

CONTRACT TREP-01

**TREP-01 Popua Power Station Battery Energy
Storage System under
Tonga Renewable Energy Project**

Notification of Award



Letter of Acceptance

18th July 2019

To: *Akuo Energy Limited 140, avenue des Champs Élysées, 75008, Paris, France*

This is to notify you that your Bid dated *27th of November 2018* for execution of the TREP-01 *Popua Power Station Battery Energy Storage System under the Tonga Renewable Energy Project (49450-012)* for the Contract Price in the aggregate of *\$3,892,720, Three Million Eight Hundred and Ninety Two Thousand Seven Hundred and Twenty US dollars, and €996,887, Nine Hundred and Ninety Six Thousand Eight Hundred and Eighty Seven Euro* as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by our Agency.

You are requested to furnish the Performance Security within 28 days in accordance with the Conditions of Contract, using for that purpose one of the Performance Security Forms included in Section 9 (Contract Forms) of the Bidding Document.

Authorized Signature:

A handwritten signature in dark ink, appearing to be "Setitain Chen".

Name and Title of Signatory: *Setitain Chen (Chief Executive Officer)*

Name of Agency:

Tonga power limited.

Attachment: Contract Agreement

Handwritten initials in dark ink, possibly "AB" and "L".

Contract Agreement

THIS AGREEMENT made on the eighteenth day of July, 2019, BETWEEN

- *Tonga Power Limited, a corporation incorporated under the laws of the Kingdom of Tonga and having its principal place of business at 1st floor, Corner of Taufa'ahau Rd, Nuku'alofa, Tonga*

(hereinafter called "the Employer"),

and

- *Akuo Eney SAS, a Frenchy simplified joint stock company (société par actions simplifiée) with a share capital of EUR 1,731,600 having its registered office at 140, avenue des Champs Elysées in Paris (75008), France and registered with the Paris trade and companies registry under number 495 259 061, registered as an overseas company under number 9006393 according Part 18 of the Companies Act 1995.*

(hereinafter called "the Contractor").

WHEREAS the Employer desires to engage the Contractor to design, manufacture, test, deliver, install, complete and commission certain Facilities, viz.

Grid stability support battery and control system integration for Popua Power Station – supply, install and commission

- A BESS to be installed at the Popua Power Station of the electricity utility Tonga Power Limited (TPL), on the island of Tonga, and connected to the power station main switchgear and SCADA. The BESS is intended to provide reserve capacity, reactive power, voltage and frequency control to the Tongatapu grid to enable increasing renewable generation in the grid.
- The BESS shall provide and include
 - a fully integrated, modular system, suitable for extended service in local conditions
 - continuous charge and discharge at 5.1 MW (with overload capacity to 10 MW)
 - usable storage capacity of at least 2.5 MWh (end of life)
 - advanced control and grid stability functionality including automated reserve capacity, reactive power, voltage, and frequency support, and smoothing functionality.
 - ability to operate in 'grid forming' mode.
 - high voltage (11 kV) electrical connection to the Popua Power Station switchboard (including supply and installation of switchgear)
- Control integration requirements include:
 - Provision of dedicated PLC for interfacing
 - Physical interface to the TPL SCADA
 - Programming of the TPL SCADA to manage all required data and alarms
 - Programming of the TPL SCADA to manage automatic diesel generator scheduling and RE plant curtailment in conjunction with BESS operation (including provision for connection of additional RE generation plants into the future).

("the Facilities") and the Contractor have agreed to such engagement upon and subject to the terms and conditions hereinafter appearing.

NOW IT IS HEREBY AGREED as follows:

Article 1 Contract Documents

1.1 Contract Documents (Reference GCC Clause 2)

The following documents shall constitute the Contract between the Employer and the Contractor, and each shall be read and construed as an integral part of the Contract:

- This Contract Agreement and the Appendixes hereto
- Letter of Bid and Price Schedules submitted by the Contractor
- Special Conditions of Contract
- List of Eligible Countries that was specified in Section 5 of the Bidding Document
- General Conditions of Contract
- Specifications
- Drawings
- Other documents submitted with the Letter of Bid
- Any clarification IX_TREP-01 received or send during tendering process.
- Any other documents shall be added here¹

1.2 Order of Precedence (Reference GCC Clause 2)

In the event of any ambiguity or conflict between the Contract Documents listed above, the order of precedence shall be the order in which the Contract Documents are listed in Article 1.1 (Contract Documents) above.

1.3 Definitions (Reference GCC Clause 1)

Capitalized words and phrases used herein shall have the same meanings as are ascribed to them in the General Conditions.

Article 2

Contract Price and Terms of Payment

2.1 Contract Price (Reference GCC Clause 11)

The Employer hereby agrees to pay to the Contractor the Contract Price in consideration of the performance by the Contractor of its obligations hereunder. The Contract Price shall be the aggregate of *Three Million Eight Hundred and Ninety Two Thousand Seven Hundred and Twenty US dollars, and Nine Hundred and Ninety Six Thousand Eight Hundred and Eighty Seven Euro, US\$3,892,720 and €996,887* as specified in Price Schedule No. 5 (Grand Summary), or such other sums as may be determined in accordance with the terms and conditions of the Contract.

2.2 Terms of Payment (Reference GCC Clause 12)

The terms and procedures of payment according to which the Employer will reimburse the Contractor are given in the Appendix (Terms and Procedures of Payment) hereto.

The Employer shall instruct its bank to issue an irrevocable confirmed documentary credit made available to the Contractor in a bank in the country of the Contractor. The credit shall be for an amount of *Two Million Nine Hundred and Ninety Eight Thousand and Ninety Four US Dollars, and Six Hundred and Seventy Seven Thousand Nine Hundred and Twelve Euro, US\$2,998,094 and €677,912*; and shall be subject to the Uniform Customs and Practice for Documentary Credits 1993 Revision, ICC Publication No. 500.¹

In the event that the amount payable under Schedule No. 1 is adjusted in accordance with GCC 11.2 or with any of the other terms of the Contract, the Employer shall arrange for the documentary credit to be amended accordingly

¹ Or Uniform Customs and Practice for Documentary Credits 2007 Revision, ICC Publication No. 600 (or the latest version).

Article 3 Effective Date**Effective Date (Reference GCC Clause 1)**

The Effective Date upon which the period until the Time for Completion of the Facilities shall be counted from is the date when all of the following conditions have been fulfilled:

- (a) This Contract Agreement has been duly executed for and on behalf of the Employer and the Contractor.
- (b) The Contractor has submitted to the Employer the performance security and the advance payment guarantee.
- (c) The Employer has paid the Contractor the advance payment.
- (d) The documentary credit in favour of the Contractor has been issued to the Contractor.

Each party shall use its best efforts to fulfil the above conditions for which it is responsible as soon as practicable.

- 3.2 If the conditions listed under 3.1 are not fulfilled within 2 months from the date of this Contract notification because of reasons not attributable to the Contractor, the parties shall discuss and agree on an equitable adjustment to the Contract Price and the Time for Completion and/or other relevant conditions of the Contract.

- 2** Or Uniform Customs and Practice for Documentary Credits 2007 Revision, ICC Publication No. 600 (or the latest version).

Article 4 Communications

The address of the Employer for notice purposes, pursuant to GCC 4.1 is:

Attention: Mr Seti Chen
 Street address: Tonga Power Limited, Main Office, Corner of Taufa'ahau Rd
 Floor/Room number: 1st floor
 City: Nuku'alofa
 ZIP code: 0000
 Country: Kingdom of Tonga

The address of the Contractor for notice purposes, pursuant to GCC is:


Attention: Mr Adrien Bock
140, avenue des Champs Élysées,
75008, Paris, France
+61 405734472
bock@akuoenergy.com

Article 5. Appendixes

- 5.1 The Appendixes listed in the attached List of Appendixes shall be deemed to form an integral part of this Contract Agreement.
- 5.2 Reference in the Contract to any Appendix shall mean the Appendixes attached hereto, and the Contract shall be read and construed accordingly.

IN WITNESS WHEREOF the Employer and the Contractor have caused this Agreement to be duly executed by their duly authorized representatives the day and year first above written.

Signed by, for and on behalf of the Employer

[Signature] 

[Title] Chief Executive Officer


in the presence of

[Signature] 

[Title] Director

Signed by, for and on behalf of the Contractor

[Signature] Adrien BOCK
[Title] COO Asia-Pacific



in the presence of

[Signature] Clément RENAULT
[Title] Project Manager



APPENDIXES

- Appendix 1 - Terms and Procedures of Payment
- Appendix 2 - Price Adjustment
- Appendix 3 - Insurance Requirements
- Appendix 4 - Time Schedule
- Appendix 5 - List of Major Items of Plant and Services and List of Approved Subcontractors
- Appendix 6 - Scope of Works and Supply by the Employer
- Appendix 7 - List of Documents for Approval or Review
- Appendix 8 - Functional Guarantees
- Appendix 9 - Initial Environmental Examination
- Appendix 10 - Resettlement Plan
- Appendix 11 - Gender Action Plan



Appendix 1 - Terms and Procedures of Payment

In accordance with the provisions of GCC Clause 12 (Terms of Payment), the Employer shall pay the Contractor in the following manner and at the following times, based on the Price Breakdown given in the section on Price Schedules. Payments will be made in the currencies quoted by the Bidder unless otherwise agreed between the parties. Applications for payment in respect of part deliveries may be made by the Contractor as work proceeds.

(A) Terms of Payment**Schedule No. 1 - Plant and Mandatory Spare Parts Supplied from Abroad**

In respect of plant and mandatory spare parts supplied from abroad, the following payments shall be made:

Ten percent (10%) of the total amount as an advance payment against receipt of invoice and an irrevocable advance payment security for the equivalent amount made out in favor of the Employer. The advance payment security may be reduced in proportion to the value of the plant and mandatory spare parts delivered to the site, as evidenced by delivery documents.

Twenty percent (20%) of the Total Price amount as per Schedule 1 upon acceptance of design by the Project Manager, within 45 days after receipt of invoice.

Forty percent (40%) of the Total Price amount as per Schedule 1 upon FAT validation within 45 days after receipt of invoice.

Twenty percent (20%) of the Total Price amount as per Schedule 1 upon issue of Bill of Lading for shipment of BESS containers to site, within 45 days after receipt of invoice.

Five percent (5%) of the Total Price amount as per Schedule 1 upon delivery to site, within 45 days after receipt of invoice.

Five percent (5%) of the Total Price (or pre-rata) amount as per Schedule 1 upon issue of the Completion Certificate, within 45 days after receipt of invoice.

Schedule No. 2 - Plant and Mandatory Spare Parts Supplied from Within the Employer's Country

In respect of plant and mandatory spare parts supplied from within the Employer's country, the following payments shall be made:

Ten percent (10%) of the total EXW amount as an advance payment against receipt of invoice, and an irrevocable advance payment security for the equivalent amount made out in favor of the Employer. The advance payment security may be reduced in proportion to the value of the plant and mandatory spare parts delivered to the site, as evidenced by delivery documents.

Eighty percent (80%) of the total or pro rata EXW amount upon Incoterm "Ex-Works," upon delivery to the site within 45 days after receipt of invoice.

Five percent (5%) of the total or pro rata EXW amount upon issue of the Completion Certificate, within 45 days after receipt of invoice.

Five percent (5%) of the total or pro rata EXW amount upon issue of the Operational Acceptance Certificate, within 45 days after receipt of invoice.

Schedule No. 3 - Design Services

In respect of design services for both the foreign currency and the local currency portions, the following payments shall be made:

Ten percent (10%) of the total design services amount as an advance payment against receipt of invoice and an irrevocable advance payment security for the equivalent amount made out in favor of the Employer.

Ninety percent (90%) of the total or pro rata design services amount upon acceptance of design by the Project Manager within 45 days after receipt of invoice.

Schedule No. 4 - Installation and Other Services

In respect of installation services for both the foreign and local currency portions, the following payments shall be made:

Ten percent (10%) of the total installation and other services amount as an advance payment against receipt of invoice and an irrevocable advance payment security for the equivalent amount made out in favor of the Employer. The advance payment security may be reduced in proportion to the value of work performed by the Contractor as evidenced by the invoices for installation services.

Eighty percent (80%) of the measured value of work performed by the Contractor, as identified in the said Program of Performance, during the preceding month, as evidenced by the Employer's authorization of the Contractor's application, will be made monthly within 45 days after receipt of invoice.

Ten percent (10%) of the total or pro rata value of installation services upon issue of the Completion Certificate, within 45 days after receipt of invoice.

In the event that the Employer fails to make any payment on its respective due date, the Employer shall pay to the Contractor interest on the amount of such delayed payment at the rate of one percent (1%) per month for period of delay until payment has been made in full.

(B) Payment Procedures

When applying for certification and making payments, the procedures shall be as follows:

Contractor shall submit invoices to the Project Manager, along with documentary evidence of the milestone completion. Project manager shall review and, if satisfied, the Employer shall submit the invoice to the Asian Development Bank for direct payment to the Contractor.

The Employer will arrange for local customs duties and tax for imported goods under this project to be waived.

Appendix 2 - Price Adjustment

Not applicable – fixed price contract.

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Appendix 3 - Insurance Requirements**(A) Types of Insurance to Be Taken Out by the Contractor**

In accordance with the provisions of GCC Clause 34, the Contractor shall at its expense take out and maintain in effect, or cause to be taken out and maintained in effect, during the performance of the Contract (or any other time period specified hereafter), the types of insurance set forth below in the sums and with the deductibles and other conditions specified. All insurance policies shall be taken out from reputable insurers; insurance certificates evidencing the currency of the policies that the Contractor has taken out himself or by a third party in accordance with the terms hereof and good industry practice shall be provided to the Employer within 30 days of being effected.

(a) Cargo Insurance

Covering loss or damage occurring, while in transit from the supplier's or manufacturer's works or stores until arrival at the Site, to the Facilities (including spare parts therefore) and to the construction equipment to be provided by the Contractor or its Subcontractors.

Amount [in currency(ies)]	Deductible limits [in currency(ies)]	Parties insured [names]	From [place]	To [place]
110% of each shipment value in USD	1% of each shipment value in USD	The Contractor and Tonga Power Ltd as co-insured	Point of origin	Popua Power Station

(b) Installation All Risks Insurance

Covering physical loss or damage to the Facilities at the Site, occurring prior to completion of the Facilities, with an extended maintenance coverage for the Contractor's liability in respect of any loss or damage occurring during the defect liability period while the Contractor is on the Site for the purpose of performing its obligations during the defect liability period.

Amount [in currency(ies)]	Deductible limits [in currency(ies)]	Parties insured [names]	Site [place]
Contract Price in USD	20,000 in USD	The Contractor and Tonga Power Ltd as co-insured	The whole of the Island of Tongatapu

(c) Third Party Liability Insurance

Covering bodily injury or death suffered by third parties (including the Employer's personnel) and loss of or damage to property (including the Employer's property and any parts of the Facilities that have been accepted by the Employer) occurring in connection with the supply and installation of the Facilities.

Amount [in currency(ies)]	Deductible limits [in currency(ies)]	Parties insured [names]	Site [place]
For loss or damage to property USD 5,000,000	20,000 in USD	Contractor	The whole of the Island of Tongatapu
For death and injury 10,000,000 in USD	20,000 in USD	Contractor	The whole of the Island of Tongatapu

(d) Automobile Liability Insurance

Covering use of all vehicles used by the Contractor or its Subcontractors (whether owned by them or not) in connection with the supply and installation of the Facilities. Comprehensive insurance with a minimum amount of \$20,000,000 (any deductible limits to Contractor's account). ~~accordance with statutory requirements.~~

(e) Workers' Compensation

In accordance with the statutory requirements applicable in any country where the Facilities or any part thereof is executed.

(f) Employer's Liability

In accordance with the statutory requirements applicable in any country where the Facilities or any part thereof is executed.

(g) Other Insurance

The Contractor is also required to take out and maintain at its own cost the following types of insurance:

Details:

Amount [in currency(ies)]	Deductible limits [in currency(ies)]	Parties insured [names]	From [place]	To [place]

The Employer shall be named as co-insured under all insurance policies provided by the Contractor pursuant to GCC Subclause 34.1, except for the Third Party Liability, Workers' Compensation, and Employer's Liability Insurance, and the Contractor's Subcontractors shall be named as co-insureds under all insurance policies taken out by the Contractor pursuant to GCC Subclause 34.1, except for the Cargo, Workers' Compensation and Employer's Liability Insurance. All insurer's rights of subrogation against such co-insureds for losses or claims arising out of the performance of the Contract shall be waived under such policies.

(B) Types of Insurance to Be Taken Out by the Employer

The Employer shall at its expense take out and maintain in effect during the performance of the Contract the following insurance policies.

Details:

Amount [in currency(ies)]	Deductible limits [in currency(ies)]	Parties insured [names]	From [place]	To [place]

Appendix 4 - Time Schedule

Activity	Scheduled
Supply of draft detailed designs and documents	45 days from the Effective Date of the Contract
Supply of final detailed designs and documents	90 days from the Effective Date of the Contract
Commencement of factory acceptance tests	207 days from the Effective Date of the Contract
Completion	297 days from the Effective Date of the Contract
Commissioning complete	1,825 days from Completion date

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Appendix 5 - List of Major Items of Plant and Services and List of Approved Subcontractors

A list of major items of plant and services is provided below.

The following Subcontractors and Manufacturers are approved for carrying out the item of the facilities indicated. Where more than one Subcontractor is listed, the Contractor is free to choose between them, but it must notify the Employer of its choice in good time prior to appointing any selected Subcontractor. In accordance with GCC Subclause 19.1, the Contractor is free to submit proposals for Subcontractors for additional items from time to time. No Subcontracts shall be placed with any such Subcontractors for additional items until the Subcontractors have been approved in writing by the Employer and their names have been added to this list of Approved Subcontractors.

Major Items of Plant and Services	Approved Subcontractors and Manufacturers	Nationality
Li-ion Battery Cells	Samsung ¹	Germany
PCS	Jema ²	Spain
Transformers	Tyree/ABB/Schneider Electric/ETEL	-

Notes:

1. LGChem, Tesla, Kokam also allowed subject to Employer acceptance of technical details of proposed equipment
2. SMA, Tesla, Ingeteam, also allowed subject to Employer acceptance of technical details of proposed equipment

Appendix 6 - Scope of Works and Supply by the Employer

The following personnel, facilities, works, and supplies will be provided or supplied by the Employer, and the provisions of GCC Clauses 10, 21, and 24 shall apply as appropriate.

All personnel, facilities, works, and supplies will be provided by the Employer in good time so as not to delay the performance of the Contractor, in accordance with the approved Time Schedule and Program of Performance pursuant to GCC Subclause 18.2.

Unless otherwise indicated, all personnel, facilities, works, and supplies will be provided free of charge to the Contractor.

<p>ITB 18.1</p>	<p>Bidders shall quote for the whole of the works less any components to be provided by the Employer and specifically noted below.</p> <p>The following components or services will be provided under the responsibility of the Employer:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Personnel</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Work together with the Contractor to implement changes to the TPL SCADA, for the purposes of communicating with the BESS, and developing an overall control strategy for generation in the network in coordination with the BESS.</td> </tr> <tr> <td style="text-align: center;">During Pre-commissioning: TPL staff to assist with operation of existing equipment and infrastructure as required to enable physical connection (electrical and communications) to the existing network.</td> </tr> <tr> <td style="text-align: center;">During Pre-commissioning: TPL staff to inspect and approve cabling and connection to the network in accordance with TPL's operating procedures.</td> </tr> <tr> <td style="text-align: center;">During Commissioning: TPL staff to assist with operation of the TPL SCADA, and scheduling of other equipment to the necessary conditions required to complete site acceptance tests and functional performance guarantee tests.</td> </tr> <tr> <td style="height: 20px;"> </td> </tr> <tr> <td style="height: 20px;"> </td> </tr> </tbody> </table> <p style="text-align: center;">Facilities</p> <p style="text-align: center;">The Employer will provide an auxiliary load power supply / connection point for essential services of the BESS.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Works</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Clear sufficient access via existing conduits to provide for routing of electrical cable from the BESS to the HSS 11 kV switchboard</td> </tr> </tbody> </table>	Personnel	Work together with the Contractor to implement changes to the TPL SCADA, for the purposes of communicating with the BESS, and developing an overall control strategy for generation in the network in coordination with the BESS.	During Pre-commissioning: TPL staff to assist with operation of existing equipment and infrastructure as required to enable physical connection (electrical and communications) to the existing network.	During Pre-commissioning: TPL staff to inspect and approve cabling and connection to the network in accordance with TPL's operating procedures.	During Commissioning: TPL staff to assist with operation of the TPL SCADA, and scheduling of other equipment to the necessary conditions required to complete site acceptance tests and functional performance guarantee tests.			Works	Clear sufficient access via existing conduits to provide for routing of electrical cable from the BESS to the HSS 11 kV switchboard
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During Commissioning: TPL staff to assist with operation of the TPL SCADA, and scheduling of other equipment to the necessary conditions required to complete site acceptance tests and functional performance guarantee tests.										
Works										
Clear sufficient access via existing conduits to provide for routing of electrical cable from the BESS to the HSS 11 kV switchboard										

	Obtain relevant building and planning permissions for construction of the BESS, based on inputs, designs, and other pertinent material to be provided by the Contractor.	
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Supplies
Water and electricity during construction, the consumption cost will be charge to the Contractor at the national rate. Employer shall arrange to exempt or pay itself any tax on such charges. Charges shall be billed as a lump sum on completion.

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Appendix 7 - List of Documents for Approval or Review

Pursuant to GCC Subclause 20.3.1, the Contractor shall prepare, or cause its Subcontractor to prepare, and present to the Project Manager in accordance with the requirements of GCC Subclause 18.2 (Program of Performance), the following documents for

(A) Approval

Within thirty days from the date of the effectiveness date:

1. OH&S safety management plan (SMP), work method statements, job hazard analysis
2. Preliminary Factory acceptance test (FAT) and inspection test plan (ITP) – the ITP shall contain, as a minimum, the following information for each significant activity identified in the relevant process:
 - a. Description of activity
 - b. Specification requirements/reference
 - c. Person responsible for activity (title)
 - d. Hold Points and Witness Points
 - e. Activity checklists
 - f. Inspection and test type
 - g. Tolerances or other acceptance criteria
 - h. Identification of relevant procedure and quality records
 - i. Test/inspection frequency
 - j. Work item or work lot identification

The Employer may request the Contractor to include additional Hold Points or Witness Points and the Contractor must make provision for the Contractor and the Employer to sign off at such points.

Within three months from the date of the effectiveness date:

3. Drawing register
4. 'Detailed design / 90%' drawings, to comprise the following (at a minimum):
 - a. site layout
 - b. sub-surface works layout
 - c. BESS enclosure(s)
 - i. plan and elevation views
 - ii. footings
 - iii. structure
 - iv. roofing
 - v. equipment layout
 - vi. wiring diagram
 - vii. plumbing (if applicable)
 - d. electrical single line diagram of whole system
 - e. protection details

- f. earthing plan
- 5. Studies:
 - a. Protection study
 - b. Earthing study

Prior to commencement of site works:

- 1. FAT report
- 2. Construction environmental management plan (CEMP)
- 3. Safety data sheets (SDS) for all substances used on site

Prior to Completion

- 4. 'As Installed' drawings & data sheets (electrical, layout, structural and civil).
- 5. 'As Installed' control system programs and protection relay settings
- 6. Technical data sheets of all major components
- 7. Manufacturer's software packages needed for future operation/maintenance.

Within one (1) month of completion of functional guarantee tests

- 1. Guarantee test report

(B) Review**Within thirty days from the date of the effectiveness date:**

- 1. Project management plan (PMP)
- 2. Quality Management Plan (QMP) and draft quality assurance manual (QAM)
- 3. Drawing register

Within two months from the date of the effectiveness date:

- 1. Drawing register
- 2. 'Preliminary / 30%' drawings, to comprise the following (at a minimum):
 - a. site layout
 - b. sub-surface works layout
 - c. BESS enclosure(s)
 - i. plan and elevation views
 - ii. footings
 - iii. structure
 - iv. roofing
 - v. equipment layout
 - vi. wiring diagram
 - d. electrical single line diagram of whole system

- e. protection details
- 3. Studies:
 - a. Study of grid harmonics to demonstrate no derating or disconnect by BESS under existing conditions
 - b. Power systems model of BESS (in PowerFactory), and fault ride-through assessment

Prior to commencement of site works:

1. Transport management plan (TMP)
2. General safety training plan
3. Training and capacity building plan
4. 'Shop' drawings / 100% designs, to comprise the following (at a minimum):
 - a. site layout
 - b. sub-surface works layout
 - c. powerhouse building
 - i. plan and elevation views
 - ii. footings
 - iii. structure
 - iv. roofing
 - v. equipment layout
 - vi. wiring diagram
 - vii. plumbing (if applicable)
 - d. electrical single line diagram of whole system
 - e. earthing plan
5. system compatibility¹, standards, and certifications
6. installation method, including construction schedule, site utilisation (laydown areas etc.), logistics, staff facilities (toilets, site office), waste management etc.
7. operations manuals, log books, and asset registers, including all OEM documentation
8. asset register hierarchy

Prior to Completion

1. List of maintenance tools supplied
2. List of other tools Employer should hold
3. List of parts and consumables supplied
4. Six hard copies and one soft copy (in a freely printable format) of Operations and Maintenance Manuals of the facilities
5. Ten year maintenance plan
6. Preventative maintenance overview

¹ Showing that configuration allows each major component to operate within input/ output range of connected equipment, in accordance with manufacturer guidelines, warranties, and good engineering practice.

During and/or after site works

7. Monthly progress report
8. Register of entries and exits on site
9. Safety incident reporting
10. Environmental incident reporting
11. Monthly safeguards monitoring report
12. Commissioning report

Handwritten initials/signature

Appendix 8 - Functional Guarantees**1. General**

This Appendix sets out

- (a) the functional guarantees referred to in GCC Clause 28 (Functional Guarantees)
- (b) the preconditions to the validity of the functional guarantees, either in production and/or consumption, set forth below
- (c) the minimum level of the functional guarantees
- (d) the formula for calculating liquidated damages for failure to attain the functional guarantees.

2. Preconditions

The Contractor gives the functional guarantees (specified herein) for the facilities, subject to the following preconditions being fully satisfied:

- (a) Usage of the BESS shall not result in annual throughput in excess of $(2.76+2.5)*365 = 1920$ MWh
- (b) Usage of the BESS shall comply with battery warranty requirements in respect of:

Discharge C-rate

Charge C-rate

DoD

Discharge/charge throughput

Rest SoC

Center SoC

Temperature

Except where these prevent the BESS operating in accordance with the specified Usage Profile in Employer Requirements, Attachment B BESS, or where they unreasonably restrict the ability of the Employer to use the BESS as per the Employer Requirements.

3. Functional Guarantees

Subject to compliance with the foregoing preconditions, the Contractor guarantees as follows:

3.1 Production Capacity

A minimum of the following levels, or that specified by the Contractor in its bid, which apply at any time during the Defects Liability period and, for applicable equipment, in the Extended Defects Liability period:

Production measure	Unit	Guarantee level
1. Energy storage ¹	MWh	4.1
a) at Beginning of Life (BOL)		
b) At End of EDLP (5 years)		
c) At End of Life of BESS Cells (10 years)	MWh	3.41
2. Maximum continuous output and input power	MW	7.2
3. Maximum 60 second output and input power	MW	8
4. Maximum 1 second output and input power	MW	10
5. Round trip efficiency	%	85
6. Availability	%	99
7. Reliability	Days	90
8. Set point response time	ms	100

Definitions for these measures are as specified in Section 6 – Employer Requirements.

3.2 Raw Materials and Utilities Consumption

Not applicable

4. Failure in Guarantees and Liquidated Damages

4.1 Failure to Attain Guaranteed Production Capacity

If the production capacity of the facilities attained in the guarantee test, pursuant to GCC Subclause 25.2, is less than the guaranteed figure specified in para. 3.1 above, but the actual production capacity attained in the guarantee test is not less than the minimum level specified in para. 4.3 below, and the Contractor elects to pay liquidated damages to the Employer in lieu of making changes, modifications and/or additions to the Facilities, pursuant to GCC Subclause 28.3, then the Contractor shall pay liquidated damages at the following rates for every complete 1% of the deficiency in the production capacity of the Facilities, or at a proportionately reduced rate for any deficiency, or part thereof, of less than a complete 1%. The rates are:

Production measure	Rate
1. Energy storage	US\$14,000
2. Maximum continuous output and input power	US\$14,000
3. Maximum 60 second output and input power	US\$14,000
4. Maximum 1 second output and input power	US\$14,000
5. Round trip efficiency	US\$56,000
6. Availability	US\$56,000
7. Reliability (MTBF)	US\$56,000
8. Set point response time	US\$56,000

4.2 Raw Materials and Utilities Consumption in Excess of Guaranteed Level

Not applicable

4.3 Minimum Levels

Notwithstanding the provisions of this paragraph, if as a result of the guarantee test(s), the following minimum levels of performance guarantees (and consumption guarantees) are not attained by the Contractor, the Contractor shall at its own cost make good any deficiencies until the Facilities reach any of such minimum performance levels, pursuant to GCC Subclause 28.2:

- (a) production capacity of the Facilities attained in the guarantee test: 90% of the guaranteed production capacity

and/or

- (b) average total cost of consumption of all the raw materials and utilities of the Facilities: 200% of the guaranteed figures.

4.4 Limitation of Liability

Subject to para. 4.3 above, the Contractor's aggregate liability to pay liquidated damages for

failure to attain the functional guarantees shall not exceed ten percent (10%) of the Contract price

Appendix 9 - Initial Environmental Examination

Attached

JO AB

Appendix 10 - Resettlement Plan

Attached

AB

Appendix 11 - Gender Action Plan

Attached

