to be taken by it for the release from the Bank Account and payment to the User of such interest as soon as the same shall have been credited to the Bank Account and NGC shall have received notice of such credit.
- 3.5 Notwithstanding any provision aforesaid:-
- 3.5.1 The User may provide different securities to NGC at any one time, each securing a different amount, provided that the aggregate amount secured by such securities shall be not less than the aggregate amount required to be secured pursuant to the Secured Amount Statement for any period specified therein.

3.5.2 The User may upon the expiry of at least 14 days prior written notice to NGC, substitute one type of security for another provided that unless NGC shall otherwise agree in writing such substituted security must be Valid from 1st April or 1st October (as the case may be) and committed at least 45 days before the immediately preceding 31st March or 30th September (as the case may be) in the following manner:-

(a) where a Performance Bond or a Letter of Credit is to substitute for other securities, it must be issued or given at least 45 days before such immediately preceding 31st March or 30th September (as the case may be).

(b) where a cash deposit in a Bank Account is to substitute for other securities, it must be deposited into the Bank Account at least 45 days before such immediately preceding 31st March or 30th September (as the case may be).

3.5.3 Upon request by the User to NGC, securities substituted in the aforesaid manner shall, providing the substitute security shall be Valid, be released on the following 1st April or 1st October (as the case may be). However, where the amount required by the Secured Amount Statement to be secured for any period is less than the amount required to be secured in the preceding period, the substituted security shall not be released until 7 days after the then following 31st March or 30th September (as the case may be).

**PART 2**

**BI-ANNUAL ESTIMATE FOR CONSTRUCTION AGREEMENT**  
**DATED [ ]**

Amount due and amount which will  
or might fall due for the period  
commencing on and including  
[ ] and ending on and  
including [ ] in  
respect of which security is  
required

---

1. NGC Engineering Charges & expenses  
for obtaining Consents pursuant to  
to Clause 2.4
2. Final Sums
- [3. One Off Charge]

**PART 3**

**SECURED AMOUNT STATEMENT**

**CONSTRUCTION AGREEMENT DATED [ ]**

Amount in which security is  
required for the period  
commencing on and including  
[ ] and ending on and  
including [ ]

---

User's Obligation

We hereby certify that the amount to be secured in respect of the User's Obligation is as stated above in respect of the named period.

for and on behalf of  
**THE NATIONAL GRID COMPANY PLC**

Duly authorised officer

**PART 4**

**NOTICE OF DRAWING**

To [ ] Bank/Public Limited Company/Limited

copy to:

[date]

Dear Sirs,

RE: **CONSTRUCTION AGREEMENT DATED [ ]**  
**PERFORMANCE BOND NO./DATED [ ]/LETTER OF CREDIT NO.**  
**[ ]/BANK ACCOUNT NO. [ ] (“THE SECURITY”)**

---

We refer to the above Security in our favour. We hereby demand immediate payment thereunder in the amount of £[ ].

We require payment to be made by telegraphic transfer to:-

Bank plc

Address:

Sort Code:

Account Name: The National Grid Company plc

Account No:

Yours faithfully,

for and on behalf of  
**THE NATIONAL GRID COMPANY PLC**

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Duly authorised officer

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**APPENDIX [N]**

**THIRD PARTY WORKS**

**END OF SCHEDULE 2 EXHIBIT 3**



**SCHEDULE 2 - EXHIBIT 4**

**DATED [ ] 200[ ]**

**THE NATIONAL GRID COMPANY PLC (1)**

**and**

**[ ] (2)**

---

**THE CONNECTION AND USE OF SYSTEM CODE**

**MANDATORY SERVICES AGREEMENT**

**RELATING TO [ ] POWER STATION**

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THIS **MANDATORY SERVICES AGREEMENT** is made on the [ ] day of [ ] 200[ ]

**BETWEEN**

- (1) **THE NATIONAL GRID COMPANY PLC** a company registered in England with number 2366977 whose registered office is at National Grid House, Kirby Corner Road, Coventry CV4 8JY ("**NGC**", which expression shall include its successors and/or permitted assigns); and
- (2) [ ] a company registered in [ ] with number [ ] whose registered office is at [ ] ("**User**", which expression shall include its successors and/or permitted assigns)

**WHEREAS**

- (A) Pursuant to the **Transmission Licence**, **NGC** is required to prepare a Connection and Use of System Code (**CUSC**) setting out the terms of the arrangements for connection to and use of the **NGC-GB Transmission System** and the provision of certain **Balancing Services**.
- (B) As at the date hereof, **NGC** and the **User** are parties to the **CUSC Framework Agreement** (being an agreement by which the **CUSC** is made contractually binding between the parties).
- (C) This **Mandatory Services Agreement** is entered into pursuant to the terms of the **CUSC** and shall be read as being governed by it and, as between **NGC** and the **User**, has priority over the terms of the **CUSC** in accordance with (and subject to) Paragraph 11.2.2 of the **CUSC**.

**NOW IT IS HEREBY AGREED** as follows:

**1. DEFINITIONS, INTERPRETATION AND CONSTRUCTION**

Unless the subject matter or context otherwise requires or is inconsistent therewith, terms and expressions defined in Section 11 of the **CUSC** have the same meanings, interpretations or constructions in this **Mandatory Services Agreement**. Subject thereto, unless the subject matter or context otherwise requires or is inconsistent therewith, in this **Mandatory Services Agreement** the terms set out in Appendix 3 shall have the meanings set out respectively therein.

## 2. COMMENCEMENT

This **Mandatory Services Agreement** shall commence on [ ] (“**Commencement Date**”).

## 3. OBLIGATORY REACTIVE POWER SERVICE - DEFAULT UTILISATION

### 3.1 Schedule 3, Part I to the CUSC

The provisions of this Clause 3 implement the terms of Paragraph 2 of Schedule 3, Part I to the **CUSC** (“**CUSC Schedule**”) with respect to the payments to be made by **NGC** to the **User** for the provision by the **User** from the **BM Units** of the **Obligatory Reactive Power Service**, and in accordance with Paragraph 2.1 thereof the **Parties** hereby agree to make all necessary amendments to this **Mandatory Services Agreement** so as to give effect to the provisions of the **CUSC Schedule** as amended or modified from time to time.

### 3.2 Term and Suspension

[3.2.1 The provisions of this Clause 3 shall be deemed to have applied in relation to each **BM Unit** with effect from 00.00 hours on the [date hereof] **Commencement Date**] and, subject always to Sub-Clause 3.2.2, shall continue thereafter unless and until the earlier of termination of the **CUSC Schedule** and termination of this **Mandatory Services Agreement**. For the avoidance of doubt, in the event this **Mandatory Services Agreement** is terminated in relation to any individual **BM Unit**, the provisions of this Clause 3 shall terminate in relation to that **BM Unit** only.] *OR*

[3.2.1 The provisions of Sub-Clauses 3.3 to 3.6 inclusive shall apply with effect from 00.00 hours on the date on which it is demonstrated (having regard to industry practice) to the reasonable satisfaction of **NGC** that each of the [CCGT] **[BM] Units** complies with the provisions of **Grid Code [CC 6.3.2 and 6.3.4]** (or the coming into force of a direction issued by the **Authority** relieving the **User** of the obligation under its **Licence** to comply therewith) or (where **NGC** in its sole discretion requires **Reactive Power** from the **BM Units** before then for the purposes of security of the **NGC-GB Transmission System**) such earlier date as **NGC** may agree with the **User** and, subject always to Sub-Clause 3.2.3, shall continue thereafter unless and until the earlier of termination of the **CUSC Schedule** and termination of this **Mandatory Services Agreement**. For the avoidance of doubt, the

issue by **NGC** in relation to the **BM Unit** of a **Reactive Despatch Instruction** to unity power factor or zero Mvar shall not imply demonstration to **NGC's** reasonable satisfaction of compliance as referred to above nor imply in relation to the **BM Unit** agreement by **NGC** of an earlier date as referred to herein.

3.2.2 No demonstration referred to in Sub-Clause 3.2.1 shall take place until the **User** shall have demonstrated to **NGC's** reasonable satisfaction (having regard to industry practice) that each **[CCGT] [BM] Unit's Excitation System**, and in particular the **Under-excitation Limiter**, has been successfully commissioned and complies with the provisions of **Grid Code [CC 6.3.8].**

3.2.2/3 In relation to any **BM Unit**, the provisions of this Clause 3 (except this Sub-Clause 3.2) shall be suspended and have no force and effect upon the coming into effect, and for the duration of, any agreement (referred to in the **CUSC Schedule** as a "**Market Agreement**" and being either a new **Ancillary Services Agreement** or an agreement incorporating provisions into this **Mandatory Services Agreement**) which may be entered into between the Parties pursuant to Paragraph 3 of the **CUSC Schedule** for the provision by the **User** in relation to that **BM Unit** of:-

- (a) the **Obligatory Reactive Power Service** but with alternative payment arrangements to those provided in this Clause 3; or
- (b) an **Enhanced Reactive Power Service**.

For the avoidance of doubt, with effect from the expiry or termination of any **Market Agreement** such provisions shall in relation to that **BM Unit** cease to be suspended and shall resume full force and effect.

3.2.3/4 Termination or suspension of this Clause 3 shall not affect the rights and obligations of the **Parties** accrued as at the date of termination or suspension.

### 3.3 Capability Data

3.3.1 The **Parties** agree that, for the purposes of the Appendices to the **CUSC Schedule**:-

- [(a) the figures set out in Table B of Appendix 1, Section A, Part I represent for each **BM Unit** the **Reactive Power** capability at **Rated MW** which the **User** is obliged to provide under and in accordance with the **Connection Conditions** of the **Grid Code**,

- together with **Reactive Power** capability at other levels of **MW Output** as specified therein by reference to the **Generator Performance Chart** submitted in accordance with **Grid Code [OC 2.4.2]** and measured at the generator stator terminals; and
- (b) the figures set out in Table A of Appendix 1, Section A, Part I shall constitute for each of the **BM Units** the value of  $QC_{lead}$  and  $QC_{lag}$  referred to in Section 2 of Appendix 3 to the **CUSC Schedule** representing the **Reactive Power** capability at **Rated MW** shown at the **Commercial Boundary** (by application of the formulae set out in Appendix 8 to the **CUSC Schedule**).] OR
  - [(a) the figures set out in Table B of Appendix 1, Section A, Part I represent for each relevant **CCGT Unit** the **Reactive Power** capability at **Rated MW** which the **User** is obliged to provide under and in accordance with the **Connection Conditions** of the **Grid Code**, together with **Reactive Power** capability at other levels of **MW Output** as specified therein by reference to the **Generator Performance Chart** submitted in accordance with **Grid Code [OC 2.4.2]** and measured at the generator stator terminals; and
  - (b) the figures set out in summary Table C of Appendix 1, Section A, Part I represent for the **BM Unit** the **Reactive Power** capability of each relevant **CCGT Unit** at **Rated MW** (derived from Table B) but shown at the high voltage side of the **Generating Unit** step-up transformer by application of the formula set out in Appendix 8, Part 2 to the **CUSC Schedule**; and
  - (c) the figures set out in Table A of Appendix 1, Section A, Part I shall constitute for the **BM Unit** the value of  $QC_{lead}$  and  $QC_{lag}$  referred to in Section 2 of Appendix 3 to the **CUSC Schedule** representing the **Reactive Power** capability of the **BM Unit** at **Rated MW** shown at the **Commercial Boundary** (derived by the summation of the **Reactive Power** capability of each relevant **CCGT Unit** at **Rated MW** extracted from summary Table C and by application of the formulae set out in Appendix 8, Part 2 to the **CUSC Schedule**.)]

### 3.4 Payments to User

- 3.4.1 In respect of each **BM Unit**, and in consideration of the **User** providing the **Obligatory Reactive Power Service** from that **BM Unit**, **NGC** shall pay to the **User** in respect of each calendar month in accordance with Paragraph 4.3 of the **CUSC** the aggregate total payments

calculated in accordance with Appendix 1 to the **CUSC Schedule** and referred to therein as "PT".

3.4.2 For the purposes of Sub-Clause 3.4.1:-

- (a) the **Relevant Zone** in which the **BM Units** are situated is specified in Appendix 1, Section A, Part I;
- (b) without prejudice to Paragraph 4.1.2.2 of the **CUSC**, **NGC** shall use the meters and aggregation principles specified and/or referred to in Appendix 1, Section A, Part II to ascertain the amount of **Leading** and **Lagging** Mvarh produced in each **Settlement Period** by the **BM Units**, and such amount of **Leading** or **Lagging** Mvarh shall constitute the respective values of  $U_{lead}$  and  $U_{lag}$  as referred to in paragraph 1 of Appendix 3 to the **CUSC Schedule**; and
- (c) the **Parties** acknowledge that all meters and metered data used for the purposes of this Clause 3 shall comply with the provisions of Appendix 4 to the **CUSC Schedule**.

## 4. FREQUENCY RESPONSE

### 4.1 Paragraph 4.1.3 of CUSC

The provisions of this Clause 4 give effect to the provisions of Paragraph 4.1.3 of the **CUSC** in respect of the provision by the **User** from the **BM Units** of the **Mandatory Ancillary Service of Frequency Response** and the payments to be made by **NGC** to the **User** in respect thereof.

### 4.2 Term

4.2.1 The provisions of this Clause 4 shall be deemed to have applied in relation to each **BM Unit** with effect from 00.00 hours on the [date hereof] **[Commencement Date]** and shall continue thereafter unless and until this **Mandatory Services Agreement** is terminated. For the avoidance of doubt, in the event this **Mandatory Services Agreement** is terminated in relation to any individual **BM Unit**, the provisions of this Clause 4 shall terminate in relation to that **BM Unit** only.

4.2.2 Termination of this Clause 4 shall not affect the rights and obligations of **NGC** and the **User** accrued as at the date of termination.

### 4.3 Provision of Frequency Response

4.3.1 The **Parties** agree that:-

- (a) [subject always to Sub-Clause 4.6,] for the purposes of Paragraph 4.1.3.7 of the **CUSC**, the figures set out in the response tables in Appendix 1, Section B, Part I represent the amount of **Primary Response**, **Secondary Response** and **High Frequency Response** referred to therein;
- (b) [subject always to Sub-Clause 4.6,] for the purposes of Paragraph 4.1.3.9 of the **CUSC**, the figures set out in the summary response table in Appendix 1, Section B, Part II represent the capabilities in respect of **Primary Response**, **Secondary Response** and **High Frequency Response** at given levels of **De-Load** referred to therein;
- (c) for the purposes of Paragraph 4.1.3.4 of the **CUSC**, the table in Appendix 1, Section B, Part III shows the permissible combinations of **Primary Response**, **Secondary Response** and **High Frequency Response** referred to therein;
- (d) for the purposes of Paragraph 4.1.3.9 of the **CUSC**, the figures (if any) set out in the plant configuration table in Appendix 1, Section B, Part II represent the plant configuration adjustment factors referred to therein to be applied where the **BM Unit** is a **CCGT Module**;
- (e) for the purposes of Paragraph 4.1.3.9 of the **CUSC**, the payment rates in Appendix 2, Section B constitute the payment rates in respect of **Primary Response**, **Secondary Response** and **High Frequency Response** referred to therein; and
- (f) [subject always to Sub-Clause 4.6,] for the purposes of Paragraph 4.1.3.9A(a) of the **CUSC** in respect of calculation of the **Response Energy Payment**, the response values in Appendix 1, Section B, Part IV represent the **Frequency Response Power** that is deemed to be delivered in respect of **Primary Response**, **Secondary Response** and **High Frequency Response**.

**4.4 Indexation**

The payment rates set out in Appendix 2, Section B are specified at April [ ] base, and shall from 1<sup>st</sup> April each year be indexed in accordance with Paragraph 4.5 of the **CUSC**.

#### 4.5 **Triennial Review**

For the purposes of Paragraph 4.1.3.20 of the **CUSC**, the first **Triennial Review Date** shall be [ ].

#### 4.6 **[Commissioning and Provisional Response Levels**

Without prejudice to Paragraphs 4.1.3.13 and 4.1.3.14 of the **CUSC**, the **User** acknowledges that the levels of **Response** set out in the response tables in Appendix 1, Section B, Parts I, II and IV are indicative figures only during the period in which the relevant **Generating Unit(s)** is being commissioned and the **User** hereby undertakes to use its reasonable endeavours to forward to **NGC** levels of **Response** which represent the true operating characteristics of such **Generating Unit(s)** for inclusion in Appendix 1, Section B, Parts I, II and IV as soon as possible following completion of commissioning.]

### 5. **RESTRICTIVE TRADE PRACTICES ACT**

Any restriction or information provision (each of those terms having the same meaning in this Clause 5 as in the Restrictive Trade Practices Act 1976) contained in this **Mandatory Services Agreement** shall cease to have effect:-

- (i) if a copy of this **Mandatory Services Agreement** is not provided to the Department of Trade and Industry ("**DTI**") within 28 days of the date on which this **Mandatory Services Agreement** is made; or
- (ii) if, within 28 days of the provision of that copy to the **DTI**, the **DTI** gives notice of objection to the **Party** providing it.

### 6. **GENERAL PROVISIONS**

Paragraphs 6.12 (limitation of liability), 6.14 (transfer and subcontracting), 6.15 (confidentiality), 6.18 (intellectual property), 6.19 (force majeure), 6.20 (waiver), 6.21 (notices), 6.22 (third party rights), 6.23 (jurisdiction), 6.24 (counterparts), 6.25 (governing law), 6.26 (severance of terms) and 6.27 (language) and Section 7 (dispute resolution) of the **CUSC** are incorporated into this **Mandatory Services Agreement** *mutatis mutandis*.

### 7. **VARIATIONS**

- 7.1 Subject to Sub-Clause 7.2, no variation to this **Mandatory Services Agreement** shall be effective unless made in writing and signed by or on behalf



of both **NGC** and the **User**.

**7.2** **NGC** and the **User** shall effect any amendment required to be made to this **Mandatory Services Agreement** by the **Authority** as a result of a change in the **CUSC** or the **Transmission Licence**, an order or direction made pursuant to the **Act** or a **Licence**, or as a result of settling any of the terms hereof. The **User** hereby authorises and instructs **NGC** to make any such amendment on its behalf and undertakes not to withdraw, qualify or revoke such authority or instruction at any time.

## **8. NOTICES**

For the purposes of this **Mandatory Services Agreement**, unless and until otherwise notified by the relevant **Party** to the other in accordance with Paragraph 6.21.1 of the **CUSC**, any notice or other communication to be given by **NGC** or the **User** to the other under, or in connection with matters contemplated by, this **Mandatory Services Agreement** shall be sent to the following address and/or facsimile number and marked for the attention of the person named below:

**NGC:**                   Address:  
  
                                  Facsimile number:  
  
                                  For the attention of:

**User:**                   Address:  
  
                                  Facsimile number:  
  
                                  For the attention of:

## **9. BANK ACCOUNT DETAILS**

For the purposes of Paragraph 4.3.2.18 of the **CUSC**, unless and until otherwise notified by the relevant **Party** to the other in accordance with that Paragraph, details of each of the **Party**'s bank accounts to which sums payable in connection with this **Mandatory Services Agreement** shall be paid are set out below:

**NGC:**                   Bank:  
  
                                  Branch:  
  
                                  Account Number:

**User:**

**Bank:**

**Branch:**

**Account Number:**

**IN WITNESS WHEREOF** the hands of the duly authorised representatives of the parties hereto at the date first above written

SIGNED BY )  
**[name]** )  
for and on behalf of )  
THE NATIONAL GRID COMPANY PLC)

SIGNED BY )  
**[name]** )  
for and on behalf of )  
**[User]** )

**APPENDIX 1 – DATA**  
**SECTION A (REACTIVE POWER)**

**Part I**  
**Capability Tables (Relevant Zone [    ])**

BM Unit No.

**REACTIVE POWER CAPABILITY AT COMMERCIAL BOUNDARY** (at rated stator terminal and nominal system voltage)

<b>TABLE A</b>	<b>LEAD (Mvar)</b>	<b>LAG (Mvar)</b>
<b>AT RATED MW</b>		

**REACTIVE POWER CAPABILITY AT GENERATOR STATOR TERMINAL** (at rated terminal voltage)

<b>TABLE B</b>	<b>MW</b>	<b>LEAD (Mvar)</b>	<b>LAG (Mvar)</b>
<b>AT RATED MW</b>			
<b>AT FULL OUTPUT (MW)</b>			
<b>AT MINIMUM OUTPUT (MW)</b>			

BM Unit No.

**REACTIVE POWER CAPABILITY AT COMMERCIAL BOUNDARY** (at rated stator terminal and nominal system voltage)

<b>TABLE A</b>	<b>LEAD (Mvar)</b>	<b>LAG (Mvar)</b>
<b>AT RATED MW</b>		

**REACTIVE POWER CAPABILITY AT GENERATOR STATOR TERMINAL** (at rated terminal voltage)

<b>TABLE B</b>	<b>MW</b>	<b>LEAD (Mvar)</b>	<b>LAG (Mvar)</b>
<b>AT RATED MW</b>			
<b>AT FULL OUTPUT (MW)</b>			
<b>AT MINIMUM OUTPUT (MW)</b>			

BM Unit No.

**REACTIVE POWER CAPABILITY AT COMMERCIAL BOUNDARY** (at rated stator terminal and nominal system voltage)

<b>TABLE A</b>	<b>LEAD (Mvar)</b>	<b>LAG (Mvar)</b>
<b>AT RATED MW</b>		

**REACTIVE POWER CAPABILITY AT GENERATOR STATOR TERMINAL** (at rated terminal voltage)

<b>TABLE B</b>	<b>MW</b>	<b>LEAD (Mvar)</b>	<b>LAG (Mvar)</b>
<b>AT RATED MW</b>			
<b>AT FULL OUTPUT (MW)</b>			
<b>AT MINIMUM OUTPUT (MW)</b>			

BM Unit No.

**REACTIVE POWER CAPABILITY AT COMMERCIAL BOUNDARY** (at rated stator terminal and nominal system voltage)

<b>TABLE A</b>	<b>LEAD (Mvar)</b>	<b>LAG (Mvar)</b>
<b>AT RATED MW</b>		

**REACTIVE POWER CAPABILITY AT GENERATOR STATOR TERMINAL** (at rated terminal voltage)

<b>TABLE B</b>	<b>MW</b>	<b>LEAD (Mvar)</b>	<b>LAG (Mvar)</b>
<b>AT RATED MW</b>			
<b>AT FULL OUTPUT (MW)</b>			
<b>AT MINIMUM OUTPUT (MW)</b>			

OR

**REACTIVE POWER CAPABILITY AT COMMERCIAL BOUNDARY** (at rated stator terminal and nominal system voltage)

<b>TABLE A</b>	<b>MW</b>	<b>LEAD (Mvar)</b>	<b>LAG (Mvar)</b>
<b>AT RATED MW</b>			

**REACTIVE POWER CAPABILITY AT GENERATOR STATOR TERMINAL** (at rated terminal voltage)

CCGT Unit No. [            ]

<b>TABLE B</b>	<b>MW</b>	<b>LEAD (Mvar)</b>	<b>LAG (Mvar)</b>
<b>AT RATED MW</b>			
<b>AT FULL OUTPUT (MW)</b>			
<b>AT MINIMUM OUTPUT (MW)</b>			

CCGT Unit No. [       ]

TABLE B	MW	LEAD (Mvar)	LAG (Mvar)
AT RATED MW			
AT FULL OUTPUT (MW)			
AT MINIMUM OUTPUT (MW)			

CCGT Unit No. [       ]

TABLE B	MW	LEAD (Mvar)	LAG (Mvar)
AT RATED MW			
AT FULL OUTPUT (MW)			
AT MINIMUM OUTPUT (MW)			

**REACTIVE POWER CAPABILITY AT HV SIDE OF STEP-UP TRANSFORMER** (at rated terminal and nominal system voltage)

SUMMARY TABLE C	RATED MW	LEAD (Mvar)	LAG (Mvar)
CCGT UNIT			

]

**Part II**  
**Meters and Aggregation Principles**

[BM Unit No.]

[BM] or [CCGT] Unit No	Meter Identification No.	Meter Location Code	Loss Adjustment Factor

Aggregation Methodology

[N/A]

or

*[Category A/B/C\* aggregation principles as set out in the latest published version of the document entitled "Methodology Document for the Aggregation of Reactive Power Metering" shall apply]*

*\* Delete as applicable*



**Part III**  
**Calculation of Reactive Power Capability**  
**at the Commercial Boundary**

For the purposes of Appendix 8 to the **CUSC Schedule**, the following table shows the reactive load applicable to each of the relevant **BM Units**, constituting the respective value  $Q_{ts}$  referred to therein:-

<b>Reactive Load</b>	
<b>BM Unit</b>	<b><math>Q_{ts}</math></b>

**APPENDIX 1 – DATA (Cont.)**  
**SECTION B (FREQUENCY RESPONSE)**  
**Part I - Frequency Response Data**

Station:  
 BM Unit Nos.

Table 1		Low Frequency Response – Mode A					
Genset De-Load (MW)	$\delta f_p$ (Hz)	Primary Response (MW)	Secondary Response (MW)				
			$\delta f_s = -0.1\text{Hz}$	$\delta f_s = -0.2\text{Hz}$	$\delta f_s = -0.3\text{Hz}$	$\delta f_s = -0.4\text{Hz}$	$\delta f_s = -0.5\text{Hz}$
	-0.1						
	-0.2						
	-0.3						
	-0.4						
	-0.5						
	-0.6						
	-0.7						
	-0.8						
	-0.1						
	-0.2						
	-0.3						
	-0.4						
	-0.5						
	-0.6						
	-0.7						
	-0.8						
	-0.1						
	-0.2						
	-0.3						
	-0.4						
	-0.5						
	-0.6						
	-0.7						
	-0.8						
	-0.1						
	-0.2						
	-0.3						
	-0.4						
	-0.5						
	-0.6						
	-0.7						
	-0.8						
	-0.1						
	-0.2						
	-0.3						
	-0.4						
	-0.5						
	-0.6						
	-0.7						
	-0.8						
	-0.1						
	-0.2						
	-0.3						
	-0.4						
	-0.5						
	-0.6						
	-0.7						
	-0.8						

Station:  
 BM Unit Nos:

Table 2	High Frequency Response (MW) - Mode A				
Genset De-Load (MW)	Frequency Deviation from Target Frequency				
	$\delta f_h = +0.1$ Hz	$\delta f_h = +0.2$ Hz	$\delta f_h = +0.3$ Hz	$\delta f_h = +0.4$ Hz	$\delta f_h = +0.5$ Hz

[In relation to the levels of **Response** capability pursuant to Paragraph 4.1.3 of **CUSC** and Table 2 above it is agreed that for low operating outputs, the **High Frequency Response** capability will be limited such that the generation level will under normal operating conditions not be caused to drop below [ ] MW.]

For the purpose of Paragraph 4.1.3.11(a) of the **CUSC** the level of **Response** capability for a **Frequency Deviation** of 0.0 Hz shall be 0.0 MW.

**Part II**

**Frequency Response Summary Data**

Station:  
BM Unit Nos:

Table 1	Frequency Response Capability Summary - Mode A		
Genset De-Load (MW)	Primary Response @-0.5Hz (MW)	Secondary Response @-0.2Hz (MW)	High Frequency Response @+0.5Hz (MW)
	P <sub>MW</sub>	S <sub>MW</sub>	H <sub>MW</sub>

Table 2	Plant Configuration Adjustment Factor K <sub>GRC</sub> – Mode A
1 Gas Turbine and 1 Steam Turbine	
1 Gas Turbine	

*(or whatever configuration is appropriate)*

**Part III**  
**Frequency Response - Permissible Combinations**

Station:  
BM Unit Nos:

Table 1	Mode A Response	
Primary Response	✓	✓
Secondary Response		✓
High Frequency Response	✓	✓

**Part IV**  
**Frequency Response Power Delivery Data**

Station:  
BM Unit Nos:

<b>Primary Response Power Delivery – Mode A</b>						
Frequency Deviation (Hz)	Genset De-load (MW)					
-0.1						
-0.2						
-0.3						
-0.4						
-0.5						

<b>Primary &amp; Secondary Response Power Delivery – Mode A</b>						
Frequency Deviation (Hz)	Genset De-load (MW)					
-0.1						
-0.2						
-0.3						
-0.4						
-0.5						

<b>High Frequency Response Power Delivery – Mode A</b>						
Frequency Deviation (Hz)	Genset De-load (MW)					
+0.1						
+0.2						
+0.3						
+0.4						
+0.5						

The figures for genset deload in the tables shall be taken from the figures for genset deload shown in the tables Frequency Response Capability Data tables in Part I.

**APPENDIX 2 - PRICES**

**SECTION A (REACTIVE POWER)**

**Not Used**

**APPENDIX 2**

**SECTION B (FREQUENCY RESPONSE)**

**PAYMENT RATES**

Table 1	Payment Rates	
Response Type	Payment Code	Payment Rate (£/MW/h)
Primary Response	P <sub>PR</sub>	
Secondary Response	S <sub>PR</sub>	
High Frequency Response	H <sub>PR</sub>	

### APPENDIX 3 – FURTHER DEFINITIONS

“BM Units”	<i>[identify]</i>
"Frequency Sensitive Mode"	a <b>Genset</b> operating mode which will result in the <b>Active Power</b> output changing, in response to a change in <b>System Frequency</b> , in a direction which assists in the recovery to <b>Target Frequency</b> by operating so as to provide <b>Primary Response</b> and/or <b>Secondary Response</b> and/or <b>High Frequency Response</b> ;
"Full Output"	the meaning attributed to it in <b>Grid Code BC 2.A.3.1</b> ;
"Generator Performance Chart"	a diagram which shows the MW and Mvar capability limits within which a <b>BM Unit</b> will be expected to operate under steady state conditions;
"Minimum Output"	the meaning attributed to it in <b>Grid Code BC 2.A.3.1</b> ;
“Mode A”	in relation to <b>Primary, Secondary</b> and/or <b>High Frequency Response</b> means the levels of <b>Response</b> set out in relation thereto in Table 1 and/or (as applicable) Table 2 of Appendix 1, Section B, Part I;
“Parties”	the parties to this <b>Mandatory Services Agreement</b> ;



“ <b>Reactive Power Zone</b> ”	means those separate areas of England and Wales identified as zones in the Seven Year Statement for 1997 for the purposes of specifying local <b>Reactive Power</b> capability and need;
“ <b>Relevant Zone</b> ”	the <b>Reactive Power Zone</b> in which the <b>BM Units</b> are situated, which for convenience only shall be specified in Appendix 1, Section A, Part I;
“ <b>Under-excitation Limiter</b> ”	the meaning attributed to it in the <b>Grid Code</b> ;
$\delta f_h$	a <b>Frequency Deviation</b> from <b>Target Frequency</b> which is achieved 10 seconds from the time of the <b>Frequency</b> change and is sustained thereafter;
$\delta f_p$	a <b>Frequency Deviation</b> from <b>Target Frequency</b> which is achieved 10 seconds from the time of the <b>Frequency</b> change and is sustained for a further 20 seconds;
$\delta f_s$	a <b>Frequency Deviation</b> from <b>Target Frequency</b> which is achieved 30 seconds from the time of the <b>Frequency</b> change and is sustained for a further 30 minutes.

## **CUSC – SCHEDULE 3**

### **CONTENTS**

#### **Part I Balancing Services Market Mechanisms – Reactive Power**

1. Definitions
2. Obligatory Reactive Power Service – Default Payment Arrangements
3. Obligatory Reactive Power Service and Enhanced Reactive Power Services – Market Payment Mechanism
4. Amendment and Conclusion of Mandatory Services Agreements
5. Statutory and Regulatory Obligations
6. Redundant Provisions

#### **Appendices**

- Appendix 1 Obligatory Reactive Power Service – Default Payment Arrangements
- Appendix 2 Obligatory Reactive Power Service and Enhanced Reactive Power Services – Market Mechanism
- Appendix 3 Technical Data
- Appendix 4 Metering
- Appendix 5 Submission of Tenders
- Appendix 6 Qualification and Evaluation Criteria
- Appendix 7 Charging Principles
- Appendix 8 Calculation of Reactive Power Capability at the Commercial Boundary
- Appendix 9 Redundant Provisions

#### **Part II Not Used**

## **SCHEDULE 3**

### **BALANCING SERVICES**

#### **Part I**

#### **Balancing Services Market Mechanisms - Reactive Power**

##### **1 Definitions and Interpretations**

- 1.1 For the purpose of this Part I and the Appendices, “**Obligatory Reactive Power Service**” means the **Mandatory Ancillary Service** referred to in **Grid Code [CC 8.1]** which the relevant **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 a relevant **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 **NGC**, the **Transmission Licence** as may be specified in such direction) in respect of the supply of **Reactive Power** (otherwise than by means of synchronous or static compensation) and in respect of the required **Reactive Power** capability referred to in **Grid Code [CC 6.3.2]**, which shall comprise in relation to a **Generating Unit**, compliance by the relevant **User** in all respects with all provisions of the **Grid Code** applicable to it relating to that supply of **Reactive Power** and required **Reactive Power** capability, together with the provision of such despatch facilities (including the submission to **NGC** of all relevant technical, planning and other data in connection therewith) and metering facilities (meeting the requirements of Appendix 4), and upon such terms, as shall be set out in a **Mandatory Services Agreement** entered into between **NGC** and the relevant **User**.

For the avoidance of doubt, “**Obligatory Reactive Power Service**” when used in this Part I and the Appendices excludes provision of **Reactive Power** capability from **Synchronous Compensation** and from static compensation equipment, and the production of **Reactive Power** pursuant thereto.

- 1.2 For the purpose of this Part I and the Appendices, “**Enhanced Reactive Power Service**” means the **Commercial Ancillary Service** of:-

- (a) the provision of **Reactive Power** capability of a **Generating Unit** in excess of that which a **User** is obliged to provide from that **Generating Unit** under and in accordance with the **Connection Conditions** of the **Grid Code** and the production of **Reactive Power** pursuant thereto, which a **User** may agree to provide and which is capable of being made available to, and utilised by, **NGC** in accordance with the **Balancing Codes** of the **Grid Code** (or as may otherwise be agreed in writing between **NGC** and a **User**) for the purposes of voltage support on the **NGC-GB Transmission System**, upon and subject to such terms as may be agreed in writing between **NGC** and such **User**; or
  - (b) the provision of **Reactive Power** capability from **Synchronous Compensation** or from static compensation equipment, and the production of **Reactive Power** pursuant thereto, which a **User** or any other person may agree to provide and which is capable of being made available to, and utilised by, **NGC** for the purposes of voltage support on the **NGC-GB Transmission System**, upon and subject to such terms as may be agreed in writing between **NGC** and such **User** or other person; or
  - (c) such other provision or enhancement of capability of **Plant** and/or **Apparatus** or other equipment to generate or absorb **Reactive Power**, and the production of **Reactive Power** pursuant thereto, which a **User** or any other person may agree to provide and which is capable of being made available to, and utilised by, **NGC** for the purposes of voltage support on the **NGC-GB Transmission System**, upon and subject to such terms as may be agreed in writing between **NGC** and such **User** or other person.
- 1.3 Unless otherwise defined in the **CUSC**, terms and expressions found in the **Grid Code** have the same meanings, interpretations and constructions in this Part I and the Appendices.
- 1.4 In this Part I and the Appendices, except where the context otherwise requires, references to a particular Appendix, Part, Section, sub-section, Paragraph or sub-Paragraph shall be a reference to a particular Appendix to or part of this Part I or, as the case may be, that Section, sub-section, Paragraph or sub-Paragraph in this Part I.

## **2. Obligatory Reactive Power Service – Default Payment Arrangements**

- 2.1 Notwithstanding any other provision of the **CUSC**, the provisions of this Part I and the Appendices, together with the **Mandatory Services Agreements** referred to in sub-Paragraph 2.6, shall govern the rights and obligations of **NGC** and relevant **Users** with respect to payments to be made by **NGC** to such **Users** for the provision of the **Obligatory Reactive Power Service**.
- 2.2 Subject always to Paragraph 3, and notwithstanding the provisions of any **Ancillary Services Agreement** now or hereafter in effect (but subject always to sub-Paragraph 4.2), the payments to be made by **NGC** to **Users** for the provision of the **Obligatory Reactive Power Service** in all **Mandatory Services Agreements** under which **Users** are or will be paid for the **Obligatory Reactive Power Service** shall, subject always to sub-Paragraph 2.7, comprise solely payments for utilisation determined in respect of each **Settlement Period** in accordance with sub-Paragraph 2.3.
- 2.3 Save to the extent and for the duration of any **Market Agreement** (as defined in sub-Paragraph 3.1) which may be entered into between **NGC** and a **User** as referred to in Paragraph 3 the utilisation payment for provision of the **Obligatory Reactive Power Service** shall be determined in accordance with the provisions of Appendix 1.
- 2.4 The Parties acknowledge and agree that, as at 1<sup>st</sup> October 1997:-
- (a) the totality of payments for the provision of the **Obligatory Reactive Power Service**, determined in accordance with the provisions of this Paragraph 2, reflect so far as reasonably practicable the overall variable costs (on the basis of the charging principles set out in Appendix 7) incurred across all relevant **Generating Units** of the provision of the **Obligatory Reactive Power Service** (whether or not payments are made in respect of those **Generating Units** pursuant to this Paragraph 2 or pursuant to **Market Agreements** entered into in accordance with Paragraph 3); and
  - (b) such totality of payments will continue to reflect those overall variable costs notwithstanding all and any variations thereto reasonably anticipated at such date.
- 2.5 It is hereby agreed and acknowledged that nothing in this Part I and the Appendices shall affect in any way the obligation on each **User**

to comply with the provisions of the **Grid Code** insofar as they relate to **Reactive Power**. For the avoidance of doubt, and without limiting the foregoing, it is hereby agreed and acknowledged that, notwithstanding that the payments for the **Obligatory Reactive Power Service** shall comprise solely payments for utilisation, nothing in this Part I and the Appendices shall relieve **Users** from the obligations to comply with the provisions of the **Grid Code** in relation to **Reactive Power** by virtue of Paragraph 6.3.3 of the **CUSC** or otherwise howsoever.

- 2.6 **Mandatory Services Agreements** have been and will continue to be entered into bilaterally between **NGC** and **Users** but it is intended that, subject as provided below, **Mandatory Services Agreements** between **NGC** and **Users** providing the **Obligatory Reactive Power Service** will be amended or (if not in existence when this Part I takes effect) concluded so as to give effect to the provisions of sub-Paragraphs 2.2 and 2.3. Subject always to sub-Paragraphs 2.8 and 4.2, **NGC** and each relevant **User** therefore agree, as soon as reasonably practicable, to amend the existing **Mandatory Services Agreement** or conclude a new **Mandatory Services Agreement** in respect of each relevant **Generating Unit** in order to give effect to the provisions of sub-Paragraphs 2.2 and 2.3.
- 2.7 For the avoidance of doubt, no payments referred to in this Paragraph 2 shall be payable by **NGC** to a **User** in relation to any **Generating Unit** unless and until the relevant **Mandatory Services Agreement** is so amended or concluded as provided in sub-Paragraph 2.6.
- 2.8 Notwithstanding the foregoing provisions of this Paragraph 2, and without prejudice to Paragraph 5, **NGC** shall only be obliged to amend or conclude any **Mandatory Services Agreement** with regard to any **Generating Unit** if:-
- (a) the leading or lagging **Reactive Power** capability required of that **Generating Unit** in accordance with **Grid Code [CC 6.3.2]** is 15 Mvar or more (measured at the **Commercial Boundary**); and
  - (b) there exists in relation to that **Generating Unit** metering facilities meeting the requirements of Appendix 4.

3. **Obligatory Reactive Power Service and Enhanced Reactive Power Service – Market Payment Mechanism**

3.1 Nothing in this Part I and the Appendices, and nothing in any **Mandatory Services Agreement** entered into or amended in accordance with sub-Paragraph 2.6, shall prevent or restrict:-

- (a) the entering into of an **Ancillary Services Agreement** or the amendment of any **Mandatory Services Agreement** between **NGC** and any **User** to provide for the making of payments by **NGC** to that **User** for the provision of the **Obligatory Reactive Power Service** on an alternative basis to that set out or referred to in Paragraph 2; or
- (b) the entering of an **Ancillary Services Agreement** between **NGC** and any **User** (or other person) for the provision of an **Enhanced Reactive Power Service**,

and any such agreement so entered into in accordance with the principles contained in sub-Paragraph 3.3 is referred to in this Part I and the Appendices as a “**Market Agreement**”.

3.2 The coming into effect of a **Market Agreement** in relation to any **Generating Unit** shall, in respect of that **Generating Unit**, suspend and replace for the duration thereof the provisions for payment for the **Obligatory Reactive Power Service** (if applicable) set out or referred to in Paragraph 2. In such a case, and for the avoidance of doubt, with effect from the expiry or termination of the **Market Agreement**, the provisions for payment for the **Obligatory Reactive Power Service** set out or referred to in Paragraph 2 shall in relation to that **Generating Unit** cease to be suspended and shall resume full force and effect.

3.3 The following principles shall govern the entering into of **Market Agreements**:-

- (a) *Relevant Dates*
  - (i) Each **Market Agreement** will commence on either 1<sup>st</sup> April or 1<sup>st</sup> October, whichever next follows the submission by **NGC** of the package of information as more particularly described in sub-Paragraph 3.3(b)(i) (“**Contract Start Days**”).
  - (ii) For the purposes of this sub-Paragraph 3.3:-

- (a) a "**Market Day**" shall be a date not earlier than twenty weeks and not later than sixteen weeks prior to a **Contract Start Day**; and
  - (b) a "**Tender Period**" shall be a period of at least eight consecutive weeks commencing on a date nominated by **NGC** and ending on a **Market Day**.
- (b) *Submission of **Tender** information by **NGC***
  - (i) **NGC** shall, acting reasonably and having regard to the principles contained in this sub-Paragraph 3.3, compile a package of information for the use of interested parties comprising technical, procedural and contractual requirements, directions and specifications to govern **Market Agreements** to take effect from the following **Contract Start Day**. **NGC** shall ensure that such requirements, directions and specifications do not conflict with any of the principles contained in this sub-Paragraph 3.3 and so far as reasonably practicable do not discriminate between **Tenderers**.
  - (ii) Prior to the commencement of each **Tender Period**, **NGC** shall provide to all persons who shall by then have requested the same the package of information as more particularly described in sub-Paragraph 3.3(b)(i).
- (c) *Submission of **Tenders***

During the **Tender Period**, but for the avoidance of doubt not later than the **Market Day**, an interested party may submit to **NGC**:-

  - (i) in relation to any **Generating Unit** providing the **Obligatory Reactive Power Service**, prices for and **Tendered Capability Breakpoints** relating to the provision thereof; or
  - (ii) in relation to that **Generating Unit**, a tender for provision of the **Enhanced Reactive Power Service** specified in sub-Paragraph 1.2(a) and/or (b) and/or (c); and/or



- (iii) in relation to any other **Generating Unit** or other **Plant and Apparatus** (or other equipment), a tender for provision of the **Enhanced Reactive Power Service** specified in sub-Paragraph 1.2(b) and/or (c),

in each case in accordance with sub-Paragraph 3.3(d). All such submissions are referred to in this Part I and the Appendices as "**Tenders**", and "**Tenderers**" shall be construed accordingly.

(d) *Form of Tenders*

- (i) All **Tenders** submitted by **Users** which comprise:-
  - (a) prices for and **Tendered Capability Breakpoints** relating to the provision of the **Obligatory Reactive Power Service**; and
  - (b) terms for the provision of the **Enhanced Reactive Power Service** specified in sub-Paragraph 1.2(a),

shall be completed on the basis that payment will be determined in respect of each **Settlement Period** in accordance with the formulae and other provisions set out in Appendix 2 and in the manner set out in Appendix 5.

- (ii) All other **Tenders** (including without limitation those comprising terms for the provision of the **Enhanced Reactive Power Service** specified in sub-Paragraphs 1.2(b) and (c)) shall be submitted in accordance with and on the basis of such (if any) reasonable directions given by **NGC** in the package of information referred to in sub-Paragraph 3.3(b)(i) or otherwise in such manner as may be reasonably specified by **NGC** from time to time, which directions shall in either case be, so far as reasonably practicable, consistent with the provisions of Appendices 2 and 5.
- (iii) Each **Tender** comprising prices for and **Tendered Capability Breakpoints** relating to the provision of the **Obligatory Reactive Power Service** shall be submitted on the basis that **NGC** may only select all (and not some) of the prices and **Tendered Capability Breakpoints** comprised therein.

- (iv) Save where expressly provided otherwise in a **Tender**, each **Tender** comprising terms for the provision of an **Enhanced Reactive Power Service** shall be treated as having been submitted on the basis that **NGC** may select all or part only of the **Reactive Power** capability comprised therein (which, in the case of the **Enhanced Reactive Power Service** specified in sub-Paragraph 1.2(a), shall mean all or part only of the excess capability comprised therein).
  - (v) All **Tenders** shall be submitted in respect of periods of whole and consecutive calendar months, to be not less than twelve months and in multiples of six months, to commence on the next following **Contract Start Day**. Save where expressly provided otherwise in a **Tender**, a **Tender** (whether in relation to the **Obligatory Reactive Power Service** or an **Enhanced Reactive Power Service**) shall be treated as having been submitted on the basis that **NGC** may select all or part only of any period so tendered (in multiples of six months), subject to a minimum period of twelve consecutive months, commencing on the next following **Contract Start Day**.
- (e) *Qualification and Evaluation of **Tenders***
- (i) Each **Tender** must satisfy the mandatory qualification criteria set out in Section A of Appendix 6.
  - (ii) **NGC** shall evaluate and (without prejudice to sub-Paragraphs 3.3(d)(iii), (iv) and (v)) select **Tenders** (or part(s) thereof) on a basis consistent with its obligations under the **Act the Transmission Licence** and the **CUSC** and, subject thereto, in accordance with the evaluation criteria set out in Section B of Appendix 6. Without limitation, **NGC** reserves the right to require tests of a **Generating Unit** or other **Plant and Apparatus** (or other equipment), on a basis to be agreed with a **Tenderer**, as part of the evaluation of a **Tender**.
  - (iii) **NGC** shall use reasonable endeavours to evaluate **Tenders** within ten weeks from each **Market Day**.

(f) *Entering into **Market Agreements***

- (i) Having selected a **Tender** (or part(s) thereof) in accordance with sub-Paragraph 3.3(e), **NGC** shall notify the relevant **Tenderer** that it wishes to enter into a **Market Agreement** in respect thereof, and that **Tenderer** and **NGC** shall each use reasonable endeavours to agree the terms of, and enter into a **Market Agreement** in respect thereof as soon as reasonably practicable but in any event not later than 4 weeks prior to the relevant **Contract Start Day**. Notwithstanding the foregoing, if a **Market Agreement** has not been entered into by the date being 4 weeks prior to the relevant **Contract Start Day**, then either **NGC** or the **Tenderer** shall be entitled, provided that it shall have used all reasonable endeavours to agree the terms of, and enter into, the **Market Agreement** as aforesaid, to notify the other that it no longer wishes to enter into the **Market Agreement**, whereupon the **Tender** in question shall be deemed to be withdrawn.
- (ii) In the event of a deemed withdrawal of a **Tender** in the circumstances set out in sub-Paragraph 3.3(f)(i), **NGC** shall be entitled to re-evaluate and select all or part of any outstanding **Tenders** in accordance with sub-Paragraphs 3.3(e)(i) and (ii) and to notify one or more **Tenderers** if, in substitution for the **Tender** so deemed to be withdrawn, it wishes to enter into a **Market Agreement** in respect of any other **Tender** or **Tenders** (or part(s) thereof). Following such notification, **NGC** and each **Tenderer** in question shall use reasonable endeavours to agree the terms of, and enter into, a **Market Agreement** prior to the relevant **Contract Start Day**.
- (iii) If, in respect of any **Tender**, a **Market Agreement** is not entered into by the relevant **Contract Start Day**, that **Tender** shall be deemed to be withdrawn.
- (iv) Save where otherwise provided in this Paragraph 3, all **Market Agreements** must be entered into on the basis of the terms set out in the relevant **Tender** (or relevant part(s) thereof).

(g) *Legal Status of **Tenders***

For the avoidance of doubt, a **Tender** shall not constitute an offer open for acceptance by **NGC**, and in respect of any **Tender** (or part(s) thereof) selected by **NGC** pursuant to sub-Paragraph 3.3(e) or (f), neither the **Tenderer** in question nor **NGC** shall be obliged to provide or pay for the **Obligatory Reactive Power Service** and/or an **Enhanced Reactive Power Service** upon the terms of that **Tender** (or the relevant part(s) thereof) unless and to the extent that those terms are incorporated in a **Market Agreement** subsequently entered into.

(h) *Publication*

(i) Within the six weeks following each **Contract Start Day**, **NGC** shall provide to all persons requesting the same the following information:-

- (a) in respect of all **Market Agreements** then subsisting, prices and contracted **Reactive Power** capability on an individual **Tender** basis relating to the period from the immediately preceding **Contract Start Day** until the next following **Contract Start Day**;
- (b) in respect of all **Mandatory Services Agreements** and **Market Agreements** subsisting in respect of the six month period ending on the immediately preceding **Contract Start Day**, details of utilisation of Mvarh provided by individual **BM Units** (or, where relevant, other **Plant** and/or **Apparatus** or other equipment) pursuant to the **Obligatory Reactive Power Service** and **Enhanced Reactive Power Service**;
- (c) details of the circumstances surrounding any failure by **NGC** during the preceding six month period to perform any of its duties and responsibilities under this Paragraph 3 in the circumstances referred to in Paragraph 5; and
- (d) any other information reasonably considered by **NGC** to be pertinent to the **Tender** process,

and, to this extent, each relevant **User** consents to the disclosure by **NGC** of the information referred to in sub-sub-Paragraphs (a) and (b) above in so far as it relates to the provision of the **Obligatory Reactive Power Service** and (where applicable) an **Enhanced Reactive Power Service** from its **Generating Units** and/or other **Plant** and **Apparatus** (or other equipment).

- (ii) Without prejudice to the provision of information pursuant to sub-Paragraph 3.3(h)(i), **NGC** further agrees to use all reasonable endeavours to provide to all persons requesting the same, within the six weeks following each **Contract Start Day**, estimates of the Mvarh absorption and generation by the ~~NGC-GB~~ **Transmission System**, where used for the purposes of voltage support, during the preceding six month period.

#### **4. Amendment and Conclusion of Mandatory Services Agreements**

- 4.1 **NGC** and each relevant **User** shall promptly do all such acts and execute and deliver such agreements and other documentation as may be necessary to amend or conclude the relevant **Mandatory Services Agreements** so as to give effect to the provisions of this Part I and the Appendices as amended from time to time.
- 4.2 Sub-Paragraphs 2.6 and 4.1 shall not require **NGC** or any **User** to amend or conclude a **Mandatory Services Agreement** so as to give effect to this Part I and the Appendices if and to the extent that, in respect of any **Generating Unit**, **NGC** and such **User** shall have expressly agreed in writing that no payments shall be made by **NGC** to such **User** under an **Ancillary Services Agreement** for the provision of the **Obligatory Reactive Power Service** from that **Generating Unit**.

#### **5. Statutory and Regulatory Obligations**

- 5.1 Neither **NGC** nor any **User** shall be bound to perform any of its duties or responsibilities under this Part I and the Appendices (including without limitation with regard to the amending or concluding of **Mandatory Services Agreements** in accordance with sub-Paragraph 2.6 and the entering into of **Market Agreements** in accordance with Paragraph 3) if and to the extent that to do so would be likely to involve that party in breach of its duties and obligations (if any) under the **Act** of or any condition of a

**Licence.** Accordingly, nothing in this Part I and the Appendices shall preclude **NGC** from procuring the provision of any **Enhanced Reactive Power Service** in a manner otherwise than in accordance with Paragraph 3 in order to comply with its duties and obligations under the **Act** and/or any condition of the **Transmission Licence** to the extent such compliance cannot reasonably be assured by the performance of its duties and responsibilities under Paragraph 3.

- 5.2 Without prejudice to sub-Paragraph 5.1, **NGC** shall not be bound to comply with the provisions of sub-Paragraph 3.3(h) with regard to the disclosure of information to the extent that to do so would be likely to restrict, distort or prevent competition in the provision of the **Obligatory Reactive Power Service** and/or **Enhanced Reactive Power Service**.

## 6. **Redundant Provisions**

Certain redundant provisions of Schedule 5 to the **MCUSA** with respect to capability payments comprised within the default payment arrangements and matters for review which were applicable on and from 1 October 1997 but are of no continuing effect by effluxion of time or otherwise, together with other provisions contained elsewhere in this Part I and the Appendices which, prior to the **CUSC Implementation Date**, included reference to such provisions, are set out (or, as the case may be, repeated) for information purposes only in Appendix 9.

## APPENDIX 1

### Obligatory Reactive Power Service – Default Payment Arrangements

The provisions of this Appendix 1, as referred to in sub-Paragraph 2.2 of this Part I, shall apply to the calculation of default payments for provision of the **Obligatory Reactive Power Service** from **BM Units**. All payments shall be expressed in pounds sterling.

#### 1. Total Payment

$$\text{Total Payment (PT)} = \text{PU } [\text{£ per Settlement Period per BM Unit}]$$

where, subject always to paragraphs 5 and 6 below:

PU = the utilisation payment in respect of a **BM Unit** for a **Settlement Period** determined in accordance with paragraph 2 below.

#### 2. Utilisation Payment

$$\text{PU} = \text{BP}_U * U \quad [\text{£ per Settlement Period per BM Unit}]$$

Where

$$\text{BP}_U = \frac{46,270,000 * I * X}{42,054,693} \quad [\text{£/Mvarh}]$$

Where

I = defined in paragraph 3 below;

X = 1 (unless the circumstances in sub-paragraphs (a) through to (d) apply)

And where X shall be 0.2 in all **Settlement Periods** from (and including) that in which:-

- (a) the relevant **BM Unit** (or, in relation to a **CCGT Module**, any relevant **CCGT Unit**) fails a **Reactive Test** until (and including) the

**Settlement Period** in which a subsequent **Reactive Test** is passed in relation to that **BM Unit** (or **CCGT Unit** (as the case may be)); or

- (b) the **User** fails (other than pursuant to an instruction given by **NGC** or as permitted by the **Grid Code**) to set the automatic voltage regulator of the **BM Unit** (or, in relation to a **CCGT Module**, any relevant **CCGT Unit**) to a voltage following mode until (and including) the **Settlement Period** in which the **User** notifies **NGC** that the automatic voltage regulator is so set; or
- (c) the **BM Unit** fails to comply with a **Reactive Despatch Instruction** due to the fact that the **BM Unit** (or, in relation to a **CCGT Module**, any relevant **CCGT Unit**) is unable to increase and/or decrease its Mvar output (other than as a direct result of variations in **System** voltage) until (and including) the **Settlement Period** in which the **User** notifies **NGC** that the **BM Unit** is so able to comply; or
- (d) the **BM Unit** fails to have a Mvar range which includes the ability to provide zero Mvar at the **Commercial Boundary** until (and including) the **Settlement Period** in which the **User** notifies **NGC** that the **BM Unit** has or once more has such range; and

U = defined in Section 1 of Appendix 3

### 3. Indexation

The indexation factor I used in the formulae in paragraph 2 above shall with effect from 1<sup>st</sup> April in respect of each subsequent twelve month period ending 31<sup>st</sup> March, be determined as follows:-

$$I = \frac{RP1_2}{RP1_1}$$

where

For the period from (and including) 1<sup>st</sup> October, 1997 to (and including) 31<sup>st</sup> March, 1998  $RP1_2 = 155.4$ , and thereafter  $RP1_2$  is the RPI for March of the immediately preceding twelve month period ending 31<sup>st</sup> March.

$RP1_1$  is the RPI for March, 1994 (142.5).

The index used is the Retail Price Index (RPI) with 1987 = 100 base. The source of the RPI index is the monthly Department for Education and Employment "Employment Gazette".



In respect of all periods from (and including) 1<sup>st</sup> April, 2004 the indexation factor I applicable for the period from (and including) 1<sup>st</sup> April, 2003 to (and including) 31<sup>st</sup> March 2004 shall apply.

4. **Information Unavailable**

Where any information or data required by **NGC** for the calculation of payments to be made pursuant to this Part I for any twelve month period ending 31<sup>st</sup> March is not available to **NGC** at the relevant time, **NGC** shall calculate payments for that twelve month period based upon the amounts payable to **Users** for the immediately preceding twelve month period adjusted by **NGC** to reflect its best estimate of the unavailable information or data. Once such information or data is available, **NGC** shall accordingly make all consequential adjustments to the payments from itself to **Users** as soon as reasonably practicable thereafter to reflect any repayment or additional payment so required to be made by one party to the other in respect of the period from 1<sup>st</sup> April in such year until the date of such repayment or additional payment (including interest thereon at the **Base Rate**).

5. **Commissioning**

5.1 Save in relation to **BM Units** operational prior to 1<sup>st</sup> April, 1997 no utilisation payments referred to in this Appendix 1 shall fall due and payable to any **User** in respect of any **BM Unit** until the **Settlement Period** in which it is demonstrated to the reasonable satisfaction of **NGC**, having regard to industry practice, that the **BM Unit** (or, in the case of a **CCGT Module**, but subject always to sub-paragraph 5.4 below, each relevant **CCGT Unit**) complies with the provisions of **Grid Code CC 6.3.2** and **CC 6.3.4** or (where **NGC** in its sole discretion requires **Reactive Power** from a **BM Unit** before then for the purposes of security of the **NGC-GB Transmission System**) such earlier date as **NGC** may agree with a **User** in respect of that **BM Unit**.

5.2 Before any demonstration of compliance referred to in sub-paragraph 5.1 above, it shall be necessary for the **User** to demonstrate to **NGC's** reasonable satisfaction, having regard to industry practice, that the **BM Unit's** (or, in the case of a **CCGT Module**, each relevant **CCGT Unit's**) **Excitation System**, and in particular the under-excitation limiter, has been successfully commissioned and complies with the provisions of **Grid Code [CC 6.3.8]**.

5.3 For the avoidance of doubt the issue by **NGC** in relation to a **BM Unit** of a **Reactive Despatch Instruction** to unity power factor or zero Mvar shall neither imply by itself that **NGC** is reasonably satisfied with

compliance as referred to in sub-paragraph 5.1 above nor imply in relation to the **BM Unit** agreement by **NGC** of an earlier date as also referred to therein.

- 5.4 Until such time as it shall be demonstrated to the reasonable satisfaction of **NGC** that, in relation to a **CCGT Module**, all relevant **CCGT Units** comply with the provisions of **Grid Code [CC 6.3.2 and CC 6.3.4]** as referred to in sub-paragraph 5.1 above, it is the intention that utilisation payments shall fall due to a **User** in respect of that **CCGT Module** notwithstanding the provisions of sub-paragraph 5.1 above. For such period, and in relation to that **CCGT Module**, only, this Appendix 1 and the definitions of QC and QR set out in Appendix 3 shall be read and construed accordingly.

6. **De-energisation and Disconnection**

Subject to all rights and obligations of **NGC** and the **User** accrued at such date, utilisation payments referred to in this Appendix 1 shall cease to fall due and payable to any **User** in respect of any **BM Unit** with effect from the date of expiry or termination for whatever reason of the relevant **Mandatory Services Agreement** in accordance with its terms or (if earlier) with effect from the date of **De-energisation** or **Disconnection** of that **BM Unit** for any reason pursuant to the relevant **Bilateral Agreement** or the **CUSC**.

## Appendix 2

### Obligatory Reactive Power Service and Enhanced Reactive Power Services – Market Payment Mechanism

The provisions of this Appendix 2, as referred to in sub-Paragraph 3.3(d)(i) of this Part I, shall apply to the calculation of payments in respect of **Tenders** comprising prices for and **Tendered Capability Breakpoints** relating to the **Obligatory Reactive Power Service** and in respect of **Tenders** comprising terms for the provision of the **Enhanced Reactive Power Services** specified in sub-Paragraph 1.2(a) of this Part I, in each case in respect of **BM Units**. All payments shall be expressed in pounds sterling. All algebraic terms contained in this Appendix 2 shall bear the meanings set out in paragraph 1 below unless the context otherwise requires.

#### 1. Definitions

For the purposes of this Appendix 2, unless the context otherwise requires, the following terms shall have the following meanings:-

- CA1,CA2 and CA3 = the available capability prices (expressed to apply to both leading and lagging) (£/Mvar/h) (as more particularly described in paragraph 2 of Appendix 5) as specified in the relevant **Market Agreement**;
- CS1,CS2 and CS3 = the synchronised capability prices (expressed to apply to both leading and lagging) (£/Mvar/h) (as more particularly described in paragraph 2 of Appendix 5) as specified in the relevant **Market Agreement**;
- CU1,CU2 and CU3 = the utilisation prices (expressed to apply to both leading and lagging) (£/Mvarh) (as more particularly described in paragraph 2 of Appendix 5) as specified in the relevant **Market Agreement**;
- K = in respect of **CCGT Modules**, the relevant configuration factor as specified in the relevant **Market Agreement**, otherwise 1;
- $Q_{lead}$  = defined in Section 2 of Appendix 3;
- $Q_{lag}$  = defined in Section 2 of Appendix 3;

$QM_{ij}$	=	<b>BM Unit Metered Volume</b> (as defined in the <b>Balancing and Settlement Code</b> );
Q1, Q2 and Q3	=	the contracted capability breakpoints (expressed to apply to both leading and lagging) in whole Mvar as may be specified in the relevant <b>Market Agreement</b> , where: <ul style="list-style-type: none"> <li>(i) Q1 = TQ1, Q2 = TQ2 and Q3 = QC where <math>TQ2 &lt; QC \leq TQ3</math></li> <li>(ii) Q1 = TQ1, Q2 = QC Q3 = null where <math>TQ1 &lt; QC \leq TQ2</math></li> <li>(iii) Q1 = QC, Q2 = null Q3 = null where <math>0 \leq QC \leq TQ1</math></li> </ul>
SPD	=	the duration of a <b>Settlement Period</b> , being 0.5;
TQ1, TQ2 and TQ3	=	defined in Appendix 5;
$U_{lead}$	=	defined in Section 1 of Appendix 3;
$U_{lag}$	=	defined in Section 1 of Appendix 3;
V	=	the system voltage range performance factor (expressed to apply to both leading and lagging) as calculated in accordance with the formulae set out in the relevant <b>Market Agreement</b> , otherwise 1;
$MEL_i(t)$	=	<b>Maximum Export Limit</b> (as defined in the <b>Balancing and Settlement Code</b> ).

## 2. **Total Payment**

Total Payment (PTM) = PUM + PCA + PCS      *[£ per Settlement Period per BM Unit]*

where, subject always to paragraphs 6, 7 and 8 below:

PUM = the utilisation payment in respect of a **BM Unit** for a **Settlement Period** determined in accordance with paragraph 3 below;

PCA = the available capability payment in respect of a **BM Unit** for a **Settlement Period** determined in accordance with paragraph 4 below; and

PCS = the synchronised capability payment in respect of a **BM Unit** for a **Settlement Period** determined in accordance with paragraph 5 below.

Provided always that PTM shall be 0 in all **Settlement Periods** from and including that in which:-

- (a) the relevant **BM Unit** (or, in relation to a **CCGT Module**, any relevant **CCGT Unit**) fails a **Reactive Test** or a **Contract Test** until (and including) the **Settlement Period** in which a subsequent **Reactive Test** or **Contract Test** (as the case may be) is passed in relation to that **BM Unit** (or **CCGT Unit** (as the case may be)); or
- (b) the **User** fails (other than pursuant to an instruction given by **NGC** or as permitted by the **Grid Code**) to set the automatic voltage regulator of the **BM Unit** (or, in relation to a **CCGT Module**, any relevant **CCGT Unit**) to a voltage following mode until (and including) the **Settlement Period** in which the **User** notifies **NGC** that the automatic voltage regulator is so set; or
- (c) the **BM Unit** fails to comply with a **Reactive Despatch Instruction** due to the fact that the **BM Unit** (or, in relation to a **CCGT Module**, any relevant **CCGT Unit**) is unable to increase and/or decrease its **Mvar Output** (other than as a direct result of variations in **System** voltage) until (and including) the **Settlement Period** in which the **User** notifies **NGC** that the **BM Unit** is so able to comply; or
- (d) the **BM Unit** fails to have a **Mvar** range which includes the ability to provide zero **Mvar** at the **Commercial Boundary** until (and including) the **Settlement Period** in which the **User** notifies **NGC** that the **BM Unit** has or once more has such range.

### 3 **Utilisation Payment**

#### 3.1 For each **Settlement Period**,

$$PUM = PUM_{lead} + PUM_{lag} \quad [\text{£ per Settlement Period per BM Unit}]$$

where

$PUM_{lead}$  = defined in sub-paragraph 3.2 below;

$PUM_{lag}$  = defined in sub-paragraph 3.3 below.

#### 3.2 Leading Utilisation ( $PUM_{lead}$ )

There are four mutually exclusive cases (a), (b), (c) or (d):

(a) If  $Q2_{lead} < (U_{lead}/SPD)$  and both  $Q2_{lead}$  and  $Q3_{lead}$  are not deemed null  
(i.e. there are three breakpoints)

then  $PUM_{lead} = SPD * [(CU1_{lead} * Q1_{lead}) + (CU2_{lead} * (Q2_{lead} - Q1_{lead})) + (CU3_{lead} * ((U_{lead}/SPD) - Q2_{lead}))]$

(b) If either  $Q1_{lead} < (U_{lead}/SPD) \leq Q2_{lead}$  and  $Q2_{lead}$  is not deemed null  
(i.e. there are at least two breakpoints)

or  $Q2_{lead} < (U_{lead}/SPD)$  and  $Q2_{lead}$  is not deemed null and  $Q3$  is deemed null  
(i.e. there are only two breakpoints)

then  $PUM_{lead} = SPD * [(CU1_{lead} * Q1_{lead}) + (CU2_{lead} * ((U_{lead}/SPD) - Q1_{lead}))]$

(c) If either  $0 < (U_{lead}/SPD) \leq Q1_{lead}$   
(i.e. irrespective of the number of breakpoints)

or  $Q1_{lead} < (U_{lead}/SPD)$  and  $Q2_{lead}$  and  $Q3_{lead}$  are deemed null  
(i.e. there is only one breakpoint)

then  $PUM_{lead} = CU1_{lead} * U_{lead}$

(d) otherwise

$PUM_{lead} = 0$  [£ per **Settlement Period per BM Unit**]

### 3.3 Lagging Utilisation ( $PUM_{lag}$ )

There are four mutually exclusive cases (a), (b), (c) or (d):

(a) If  $Q2_{lag} < (U_{lag}/SPD)$  and both  $Q2_{lag}$  and  $Q3_{lag}$  are not deemed null  
(i.e. there are three breakpoints)

then  $PUM_{lag} = SPD * [(CU1_{lag} * Q1_{lag}) + (CU2_{lag} * (Q2_{lag} - Q1_{lag})) + (CU3_{lag} * ((U_{lag}/SPD) - Q2_{lag}))]$

(b) If

either  $Q1_{lag} < (U_{lag}/SPD) \leq Q2_{lag}$  and  $Q2_{lag}$  is not deemed null  
(i.e. there are at least two breakpoints)

or  $Q2_{lag} < (U_{lag}/SPD)$  and  $Q2_{lag}$  is not deemed null and  $Q3$  is deemed null  
(i.e. there are only two breakpoints)

then  $PUM_{lag} = SPD * [(CU1_{lag} * Q1_{lag}) + (CU2_{lag} * ((U_{lag}/SPD) - Q1_{lag}))]$

(c) If

either  $0 < (U_{lag}/SPD) \leq Q1_{lag}$   
(i.e. irrespective of the number of breakpoints)

or  $Q1_{lag} < (U_{lag}/SPD)$  and  $Q2_{lag}$  and  $Q3_{lag}$  are deemed to be null  
(i.e. there is only one breakpoint)

then  $PUM_{lag} = CU1_{lag} * U_{lag}$

(d) otherwise

$PUM_{lag} = 0$  [£ per **Settlement Period per BM Unit**]

#### 4 **Available Capability Payment**

##### 4.1 For each **Settlement Period**,

where at any time  $MEL_i(t) > 10\text{MW}$

then  $PCA = K * ((V_{lead} * PCA_{lead}) + (V_{lag} * PCA_{lag}))$

otherwise

$PCA = 0$  *[£ per **Settlement Period** per **BM Unit**]*

where

$PCA_{lead}$  = defined in sub-paragraph 4.2 below;

$PCA_{lag}$  = defined in sub-paragraph 4.3 below.

##### 4.2 Available Leading Capability ( $PCA_{lead}$ )

There are four mutually exclusive cases (a), (b), (c) or (d):

(a) If  $Q2_{lead} < Q_{lead} \leq Q3_{lead}$  and both  $Q2_{lead}$  and  $Q3_{lead}$  are not deemed null  
*(i.e. there are three breakpoints)*

then  $PCA_{lead} = SPD * [(CA1_{lead} * Q1_{lead}) + (CA2_{lead} * (Q2_{lead} - Q1_{lead})) + (CA3_{lead} * (Q_{lead} - Q2_{lead}))]$

(b) If  $Q1_{lead} < Q_{lead} \leq Q2_{lead}$  and  $Q2_{lead}$  is not deemed null  
*(i.e. there are at least two breakpoints)*

then  $PCA_{lead} = SPD * [(CA1_{lead} * Q1_{lead}) + (CA2_{lead} * (Q_{lead} - Q1_{lead}))]$

(c) If  $0 < Q_{lead} \leq Q1_{lead}$   
*(i.e. irrespective of the number of breakpoints)*

then  $PCA_{lead} = SPD * CA1_{lead} * Q_{lead}$

(d) otherwise

$PCA_{lead} = 0$  *[£ per **Settlement Period** per **BM Unit**]*



#### 4.3 Available Lagging Capability ( $PCA_{lag}$ )

There are four mutually exclusive cases (a), (b), (c) or (d):

(a) If  $Q2_{lag} < Q_{lag} \leq Q3_{lag}$  and  $Q2_{lag}$  and  $Q3_{lag}$  are not deemed null  
(i.e. there are three breakpoints)

then  $PCA_{lag} = SPD * [(CA1_{lag} * Q1_{lag}) + (CA2_{lag} * (Q2_{lag} - Q1_{lag})) + (CA3_{lag} * (Q_{lag} - Q2_{lag}))]$

(b) If  $Q1_{lag} < Q_{lag} \leq Q2_{lag}$  and  $Q2_{lag}$  is not deemed null  
(i.e. there are at least two breakpoints)

then  $PCA_{lag} = SPD * [(CA1_{lag} * Q1_{lag}) + (CA2_{lag} * (Q_{lag} - Q1_{lag}))]$

(c) If  $0 < Q_{lag} \leq Q1_{lag}$   
(i.e. irrespective of the number of breakpoints)

then  $PCA_{lag} = SPD * CA1_{lag} * Q_{lag}$

(d) otherwise

$PCA_{lag} = 0$  [£ per **Settlement Period** per **BM Unit**]

### 5. Synchronised Capability Payment

5.1 For each **Settlement Period**,

where  $QM_{ij} > 5MWh$

$PCS = K * ((V_{lead} * PCS_{lead}) + (V_{lag} * PCS_{lag}))$

Otherwise

$PCS = 0$  [£ per **Settlement Period** per **BM Unit**]

where

$PCS_{lead}$  = defined in sub-paragraph 5.2 below;

$PCS_{lag}$  = defined in sub-paragraph 5.3 below.

## 5.2 Synchronised Leading Capability ( $PCS_{lead}$ )

There are four mutually exclusive cases (a), (b), (c) and (d):

- (a) If  $Q2_{lead} < Q_{lead} \leq Q3_{lead}$  and  $Q2_{lead}$  and  $Q3_{lead}$  are not deemed null  
(i.e. there are three breakpoints)
- then  $PCS_{lead} = SPD * [(CS1_{lead} * Q1_{lead}) + (CS2_{lead} * (Q2_{lead} - Q1_{lead})) + (CS3_{lead} * (Q_{lead} - Q2_{lead}))]$
- (b) If  $Q1_{lead} < Q_{lead} \leq Q2_{lead}$  and  $Q2_{lead}$  is not deemed null  
(i.e. there are at least two breakpoints)
- then  $PCS_{lead} = SPD * [(CS1_{lead} * Q1_{lead}) + (CS2_{lead} * (Q_{lead} - Q1_{lead}))]$
- (c) If  $0 < Q_{lead} \leq Q1_{lead}$   
(i.e. irrespective of the number of breakpoints)
- then  $PCS_{lead} = SPD * CS1_{lead} * Q_{lead}$
- (d) otherwise
- $PCS_{lead} = 0$  [**£ per Settlement Period per BM Unit**]

## 5.3 Synchronised Lagging Capability ( $PCS_{lag}$ )

There are four mutually exclusive cases (a), (b), (c) or (d):

- (a) If  $Q2_{lag} < Q_{lag} \leq Q3_{lag}$  and  $Q2_{lag}$  and  $Q3_{lag}$  are not deemed null  
(i.e. there are three breakpoints)
- then  $PCS_{lag} = SPD * [(CS1_{lag} * Q1_{lag}) + (CS2_{lag} * (Q2_{lag} - Q1_{lag})) + (CS3_{lag} * (Q_{lag} - Q2_{lag}))]$
- (b) If  $Q1_{lag} < Q_{lag} \leq Q2_{lag}$  and  $Q2_{lag}$  is not deemed null  
(i.e. there are at least two breakpoints)
- then  $PCS_{lag} = SPD * [(CS1_{lag} * Q1_{lag}) + (CS2_{lag} * (Q_{lag} - Q1_{lag}))]$
- (c) If  $0 < Q_{lag} \leq Q1_{lag}$   
(i.e. irrespective of the number of breakpoints)

then  $PCS_{lag} = SPD * CS1_{lag} * Q_{lag}$

(d) otherwise

$PCS_{lag} = 0$  [(£ per **Settlement Period per BM Unit**)]

## 6. Testing

**NGC** reserves the right to require to be included in any **Market Agreement**, on a basis to be agreed with a **Tenderer**, terms with regard to the carrying out of a **Contract Test**. The provisions of **Grid Code [OC 5.5.1]** relating to the carrying out of a **Reactive Test** (including re-tests) shall apply to the carrying out of **Contract Tests**.

## 7. Termination

Save where expressly provided otherwise in a **Tender**, each **Market Agreement** shall contain terms entitling **NGC** to terminate that **Market Agreement** in the event that the **User** fails to provide a satisfactory level of service and entitling the **User** to terminate the **Market Agreement** in the event that **NGC** fails (without reasonable cause) to make due payment to the **User**, in each case as more particularly defined therein.

## 8. De-energisation and Disconnection

Subject to all rights and obligations of **NGC** and the **User** accrued at such date, utilisation, available capability and synchronised capability payments referred to in this Appendix 2 shall cease to fall due and payable to any **User** in respect of any **BM Unit** with effect from the date of expiry or termination for whatever reason of the relevant **Market Agreement** in accordance with its terms or (if earlier) with effect from the date of **De-energisation** or **Disconnection** of that **BM Unit** for any reason pursuant to the relevant **Bilateral Agreement** or the **CUSC**.

### **Appendix 3**

#### **Technical Data**

##### **Section 1** **Reactive Utilisation Data**

This Section 1 of Appendix 3 specifies the technical data to be used to determine the utilisation payments to be made in accordance with Appendix 1 and Appendix 2. For the purposes thereof, the following terms shall have the following meanings:-

$U_{lead}$  = leading Mvarh produced by the relevant **BM Unit** at the **Commercial Boundary** in the relevant **Settlement Period** measured by metering meeting the requirements of Appendix 4 and as specified in the relevant **Mandatory Services Agreement** and/or **Market Agreement** where the **User** has complied with a **Reactive Despatch Instruction** in accordance with **Grid Code [BC 2]**, otherwise 0;

$U_{lag}$  = lagging Mvarh produced by the relevant **BM Unit** at the **Commercial Boundary** in the relevant **Settlement Period** measured by metering meeting the requirements of Appendix 4 and as specified in the relevant **Mandatory Services Agreement** and/or **Market Agreement** where the **User** has complied with a **Reactive Despatch Instruction** in accordance with **Grid Code BC 2**, otherwise 0;

$U$  = the total Mvarh (leading and lagging)

where

$$U = U_{lead} + U_{lag} \quad [Mvarh \text{ per } \mathbf{Settlement Period} \text{ per } \mathbf{BM Unit}]$$

For the avoidance of doubt, leading Mvarh shall mean Mvarh imported by the **BM Unit** at the **Commercial Boundary** irrespective of the direction of **Active Power** flow, and lagging Mvarh shall mean Mvarh exported by the **BM Unit** at the **Commercial Boundary** irrespective of the direction of **Active Power** flow.

**Section 2**  
**Reactive Power Capability Data and Redeclarations**

This Section 2 of Appendix 3 specifies the technical data to be used to determine the capability payments to be made in accordance with Appendix 2.

1. For the purposes thereof, the following terms shall have the following meanings:-

$$Q_{\text{lead}} = \min (QR_{\text{lead}}, QC_{\text{lead}}) [Mvar]$$

$$Q_{\text{lag}} = \min (QR_{\text{lag}}, QC_{\text{lag}}) [Mvar]$$

where

QC = as specified in the relevant **Mandatory Services Agreement** and/or **Market Agreement**, being the high voltage value (specified in whole Mvar) equivalent at the **Commercial Boundary** to the low voltage Mvar capability (leading or lagging) of the relevant **BM Unit** as described in paragraph 2 below, representing the capability to supply continuously leading or lagging Mvar (as the case may be);

QR = as determined in accordance with the relevant **Mandatory Services Agreement** and/or **Market Agreement**, being, in relation to a **Settlement Period**, the high voltage value (specified in whole Mvar) equivalent to the redeclared low voltage Mvar capability (leading or lagging) of the relevant **BM Unit** (or, in the absence of such redeclaration, such high voltage value reasonably determined by **NGC** as a result of monitoring and/or testing as provided in the relevant **Mandatory Services Agreement** and/or **Market Agreement**), and  $QR_{\text{lead}}$  and  $QR_{\text{lag}}$  shall be construed accordingly.

2. (a) In respect of capability payments made in accordance with Appendix 1:-
- (i) QC shall be the capability required to provide under and in accordance with the **Connection Conditions** of the **Grid Code** (where applicable, as determined by any direction in force from time to time and issued by the **Authority** relieving the relevant **User** from the obligation under its **Licence** to comply with such part or parts of the **Grid Code** as may be specified therein); and

- (ii) QC and QR shall represent the high voltage value equivalent at **Rated MW** at the **Commercial Boundary**.
- (b) In respect of capability payments made pursuant to a **Market Agreement** in accordance with Appendix 2:-
  - (i) QC shall be the capability required to be provided under and in accordance with the **Connection Conditions** of the **Grid Code** or, where the **Market Agreement** is in respect of a **Tender** for terms for the provision of the **Enhanced Reactive Power Service** specified in sub-Paragraph 1.3(a) of this Part I, a capability agreed to be provided in excess of that required under and in accordance with the **Connection Conditions** of the **Grid Code** but so that in such a case QC cannot exceed TQ3 (defined in Appendix 5);
  - (ii) QC shall represent the high voltage value equivalent at a nominated **Registered Capacity** specified by a **Tenderer** in the **Tender** at the **Commercial Boundary** within the system voltage range specified in the relevant **Market Agreement**; and
  - (iii) QR shall represent the high voltage value equivalent at the then current **Registered Capacity** at the **Commercial Boundary** within the system voltage range specified in the relevant **Market Agreement**.
- (c) For the purposes of this Section 2, the figures for QC and QR shall be determined in a manner consistent with the principles and methodologies set out in a document published or to be published from time to time by **NGC** for this purpose.

For the avoidance of doubt, leading capability shall mean the ability to import **Reactive Power** at the **Commercial Boundary** irrespective of the direction of **Active Power** flow, and lagging capability shall mean the ability to export **Reactive Power** at the **Commercial Boundary** irrespective of the direction of **Active Power** flow.

## Appendix 4 Metering

### 1 Balancing and Settlement Code

For the avoidance of doubt, nothing in this Appendix shall affect the rights and obligations of **NGC** and those **Users** also bound by the **Balancing and Settlement Code** by virtue of being a party to the **BSC Framework Agreement** with regard to **Metering Equipment** and **Metering Systems** insofar as such provisions relate to **Reactive Energy**.

### 2. BM Units

- 2.1 For the purposes of this Part I and the Appendices, subject always to sub-paragraph 2.2, the quantities of Mvarh imported and exported by a **BM Unit** shall be derived from the relevant **Metering System** for that **BM Unit** registered pursuant to Section K of the **Balancing and Settlement Code**.
- 2.2 Where the existing **Metering System** for the **BM Unit** registered pursuant to Section K of the **Balancing and Settlement Code** does not incorporate **Metering Equipment** capable of measuring and recording Mvarh imports and exports for that **BM Unit** for each **Settlement Period**, then the relevant **User** shall register or procure that there is registered pursuant to Section K of the **Balancing and Settlement Code** a **Metering System** which does incorporate such **Metering Equipment**.
- 2.3 All relevant **Metering Equipment** identification and location codes shall be set out in the relevant **Mandatory Services Agreement**, and the **User** hereby agrees to facilitate agreement between **NGC** and that **User** with respect thereto by providing **NGC** as soon as reasonably practicable following request with all necessary supporting diagrams and other written documentation.
- 2.4 Where the configuration of the **Metering System** is such that:-
- 2.4.1 Mvarh import and export values for the **BM Unit** are not measured at the **Commercial Boundary**, and/or
  - 2.4.2 Mvarh import and export values for the **BM Unit** are measured by more than one **Meter**; and/or
  - 2.4.3 the Mvarh import and export values for the **BM Unit** are measured by a **Meter** which also measures the Mvarh import

and export values of one or more other **Generating Units, Plant and Apparatus** or other equipment,

then appropriate loss adjustment factors and aggregation methodologies (as the case may be) shall be used to determine on a **Settlement Period** basis the Mvarh import value and Mvarh export value for the relevant **BM Unit** at the **Commercial Boundary** to be used for the purposes of this Part I.

The appropriate factors and methodologies for each relevant **BM Unit** shall be agreed by **NGC** and each relevant **User** (both acting reasonably) in the relevant **Mandatory Services Agreement** by adoption of one or more of the factors or methodologies set out in the document entitled "Methodology Document for the Aggregation of Reactive Power Metering" (as amended from time to time) published by **NGC** for this purpose. This document shall specify the respective factors and methodologies to be applied for particular **Metering System** configurations in order to determine so far as reasonably practicable the Mvarh import value and Mvarh export value for the relevant **BM Unit** at the **Commercial Boundary** as required by this sub-paragraph 2.4

### 3. **Other Plant and/or Apparatus (or other equipment)**

In all other cases not covered by paragraph 2, the following provisions shall apply:-

- 3.1 The quantities of Mvarh imported and exported shall be measured and recorded through **Meters** complying with all relevant **Codes of Practice** to the extent applying to **Reactive Energy**, which shall include without limitation those relating to calibration, testing and commissioning.
- 3.2 Such **Meters** shall be capable of providing a Mvarh import and export value for each **Settlement Period** for each item of **Plant and/or Apparatus** or other equipment.
- 3.3 Such **Meters** shall be situated as close as reasonably practicable to the **Commercial Boundary** taking into account relevant financial considerations.
- 3.4 The principles set out in paragraph 2.4 in relation to adjustment and aggregation shall apply.



- 3.5 For the purposes of remote interrogation the relevant **Mandatory Services Agreement** shall include appropriate terms with regard to the provision and maintenance of all communication links.

## Appendix 5 Submission of Tenders

The provisions of this Appendix 5 specify the manner in which **Users** shall complete **Tenders** comprising prices and **Tendered Capability Breakpoints** relating to the **Obligatory Reactive Power Service** and terms for the provision of the **Enhanced Reactive Power Service** specified in sub-Paragraph 1.3 (a) of this Part I, in each case in respect of **BM Units**.

A **Tender** shall include (inter alia) details of the **Reactive Power** range, the prices tendered for utilisation and capability and an indexation mechanism as set out below. Each **Tender** must relate to one **BM Unit** only. **Users** wishing to tender in relation to more than one **BM Unit** must therefore submit separate **Tenders** for each **BM Unit**.

### 1. Reactive Power Capability

- 1.1 In respect of each **BM Unit**, a **Tenderer** must nominate a **Registered Capacity** which it anticipates will be the actual **Registered Capacity** on the **Contract Start Day** for that **BM Unit** (in this Appendix 5 referred to as “**Nominated Registered Capacity**”) to be used for the duration of the **Market Agreement**. All capability data used for the purpose of a **Tender** must be expressed as the capability of a **BM Unit** at the **Commercial Boundary** and must represent the value of **Reactive Power** output which can be supplied continuously at the **Commercial Boundary** when the **BM Unit** is operating at the **Nominated Registered Capacity**.
- 1.2 In respect of each **BM Unit**, all capability data relating to the provision of the **Enhanced Reactive Power Service** specified in sub-Paragraph 1.2(a) of this Part I must be expressed as the capability of that **BM Unit** at the **Commercial Boundary** across a system voltage range to be specified by the **Tenderer** in its **Tender** (or otherwise in accordance with directions given by **NGC**).
- 1.3 All **Reactive Power** capability data in respect of a **BM Unit** must be expressed as positive, whole numbers in Mvar, with leading and lagging capability data distinguished by the subscripts <sub>lead</sub> and <sub>lag</sub>.
- 1.4 In respect of each **BM Unit**, and subject to any directions issued from time to time by **NGC** with regard to such values, the **User** must submit at least one **Reactive Power** capability value and may in addition submit up to a further two **Reactive Power** capability values (all three being “**Tendered Capability Breakpoints**”), for both leading and lagging Mvar. One of these **Tendered Capability Breakpoints**, in respect of both leading and lagging Mvar, must be equivalent to the minimum **Reactive Power** capability of a **BM Unit** which a **User** is obliged to provide under and in

accordance with the **Connection Conditions** of the **Grid Code** (to the nearest whole Mvar) after application of the principles set out in subparagraphs 1.2 and 1.3 above and as further described in the package of information referred to in sub-Paragraph 3.3(b)(i) of this Part I.

- 1.5 The **Tendered Capability Breakpoints** shall be defined for the purposes of this Appendix as TQ1, TQ2, TQ3, for leading and lagging Mvar as the case may be, where:-

$$TQ3_{\text{lead}} > TQ2_{\text{lead}} > TQ1_{\text{lead}} > 0$$

and  $TQ3_{\text{lag}} > TQ2_{\text{lag}} > TQ1_{\text{lag}} > 0$

- 1.6 Where only two **Tendered Capability Breakpoints** are tendered, for leading or lagging Mvar as the case may be, then the value of TQ3 shall be deemed to be null for the purposes of calculating payments for capability and utilisation and no additional payments for capability will fall due and payable in respect of a **BM Unit** for the provision of **Reactive Power** capability above **Tendered Capability Breakpoint** TQ2.
- 1.7 Where only one **Tendered Capability Breakpoint** is tendered, for leading or lagging Mvar as the case may be, then the values of TQ2 and TQ3 shall be deemed to be null for the purposes of calculating payments for capability and utilisation and no additional payments for capability will fall due and payable in respect of a **BM Unit** for the provision of **Reactive Power** capability above **Tendered Capability Breakpoint** TQ1.
- 1.8 The **Reactive Power** capability value at zero Mvar (referred to in paragraph 2 below as Q0) shall be treated as a **Tendered Capability Breakpoint** for the purposes of tendering capability and utilisation prices and calculating capability and utilisation payments.

## 2. **Prices**

In respect of each **Tendered Capability Breakpoint**, prices submitted by **Users** must be zero or positive, quoted in pounds sterling to the nearest tenth of a penny and shall otherwise be tendered as described in subparagraphs 2.1, 2.2 and 2.3 below. The prices shall be described using the following notation:-

$C1_{\text{lag}}$  is the price applicable between **Tendered Capability Breakpoints** Q0 and TQ1<sub>lag</sub> including TQ1<sub>lag</sub>

$C2_{\text{lag}}$  is the price applicable between **Tendered Capability Breakpoints** TQ1<sub>lag</sub> and TQ2<sub>lag</sub> including TQ2<sub>lag</sub>

$C_{3lag}$  is the price applicable between **Tendered Capability Breakpoints**  $TQ_{2lag}$  and  $TQ_{3lag}$  including  $TQ_{3lag}$

$C_{1lead}$  is the price applicable between **Tendered Capability Breakpoints**  $Q_0$  and  $TQ_{1lead}$  including  $TQ_{1lead}$

$C_{2lead}$  is the price applicable between **Tendered Capability Breakpoints**  $TQ_{1lead}$  and  $TQ_{2lead}$  including  $TQ_{2lead}$

$C_{3lead}$  is the price applicable between **Tendered Capability Breakpoints**  $TQ_{2lead}$  and  $TQ_{3lead}$  including  $TQ_{3lead}$

where C shall represent CU, CA or CS as the case may be.

## 2.1 Utilisation Prices (CU)

- (a) Utilisation prices submitted by **Users** must be:-
- (i) quoted in units of £/Mvarh; and
  - (ii) no greater than £999.999/Mvarh.
- (b) Utilisation prices must increase across the **Reactive Power** capability range, for leading or lagging Mvar as the case may be, such that:-
- $$CU_{3lead} \geq CU_{2lead} \geq CU_{1lead} \geq 0$$
- $$CU_{3lag} \geq CU_{2lag} \geq CU_{1lag} \geq 0$$
- (c) Utilisation payments shall be made for metered **Reactive Power** output and shall be calculated in accordance with Appendix 2.

## 2.2 Available Capability Prices (CA)

- (a) Available capability prices submitted by **Users** must be:-
- (i) quoted in units of £/Mvar/h; and
  - (ii) no greater than £999.999/Mvar/h.
- (b) Available capability prices must increase across the **Reactive Power** capability range, for leading or lagging Mvar as the case may be, such that:-

$$CA3_{\text{lead}} \geq CA2_{\text{lead}} \geq CA1_{\text{lead}} \geq 0$$

$$CA3_{\text{lag}} \geq CA2_{\text{lag}} \geq CA1_{\text{lag}} \geq 0$$

- (c) Available capability payments shall be calculated in accordance with Appendix 2

### 2.3 Synchronised Capability Prices (CS)

- (a) Synchronised capability prices submitted by **Users** must be:-
- (i) quoted in units of £/Mvar/h; and
  - (ii) no greater than £999.999/Mvar/h.
- (b) Synchronised capability prices must increase across the **Reactive Power** capability range, for leading or lagging Mvar as the case may be, such that:-

$$CS3_{\text{lead}} \geq CS2_{\text{lead}} \geq CS1_{\text{lead}} \geq 0$$

$$CS3_{\text{lag}} \geq CS2_{\text{lag}} \geq CS1_{\text{lag}} \geq 0$$

- (c) Synchronised capability payments shall be calculated in accordance with Appendix 2.

### 3. Indexation

Where a **Tender** is submitted in respect of a period which exceeds the minimum twelve month period required by sub-Paragraph 3.3(d)(v) of this Part I, then the **User** shall submit one mechanism for calculating indexation on an annual basis which shall apply to all prices submitted in the **Tender** for all subsequent periods of twelve months following the minimum twelve month period to which the **Tender** applies. Such mechanism shall be based on either the Retail Prices Index (as referred to in paragraph 3 of Appendix 1), a fixed percentage (which may be positive, zero or negative) or a summation of such Retail Prices Index and such fixed percentage.

### 4. Other Technical Information

A **User** shall submit with a **Tender** such other technical information as reasonably directed by **NGC** in accordance with sub-Paragraph 3.3 (b)(i) of this Part I. Such information may include (without limitation):-

- 4.1 in relation to a **Tender** for the **Enhanced Reactive Power Service** specified in sub-Paragraph 1.2 (a) of this Part I, details of the capability of the **Generating Unit** to provide **Reactive Power** at the generator stator terminals by reference to the **Generator Performance Chart** submitted in accordance with [\[Operating Condition 2.4.2\]](#) of the **Grid Code**, which capability must represent the true operating characteristics of that **Generating Unit**; and
- 4.2 details of the system voltage range over which the **User** proposes to make available from the **Generating Unit** such **Enhanced Reactive Power Service** (and in each case any restrictions thereto); and
- 4.3 in relation to a **Tender** for the **Enhanced Reactive Power Service** specified in sub-Paragraph 1.2 (a) of this Part I, the ambient air temperature at which such **Enhanced Reactive Power Service** is specified, and variations to such **Enhanced Reactive Power Service** in accordance with any air temperature range specified by **NGC**; and
- 4.4 details, including prices, of any additional services offered as part of any **Enhanced Reactive Power Service** (not being the **Enhanced Reactive Power Service** specified in sub-Paragraph 1.2 (a) of this Part I); and
- 4.5 any restrictions on **NGC** selecting part of an **Enhanced Reactive Power Service**.

## Appendix 6 Qualification and Evaluation Criteria

### Section A – Qualification Criteria

1. Without prejudice to the requirements of sub-Paragraph 3.3 of this Part I, all **Tenders** must satisfy the following mandatory qualification criteria:-

1.1 in relation to a **Tender** for provision of the **Enhanced Reactive Power Service** specified in sub-Paragraph 1.2 (a) of this Part I, the leading and/or lagging capability (as the case may be) comprised therein, being the capability in excess of that required under and in accordance with the **Connection Conditions** of the **Grid Code**, must be at least 15 Mvar leading and/or 15 Mvar lagging (as the case may be) or (if lower) such amount of Mvar representing an additional 10% of that required under and in accordance with the **Connection Conditions** of the **Grid Code** (in each case as measured at the **Commercial Boundary**); and

1.2 in relation to a **Tender** for provision of any other **Enhanced Reactive Power Service**, the leading and/or lagging capability (as the case may be) comprised therein must be at least 15 Mvar leading and/or 15 Mvar lagging (as the case may be) (as measured at the **Commercial Boundary**); and

1.3 the tendered capability must be subject to Mvar metering meeting the requirements of Appendix 4; and

1.4 the tendered capability must be subject to Mvar despatch facilities reasonably acceptable to **NGC**, incorporating the ability for **NGC** to receive from the **Tenderer** relevant technical, planning and other data in **NGC's** reasonable opinion necessary in connection therewith; and

1.5 the site in question must be the subject of an agreement for connection to, and/or use of, the **NGG-GB Transmission System** or (as the case may be) a **Distribution System**.

### Section B – Evaluation Criteria

2. The overall economic value of a **Tender** (and where appropriate any part thereof) will be assessed by reference to the following criteria (which are not listed in any order of importance or priority):-

- 2.1 in relation to a **Generating Unit** providing the **Obligatory Reactive Power Service**, a comparison with the default payment arrangements for that **Generating Unit**, including the effect (if any) of the balance of tendered capability and utilisation prices as a hedge against forecast costs of that **Generating Unit** pursuant to the default payment arrangements;
  - 2.2 the location of the tendered capability and its effectiveness in providing voltage support for the **NGC-GB Transmission System**;
  - 2.3 its interaction with other **Tenders**, in terms (inter alia) of relative prices and capability tendered and relative effectiveness in providing voltage support as referred to in sub-paragraph 2.2 above;
  - 2.4 forecast savings (if any) in constraint costs resulting from the consequential effect on power flows; and
  - 2.5 any forecast benefit or detriment attributable to it in the context of the investment planning process referred to at paragraph 4 below.
3. Particular factors affecting the value of a **Tender** (and where appropriate any part thereof) may include (without limitation) the following evaluation criteria (which are not listed in any order of importance or priority):-
- 3.1 the amount of leading and lagging Mvar tendered and the impact (if any) of any changes in the technical data, the **Registered Capacity** and other information submitted to **NGC** pursuant to the **Data Registration Codes** of the **Grid Code** since the date of submission of the **Tender**;
  - 3.2 prices and other terms offered within the **Tender**;
  - 3.3 the number of months over which capability is tendered;
  - 3.4 forecast Mvarh output, including any revised forecast of Mvarh output taking into account tendered utilisation prices (for the avoidance of doubt of the **Tender** and of all other **Tenders** pursuant to sub-paragraph 2.3 above);
  - 3.5 in relation to a **Generating Unit**, forecast MW output and MW availability;
  - 3.6 the expected availability and quality of capability tendered, in terms of reliability and dependability for despatch purposes, derived from:-



- (i) historical performance (where relevant);
    - (ii) expected reliability of capability tendered signalled by tendered prices;
    - (iii) any programme agreed with **NGC** for the restoration of capability;
  - 3.7 the availability of suitable monitoring facilities;
  - 3.8 the capability (if any) of a **Generating Unit** to provide voltage support services when not providing **Active Power** (for example pumped storage plant operating in spin-gen mode or when pumping and open cycle gas turbine plant when declutched and operating in **Synchronous Compensation** mode);
  - 3.9 the complexity of the terms offered within the **Tender**;
  - 3.10 the results of any testing carried out pursuant to sub-Paragraph 4.3 (e) (ii) of this Part I and (where applicable) the absence of any such testing; and
  - 3.11 any other factors enhancing or constraining the capability tendered, derived (inter alia) from technical and other information made available to **NGC** (including without limitation operational and planning data provided to **NGC** pursuant to the **Grid Code**).
4. For the avoidance of doubt, **Tenders** will be considered in the investment planning process of **NGC's Transmission Business** only if, and to the extent, required to enable **NGC** to comply with its obligations under the **Act** and the **Transmission Licence**, and in such a case any consequential benefit or detriment attributable to the **Tender** will be taken into account in the tender evaluation process and **Tenders** will be evaluated accordingly.
5. For the avoidance of doubt:-
- (a) extant voltage support for the **NGC-GB Transmission System** | whether via contracted services from third parties or assets owned and/or operated by **NGC's Transmission Business**; and
  - (b) forecast Mvarh **Demand** on the **NGC-GB Transmission System** | and at **Grid Supply Points**

in each case as at the relevant **Market Day** and as anticipated by **NGC** at the subsequent **Contract Start Day** and throughout the term of the **Tender**, will be taken into account in the tender evaluation process and **Tenders** will be evaluated accordingly.

## Appendix 7 Charging Principles

In accordance with the relevant provisions of this Part I, the following principles are intended to form the basis of the default payment arrangements for the provision of the **Obligatory Reactive Power Service** set out in this Part I and are intended to be taken into account in any review of the indexation factor referred to in Appendix 1. However, they are not intended to stifle innovation in the development of the default payment arrangements or the giving of appropriate economic signals.

1. The totality of payments that would be made pursuant to the default payment arrangements in the absence of **Market Agreements** shall be based and founded upon the following variable costs (actual or estimated) incurred or to be incurred in respect of, and aggregated across, all **Generating Units** providing the **Obligatory Reactive Power Service**:-
  - 1.1 the additional heat losses incurred as a consequence of producing **Reactive Power**, measured at the high voltage side of the generator/transformer terminals, the calculation of such heat losses to take account of the square law relationship between the electric current and the additional heat losses incurred; and
  - 1.2 maintenance costs incurred as a direct result of **Reactive Power** output (including a sum in respect of any reduction in the working life of **Generating Unit** components consequent upon **Reactive Power** output).
2. For the avoidance of doubt, and without limitation, the totality of payments referred to in paragraph 1 above shall not take into account in respect of any **Generating Unit** providing the **Obligatory Reactive Power Service** the fixed costs incurred in achieving initial compliance with the relevant provisions of the **Grid Code**.
3. Further for the avoidance of doubt, the totality of payments referred to in paragraph 1 above shall, to the extent affecting the specific costs therein identified, take due account of any change in or amendments to, or replacement of, the **Pooling and Settlement Agreement**, the **Balancing and Settlement Code**, the **Grid Code** and any other statutory or regulatory obligation, in each case coming into force or effect after 1<sup>st</sup> October, 1997 and affecting the provision of the **Obligatory Reactive Power Service**.



**Appendix 8**  
**Calculation of Reactive Power Capability**  
**at the Commercial Boundary**

**Part 1**

In accordance with the terms of the **Mandatory Services Agreement**, these formulae will be used to convert **Reactive Power** capability of a **BM Unit** at the generator stator terminals to the capability at the **Commercial Boundary**.

$$Q_{lead} = (Q_{Glead} + Q_U) + \left[ \frac{[(P_G - P_U)^2 + (Q_{Glead} + Q_U)^2] * F * X_t}{100. MVA_X} \right] + Q_{ts}$$

Where the **BM Unit** has a **Reactive Power** capability (leading), this shall be expressed as a positive integer. Where the **BM Unit** does not have a **Reactive Power** capability (leading),  $Q_{lead}$  and/or  $Q_{Glead}$  shall be the minimum **Reactive Power** capability (lagging) expressed as a negative integer or zero.

$$Q_{lag} = (Q_{Glag} - Q_U) - \left[ \frac{[(P_G - P_U)^2 + (Q_{Glag} - Q_U)^2] * F * X_t}{100. MVA_X} \right] - Q_{ts}$$

Where the **BM Unit** has a **Reactive Power** capability (lagging), this shall be expressed as a positive integer. Where the **BM Unit** does not have a **Reactive Power** capability (lagging),  $Q_{lag}$  and/or  $Q_{Glag}$  shall be the minimum **Reactive Power** capability (leading) expressed as a negative integer or zero.

Where:

- $Q_{lead}$  = the **Reactive Power** capability (leading) of the **BM Unit** at **Rated MW** at the **Commercial Boundary** in Mvar;
- $Q_{lag}$  = the **Reactive Power** capability (lagging) of the **BM Unit** at **Rated MW** at the **Commercial Boundary** in Mvar;
- $P_G$  = **Rated MW** referred to in Schedule 1 of **Grid Code DRC**;
- $P_U$  = normal auxiliary load (**Active Power**) supplied by the **BM Unit** at **Rated MW** referred to in Schedule 1 of **Grid Code DRC** in MW;
- $Q_U$  = normal auxiliary lagging load (**Reactive Power**) supplied by the **BM Unit** at **Rated MW** referred to in Schedule 1 of **Grid Code DRC** in Mvar;
- $X_t$  = positive sequence reactance, nominal tap, of the **BM Unit** step-up transformer in percentage of rating as referred to in Schedule 1 of **Grid Code DRC**;
- $F$  = the factor (if any) identified as such in the **Mandatory Services Agreement** representing the number of station transformers, otherwise 1;

- $Q_{Glag}$  = the **Reactive Power** capability (lagging) of the **BM Unit** at **Rated MW** at the generator stator terminals as set out in Table B of Appendix 1, Section A, Part I of the **Mandatory Services Agreement** or as redeclared by the **User** pursuant to **Grid Code BC**;
- $Q_{Glead}$  = the **Reactive Power** capability (leading) of the **BM Unit** at **Rated MW** at the generator stator terminals as set out in Table B of Appendix 1, Section A, Part I of the **Mandatory Services Agreement** or as redeclared by the **User** pursuant to **Grid Code BC**;
- $Q_{ts}$  = the relevant reactive load applicable to each of the relevant **BM Unit** shown in the relevant table in the **Mandatory Services Agreement**, the summation of which represents the lagging reactive load in Mvar taken by a **Trading Unit** calculated in accordance with the values for **Demand (Active Power)** and **Power Factor** referred to in [**Grid Code PC.A.4.3.1(a)** or **Grid Code PC.A.5.2.2(a)**] (as the case may be), or as agreed between **NGC** and the **User** from time to time (and where such load is leading,  $Q_{ts}$  will be negative);
- $MVA_x$  = **BM Unit** step-up transformer rated MVA referred to in Schedule 1 of **Grid Code DRC**.

N.B. All of the above factors referred to in **Grid Code DRC** shall be expressed in such units as are specified in **Grid Code DRC** and to the same number of significant figures as also specified therein (as varied from time to time).

## Part 2

In accordance with the terms of the **Mandatory Services Agreement**, the formulae in Section 1 will be used by **NGC** to convert **Reactive Power** capability of a **CCGT Unit** at the generator stator terminals to the capability at the HV side of the **Generating Unit** step-up transformer, and the formulae in Section 2 will be used to calculate the **Reactive Power** capability of the **BM Unit** at the **Commercial Boundary**.

### Section 1

$$CQ_{\text{lead}} = (Q_{\text{Glead}} + Q_{\text{u}}) + \left[ \frac{[(P_{\text{G}} - P_{\text{U}})^2 + (Q_{\text{Glead}} + Q_{\text{U}})^2] * F * X_{\text{t}}}{100.MVA_{\text{X}}} \right]$$

Where the **CCGT Unit** has a **Reactive Power** capability (leading), this shall be expressed as a positive integer. Where the **CCGT Unit** does not have a **Reactive Power** capability (leading),  $Q_{\text{lead}}$  and/or  $Q_{\text{Glead}}$  shall be the minimum **Reactive Power** capability (lagging) expressed as a negative integer or zero.

$$CQ_{\text{lag}} = (Q_{\text{Glag}} - Q_{\text{u}}) - \left[ \frac{[(P_{\text{G}} - P_{\text{U}})^2 + (Q_{\text{Glag}} - Q_{\text{U}})^2] * F * X_{\text{t}}}{100.MVA_{\text{X}}} \right]$$

Where the **CCGT Unit** has a **Reactive Power** capability (lagging), this shall be expressed as a positive integer. Where the **CCGT Unit** does not have a **Reactive Power** capability (lagging),  $Q_{\text{lag}}$  and/or  $Q_{\text{Glag}}$  shall be the minimum **Reactive Power** capability (leading) expressed as a negative integer or zero.

Where:

- $CQ_{\text{lead}}$  = the **Reactive Power** capability (leading) of the **CCGT Unit** at **Rated MW** at the HV side of the **Generating Unit** step-up transformer in Mvar;
- $CQ_{\text{lag}}$  = the **Reactive Power** capability (lagging) of the **CCGT Unit** at **Rated MW** at the HV side of the **Generating Unit** step-up transformer in Mvar;
- $P_{\text{G}}$  = **Rated MW** of a **CCGT Unit** referred to in [Schedule 1 of **Grid Code DRC**];
- $P_{\text{U}}$  = normal auxiliary load (**Active Power**) supplied by the **CCGT Unit** at **Rated MW** referred to in [Schedule 1 of **Grid Code DRC**] in MW;
- $Q_{\text{U}}$  = normal auxiliary lagging load (**Reactive Power**) supplied by the **CCGT Unit** at **Rated MW** referred to in [Schedule 1 of **Grid Code DRC**] in Mvar;

- F = the factor (if any) identified as such in the **Mandatory Services Agreement** representing the number of station transformers, otherwise 1;
- $X_t$  = positive sequence reactance, nominal tap, of the **CCGT Unit** step-up transformer in percentage of rating as referred to in [\[Schedule 1 of Grid Code DRC\]](#);
- $Q_{Glag}$  = the **Reactive Power** capability (lagging) of the **CCGT Unit** at **Rated MW** at the **User** stator terminals as set out in Table B of Appendix 1, Part I of the **Mandatory Services Agreement** or as redeclared by the **User** pursuant to **Grid Code BC**;
- $Q_{Glead}$  = the **Reactive Power** capability (leading) of the **CCGT Unit** at **Rated MW** at the **User** stator terminals as set out in Table B of Appendix 1, Part I of the **Mandatory Services Agreement** or as redeclared by the **User** pursuant to **Grid Code BC**;
- $MVA_x$  = **Generating Unit** step-up transformer rated MVA referred to in [\[Schedule 1 of Grid Code DRC\]](#).

## **Section 2**

$$Q_{lead} = \left( \sum_n^{CCGTunits} CQ_{lead} \right) + Q_{ts}$$

$$Q_{lag} = \left( \sum_n^{CCGTunits} CQ_{lag} \right) - Q_{ts}$$

Where

$Q_{lead}$  = the **Reactive Power** capability (leading) of the **BM Unit** at the **Commercial Boundary** in Mvar;

$\sum_n^{CCGTunits}$  = the summation over each relevant **CCGT Unit**;

$Q_{lag}$  = the **Reactive Power** capability (lagging) of the **BM Unit** at the **Commercial Boundary** in Mvar;

$Q_{ts}$  = the relevant reactive load applicable to each of the **BM Units** shown in the relevant table in the **Mandatory Services Agreement**, the summation of which represents the lagging



reactive load in Mvar taken by a **Trading Unit** calculated in accordance with the values for **Demand (Active Power)** and **Power Factor** referred to in **Grid Code [PC.A.4.3.1(a) or Grid Code PC.A.5.2.2(a)]** (as the case may be), or as agreed between **NGC** and the **User** from time to time (and where such load is leading,  $Q_{ts}$  will be negative).

- N.B. All of the above factors referred to in **Grid Code DRC** shall be expressed in such units as are specified in **Grid Code DRC** and to the same number of significant figures as also specified therein (as varied from time to time).

## **Appendix 9** **Redundant Provisions**

### **1. Introduction**

This Appendix 9 is included in this Part I for information purposes only as more particularly described in Paragraph 6 of this Part I.

### **2. Definitions - Paragraph 1.1 of MCUSA, Schedule 5.**

In this Appendix 9, except where the context otherwise requires, the following expressions shall have the following meanings:-

**“Reactive Power Zone”** means those separate areas of England and Wales identified as zones in the Seven Year Statement for 1997 for the purpose of specifying local Reactive Power capability and need;

**“Relevant Zone”** means in relations to any Despatch Unit, the Reactive Power Zone to which the Despatch Unit is allocated as specified in an Ancillary Services Agreement.

**“Transmission Users Group”** means the group established pursuant to paragraph 4 of Schedule 4 to this Agreement.

### **3. Variations and Review – Paragraph 2.5 of MCUSA Schedule 5**

The Parties acknowledge and agree that the Transmission Users Group shall be requested to review each of the matters described in Appendix 7 by the respective date (if any) shown opposite each therein. In carrying out such review, the Transmission Users Group shall be requested to take into account the respective applicable principles (if any) set out therein and to give due and proper consideration to any matter referred to it by the Director. For the avoidance of doubt, following each such review NGC or any User may raise a Proposed Variation with respect thereto in accordance with sub-paragraph 2.2(a). It is further agreed that:-

- (a) NGC shall consider and no later than 31<sup>st</sup> December 1999, report to the Transmission Users Group on the practicalities of establishing a unified mechanism for the provision of voltage support for the NGC Transmission System; and

- (b) the Transmission Users Group shall be requested, no later than 31<sup>st</sup> March 2000 to invite the Grid Code Review Panel to review the provisions of the Grid Code with respect to Reactive Power in light of this Schedule.

**4. Obligatory Reactive Power Service – Default Payment Arrangements  
– Paragraph 4 of MCUSA, Schedule 5**

4.1 ---

4.2 Subject always to Paragraph 5, and notwithstanding:-

- (a) the provisions of the Works Programme for reactive power ancillary services agreed by Pool Members on 1<sup>st</sup> March 1994, as adopted from 1<sup>st</sup> August 1994; and
- (b) the provisions of any **Ancillary Services Agreement** now or hereafter in effect (but subject always to sub-Paragraph 6.2),

the payments to be made by **NGC** to **Users** for the provision of the **Obligatory Reactive Power Service** in all **Mandatory Services Agreements** under which **Users** are or will be paid for the **Obligatory Reactive Power Service** shall, subject always to sub-Paragraph 4.5 and 4.7, comprise solely payments for utilisation determined in respect of each **Settlement Period** in accordance with sub-Paragraph 4.3.

4.3 ---

4.4 The Parties acknowledge and agree that, as at the date this Schedule comes into effect:-

- (a) the totality of payments for the provision of the **Obligatory Reactive Power Service**, determined in accordance with the provisions of this Paragraph 4, reflect so far as reasonably practicable the overall variable costs (on the basis of the charging principles set out in Appendix 8) incurred across the relevant **Generating Units** of the provision of the **Obligatory Reactive Power Service** (whether or not payments are made in respect of those **Generating Units** pursuant to this Paragraph 4 or pursuant to **Market Agreements** entered into in accordance with Paragraph 5); and

- (b) without prejudice to the review of the indexation factor specified as item 4 in Appendix 7, such totality of payments will continue to reflect those overall variable costs notwithstanding all and any variations thereto reasonably anticipated at such date.

4.5 It is hereby agreed and acknowledged that nothing in this Schedule and the Appendices shall affect in any way the obligation on each **User** to comply with the provisions of the **Grid Code** insofar as they relate to **Reactive Power**. For the avoidance of doubt, and without limiting the foregoing, it is hereby agreed and acknowledged that, notwithstanding that the payments for the **Obligatory Reactive Power Service** with affect from 1<sup>st</sup> April 2000, subject always to sub-paragraph 2.5 shall comprise solely payments for utilisation, nothing in this Schedule and the Appendices shall relieve **Users** from the obligations to comply with the provisions of the **Grid Code** in relation to **Reactive Power** by virtue of Sub-Clause 9.3 of this Agreement or otherwise howsoever.

4.6 ---

4.7 ---

4.8 ---

**5. Obligatory Reactive Power Service (Default Payment Arrangements)  
– Appendix 1 of MCUSA, Schedule 5**

The provisions of this Appendix 1, as referred to in sub-paragraph 4.2 of this Schedule shall apply to the calculation of default payments for provision of the **Obligatory Reactive Power Service** from **BM Units**. All payments shall be expressed in pounds sterling.

1. Total Payment

Total Payment (PT) = PU+PC

Where, subject always to Paragraph 7 and 8 below:

PU = the utilisation payment in respect of a **BM Unit** for a **Settlement Period** determined in accordance with Paragraph 2 below.

PC = the capability payment in respect of **BM Unit** for a **Settlement Period** determined in accordance with paragraph 3 below.

## 2. Utilisation Payment

$$PU = BP_U * U \quad [\text{£ per Settlement Period per BM Unit}]$$

Where

$$BP_U = \frac{46,270,000 * I * X}{42,054,694} \quad [\text{£/Mvarh}]$$

Where

I = defined in Paragraph 5 below;

X = a factor which should be:-

- (i) in respect of any Settlement Period from (and including) 1<sup>st</sup> October, 1997 to (and including) 31<sup>st</sup> March 1998, 0.2; and
- (ii) in respect of any Settlement Period from (and including) 1<sup>st</sup> April 1998 to (and including) 31<sup>st</sup> March 1999, 0.5 (subject as provided below); and
- (iii) subject always to sub-paragraph 2.5 of this Schedule, in respect of any Settlement Period from (and including) 1<sup>st</sup> April 1999 to (and including) 31<sup>st</sup> March 2000, 0.75 (subject as provided below); and
- (iv) subject always to sub-paragraph 2.5 of this Schedule, in respect of all Settlement Periods thereafter, 1.00 (subject as provided below);

Provided always that with effect from 1<sup>st</sup> April 1998, X shall be 0.2 in all **Settlement Periods** from (and including) that in which:-

- (a) the relevant **BM Unit** (or, in relation to a **CCGT Module**, any relevant **CCGT Unit**) fails a **Reactive Test** until (and including) the **Settlement Period** in which a subsequent **Reactive Test** is passed in relation to that **BM Unit** (or **CCGT Unit** (as the case may be)); or
- (b) the **User** fails (other than pursuant to an instruction given by **NGC** or as permitted by the **Grid Code**) to set the Automatic Voltage Regulator of the **BM Unit** (or, in relation to a **CCGT Module**, any relevant **CCGT Unit**) to a voltage following mode until (and

including) the **Settlement Period** in which the **User** notifies **NGC** that the Automatic Voltage Regulator is so set; or

- (c) the **BM Unit** fails to comply with a **Reactive Despatch Instruction** due to the fact that the **BM Unit** (or, in relation to a **CCGT Module**, any relevant **CCGT Unit**) is unable to increase and/or decrease its Mvar output (other than as a direct result of variations in **System** voltage) until (and including) the **Settlement Period** in which the **User** notifies **NGC** that the **BM Unit** is so able to comply; or
- (d) the **BM Unit** fails to have a Mvar range which includes the ability to provide zero Mvar at the Commercial Boundary until (and including) the **Settlement Period** in which the **User** notifies **NGC** that the **BM Unit** has or once more has such rang; and

U = defined in Section 1 of Appendix 3

### 3. Capability Payment

$$PC = \frac{[(BP_c * ZWF_{lead} * QC_{lead} * QSF_{lead}) + (BP_c * ZWF_{lag} * QC_{lag} * QSF_{lag})] * J}{[\text{£ per Settlement Period per Despatch Unit}]}$$

Provided always that PC shall be 0 in all Settlement Periods from (and including) that in which:-

- (i) the User fails (other than pursuant to an instruction given by NGC or as permitted by the Grid Code) to set the Automatic Voltage Regulator of the Despatch Unit (or, in relation to a Centrally Despatched CCGT Module, any relevant CCGT Unit) to a voltage following mode until (and including) the Settlement Period in which the User notifies NGC that the Automatic Voltage Regulator is so set; or
- (ii) the Despatch Unit fails to comply with a Reactive Despatch Instruction due to the fact that the Despatch Unit (or in relation to a Centrally Despatched CCGT Module, any relevant CCGT Unit) is unable to increase and/or decrease its Mvar output (other than as a direct result of variations in System voltage) until (and including) the Settlement Period in which the User notifies NGC that the Despatch Unit is so able to comply; or
- (iii) the Despatch Unit fails to have a Mvar range which includes the ability to provide zero Mvar at the Commercial Boundary until (and including) the Settlement Period in which the User notifies NGC that the Despatch Unit has or once more has such range; or

- (iv) a continuous period of unavailability of a Despatch Unit to be Despatched by NGC in accordance with Grid Code SDC extends beyond 75 consecutive days until (and including) the Settlement Period in which the Despatch Unit is subsequently declared available in accordance with Grid Code SDC.

where

$$BP_c = \frac{46,270,000 * 1 * Y}{0.868178624 * 16,112 * 8,760 * 2} \quad [\text{£/Mvar per Settlement Period}]$$

Where

I = defined in paragraph 5 below;

Y = a factor which shall be:-

- (i) in respect of any Settlement Period from (and including) 1<sup>st</sup> October, 1997 to (and including) 31<sup>st</sup> March 1998, 0.8; and
- (ii) in respect of any Settlement period from (and including) 1<sup>st</sup> April, 1998 to (and including) 31<sup>st</sup> March, 1999, 0.5; and
- (iii) subject always to sub-paragraph 2.5 of this Schedule, in respect of any Settlement Period from (and including) 1<sup>st</sup> April, 1999 to (and including) 31<sup>st</sup> March, 2000, 0.25; and
- (iv) subject always to sub-paragraph 2.5 of this Schedule, in respect of all Settlement Periods thereafter, 0;

ZWF = the provisional Zonal Weighting Factor defined in paragraph 4 below (expressed to apply to both leading and lagging Mvar) subject to reconciliation in accordance with that paragraph:

QC = defined in Section 2 of Appendix 3 (expressed to apply to both leading and lagging Mvar);

QSF = the shortfall factor relating to the capability payment (expressed as either  $QSF_{lead}$  or  $QSF_{lag}$  to apply respectively to capability leading and capability lagging as applicable), being:-

$$\min \left( 1, \left( \frac{QR}{QC} \right)^2 \right)$$

where

QR = defined in Section 2 of Appendix 3 (expressed to apply to both leading and lagging Mvar); and

J = 1 in each Settlement Period in which, in relation to the Despatch Unit in question, Genset Registered Capacity is greater than 2MW, otherwise 0.

4. Zonal Weighting Factors

ZWF = the Provisional Zonal Weighting Factor (expressed as either  $ZWF_{lead}$  or  $ZWF_{lag}$  to apply respectively to the zonal weighting factor leading and the zonal weighting factor lagging) for the Despatch Unit, calculated as follows:-

(a) In respect of the period from (and including) 1<sup>st</sup> October, 1997 to (and including) 31<sup>st</sup> March, 1998 and in respect of each subsequent twelve month period ending 31<sup>st</sup> March, provisional zonal weighting factors (“the Provisional Zonal Weighting Factors”) shall be calculated by NGC in respect of both leading and lagging Reactive Power by reference to:-

(i) the leading or lagging (as the case may be) Mvar “need” for leading or lagging (as the case may be) Reactive Power for that period in each Relevant Zone, divided by

(ii) the total leading or lagging (as the case may be) Mvar capability for that period in each Relevant Zone as forecast by NGC (“the Total Forecast Capability”),

with the result of that division in each case being multiplied by an adjustment factor being:-

$$\frac{16112}{TAN}$$

Where

TAN = a figure being, for the period from (and including) 1<sup>st</sup> October, 1997 to (and including) 31<sup>st</sup> March



1998, 14,775, and for each subsequent twelve month period ending 31<sup>st</sup> March, a figure being the sum total of the leading Mvar “need” for leading Reactive Power plus the sum total of the lagging Mvar “need” for lagging Reactive Power in all Reactive Power Zones for the twelve month period in question, as given each year in the Seven Year Statement,

provided that each Provisional Zonal Weighting Factor (both leading and lagging) shall not in any event be greater than 3.000 and provided further that (for the avoidance of doubt) no determination of  $ZWF_{lead}$ ,  $ZWF_{lag}$  and TAN shall be made in respect of any such twelve month period when  $Y = 0$ .

- (b) The Provisional Zone Weighting Factors, together with the Total Forecast Capability, will be notified by NGC as soon as reasonably practicable by publication in the first practicable Seven Year Statement (or any update thereof).

#### Reconciliation

As soon as reasonably practicable following the expiry of each twelve month period ending 31<sup>st</sup> March, NGC shall recalculate  $ZWF_{lead}$  and  $ZWF_{lag}$  for that twelve month period in accordance with the above provision for calculation of the Provisional Zonal Weighting Factors but substituting for the Total Forecast Capability the actual total leading or lagging (as the case may be) Mvar capability for that twelve month period in each Relevant Zone as determined by NGC (“the Total Actual Capability”). Such recalculation of  $ZWF_{lead}$  and  $ZWF_{lag}$  shall be undertaken by NGC in a manner consistent with the principles and methodologies set out in the document entitled “Methodology Document for the Recalculation of Zonal Weighting Factors” published by NGC for this purpose. Such recalculated figures for  $ZWF_{lead}$  and  $ZWF_{lag}$  (“the Final Zonal Weighting Factors”), together with the Total Actual Capability, shall be published by NGC in the Seven Year Statement. Each Final Zonal Weighting Factor (both leading and lagging) shall not in any event be greater than 3.000 and (for the avoidance of doubt) no determination of  $ZWF_{lead}$ ,  $ZWF_{lag}$  and TAN shall be made in respect of any such twelve month period when  $Y=0$ .

NGC shall derive the Total Actual Capability from the Mvar capability (required under and in accordance with the Connection Conditions of the Grid Code) of Generating Units in respect of which Ancillary Services

Agreements have been or will be amended or concluded to give effect to the provisions of sub-paragraphs 4.2 and 4.3 of this Schedule. In respect of any twelve month period ending 31<sup>st</sup> March, such Mvar capability shall be reduced pro rata for all Settlement Periods in such twelve month period in respect of which no capability payments referred to in this Appendix 1 shall fall due:-

- (a) by virtue of paragraph 7 below (with effect from the commencement of the twelve month period in question ); and
- (b) by virtue of paragraph 8 below (until the end of the twelve month period in question); and
- (c) by virtue of factor J referred to in paragraph 3 above being set to zero (at any time during the twelve month period in question).

As soon as reasonably practicable following publication of the relevant Seven Year Statement, NGC shall pay to each relevant User or be paid by each relevant User such sum as will reconcile:-

- (i) capability payments made to that User and calculated in accordance with paragraph 3 above by reference to the Provisional Zonal Weighting Factors,

with

- (ii) capability payments due to or from that User and calculated in accordance with paragraph 3 above by reference to the Final Zonal Weighting Factors.

For the avoidance of doubt, such reconciliation will include the payment of interest at the Base Rate from the date of payment by NGC to that User of the capability payments referred to at (i) above.

For clarification purposes, each reference in this paragraph 4 to “need” does not imply actual Reactive Power need but is used merely to refer to the figure identified as “need” in the Seven Year Statement. Such figure shall be determined each year using the same principles and methodologies as used to determine the zonal weighting factors for the twelve month periods ended on 31<sup>st</sup> March 1996 and 31<sup>st</sup> March 1997.

## 5. Indexation

The indexation factor I used in the formulae in Paragraph 2 above shall <sup>1</sup>], with effect from 1<sup>st</sup> October 1997 in respect of the period from (and

including) that date to (and including) 31<sup>st</sup> March 1998,] with effect from 1<sup>st</sup> April in respect of each subsequent twelve month period ending 31<sup>st</sup> March, be determined as follows:-

$$I = \frac{RP1_2}{RP1_1}$$

where

For the period from (and including) 1<sup>st</sup> October, 1997 to (and including) 31<sup>st</sup> March, 1998  $RP1_2 = 155.4$ , and thereafter  $RP1_2$  is the RPI for March of the immediately preceding twelve month period ending 31<sup>st</sup> March.

$RP1_1$  is the RPI for March, 1994 (142.5).

The index used is the Retail Price Index (RPI) with 1987 = 100 base. The source of the RPI index is the monthly Department of Employment "Employment Gazette".

Subject always to sub-paragraph 2.5 of this Schedule, In respect of all periods from (and including) 1<sup>st</sup> April, 2001 the indexation factor I applicable for the period from (and including) 1<sup>st</sup> April, 2000 to (and including) 31<sup>st</sup> March 2001 shall apply.

6. ---

7. ---

8. ---

9. Reconciliation

As soon as practicable after this Schedule has taken effect and Ancillary Services Agreements have been amended so as to give effect thereto, NGC will pay to each relevant user or be paid by each relevant User such sum as will reconcile:-

- (a) payments (if any) made to such User for the provision of the Obligatory Reactive Power Service from BM Units in respect of the period from 1<sup>st</sup> October, 1997 to (and including) the date of such reconciliation by NGC

with

- (b) payments due to or from such User pursuant to any Ancillary Services Agreement giving effect to this Schedule in respect of the

period from 1<sup>st</sup> October, 1997 to the date of such reconciliation (both dates inclusive) as if such Ancillary Services Agreements had then been effective. For the avoidance of doubt, such reconciliation will include the payment of interest at Base Rate from the date of the relevant payment by NGC referred to at sub-paragraph 9(a) above.

**6. Metering – Appendix 4 of MCUSA Schedule 5**

2.4 Subject always to sub-paragraph 2.5, the appropriate factors and methodologies for each relevant **BM Unit** shall be agreed by **NGC** and each relevant **User** (both acting reasonably) in the relevant **Mandatory Services Agreement** by adoption of one or more of the factors or methodologies set out in the document entitled “Methodology Document for the Aggregation of Reactive Power Metering” (as amended from time to time) published by **NGC** for this purpose. This document shall specify the respective factors and methodologies to be applied for particular **Metering System** configurations in order to determine so far as reasonably practicable the Mvarh import value and Mvarh export value for the relevant **BM Unit** at the **Commercial Boundary** as required by this sub-paragraph 2.4.

2.5 Loss adjustment factors and aggregation methodologies need not be agreed between **NGC** and the relevant **User** in connection with any configuration described in sub-paragraph 2.4.3 in respect of periods prior to (1<sup>st</sup> April 1998).

**7. Matters for Review - Appendix 7 of MCUSA, Schedule 5**

<u>Matter</u>	<u>Date of review</u>
1. The values of X and Y referred to in Appendix 1 in respect of Settlement Periods from (and including) 1 <sup>st</sup> April 1999.	1 <sup>st</sup> October 1998

Applicable principle:

The degree and extent to which a competitive market has been established in accordance with the provisions of this Schedule (taking into account, inter alia, the amount of Mvar capability the subject of Market Agreements and the

utilisation thereof).

2. Any payment arrangements formulated by NGC in conjunction with any unlicensed providers . 1<sup>st</sup> October 1999

Applicable principle:

The extent to which it is reasonably practicable to achieve consistency with the provisions of Appendix 1 or Appendices 2 and 5 (as the case may be).

3. The treatment of Trading Units for the purposes of metering and calculation of Mvar capability in connection with this Schedule. 1<sup>st</sup> October 1999

Applicable principle:

None

4. The indexation factor referred to in Appendix 1 to apply in respect of all periods from (and including) 1<sup>st</sup> April 2001. 1<sup>st</sup> October 2000

Applicable principles:

Those charging principles set out in Appendix 8.

5. (a) The extent of any change in the nature of, or extent of recovery under the Balancing and Settlement Code of, variable costs incurred or to be incurred by Generating Units providing the Obligatory Reactive Power Service; and Not applicable
- (b) the extent to which such changes should lead to a change in the specific costs

identified in paragraph 1 of Appendix 8 upon which the totality of payments referred to therein is based and founded.

Applicable principle:

That, to the extent innovation in the development of the default payment arrangements or the giving of appropriate economic signals is not thereby stifled, the specific costs from time to time identified in paragraph 1 of Appendix 8 (and upon which the totality of payments referred to therein is based and founded) should continue to comprise the totality of variable costs (actual or estimated) incurred or to be incurred in respect of, and aggregated across, all Generating Units providing the Obligatory Reactive Power Service, provided always that each of those specific costs from time to time identified shall only be a variable cost not recovered under the Balancing and Settlement Code which:-

- (i) is not being incurred at the date this Schedule comes into effect; or
- (ii) is being incurred at the date this Schedule comes into effect and as at that date is either identified as a specific cost in paragraph 1 of Appendix 8 or is being

recovered under the  
Balancing and Settlement  
Code.

**8. Charging Principles - Appendix 8 of MCUSA Schedule 5**

In accordance with the relevant provisions of this Part I, the following principles are intended to form the basis of the default payment arrangements for the provision of the **Obligatory Reactive Power Service** set out in this Schedule I and are intended to be taken into account in any review of the indexation factor referred to in Appendix 1. However, they are not intended to stifle innovation in the development of the default payment arrangements or the giving of appropriate economic signals. It is therefore the Parties' intention that, upon any change in the nature of, or extent of recovery under the Balancing and Settlement Code of, variable costs (actual or estimated) incurred or to be incurred by Generating Units providing the Obligatory Reactive Power Service, the specific costs identified in paragraph 1 below shall be a matter for review by the Transmission Users Group as more particularly referred to as item 5 of Appendix 7.

**Part II**

Not Used