

WS Connection Agreement

GENERATOR CONNECTION AGREEMENT (THERMAL)

Between

GHANA GRID COMPANY LIMITED

and



Dated as of _____, 20.....

SEPTEMBER 2012

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CONNECTION AGREEMENT

This Connection Agreement (this “Agreement”) is entered into as of the [date] day of [month], 2012

BETWEEN

GHANA GRID COMPANY LIMITED, incorporated under the Companies Act, 1963 (Act 179) and wholly owned by Government of Ghana, with its registered address at P.O. Box CS 7979, Tema, Ghana (hereinafter referred to as “**GRIDCo**”, which expression shall include its successors, and permitted assigns),

- and -

<*>, a company with incorporated under the laws of <*>, with its registered office located at <*> [optional: registered in Ghana with the External Companies Registry as an external company under the Companies Code, 1963 (Act 179)] (hereinafter referred to as the “**WS**”)

WHEREAS:

- (A) GRIDCo is responsible for planning, operating and managing the NITS;
- (B) WS owns and operates an approximately <*> MW nominal rated capacity electrical generation facility (the “**Facility**”), located at <*> which is connected to the NITS; and
- (C) GRIDCo and WS wish to enter into this Connection Agreement to govern the establishment and operational matters pertaining to the connection, at the Point of Connection of the WS generation facility to the NITS; and
- (D) This Agreement must be read in conjunction with Parties rights and obligations set under the Electricity Transmission (Technical, Operational and Standards of Performance) Rules, 2008, LI 1934, the Electricity Regulations, 2008, LI 1937, the Grid Code and the License obligations of both Parties.

NOW THEREFORE THIS AGREEMENT WITNESSETH AND IT IS HEREBY AGREED AS FOLLOWS:

1. DEFINITIONS AND INTERPRETATION

1.1 Definitions

In this Agreement, the following words and terms shall have the meanings ascribed to them in this Section 1, unless the context requires otherwise:

“**Active Power**” means the product of voltage and the in-phase component of alternating current, measured in units of watts or standard multiples thereof.

“Affected System” means any electric system or equipment other than the Systems that may be affected by the Connection or the Facility, including any generation, transmission or distribution system or equipment connected to the NITS.

“Agreement” means this Connection Agreement, (including the Appendices attached hereto at the time of execution or subsequently by agreement of the Parties), as the same may be amended from time to time in accordance with this Agreement or otherwise by agreement of the Parties.

“Annual Generation Schedule” has the meaning provided in Appendix 3, Part 1, Paragraph 2.1.1;

“Appendices” means the appendices to this Agreement as described in Section 1.4.

“Application” means the form of application for connection of the Facility to the NITS or for modifications of the existing connection of the Facility to the NITS, as such form may be made available by GRIDCo from time to time.

“Automatic Generation Control” means the system whereby electrical power is regulated by GRIDCo within a control area in response to changes in load, system frequency and other factors to maintain the scheduled system frequency and interchanges with other control areas;

“Availability Declaration” means a written declaration of available capacity of the Facility made by the WS to GRIDCo, as amended from time to time, and containing the information and otherwise delivered in accordance with the requirements set forth in the Operating Procedures and Section 10 of the Grid Code.

“Availability Period” means a period of one (1) hour;

“Available Capacity” means, for any Availability Period, the Active Power, expressed in MW at the reference conditions (as specified in Appendix 4), of each Unit available for delivery to the applicable Point of Connection announced by the WS for each Availability Period pursuant to an Availability Declaration.

“Bank of Ghana Prime Rate” means the Monetary Policy Rate as determined by the Bank of Ghana from time to time.

“Base Connection Charge” means the charges and fees for the connection of the Facility to the NITS that are approved by PURC in accordance with the Laws of Ghana that are payable by the WS.

“Capacity Test” means, in relation to a Unit, any test to determine its Dependable Capacity carried out in accordance with Appendix 4, Part 3;

“Cause” the failure of the applicable Party to comply with the relevant Laws of Ghana and such failure not having been rectified within such period (if any) as may be allowed

by the relevant Laws of Ghana or the relevant governmental or regulatory entity of the Republic of Ghana (other than GRIDCo).

“**Cedis**” shall mean the lawful currency of the Republic of Ghana, which as of the date of this Agreement is the Ghana Cedis.

“**Certificate of Approval to Connect**” means the certificate to be issued by GRIDCo to the WS within five (5) days after the WS satisfies the conditions precedent set forth in Section 4.1

“**Claims**” has the meaning set out in Section 10.1.1 Reference source not found. of this Agreement.

“**Cold Start**” means, in respect of a Unit, starting such Unit more than 96 hours since its last shutdown;

“**Commissioning Tests**” means those tests established by the Parties in accordance with the Grid Code that are designed to establish that the Facility can be safely operated and connected to the NITS, including the synchronization tests set forth in Part 1 of Appendix 4.

“**Connection**” means the Connection Facilities, equipment and procedures as described in this Agreement to permit the flow of electrical power from the Facility to the NITS, and “**Connect**” has a corresponding meaning.

“**Connection Capacity**” means, as of the Effective Date of this Agreement, approximately <*>MW.

“**Connection Facilities**” means the facilities that Connect the high-voltage bushings of the Facility step-up transformers to the NITS, as more particularly described in Appendix 7.

“**Connection Requirements**” or “**CR**” means the specific requirements and obligations contained in Section 4 and Appendix 1, as may be amended from time to time in accordance with this Agreement.

“**Cure Period**” means with respect to: (a) a Financial Default, sixty (60) days after receipt of notice from the Non-Defaulting Party; (b) a Non-Financial Default, ninety (90) days after receipt of notice from the Non-Defaulting Party; and (c) an Insolvency Event, no Cure Period shall apply.

“**Daily Generation Schedule**” has the meaning provided in Appendix 3, Part 1;

“**Data Link**” means a system provided by the WS acceptable to GRIDCo capable of providing data exchange between the Facility and GRIDCo as contemplated in this Agreement in a manner that is effectively the same as a Remote Terminal Unit;

“Declared Available Capacity” means, for any Availability Period, the Active Power, expressed in MW, available for delivery by the WS for each Availability Period pursuant to an Availability Declaration, which capacity must not exceed 105% of the Dependable Capacity in effect during such Availability Period;

“Dollars” shall mean the lawful currency of the United States of America.

“Default Notice” has the meaning set out in Section 6.1.1 of this Agreement;

“Defaulting Party” has the meaning set out in Section 6.1.1 of this Agreement;

“Dependable Capacity” means the average generating capability (measured in MW) of the Facility to produce Electrical Energy, calculated in accordance with Appendix 4, Part 3;

“Despatch” means directing the generation of Electrical Energy through Despatch Instructions, issued pursuant to the Despatch Procedures;

“Despatch Centre” means the control and despatching centre currently located in <*> or such other similar centres as may be designated by GRIDCo from time to time in writing as being the primary control point for Despatch Instructions to the WS;

“Despatch Day” means the day in respect of which Despatch Instructions are issued;

“Despatch Procedure” means the procedures for the issuance of Despatch Instructions, set forth in Appendix 3, Part 1;

“Despatch Instruction” means the instructions issued by GRIDCo in accordance with the Despatch Procedures to schedule the generation of Active Power, Electrical Energy and Reactive Power from the Facility in accordance with the Operating Procedures.

“Disclosing Party” has the meaning set out in Section 15.4.1 of this Agreement.

“Discriminatory Action” shall mean any action or refusal to act, other than for Cause, having the effect of:

- (a) depriving a Party of any right or benefit available under the Laws of Ghana or granted to a Party under this Agreement; or
- (b) treating a Party differently (to its disadvantage) than similarly situated persons.

“Dispute” has the meaning set out in Section 13.1 of this Agreement.

“Effective Date” has the meaning set out in Section 5.1 of this Agreement.

“Electrical Energy” means the energy produced, flowing or supplied by an electrical circuit.

“Emergency” means any abnormal system condition that requires automatic or immediate manual action to prevent or limit physical threat to persons or property or loss of generation supply or transmission facilities or that is likely in the reasonable opinion of GRIDCo materially and adversely to affect, the security, reliability or integrity of either System.

“Energy Commission” or **“EC”** means the commission established by the Energy Commission Act, 1997 (Act 541) and mandated by the Laws of Ghana to have oversight responsibility over the NITS.

”Energy Losses” means losses in Active Power;

“Event of Default” means a Financial Default, a Non-Financial Default or an Insolvency Event.

“Excitation System” means the excitation system of WS as set out in Schedule A to Appendix 4:

“Facility” means the total and complete electricity generating facility, together with all related equipment and property, located at <*>, Ghana, as further described in Appendices 6, 7 and 8 to this Agreement.

“Financial Default” means the failure to pay an undisputed amount, including amounts deemed due as a result of the resolution of a Dispute, under this Agreement when due, including amounts due for indemnification.

“Force Majeure” means any event or circumstance or combination thereof which affects a Party and is not within the reasonable control of that Party, acting and having acted in accordance with Prudent Utility Practices, that prevents such Party (the **“Affected Party”**) from or causes delay or impediment to the Affected Party in fulfilling all or any of its obligations under this Agreement, including the following events or circumstances to the extent that they satisfy the foregoing requirements of this definition:

- (a) any act of war (whether declared or undeclared), invasion, armed conflict or act of foreign enemy, military or other usurpation of power, blockade, embargo, revolution, riot, insurrection, civil commotion, sabotage or act of terrorism;
- (b) a natural event including but not limited to, lightning, earthquakes, volcanic activity, floods, storms, typhoons or tornados;
- (c) epidemics, plagues or quarantines; and
- (d) any Discriminatory Action.

“Frequency Variation” means the frequency limits provided in Technical Schedule TS-F of the Grid Code or as specified in the limits specified in the Frequency Voltage Limit Diagram referred to in Part 2 of Appendix 4;

“Full Load Saturation Curve” means the full-load saturation curve as referred to in Schedule A to Appendix 4;

“Future Facilities” means any electrical generation and related facilities located at or near the Site that may be Connected at or near the Point of Connection other than the Facility

“Gas” means natural gas;

“Generator System” means the installed generators, step-up transformers, generator breaker (if any), electric protection and control systems, related auxiliaries and communication facilities owned and operated by the WS and located at and forming part of the Facility, to but excluding the Points of Connection , together with all additions and modifications thereto and repairs or replacements thereof.

“GRIDCo” has the meaning set out on page 1 of this Agreement.

“GRIDCo Indemnitee” has the meaning set out in Section 10.1.1 of this Agreement.

“Grid Code” or **“GC”** means the National Electricity Grid Code of Ghana issued from time to time by the Energy Commission and based on the provisions of sections 24, 27 and 28 of the Energy Commission Act, 1997 (Act 541).

“High Side Bushings” means the bushings on the NITS side of the Main Transformer;

“Hot Start” means, in respect of a Unit, starting such Unit less than 8 hours since its last shutdown;

“IEEE Standard”, generally, means standards published by the Institute of Electrical and Electronics Engineers (“IEEE”), as such standards may be amended or replaced from time to time, and each numbered standard refers to a particular standard published by the IEEE;

“Indemnified Party” has the meaning set out in Section 10.2 of this Agreement.

“Indemnifying Party” has the meaning set out in Section 10.2 of this Agreement.

“Inertia Constant” has the meaning set out in Schedule A to Appendix 4;

“Insolvency Event” means:

- (a) the passing of a resolution for the bankruptcy, insolvency, winding up, liquidation of, or other similar proceeding relating to the WS;

- (b) the appointment of a trustee, liquidator, custodian, provisional manager or similar person in a proceeding referred to in clause (a), which appointment has not been set aside or stayed within thirty (30) days of such appointment; or
- (c) the making by a court having jurisdiction of an order winding up or otherwise confirming the bankruptcy or insolvency of the WS, which order has not been set aside or stayed within thirty (30) days;

“**Joint Technical Committee**” has the meaning set out in Section 7.1.1 of this Agreement.

“**kV**” means kilovolts;

“**Laws of Ghana**” shall include all laws, legislative instruments, decrees, and regulations of statutory bodies or their amendments.

“**Lenders**” has the meaning set out in Section 15.7 of this Agreement.

“**LIBOR**” means, in respect of an overdue amount, the three (3) month London Interbank Offered Rate as published by the British Bankers Association as of the date the amount became due.

“**License**” means, in respect of the WS, the generation license and, in respect of GRIDCo, the electricity transmission utility license, in each case issued by the appropriate Ghanaian regulatory authorities, as amended or replaced from time to time.

“**Main Transformer**” means the transformer that transforms the voltage to the voltage of the NITS as identified in Appendix 7;

“**Monthly Generation Schedule**” has the meaning provided in Appendix 3, Part 1, Paragraph 2.2.1;

“**MVAR**” means megavars;

“**MVARh**” means megavars-hour;

“**MW**” means megawatts;

“**MWh**” means megawatts-hours;

“**NITS**” means National Interconnected Transmission System as further defined in Article 1.03 of the Grid Code and, for the avoidance of doubt, shall include the Connection Facilities.

“**Nominal Frequency**” means 50Hz;

“**Non-Defaulting Party**” has the meaning set out in Section 6.1.1 of this Agreement.

“Non-Financial Default” means the failure of a Party to perform or comply with any material term or condition set forth in this Agreement, other than a Financial Default or an Insolvency Event.

“Offtaker” means the purchaser of electricity and related attributes from the Facility under a PPA.

“Operating Procedures” means the practices and procedures relating to the Facility and the Connection Facilities and contained in Appendix 3 and as may be amended from time to time by the Parties in accordance with Section 8.3 of this Agreement.

“Outage” means any interruption or reduction of the generating capability of the Facility.

“Party” means either GRIDCo or the WS as the context requires; and **“Parties”** means both GRIDCo and the WS.

“Plant Performance Characteristics” means the technical characteristics applicable to the Facility, set out in Appendix 4;

“Point of Connection” means each of the physical points of connection between the Facility and the Connection Facilities being the high voltage bushings of the step-up transformer for each Unit depicted in the Appendix 7, or such other point(s) as the Parties may agree upon.

“Power System Stabilizer” means the power system stabilizer specified in Schedule A to Appendix 4;

“Prime Mover Type” means the prime mover, such as a steam turbine or reciprocating engine, for the facility as specified in Schedule A to Appendix 4;

“Professional Engineer” means an individual licensed to carry on the practise of professional engineering in Ghana;

“PPA” means the power purchase agreement that is in effect between the WS and the Offtaker.

“Prudent Utility Practice” means any of the practices, methods and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, would have been expected to accomplish the desired result at a lowest reasonable cost consistent with good business practices, reliability, safety and expedition. Prudent Utility Practice is not intended to be limited to the optimum practice, method or act to the exclusion of all others, but rather to be acceptable practices, methods or acts generally accepted in the EC region. Prudent Utility Practice includes due regard for manufacturer’s warranties and requirements of governmental agencies of competent jurisdiction

“**PURC**” means the Public Utilities Regulatory Commission of Ghana.

“**Reactive Power**” means the product of voltage and current and the sine of the system phase angle between them, measured in units of volt amperes reactive

“**Receiving Party**” has the meaning set out in Section 13.3.7 of this Agreement.

“**Reference Conditions**” means the reference conditions specified in Appendix 2;

“**Revenue Metering**” means the Import or Export Meter, either Primary Meters or Back-up Meters whichever is applicable, used for settlement purposes by the Offtaker and the WS;

“**Rules**” has the meaning set out in Section 13.4.1 of this Agreement.

“**Scheduled Maintenance Programme**” means, in respect of the Facility, the program of Scheduled Outages approved by GRIDCo;

“**Scheduled Outage**” means, a planned interruption or reduction of the generating capability of the Unit that has been scheduled and allowed by GRIDCo in accordance with Appendix 3, Part 2;

“**Site**” shall mean the land on which the Facility is located and, for identification purposes, described and shown on the location maps set forth in Appendix 8.

“**System**” means the NITS or the Generator System, as the context requires.

“**Systems**” means both the NITS and the Generator System.

“**Technical Expert**” shall have the meaning set out in Section 13.3.1 of this Agreement.

“**Technical Limits**” means those parameters and requirements described in Part 2 of Appendix 4 and Appendix 5, as such parameters and requirements may be amended or modified by mutual agreement of the Parties from time to time to ensure compliance with the Grid Code.

“**Term**” shall have the meaning set out in Section 5.2 of this Agreement.

“**Unit**” means a combustion or steam turbine generator unit and its associated equipment forming part of the Generator System.

“**Voltage Variation**” means the permitted voltage variation on the High Side Bushings of the Main Transformer specified in Appendix 4;

“**Warm Start**” means, in respect of a Unit, starting such Unit more than 8 hours but less than 96 hours since its last shutdown;

“Weekly Available Capacity Schedule” shall have the meaning provided in Appendix 3, Part 1, Paragraph 2.3.1.

“Work Protection” means a state or condition whereby an isolated or an isolated and de-energized condition has been established for work on facilities and will continue to exist, except for authorized tests, until the work relating thereto has been completed.

“WS” has the meaning set out on page 1 of this Agreement.

“WS Indemnitee” has the meaning set out in Section 10.1.2 of this Agreement.

1.2 Interpretation

1.2.1 In this Agreement unless the context requires otherwise:

- (a) the words “herein”, “hereby”, “hereof” and “hereunder” shall refer to this Agreement as a whole and not to any particular Section of this Agreement;
- (b) references to this Agreement shall include a reference to all Appendices and Schedules hereto, as the same may be amended, modified, supplemented or replaced from time to time;
- (c) references to any agreement, document or instrument shall mean such agreement, document or instrument as the same may be amended, modified, supplemented or replaced from time to time;
- (d) the words “including”, “includes” and “include” shall be deemed to be followed by the words, “without limitation”;
- (e) words importing the singular shall include the plural and vice versa;
- (f) references to persons or parties shall include firms, corporations and any organization or entity having legal capacity. References to the masculine shall include the feminine and neuter and vice versa;
- (g) reference to any Party or a person includes a reference to the, successors and permitted assigns of that Party;
- (h) the headings in this Agreement do not affect its interpretation.
- (i) a reference to a Section, clause or Appendix means a Section, Clause or Appendix of this Agreement; and
- (j) a reference to an entity includes any successor to that entity.

1.2.2 The provisions of any applicable Laws of Ghana, the Grid Code or any License as the case may be, shall prevail to the extent of any inconsistency with this

Agreement. In the event of any inconsistency between any obligations of a Party pursuant to the applicable Laws of Ghana, the Grid Code or any License and this Agreement, such inconsistencies shall be resolved according to the following order of priority:

- (a) the applicable Laws of Ghana;
- (b) the Grid Code;
- (c) GRIDCo's License;
- (d) the WS' License; and
- (e) this Agreement.

1.3 **Grid Code**

- 1.3.1 The WS hereby agrees to be bound by, and at all times to comply with, the Grid Code.
- 1.3.2 GRIDCo hereby agrees to be bound by, and at all times to comply with, the Grid Code.
- 1.3.3 The WS acknowledges and agrees that GRIDCo is bound at all times to comply with the Grid Code in addition to complying with the provisions of this Agreement.

1.4 **Appendices**

- 1.4.1 The following are the Appendices to this Agreement:
 - (a) Appendix 1 - Connection Requirements
 - (b) Appendix 2 - Charges, Invoicing and Payment
 - (c) Appendix 3 - Operating Procedures
 - (i) Part 1 - Generator System Scheduling and Despatch Procedures
 - (ii) Part 2 - Generator System Scheduled Maintenance and Construction Outages
 - (iii) Part 3 - Connection Facilities Operating Procedures
 - (d) Appendix 4 - Performance Tests and Plant Performance Characteristics
 - (i) Part 1 - Synchronization Tests

(ii) Part 2 - Plant Performance Characteristics; Reference Conditions

(e) Appendix 5 - Grid System Parameters and Requirements

(f) Appendix 6 - Intentionally Not Used

(g) Appendix 7 - Intentionally Not Used]

(h) Appendix 8 - Site Plan

(i) Appendix 9 - Insurance

(j) Appendix 10 - Additional Provisions and Definitions

2. SCOPE OF AGREEMENT

2.1 Objective

The objective of this Agreement is to define the terms and conditions of the Connection of the Generator System to the NITS.

2.2 Other Agreements with GRIDCo

2.2.1 Notwithstanding that the WS may from time to time be party to other agreements with GRIDCo, nothing in any such other agreement, and no exercise of any right thereunder, restricts or otherwise affects any right, obligation, or liability of either Party under this Agreement, and no notice, consent, approval or other communication or decision, whether by the Joint Technical Committee, if any, or otherwise, under or in relation to any such other agreement shall constitute or be relied upon as a notice, consent, approval, communication or decision under this Agreement.

2.2.2 Nothing in this Agreement, and no exercise of any right hereunder, restricts or otherwise affects any right, obligation or liability of either Party under any such other agreement, and no notice, consent, approval or other communication or decision, whether by the Joint Technical Committee, if any, or otherwise, under or in relation to this Agreement, shall constitute or be relied upon as a notice, consent, approval, communication or decision under any such other agreement.

2.2.3 The Parties agree that this Agreement is both a “Connection MOU” and a “Connection Agreement” for the purposes of the Grid Code and that this Agreement is, notwithstanding articles 8.16 and 8.17 of the Grid Code, fully effective, legally binding and enforceable as at the date of this Agreement with respect only to the Facility. [NOTE: IN THE CASE OF A NEW FACILITY, “CONNECTION MOU” AND “SYSTEM IMPACT SUDY” WILL BE

**REQUIRED IN COMPLIANCE WITH THE GRID CODE AND ITS
REQUIRED CONNECTION PROCEDURE]**

3. SYSTEM AND SERVICES

3.1 System Title/Risks/Responsibility

3.1.1 As between the Parties, GRIDCo has and shall continue to have, title to, and risk and responsibility for, the NITS and, except as expressly provided by this Agreement, the WS assumes no proprietary interest in, or risk or responsibility whatsoever for the NITS (or any part thereof) under this Agreement. Equally, as between the Parties, WS has and shall continue to have title to, and risk and responsibility for, the Facility and except as expressly provided by this Agreement, GRIDCo assumes no proprietary interest in, or risk or responsibility whatsoever for the Facility under this Agreement.

3.1.2 Nothing in this Agreement or its performance shall affect the independent rights and duties of WS to have at all times responsibility for and actual physical control and possession of the Facility, or of GRIDCo to have at all times responsibility for operating and managing the NITS. Without prejudice to its obligations under this Agreement, GRIDCo shall retain the right to independently plan, operate, and manage the NITS in accordance with the Laws of Ghana and the Grid Code.

3.2 Standards and Codes of Practice

- (a) Both Parties shall act in accordance with industry best practices and applicable industry standards in respect of the installation, operation and maintenance of the Facility or the NITS, as applicable.
- (b) The equipment of the Facility and the NITS, including overhead lines and cables, shall comply with the relevant International Electrotechnical Commission (IEC) standard or American National Standards Institute (ANSI) or any other equivalent international standard acceptable to GRIDCo.
- (c) Provided that whenever an international standard or IEC standard is followed by WS or GRIDCo, necessary corrections or modifications of such international standard or IEC standard shall be made for nominal system frequency, nominal system voltage, ambient temperature, humidity and other conditions prevailing in Ghana before actual adoption of the said standard.
- (d) The effect of wind, storms, floods, lightening, elevation, temperature extremes, contamination, pollution and earthquakes must be considered by the relevant Party in the design and operation of the Facility or NITS, as applicable.

- (e) Installation, operation and maintenance of equipment by both Parties shall conform to the relevant Prudent Utility Practice.

3.3 Connection Charges

The WS shall pay to GRIDCo the charges for modifications of the connection of the Facility to the NITS as described in Appendix 2. GRIDCo shall submit to the WS an invoice in respect of such charges, if any. WS shall pay such invoice within thirty (30) days after receipt of such invoice and GRIDCo shall not be required to expend any monies until it has received payment from WS.

The charges, if any, shall be determined based on the following:

- (a) the Base Connection Charge;
- (b) the cost of NITS changes (if any) as set out in the approved Application with respect to the Facility, if any.

Any charges in respect of future Facilities or expansions to existing Facility shall be determined pursuant to an Application in respect of connection of such Future Facilities

3.4 System Costs

3.4.1 Any and all work subsequent to the completion of the Connection of the Facility to the NITS, including all additions, modifications, replacements, operation, maintenance and repair carried out by GRIDCo in respect of the NITS, or by the WS in respect of the Facility, shall be at the cost of GRIDCo and WS respectively, except as expressly provided in this Agreement or any other agreement made between the Parties.

3.4.2 If:

- (a) at any time any addition, modification, repair or replacement is made to the Facility that may materially affect the Connection, or any information and documentation referred to in Paragraph 4.1.1 (b) provided by the WS on which the CR are, in whole or in part, based proves incorrect, or is amended or updated; and
- (b) GRIDCo determines, acting in accordance with Prudent Utility Practice, and following due consideration of the effect of such addition, modification, repair or replacement on the Connection, that as a result it is necessary to amend the CR, then;

GRIDCo may, on prior written notice to the WS, amend the CR, and all costs associated with GRIDCo and the WS implementing such amendments shall be the responsibility of the WS. The WS shall also be responsible for all of GRIDCo's actual costs of completing studies or other investigations undertaken by GRIDCo

pursuant to this Section and in accordance with Prudent Utility Practice in order to determine whether amendments to the CR are required.

- 3.4.3 GRIDCo may, on prior written notice to the WS, amend the CR in accordance with Prudent Utility Practice. If such amendments are not required for compliance with the Grid Code, all costs associated with GRIDCo and the WS implementing such amendments shall be the responsibility of GRIDCo. If such amendments are required for compliance with the Grid Code, the costs associated with implementing such amendments in the NITS shall be the responsibility of GRIDCo and the costs associated with implementing such amendments in the Facility shall be the responsibility of the WS.
- 3.4.4 Subject to Section 3.4.3, each Party shall bear its own costs in complying with the Grid Code.
- 3.4.5 The Joint Technical Committee may amend the CR in accordance with Prudent Utility Practice. The Parties' responsibility for costs associated with implementing such amendments shall be as determined by the Joint Technical Committee.
- 3.4.6 Any costs of one Party that are to be paid by the other Party pursuant to this Agreement shall be invoiced and paid as provided in Appendix 2.

3.5 **Changes to System**

- 3.5.1 Subject to Section 3.4.2, the WS shall notify GRIDCo of any addition or modification (including repair or replacement, but excluding Scheduled Outages, which shall be subject to Section 8.10) of all or any portion of the Facility.
- 3.5.2 Where any such additions or modifications of the Facility would materially affect the NITS, an Affected System or the Connection, the WS shall not undertake them without first submitting the proposed addition or modification to GRIDCo and obtaining the prior written consent of GRIDCo to proceed (subject to Emergency operation provisions of Section 8.10 of this Agreement, in which case such GRIDCo prior approval shall not be necessary). Such consent is not to be unreasonably withheld, but may be conditional upon amendments to the CR, and the implementation of those amendments, pursuant to Section 3.4.2.
- 3.5.3 Notwithstanding any review or consent by GRIDCo, the responsibility for any such additions or modifications to the Facility shall reside entirely with the WS and any review or consent by GRIDCo shall not constitute an assumption of liability by GRIDCo or relieve the WS of any liability in respect of such additions or modifications of the Facility and their effect on the NITS, an Affected System or the Connection.

3.6 Information to Be Provided by the WS

3.6.1 The WS shall, in respect of the Facility and its portion of the Connection Facilities, provide to GRIDCo:

- (a) as soon as available and in any case not later than 60 days following the Effective Date:
 - (i) specifications of major equipment;
 - (ii) details of the protection arrangements and settings;
 - (iii) copies of all safety rules and instructions and a list of safety representatives;
 - (iv) electrical diagrams and plans;
 - (v) information that will enable GRIDCo to prepare the Points of Connection drawings, as reasonably required by GRIDCo;
 - (vi) a list of the names and telephone numbers of authorized representatives, including the confirmation that they are fully authorized to make binding decisions on behalf of the WS for significant incidents or during an Emergency;
- (b) as soon as available and in any case not later than 60 days following the Effective Date, all Commissioning Tests procedures and Commissioning Test results for the Points of Connection; and
- (c) promptly, all test reports, as may be reasonably required by GRIDCo throughout the Term.

3.7 Information to Be Provided by GRIDCo

3.7.1 GRIDCo shall, in respect of its portion of the Connection Facilities, provide to the WS, promptly when available:

- (a) specifications of major equipment;
- (b) details of the protection arrangements and settings;
- (c) copies of all safety rules and instructions and a list of safety representatives;
- (d) electrical diagrams and plans;
- (e) a list of the names and telephone numbers of authorized representatives, including the confirmation that they are fully authorized to make binding

decisions on behalf of GRIDCo for significant incidents or during an Emergency;

- (f) proposed maintenance program; and
- (g) Connection and energization procedures of GRIDCo.

3.8 No Other Services

This Agreement does not obligate either Party to provide, or entitle either Party to receive, any service not expressly provided herein. Each Party is responsible for making the arrangements necessary for it to receive any other service that it may desire from the other Party or any third-party.

4. CONNECTION REQUIREMENTS

4.1 Conditions Precedent

4.1.1 Notwithstanding anything in this Agreement to the contrary, and without limiting any other obligations of the WS, the WS shall not have the right under this Agreement to require that the WS' equipment forming all or part of the New Facility be Connected until:

- (a) the Commissioning Tests have been successfully performed;
- (b) that all information and documentation as specified in Appendix 1 has been provided; and
- (c) that, where a new Connection or modification of an existing Connection is required, the Application has been duly completed and submitted to and approved by GRIDCo.

4.2 Equipment at Point(s) of Connection

4.2.1 The WS and GRIDCo confirm that their respective equipment at the Points of Connection shall comply with the minimum technical and design criteria specified in the Grid Code.

4.2.2 The WS agrees to perform its obligations hereunder in accordance with, and to adhere to, the CR.

4.2.3 If the CR are amended pursuant to this Agreement in a manner that affects the Connection or the Facility, then the Parties shall consult through the Joint Technical Committee with respect to those amendments and the means of their implementation, provided however that no such consultation shall limit or restrict GRIDCo's ability to amend the CR pursuant to Section 3.4.

4.3 **Testing and Commissioning of Connection Facilities**

4.3.1 The Parties shall cooperate with one another through the Joint Technical Committee and with the Offtaker to ensure that the testing and commissioning of the Connection Facilities is completed as soon as possible following the date notified by WS to GRIDCo.

4.4 **Right to remain Connected**

4.4.1 Subject to this Agreement and the Grid Code, the WS has the right for the WS' Connection Facilities at the Points of Connection to remain Connected to the NITS for the duration of this Agreement.

4.4.2 The WS shall keep the WS' Connection Facilities at the Points of Connection connected to the NITS until disconnected in accordance with the provisions of this Agreement.

4.4.3 Subject to the other provisions of this Agreement and the Grid Code, GRIDCo shall accept into the NITS at the Points of Connection the electricity generated by the WS at the Facility, up to the Connection Capacity, except to the extent (if any) that GRIDCo is prevented in accordance with Prudent Utility Practice from doing so by transmission constraints or economic Despatch Procedures which could not be avoided by the exercise of Prudent Utility Practice by GRIDCo.

4.4.4 The WS shall not alter or change the Facility without the prior written consent of GRIDCo, which consent may not be unreasonably withheld.

5. **TERM AND TERMINATION**

5.1 **Effective Date**

(a) This Agreement shall be effective as of 00:00 hour on the date of this Agreement or as of 00:00 hour on any other date agreed in writing between the Parties (the “**Effective Date**”).

5.2 **Term**

(b) This Agreement shall be fully binding on the Parties with effect from the Effective Date and shall remain in full force and effect for a period of <*> years following the Effective Date after which it shall be terminable at six (6) months' notice unless terminated earlier in accordance with the terms of this Agreement. On giving of a notice to terminate by either Party, both Parties shall enter into negotiations to enter into a new agreement on the same or modified terms as this Agreement.

5.3 Termination Without Cause by WS

5.3.1 The WS may, if it is not then a defaulting Party, terminate this Agreement at any time during the term of this Agreement by giving GRIDCo a six months prior written notice setting out the termination date.

5.3.2 Where the WS gives notice to terminate under this Section 5.3, GRIDCo shall disconnect all of the WS facilities at Point(s) of Connection on the termination date specified in that notice or on such other date as the Parties may agree in writing.

5.4 Termination for Cause by Either Party

5.4.1 Termination of this Agreement by a Party by reason of an Event of Default occurring in relation to the other Party, shall be effected in accordance with Section 6.

5.5 Provisions Relating to Termination Generally

5.5.1 Termination of this Agreement for any reason shall not affect the liabilities of either Party that were incurred or arose under this Agreement prior to the time of termination

5.5.2 Termination of this Agreement for any reason shall be without prejudice to the right of the terminating Party to pursue all legal and equitable remedies that may be available to it, including injunctive relief.

5.6 Rights and Remedies not Exclusive

5.6.1 The rights and remedies set out in this Agreement are not intended to be exclusive but rather are cumulative and are in addition to any other right or remedy otherwise available to a Party at law or in equity.

5.7 Survival

5.7.1 Sections 5.5 and 5.6 shall survive termination of this Agreement. Each Party's further rights and obligations shall cease immediately on termination except that those other Sections that by their express terms are intended to survive the termination of this Agreement and the rights that have accrued at the date of termination, shall survive termination of this Agreement, and shall continue in full force and effect.

6. EVENTS OF DEFAULT AND TERMINATION FOR CAUSE

6.1 Occurrence of an Event of Default

6.1.1 If an Event of Default occurs in relation to a Party (the “**Defaulting Party**”), the other Party (the “**Non-Defaulting Party**”) may, without prejudice to its other rights and remedies as provided for in this Agreement or at law or in equity, serve the Defaulting Party with a notice specifying the Event of Default that has occurred and the applicable Cure Period (a “**Default Notice**”).

6.2 Curing Events of Default

6.2.1 Upon receipt of a Default Notice, the Defaulting Party shall be entitled to remedy the Event of Default within the applicable Cure Period.

6.2.2 During the Cure Period, the Defaulting Party shall diligently seek to remedy the Event of Default specified in the Default Notice.

6.2.3 A Financial Default shall be considered remedied when the Defaulting Party has paid to the Non-Defaulting Party all amounts that are the subject of the Financial Default, together with interest calculated in accordance with Section 6.2.4, provided that such payment shall be without prejudice to any further Financial Default that may occur or arise in connection with the Defaulting Party’s failure to reimburse the Non-Defaulting Party for all costs of enforcement, recovery, or attempted enforcement or recovery, including reasonable legal costs and expenses, reasonably incurred by the Non-Defaulting Party in relation to the Financial Default that may arise, be incurred or invoiced following the date of such Default Notice, together with interest calculated in accordance with Section 6.2.4

6.2.4 Amounts specified in a Default Notice given in relation to a Financial Default shall bear interest at LIBOR plus 2% for amounts denominated in Dollars and the Bank of Ghana Prime Rate plus 2% for amounts denominated in Cedis from the date on which the Event of Default occurred until the date on which payment is sent to the Non-Defaulting Party.

6.2.5 A Non-Financial Default shall be considered remedied when the Event of Default has been remedied to the reasonable satisfaction of the Non-Defaulting Party.

6.2.6 In connection with any Event of Default, the Non-Defaulting Party shall be entitled to be reimbursed by the Defaulting Party for all third party costs of enforcement, recovery, or attempted enforcement or recovery, including reasonable legal costs and expenses, reasonably incurred by the Non-Defaulting Party in relation to the Event of Default. Such reimbursement shall be made within thirty (30) days following the delivery by the Non-Defaulting Party to the

Defaulting Party of an invoice for such amounts, together with reasonable supporting documentation.

6.3 Right to Terminate and Disconnect

6.3.1 Subject to Section 6.3.2, where an Event of Default has not been remedied prior to the expiry of the applicable Cure Period, including in accordance with Section 6.2.3, the Non-Defaulting Party may, without prejudice to its other rights and remedies as provided for in this Agreement or at law or in equity, terminate this Agreement by written notice to the Defaulting Party. Such termination shall take effect:

- (a) in the case of a Non-Financial Default, on the date on which the termination notice is delivered to the Defaulting Party; or
- (b) in the case of a Financial Default, on the date that is seven business days from the date on which the termination notice is delivered to the Defaulting Party.

6.3.2 GRIDCo may not terminate this Agreement under Section 6.3.1 or, subject to Section 6.3.4, disconnect the WS facilities under Section 6.3.3 in relation to an Event of Default by the WS where the issue of the WS default has not been finally resolved.

6.3.3 GRIDCo may disconnect the Generator System or any portion of it on or after the date on which this Agreement terminates under Section 6.3.1.

6.3.4 Nothing in this Section 6 shall prevent GRIDCo from:

- (a) disconnecting the Generator System where permitted to do so by Section 8.10; or
- (b) immediately disconnecting the Generator System where GRIDCo reasonably believes that a Non-Financial Default by the WS is having or will have a material adverse effect on the NITS or on a third party.

6.4 Effect of Termination

6.4.1 The Parties acknowledge and agree that upon termination of this Agreement there shall be no further obligation on GRIDCo to keep the Facility connected to the NITS and GRIDCo shall be entitled to disconnect the Facility from the NITS, or (as case may be) WS shall be entitled to disconnect the Facility, from the NITS at any time after the termination of this Agreement by providing ten (10) days prior written notice of such disconnection to the other Party. Disconnection in these circumstances shall be undertaken in accordance with the requirements of the Grid Code and Prudent Utility Practice.

6.4.2 Notwithstanding the termination of this Agreement, all costs required to effect such disconnection shall be borne by the terminating Party, unless such termination resulted from the non-terminating Party's default or breach of this Agreement in which case the non-terminating Party shall bear all such costs.

7. JOINT TECHNICAL COMMITTEE

7.1 Constitution

7.1.1 The Parties shall establish a committee (the "**Joint Technical Committee**") composed of two (2) representatives from each Party to carry out the administration and operational aspects of this Agreement. Each Party shall advise the other in writing of its initial appointment of representatives to the Joint Technical Committee, and each Party shall advise the other in writing of any replacements.

7.1.2 Decisions regarding administration and the operation of the Connection under this Agreement shall require approval from at least one such representative of each Party. Either Party may request the participation of a third-party at a Joint Technical Committee meeting to provide advice and input on technical matters, provided always that the Parties both consent to such participation, such consent not to be unreasonably withheld. In the case of inability of the Joint Technical Committee to reach a decision as provided in this Section, the matter shall be subject to dispute resolution as provided in Article 13.

7.1.3 The Joint Technical Committee shall:

- (a) be established within thirty (30) days after the Effective Date;
- (b) exist for the duration of this Agreement;
- (c) meet by mutual agreement, such agreement not to be unreasonably withheld;
- (d) appoint the Technical Expert pursuant to Section 13.3.
- (e) keep a written record of its meetings and determinations;
- (f) require participation from both Parties to conduct a meeting;
- (g) conduct its meetings at a mutually acceptable location or via telephone conference call; and
- (h) act reasonably, and use all reasonable efforts to expeditiously resolve issues for which the Joint Technical Committee is responsible.

7.2 Limited Authority of Joint Technical Committee

- 7.2.1 The Joint Technical Committee shall perform such functions as the Parties direct including reviewing and commenting on the Operating Procedures pursuant to Section 8.3.2, consulting on amendments to the CR and their implementation, and advising the Parties on other technical issues relating to the operation and maintenance of the Connection Facilities. Actions by the Joint Technical Committee shall only be undertaken by unanimous approval of the representatives of both Parties.
- 7.2.2 Any technical advice provided by the Joint Technical Committee shall be in accordance with Prudent Utility Practice.
- 7.2.3 The Joint Technical Committee has no authority to amend this Agreement or to determine any matter that affects the ownership and control of either of the Systems.

8. OPERATION OF SYSTEMS

8.1 Commissioning

- 8.1.1 The Commissioning Tests, if required, shall be carried out in accordance with the Grid Code.

8.2 Operation and Maintenance of the Connection

Subject to the terms and conditions of this Agreement, from and including the date of this Agreement with respect to the Facility:

- 8.2.1 GRIDCo undertakes to keep the Generator System connected to the NITS at the Points of Connection and to operate and maintain the NITS (including, without limitation, the Connection Facilities) in accordance with the requirements of the Grid Code and the Operating Procedures to enable the export of the electricity generated from the Facility and delivered to the Points of Connection up to the Connection Capacity.
- 8.2.2 GRIDCo shall maintain and operate the NITS and the WS shall maintain and operate the Facility, in accordance with Prudent Utility Practice and the provisions of this Agreement or cause the same to be so maintained and operated.
- 8.2.3 GRIDCo shall have the right to despatch the Generator System within the Technical Limits and in accordance with the Despatch Procedures, the Operating Procedures and the Grid Code.

8.3 **Operating Procedures**

- 8.3.1 GRIDCo shall at all times operate and maintain the NITS and the WS shall at all times operate and maintain the Facility, including each of their respective portions of the Points of Connections, in accordance with the Operating Procedures, Prudent Utility Practice, the Grid Code and applicable Laws of Ghana and within the Technical Limits. The WS shall ensure that the Facility and its portion of the Connection Facilities are constructed and operated with due regard for the safety of the WS' employees and the public. In the event the Operating Procedures do not address a particular circumstance that arises, or an event of Force Majeure prevents the Parties from following the Operating Procedures, the Parties shall act in accordance with Prudent Utility Practice, the Grid Code and applicable Laws of Ghana.
- 8.3.2 GRIDCo and WS shall jointly review as necessary, through the Joint Technical Committee, the Operating Procedures with respect to the operation of the Connection Facilities.
- 8.3.3 The Parties may amend the Operating Procedures from time to time as mutually agreed pursuant to the process set out in Part 3 of Appendix 3. Any amendments to Operating Procedures must be consistent with this Agreement and must be in writing.
- 8.3.4 Physical property boundaries for the Facility and the Connection Facilities are as indicated in Appendix 8.
- 8.3.5 The Operating Procedures are attached as Appendix 3.
- 8.3.6 GRIDCo and the WS agree to provide each other a reasonable amount of time to adhere to any Operating Procedures amended in accordance with Section 8.3.2 and shall make reasonable efforts to adhere to the amendments in a timely manner.

8.4 **Planned Equipment Outages**

- 8.4.1 The Parties shall, to the extent that is reasonably practical and consistent with Prudent Utility Practice, coordinate Scheduled Outages in the Generator System, or planned outages in those parts of the NITS that affect the Connections. If GRIDCo initiates a planned outage in the NITS, or the WS initiates a Scheduled Outage in the Generator System, the initiating Party shall make reasonable efforts to ensure that such outages shall be of minimal duration and cause minimal inconvenience to the other System and shall not impair its safe and reliable operation.
- 8.4.2 Each Party shall give the other Party fourteen (14) days prior notice of planned outages or Scheduled Outages, as applicable, referred to in Section 8.4.1. In connection with each such planned outage initiated by GRIDCo, GRIDCo may

disconnect the NITS from the Generator System, or the WS may require the disconnection of the NITS from the Generator System. In connection with each such Scheduled Outage initiated by the WS, the WS may disconnect the Generator System from the NITS, or GRIDCo may require the disconnection of the Generator System from the NITS.

8.5 Limiting System Disturbances

GRIDCo shall maintain and operate the NITS and WS shall maintain and operate the Facility, in accordance with the requirements of this Agreement so as to minimize the likelihood of creating a disturbance, which may cause impairment to the operation of the other System, an Affected System or the Connection. GRIDCo shall take appropriate action in accordance with Prudent Utility Practice to reduce the transfer of any disturbance from the NITS to the Facility, and WS shall take appropriate action in accordance with Prudent Utility Practice to reduce the transfer of any disturbance from the Facility to the NITS.

8.6 Protection of Systems

- 8.6.1 The WS shall be responsible for protecting its equipment in such a manner that faults or other disturbances in the NITS do not cause damage to the Facility or its part of the Connection Facilities, in accordance with Prudent Utility Practice. GRIDCo shall not assume any responsibility for the protection of the Facility, the WS' part of Connection Facilities, plant, equipment or any other portion of the WS electrical equipment.
- 8.6.2 The WS shall upgrade the Facility as may be required to accommodate any new available fault current levels as determined by GRIDCo's impact assessment study for the NITS, as carried out from time to time and notified to the WS. If the Generator System of the WS itself is the cause for the fault current levels of existing equipment connected to the NITS to be exceeded, the WS shall be responsible for any required mitigation measures. The impacted equipment and all related mitigation costs shall be determined by an impact assessment study carried out by GRIDCo.
- 8.6.3 GRIDCo and the WS shall fully cooperate to ensure that data necessary or appropriate for the planning, design and operation of the Connection are complete and accurate. GRIDCo shall conduct, or may require that the WS conduct, such tests as may be required where GRIDCo believes on reasonable grounds that the completeness or accuracy of such data is in question. The Party conducting such tests shall promptly report the results to the other Party. Where the tests are conducted by GRIDCo, the tests shall be conducted at a time that is mutually agreed by the WS and GRIDCo. Where the tests are conducted by the WS, the tests shall be conducted at a time set by the WS, but GRIDCo shall be given prior notice of such tests. Where the tests confirm the incompleteness or inaccuracy of such data, the WS shall reimburse GRIDCo for the costs and

expenses reasonably incurred by GRIDCo in conducting the tests. Where the tests confirm the completeness and accuracy of such data, GRIDCo shall reimburse the WS for the costs and expenses reasonably incurred by the WS in conducting the tests. If the testing is required to be rescheduled at the request of a Party or by reason of a Party's failure to attend, that Party shall, at the request of the other Party, pay all reasonable costs incurred by the other Party in respect of the rescheduling of the tests.

- 8.6.4 The WS shall, at GRIDCo's request, provide GRIDCo prior notice of the Commissioning Tests and, to the extent possible, permit GRIDCo to witness such Commissioning Tests. The WS shall provide such information as GRIDCo may reasonably require with respect to the Commissioning Tests, so as to enable GRIDCo to ensure that the Facility will not adversely affect the reliability of the NITS.
- 8.6.5 The WS acknowledges that the fault levels at the Points of Connection applicable to the Generator System will change from time to time. Where the WS reasonably requires confirmation of the fault levels at a Point of Connection applicable to the Generator System, the WS shall submit a request to that effect to GRIDCo. GRIDCo shall then provide the WS with the current fault levels.
- 8.6.6 The WS shall promptly respond to GRIDCo's request to explain any and all incidents involving the Generator System protective relays that affect the NITS.
- 8.6.7 GRIDCo shall provide to the WS such technical parameters as may be required to assist the WS in ensuring that the design of the Generator System shall be consistent with the requirements applicable to the NITS as set out in this Agreement.

8.7 **Reactive Power**

WS shall adhere to the reactive power requirements and limits as stipulated in the Grid Code. GRIDCo may request that WS adjust the reactive power output of the Generator System from time to time (within such limits) depending on NITS conditions and in accordance with requirement of this Agreement and the Grid Code.

8.8 **Exchange of Information**

- 8.8.1 GRIDCo and WS shall exchange, in a timely manner, all information reasonably required for the coordinated operation of the Connection, including:
 - (a) any information required to be exchanged in accordance with the Operating Procedures; and
 - (b) such further information as may be reasonably required to meet obligations to any organization of which one or both Parties are members

and which imposes upon it or them an obligation to collect information for submission to that organization;

provided, however that each Party shall continue to be responsible for maintaining the confidentiality of any information disclosed to it pursuant to this Section 8.8.1 as provided in Section 15.1 below.

8.8.2 The WS hereby authorizes GRIDCo, and GRIDCo hereby authorizes WS, to disclose to the Offtaker any information reasonably requested by it and that is related to the Facility.

8.8.3 Each Party shall be responsible for the costs incurred by it in providing any information that it is required to provide to the other Party under this Agreement.

8.8.4 Each Party shall take care and use reasonable endeavours to provide accurate information pursuant to this Section 8.8; provided, however, that any information provided shall be relied on by the recipient or any organization to which the information is provided at its sole risk and the providing Party shall have no liability for any inaccuracy in the information provided.

8.9 **Site Access**

8.9.1 If GRIDCo requires access to any part of the Facility or the Site in relation to the Connection, then it shall deliver prior notice to the WS and the WS shall reasonably provide such access.

8.9.2 The WS shall furnish, at no cost to GRIDCo, any and all rights of use, licenses, rights of way and easements with respect to the Site that are necessary or appropriate to enable GRIDCo to obtain ingress and egress to construct, operate, maintain, repair, test (or witness testing), inspect, replace or remove facilities and equipment with respect to the performance of GRIDCo's obligations and the enforcement of GRIDCo's rights hereunder.

8.9.3 In exercising such rights of use, licenses, rights, or way and easements GRIDCo shall not unreasonably disrupt or interfere with normal operations of the Facility and shall adhere to reasonable safety rules and procedures established in advance, as may be amended from time to time, by the WS and provided to GRIDCo in writing.

8.10 **Immediate Disconnection**

8.10.1 Notwithstanding any other provision of this Agreement,

- (a) in an Emergency, either Party is entitled to take such action, including disconnection, as may be appropriate in accordance with Prudent Utility Practice;

- (b) GRIDCo may disconnect, or require the disconnection of, the Facility from the NITS if GRIDCo discovers material deficiencies in the Facility that do not permit the WS to reliably operate the Facility in accordance with this Agreement, which, in accordance with Prudent Utility Practice, require the disconnection of the Facility to protect the NITS or an Affected System;
- 8.10.2 The Party disconnecting or requiring disconnection shall notify, in a timely manner, the other Party of the disconnection or such requirement, and such notice shall, in all non-Emergency situations, and, in an Emergency situation, if reasonably possible, be given in advance of any disconnection. The disconnecting Party shall give the other Party the reasons for such disconnection.
- 8.10.3 In the event of a disconnection pursuant to 8.10.1(b) GRIDCo shall reconnect the Facility to the NITS at the WS' cost as soon as reasonably practicable after all deficiencies are rectified in accordance with Prudent Utility Practice to the reasonable satisfaction of GRIDCo.

9. COMPLIANCE

9.1 Grid Code

- 9.1.1 Pursuant to Section 1.3, the WS shall comply with all applicable requirements of the Grid Code.
- 9.1.2 The WS shall comply with the Standards of Performance (Grid Code Section 12) set out in the Grid Code. In the event of failure to comply with such obligation, the WS shall be subject to the sanctions applicable to such failure in the Grid Code. The WS shall for all purposes be considered a Participant under and in connection with the Grid Code, and the WS shall be entitled to all of the rights and privileges and be subject to all of the obligations of a Participant, under and in connection with the Grid Code.
- 9.1.3 GRIDCo shall use reasonable efforts to provide the WS with written notification of any amendments, to the Grid Code initiated by GRIDCo that are applicable to the WS. Following any amendment by the Energy Commission, GRIDCo shall provide written notification of the changes to the WS.
- 9.1.4 The WS shall be responsible for complying with all such amendments to the Grid Code that apply to the WS or the Facility in a timely manner, and at its own cost and shall seek expertise as necessary in order to satisfy and comply with all applicable Grid Code requirements.

9.2 Failure to Comply with Grid Code

- 9.2.1 If thirty (30) days after GRIDCo has given written notice to the WS of non-compliance with an applicable Grid Code requirement, the WS remains in non-compliance, or the WS fails to comply with an applicable Grid Code requirement more than once, and in either case such non-compliance materially prejudices GRIDCo's ability to maintain reliability of the NITS as a result of such non-compliance, then GRIDCo may (until such non-compliance is remedied) disconnect the Generator System from the NITS, provided that:
- (a) GRIDCo first gives the WS thirty (30) days written notice of its intent to disconnect, where the WS fails to comply with the applicable requirements of the Grid Code notified to it under Section 9.1.3; and
 - (b) such right to disconnect shall be suspended as long as the WS is diligently pursuing corrective action in accordance with Prudent Utility Practice.
- 9.2.2 If GRIDCo disconnects the Generator System in accordance with Section 9.2.1, GRIDCo shall reconnect the Generator System provided that WS presents evidence acceptable to GRIDCo, acting reasonably, that the WS and the Facility shall be in compliance with applicable Grid Code requirements upon any such reconnection.
- 9.2.3 If the WS fails to provide evidence acceptable to GRIDCo that the WS and the Facility shall be in compliance with applicable Grid Code requirements upon any such reconnection as described in Section 9.2.2 within one (1) year of disconnection under Section 9.2.1, GRIDCo shall not be under any obligation to reconnect the Generator System and GRIDCo may terminate this Agreement upon no less than sixty (60) days prior written notice to the WS.
- 9.2.4 If the WS' System is disconnected for non-compliance with applicable Grid Code requirements pursuant to Section 9.2.1, the WS shall pay to GRIDCo an approved reconnection fees prior to reconnecting the Generator System to the NITS.

10. LIABILITIES AND INDEMNITIES

10.1 Indemnity

- 10.1.1 Subject to Sections 10.2 and 10.4 the WS shall indemnify and save and hold harmless GRIDCo, its directors, officers, employees, shareholders, agents, successors and assigns (collectively, the "**GRIDCo Indemnitees**" and each individually, a "**GRIDCo Indemnitee**") from and against any and all claims, liabilities, losses, damages, costs and expenses (including legal fees and disbursements on a solicitor-client basis and consultant fees and disbursements), fines, penalties, judgments, awards, assessments or charges of any kind

(collectively, “**Claims**”), which any of the GRIDCo Indemnitees incurs, suffers or is put to which in any way relate to or arise or result from any third-party claim, demand or proceeding, which in any way relate to or arise or result from any failure by the WS to keep, observe or perform any obligations, covenants, terms or conditions under this Agreement to be kept, observed or performed by the WS, or any negligent, reckless or intentional wrongdoing of the WS or any director, officer, employee, shareholder or agent of the WS.

- 10.1.2 Subject to Section 10.2 and 10.4, GRIDCo shall indemnify and save and hold harmless WS, its directors, officers, employees, shareholders, agents, successors and assigns (collectively, the “**WS Indemnitees**” and each individually, a “**WS Indemnitee**”) from and against Claims, which any of the WS Indemnitees incurs, suffers or is put to which in any way relate to or arise or result from any third-party claim, demand or proceeding, which in any way relate to or arise or result from any failure by GRIDCo to keep, observe or perform any obligations, covenants, terms or conditions under this Agreement to be kept, observed or performed by GRIDCo, or any negligent, reckless or intentional wrongdoing of GRIDCo or any director, officer, employee, shareholder or agent of GRIDCo.

10.2 **Notice of Proceedings**

Promptly after receipt by a Party (the “**Indemnified Party**”) of any Claims, notice of commencement of any action or administrative or legal proceeding or investigation for which the Party will seek indemnification from the other Party (the “**Indemnifying Party**”) pursuant to Section 10.1, the Indemnified Party shall notify the Indemnifying Party of such fact. Such notice shall be given as soon as reasonably practicable after the relevant Party becomes aware of such claim or proceeding. Any failure of or delay in such notification shall not affect a Party’s indemnification obligation unless such failure or delay is materially prejudicial to the Indemnifying Party.

10.3 **Conduct of Proceedings**

- 10.3.1 The Indemnifying Party shall have the right, but not the obligation, to contest, defend and litigate (and, subject to Section 10.3.2, to retain legal advisers of its choice in connection therewith) any Claims, claim, action, suit or proceeding by any third party alleged or asserted against the Indemnified Party arising out of any matter in respect of which it is entitled to be indemnified hereunder, and the reasonable costs and expenses thereof shall be subject to the said indemnity. Notwithstanding the preceding, the Indemnifying Party shall not be entitled to assume and control the defence of such claim, action, suit or proceeding where:

- (a) the Indemnified Party shall have reasonably concluded that there may be a conflict of interest between the Indemnifying Party and the Indemnified Party in the conduct of the defence of such action; or

- (b) such claim, action, suit or proceeding involves the potential imposition of criminal liability on the part of the Indemnified Party; or
- (c) the Indemnified Party shall have reasonably concluded and specifically notified the Indemnifying Party either that there may be specific defences available to it which are different from or additional to those available to the Indemnifying Party or that such claim, action, suit or proceeding involves or could have a material adverse effect upon it beyond the scope of this Agreement,

and in such situations the Indemnifying Party shall reimburse the Indemnified Party for the reasonable costs and expenses of defending such claim, action, suit or proceeding. Neither Party shall settle or compromise any claim, action, suit or proceeding in respect of which it is entitled to be indemnified by the other Party without the prior written consent of that Party.

10.3.2 Any Indemnified Party which exercises its rights under this Article 10 shall have the right to employ its own legal advisers and such advisers may participate in such action, and the fees and expenses of such advisers shall be at the expense of such Indemnified Party, when and as incurred, unless:

- (a) the employment of legal advisers by such Indemnified Party has been authorised in writing by the Indemnifying Party;
- (b) the Indemnifying Party shall not in fact have employed independent legal advisers reasonably satisfactory to the Indemnified Party to assume the defence of such action and shall have been so notified by the Indemnified Party; or
- (c) the Indemnifying Party is unwilling or unable to assume control of the defence as provided in Section 10.3.1(a), 10.3.1(b) or 10.3.1(c).

The reasonable fees and disbursements of the legal advisers described in subparagraphs (a) through (c) (inclusive) shall constitute legal or other expenses under this Article 10.

10.3.3 Any person other than the Parties seeking the benefit of the indemnity provided pursuant to this Article 10 must acknowledge, on request and in writing to both Parties, that, in consideration of receiving such indemnity, such person is bound by the terms of this Section 10.3.

10.4 **Limitations on Liability**

10.4.1 Neither Party, nor any of its directors, officers, employees, shareholders, agents, successors and assigns, shall be liable to the other Party, or any of its directors, officers, employees, shareholders, agents, successors and assigns, under or in relation to this Agreement for any indirect or consequential incidental, punitive

or exemplary damages, injury or loss suffered by that other Party or its directors, officers, employees, shareholders, agents, successors and assigns, howsoever and whensoever caused, and whether arising in contract or in tort, including loss of profits, loss of revenue, cost of capital, cost of purchased or replacement capacity or energy, and loss of use of any facilities, property or equipment.

10.4.2 Section 10.1 shall not apply to the extent any Claims are attributable to any negligent, reckless or intentional wrongdoing of any of the GRIDCo Indemnitees or WS Indemnitees or to the extent that the Party incurring, suffering or the subject of any Claims is duly compensated therefore by insurance proceeds, and such Party shall take reasonable measures to claim and receive such insurance proceeds.

11. FORCE MAJEURE

11.1 Performance Excused for Force Majeure

Neither Party shall be considered in default as to any obligation under this Agreement to the extent it is prevented from fulfilling the obligation due to an event of Force Majeure. However, a Party whose performance under this Agreement is hindered by an event of Force Majeure shall make all reasonable efforts consistent with Prudent Utility Practice, where applicable, to perform its obligations under this Agreement and make reasonable efforts to remedy the Force Majeure with reasonable despatch, provided that settlement of strikes, lockouts and other labour disturbances shall be wholly within the discretion of the Party involved.

11.2 Notice

If there is a Force Majeure event affecting a Party's ability to perform its obligations under this Agreement, the affected Party shall promptly notify the other Party of the occurrence of the Force Majeure event, identifying the nature of the event, its expected duration and the particular obligations affected. The affected Party shall furnish to the other Party reports with respect to the Force Majeure event and the affected Party's efforts to remedy such event at such intervals as the other Party may reasonably request during the continuance of such Force Majeure event.

11.3 Termination for Extended Force Majeure

If an event of Force Majeure continues uninterrupted for a period that exceeds one hundred eighty (180) continuous days, then either Party may terminate this Agreement by giving the other Party no less than sixty (60) days prior written notice of its intention to terminate this Agreement. Notwithstanding the foregoing, this Agreement shall not be terminated if an event of Force Majeure is of a nature that is reasonably correctable, and the Party claiming Force Majeure is making reasonable commercial efforts to end or alleviate the Force Majeure event.

12. REGULATORY APPROVALS

12.1 Obtaining and/or Maintaining Approvals

The obligations of the Parties under this Agreement are subject to each Party obtaining and maintaining regulatory approvals, if any, necessary for performance of this Agreement. The Parties agree to use all reasonable efforts to obtain and maintain such regulatory approvals and to cooperate with and assist one another as reasonably necessary in seeking such approvals.

13. DISPUTE RESOLUTION

13.1 Notice of Disputes

In the event any dispute, claim, question or difference (a “**Dispute**”) arises with respect to this Agreement or its performance, enforcement, breach, termination or validity, or any invoice rendered hereunder, such Dispute shall be resolved in accordance with this Section 13. The Party claiming a Dispute shall provide written notice to the other Party. If a Party claims entitlement to payment or any part thereof or enforcement of any right or obligation hereunder, and a Dispute arises in relation thereto, such payment shall not be due nor shall any such right or remedy be exercised (as the case may be) until final resolution of the Dispute in favor of the Party entitled to payment or entitled to exercise the right or remedy (as the case may be).

13.2 Amicable Resolution

13.2.1 The Parties shall make reasonable efforts through or by their respective senior executives to amicably resolve any Dispute within thirty (30) days of receipt of the notice provided under Section 13.1.

13.2.2 If the Parties are unable to amicably resolve the Dispute after the thirty (30) days (a) if the dispute arose from the inability of the Joint Technical Committee to reach a decision pursuant to Section 7.1, the Dispute shall be referred to the Technical Expert for resolution and (b) for all other disputes, the Dispute shall be referred to arbitration for resolution.

13.3 Resolution by Technical Expert

13.3.1 Any Dispute arising out of or in relation to this Agreement which requires referral to the Technical Expert, shall be dealt with by the independent engineer appointed in accordance with this Section 13.3 (the “**Technical Expert**”), and in the manner required by the relevant provision of the Agreement and this Section 13.3.

13.3.2 On or before the date that is thirty (30) days after the establishment of the Joint Technical Committee pursuant to Section 7.1, the Joint Technical Committee shall select an international and independent engineering firm to serve as the

Technical Expert for all purposes of this Agreement. If the Joint Technical Committee is unable to agree on the appointment of the Joint Technical Committee, either Party may submit such Dispute to senior management in accordance with Section 13.2.1 and such Dispute shall then be resolved by senior management and shall not be subject to arbitration under this Agreement. The Parties, by mutual agreement, may replace or designate a substitute Technical Expert for all or any single purpose under this Agreement.

- 13.3.3 The person so appointed shall, during the time that he/she performs the task assigned to him/her, be the Technical Expert for the purpose for which he/she is appointed.
- 13.3.4 The Technical Expert shall determine or settle any matter which requires his/her determination in such manner as he/she shall in his/her discretion see fit.
- 13.3.5 The determination or settlement by the Technical Expert of the matter in dispute or disagreement shall, in the absence of manifest error, be final and binding on the Parties and shall not be subject to appeal to any other dispute resolution forum.
- 13.3.6 Before the Technical Expert makes his/her determination or decision on the matter referred or otherwise brought before him/her, the Parties may make written submissions to him/her. Upon receiving such submissions, the Technical Expert shall forthwith make available any such submission to the other Party for comment. The Parties shall, if requested by the Technical Expert, make available to the Technical Expert any document or other materials which the Technical Expert considers necessary or helpful in reaching his determination or decision.
- 13.3.7 The Technical Expert shall endeavour to make his/her determination or decision required of him/her under the Agreement within thirty (30) days of the matter being referred to, or otherwise brought before, him/her, or such shorter time period as is appropriate for resolution of the Dispute in question.
- 13.3.8 Except as set forth in Section 13.3.9, unless the Technical Expert decides that a Party has conducted itself in a frivolous, vexatious or irresponsible manner, the costs of the Technical Expert's decision or other action shall, on account of the nature of the services required of the Technical Expert, be borne by the Parties equally.
- 13.3.9 The Technical Expert shall determine that any Party that fails to comply with his/her determination or decision shall bear the costs of any further process to enforce the decision or determination.
- 13.3.10 Any sum payable as a result of the Technical Expert's determination shall be payable within fifteen (15) days of the Parties receiving notification of the same.

Any action required as a result of the Technical Expert's determination shall be undertaken by the applicable Party as promptly as possible.

- 13.3.11 The decision or other action taken by the Technical Expert shall be reduced to writing forthwith and conveyed to each of the Parties.

13.4 **Resolution by Arbitration**

- 13.4.1 In the event the Parties are unable to resolve a Dispute in accordance with Section 13.2 and that such Dispute does not arise from the inability of the Joint Technical Committee to reach a decision pursuant to Section 7.1, the Dispute shall be finally resolved by arbitration under the UNCITRAL Arbitration Rules in force (the "**Rules**"), which Rules are deemed to be incorporated by reference into this Agreement. Any dispute submitted by a Party to arbitration shall be heard by a panel of three (3) arbitrators, in accordance with the following provisions:
- 13.4.2 The Parties shall each appoint one arbitrator and the two (2) arbitrators shall jointly appoint a third arbitrator who shall chair the arbitration panel. If the arbitrators appointed by the Parties fail to appoint a third arbitrator within thirty (30) days after the appointment of the first two (2) arbitrators, the third arbitrator, at the request of either Party shall be appointed by the Secretary General of the Permanent Court of Arbitration (The Hague).
- 13.4.3 If a Party fails to appoint an arbitrator within thirty (30) days after the other Party has appointed an arbitrator, the Party who has appointed an arbitrator may appeal to the Permanent Court of Arbitration (The Hague) to appoint a sole arbitrator for the matter in dispute and the arbitrator so appointed shall be the sole arbitrator of the Dispute.
- 13.4.4 The decision of a majority of the arbitrators or of the sole arbitrator is final and binding on the Parties. In addition, it will be applicable in any jurisdiction, and the Parties to this Agreement waive any objection or presumption of immunity in respect of this decision.
- 13.4.5 Where an arbitrator is unable to perform the duties assigned to that arbitrator, another arbitrator shall be appointed under the same conditions as the original arbitrator.
- 13.4.6 The third arbitrator appointed under Section 13.5.2 or the sole arbitrator appointed under Section 13.5.3 above shall be a legal or technical expert, recognized internationally, with extensive experience in the matter under dispute in question.
- 13.4.7 The seat and place of arbitration shall be Accra, Ghana, or such other location as may be mutually agreed to by the Parties.

13.4.8 The language of the arbitration shall be English.

13.5 Performance During Dispute Resolution

While attempts are being made to resolve a Dispute, the Parties shall continue to perform all obligations under this Agreement and shall continue to comply with all terms of this Agreement to the extent reasonably practicable and, except as provided in Section 13, neither Party shall commence any legal proceedings whatsoever against the other Party in connection with their respective rights or liabilities under this Agreement.

13.6 Costs of Dispute

Each Party shall be responsible for all costs (except the fees of the arbitrators, which shall be apportioned between the Parties as determined by the arbitrators) incurred by it in resolving any Dispute under this Section 13.

13.7 Equitable Remedies

The Parties acknowledge that a declaratory judgment or damages may provide an inadequate remedy for breach of the provisions of this Agreement, and accordingly each Party shall be entitled to seek specific performance, injunction or other similar remedy to ensure full and proper performance by the other Party of its obligations under this Agreement and such remedy may be sought in lieu of or in addition to the dispute resolution procedures set out in this Section 13.

14. NOTICES

14.1 Method of Service

Except for any notices or information given or exchanged in connection with the Joint Technical Committee or notice relating to Emergencies or Force Majeure events which shall be given in a more expedient manner by telecommunication (including telephone conversation, facsimile transmissions, or internet e-mail), such telecommunication to be promptly confirmed in writing, any notice, approval, direction or request required or permitted to be given hereunder shall be in writing and shall be given by hand delivery, facsimile, or by registered letter, postage fully prepaid, addressed to the following addresses of the Parties:

GRIDCo:

Ghana Grid Company Ltd.
P. O. Box CS 7979
Tema, Ghana
Attention: Director, System Operations Department

with a copy to:

Ghana Grid Company Ltd.
P. O. Box CS 7979
Tema, Ghana
Attention: Chief Executive

WS:

Company's Registered Name: <*>
Attention General Manager/[Authorized Representative Name & Position/title]: <*>
General Manager: <*>
Mailing Address: <*>
Facsimile No: <*>

Each Party may amend its address for the purposes of this Section 14.1 by written notice to the other Party not less than ten (10) days prior to the effective date of such change of address.

14.2 Deemed Receipt

Notice by mail shall be deemed received seven (7) days after the date of posting. Notice by facsimile or hand delivery shall be deemed to have been received by the close of the business day on which it was transmitted or delivered (unless transmitted or delivered on a day other than a business day or after the close of the business day in which case it shall be deemed received at the close of the next business day).

15. GENERAL PROVISIONS

15.1 Representations and Warranties of the WS

The WS hereby represents and warrants, as of the Effective Date, that:

- (a) the WS is a <*> company duly organised, validly existing and registered under the laws of Ghana, is duly authorised to conduct its business in Ghana and has all requisite legal power and authority to execute this Agreement and to carry out the terms, conditions and provisions hereof and thereof;
- (b) all legislative, administrative and other governmental action required from governmental instrumentalities to authorise the execution and delivery of this Agreement by the WS and the transactions contemplated hereby to be undertaken by the WS have been taken by the WS and are in full force and effect except to the extent of actions which are not required to be taken until a later time and except to the extent that the

effectiveness of any other document is conditioned upon the effectiveness of this Agreement;

- (c) this Agreement constitutes the valid, legal and binding obligation of the WS, enforceable in accordance with the terms thereof except as the enforceability may be limited by applicable bankruptcy, insolvency, reorganisation, moratorium or other similar laws affecting creditors' rights generally;
- (d) there are no actions, suits or proceedings existing, or, to the WS' knowledge, pending or threatened, against or affecting the WS before any court or administrative body or arbitral tribunal that would materially and adversely affect the ability of the WS to meet and carry out its obligations under this Agreement;
- (e) the execution, delivery and performance by the WS of this Agreement has been duly authorised by all requisite corporate action, and to the best of the WS' knowledge will not contravene any provision of, or constitute a default under, any other agreement or instrument to which it is a party or by which it, or its property may be bound; and
- (f) all amounts due and properly payable to GRIDCo in connection with development and construction of the Connection Facilities have been paid.

15.2 Representations and Warranties of GRIDCo

GRIDCo hereby represents and warrants, as of the Effective Date, that:

- (a) GRIDCo has all requisite legal power and authority to execute this Agreement and to carry out the terms, conditions and provisions hereof;
- (b) all legislative, administrative or other governmental action required to authorise the execution, delivery and performance by GRIDCo of this Agreement and the transactions contemplated hereby to be undertaken by GRIDCo have been taken by GRIDCo and are in full force and effect except to the extent of actions which by the terms of such document are to be taken at a later time and except to the extent that the effectiveness of any other document is conditioned on the effectiveness of this Agreement;
- (c) this Agreement constitutes the valid, legal and binding obligation of GRIDCo, enforceable in accordance with the terms hereof except as the enforceability may be limited by applicable bankruptcy, insolvency, reorganisation, restructuring, moratorium or other similar laws affecting creditors' rights generally;

- (d) there are no actions, suits or proceedings existing or, to GRIDCo's knowledge, pending or threatened, against or affecting GRIDCo before any court or administrative body or arbitral tribunal which would materially and adversely affect the ability of GRIDCo to meet and carry out its obligations under this Agreement; and
- (e) the execution and delivery of this Agreement by GRIDCo have been duly authorised by all requisite corporate action, and to the best of GRIDCo's knowledge will not contravene any provision of, or constitute a default under, any other agreement or instrument to which it is a party or by which it or its property may be bound.

15.3 Insurance

Each Party covenants to obtain and maintain during and for the Term of this Agreement, at its own cost and expense, such insurance as shall be appropriate in accordance with Prudent Utility Practice, including the insurance policies set forth in Appendix 9 and to provide evidence of such insurance upon request of the other Party.

15.4 Confidentiality

15.4.1 Except as provided in section 8.8.2, any information disclosed related to this Agreement shall be considered confidential, whether expressly designated as such or not, and shall be kept confidential by the Parties. Such obligation on each Party shall continue for a one year period following the termination of this Agreement. Such confidential information shall not be disclosed by a Party (the "**Disclosing Party**") to any third-party, except:

- (a) to affiliates, lenders, contractors, agents, consultants, insurers, or other advisors of the Disclosing Party on a need to know basis;
- (b) if such information has entered the public domain (other than through the actions of the Disclosing Party) or if such information is the Disclosing Party's own confidential information;
- (c) as required by law or any authority having jurisdiction in respect of the Disclosing Party;
- (d) with the prior written consent of the other Party;
- (e) as the Parties may otherwise agree;
- (f) to the Offtaker where required to meet obligations under the PPA, the Grid Code or this Agreement; or
- (g) to potential purchasers of the Facility or of shares in the WS, or to any insurers or reinsurers of the Facility;

provided that any such recipient shall be, and the Disclosing Party shall ensure that the recipient is, under the same duty of confidentiality as the Disclosing Party in respect of such confidential information.

15.4.2 If either Party receives a request from any third-party for any such confidential information, that Party shall, to the extent legally permissible, promptly notify the other Party of the request and shall, to the extent legally permissible, protect the other Party's confidential information using a reasonable degree of care.

15.5 **Governing Law**

This Agreement shall be governed by and construed in accordance with the laws of the Republic of Ghana applicable therein.

15.6 **Transfer of Control or Sale of Facility**

In any sale or transfer of control of any of the Facility, WS shall as a condition of such sale or transfer require the acquiring party or transferee with respect to the transferred facilities either to assume the obligations of WS with respect to this Agreement or to enter into an agreement with GRIDCo imposing on the acquiring party or transferee the same obligations applicable to WS pursuant to this Agreement.

15.7 **Assignment and Subcontracting**

Except as provided in this Section 15.7, neither Party may assign any of its rights or obligations under this Agreement without the prior written consent of the other Party, such consent not to be unreasonably withheld. The WS acknowledges that GRIDCo may contract with consultants/contractor, to provide services in carrying out its obligations under this Agreement. GRIDCo acknowledges that WS may itself contract with consultants/contractors to undertake operation and maintenance services in respect of the Facility and in carrying out its obligations under this Agreement.

Notwithstanding the foregoing, the WS may assign this Agreement to the persons, entities or institutions providing financing or refinancing for the development, design, construction or operation of the Facility (collectively, the "**Lenders**") and if the WS provides notice thereof to GRIDCo, GRIDCo shall provide notice and reasonable opportunity for such lenders to cure any default under this Agreement. GRIDCo shall, if requested by the Lenders, execute such documentation as may be required with respect to the assignment and status of this Agreement, provided such documents do not alter GRIDCo's rights and obligations under this Agreement save in respect of the notice provisions and the cure periods referred to herein. In the event of any foreclosure by such Lenders, the purchasers at such foreclosure or any subsequent purchaser, shall upon request, be entitled to the rights and benefits of (and be bound by) this Agreement so long as it is an entity entitled to Connect with the NITS in accordance with the Laws of Ghana, including the Grid Code.

15.8 **Non-Waiver**

Any waiver by a Party must be made in writing and shall be limited to the particular instance and shall not extend to any other instance or matter in this Agreement or in any way otherwise affect the rights or remedies of such Party.

15.9 **Enurement**

This Agreement shall enure to the benefit of and be binding upon the Parties and their respective successors and permitted assigns.

15.10 **No Partnership**

Nothing contained in this Agreement shall be construed as creating a partnership, joint venture or agency between the Parties.

15.11 **Amendments**

Any amendment or variation of this Agreement shall be binding on GRIDCo and on the WS only if made in writing and signed by the authorized representative of each Party.

15.12 **Further Assurances**

During the term of this Agreement, each Party shall execute, acknowledge and deliver such other instruments and shall take such other action as may be necessary to carry out its obligations under this Agreement, and to allow the other Party to carry out its obligations and to exercise its rights under this Agreement.

15.13 **Entire Agreement**

This Agreement constitutes the entire agreement between the Parties with respect to the connection and operation of the Connection Facilities and supersedes and replaces any and all prior agreements, negotiations, understandings, or representations between the Parties concerning the subject matter of this Agreement, as expressly set out in this Agreement.

15.14 **Conflicts**

Should any term or provision of this Agreement conflict with the language of any other agreement between the Parties, the terms and provisions of this Agreement shall govern.

15.15 **Severability**


If any provision of this Agreement is or becomes illegal, invalid or unenforceable under the Laws of Ghana, it shall be severed from this Agreement and the remainder of this Agreement shall remain in full force and effect and shall be interpreted and construed as if that provision had never formed part of this Agreement.

15.16 Counterparts

This Agreement may be executed in one or more counterparts or by facsimile transmission and if so executed such counterparts or facsimile transmissions shall be read and construed together as if they formed one document.

[SIGNATURES APPEAR ON THE FOLLOWING PAGE]

IN WITNESS WHEREOF, each signatory having been appropriately authorized to enter into this Agreement on behalf of the Party for whom they sign, the Parties have caused this Agreement to be executed by their respective duly authorized representatives as of the date first written above.

<p>SIGNED on behalf of the GHANA GRID COMPANY LIMITED</p> <hr/> <p><u>Name:</u> <u>Title:</u></p>	<p>SIGNED on behalf of the </p> <hr/> <p><u>Name:</u> <u>Title:</u></p>
<p>In the presence of Name: Title:</p>	<p>In the presence of Name: Title:</p>

Appendix 1

WS CONNECTION REQUIREMENTS

[NTD: GRIDCo and WS to complete technical information.]

This section defines the requirements that are applicable for the WS to connect to the 161 kV nominal voltage levels on the NITS or for an existing Facility applying for substantial modification to the Facility.

No.	Item	Requirement
1.1.	Connection Location and Voltage Level	<p>The WS may apply to connect to the NITS at the nominal voltage levels of 161 kV. It may also be possible to connect at voltages above or below 161 kV as determined by GRIDCo.</p> <p>The voltage level and Point(s) of Connection to the NITS are to be determined by GRIDCo in consultation with the WS . GRIDCo shall be the final authority in determining the Point(s) of Connection</p>
1.2.	Signing of Technical Reports, Drawings, Memos, etc.	All reports, memos, drawings, equipment specifications, and modeling data of technical nature (excluding manufacturing drawings) shall be signed [and sealed] by a Professional Engineer certified to practice in Ghana.
1.3.	Operating Procedures	The WS shall abide by all procedures in the Grid Code and any Operating Procedures which are identified in this CA, which include one of the following types: normal, abnormal or emergency Operating Procedures, imposed by GRIDCo.
1.4.	Reactive Power Requirements	<p>The Facility shall be designed to provide reactive power supply and absorption capability acceptable to GRIDCo.</p> <p>The Facility connected to the NITS shall be able to control the voltage level at the Points of Connection as determined by GRIDCo by adjusting the WS 's power factor.</p> <p>The WS shall design the Facility to maintain power delivery at continuous rated power output measured at the WS terminals at a power factor within the designed limits of the generator. Connection studies will determine if a range different from this may be permitted.</p> <p>The reactive supply shall be available over the full range of operating conditions and within the Generator System Technical Limits.</p> <p>The WS shall be responsible for providing any necessary reactive power facilities as determined by Connection studies and/or studies associated with a request for transmission service (if applicable).</p>
1.5.	Dynamic Power Requirements	For new Facility, GRIDCo may conduct Connection studies to determine the need for additional dynamic reactive power support to ensure post disturbance voltages remain within the voltage ranges specified in [the Grid Code]. The dynamic reactive support may be required at the Points of Connection or at other points in the NITS.
1.6.	Voltage Variations	The system nominal voltages, typical normal steady-state minimum and maximum operating voltage limits and voltages for rating of equipment are as follows:

No.	Item	Requirement			
		System Nominal Voltage (kV)	Normal steady state operating limits		Voltage for rating of equipment (kV)
Minimum Voltage (kV)	Maximum Voltage (kV)		161	153	
		<p>The WS Facility and Connection Facilities when connected to the NITS at the above nominal voltage, shall:</p> <ul style="list-style-type: none"> Be capable of operating continuously within the minimum and maximum voltage limits as defined above. GRIDCo reserves the right to require the WS 's equipment to be capable of operation outside the normal minimum and maximum values above at specific locations on the NITS. Be capable of remaining in operation during transient undervoltage events following system disturbances to the undervoltage levels defined above. Be capable of withstanding, switching (or transient) and temporary (or dynamic) over-voltages and remaining in service up to the voltage levels of $\pm 10\%$ of nominal system voltage and for durations up to 30 minutes (the period beginning approximately 120 cycles after a disturbance has occurred and after transients have died out). Be capable of remaining in operation during under-voltages caused by nearby faults not on the Connection Facilities. The minimum voltage at the Points of Connection on the 161 kV system is 0% for 7 cycles and less than 50% for 16 cycles. <p>Generator System tripping will be permitted if required to prevent Units damage for voltage conditions outside the voltage limits defined above.</p>			
1.7.	Frequency Variations	<p>The design criteria for frequency variation used on the NITS is as follows:</p> <ul style="list-style-type: none"> The nominal system frequency is 50 Hz. Frequency variations are as indicated in the technical schedules (TS-F) of the Grid Code <p>Generator System and Connection Facilities are required to be designed to operate reliably for the following fundamental frequency range when connected to the NITS</p>			
			Under frequency Limit	Over frequency Limit	Minimum Time
50.0 – 49.0 Hz	50.0 -51.0 Hz	N/A continuous	49.0 – 47.5 Hz	51.0 – 51.5 Hz	10 minutes
[7.5 – 47.0 Hz][NTD: GRIDCo to provide]	[51.5 – 52.9 Hz] [NTD: GRIDCo to provide]	30 seconds	<ul style="list-style-type: none"> Facility tripping is permitted if required to prevent WS damage for frequency conditions outside the operating limits defined above. The WS shall coordinate frequency relay settings with GRIDCo Facility must be able to ride through a frequency rate of change of 		

No.	Item	Requirement	
		4.0 Hz/second and quickly damped thereafter.	
1.8.	Inertia Constant (H)	<p>The impact on stability performance of the inertia of the Units, if required, shall be reviewed by GRIDCo. The Connection studies shall demonstrate the ability of the WS unit to maintain synchronism for typical fault clearing times at or near the Points of Connection.</p> <p>Mitigating measures to correct any performance issues will be determined by GRIDCo in coordination with the WS. The WS shall be responsible for the reasonable cost of required mitigation, if any.</p>	
1.9.	Synchronous Generator System controls	Speed Governor	<p>Synchronous Units shall have a functioning speed governor to ensure satisfactory frequency response. The speed governor shall have the following characteristics:</p> <ul style="list-style-type: none"> ● 4% droop, ● Fully responsive to frequency deviations exceeding ± 0.030 Hz, ● Capable of providing immediate and sustained response to abnormal frequency excursions, ● Control WS generator unit speed stably during connected and also during islanded operation, ● Control WS generator unit speed following full load rejection so as to prevent a trip on over speed. <p>The performance requirements of the governor system shall be in accordance with IEEE Standard 125 for hydraulic turbines and with IEEE Standard 122 for steam turbines.</p> <p>Similar performance requirements shall apply to all types of prime movers</p>
		Excitation System	<p>The synchronous generator units of Generator System may require the addition of a high initial response type of exciter if GRIDCo system studies demonstrate all or part of the following:</p> <ul style="list-style-type: none"> ● The high initial response excitation system is required to meet minimum transient voltage criteria; ● The high initial response excitation system is required to enhance the ability of the Generation Facility to damp electromechanical modes of oscillation and meet minimum damping criteria. ● The WS generator unit size exceeds 70 MVA. <p>The excitation system shall be designed in accordance with the guidelines of IEEE Standard 421.4</p> <p>A static excitation system voltage response time shall not be greater than 100 milliseconds.</p> <p>For rotating exciters, the excitation system nominal</p>

No.	Item	Requirement	
			response, at rated speed, shall be at least 2.0.
		Automatic Voltage Regulator (AVR)	<p>A continuously acting AVR equipped with a line drop compensator, or equivalent, providing a minimum of 60% line drop compensation shall be required for each WS Facility.</p> <p>The AVR shall have the capability to maintain the steady-state voltage within $\pm 0.5\%$ of the nominal voltage at the Points of Connection. AVR/exciter operation shall be stable and transient gain reduction shall not be used to preserve control system stability.</p>
		Joint VAR Control	<p>For the connection of a Generator System consisting of several units, joint VAR control capability shall be provided with the capability to control a remote bus. The joint VAR control requirements are to be determined in consultation with GRIDCo.</p>
		Power Ramp Rates	<p>The real power output of the Generator System is required to be adjustable. GRIDCo will review if the power ramp rate is adequate to follow load if GRIDCo requires the Units to be on Automatic Generation Control (AGC) or any other load control scheme. Typical power ramp rates are 2 MW/second.</p>
		Maximum Power Limit	<p>The maximum output of the Connection Facilities shall be specified in the Agreement. When in operation, the Generator System shall not exceed this maximum output value.</p>
		Power System Stabilizer (PSS)	<p>All Units shall be provided with a PSS and a high initial response static exciter.</p> <p>The voltage response time shall not exceed 100 ms.</p> <p>If GRIDCo studies determine that the PSS does not provide significant damping to electromechanical modes of oscillation then the static excitation system shall have the capability of accepting a stabilizing signal input as a minimum requirement.</p>
		Automatic Generation Control (AGC)	<p>GRIDCo reserves the right to require that Units be capable of AGC operation. GRIDCo will determine the need for AGC operation.</p> <p>GRIDCo shall determine the AGC operating protocol and operating set points in coordination with the WS.</p>
1.10.	Synchronizing Facilities	<p>The WS shall provide synchronizing facilities including a facility for backup manual synchronizing.</p> <p>Synchronizing shall normally be accomplished through the closing of a circuit breaker under the control of an automatic synchronizer with automatic voltage and speed matching for the incoming WS generator unit so as to achieve a “bumpless” connection with minimum disturbance to the NITS.</p> <p>The WS shall be responsible for determining the synchronizer settings.</p>	

No.	Item	Requirement
		<p>The WS shall resolve any adverse effects caused by WS synchronization. Typical maximum synchronizer settings are:</p> <ul style="list-style-type: none"> ● Frequency difference: 0.10 Hz, ● Voltage difference: 3%, ● Phase angle difference: 20 degrees. <p>The WS Facility operator is responsible for synchronization of the Facility to the NITS subject to authorization from GRIDCo.</p>
1.11.	Protection Requirements	<p>The WS shall be responsible for the following:</p> <ul style="list-style-type: none"> ● To ensure that the Facility and Connection Facilities are protected for all operating conditions and for all faults on the NITS. ● To install protective relaying equipment and systems that will sense and properly react to failure and malfunction of the Facility and Connection Facilities. The design of protective relaying installations will be in accordance with Prudent Utility Practice and shall satisfy Grid Code requirements. The protection shall fully protect the safety of the public and of GRIDCo personnel interfacing with the Facility and Connection Facilities. ● To install high side breaker failure protection at the generating station and on all Unit breakers. ● To provide GRIDCo with information as to the type of protection used and the settings for these protections. GRIDCo shall be the final authority on establishing control and protection settings that impact the operation of the NITS. ● To determine the settings for relays that protect the Units and other parts of the Facility and equipment. The WS shall coordinate the protection and associated protection settings for installed equipment in the Facility and Connection Facilities with the settings of the NITS protection schemes. GRIDCo will provide details of the GRIDCo system protection to the WS to facilitate this coordination. ● The WS shall produce a protection relay coordination report that clearly demonstrates protection coordination. This report shall be submitted to GRIDCo for review and approval prior to the first energization of the Facility and Connection Facilities. <p>Fault interrupting devices shall have adequate fault interrupting and momentary withstand ratings to satisfy the short circuit level requirements and shall meet maximum clearing times established in coordination with GRIDCo.</p> <p>In cases where GRIDCo system studies indicate the reliability of the NITS may be jeopardized, GRIDCo may require the WS to install additional protection. GRIDCo will provide information as to the type of additional protections and the required clearing times of these protections. These protections can include but are not limited to the following:</p> <ul style="list-style-type: none"> ● Bus differential, ● Overvoltage, ● Under-voltage, ● Breaker failure, ● Out of step, ● Reverse power,

No.	Item	Requirement
		<ul style="list-style-type: none"> ● Voltage balance, ● Directional over-current, and ● Transfer trip.
1.12.	Communications	<p>Communications facilities are required between the Facility and the NITS. The WS shall provide and maintain the required communications from the Facility to the site(s) designated by GRIDCo. The communications type and performance shall be adequate for its intended use and shall satisfy the requirements further specified herein. GRIDCo will specify the interface at its sites.</p> <p>Communications facilities may be required for, but are not limited to:</p> <ul style="list-style-type: none"> ● System protection, ● Supervisory control (including associated data acquisition and alarms), ● Tele-metering, ● Operational voice communication, from a stand-alone dedicated voice line that is capable of functioning for up to 12 hours in a system or site shutdown condition or complete loss of station service supply, ● Facsimile and e-mail communication. <p>The exact requirement for communications, and functional characteristics, will be dependent on the function served and where appropriate by the reliability and/or redundancy to be defined and determined in coordination with GRIDCo.</p> <p>All communications system maintenance and planned outages shall be coordinated through GRIDCo.</p>
1.13.	Revenue Metering	<p>General:</p> <p>All measuring devices and metering equipment required for revenue metering shall be owned, supplied, installed and maintained by GRIDCo at the WS's expense. Metering specifications and standards shall conform to the requirements of the Grid Code and Prudent Utility Practice.</p> <p>The specific types of metering equipment, timing devices, locations of meters, the details of the metering arrangement and the records to be kept shall be compatible with normal GRIDCo practice and shall be determined by GRIDCo in consultation with the WS.</p> <p>Also all technical matters related to meter accuracy, metering configuration, Energy Losses measurement, meter reading process, backup metering check requirement and meter security audit will be decided by GRIDCo in coordination with the WS</p>
1.14.	Telemetry, Metering, and Supervisory Control and Data Acquisition(SCADA)	<p>The WS shall provide a Remote Terminal Unit (RTU) or Data Link to a GRIDCo RTU capable of exchanging Supervisory Control and Data Acquisition (“SCADA”) information with the GRIDCo system control center. The protocol for data exchange via the RTU shall be compatible with that used for communications by the GRIDCo system control center. GRIDCo will provide the WS with the protocol for data exchange.</p> <p>As a minimum, the WS is required to provide the following data needed by the SCADA system:</p> <ul style="list-style-type: none"> ● Hourly integrated billing MWh,

No.	Item	Requirement
		<ul style="list-style-type: none"> ● Hourly integrated MVARh, ● Individual WS MW and MVAR, ● WS breaker status, ● Individual WS on/off status, if no WS breaker exists, ● Total station instantaneous MW and MVAR, ● Station service instantaneous MW, MVAR, hourly MWh and MVARh, ● WS transformer(s) high voltage side breaker(s) and isolator(s) status, ● Bus voltage at high voltage bus, ● PSS status, if applicable, ● AVR status, if applicable, ● Total plant MW, if requested, ● Instantaneous ambient temperature, if requested, ● WS step-up transformer tap setting, if requested. <p>SCADA readings shall be available in four (4) second intervals.</p> <p>If an AVR is required, the WS shall either provide full supervisory control facilities for each Unit or a total plant MVAR control point adjustable from the GRIDCo system control center, or provide 24 hour telephone access to a continuously staffed or remotely controlled Facility control via a dedicated phone line. Within an agreed time (typically 10 minutes), the Facility shall be able to adjust the voltage set point as directed by GRIDCo.</p> <p>All measuring devices and metering equipment required for this purpose shall be supplied, installed and maintained by the WS.</p> <p>If the Facility is Despatched by GRIDCo the WS shall either provide full supervisory control facilities for each Unit or a total WS plant MW control point adjustable from GRIDCo system control centre, or provide 24 hour telephone access to a continuously staffed or remotely controlled Facility control room via a dedicated phone line. Within an agreed time, the Facility shall be able to:</p> <ul style="list-style-type: none"> ● Start-up, synchronize and fully load the available Generator System and, ● Change the output of any Unit within the Technical Limits of the Generator System and subject to the Grid Code provisions. <p>The Generator System may need to be connected to the GRIDCo Automatic Generation Control system as determined by GRIDCo. If GRIDCo requires the Unit to be connected to the AGC system, the WS shall provide the appropriate Telemetry equipment for the AGC signals.</p>
1.15.	Insulation Levels	<p>The Facility and Connection Facilities shall comply with Prudent Utility Practice for insulation coordination and the Grid Code provisions.</p> <p>Equipment connected to the NITS on the high voltage side of WS transformer(s) shall be insulated to at least the basic insulation levels (BIL) applicable to the system nominal voltage as determined and defined by GRIDCo, subject to insulation coordination studies. The WS shall be responsible for conducting such insulation coordination studies.</p>
1.16.	Short Circuit Levels	<p>The Facility and Connection Facilities shall be designed for operation at short circuit (fault) levels that take into account future development of the NITS.</p>

No.	Item	Requirement
		<p>The short circuit levels, available on request from GRIDCo, to be used in the design depend on the Points of Connection and future planned development. If the Facility causes fault current limits of existing equipment connected to the NITS to be exceeded, the WS is responsible for mitigation. Affected equipment will be identified and mitigation costs determined by GRIDCo system study and the relevant circuit breakers would be replaced as per GRIDCo instructions.</p>
1.17.	Grounding	<p>Each generating unit forming part of the Generator System shall be grounded in accordance with the Prudent Utility Practice.</p> <p>The overall grounding for the Facility and the Connection Facilities shall be designed in accordance with the guidelines of relevant IEEE Standard. GRIDCo system studies shall determine if modifications to the ground grids of existing facilities are necessary to keep grid voltage rises within safe levels.</p>
1.18.	Lightning (Surge) Protection	<p>Lightning (Surge) Protection against direct lightning strokes shall be provided for protecting outdoor equipment including transformers forming part of the Facility and the Connection Facilities.</p> <p>Lightning protection shall be designed for a zero rate of failure (that is, all voltage stresses are at least three standard deviations less than the critical flashover voltage) taking into account the regional lightning stroke density (estimated from data or from a local keraunic level map if available) and grounding grid resistances as applicable to the Facility and Connection Facilities.</p>
1.19.	Safety	<p>The Facility and the Connection Facilities shall comply with safety requirements in the Grid Code and the Prudent Utility Practice.</p>
1.20.	Environmental Conditions	<p>Any equipment that can impact the NITS shall be designed to function safely and reliably under the environmental conditions prevalent at the WS site plan. In particular, such equipment located outdoors at the Points of Connection necessary for isolating the Connection Facilities from the NITS shall function reliably in adverse weather conditions.</p>
1.21.	Clearances and Access	<p>Energized parts shall be maintained at safe vertical and horizontal clearances.</p>
1.22.	Isolation	<p>The WS shall provide fault interrupting devices and isolating devices at a location(s) defined by GRIDCo at or near the Points of Connection.</p> <p>Isolating devices shall be manually operable or motor operated isolation switches that provide visual electrical isolation. The isolation switch shall simultaneously operate all phases (i.e. gang-operated open/close). In some instances, GRIDCo may require motor operated isolation switches to allow rapid remote or automatic isolation from the NITS. The requirement to provide motor operated isolation devices will be determined by GRIDCo on a case by case basis.</p> <p>Provision shall also be made for GRIDCo to padlock these isolation switches securely in the open position as per the GRIDCo safety rules.</p> <p>If the Points of Connection is remote from the connecting GRIDCo substation, then the isolating device(s) shall also have a safety ground switch(es) installed on the GRIDCo side of the isolating device(s). The need for the safety ground switch(es) will be determined by GRIDCo in coordination with the WS.</p>
1.23.	Transformer Connection	<p>Transformer reactance and tap settings shall be coordinated with GRIDCo to</p>

No.	Item	Requirement
		<p>optimize the leading and lagging reactive power capability that can be provided to the NITS.</p> <p>The transformer connection is normally required to be delta on the WS side and grounded star on the NITS side so as to block transmission of harmonic currents and isolate WS and NITS side grounding networks.</p> <p>Tap changers shall be supplied with adequate tap changer range to allow operation over the range of operating voltage at the Points of Connection.</p>
1.24.	Testing and Maintenance Coordination	<p>The WS shall provide planned testing and maintenance work schedules for equipment within the Facility. GRIDCo shall be given advance notification of planned outages for scheduled test and maintenance work.</p> <p>The WS shall have a Generator System protection system's maintenance and testing program in place. Documentation of the protection system maintenance and testing program for the Facility shall be provided to GRIDCo</p>
1.25.	Inspection Requirements	<p>The Facility and the Connection Facilities shall be open to inspection by GRIDCo, whenever requested, for verification of compliance with this document. GRIDCo shall provide reasonable notice to the WS of the proposed date for any planned inspection visits</p>
1.26.	Notification of New or Modified Facilities	<p>The WS shall give reasonable notice to GRIDCo of any planned substantial modifications or additions of the New Facility or any Future Facilities impacting the NITS and obtain GRIDCo's approval for the modifications before proceeding with the work.</p>

Appendix 2
CHARGES, INVOICING AND PAYMENT

Charges

- 1.1. GRIDCo shall provide Connection services to the WS in accordance with this Agreement.
- 1.2. GRIDCo shall not charge the WS for Connection services except in accordance with the PURC-approved Connection charges.
- 1.3. The WS shall pay for charges for Connection services in accordance with the PURC-approved Connection charges.
- 1.4. In addition to charges for Connection services, GRIDCo may require that WS pay the following in respect of any modification or addition to the Facility or arising out of the request for Connection:
 - (a) The capital cost of:
 - (i) the development and construction of new or modified Connection Facilities; and
 - (ii) additions or modifications to the NITS related to the Connection of the Generator System (whether or not located at the Connection Facilities); and
 - (b) Any other fees, charges or costs expressly provided for in this Agreement.

Invoicing and Payments

- 2.1. A Party may invoice the other Party on a monthly basis for Connection services or ancillary services provided. Invoicing of capital costs shall be as agreed to by the Parties. Invoices for any other services or charges shall be issued in accordance with this Agreement or within a reasonable time of such other services being provided.
- 2.2. Subject to Paragraph 2.5 of this Appendix 2, the Party receiving the invoice shall within 30 days receipt of invoice pay to the other Party the amount of the invoice.
- 2.3. The Parties shall agree on the means of payment and shall each notify the other of the details of the accounts to which payments shall be made and the banks and branches at which such accounts are maintained.
- 2.4. Any dispute regarding an invoice shall be resolved pursuant to the procedure provided in Article 13 in the body of the Agreement.
- 2.5. Overdue amounts shall bear interest at the rates prescribed in Section 6.2.4.

- 2.6. Any payments received by one Party from the other under this Agreement shall be applied in or towards settlement of amounts payable to the recipient by the payee in respect of this Agreement with the longest outstanding Financial Default being settled first.

Appendix 3
OPERATING PROCEDURES

PART 1: GENERATOR SYSTEM SCHEDULING AND DESPATCH PROCEDURES

1. Scope of Procedures

1.1. Issuance and Objectives

1.1.1. This Part 1 of Appendix 3 sets out the procedures for:

- (a) the issue of an Annual Generation Schedule by GRIDCo to the WS;
- (b) the issue of a Monthly Generation Schedule by GRIDCo to the WS;
- (c) the issue of a Weekly Available Capacity Schedule by the WS to GRIDCo;
- (d) the submission by the WS to GRIDCo of Availability Declarations;
- (e) the confirmation of Availability Declarations and the notification by the WS to GRIDCo of any changes in the information stated in an Availability Declaration after its submission;
- (f) the issue of Daily Generation Schedules by GRIDCo to the WS; and
- (g) the issue of Despatch Instructions by GRIDCo to the WS.

1.1.2. The objective of the system scheduling and despatch procedures set out in this Part 1 of Appendix 3 (the “**Despatch Procedures**”) is to enable GRIDCo to issue such Despatch Instructions to the WS as will allow GRIDCo to ensure (so far as possible):

- (a) the integrity of the NITS;
- (b) the security and quality of supply; and
- (c) that there is sufficient generation to meet demand on the NITS at all times (to the extent possible) together with an appropriate margin of reserve.

1.2. Compliance with Grid Code

1.2.1. This Part 1 of Appendix 3 shall be subject to and read in conjunction with the Grid Code and, in particular, the Scheduling and Despatch Sub-Code contained in Section 10 thereof.

1.3. Changes in Procedures

1.3.1. Either GRIDCo or the WS may request a change to Despatch Procedures set out in this Appendix 3, provided that:

- (a) neither GRIDCo nor the WS shall request a change which is inconsistent with Prudent Utility Practice; or
 - (b) the Grid Code.
- 1.3.2. Notwithstanding Paragraph 1.3.1 of this Appendix 3, GRIDCo shall not request a change to Despatch Procedures set out in this Appendix 3, which:
- (i) would be likely to prejudice the WS's ability to ensure that the Generator System operates within the Technical Limits and the Plant Performance Characteristics; or
 - (ii) which otherwise would materially and adversely impact the WS's performance of its obligations and enjoyment of its rights set forth in the Agreement.

The WS and GRIDCo will discuss any such change in sufficient time to implement the change properly and in a manner consistent with Prudent Utility Practice. No change shall be effective unless approved by the WS and GRIDCo in writing, such approval not to be unreasonably withheld.

- 1.3.3. At least once in each calendar year, GRIDCo and the WS will collectively discuss and review the Despatch Procedures.

2. Timing of Schedules

2.1. Annual Generation Schedule

- 2.1.1. GRIDCo shall issue to the WS at least ninety (90) days prior to the first day of each calendar year notice of its anticipated requirements with regard to the generation by the Generator System of Electrical Energy (an "**Annual Generation Schedule**") during such calendar year. GRIDCo shall issue, fourteen (14) days prior to the first day of each subsequent month in such calendar year, and at the same time as GRIDCo shall issue to the WS the Monthly Generation Schedule, an update of the Annual Generation Schedule containing notice of GRIDCo's anticipated requirements with regard to the generation by the Generator System of Electrical Energy for the remaining applicable twelve (12) month period.

2.2. Monthly Generation Schedules

- 2.2.1. GRIDCo shall issue to the WS at least fourteen (14) days prior to the first day of each month notice of its anticipated requirements with regard to the generation by the Generator System of Electrical Energy (a "**Monthly Generation Schedule**") during the following month.

2.3. Weekly Schedules

- 2.3.1. The WS will submit to GRIDCo in respect of the Generator System by 10.00 hours each Thursday, a weekly schedule (a “**Weekly Available Capacity Schedule**”) which will run from 00.00 hours on the Saturday to 24.00 hours on the following Friday. The Weekly Available Capacity Schedule (for each hour in the week) shall be non-binding, but shall, to the best of the WS’s knowledge at such time, indicate:
- (a) the times at which the WS anticipates that the Generator System will be available;
 - (b) for each time where the Generator System will be available, the Available Capacity;
 - (c) for each time where the Generator System will be available, the assumed ambient temperature;
 - (d) for each time where the Generator System will be available, the average Active Power expected from the Available Capacity at the assumed ambient temperature but without correction to Reference Conditions; and
 - (e) where the Generator System or any Unit thereof will not be available, the reason for its non-availability.

3. AVAILABILITY DECLARATIONS

3.1. Submission by WS

- 3.1.1. The WS shall comply promptly with a GRIDCo request to submit its Availability Declaration data, its generation scheduling and Despatch parameters and any other relevant data as may be requested.
- 3.1.2. The WS shall ensure that all Despatch Instructions from GRIDCO relating to a scheduled Unit are implemented.
- 3.1.3. The WS, if nominated to provide ancillary services, be responsible for ensuring that each Unit is capable of providing necessary support when so instructed by GRIDCo.
- 3.1.4. By 10.00 hours on each preceding day, every WS shall submit to GRIDCo, in writing, the completed Availability Declaration to be used in preparation of the Generation Schedule for the Despatch Day.
- 3.1.5. If an Availability Declaration for the next day’s Generation Schedule is not submitted within the prescribed deadline, the WS shall be deemed to have submitted on such day an Availability Declaration in the same value and terms as indicated in the most recent Availability Declaration and GRIDCo shall use this data in preparing the Generation Schedule.

3.2. Revision of Availability Declaration

3.2.1. During the Construction Period, when the Generator System is synchronised on test, the WS shall be entitled to revise its Availability Declaration without the consent of GRIDCo so as to increase or decrease the Declared Available Capacity at any time up to one (1) hour prior to the hour reflected in such revised Availability Declaration.

3.3. **Content of Availability Declaration**

3.3.1. Availability Declarations shall contain the following information:

- (a) the Available Capacity in each Availability Period during the following Day (including start time and date);
- (b) the assumed ambient temperature expected for each Availability Period during the following day;
- (c) the average Available Capacity at the assumed ambient temperature but without correction to Reference Conditions for each Availability Period during the following day;
- (d) estimated initial conditions (time required for notice to synchronise within the Technical Limits and Plant Performance Characteristics), last on or off time;
- (e) the Generator System run-up rate for each levels of warmth (cold, warm or hot) with time breakpoints between those levels of warmth and definition of ramp at the breakpoints;
- (f) the Generator System run-up rate in MW with breakpoints;
- (g) the Generator System run-down rate;
- (h) the Reactive Power capacity of the Generator System;
- (i) minimum load for the Generator System; and
- (j) any maintenance which is planned during the subject period that could reasonably affect services required by GRIDCo.

4. **SCHEDULING**

4.1. **Daily Generation Procedures**

4.1.1. Daily Generation Scheduling procedures include the following:

- (a) collation of hourly demand forecast for the next Despatch Day by GRIDCo;
- (b) the submission of an Availability Declaration to GRIDCo by the WS;

- (c) the submission to GRIDCo of any revised generation scheduling data or Despatch parameters for the following Availability Declaration period by the WS; and
- (d) the use of the information provided by the WS and other Grid Participants in the preparation of a Generation Schedule for the next Despatch Day.

4.2. Content of Generation Schedule

- 4.2.1. Each Daily Generation Schedule will specify in respect of each Availability Period in the relevant day the level of Active Power (without correction for Reference Conditions) which the Generator System is required to deliver.
- 4.2.2. Information in the Daily Generation Schedule is indicative only, and the WS acknowledges that the Despatch Instructions could reflect lesser, more or different Generator System requirements than in the Daily Generation Schedule (so long as consistent with the then-current Availability Declaration and the Technical Limits).

4.3. Additional Scheduling and Despatch Data

- 4.3.1. The generation data to be submitted by the WS shall also consist of scheduling and Despatch parameters for the Generator System and other relevant generation data, and also including the following:
 - (a) details of any special factors which may have a significant impact on the output of a scheduled Unit;
 - (b) any temporary change to the registered data of the scheduled Unit indicating the duration of the temporary change; and
 - (c) any temporary change of a Unit's availability to provide ancillary services and the duration of the temporary change.
- 4.3.2. The WS shall, without delay, notify GRIDCo of any change in the Availability Declaration, generation scheduling and Despatch parameters and other relevant generation data.
- 4.3.3. The WS shall submit to GRIDCo all specified generation data one day ahead of the Despatch Day.

5. DESPATCH INSTRUCTIONS

5.1. Time of Issue

- 5.1.1. GRIDCo may issue Despatch Instructions relating to any day at any time during the period from after the issue of the Daily Generation Schedule in respect of that day.

- 5.1.2. GRIDCo will issue Despatch Instructions as far in advance of the time that the Generator System is required to synchronise or (as the case may be) of the time that the Generator System's output is required to change as is reasonably practicable in accordance with the Plant Performance Characteristics, and in no event less than thirty (30) minutes for simple cycle operations, three and a half (3.5) hours for combined cycle operations from a Hot Start, four and a half (4.5) hours for combined cycle operations from Warm Start conditions that consist of eight (8) to forty-eight (48) hours since the last shutdown, six (6) hours for combined cycle operations from Warm Start conditions that consist of forty-eight (48) hours to ninety-six (96) hours since the last shutdown, and six (6) hours for combined cycle operations from a Cold Start prior to the relevant Availability Period.
- 5.1.3. GRIDCo may issue specific Despatch Instructions with respect to the matters set out in Paragraph 0 of this Appendix 3 in respect of any Availability Period in a day before the issue of the Daily Generation Schedule for that day if the length of notice to synchronise the Generator System or to change the level of output of the Generator System (as set out in the relevant Availability Declaration or otherwise as required in accordance with the Technical Limits and Plant Performance Characteristics) requires the instruction to be given at that time.

5.2. **Scope of Despatch Instruction**

- 5.2.1. Despatch Instructions shall take into account the Capacity and Availability Declaration, generation scheduling and Despatch parameters and other relevant generating plant data supplied to the ETU.
- 5.2.2. In addition to varying the requirements of the relevant Daily Generation Schedule, Despatch Instructions may include requirements in respect of target (at instructed MW level) Reactive Power output measured at the Points of Connection to be maintained by the Generator System so long as consistent with the Technical Limits and the relevant Plant Performance Characteristics for Reactive Power. Subject to the provisions of this Appendix 3, any Despatch Instruction may be subsequently cancelled or varied by a later Despatch Instruction, so long as consistent with the then-current Availability Declaration and the Technical Limits.
- 5.2.3. The issue of Despatch Instructions for Reactive Power shall be limited to varying the Reactive Power output within the Technical Limits and will be made with due regard, and payment for, any resulting change in the capability of the Generator System to generate Active Power and may include instructions for reduction in Active Power generation to increase Reactive Power capability. In the event of a sudden change in the NITS voltage, the WS shall not take any action in respect of the Generator System to override automatic response unless instructed otherwise by GRIDCo or unless immediate action is necessary to comply with stability limits. The WS may take such actions as is reasonably necessary to maintain the integrity of the Generator System.
- 5.2.4. Despatch Instructions may include:

- (a) notice and changes in notice to synchronise or de-synchronise the Generator System in a specific timescale;
- (b) notice and changes in notice to increase or decrease active and reactive power output; and
- (c) instructions relating to abnormal conditions, such as adverse weather conditions, or high or low NITS voltage.
- (d) details of the type of reserves to be carried by each Unit, including specifications of the duration in which that reserve may be Despatched;
- (e) an instruction for generating Units to provide operational requirements and other ancillary service;
- (f) target voltage levels at instructed generating capacity level or the individual reactive power output at the bus or connection point;
- (g) requirements for changes in AGC mode; and
- (h) an instruction to carry out tests as specified in the Operations Sub-Code of the Grid Code.

5.2.5. For any Availability Period the scheduled Available Capacity (as corrected to Reference Conditions) for such Availability Period shall not exceed the Declared Available Capacity for such Availability Period.

5.2.6. Despatch Instructions shall contain, at the minimum, the following:

- (a) the Unit to which the instruction applies;
- (b) the MW and MVare output required;
- (c) start and synchronizing time of scheduled Units;
- (d) target time of ramp-up and ramp-down rates for Units; and
- (e) the time Despatch Instruction is issued.

5.3. **Inefficient Operating Configuration**

5.3.1. The WS shall use all reasonable endeavours to operate the Generator System in the most efficient operating configuration consistent with the relevant Daily Generation Schedule and/or Despatch Instruction and with Prudent Utility Practice. The Daily Generation Schedule and Despatch Instructions shall refer to the Generator System as a whole and shall not refer or direct activity related to any particular Unit. If the Daily Generation Schedule or Despatch Instructions would, in the WS's opinion, result in an unusually inefficient Generator System operating configuration, the WS shall notify GRIDCo of

such opinion, but shall not have any liability in respect of any failure to give any notification of such opinion or for the consequences of any revision to Daily Generation Schedules or Despatch Instructions made by GRIDCo as a result of such notification or any recommendation of the WS.

- 5.3.2. To preserve the NITS integrity in an Emergency, GRIDCo may issue Despatch Instructions to change the Generator System's output even when this is outside the Plant Performance Characteristics. A refusal to carry out the instruction may only be given on safety grounds (relating to personnel, the Generator System or apparatus) or the integrity of the Generator System or because such Despatch is not consistent with the Technical Limits.

6. NOTICE AND COMMUNICATION

6.1. Weekly Available Capacity Schedules, Availability Declarations and Generation Schedules

- 6.1.1. Each Weekly Available Capacity Schedule, Availability Declaration, Monthly Generation Schedule and Daily Generation Schedule shall be submitted by the issuing Party in writing by fax or electronic mail to and from the Generator System control centre and the Despatch Centre.

6.2. Despatch Instructions and other Communications

- 6.2.1. Despatch Instructions and any other notifications to be given by either Party under the Despatch Procedure may, unless otherwise required, be given by telephone but must be followed as soon as possible thereafter with written confirmation by fax or electronic mail.
- 6.2.2. Despatch Instructions must be formally acknowledged immediately by the WS by telephone and must be followed as soon as possible thereafter with written confirmation by fax or electronic mail. Reasons for non-acceptance, which may only be on safety grounds or because they are not in accordance with the Availability Declaration or the Technical Limits (and in the case of Despatch of Reactive Power, within the performance band set forth in Part 2 of Appendix 3), must be given to GRIDCo as soon as practicable. In the event that in carrying out the Despatch Instructions an unforeseen problem arises, caused by safety reasons, GRIDCo must be notified immediately by telephone.

6.3. Form of Generation Schedules and Despatch Instructions

- 6.3.1. The form of the Monthly Generation Schedule and the Daily Generation Schedule and Despatch Instructions may be revised as reasonably determined by GRIDCo and the WS from time to time but shall always be delivered in accordance with Paragraph 6.2 in a clear, concise form.

6.4. Communication with the WS

6.4.1. The WS shall, at the beginning of each shift, contact GRIDCo on the telephone, and the operator at the Generator System and the operator at the Despatch Centre must exchange names in order to identify each other. If, during the shift at the Generator System or the Despatch Centre, the operator changes, the Party whose operator has changed must notify the other accordingly.

6.5. Implementation of Despatch Instructions by the WS

6.5.1. The WS will respond to each Despatch Instruction properly given by GRIDCo without delay in accordance with the instruction, provided that in the case of Despatch Instructions issued pursuant to Paragraph 5.3.2, the WS shall make reasonable efforts to so respond, and in the event the WS fails to respond to any such Despatch Instruction, there shall be no reduction in Available Capacity from that set forth in the Availability Declaration.

6.5.2. Where the WS is unable to comply with Despatch Instructions, the WS shall inform GRIDCo by telephone without delay.

6.5.3. Where GRIDCo instructs a change in generation output, the WS shall, subject to the then-current Availability Declaration, the Technical Limits and the Plant Performance Characteristics, comply with the instruction without delay and the Generator System shall achieve the instructed target output within five (5) minutes before or after the time specified by GRIDCo for achieving it.

6.5.4. If an unforeseen problem arises, which affects the safety of the plant or personnel, the WS may, acting in accordance with Prudent Utility Practice, disregard Despatch Instructions and take necessary corrective actions and shall notify GRIDCo.

6.5.5. The WS will not synchronise or de-synchronise a Unit without GRIDCo's prior agreement except in response to the Despatch Instructions of GRIDCo or if it de-synchronises automatically as a result of inter trip schemes or low frequency relay operations. De-synchronisation may also take place without GRIDCo's prior agreement if it is done purely on safety grounds (relating to personnel or the Generator System). If that happens, the WS must inform GRIDCo promptly of the de-synchronisation.

6.5.6. Where the WS fails to respond to Despatch Instructions within a tolerable time and with accuracy, the Unit shall be declared and identified as non-conforming and the relevant WS may face financial penalties or other sanctions imposed under its license and pursuant to this Agreement.

6.6. Generating Unit Changes

6.6.1. The WS will without delay notify GRIDCo by telephone of any change or loss (temporary or otherwise) to the Available Capacity, including any changes to the Technical Limits or Plant Performance Characteristics, of the Generator System, indicating magnitude and the duration of the change. The WS must also state whether the loss was instantaneous.

6.6.2. The WS will operate the Generator System with automatic voltage regulators and volt amperes reactive limiters in service at all times unless released from this obligation by GRIDCo.

6.7. Actions required by the WS in Response to Changes in Frequency

6.7.1. Low Frequency

The WS shall ensure that the Units operate on the drop control mode when the Units are synchronized to the NITS. Within the Technical Limits and the Plant Performance Characteristics, the Generator System will be required to increase generation by a percentage to be determined by GRIDCo when the system frequency drops by 0.1 Hz for any drop in system frequency below 49.5hz.

6.7.2. High Frequency

(a) Subject to the Technical Limits and the Plant Performance Characteristics, if system frequency rises to or above 50.4 Hz the WS shall ensure that, the Generator System will be required to automatically or manually decrease generation by a percentage to be determined by GRIDCo at the time of the system frequency rise.

(b) This reduction must be made without reference to GRIDCo and must be maintained until the system frequency has returned to the normal system frequency of 50 Hz. In order that GRIDCo can deal with Emergency conditions effectively, it needs as much up to date information as possible, and accordingly the WS shall inform GRIDCo directly by telephone of the action taken as soon as possible after the rise in system frequency.

6.8. Actions required by the WS in Response to Changes in Voltage

6.8.1. Subject to the Technical Limits and the Plant Performance Characteristics, if NITS parameters are normal as described in Appendix 4, the Generator System shall be able to synchronise to the NITS when Dispatch Instructions are given to do so.

6.9. Communication Between the Parties

6.9.1. The Parties shall establish a communications protocol to be used in Emergency situations.

APPENDIX 3
PART 2: GENERATOR SYSTEM SCHEDULED MAINTENANCE AND
CONSTRUCTION OUTAGES

1. Scheduled Outages

1.1. Preparation of Draft Scheduled Maintenance Plans

1.1.1. The WS shall:

- (a) not later than one hundred and twenty (120) days before the beginning of each calendar year, submit to GRIDCo in writing its best estimate (in accordance with Prudent Utility Practices) of the programme for the Scheduled Outages to be taken in that year; and
- (b) not earlier than thirty (30) days and not later than fifteen (15) days before the beginning of each calendar year, submit to GRIDCo in writing its firm programme for the Scheduled Outages to be taken in that year and its provisional proposals for Scheduled Outages in each of the next succeeding four (4) years.

1.1.2. To the extent reasonably practicable, when planning a Scheduled Outage the WS shall consider the following:

- (a) not plan to take any Scheduled Outages during the months of February and March (Dry Season);
- (b) use all reasonable endeavours to plan to take Scheduled Outages during the months of April to August (Wet Season); and
- (c) plan all Outages of less than six (6) hours to be carried out either between 10.00 hours and 16.00 hours or between 23:00 hours and 05:00 hours (next day).
- (d) shall include in the draft Scheduled Maintenance Programmes appropriate cooldown periods to reduce housing temperatures for the relevant Unit or Units.

1.2. Approval of Draft Scheduled Maintenance Programmes by GRIDCo

1.2.1. Within thirty (30) days after receiving the WS's draft Scheduled Maintenance Programme under Paragraph 1.1.1(a), GRIDCo shall give notice to the WS in writing either:

- (a) that they are satisfied with such draft Scheduled Maintenance Programme, in which case such draft Scheduled Maintenance Programme shall be the Scheduled Maintenance Programme for the Contract Year in question; or
- (b) that they wish certain adjustments to be made to it, in which event GRIDCo shall specify such adjustments and reasons for them,

provided that, if GRIDCo fail within the allowed period to object to any proposed Scheduled Outage referred to in the draft Scheduled Maintenance Programme or fail within such period to advise the WS of a substitute time, in accordance with (and subject to the limitations in) this Paragraph 1.2, the WS may adhere to its draft Scheduled Maintenance Programme for the time stated in such notice, which upon expiry of the allowed period shall then be the Scheduled Maintenance Programme for the Contract Year in question.

- 1.2.2. Where GRIDCo gave notice under subparagraph (b) of Paragraph 1.2.1 of this Part 2, the WS shall, after full discussion with GRIDCo, promptly revise its draft Scheduled Maintenance Programme to take account of the agreement reached between GRIDCo and the WS or, in the absence of any such agreement, such adjustments as may have been requested by GRIDCo, in its notice referred to in subparagraph (b) of Paragraph 1.2.1. The revised draft Scheduled Maintenance Programme shall be delivered to GRIDCo as soon as practicable and shall be the Scheduled Maintenance Programme for the year in question. Unless the WS objects in writing within twenty (20) days after receiving the joint notice of GRIDCo under subparagraph (b) of Paragraph 1.2.1, it shall be deemed to have agreed to the revisions to the draft Scheduled Maintenance Programme notified by GRIDCo, and the draft Scheduled Maintenance Programme as so revised shall be the Scheduled Maintenance Programme for the relevant period.

1.3. **Subsequent Amendments to Scheduled Maintenance Plans**

- 1.3.1. Subsequent to the establishment of the Scheduled Maintenance Programme pursuant to Paragraph 1.1 and 1.2, GRIDCo or the WS may at any time propose amendments to the Scheduled Maintenance Programme and shall be obliged to make such a proposal as soon as it becomes aware that such an amendment will be necessary. Such amendments shall be made to the Scheduled Maintenance Programme only if they are agreed by GRIDCo and the WS; provided that if the WS proposes an amendment to the Scheduled Maintenance Programme due to the occurrence of events not anticipated or reasonably anticipated prior to submission of the initial Scheduled Maintenance Programme to either increase the maintenance period or revise the timing of such maintenance period, and GRIDCo objects to such amendment, such dispute shall be resolved as provided in Paragraph 1.2.2 of this Part 2. The Parties shall agree to attempt to make such amendments whenever reasonably practicable.
- 1.3.2. The timing and number of hours estimated for the Scheduled Maintenance Program shall be in accordance with the recommendations of the manufacturer or the long-term maintenance service provider, if any, and Prudent Utility Practice.

1.4. **Declarations of Available Capacity During Scheduled Outages**

The WS shall not make Availability Declarations in any Availability Period in excess of the availability levels based on the Scheduled Maintenance Programme during any period in which the Generator System, according to the Scheduled Maintenance Programme, is the subject of a Scheduled Outage.

2. Emergency Outages

2.1. Amendments to Scheduled Maintenance Programmes

2.1.1. Notwithstanding Paragraph 1.2, GRIDCo shall be entitled to require the WS to make an amendment to the Scheduled Maintenance Program, provided such amendment is in accordance with Prudent Utility Practice, including the postponement of a Scheduled Outage, if and to the extent that GRIDCo considers that the amendment is required in order to preserve the safety and security of the NITS provided that such postponement is in accordance with:

- (a) applicable Laws of Ghana;
- (b) the Grid Code; and
- (c) such rescheduling does not affect the safety or integrity of the Generator System.

2.2. Supply of Power

2.2.1. During any Emergency, the WS shall, as soon as possible after receipt of a request from GRIDCo, supply such power as the Generator System is able to generate within the Technical Limits, Plant Performance Characteristics, Despatch Procedures and Prudent Utility Practices.

2.3. De-energising the Generator System

2.3.1. If, in the reasonable opinion of GRIDCo, the condition or manner of operation of the NITS or the Generator System poses an immediate threat of injury or material damage to any person or the NITS, GRIDCo shall be entitled to require the WS to de-energise the Generator System if it is necessary or expedient to do so to avoid the occurrence of such injury or damage.

2.3.2. If, in the reasonable opinion of the WS, the condition or manner of operation of the NITS poses an immediate threat of injury or material damage to any person or to the Generator System or any portion thereof, the WS shall be entitled to de-energise the Generator System or a portion thereof if it is necessary or expedient to do so to avoid the occurrence of any such injury or damage. The WS shall give GRIDCo prompt notice of such de-energisation. The WS shall re-energise the Generator System or relevant portion thereof as quickly as practicable after the circumstances leading to the de-energization have ceased to exist, subject to the WS giving GRIDCo prior notice of, and GRIDCo approving, such re-energization.

3. Shutdown of Generator System

3.1.1. WS shall promptly notify GRIDCo in the event that the Generator System are shut down for any reason. GRIDCo shall investigate and determine the cause of the shutdown, using available evidence including input from the WS's staff.

3.1.2. Once GRIDCo is satisfied that reconnection of the Generator System following a shutdown will not adversely affect the NITS, GRIDCo shall notify the WS as soon as practicable that it may reconnect its facilities to the NITS. The WS shall not reconnect its facilities to the NITS following a shut down until authorized to do so by GRIDCo. Reconnection shall be effected in accordance with GRIDCo approved reconnection procedures or, in the absence of such procedures, in accordance with procedures agreed between the Parties.

APPENDIX 3
PART 3: CONNECTION FACILITIES OPERATING PROCEDURES

1. Scope and amendment of Operating Procedures

1.1. Contents of Operating Procedures

1.1.1. The Operating Procedures address the following:

- (a) methods of day to day communication between the WS and GRIDCo;
- (b) safety and maintenance co-ordination in respect of the Generator System and the NITS;
- (c) clearances and switching practices;
- (d) contingency planning in the event of a partial or total NITS shut-down; and
- (e) incident reporting.

1.2. Future Amendments to Operating Procedures

1.2.1. Either Party may from time to time propose amendments to the Operating Procedures in any manner consistent with Paragraph 1.1 by giving notice to the other Party stating the reasons for the proposed amendments. Within thirty (30) Days after receiving notice of a request to amend the Operating Procedures, the receiving Party shall notify the requesting Party of its objections to the proposed amendments and the modifications it requires. The Parties shall meet to discuss the proposed amendments and try to reach agreement on the revised Operating Procedures. If the Parties fail to reach agreement within forty-five (45) Days of receipt of the notice of request to amend the Operating Procedures, either Party may refer the matter to the Technical Expert for determination pursuant to Section 13.1 of the body of the Agreement.

1.3. Effective Date of Amendments

1.3.1. Any amendment to the Operating Procedures shall take effect on the date agreed by the Parties or determined by the Technical Expert or, if there is no objection to the proposed amendments to the Operating Procedures, the expiry of the relevant objection period.

1.4. Switching Protocols

1.4.1. Each Party shall develop a written protocol that establishes the conditions for, and the coordination of switching in respect of equipment under its control.

1.4.2. The Parties shall approve one another's switching protocols.

1.4.3. GRIDCo may issue to the WS, and the WS shall comply with, such switching instructions as may be required to maintain the security and reliability of the NITS.

1.4.4. The Parties shall, prior to the time at which any switching activity is to occur, agree upon procedures for such switching activity.

1.5. Isolation of Facilities at the WS's Request

1.5.1. A Party shall not, other than in an Emergency, operate an isolating disconnect switch except on prior notice to the other Party.

1.5.2. If the WS requires isolation of its own facilities or of facilities under GRIDCo's control, the WS shall deliver a written notice to that effect to GRIDCo.

1.5.3. The Parties shall bear their own costs and expenses associated with such isolation and reconnection.

1.6. Planned Work

1.6.1. Where planned work to be performed by a Party may affect the safety of the other Party's personnel, the Party performing the work shall provide the other Party with all required Work Protection documentation and related notices in writing or by such other means as they may agree in writing.

1.6.2. Where planned work on the facilities of a Party:

(a) requires the participation or cooperation of the other Party; or

(b) could adversely affect the normal operation of the other Party's facilities,

the other Party shall use commercially reasonable efforts to accommodate the planned work and shall negotiate in good faith the reasonable procedures and cost sharing criteria applicable to the planned work.

1.7. Access to and Security of Facilities

1.7.1. Each Party shall ensure that its facilities are secure at all times. Where a Party's facilities are located on the site of another Party, the Parties shall cooperate to ensure the security of those facilities.

1.7.2. Each Party shall be entitled to access the site or facilities of the other Party at all reasonable times where required in order to carry out work on its facilities or where otherwise permitted or required under this Agreement.

1.7.3. Each Party shall, to facilitate the exercise by the other Party of its access rights, provide that other Party with all applicable access procedures, including procedures relating to access codes and keys.

1.7.4. Where a Party wishes to exercise its right of access to the site or facilities of the other Party, the accessing Party shall provide reasonable prior notice to the host Party of the

date, time and location of access and of the nature of the work to be undertaken. Where the accessing Party's access cannot reasonably be accommodated by the host Party, the Parties shall agree on another date and time for access.

- 1.7.5. Where an accessing Party causes damage to or loss of any property of the host Party, the accessing Party shall promptly notify the host Party. The accessing Party shall pay to the host Party the host Party's reasonable costs of repairing such property or, if such property cannot be repaired, of replacing such property.
- 1.7.6. Where the property of a Party is on the site of the other Party, the host Party shall not interfere with or cause damage to or the loss of that property. Where the host Party causes such damage or loss, the host Party shall promptly notify the other Party. The host Party shall pay to the other Party the other Party's reasonable costs of repairing such property or, if such property cannot be repaired, of replacing such property.
- 1.7.7. GRIDCo may access the site or facilities of the WS in order to ensure that the Generator System comply with the requirements of this Agreement or for the purpose of investigating a threat or potential threat to the security of the NITS.

1.8. **Work on Site of Other Party**

- 1.8.1. When a Party is conducting work at the other Party's site, the working Party shall:
 - (a) comply with all of the host Party's practices and requirements relating to occupational health and safety and environmental protection;
 - (b) comply with all applicable law relating to occupational health and safety and environmental protection; and
 - (c) comply with all of the host Party's reasonable practices and requirements relating to security of the host Party's site, including entering into an access agreement on reasonable terms relating to security of the host Party's site.
- 1.8.2. When a Party is conducting work at the other Party's site, the working Party shall comply with its own practices and requirements in relation to occupational health and safety and environmental protection:
 - (a) to the extent permitted by the host Party, which permission shall not be granted unless the host Party is satisfied that the working Party's practices and requirements provide for a level of safety or protection that equals or exceeds its own; or
 - (b) to the extent that the host Party has not made its practices or requirements known to the working Party.
- 1.8.3. Each Party shall ensure that its facilities are operated and maintained only by appropriately qualified and trained persons.

Appendix 4
PERFORMANCE TESTS AND PLANT PERFORMANCE CHARACTERISTICS
PART 1: SYNCHRONISATION TESTS

- 1.1. The WS shall carry out, the following tests prior to synchronisation of the New Facility with the NITS:
- (a) automatic voltage regulator setting and static adjustments;
 - (b) generator control tests;
 - (c) open and short circuit tests on the generator;
 - (d) protection level tests:
 - (i) stator earth fault;
 - (ii) negative phase sequence; and
 - (iii) generator transformer overcurrent and earth fault;
 - (e) transformer protection tests;
 - (f) interrupting circuit tests for generator output breaker; and
 - (g) all protective systems that affect the NITS.

**PART 2: PLANT PERFORMANCE CHARACTERISTICS; REFERENCE
CONDITIONS**

[NTD: WS to provide missing information for Part 2]

1. PERFORMANCE CHARACTERISTICS FOR NEW FACILITY

The following Plant Performance Characteristics shall be applicable to and tested for the New Facility:

(a) Voltage

Nominal Voltage and Voltage Variation at the High Side Bushings of the Main Transformer:

(i) Nominal voltage: 161 kV (or any other voltage as determined by GRIDCo)

(ii) Voltage variation on taps: [_____] nominal voltage for the New Facility

(b) Frequency

Nominal Frequency and Limits on Frequency Variation:

(i) Nominal frequency: 50 Hz

(ii) Frequency variation: Within the limits as defined in Figure 4-1 (Frequency Voltage Limit Diagram).

(c) Reactive Power

Capacity for Production and Absorption of Reactive Power:

see Figure 4-2 (Reactive Power/Power Capability Curve).

(d) Ramping Rates

Maximum Load Ramping Rate:

The maximum load ramping rate for the Generator System, including the New Facility, operating in combined cycle mode shall be [__] MW/minute.

(e) Start-up Times

As provided in Paragraph 5.1.2 of Part 1 of Appendix 3.

2. MINIMUM STABLE LOAD

The minimum stable load of the Facility is: [] MW.

The minimum stable load of the Facility following the Effective Date and operating in combined cycle mode shall be: [] MW.

for the Generator System, including Unit Three, when firing Gas and operating in combined cycle mode will be determined pursuant to the EPC Contract.

3. FULL LOAD REJECTION CAPABILITY

[]

The following Figures are to be provided by the WS.

Figure 4-1

[Insert New Unit Frequency-Voltage Limit Diagram]

Figure 4-2

[Insert a]

Reactive Power/Power Capability Curve

APPENDIX 4
Schedule (A)
TECHNICAL DATA TO BE PROVIDED BY THE WS

General technical data, including steady-state and dynamics data, is required by GRIDCo to allow realistic simulation of the electric behavior of the Generator System in the NITS. Unit-specific dynamics data shall be provided for generators, excitation systems, voltage regulators, turbine-governor systems, power system stabilizers and other associated generation equipment. Field verification of Generator System data as defined herein will be required. Some of this data may not be initially available to the WS but shall be submitted to GRIDCo as it becomes available. Additional data or resubmission of data based on periodic testing as may be directed by GRIDCo shall be provided to GRIDCo by the WS.

2.1 Generator System Technical Data

Name and location of WS		
Connection Capacity (MW)		
Number of Units and MVA rating (with all temperature dependencies indicated)		
Energy Source (Hydro, Thermal, Gas, etc.), Type of Generator (synchronous, induction, etc.) and Prime Mover Type (steam turbine, reciprocating etc.)		
Scheduled In-Service Dates		
Generating Unit	Active/Reactive Power Capability Curve (Mvar vs. MW)	
	Open Circuit and Full Load Saturation Curves	
	Generator V Curve	
	Grounding Method (and impedance value if applicable)	
	Synchronous Generator Data (if applicable)	
	Induction Generator Data (if applicable)	
	Excitation System and AVR	Make, model and type of exciter (AC or DC, rotary, brushless or static etc.)

		Make, model and type of AVR	
		AVR setting range	
		Block diagram including values of all gains, time constants and limits in IEEE Standard model format	
	Power System Stabilizer	Block diagram including values of all gains, time constants and limits in IEEE Standard model format	
	Prime Mover and Governor	Block diagram including all parameters in IEEE Standard model format	
Step-up Transformer	Type, make, model		
	MVA rating—Normal		
	MVA rating—Emergency		
	Voltage rating of each winding		
	Connection configuration of each winding		
	Saturation Characteristics		
	Tap changer nominal tap, tap step size and tap range		
	Positive sequence impedance on own base (p.u.) at nominal tap for each winding		
	Zero sequence impedance on own base (p.u.) at nominal tap for each winding		
Circuit Breakers: type, make, model, interrupting capability, continuous current rating, tripping and closing times			
Surge arresters: Type, make, model and rating			

Description of protection and control provided and protection and control block diagrams and schematic drawings	
List of protection and control settings	
Description of interface provided for remote control and monitoring	
Description of facilities for metering and revenue metering	
Description of communication facilities	
Single line diagram and description of station service and auxiliary load	
Scheduled maintenance annual outage requirements	
Forced outage rate—expected design value	
Phase Unbalance (%)	
Individual harmonic or interharmonic voltage distortion (%)	
Total voltage distortion THD (%)	
High frequency harmonic noise maximum balanced IT	

2.2. Thermal Turbine-Generator Mechanical Data:

Number of lumped rotating masses on the turbine-generator shaft	
Moment of inertia of each lumped mass	
fraction of the total external mechanical torque applied to each lumped mass	
spring constant of the shaft section between each lumped mass	
speed deviation self-damping coefficient for each lumped mass	
Mutual damping coefficient between pairs of lumped masses	

2.3. Synchronous Generator Data

Rated	MVA			
	MW			
	PF			
	KV			
Synchronous Speed (RPM)				
Short Circuit Ratio				
Inertia Constant H (MW-S./MVA) (generator and turbine combined)				
REACTANCES IN PERCENT ON MACHINE OR STATION MVA BASE (Include both saturated and unsaturated reactances)	Potier Reactance X_p			
	Stator Leakage Reactance X_l			
	Negative sequence resistance R_2			
	Zero sequence resistance R_0			
	AT RATED CURRENT	Direct axis synchronous reactance X_d		
		Direct axis transient reactance X'_d		
		Direct axis sub-transient reactance X''_d		
		Quadrature axis synchronous reactance X_q		
		Quadrature axis transient reactance X'_q		
		Quadrature axis sub-transient reactance X''_q		
		Negative sequence reactance X_2		
		Zero sequence reactance X_0		
	AT RATED VOLTAGE	Direct axis synchronous reactance X_d		
		Direct axis transient reactance X'_d		
		Direct axis sub-transient reactance X''_d		
		Quadrature axis synchronous reactance X_q		
		Quadrature axis transient reactance X'_q		

		Quadrature axis sub-transient reactance X''_q	
		Negative sequence reactance X_2	
		Zero sequence reactance X_0	
Direct axis transient short-circuit time constant T'_d (seconds)			
Direct axis sub-transient short-circuit time constant T''_d (seconds)			
Quadrature axis transient short-circuit time constant T'_q (seconds)			
Quadrature axis sub-transient short-circuit time constant T''_g (seconds)			
Direct axis transient open-circuit time constant T'_{do} (seconds)			
Direct axis sub-transient open-circuit time content T''_{do} (seconds)			
Quadrature axis transient open-circuit time constant T'_{qo} (seconds)			
Quadrature axis sub-transient open-circuit time constant T''_{go} (seconds)			
Armature short-circuit time constant T_a (seconds)			

[NTD: Separate table to be provided for each unit.]

Appendix 5
GRID SYSTEM PARAMETERS AND REQUIREMENTS

1. NITS Parameters

1.1. Grid Characteristics

1.1.1. Grid Frequency and Voltage Variations

1.1.2. Nominal Values

- (a) Grid Voltage 330 or 161 kV
- (b) Grid Frequency 50 Hz

1.1.3. Operating Conditions

(a) Normal State

- Voltage from -5% to +5% of nominal value
- Frequency from -0.4% to +0.4% of nominal value

(b) Alert State

- Voltage (for 161 kV) $\pm 10\%$ (within 10 minutes)
- Frequency from -1% to +1% of nominal value

(c) Emergency State

- Voltage (for 161 kV) $\pm 10\%$ (within 30 minutes)
- Frequency from -2% to +2% of nominal value

1.2. Other Grid Characteristics [TO BE UPDATED TO REFLECT 330 kV LINE]

1.2.1. Transmission Capacity (See attached diagram)

1.2.2. Maximum Connected Load (See attached diagram)

1.2.3. Conductor Size & Rating (See attached diagram)

1.2.4. Short Circuit Currents:

- (a) Single-phase current 20 kA
- (b) Three-phase current 17 kA

1.2.5. Basic Insulation Level

- (a) Windings and equipment 750 kV
- (b) Bushings and equipment 750 kV

Figure 5-1 - Single Line Diagram Overview

To be inserted

Figure 5-2 – Detailed Grid Plan and Station Arrangement

To be inserted

Appendix 6
GENERATOR SYSTEM SINGLE-LINE DIAGRAM
[THE WS TO PROVIDE DIAGRAM]

Appendix 7
CONNECTION FACILITIES SINGLE-LINE DIAGRAM
[WS TO PROVIDE]

Appendix 8
SITE PLAN
[WS TO PROVIDE]

**Appendix 9
INSURANCE**

The WS shall provide, at a minimum, the following insurance in respect of the Facility.

Construction Material Damage:

Cover:	Physical loss of or damage to any part of the contract works, being the permanent and temporary works relating to the design, manufacture, supply, construction, erection and/or setting to work, testing and commissioning of the Facility including materials and plant for incorporation therein.
Sum Insured:	Full re-instatement of the Facility.
Deductible:	(a) In respect of loss or damage during testing, commissioning, operation and maintenance to: Gas Turbine – maximum <*> Steam Turbine/HRSG/Transformer – maximum <*> (b) In respect of all other loss or damage not included in (a) above – maximum <*>.
Insured:	The WS, all other contractors and sub-contractors of whatsoever tier engage in carrying out works on the Site, architects, project managers and engineers and other consultants for their Site activities only, the GRIDCo and GRIDCo’s contractors and sub-contractors in the New Facility, lenders and their advisors if applicable.

Third Party Liability:

Cover:	In respect of legal liability for loss of or damage to third party property and/or death of, bodily injury to or disease contracted or illness sustained by any third party. Policy to include a cross liability clause.
Limit of Indemnity:	A minimum of <*> any one occurrence unlimited in number during the Period.
Deductible:	A maximum of <*> each and every occurrence.
Insured:	The WS, all other contractors and sub-contractors of whatsoever tier engaged in carrying out works on the Site; architects and engineers

	and other consultants for their Site activities only; GRIDCo and the GRIDCo's contractors and sub-contractors.
Jurisdiction:	To include Republic of Ghana.

Public/Product Liability:

Cover:	Legal liability of the insured for damage to property of third parties or bodily injury to third parties arising out of the ownership, operation and maintenance of the Facility or breach of this Agreement.
Sum Insured:	Minimum of <*> any one occurrence unlimited in any period of insurance.
Deductible:	Maximum of <*>.
Insured:	The WS and its contractors and sub-contractors.
Review:	On the Effective Date, and on each third anniversary thereof, to reflect an appropriate sum insured in accordance with Prudent Utility Practice.
Jurisdiction:	To include Republic of Ghana.

APPENDIX 10

ADDITIONAL PROVISIONS AND DEFINITIONS