

DATED _____ **2019**

NATIONAL GRID ELECTRICITY TRANSMISSION plc

and

[REDACTED]

**REACTIVE MARKET ANCILLARY SERVICES
AGREEMENT RELATING
TO [REDACTED] POWER STATION**

Contract Log No [REDACTED]

[Voltage Only Option]

THIS REACTIVE MARKET ANCILLARY SERVICES AGREEMENT is made the _____ day
of _____ 2019

BETWEEN:-

- (1) **NATIONAL GRID ELECTRICITY TRANSMISSION plc** a company registered in England with number 2366977 whose registered office is at 1-3 Strand, London, WC2N 5EH (“**The Company**” which expression shall include its permitted successors and/or assigns); and
- (2) [] a company registered in [England/Scotland] with number [] whose registered office is at [] (the “**Generator**” which expression shall include its permitted successors and/or assigns).

WHEREAS:-

- (A) **The Company** and the **Generator** are parties to a **Mandatory Services Agreement** [dated []] OR [have agreed to enter into a **Mandatory Services Agreement** following the date hereof] in respect of [] **Power Station** (the “**MSA**”).
- (B) Clause 3 of the **MSA** gives effect to the provisions of paragraph 2 of Schedule 3, Part I to the **Connection and Use of System Code** (the “**CUSC Schedule**”) with respect to the payments to be made by **The Company** to the **Generator** for the provision by the **Generator** of the **Obligatory Reactive Power Service** from the **Contracted Units**.
- (C) For the duration of its term, this Reactive Market Ancillary Services Agreement (“**Market Agreement**”) replaces certain provisions of the **MSA** and sets out alternative terms upon which the **Generator** has agreed to provide the **Enhanced Reactive Power Service** from the **Contracted Units** pursuant to paragraph 3 of the **CUSC Schedule**.

NOW IT IS HEREBY AGREED as follows:-

1. **DEFINITIONS, INTERPRETATION AND CONSTRUCTION**

Unless the subject matter otherwise requires or is inconsistent therewith or unless expressly defined in Appendix 1, the definitions contained or referred to in Section 11 of the **Connection and Use of System Code**, in the **CUSC Schedule** and in Appendix 3 to the **MSA** have the same meanings, interpretations and construction in this **Market Agreement** as though the same were set out in full in this **Market Agreement**. In addition, the further definitions set out in Appendix 1 to this **Market Agreement** shall apply.

2. **COMMENCEMENT, TERM AND SUSPENSION**

- 2.1 This **Market Agreement** shall be conditional in all respects on **The Company** and the **Generator** having entered into a **MSA** by not later than []].

2.2 Subject to Sub-Clause 2.1, this **Market Agreement** shall apply to **Settlement Days** from and including [] hours on [] and, subject always to earlier termination in accordance with Clause 5 hereof, shall continue in force and effect until the earlier of:-

(i) [] hours on []; or

(ii) the date of termination of the **CUSC Schedule** or the **MSA**.

For the avoidance of doubt, in the event this **Market Agreement** is terminated in relation to any individual **Contracted Unit**, the provisions of this **Market Agreement** shall terminate in relation to that **Contracted Unit** only.

2.2 For the duration of each **Service Period**, in relation to any **Contracted Unit** to which this **Market Agreement** applies, the provisions of Clause 3 of the **MSA** (except Sub-Clause 3.2) shall be suspended and have no force and effect.

2.3 Nothing in this **Market Agreement** shall affect the rights and obligations of the **Parties** accrued under the terms of Clause 3 of the **MSA** as at the date this **Market Agreement** comes into effect.

3. **SERVICE PROVISION AND PAYMENT**

3.1 **Provision of Enhanced Reactive Power Service**

For the duration of this **Market Agreement** the **Generator** agrees to provide the **Enhanced Reactive Power Service** upon and subject to the terms and conditions set out herein.

3.2 **Service Requests**

3.2.1 Where in respect of any **Settlement Period** during any **Service Period** the prevailing **Physical Notification** of any **Contracted Unit** is zero, then except with respect to any period of deemed unavailability pursuant to Sub-Clause 3.4, **The Company** shall be entitled to instruct the provision of the **Enhanced Reactive Power Service** in accordance with Sub-Clause 3.2.2.

3.2.2 Such instruction ("**Service Request**") shall be submitted by **The Company** to the **Generator** by telephone followed by email using form D, as specified in Appendix 2, and no later than commencement of the **Notice Period** for the relevant **Service Period** and for the avoidance of doubt shall apply to all **Settlement Periods** in the **Service Period**.

3.2.3 Each **Service Request** shall be promptly acknowledged by the **Generator** by email using form D, as specified in Appendix 2.

3.3 **BM Unit Data**

3.3.1 Forthwith upon receipt by the **Generator** of a **Service Request**, and in respect of each **Settlement Period** in the **Service Period**, the **Generator** shall, in accordance with the **Grid Code**, and in respect of the relevant **Contracted Unit**:-

(a) procure that the **Physical Notification** is re-declared to not less than the **Contracted Output** and maintained at that level through to **Gate Closure**;

(b) resubmit all **Dynamic Parameters** to be consistent with the **Contracted Parameters**; and

(c) comply with the obligation set out in **Grid Code BC2.5.1**.

3.3.2 If, during the **Service Term** and with respect to any one or more of the **Contracted Units**, the **Generator** becomes aware that it can enhance the values of any of the **Contracted Parameters** then it shall promptly so notify **The Company** by facsimile using form A, as specified in Appendix 2, and shall promptly notify **The Company** by facsimile using form A, as specified in Appendix 2 when such enhanced **Contracted Parameters** can no longer be maintained.

3.4 **Service Unavailability**

3.4.1 For the purposes of this Clause 3, the **Enhanced Reactive Power Service** shall be deemed unavailable from a **Contracted Unit** in any **Settlement Period** in a **Service Period** where the prevailing **Physical Notification** for that **Settlement Period** is expected to be above zero at the commencement of the relevant **Notice Period**.

3.4.2 Where at any time the **Generator** becomes aware that any of the **Contracted Units** no longer has the capability of providing the **Enhanced Reactive Power Service** during all or any part of a **Service Period**, then it shall promptly so notify **The Company** by facsimile using form B, as specified in Appendix 2, and the **Generator** shall thereafter promptly notify **The Company** by facsimile using form C, as specified in Appendix 2 when capability is restored.

3.4.3 Each notification of non-capability by the **Generator** pursuant to Sub-Clause 3.4.2 shall be accompanied by an explanation in reasonable detail of the reasons for such unavailability, and for the avoidance of doubt the **Generator** may only declare unavailability for reasons of safety or reasons relating to the technical capability of the **Contracted Unit**.

3.4.4 For the purposes of this Clause 3, the **Enhanced Reactive Power Service** shall be deemed unavailable from any **Contracted Unit** from the time that such **Contracted Unit** no longer has the capability to provide the **Enhanced Reactive Power Service** as described in Sub-Clause 3.4.2 to the time of receipt by **The Company** of notification that capability is restored as referred to in Sub-Clause 3.4.2.

3.5 **Reactive Despatch Instruction**

3.5.1 It is acknowledged by the **Generator** that, at all times during each **Service Period** (excluding any period of deemed unavailability specified in Sub-Clause 3.4.4) when any **Contracted Unit** is operating in accordance with a non-zero **Physical Notification** (for the avoidance of doubt whether or not pursuant to a **Service Request**), **The Company** shall have the right (but not the obligation) to issue a **Reactive Despatch Instruction** to provide **Reactive Power** from that **Contracted Unit**.

3.5.2 Following receipt of a **Reactive Despatch Instruction**, the **Generator** shall take all necessary steps to ensure that each **Contracted Unit** operates throughout

each **Settlement Period** and at the **Reactive Power** output specified in the **Reactive Despatch Instruction**.

3.6 **Payments to the Generator**

3.6.1 In consideration of the provision by the **Generator** of the **Enhanced Reactive Power Service**, and for each **Contracted Unit**, **The Company** shall make the following payments to the **Generator**:-

(a) subject to Sub-Clauses 3.6.2 and 3.6.3, a sum calculated in accordance with Appendix 4 ("**Utilisation Fee**") for each **Service Period** in respect of which **The Company** has issued a **Service Request**; and

(b) subject to Sub-Clause 3.6.4, an amount calculated in accordance with Appendix 1 of Schedule 3 to the **CUSC Schedule** for provision of **Reactive Power** in accordance with a **Reactive Despatch Instruction**.

3.6.2 For the avoidance of doubt, the **Utilisation Fee** shall not be payable for **Settlement Periods** associated with the run up and run down of the relevant **Contracted Unit**.

3.6.3 No payment shall be made by **The Company** pursuant to Sub-Clauses 3.6.1 (a) with respect to any **Settlement Period** in respect of which **The Generator** fails to comply with any of its obligations hereunder.

3.6.4 For the purpose of Sub-Clause 3.6.1(b), the provisions of paragraph 5 of Schedule 3 to the **CUSC Schedule** shall apply.

4. **GRID CODE**

It is acknowledged by both **Parties** that the provision by the **Generator** of the **Enhanced Reactive Power Service** in accordance with the terms hereof shall not relieve it of any of its obligations set out in the **Grid Code** including without limitation its obligations set out in **Grid Code CC8.1** to provide **Reactive Power** (supplied otherwise than by means of **Synchronous** or **Static Compensation**) in accordance with **Grid Code CC6.3.2** and **CC6.3.4**.

5. **TERMINATION**

5.1 **The Company** shall be entitled to terminate the provisions of this **Market Agreement** in relation to any **Contracted Unit** in the following circumstances:-

5.1.1 upon a change in the **Registered Capacity** of that **Contracted Unit** to less than 25MW; or

5.1.2 upon a continuous period of unavailability of that **Contracted Unit** to be instructed by **The Company** in accordance with **Grid Code BC2** extending beyond 30 consecutive days; or

5.1.3 upon an aggregate period of 30 days in the **Service Term** in which, for that **Contracted Unit**, QR_{lead} is less than QC_{lead} ; or

5.1.4 upon an aggregate period of 30 days in the **Service Term** in which, for that **Contracted Unit**, QR_{lag} is less than QC_{lag} ,

in each case by giving notice in writing to the **Generator**, not later than 30 days following such occurrence, that such occurrence constitutes an event of default. Once **The Company** has given such notice of an event of default, this **Market Agreement** shall terminate in relation to the **Contracted Unit** concerned.

5.2 **The Company** shall also be entitled to terminate the provisions of this **Market Agreement** with effect from the end of a **Day** by giving notice in writing to the **Generator** two **Days** prior to that **Day**.

6. CONNECTION AND USE OF SYSTEM CODE

The provisions of Paragraphs 4.3 (Payments for Balancing Services), 6.12 (Limitation of Liability), 6.14 (Transfer and Sub-contracting), 6.15 (Confidentiality), 6.20 (Waiver), 6.21 (Notices), 6.22 (Third Party Rights), 6.23 (Jurisdiction), 6.24 (Counterparts), 6.25 (Governing Law) and 6.26 (Severance of Terms) of the **Connection and Use of System Code** shall apply to this **Market Agreement** as if set out in full herein.

7. DISCLOSURE OF INFORMATION

The **Generator** hereby consents to the disclosure and use by **The Company** in such manner or form as it thinks fit of data and other information relating to this **Market Agreement** and the provision of the **Enhanced Reactive Power Service** (including payments made to the **Generator** hereunder):

(a) to the extent necessary to enable **The Company** to comply with its obligations set out in the **CUSC Schedule**;

(b) for the purposes of any or all of the statements published from time to time pursuant to Standard Condition C16 of the **Transmission Licence**; or

(c) for the purposes of making market data available to tenderers for **Enhanced Reactive Power Services**.

8. DISPUTE RESOLUTION

It is hereby acknowledged and agreed by the **Parties** that any dispute or difference of whatever nature concerning the obligations of the **Parties** under this **Market Agreement** insofar as and to the extent the same relate to the **Enhanced Reactive Power Service** shall be a dispute or difference arising out of or in connection with the **CUSC Schedule**, and accordingly the provisions of Section 7 of the **Connection and Use of System Code** shall apply.

9. **NOTICES**

For the purposes of this **Market Agreement**, save to the extent as may be specified on the forms specified in Appendix 2, any notice or other communication to be given by **The Company** or the **Generator** to the other under, or in connection with matters contemplated by, this **Market Agreement** shall be sent to the following address and/or facsimile number and marked for the attention of the person named below:

The Company: National Grid Electricity Transmission plc
Market Operations
National Grid House
Warwick Technology Park
Gallows Hill
Warwick CV34 6DA

Facsimile number: 01926 655630

For the attention of: The Company Secretary

Copy to: Head of Commercial Operations

Facsimile number: 01926 656613

Generator: [REDACTED]

Facsimile number: [REDACTED]

For the attention of: [REDACTED]

Operational telephone
contact number: [REDACTED]

Operational facsimile

contact number: [REDACTED]

Operational contact: [REDACTED]

10. **HIERARCHY**

If any provision of this **Market Agreement** shall be inconsistent with the provisions of the **CUSC Schedule**, the provisions of the **CUSC Schedule** shall prevail to the extent of such inconsistency.

11. VARIATIONS

No variations or amendments to this **Market Agreement** shall be effective unless made in writing and signed by and on behalf of both **Parties**.

12. ASSIGNMENT BY THE COMPANY

The Company is permitted to assign or transfer the benefit and/or burden of this **Market Agreement** to the holder of a **Licence** with responsibility for carrying out the **Balancing Services Activity**.

13. ANTI-BRIBERY

13.1 Each **Party** shall:

3.13.1 comply with all **Anti-Bribery Laws**;

3.13.2 not engage in any activity, practice or conduct which would constitute an offence under sections 1, 2 or 6 of the Bribery Act 2010 if such activity, practice or conduct had been carried out in the United Kingdom;

3.13.3 have and shall maintain in place, throughout the **Service Term**, its own policies and procedures, including **Adequate Procedures**, to ensure compliance with the **Anti-Bribery Laws** and this Clause 13, and will enforce them where appropriate; and

3.13.4 procure and ensure that all of its **Associated Persons** and/or other persons who are performing services in connection with this **Agreement** comply with this Clause 13.

13.2 If either **Party** breaches this Clause 13 then, without prejudice to any other rights or remedies, the other **Party** may immediately terminate this **Market Agreement** on written notice to the **Party** in breach.

14. EMR

14.1 Notwithstanding any confidentiality obligations and any restriction on the use or disclosure of information set out in this **Market Agreement**, the **Generator** consents to **The Company** and each of its subsidiaries using all and any information or data supplied to or acquired by it in any year under or in connection with this **Market Agreement** for the purpose of carrying out its **EMR Functions**.

14.2 The provisions relating to the resolution of disputes set out in this **Market Agreement** (if any) are subject to any contrary provision of an **EMR Document**.

14.3 Where for the purposes of this provision only:

“**AF Rules**” has the meaning given to “allocation framework” in section 13(2) of the Energy Act 2013;

“**Capacity Market Rules**” means the rules made under section 34 of the Energy Act 2013 as modified from time to time in accordance with that section and The Electricity Capacity Regulations 2014;

**“EMR
Document”**

means The Energy Act 2013, The Electricity Capacity Regulations 2014, the Capacity Market Rules, The Contracts for Difference (Allocation) Regulations 2014, The Contracts for Difference (Definition of Eligible Generator) Regulations 2014, The Contracts for Difference (Electricity Supplier Obligations) Regulations 2014, The Electricity Market Reform (General) Regulations 2014, the AF Rules and any other regulations or instruments made under Chapter 2 (contracts for difference), Chapter 3 (capacity market) or Chapter 4 (investment contracts) of Part 2 of the Energy Act 2013 which are in force from time to time; and

**“EMR
Functions”**

has the meaning given to “EMR functions” in Chapter 5 of Part 2 of the Energy Act 2013.

IN WITNESS WHEREOF the hands of the duly authorised representatives of the **Parties** at the date first above written.

SIGNED on behalf of
NATIONAL GRID
ELECTRICITY TRANSMISSION plc

SIGNED on behalf of

[REDACTED]

APPENDIX 1

Definitions

“Contracted Maximum Lagging MVar”	means, for each Contracted Unit , the maximum lagging MVar value specified in the table set out in Appendix 3;
“Contracted Maximum Leading MVar”	means, for each Contracted Unit , the maximum leading MVar value specified in the table set out in Appendix 3;
“Contracted Output”	means, for each Contracted Unit , the applicable MW level specified in Appendix 3;
“Contracted Parameters”	means, in relation to a Contracted Unit , the parameters and values specified in the table set out in Appendix 3;
“Contracted Units”	for the purposes of this Market Agreement , means BM Unit(s) [] , [] and [] at the Generator’s [] Power Station , and “Contracted Unit” shall be construed accordingly;
“Day”	means a calendar day;
“Enhanced Reactive Power Service”	means the availability and provision of Reactive Power from the Contracted Units in accordance with this Market Agreement ;
“MSA”	for the purposes of this Market Agreement , the meaning attributed to it in the recitals hereto;
“Notice Period”	means the period of hours specified in Appendix 3 which expires at the start of the relevant Service Period ;
“Redeclared Range”	means, in relation to a Contracted Unit , the Reactive Power output range submitted by the Generator in accordance with Sub-Clause 3.3, being the range between the maximum Reactive Power output

(lagging) and the maximum **Reactive Power** output (leading);

“Service Period” means the period commencing at [] hours on a Day and ending at [] hours on the next Day during the Service Term;

“Service Request” has the meaning given to that term in Sub-Clause 3.2.2;

“Service Term” means the period more particularly described in Sub-Clause 2.2;

“Utilisation Fee” means the amount per **Settlement Period** more particularly described in Sub-Clause 3.6.1(a).

APPENDIX 2

Facsimile Forms

FORM A

**ENHANCED REACTIVE POWER SERVICE FAX FORM FOR
DYNAMIC PARAMETER REDECLARATION**

Contracted Unit:	
Contract Number:	
Company Name:	

Tel:	
Standby Tel:	
Fax:	
Standby Fax:	

We hereby notify you of a Dynamic Parameter Re-declaration of the above Contracted Unit due to

PARAMETER RE-DECLARATION PRIOR TO SERVICE PERIOD

		BM Unit ()	BM Unit ()	BM Unit ()
Output (MW)				
Reduction (MW) if applicable				
MVAr Range at Commercial Boundary	Maximum Leading MVAr			
	Maximum Lagging MVAr			
NDZ (min)				
RUR (MW/min)				
RDR (MW/min)				
MZT (mins)				
MNZT (mins)				

Fax Sent By (Print name): **Date:**
Time: **Signature:**

Acknowledged by National Grid (Print name):
Signature: **Date:**
Time:

National Grid Control
Fax number: 0870 602 4808
Telephone: 0844 892 0385

Standby Fax: 0870 602 4805
Standby Phone: 0844 892 0370

FORM B

**ENHANCED REACTIVE POWER SERVICE FAX FORM FOR
DECLARATION OF UNAVAILABILITY**

Contracted Unit:	
Contract Number:	
Company Name:	
Contracted MW:	

Tel:	
Standby Tel:	
Fax:	
Standby Fax:	

**We hereby notify you of the unavailability of Enhanced Reactive Power Service
from the above Contracted Unit**

**UNAVAILABILITY OF SERVICE PRIOR TO OR WITHIN NOTICE PERIOD,
OR WITHIN SERVICE PERIOD**

Reason for Unavailability:

Fax Sent By (Print name): **Date:** **Time:**

Signature:

Acknowledged by National Grid (Print name):

Signature: **Date:** **Time:**

National Grid Control
Fax number: 0870 602 4808
Telephone: 0844 892 0385

Standby Fax: 0870 602 4805
Standby Phone: 0844 892 0370

FORM C

**ENHANCED REACTIVE POWER SERVICE FAX FORM FOR
REDECLARATION OF AVAILABILITY**

Contracted Unit:	
Contract Number:	
Company Name:	
Contracted MW:	

Tel:	
Standby Tel:	
Fax:	
Standby Fax:	

**We hereby notify you of the availability of Enhanced Reactive Power Service
from the above Contracted Unit**

**RESTORATION OF AVAILABILITY OF SERVICE PRIOR TO OR WITHIN NOTICE PERIOD,
OR WITHIN SERVICE PERIOD**

Reason for Restoration of Availability:

Fax Sent By (Print name): **Date:** **Time:**

Signature:

Acknowledged by National Grid (Print name):

Signature: **Date:** **Time:**

National Grid Control

National Grid Control
Fax number: 0870 602 4808
Telephone: 0844 892 0385

Standby Fax: 0870 602 4805
Standby Phone: 0844 892 0370

FORM D
ENHANCED REACTIVE POWER SERVICE
FORM FOR INSTRUCTION

Contracted Unit:	
Contract Number:	
Company Name:	
Contracted MW:	

Tel:	
Standby Tel:	
Fax:	
Standby Fax:	

CONFIRMATION OF INSTRUCTIONS

National Grid issues the following commencement and cease instructions (Service Request) in accordance with the REACTIVE MARKET ANCILLARY SERVICES AGREEMENT relating to

[] Power Station:

	Date	Time	Instruction	Time at Which Full MVar Capability Achieved
Start of Service excl. RUR				
End of Service excl. RDR				
Start of Service excl. RUR				
End of Service excl. RDR				
Start of Service excl. RUR				
End of Service excl. RDR				
Start of Service excl. RUR				
End of Service excl. RDR				
Start of Service excl. RUR				
End of Service excl. RDR				

Instruction Comments:

Note: Upon receipt of this instruction you will redeclare Physical Notification and Dynamic Parameters, in accordance with Clause 3.3 of the Agreement

Fax Sent By National Grid (Print name): Date:
Time: Signature:

Acknowledged by (Print name): Date: Time:
Signature:

National Grid Control
Fax number: 0870 602 4808
Telephone: 0844 892 0385

Standby Fax: 0870 602 4805
Standby Phone: 0844 892 0370

[Generator] Control
Fax number: []

Telephone: [] Standby Fax: [] Standby

APPENDIX 3

Contracted Output, Notice Period and Dynamic Parameters

		BM Unit ()	BM Unit ()	BM Unit ()
Contracted Output (MW)				
Notice Period (hours)				
Mvar Range	Contracted Maximum Leading MVar			
	Contracted Maximum Lagging MVar			
RUR (MW/min)				
RDR (MW/min)				
MZT (mins)				
MNZT (mins)				
Service Period				
Service Term				

APPENDIX 4 - Gas

Utilisation Fee

The **Contract Fee** for each **Service Period** shall be determined as follows:-

$$\text{Contract Fee (CF)} = (\text{Max}(0, \text{SP} - \text{CSS}_d)) * \text{CO} * \text{H}_d$$

Where:

CF = the **Contract Fee** for the relevant **Service Period**.

SP = the Strike Price, being either:

- (i) £[]/MWh for Option 1 - where at the time of the **Service Request**, $\text{PN} < \text{SEL}$ in EFA Block 6 and EFA Block 3 in the **Service Period**,
- (ii) £[]/MWh for Option 2 - where at the time of the **Service Request**, either $\text{PN} \geq \text{SEL}$ in EFA Block 6 or $\text{PN} \geq \text{SEL}$ in EFA Block 3, in the **Service Period**, but not both,
- (iii) £[]/MWh for Option 3 - where at the time of the **Service Request**, $\text{PN} \geq \text{SEL}$ in both EFA Block 6 and EFA Block 3 in the **Service Period**.

CSS_d = for **Service Periods** expiring in calendar day d, the day ahead **Clean Spark Spread**

$$\text{Clean Spark Spread} = \text{GBPP} - \text{Gas Cost} - \text{Carbon Cost}$$

Where:

$$\text{Gas Cost} = (\text{Day Ahead NBP} / \text{Gas Conversion Factor} * 10) / \text{Gas Efficiency Constant}$$

~~Carbon Cost = (Dec 2018EUA + CPS) * Gas Carbon Intensity, or where the contract is into January 2020, then for the period of January 1 2020 on:~~

$$\text{Carbon Cost} = (\text{Dec 2019EUA} + \text{CPS}) * \text{Gas Carbon Intensity}$$

And where:

GBPP = a mean average across each **Settlement Period** throughout the **Service Period** of the clearing prices for those **Settlement Periods** published by APX following the day ahead auction on calendar day d-1, quoted as £/MWh

Day Ahead NBP = the Day Ahead NBP volume-weighted average price as published by Argus on calendar day d-1 (or, where this is not a **Working Day**, on the immediately preceding **Working Day**) or, where the **Working Day** immediately preceding calendar day d is a Friday, the Argus Weekend NBP volume-weighted average price published on that day, quoted as pence/therm

EUA = the European Union Allowance price (expressed in €/tonne) published by the Intercontinental Exchange as the 'Settle Price' within the end of day report for contract C-EUA and dated the **Day** in which the **Settlement Period** falls or, if no report is published for that **Day**, the report published most recently prior to that **Day**, converted to £/tonne at the Euro to

Sterling daily spot exchange rate for that **Day** published by the Bank of England.

CPS = UK carbon price support being £18.00/tonne from 1st April 2017

Gas Carbon Intensity = []

Gas Efficiency Constant = []

Gas Conversion Factor = 29.3071

CO = **Contracted Output**

H_d = the number of hours comprised in the relevant **Service Period** excluding periods of deemed unavailability pursuant to Sub-Clause 3.4 and any **Settlement Periods** in respect of which the **Generator** fails to comply with any of its obligations hereunder as referred to in Sub-Clause 3.6.3.

Euro GBP conversion = daily spot rate as published by the Bank of England.

APPENDIX 4 - COAL

Utilisation Fee

The **Contract Fee** for each **Service Period** shall be determined as follows:-

$$\text{Contract Fee (CF)} = (\text{Max}(0, \text{SP} - \text{CDS}_d)) * \text{CO} * \text{H}_d$$

Where:

CF = the **Contract Fee** for the relevant **Service Period**.

SP = the Strike Price, being either:

- (i) £[] MWh for Option 1 - where at the time of the **Service Request**, $\text{PN} < \text{SEL}$ in EFA Block 6B and EFA Block 3A in the **Service Period**,
- (ii) £[]/MWh for Option 2 - where at the time of the **Service Request**, either $\text{PN} \geq \text{SEL}$ in EFA Block 6B or $\text{PN} \geq \text{SEL}$ in EFA Block 3A, in the **Service Period**, but not both,
- (iii) £[]/MWh for Option 3 - where at the time of the **Service Request**, $\text{PN} \geq \text{SEL}$ in both EFA Block 6B and EFA Block 3A in the **Service Period**.

CDS_d = for **Service Periods** expiring in calendar day d, the day ahead **Clean Dark Spread**

$$\text{Clean Dark Spread} = \text{GBPP} - \text{Coal Cost} - \text{Carbon Cost}$$

Where:

$$\text{Coal Cost} = (\text{Front Month API2} / \text{Coal Conversion Factor}) / \text{Coal Efficiency Constant}$$

~~Carbon Cost = $(\text{Dec-2018EUA} + \text{CPS}) * \text{Coal Carbon Intensity}$ or where the contract is into January 2020, then for the period of January 1-2020 on:~~

$$\text{Carbon Cost} = (\text{Dec-2019EUA} + \text{CPS}) * \text{Coal Carbon Intensity}$$

And where:

GBPP = a mean average across each **Settlement Period** throughout the **Service Period** of the clearing prices for those **Settlement Periods** published by APX following the day ahead auction on calendar day d-1, quoted as £/MWh

Front Month API2 = the coal All Published Index number 2 closing price for the following calendar month as published by Bloomberg on calendar day d-1 (or, where this not a Working Day, on the immediately preceding Working Day), converted to £/ton

EUA = the European Union Allowance price (expressed in €/tonne) published by the Intercontinental Exchange as the 'Settle Price' within the end of day report for contract C-EUA and dated the **Day** in which the **Settlement Period** falls or, if no report is published for that Day, the report published most recently prior to that Day, converted to £/tonne at the Euro to Sterling daily spot exchange rate for that **Day** published by the Bank of England.

CPS = UK carbon price support being £18.00/tonne from 1st April 2017

Coal Carbon Intensity = []

Coal Efficiency Constant = -[]

Coal Conversion Factor = 6.97

CO = the **Contracted Output**

H_d = the number of hours comprised in the relevant **Service Period** excluding periods of deemed unavailability pursuant to Sub-Clause 3.4 and any **Settlement Periods** in respect of which the **Generator** fails to comply with any of its obligations hereunder as referred to in Sub-Clause 3.6.3.

Euro GBP conversion = daily spot rate as published by the Bank of England.

Appendix 4 - Other

Utilisation Fee

The **Contract Fee** for each **Service Period** shall be determined as follows:-

$$\text{Contract Fee (CF)} = P * CO * H_d$$

Where:

CF = the **Contract Fee** for the relevant **Service Period**.

P = the Price, being either:

- (i) £[]/MWh for Option 1 - where at the time of the **Service Request**, $PN < SEL$ in EFA Block 6 and EFA Block 3 in the **Service Period**,
- (ii) £[]/MWh for Option 2 - where at the time of the **Service Request**, either $PN \geq SEL$ in EFA Block 6 or $PN \geq SEL$ in EFA Block 3, in the **Service Period**, but not both,
- (iii) £[]/MWh for Option 3 - where at the time of the **Service Request**, $PN \geq SEL$ in both EFA Block 6 and EFA Block 3 in the **Service Period**.

CO = the **Contracted Output**

H_d = the number of hours comprised in the relevant **Service Period** excluding periods of deemed unavailability pursuant to Sub-Clause 3.4 and any **Settlement Periods** in respect of which the **Generator** fails to comply with any of its obligations hereunder as referred to in Sub-Clause 3.6.3.