



Procurement of Works

**INVITATION TO BID FOR THE GEOLOGICAL INVESTIGATIONS AND
BATHYMETRY SURVEYS IN RESPECT OF THE DEVILS GORGE HYDRO-
ELECTRIC SCHEME (DGHES) SITES**

ITB No: ZRA/DGHES/01/2025

**GEOLOGICAL INVESTIGATIONS AND BATHYMETRY
SURVEY IN RESPECT OF THE DEVILS GORGE HYDRO-
ELECTRIC SCHEME (DGHES) SITES**

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Employer: Zambezi River Authority

Standard Bidding Document

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PART 1 – Bidding Procedures

Section 1 - Instructions to Bidders

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Section I - Instructions to Bidders

A. General

- 1. Scope of Bid**
 - 1.1 The Employer, as **indicated in the BDS**, issues this Bidding Document for the procurement of the Works specified in Section 6 (Employer's Requirements). The name, identification, and number of contracts of this bidding are **provided in the BDS**.
 - 1.2 Throughout this Bidding Document:
 - (a) the term "in writing" means communicated in written form and delivered against receipt;
 - (b) except where the context requires otherwise, words indicating the singular also include the plural and words indicating the plural also include the singular; and
 - (c) "day" means calendar day;
 - (d) the term "Project Manager" refers to the officer, body or institution appointed to oversee the works on behalf of the Authority;
 - 2. Source of Funds**
 - 2.1 The Procuring Entity **indicated in the BDS** has secured financing (hereinafter called "funds") toward the cost of the project or programme **named in the BDS**. The Employer intends to apply a portion of the funds to eligible payments under the contract(s) for which this Bidding Document is issued.
 - 2.2 Payments by the Employer will be made only at the request of the Project Manager
 - 3. Fraud and Corruption**
 - 3.1 It is the Authority 's policy, that bidders, suppliers, and contractors and their agents (whether declared or not), personnel, subcontractors, sub-consultants, service providers and suppliers, under the Authority's financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts.¹ In pursuance of this policy, the Authority:
 - (a) defines, for the purposes of this provision, the terms set forth below as follows:
 - (i) "corrupt practice" is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
 - (ii) "fraudulent practice" is any act or omission, including a misrepresentation, that knowingly or
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recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation²;

- (iii) "collusive practice" is an arrangement between two or more parties³ designed to achieve an improper purpose, including to influence improperly the actions of another party;
 - (iv) "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party⁴;
 - (v) "obstructive practice" is
 - (aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Authority investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
 - (bb) acts intended to materially impede the exercise of the Authority's inspection and audit rights provided for under sub-clause 3.1 (e) below.
 - (b) will reject a proposal for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for the contract in question;
 - (c) will cancel the funding allocated to a contract if it determines at any time that representatives of the Employer - engaged in corrupt, fraudulent, collusive, or coercive practices during the procurement or the execution of that contract, without the Employer having taken timely and appropriate action satisfactory to the Authority to remedy the situation; and
 - (d) will sanction a firm or an individual, at any time, in accordance with prevailing sanctions procedures,
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including suspending or barring a bidder in accordance with the Authority's Procurement Procedures.

- 3.2 In further pursuance of this policy, Bidders shall permit the Authority to inspect any accounts and records and other documents relating to the Bid submission and contract performance, and to have them audited by the Authority.
- 3.3 Furthermore, bidders shall be aware of the provision stated in GCC Sub-Clauses 22.2 and 56.2 (h).

4. Eligible Bidders

- 4.1 A Bidder may be a natural person, private entity, or Authority-owned entity—subject to ITB 4.6—or any combination of them in the form of a joint venture, under an existing agreement, or with the intent to constitute a legally-enforceable joint venture. Unless otherwise **stated in the BDS**, all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms.
- 4.2 A Bidder, and all parties constituting the Bidder, shall have the nationality of an eligible country, in accordance with Section 5 (Eligible Countries). A Bidder shall be deemed to have the nationality of a country if the Bidder is a citizen or is constituted, or incorporated, and operates in conformity with the provisions of the laws of that country. This criterion shall also apply to the determination of the nationality of proposed subcontractors or suppliers for any part of the Contract including related services.
- 4.3 A Bidder shall not have a conflict of interest. All Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if :
 - (a) they have a controlling partner in common; or
 - (b) they receive or have received any direct or indirect subsidy from any of them; or
 - (c) they have the same legal representative for purposes of this bid; or
 - (d) they have a relationship with each other directly that puts them in a position to have access to information about or influence on the Bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or
 - (e) a Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which the party is involved. However, this does not limit the inclusion of the same subcontractor in more than one bid; or

- (f) a Bidder participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the Bid; or
- (g) a Bidder has been hired (or is proposed to be hired) by the Employer as Engineer for the contract.

4.4 A Bidder that has been sanctioned by the Authority in accordance with the above ITB 3.1 (d), shall be ineligible to be awarded an Authority-financed contract, or benefit from a Authority-financed contract, financially or otherwise, during such period of time as the Authority shall determine

4.5 Bidders shall provide such evidence of their continued eligibility satisfactorily to the Employer, as the Employer shall reasonably request.

4.6 In case a prequalification process has been conducted prior to the bidding process, this bidding is open only to prequalified Bidders.

5. Eligible Materials, Equipment and Services

5.1 The materials, equipment and services to be supplied under the Contract shall have their origin in eligible source countries as defined in ITB 4.2 above and all expenditures under the Contract will be limited to such materials, equipment, and services. At the Employer's request, Bidders may be required to provide evidence of the origin of materials, equipment and services.

5.2 For purposes of ITB 5.1 above, "origin" means the place where the materials and equipment are mined, grown, produced or manufactured, and from which the services are provided. Materials and equipment are produced when, through manufacturing, processing, or substantial or major assembling of components, a commercially recognized product results that differs substantially in its basic characteristics or in purpose or utility from its components.

B. Contents of Bidding Document

6. Sections of Bidding Document

6.1 The Bidding Document consist of Parts 1, 2, and 3, which include all the Sections indicated below, and should be read in conjunction with any Addenda issued in accordance with ITB 8.

PART 1 Bidding Procedures

Section I - Instructions to Bidders (ITB)

Section II - Bid Data Sheet (BDS)

Section III - Evaluation and Qualification Criteria

Section IV - Bidding Forms

Section V - Eligible Countries

PART 2 Requirements

Section VI - Works Requirements

PART 3 Conditions of Contract and Contract Forms

Section VII - General Conditions (GC)

Section VIII - Particular Conditions (PC)

Section IX - Contract Forms

6.2 The Invitation for Bids issued by the Employer is not part of the Bidding Document.

6.3 The Employer is not responsible for the completeness of the Bidding Document and their Addenda, if they were not obtained directly from the source stated by the Employer in the Invitation for Bids.

6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Document. Failure to furnish all information or documentation required by the Bidding Document may result in the rejection of the bid.

7. Clarification of Bidding Document, Site Visit, Pre-Bid Meeting

7.1 A prospective Bidder requiring any clarification of the Bidding Document shall contact the Employer in writing at the Employer's address **indicated in the BDS** or raise his inquiries during the pre-bid meeting if provided for in accordance with ITB 7.4. The Employer will respond in writing to any request for clarification, provided that such request is received prior to the deadline for submission of bids, within a period **given in the BDS**. The Employer shall forward copies of its response to all Bidders who have acquired the Bidding Document in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. Should the Employer deem it necessary to amend the Bidding Document as a result of a request for clarification, it shall do so following the procedure under ITB 8 and ITB 22.2.

7.2 The Bidder is encouraged to visit and examine the Site of Works and its surroundings and obtain for itself, on its own risk and responsibility, all information that may be necessary for preparing the bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense.

7.3 The Bidder and any of its personnel or agents will be granted permission by the Employer to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the Bidder, its personnel, and agents will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a

result of the inspection.

- 7.4 The Bidder's designated representative is invited to attend a pre-bid meeting, if **provided for in the BDS**. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.
- 7.5 The Bidder is requested, as far as possible, to submit any questions in writing, to reach the Employer not later than one week before the meeting.
- 7.6 Minutes of the pre-bid meeting, including the text of the questions raised, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Bidders who have acquired the Bidding Document in accordance with ITB 6.3. Any modification to the Bidding Document that may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an addendum pursuant to ITB 8 and not through the minutes of the pre-bid meeting.
- 7.7 Nonattendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.

8. Amendment of Bidding Document

- 8.1 At any time prior to the deadline for submission of bids, the Employer may amend the Bidding Document by issuing addenda.
- 8.2 Any addendum issued shall be part of the Bidding Document and shall be communicated in writing to all who have obtained the Bidding Document from the Employer in accordance with ITB 6.3.
- 8.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may, at its discretion, extend the deadline for the submission of bids, pursuant to ITB 22.2

C. Preparation of Bids

9. Cost of Bidding

- 9.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Employer shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

10. Language of Bid

- 10.1 The Bid, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Employer, shall be written in the language **specified in the BDS**. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an

accurate translation of the relevant passages in the language **specified in the BDS**, in which case, for purposes of interpretation of the Bid, such translation shall govern.

**11. Documents
Comprising the
Bid**

11.1 The Bid shall comprise the following:

- (a) Letter of Bid;
- (b) completed Schedules, in accordance with ITB 12 and 14, or **as stipulated in the BDS**;
- (c) Bid Security or Bid Securing Declaration, in accordance with ITB 19;
- (d) alternative bids, at Bidder's option and if permissible, in accordance with ITB 13;
- (e) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.2;
- (f) documentary evidence in accordance with ITB 17 establishing the Bidder's qualifications to perform the contract;
- (g) Technical Proposal in accordance with ITB 16;
- (h) In the case of a bid submitted by a joint venture (JV), the JV agreement, or letter of intent to enter into a JV including a draft agreement, indicating at least the parts of the Works to be executed by the respective partners; and
- (i) Any other document **required in the BDS**.

**12. Letter of Bid and
Schedules**

12.1 The Letter of Bid, Schedules, and all documents listed under Clause 11, shall be prepared using the relevant forms in Section IV (Bidding Forms), if so provided. The forms must be completed without any alterations to the text, and no substitutes shall be accepted. All blank spaces shall be filled with the information requested.

13. Alternative Bids

13.1 Unless otherwise **indicated in the BDS**, alternative bids shall not be considered.

13.2 When alternative times for completion are explicitly invited, a statement to that effect will be **included in the BDS**, as will the method of evaluating different times for completion.

13.3 When **specified in the BDS** pursuant to ITB 13.1, and subject to ITB 13.4 below, Bidders wishing to offer technical alternatives to the requirements of the Bidding Document must first price the Employer's design as described in the Bidding Document and shall further provide all information necessary for a complete evaluation of the alternative by the Employer, including

drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the best-evaluated Bidder conforming to the basic technical requirements shall be considered by the Employer.

- 13.4 When **specified in the BDS**, Bidders are permitted to submit alternative technical solutions for specified parts of the Works. Such parts will be **identified in the BDS** and described in Section VI (Employer's Requirements). The method for their evaluation will be stipulated in Section III (Evaluation and Qualification Criteria).

14. Bid Prices and Discounts

- 14.1 The prices and discounts quoted by the Bidder in the Letter of Bid and in the Schedules shall conform to the requirements specified below.
- 14.2 The Bidder shall submit a bid for the whole of the works described in ITB 1.1 by filling in prices for all items of the Works, as identified in Section IV, Bidding Forms. In case of admeasurement contracts, the Bidder shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered into by the Bidder will not be paid for by the Employer when executed and shall be deemed covered by the rates for other items and prices in the Bill of Quantities.
- 14.3 The price to be quoted in the Letter of Bid shall be the total price of the Bid, excluding any discounts offered.
- 14.4 Unconditional discounts, if there are any, and the methodology for their application shall be quoted in the Letter of Bid, in accordance with ITB 12.1.
- 14.5 If so indicated in ITB 1.1, bids are invited for individual contracts or for any combination of contracts (packages). Bidders wishing to offer any price reduction for the award of more than one Contract shall specify in their bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Price reductions or discounts shall be submitted in accordance with ITB 14.3, provided the bids for all contracts are submitted and opened at the same time.
- 14.6 Unless otherwise **provided in the BDS** and the Conditions of Contract, the prices quoted by the Bidder shall be fixed. If the prices quoted by the Bidder are subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract, the Bidder shall furnish the indices and weightings for the price adjustment formulae in the Schedule of Adjustment Data in Section IV (Bidding Forms) and the Employer may require the Bidder to justify its proposed

indices and weightings.

14.7 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 28 days prior to the deadline for submission of bids, shall be included in the rates and prices and the total bid price submitted by the Bidder.

15. Currencies of Bid and Payment

15.1 The currency(ies) of the bid shall be as **specified in the BDS**.

15.2 Bidders may be required by the Employer to justify, to the Employer's satisfaction, their local and foreign currency requirements, and to substantiate that the amounts included in the prices shown in the appropriate form(s) of Section IV, in which case a detailed breakdown of the foreign currency requirements shall be provided by Bidders.

16. Documents Comprising the Technical Proposal

16.1 The Bidder shall furnish a Technical Proposal including a statement of work methods, equipment, personnel, schedule and any other information as stipulated in Section IV (Bidding Forms), in sufficient detail to demonstrate the adequacy of the Bidders' proposal to meet the work requirements and the completion time.

17. Documents Establishing the Qualifications of the Bidder

17.1 To establish its qualifications to perform the Contract in accordance with Section III (Evaluation and Qualification Criteria) the Bidder shall provide the information requested in the corresponding information sheets included in Section IV (Bidding Forms).

17.2 Domestic Bidders, individually or in joint ventures, applying for eligibility for a 7½-percent margin of domestic preference shall supply all information required to satisfy the criteria for eligibility as described in ITB 33.

18. Period of Validity of Bids

18.1 Bids shall remain valid for the period **specified in the BDS** after the bid submission deadline date prescribed by the Employer. A bid valid for a shorter period shall be rejected by the Employer as nonresponsive.

18.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Employer may request Bidders to extend the period of validity of their bids. The request and the responses shall be made in writing. If a bid security is requested in accordance with ITB 19, it shall also be extended for a corresponding period. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request shall not be required or permitted to modify its bid.

19. Bid Security

19.1 Unless otherwise **specified in the BDS**, the Bidder shall furnish as part of its bid, in original form, either a Bid Securing Declaration or a bid security **as specified in the BDS**. In the case of a bid security, the amount shall be **as specified in the BDS**.

19.2 A Bid Securing Declaration shall use the form included in Section IV Bidding Forms.

19.3 If a bid security is specified pursuant to ITB 19.1, the bid security shall be, at the Bidder's option, in any of the following forms:

- (a) an unconditional guarantee, issued by a bank *or surety*;
- (b) an irrevocable letter of credit;
- (c) a cashier's or certified check; or
- (d) another security **indicated in the BDS**.

from a reputable source from an eligible country. If the unconditional guarantee is issued by an insurance company or bonding company located outside the Employer's Country, it shall have a correspondent financial institution located in the Employer's Country. In the case of a bank guarantee, the bid security shall be submitted either using the Bid Security Form included in Section IV (Bidding Forms) or in another substantially similar format approved by the Employer prior to bid submission. In either case, the form must include the complete name of the Bidder. The bid security shall be valid for twenty-eight days (28) beyond the original validity period of the bid, or beyond any period of extension if requested under ITB 18.2.

19.4 Any bid not accompanied by an enforceable and substantially compliant bid security or Bid Securing Declaration, if required in accordance with ITB 19.1, shall be rejected by the Employer as nonresponsive.

19.5 If a bid security is specified as pursuant to ITB 19.1, the bid security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's furnishing of the performance security pursuant to ITB 41.

19.6 If a bid security is specified pursuant to ITB 19.1, the bid security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required performance security.

19.7 The bid security may be forfeited or the Bid Securing Declaration executed:

(a) if a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Letter of Bid, except as provided in ITB 18.2 or

(b) if the successful Bidder fails to:

(i) sign the Contract in accordance with ITB 40; or

(ii) furnish a performance security in accordance with ITB 41.

19.8 The Bid Security or the Bid Securing Declaration of a JV shall be in the name of the JV that submits the bid. If the JV has not been constituted into a legally enforceable JV, at the time of bidding, the Bid Security or the Bid Securing Declaration shall be in the names of all future partners as named in the letter of intent mentioned in ITB 4.1.

19.9 If a bid security is **not required in the BDS**, and

(a) if a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Letter of Bid Form, except as provided in ITB 18.2, or

(b) if the successful Bidder fails to: sign the Contract in accordance with ITB 40; or furnish a performance security in accordance with ITB 41;

the Employer may, **if provided for in the BDS**, declare the Bidder disqualified to be awarded a contract by the Employer for a period of time **as stated in the BDS**.

20. Format and Signing of Bid

20.1 The Bidder shall prepare one original of the documents comprising the bid as described in ITB 11 and clearly mark it "ORIGINAL". Alternative bids, if permitted in accordance with ITB 13, shall be clearly marked "ALTERNATIVE". In addition, the Bidder shall submit copies of the bid in the number **specified in the BDS**, and clearly mark each of them "COPY." In the event of any discrepancy between the original and the copies, the original shall prevail.

20.2 The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as **specified in the BDS** and shall be

attached to the bid. The name and position held by each person signing the authorization must be typed or printed below the signature.

- 20.3 Any amendments such as interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the bid.

D. Submission and Opening of Bids

21. Sealing and Marking of Bids

- 21.1 Bidders may always submit their bids by mail or by hand. When **specified in the BDS**, bidders shall have the option of submitting their bids electronically. Procedures for submission, sealing and marking are as follows:

- (a) Bidders submitting bids by mail or by hand shall enclose the original and each copy of the Bid, including alternative bids, if permitted in accordance with ITB 13, in separate sealed envelopes, duly marking the envelopes as "ORIGINAL", "ALTERNATIVE" and "COPY." These envelopes containing the original and the copies shall then be enclosed in one single envelope. The rest of the procedure shall be in accordance with ITB sub-Clauses 22.2 and 22.3.
- (b) Bidders submitting bids electronically shall follow the electronic bid submission procedures **specified in the BDS**.

- 21.2 The inner and outer envelopes shall:

- (a) bear the name and address of the Bidder;
- (b) be addressed to the Employer as **provided in the BDS** pursuant to ITB 22.1;
- (c) bear the specific identification of this bidding process indicated in accordance with ITB 1.1; and
- (d) bear a warning not to open before the time and date for bid opening.

- 21.3 If all envelopes are not sealed and marked as required, the Employer will assume no responsibility for the misplacement or premature opening of the bid.

22. Deadline for Submission of Bids

- 22.1 Bids must be received by the Employer at the address no later than the date and time **indicated in the BDS**.

- 22.2 The Employer may, at its discretion, extend the deadline for the submission of bids by amending the Bidding Document in accordance with ITB 8, in which case all rights and obligations of the Employer and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

23. Late Bids

23.1 The Employer shall not consider any bid that arrives after the deadline for submission of bids, in accordance with ITB 22. Any bid received by the Employer after the deadline for submission of bids shall be declared late, rejected, and returned unopened to the Bidder.

24. Withdrawal, Substitution, and Modification of Bids

24.1 A Bidder may withdraw, substitute, or modify its bid after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 20.2, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the bid must accompany the respective written notice. All notices must be:

- (a) prepared and submitted in accordance with ITB 20 and ITB 21 (except that withdrawal notices do not require copies), and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL," "SUBSTITUTION," "MODIFICATION;" and
- (b) received by the Employer prior to the deadline prescribed for submission of bids, in accordance with ITB 22.

24.2 Bids requested to be withdrawn in accordance with ITB 24.1 shall be returned unopened to the Bidders.

24.3 No bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Letter of Bid or any extension thereof.

25. Bid Opening

25.1 The Employer shall open the bids in public at the address, date and time **specified in the BDS** in the presence of Bidders' designated representatives and anyone who choose to attend. Any specific electronic bid opening procedures required if electronic bidding is permitted in accordance with ITB 21.1, shall be as **specified in the BDS**.

25.2 First, envelopes marked "WITHDRAWAL" shall be opened and read out and the envelope with the corresponding bid shall not be opened, but returned to the Bidder. No bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at bid opening. Next, envelopes marked "SUBSTITUTION" shall be opened and read out and exchanged with the corresponding bid being substituted, and the substituted bid shall not be opened, but returned to the Bidder. No bid substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at bid opening. Envelopes marked "MODIFICATION" shall be opened and read out with the corresponding bid. No bid modification shall be permitted unless the corresponding modification notice contains a valid

authorization to request the modification and is read out at bid opening. Only envelopes that are opened and read out at bid opening shall be considered further.

25.3 All other envelopes shall be opened one at a time, reading out: the name of the Bidder and the Bid Price(s), including any discounts and alternative bids and indicating whether there is a modification; the presence of a bid security or Bid Securing Declaration, if required; and any other details as the Employer may consider appropriate. Only discounts and alternative offers read out at bid opening shall be considered for evaluation. No bid shall be rejected at bid opening except for late bids, in accordance with ITB 23.1.

25.4 The Employer shall prepare a record of the bid opening that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, or modification; the Bid Price, per contract if applicable, including any discounts and alternative offers; and the presence or absence of a bid security, if one was required. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders.

E. Evaluation and Comparison of Bids

26. Confidentiality

26.1 Information relating to the examination, evaluation, comparison, and post qualification of bids and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process until information on Contract award is communicated to all Bidders.

26.2 Any attempt by a Bidder to influence the Employer in the evaluation of the bids or Contract award decisions may result in the rejection of its bid.

26.3 Notwithstanding ITB 25.2, from the time of bid opening to the time of Contract award, if any Bidder wishes to contact the Employer on any matter related to the bidding process, it may do so in writing.

27. Clarification of Bids

27.1 To assist in the examination, evaluation, and comparison of the bids, and qualification of the Bidders, the Employer may, at its discretion, ask any Bidder for a clarification of its bid. Any clarification submitted by a Bidder that is not in response to a request by the Employer shall not be considered. The Employer's request for clarification and the response shall be in writing. No change in the prices or substance of the bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the bids, in accordance with ITB 31.

27.2 If a Bidder does not provide clarifications of its bid by the date and time set in the Employer's request for clarification, its bid may be rejected.

**28. Deviations,
Reservations,
and Omissions**

28.1 During the evaluation of bids, the following definitions apply:

- (a) "Deviation" is a departure from the requirements specified in the Bidding Document;
- (b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document; and
- (c) "Omission" is the failure to submit part or all of the information or documentation required in the Bidding Document.

**29. Determination of
Responsiveness**

29.1 The Employer's determination of a bid's responsiveness is to be based on the contents of the bid itself, as defined in ITB11.

29.2 A substantially responsive bid is one that meets the requirements of the Bidding Document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that,

(a) if accepted, would:

- (i) affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or
- (ii) limit in any substantial way, inconsistent with the Bidding Document, the Employer's rights or the Bidder's obligations under the proposed Contract; or

(b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive bids.

29.3 The Employer shall examine the technical aspects of the bid submitted in accordance with ITB 16, Technical Proposal, in particular, to confirm that all requirements of Section 6 (Employer's Requirements) have been met without any material deviation, reservation or omission.

29.4 If a bid is not substantially responsive to the requirements of the Bidding Document, it shall be rejected by the Employer and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

**30. Nonconformities
, Errors, and
Omissions**

30.1 Provided that a bid is substantially responsive, the Employer may waive any nonconformities in the bid.

- 30.2 Provided that a bid is substantially responsive, the Employer may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the price of the bid. Failure of the Bidder to comply with the request may result in the rejection of its bid.
- 30.3 Provided that a bid is substantially responsive, the Employer shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price may be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component. The adjustment shall be made using the methods indicated in Section III (Evaluation and Qualification Criteria).
- 31. Correction of Arithmetical Errors**
- 31.1 Provided that the bid is substantially responsive, the Employer shall correct arithmetical errors on the following basis:
- (a) only for unit price contracts, if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Employer there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected;
 - (b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
 - (c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.
- 31.2 If the Bidder that submitted the best-evaluated bid does not accept the correction of errors, its bid shall be declared non-responsive.
- 32. Conversion to Single Currency**
- 32.1 For evaluation and comparison purposes, the currency(ies) of the bid shall be converted into a single currency as **specified in the BDS**.
- 33. Margin of Preference**
- N/A

34. Evaluation of Bids

34.1 The Employer shall use the criteria and methodologies listed in this Clause. No other evaluation criteria or methodologies shall be permitted.

34.2 To evaluate a bid, the Employer shall consider the following:

- (a) the bid price, excluding Provisional Sums and the provision, if any, for contingencies in the Summary Bill of Quantities for admeasurement contracts or Schedule of Prices for lump sum contracts, but including Daywork items, where priced competitively;
- (b) price adjustment for correction of arithmetic errors in accordance with ITB 31.1;
- (c) price adjustment due to discounts offered in accordance with ITB 14.3;
- (d) converting the amount resulting from applying (a) to (c) above, if relevant, to a single currency in accordance with ITB 32;
- (e) adjustment for nonconformities in accordance with ITB 30.3;
- (f) application of all the evaluation factors indicated in Section III (Evaluation and Qualification Criteria);

34.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be considered in bid evaluation.

34.4 If this Bidding Document allows Bidders to quote separate prices for different contracts, and to award multiple contracts to a single Bidder, the methodology to determine the best-evaluated price of the contract combinations, including any discounts offered in the Letter of Bid, is specified in Section III (Evaluation and Qualification Criteria).

34.5 If the bid for an admeasurement contract, which results in the best-evaluated Bid Price, is seriously unbalanced, front loaded or substantially below updated estimates in the opinion of the Employer, the Employer may require the Bidder to produce detailed price analyses for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, taking into consideration the schedule of estimated Contract payments, the Employer may require that the amount of the performance security be increased at the expense of the Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.

35. Comparison of

35.1 The Employer shall compare all substantially responsive bids in

Bids

accordance with ITB 34.2 to determine the best-evaluated bid.

36. Qualification of the Bidder

36.1 The Employer shall determine to its satisfaction whether the Bidder that is selected as having submitted the best-evaluated and substantially responsive bid meets the qualifying criteria specified in Section III (Evaluation and Qualification Criteria).

36.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 17.1.

36.3 An affirmative determination of qualification shall be a prerequisite for award of the Contract to the Bidder. A negative determination shall result in disqualification of the bid; in which event the Employer shall proceed to the next best-evaluated bid to make a similar determination of that Bidder's qualifications to perform satisfactorily.

37. Employer's Right to Accept Any Bid, and to Reject Any or All Bids

37.1 The Employer reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to Bidders. In case of annulment, all bids submitted and specifically, bid securities, shall be promptly returned to the Bidders.

F. Award of Contract**38. Award Criteria**

38.1 Subject to ITB 37.1, the Employer shall award the Contract to the Bidder whose offer has been determined to be the best-evaluated bid and is substantially responsive to the Bidding Document, provided that the Bidder is determined to be qualified to perform the Contract satisfactorily.

39. Notification of Award

39.1 Prior to the expiration of the period of bid validity, the Employer shall notify the successful Bidder, in writing, via the Letter of Acceptance included in the Contract Forms, that its bid has been accepted. At the same time, the Employer shall also notify all other Bidders of the results of the bidding, and shall publish in UNDB online and in the dgMarket the results identifying the bid and lot numbers and the following information: (i) name of each Bidder who submitted a Bid; (ii) bid prices as read out at Bid Opening; (iii) name and evaluated prices of each Bid that was evaluated; (iv) name of bidders whose bids were rejected and the reasons for their rejection; and (v) name of the winning Bidder, and the Price it offered, as well as the duration and summary scope of the contract awarded.

39.2 Until a formal contract is prepared and executed, the notification of award shall constitute a binding Contract.

39.3 The Employer shall promptly respond in writing to any

unsuccessful Bidder who, after notification of award in accordance with ITB 39.1, requests in writing the grounds on which its bid was not selected.

40. Signing of Contract

40.1 Promptly upon notification, the Employer shall send the successful Bidder the Contract Agreement.

40.2 Within seven (7) days of receipt of the Contract Agreement, the successful Bidder shall sign, date, and return it to the Employer.

41. Performance Security

41.1 Within twenty-eight (28) days of the receipt of notification of award from the Employer, the successful Bidder shall furnish the performance security in accordance with the conditions of contract, subject to ITB 34.5, using for that purpose the Performance Security Form included in Section IX (Contract Forms), or another form acceptable to the Employer. If the performance security furnished by the successful Bidder is in the form of a bond, it shall be issued by a bonding or insurance company that has been determined by the successful Bidder to be acceptable to the Employer. A foreign institution providing a bond shall have a correspondent financial institution located in the Employer's Country.

41.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or to sign the Contract Agreement shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security. In that event the Employer may award the Contract to the next best-evaluated Bidder whose offer is substantially responsive and is determined by the Employer to be qualified to perform the Contract satisfactorily.

41.3 The above provision shall also apply to the furnishing of a domestic preference security if so required.

42. Adjudicator

42.1 The Employer proposes the person **named in the BDS** to be appointed as Adjudicator under the Contract, at the hourly fee **specified in the BDS**, plus reimbursable expenses. If the Bidder disagrees with this proposal, the Bidder should state in his Bid. If, in the Letter of Acceptance, the Employer does not agree to the appointment of the Adjudicator, the Employer will request the Appointing Authority designated in the Particular Conditions of Contract (PCC) pursuant to Clause 23.1 of the General Conditions of Contract (GCC), to appoint the Adjudicator.

Section II - Bid Data Sheet (BDS)

A. Introduction

ITB 1.1	The Employer is: Zambezi River Authority
ITB 1.1	<p>The name of the bidding process is: Geological investigations and Bathymetry Surveys in respect of the Devils Gorge Hydro-Electric Scheme (DGHES) sites</p> <p>The identification number of the bidding process is: ZRA/DGHES/01/2025.</p> <p>The number and identification of lots comprising this bidding process is: N/A</p>
ITB 2.1	The Employer is: Zambezi River Authority.
ITB 2.1	The name of the Project is Geological Investigations and Bathymetry Survey in respect of the Devils Gorge Hydro-Electric Scheme (DGHES) sites.
ITB 4.1(a)	The individuals or firms in a JV <i>shall</i> be jointly and severally liable. Yes.

B. Bidding Documents

ITB 7.1	<p>For <u>clarification purposes</u> only, the Employer's address is:</p> <p>Attention: The Manager Procurement</p> <p>Street Address: 32 Cha Cha Cha Road, Kariba House, 4th Floor, Lusaka</p> <p>City: Lusaka</p> <p>Telephone: +260 211227971-3 / 0967 783 625</p> <p>Electronic mail address: misozi.mbawo@zambezi.org; Cc: rangarirai.muchawaya@zambezi.org</p> <p>Requests for clarification should be received by the Employer BY E-MAIL ONLY no later than: (7 days from the closing date)</p>
ITB 7.4	<p>Site Visit and Pre-Bid meeting</p> <p>The Site Visit and Pre-bid meeting will take place on 19th and 20th August 2025 over a period of two days with a day dedicated to each section. Bidders coming from Zambia and Victoria Falls Town will be required to meet from Total Filling Station in Victoria Falls Town – Zimbabwe at 07:00am on the first day. While those coming from Within Zimbabwe and capable of finding their way to Mlibizi, can be at the Mlibizi Resort by 10:30am, or should be at the Binga/Bulawayo Road Junction at 08:00am, if not capable of getting to Mlibizi Resort. Bidders from Zambia</p>

	<p>will need to get in touch in advance for border crossing and logistical (movement) arrangements to be facilitated by the Authority.</p> <p>Departure to Site from the Mlibizi Resort on day one will be at 10:45am, via a boat, and moving upstream to the site, 13km from the boat launching point. A pre-bid meeting will be held at site at 12:30 hours to clarify any issues arising from the site visit of the Section B sites. Upon completion of the pre-bid meeting, the bidders together with the Authority will depart Mlibizi for Sidinda area, sitting Section A sites and stay the night there. Departure to site will then be at 10:00am, launching the boat from Sidinda Fishing Camp, and going 6km upstream to the Section A sites. A second and final pre-bid meeting will be held from the site at 11:00am. Bidders will be expected to foot their own accommodation and meal expenses, while the Authority will assist with transport for those that may require transport from Victoria Falls Town to Mlibizi, to Sidinda and back to Victoria Falls Town. The Cell Numbers to use on the day of site visit are +260967440029, +260964942793 and +263772232243. Location coordinates : Section B (Mlibizi / Magonda) – 17°58'23.88"S; 26°56'37.84"E and Section A (Sidinda / Nsingu) - 17°59'44.22"S; 26°34'14.45"E.</p>
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C. Preparation of Bids

ITB 10.1	The language of the bid is: English
ITB 11.1 (b)	The following schedules shall be submitted with the bid: Priced Bill of Quantities (BoQ).
ITB 11.1 (i)	<p>The Bidder shall submit with its bid the following additional documents:</p> <p>(1) Company registration documents.</p> <p>(2) Tax Compliance Certificate.</p> <p>(3) Document stating shareholding and directorship.</p>
ITB 13.1	Alternative bids shall not be permitted.
ITB 13.2	<p>Alternative times for completion shall not be permitted.</p> <p>If alternative times for completion are permitted, the evaluation method will be as specified in Section III (Evaluation and Qualification Criteria).</p>
ITB 13.4	Alternative technical solutions shall NOT be permitted for the following parts of the Works:
ITB 14.6	The prices quoted by the Bidder shall not be subject to adjustment during the performance of the Contract.
ITB 15.1	The prices shall be quoted by the bidder in any fully convertible currency, singly or in combination of up to three foreign currencies.

ITB 18.1	The bid validity period shall be: Ninety (90) days.
ITB 19.1	The Bidder shall furnish a bid security in the amount of: A bid Securing Declaration is required.
ITB 19.3 (d)	<i>[Insert other acceptable bid security form.] N/A</i>
ITB 20.1	In addition to the original of the bid, the number of copies is: Two 2 Copies and soft copy on flash Disk.
ITB 20.2	The written confirmation of authorization to sign on behalf of the Bidder shall indicate: POWER OF ATTORNEY REQUIRED.

D. Submission and Opening of Bids

ITB 21.1	Bidders shall not have the option of submitting their bids electronically.
ITB 21.1 (b)	If bidders have the option of submitting their bids electronically, the electronic bidding submission procedures shall be: N/A
ITB 22.1	<p>Deposit bids in the TENDER BOX and the Proposal submission addresses are:</p> <p>Address Proposal to: The Chief Executive: Eng. Munyaradzi C. Munodawafa.</p> <p>Street Address: Kariba House, 32 Cha Cha Cha Road,</p> <p>Floor/ Room number: 5th Floor, Registry Office,</p> <p>City: Lusaka.</p> <p>Country: Zambia.</p> <p>And</p> <p>Street Address: Club Chambers, Cnr Nelson Mandela/3rd Street,</p> <p>Floor/Room number: Reception Area 4th Floor</p> <p>City: Harare</p> <p>Country: Zimbabwe.</p> <p>Attention : Manager Procurement</p> <p>The deadline for bid submission is:</p> <p>Date: 27th August 2025</p> <p>Time: 1600 hours CAT</p>
ITB 25.1	<p>The physical opening of the bids shall concurrently take place at:</p> <p>Street Address: Kariba House, 32 Cha Cha Cha Road,</p> <p>Floor/ Room number: 5th Floor, Registry Office</p>

	City: Lusaka Country: Zambia And Street Address: Club Chambers, Cnr Nelson Mandela/3rd Street, Floor/Room number: Reception Area, 4th Floor. City: Harare Country: Zimbabwe Date : 27th August 2025 Time : Immediately after the closing of bids submission at 1600 hrs. CAT
ITB 25.1	If electronic bid submission is permitted in accordance with ITB 21.1, the specific bid opening procedures shall be: N/A

E. Evaluation and Comparison of Bids

ITB 32.1	The currency that shall be used for bid evaluation and comparison purposes to convert all bid prices expressed in various currencies into a single currency is: United States of America Dollars (USD). The source of exchange rate shall be: Standard Chartered Bank Zambia The date for the exchange rate shall be: Seven (7) days before the bid closing date.
ITB 42.1	The Adjudicator proposed by the Employer is: tba

Section III - Evaluation and Qualification Criteria

This section contains all the criteria that the Employer shall use to evaluate bids and qualify Bidders if the bidding was not preceded by a prequalification exercise and post qualification is applied. In accordance with ITB 34 and ITB 36, no other methods, criteria and factors shall be used. The Bidder shall provide all the information requested in the forms included in Section 4 (Bidding Forms).

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1. Evaluation

In addition to the criteria listed in ITB 34.2 (a) – (e) the following criteria shall apply:

1.1 Adequacy of Technical Proposal

Evaluation of the Bidder's Technical Proposal will include an assessment of the Bidder's technical capacity to mobilize key equipment and personnel for the contract consistent with its proposal regarding work methodology, scheduling, and equipment sourcing in sufficient detail and fully in accordance with the requirements stipulated in Section VI (Employer's Requirements).

1.2 Completion Time

An alternative Completion Time, if permitted under ITB 13.2, will be evaluated: Bidders to provide construction schedule as part of the methodology.

1.3 Statutory Documents

Submit with the company registration documents.

2. Qualification

Factor	2.1 Eligibility					
Sub-Factor	Requirement	Criteria				Documentation Required
		Single Entity	Bidder			
			Joint Venture, Consortium or Association			
			All partners combined	Each partner	At least one partner	
2.1.1 Nationality	Nationality in accordance with ITB 4.2.	Must meet requirement	Existing or intended JV must meet requirement	Must meet requirement	N / A	Form ELI –1.1 and 1.2, with attachments
2.1.2 Conflict of Interest	No- conflicts of interests as described in ITB 4.3.	Must meet requirement	Existing or intended JV must meet requirement	Must meet requirement	N / A	Letter of Bid
2.1.3 Ineligibility	Not having been declared ineligible by ZPPA or PRAZ as described in ITB 4.4.	Must meet requirement	Existing JV must meet requirement	Must meet requirement	N / A	Letter of Bid
2.1.4 Government Owned Entity	Compliance with conditions of ITB 4.5	Must meet requirement	Must meet requirement	Must meet requirement	N / A	Form ELI –1.1 and 1.2, with attachments
2.1.5 Ineligibility based on a United Nations resolution or Zambian or Zimbabwean law	Not having been excluded because of the laws of Zambia or Zimbabwe official regulations, or by an act of compliance with UN Security Council resolution, in accordance with ITB 4.8	Must meet requirement	Existing JV must meet requirement	Must meet requirement	N / A	Letter of Bid

Factor	2.2 Historical Contract Non-Performance					
Sub-Factor	Criteria					Documentation Required
	Requirement	Single Entity	Bidder			
			Joint Venture, Consortium or Association			
			All partners combined	Each Partner	At least one Partner	
2.2.1 History of non-performing contracts	Non-performance of a contract did not occur within the last 10 years prior to the deadline for application submission, based on all information on fully settled disputes or litigation. A fully settled dispute or litigation is one that has been resolved in accordance with the Dispute Resolution Mechanism under the respective contract, and where all appeal instances available to the bidder have been exhausted.	Must meet requirement by itself or as partner to past or existing JV	N / A	Must meet requirement by itself or as partner to past or existing JV	N / A	Form CON - 2
2.2.2 Pending Mitigation	All pending litigation shall in total not represent more than twenty percent (20%) of the Bidder's net worth and shall be treated as resolved against the Bidder.	Must meet requirement by itself or as partner to past or existing JV	N / A	Must meet requirement by itself or as partner to past or existing JV	N / A	Form CON – 2

Factor	2.3 Financial Situation					
Sub-Factor	Requirement	Criteria				Documentation Required
		Single Entity	Bidder			
			Joint Venture, Consortium or Association			
			All partners combined	Each Partner	At least one Partner	
2.3.1 Historical Financial Performance	Submission of audited balance sheets or other financial statements acceptable to the Employer, for the last three [3] years to demonstrate the current soundness of the bidders' financial position and its prospective long-term profitability	Must meet requirement	N / A	Must meet requirement	N / A	Form FIN – 3.1 with attachements
2.3.2. Average Annual Turnover	The Bidder shall demonstrate a minimum average annual turnover of USD 300,000, calculated as the total certified payments received for contracts completed or in progress within the last seven (7) years, i.e., from January 1, 2018, to December 31, 2024, divided by five (5) (i.e., the best five years will be considered).	Must meet requirement	Must meet requirement	Must meet 40% of the requirement	Must meet 40%of the requirement	Form FIN –3.2

Factor	2.3 Financial Situation					
Sub-Factor	Requirement	Criteria				Documentation Required
		Single Entity	Bidder			
			Joint Venture, Consortium or Association			
			All partners combined	Each Partner	At least one Partner	
2.3.3. Financial Resources	<p>The Bidder must demonstrate access to, or availability of, financial resources such as liquid assets, lines of credit other than any contractual advance payments to meet:</p> <p>(i) the following cash-flow requirement is estimated at US\$150,000.00 for the subject contract(s) net of the Bidder's other commitments.</p> <p>The documentary evidence shall be in the form of supporting letter(s) issued by the bidder's bank/financial institution confirming that the above-specified minimum amount is available through lines of credit and/or funds in the bidder's bank account for use in the execution of the subject contract if</p>	Must meet requirement	Must meet requirement	Must meet. Minimum 25% of the requirement	Must meet. Minimum 40% of the requirement	Form FIN –3.3

Factor	2.3 Financial Situation					
Sub-Factor	Criteria					Documentation Required
	Requirement	Bidder				
		Single Entity	Joint Venture, Consortium or Association			
			All partners combined	Each Partner	At least one Partner	
	awarded to the bidder.					

Factor	2.4 Experience					
Sub-Factor	Requirement	Criteria				Documentation Required
		Single Entity	Bidder			
			Joint-Venture, Consortium or Association			
			All partners combined	Each Partner	At least one Partner	
2.4.1 General Experience	The Bidder shall demonstrate experience as a prime contractor, JV member, subcontractor, or management contractor in the successful execution of similar contracts over the last five (5) years, counted from January 1, 2020, to the bid submission deadline.	Must meet requirement	N / A	Must meet requirement	N / A	Form EXP-4.1
2.4.2 Specific Experience	The Bidder shall demonstrate experience in the successful execution of Two (02) contracts involving both geological investigations (including geological mapping, seismic	Must meet requirement	Must meet requirements for all characteristics	N / A	Must meet requirement for one characteristic	Form EXP 2.4.2(a)

Factor	2.4 Experience					
Sub-Factor	Requirement	Criteria				Documentation Required
		Single Entity	Bidder			
			Joint-Venture, Consortium or Association			
			All partners combined	Each Partner	At least one Partner	
	and electrical geophysical profiling, pit excavation, rock and soil sampling, and laboratory testing) and bathymetric surveys (including multibeam sonar profiling, thermal measurements, and underwater sediment investigations), gained within the last five (5) years from January 1, 2020 to the bid submission deadline, by having completed either two (2) contracts that included both geological and Bathymetric components, or four (4) separate contracts – 2 involving Bathymetric and two (2) Involving Geological investigation. The Bidder must have had direct technical responsibility for the relevant components of the work, and each contract must have been substantially or fully completed within the					

Factor	2.4 Experience					
Sub-Factor	Criteria					Documentation Required
	Requirement	Bidder				
		Single Entity	Joint-Venture, Consortium or Association			
			All partners combined	Each Partner	At least one Partner	
	specified period.					

2.5 Personnel

The Bidder shall provide the names, qualifications, and detailed project-based experience of the key professional personnel proposed for the execution of the works. Each proposed individual must have performed comparable roles on projects that involved geological investigations, geophysical profiling, bathymetric surveys, and related geotechnical fieldwork, similar in complexity to the Devil's Gorge Hydro-Electric Scheme (DGHEs) investigations.

The evaluation will place greater emphasis on specific relevant project experience rather than only the number of years in a generic role. Each CV shall clearly reference at least Two (2) similar assignments completed within the last 15 years, including: Project title and location, Role held and duration, Description of tasks performed, Client name and contactable reference. All CVs must be signed by both the individual and the Bidder's authorized representative.

Bidders are encouraged to propose additional technical personnel as required to meet the full scope of services. For non-skilled positions, Contractors are expected to engage labor from local communities in collaboration with the Employer and local leadership.

The following key positions must be filled by personnel meeting the minimum project-specific experience thresholds listed below:

No.	Position	Responsibilities	Minimum Project-Specific Experience
1	Team Leader / Project Manager	Overall responsibility for planning, coordinating, and managing multidisciplinary field investigations, quality assurance; team leadership	Lead role on at least two (2) multidisciplinary geotechnical/geophysical investigation or bathymetric surveys projects involving riverine or hydropower infrastructure
2	Geophysicist	Responsible for planning and executing seismic refraction, MASW, and electrical resistivity surveys; data processing and interpretation	Lead or senior role on at least two (2) projects in near-surface geophysics involving land and underwater geophysical investigations for dam sites, tunnels, or similar
3	Geologist	Analyzes soil and rock data; provides design input for dam foundations, abutments, and structures	Experience on at least two (2) engineering geology with experience projects involving boreholes, trial pits, and lab analysis for dam or riverbed works. Proficiency in rock system mass classification.

No.	Position	Responsibilities	Minimum Project-Specific Experience
			Field experience in complex geological terrains and structural geology mapping.
4	SHEQ Manager	Develops, implements, and monitors Safety, Health, Environmental, and Quality plans in accordance with international and ZRA standards	Responsible for SHEQ compliance on at least one (1) large-scale infrastructure project in environmentally sensitive or riverine areas

The Bidder shall provide details of the proposed personnel and their experience records in the relevant Forms included in Section IV, Bidding Forms.

2.6 Equipment

The Bidder must demonstrate that it has access to the key equipment necessary for the effective execution of the geological and bathymetric investigations. For each item listed below, the Bidder shall indicate whether the equipment is owned, leased, or will be procured, and provide supporting evidence (e.g., ownership certificate, lease agreement, or commitment letter). Only the major equipment critical to performance is list for evaluation, however bidders must provide all the requirement equipment and tools required to effectively execute the works as per their methodology.

No.	Equipment
1	Multi-beam sonar system
2	Differential GPS (DGPS)
3	Motion Sensor
4	Thermal Profiler
5	High-accuracy GPS (DGPS/RTK)
6	Seismic and resistivity survey equipment
7	4x4 vehicles and boats (a speedboat and a fishing pontoon)

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Letter of Bid

The Bidder must prepare the Letter of Bid on stationery with its letterhead clearly showing the Bidder's complete name and address.

Note: All italicized text is for use in preparing this form and shall be deleted from the final products.

Date: _____
Bidding No.: _____
Invitation for Bid No.: _____

To:

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB) Clause 8;
- (b) We offer to execute in conformity with the Bidding Documents the following Works:
- (c) The **total price of our Bid including VAT**, excluding any discounts offered in item (d) below is:
- (d) The discounts offered and the methodology for their application are: _____;
- (e) Our bid shall be valid for a period of **ninety (90) days as specified in ITB 18.1.]** days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (f) If price adjustment provisions apply, the Table(s) of Adjustment Data shall be considered part of this Bid. N/A.
- (g) If our bid is accepted, we commit to obtain a performance security in accordance with the Bidding Document;
- (h) Our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from eligible countries;
- (i) We, including any subcontractors or suppliers for any part of the contract, do not have any conflict of interest in accordance with ITB 4.3;

-
- (j) We are not participating, as a Bidder or as a subcontractor, in more than one bid in this bidding process in accordance with ITB 4.3, other than alternative offers submitted in accordance with ITB 13;
 - (k) Our firm, its affiliates or subsidiaries, including any Subcontractors or Suppliers for any part of the contract, has not been declared ineligible by the Authority;;
 - (l) We are not a Government owned entity and meet the requirements of ITB 4.5;
 - (m) We have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract: ⁵

Name of Recipient	Address	Reason	Amount
.....
.....

- (n) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed;
- (o) We understand that you are not bound to accept the best-evaluated bid or any other bid that you may receive and have the right to cancel the bidding process; and
- (p) If awarded the contract, the person named below shall act as Contractor's Representative:

Dated thisday of2024

Full Name.....Signature

In the capacity of (*POSITION*)Date.....

Duly authorized to sign Bids for and on behalf of

Name of Bidder:.....

Physical Address:.....

Official E-mail:.....

Cell Number:

Financial Proposal

Bill of Quantities/ Schedules of Pricing

The bid includes the following Preliminary Bill of Quantities (**Preliminary Bill of Quantities is attached hereto (Excel document).**

Form of Bid-Securing Declaration

Date: *[insert date (as day, month and year)]*

Bid No.: *[insert number of bidding process]*

Alternative No.: *[insert identification No if this is a Bid for an alternative]*

To: *[insert complete name of Employer]*

We, the undersigned, declare that:

We understand that, according to your conditions, bids must be supported by a Bid-Securing Declaration.

We accept that we will automatically be suspended from being eligible for bidding in any contract with Authority for the period of 2 years if we are in breach of our obligation(s) under the bid conditions, because we:

- (a) have withdrawn our Bid during the period of bid validity specified in the Letter of Bid; or
- (b) having been notified of the acceptance of our Bid by the Employer during the period of bid validity, (i) fail or refuse to execute the Contract, if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the ITB.

We understand this Bid-Securing Declaration shall expire if we are not the successful Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder; or (ii) twenty-eight days after the expiration of our Bid.

Signed: *[insert signature of person whose name and capacity are shown]*

In the capacity of *[insert legal capacity of person signing the Bid-Securing Declaration]*

Name: *[insert complete name of person signing the Bid-Securing Declaration]*

Duly authorized to sign the bid for and on behalf of: *[insert complete name of Bidder]*

Dated on _____ day of _____, _____ *[insert date of signing]*

Corporate Seal (where appropriate)

[Note: In case of a Joint Venture, the Bid-Securing Declaration must be in the name of all partners to the Joint Venture that submits the bid.]

Technical Proposal

Technical Proposal Forms and Submission

1. Personnel

2. Equipment

3. Site Organization

4. Method Statement

5. Mobilization Schedule

6. Construction Schedule

Forms for Personnel

Form PER – 1: Proposed Personnel

Bidders should provide the names of suitably qualified personnel to meet the specified requirements for each of the positions listed in Section III (Evaluation and Qualification Criteria). The data on their experience should be supplied using the Form below for each candidate.

1.	Title of position
	Name
2.	Title of position
	Name
3.	Title of position
	Name
4.	Title of position
	Name
5.	Title of position
	Name
6.	Title of position
	Name
etc.	Title of position
	Name

Form PER – 2: Resume of Proposed Personnel

The Bidder shall provide all the information requested below. Fields with Asterix (*) shall be used for evaluation.

Position*		
Personnel information	Name *	Date of birth
	Professional qualifications	
Present employment	Name of Employer	
	Address of Employer	
	Telephone	Contact (manager / personnel officer)
	Fax	E-mail
	Job title	Years with present Employer

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

[illegible]

Forms for Equipment

The Bidder shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in Section III (Evaluation and Qualification Criteria). A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder. The Bidder shall provide all the information requested below, to the extent possible. Fields with asterisk (*) shall be used for evaluation.

Type of Equipment*		
Equipment Information	Name of manufacturer	Model and power rating
	Capacity*	Year of manufacture*
Current Status	Current location	
	Details of current commitments	
Source	Indicate source of the equipment <input type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially manufactured	

The following information shall be provided only for equipment not owned by the Bidder.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	

Bidder's Qualification

To establish its qualifications to perform the contract in accordance with Section III (Evaluation and Qualification Criteria) the Bidder shall provide the information requested in the corresponding Information Sheets included hereunder.

Form ELI 1.1
Bidder Information Sheet

Date: _____
Bidding No.: _____
Invitation for Bid No.: _____
Page _____ of _____ pages

1. Bidder's Legal Name
2. In case of JV, legal name of each party: N/A
3. Bidder's actual or intended Country of Registration: N/A
4. Bidder's Year of Registration:
5. Bidder's Legal Address
6. Bidder's Authorized Representative Information Name: Address: Telephone/Fax numbers: Email Address:
7. Attached are copies of original documents of: <input type="checkbox"/> Articles of Incorporation or Registration of firm named in 1, above, in accordance with ITB Sub-Clauses 4.1 and 4.2. <input type="checkbox"/> In case of JV, letter of intent to form JV including a draft agreement, or JV agreement, in accordance with ITB Sub-Clauses 4.1 N/A <input type="checkbox"/> In case of Authority owned entity from the Employer's country, documents establishing legal and financial autonomy and compliance with the principles of commercial law, in accordance with ITB Sub-Clause 4.5.

Form ELI 1.2

Party to JV Information Sheet

N/A

Form CON – 2

Historical Contract Non-Performance

N/A

Form CCC

Current Contract Commitments / Works in Progress

Bidders and each partner to a JV should provide information on their current commitments on all contracts that have been awarded, for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

Name of contract	Employer, contact address/tel/	Value of outstanding work USD	Estimated completion date	Average monthly invoice over last six months (USD/month)
1.				
2.				
3.				
4.				
5.				
etc.				

Financial Situation

Historical Financial Performance

Provide Audited Financial Statements for the past 5 years.

Form FIN – 3.2

Average Annual Turnover:

Form FIN3.3
Financial Resources

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject contract or contracts as indicated in Section III (Evaluation and Qualification Criteria)

Source of financing	Amount USD
1.	
2.	
3.	
4.	

Please entail financial statement for the past 5 years.

Experience

Form EXP – 2.4.2(a)

Specific Experience

Bidder's Legal Name: _____ Date: _____

JV Partner Legal Name: _____ Bidding No.: _____

Page _____ of _____ pages

Similar Contract Number: _____ <i>[insert specific number] of</i> <i>_____ [insert total number of contracts</i> <i>required.</i>	Information		
Contract Identification	_____		
Award date	_____		
Completion date	_____		
Role in Contract	<input type="checkbox"/> Contractor	<input type="checkbox"/> Management Contractor	<input type="checkbox"/> Subcontractor
Total contract amount	_____		USD _____
If partner in a JV or subcontractor, specify participation of total contract amount	_____ %	_____	USD _____
Employer's Name:	_____		
Address:	_____ _____ _____		
Telephone/fax number:	_____ _____		
E-mail:	_____		

Form EXP – 2.4.2(a) (cont.)
Specific Experience (cont.)

Bidder's Legal Name: _____ Page _____ of _____ pages

JV Partner Legal Name: _____

Similar Contract No. ___[insert specific number] of ___[insert total number of contracts] required	Information
Description of the similarity in accordance with Sub-Factor 2.4.2a) of Section III (Evaluation and Qualification Criteria):	
Amount	_____
Physical size	_____
Complexity	_____
Methods/Technology	_____
Physical Production Rate	_____

Method Statement

Contractors shall provide a statement method demonstration own analysis of the work to be done and execution of the works.

Mobilization Schedule

This will be part of the statement method.

Section V - Eligible Countries: N/A

Section VI - Employer's Requirements

Introduction

The Devil's Gorge Hydro-Electric Scheme (DGHES) was conceived in 1972 out of a study instituted by the predecessor of the Zambezi River Authority, Central African Power Corporation. The aim of the study was to identify possible power sources which the intergovernmental institution could develop to meet the power demands of Zambia and Zimbabwe.

In 2023, the Zambezi River Authority, through its consultant, Tractebel Engineering SA of France, launched prefeasibility studies into the development of the Devil's Gorge Hydro-Electric Scheme. The study has since identified two (02) sections on the Zambezi namely alternative A and Alternative B. Alternative A is located approximately 50km downstream of the Batoka Gorge Hydro-Electric Scheme ("BGHES") dam site while Alternative B, also referred to as the "1972 site" is located at the tail end of the Lake Kariba reservoir, just downstream of the Gayi/Zambezi Rivers Confluence, and approximately 100km downstream of the BGHES dam site.

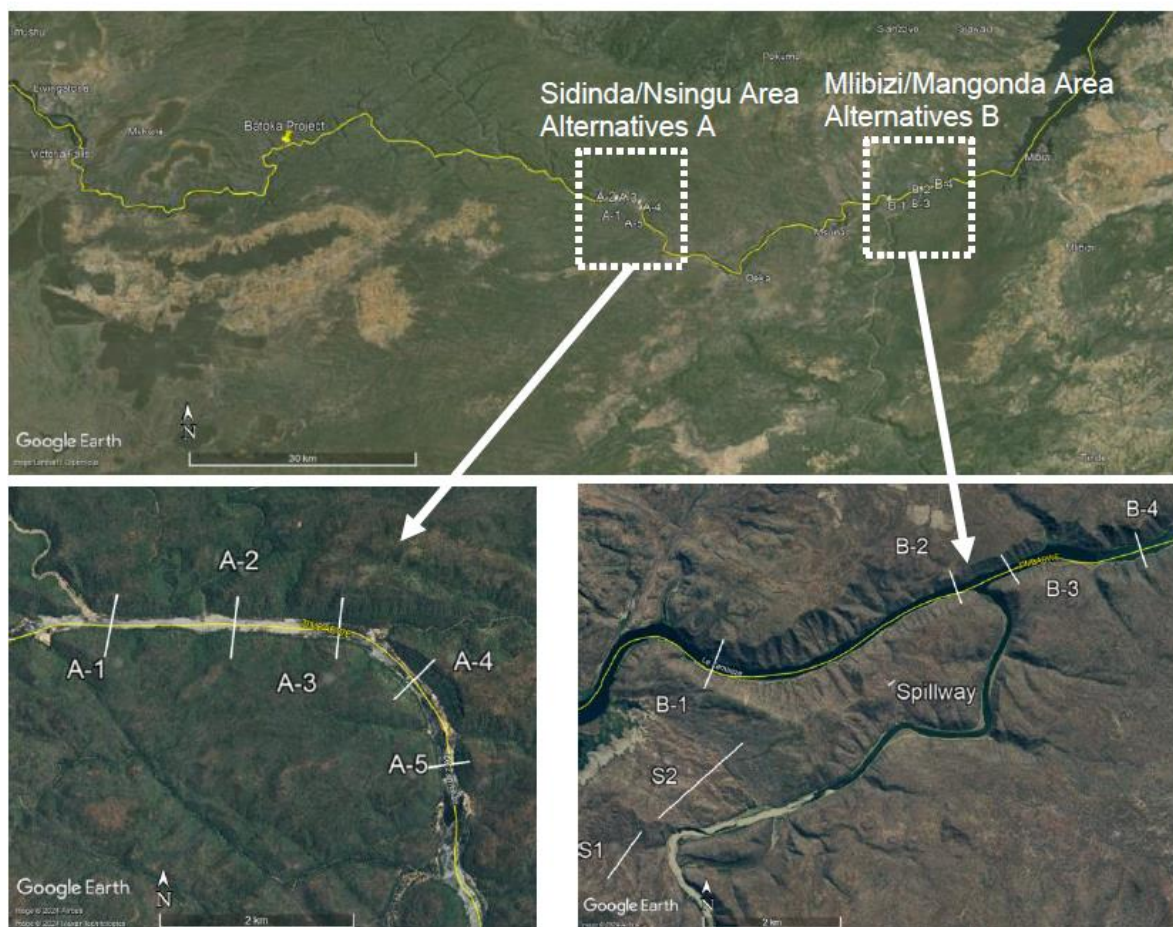


Figure 1: Potential Scheme sites

This document outlines the site investigation plan and technical specifications for the bathymetric surveys and geological investigations for DGHES.

Location and Geological Characteristics

The geological history of the Zambian and Zimbabwean region is complex and ancient. Although the broader southern African region features very old Precambrian rocks, the local bedrock in both Area A and Area B dates from the early Jurassic, belonging to the Karoo Basin.

The key formations relevant to the project include:

- The Jurassic upper Karoo sandstones, exceeding 1000 meters in thickness.
- The Batoka Basalts and interbedded sandstones, with a cumulative thickness of several hundred meters.
- The later, discontinuous Cretaceous Kalahari Beds (mainly sands).

Following the Jurassic period, a prolonged phase of erosion and non-deposition occurred. Continental detrital sedimentation resumed during the Tertiary with the deposition of Kalahari sands, after which erosion and weathering continued into recent times.

The Batoka Basalt series are reported to include interbedded sandstones; however, these were not observed during the visit to Area A and have also not been reported at the Batoka Gorge project. This aspect requires further investigation. Similarly, the upper Karoo sandstones are said to locally include interbedded siltstones or argillite layers, which have been observed in Area B. This also needs confirmation.

Recent colluvial deposits are present and must be accounted for as overburden on the Zambezi Valley plateaus and slopes.

At a regional scale:

- The bedrock in **Area A** is basaltic (Jurassic).
- The bedrock in **Area B** consists mainly of sandstones from the upper Karoo (Triassic to Jurassic).

Kalahari sandstones are not expected to significantly impact either project area due to either non-deposition or erosion. Small outcrops may be found locally, potentially filling extensional fractures.

The geological structure indicates that Batoka basalts overlie Karoo sandstones from west to east, and the Kalahari sands overlay parts of the Karoo bedrock inconsistently.

A notable uncertainty exists regarding the nature of the contact between basalts and sandstones. Literature suggests an abnormal contact—either a fault or unconformity - which was not observed in Area B and needs to be clarified.

Hydrothermal potential is indicated by thermal springs in both project areas:

- **Sidinda thermal spring** in Area A (observed during site visit).
- **Sigobouya thermal spring** in Area B (not observed).

These are associated with a deep fracture network. This hydrothermal activity could alter the bedrock and create conditions with high-temperature, chemically aggressive fluids that could impact future concrete structures.

The Zambezi River follows paths influenced by a network of deep fractures filled with weaker materials, potentially including residual Kalahari sands. This has contributed to the river's incision, such as the formation of Victoria Falls and possibly similar deepening near Area A (e.g., riverbed observed up to 30 m below river level).

Basalts in Area A are:

- Massive to fractured
- Vesicular (amygdaloidal) with zeolite filling
- Auto-brecciated and weathered

Hydrothermal alteration (zeolite presence) can reduce rock strength and permeability. The bedrock exhibits persistent basalt layering with dips varying along the river course. These layers include potential weak interbeds formed during volcanic flow interruptions.

The rock mass quality varies:

- Auto-brecciated basalt: low to poor quality
- Massive basalt: good quality

Fracturing and jointing are irregular but important for permeability and hydrothermal

flow. No major faults with displacement were observed, but a large-scale fracture network exists and may influence the geology and hydraulics.

Hot springs with temperatures above 45°C suggest a strong thermal gradient and rapid fluid ascent, which could be altered by future reservoir pressure changes.

Further uncertainties and hazards include:

- Unknown nature and depth of fractured zones
- Impact of hydrothermal flows on rock strength and permeability
- Variability of overburden thickness and weathering penetration
- Rock alkali-aggregate reactivity (AAR) potential

Investigation Program

Scope of Works

Topography Benchmarks

One benchmark tied to the national grid should be made available at each A and B site to allow appropriate levelling of the works and calibration of the DGPS used by the various contractors.

Bathymetry and Thermal Measurements

This section outlines the specifications for carrying out bathymetric surveys and river water thermal profiling within the Devil's Gorge Hydroelectric Scheme (DGHEs) project area. The aim is to obtain high-resolution hydrographic and thermal data to support geological interpretations and engineering design at the proposed dam axes and reservoir reach. The bathymetric survey is intended to accurately define the riverbed morphology along the proposed dam axes at DGHEs sites A and B. The data obtained shall inform design considerations, geotechnical interpretations, and sedimentation assessments. Survey shall include both transverse and longitudinal profiles using high-resolution sonar technology.

Methodology and Equipment

The Contractor shall use a multi-beam echo sounder (MBES) or a dual-frequency single beam echo sounder, coupled with a Differential GPS navigation system and motion sensor (for pitch, roll, heave correction) with the following specifications:

-
- Minimum depth range: 0.5 m to 50 m
 - Horizontal accuracy: ± 0.2 m
 - Vertical accuracy: ± 0.1 m
 - Positioning system: DGPS (sub-meter precision)
 - Sound velocity profile corrections shall be applied

- **Area A Bathymetry**

Bathymetric surveys will be conducted on sites A2, A3, and A5. The works will survey within a stretch of approximately 400 m of the riverbed centred on the intended dam axis and will include:

- A series of transverse profiles of approximately 100 m long and with a 50 m distance spacing between profiles. (approx. 600 m in total)
- One 400 m longitudinal profile along the deeper axis of the riverbed (approx. 1200m in total)

- **Area B Bathymetry**

Bathymetric surveys will be carried out on sites B3 and B4. The works will survey within a stretch of approximately 400 m of the riverbed centred on the intended dam axis and will include:

- a series of transverse profiles of approximately 300 m long and with a 50 m distance spacing between profiles. (approx. 1200 m in total)
- three 400 m long longitudinal profiles at the left side, the centre, and the right side of the riverbed (approx. 2400 m in total)

The total provisional length of the bathymetry profile is $1800 \text{ m} + 3600 = 5400 \text{ m}$ approximately.

- **Area A and B River Water Temperature Measurements**

The purpose is to specify the occurrence of thermal springs along the river.

The measurements will be performed along one profile for the whole stretch of the river from A2 to A5 and from B3 to B4 sites. This represents approximately 20 km river length.

- **Survey Execution**

- Transverse profiles shall be spaced at intervals not exceeding 30 meters

-
- At least one longitudinal profile shall be conducted along the thalweg (deepest channel path)
 - Data shall be acquired in calm flow conditions where possible
 - Survey speed and line spacing shall be optimized for complete coverage and resolution

A pre-survey meeting shall be held on site with the Engineer to finalize the survey grid and access routes.

- **Data Processing and Quality Assurance**

- Raw data shall be corrected for vessel motion, sound velocity, and water level fluctuations
- Final products shall be reviewed for completeness, consistency, and coverage
- Depth soundings shall be referenced to a common vertical datum (EGM 2008, unless otherwise specified)

The Contractor shall implement Quality Assurance and Quality Control procedures throughout data acquisition and processing and submit calibration reports as part of the final deliverables.

- **Deliverables**

The following outputs shall be submitted by the contractor:

- 2D bathymetric maps with 0.5 m contour intervals
- 3D riverbed terrain models
- Cross-sectional profiles at 50 m intervals
- Longitudinal profiles along survey lines
- XYZ coordinate datasets referenced to WGS 84 / EGM 2008
- Raw sonar data (proprietary and open formats)
- Final technical report, including:
 - Methodology
 - Equipment used
 - Calibration reports
 - QA/QC logs
 - Accuracy assessment
 - Survey limitations (if any)

All spatial data shall be geo-referenced in WGS 84 / UTM Zone 35S, with elevations in **EGM 2008**.

- **Standards and References**

- IHO S-44 – Standards for Hydrographic Surveys (Order 1 or 2, as applicable)
- ISO 17208-1 – Underwater acoustics and sonar systems
- ASTM D5259 – Standard guide for use of sonar-based survey equipment
- Project-specific survey protocols as approved by the Engineer

Land Geophysical Profiling

At both site A (A2, A3 and A5) and B (B3 and B4), a systematic program is planned for each local option. It is composed of:

- Both refraction seismic or equivalent (MASW...) and electrical profiling.
- 1 profile along each right and left bank abutments for approximately 450 m long each. The length of geophysical profiles at each of the A3 site options and the B2 site options is approximately 900m.

Therefore, the total length for land geophysical profiles is:

- At Site A (A2, A3 and A5): 2700 m
- At Site B (B3 and B4): 1800 m

The location maps in Figure 1 (above) give the spirit of the investigation profiles positions, the exact location will be decided on site according to site condition and difficulties.

All field measurements and interpretations shall comply with current geophysical best practices, and applicable ISRM and ASTM guidelines.

Contractor must ensure data quality control during acquisition and processing stages.

The final geophysical report should include methodology, raw data, processed results, interpretations, and site-specific recommendations.

Underwater Geophysical Profiling

This investigation is only foreseen at 2 options B2 and B3 (to be confirmed on site) of the site B where the definition of the thickness of sediments below the river bottom is requested.

Given the strength of the river stream, profiles parallel to the riverbed are foreseen should the stream be moderate, one single profile across the riverbed can be considered. This results in two options:

-
- Option 1: Three profiles parallel to the river axis (left side, centre, right side) for a minimum approx. 250 m in length each
 - Option 2: Only one transverse profile across the riverbed for a minimum approx. 300 m length

Both seismic and electrical profiling will be performed wherever practicable.

The exact length will be decided according to the proposed method statement and technical feasibility.

Pit Excavation, Sample Taking, Lab Testing

At each optional site, a provision of 6 pits on soils or loose cover is foreseen when feasible.

At Site A, this cumulates to 18 pits

At Site B, this cumulates to 12 pits

This number is provisional and will be adjusted according to site conditions and needs.

A provision of 30 soil bags of 25 kg is foreseen to be transported to the laboratory for testing. The Authority will facilitate transportation and payment for the samples at the laboratory. However, the Contractor will be responsible for coordination of the testing processes with the Laboratory, collection and presentation (in a final geological and Bathymetric surveys report) of results to the Engineer (Tractebel) for interpretation.

Rock samples will be taken at the best suitable locations for the purpose of laboratory testing. A number of 20 samples at each site A (A2, A3 and A5) and site B (B3 and B4) site will be taken, for a total of 40 rock samples of 5 kg each. The rock sample will allow the drilling at the lab to produce an appropriate piece of core for the testing (dam/length according to standards). The Authority will mobilise an appropriate transport to carry these samples to the laboratory.

Location of Excavation pits

The location of the excavation pits will be approved by the Engineer.

Equipment and materials

Trial pits shall be excavated using tracked mechanical backhoe excavators in accordance with BS 5930:2015+A1:2020. Excavation shall reach depths of up to 4 metres, unless limited by groundwater ingress or stability concerns. Excavation faces shall be suitably battered or shored to prevent collapse, and all work shall comply with CDM Regulations and site-specific health and safety protocols.

Pit excavation Logs

During excavation operations, the Contractor shall record all relevant data and significant observations which shall be reported in the pit excavation logs. The presentation of the Logs for the excavation pits. The soil and rock selection shall be approved by the Engineer. shall be carried out using British Standard 5930 or equivalent international standard, approved by the Engineer, and shall include:

Pit Information

- Pit number
- Location
- Elevation
- Max. depth reached
- Commencement date
- Finishing date
- Name of personnel directing operations
- Daily depths

Geological and geotechnical data

- RQD
- Alteration degree
- Water level
- Stratigraphy description (according to ISRM Standard)
- Sample number and depth
- Presence of cavities and dimension

Furthermore, photographic documentation of the works shall be provided with regard to soil and rock sampling operations and any significant situation which may occur.

Laboratory Tests

The following laboratory tests are envisaged on the soil and rock samples selected from the pit excavations. The samples to be tested will be selected by the Engineer.

The Contractor will propose a reputed laboratory, with a specific recent experience in similar assignments to be demonstrated. The Engineer will verify the capabilities of

the proposed laboratory. Soil test from pit sample will consist in part of or all of the following

Soil Tests

LABORATORY TESTS (on soil samples collected from pit excavations)			
Item	Test description	Procedures	Number of tests
1	Moisture Content	ASTM D2216	20
2	Atterberg Limits	ASTM D4318	20
3	Specific Gravity	ASTM D854	20
4	Particle Size Distribution	ASTM D6913 (sieve analysis) ASTM D7928 (sedimentation analysis)	20
5	Organic Content	ASTM D2664 (Loss on Ignition)	20

Table 1: Laboratory tests on soil samples

Surface Rock Tests

LABORATORY TESTS (on samples collected from pit excavations)			
Item	Test description	Procedures	Number of tests
1	Specific Gravity	ISRM 1122 – ASTM C128	20
2	Porosity	ASTM C20	20
3	Water Absorption	ISRM 1122 – ASTM C20	20
4	Soundness	Soundness ASTM C88	10
5	Los Angeles Test	ISRM 1122 – ASTM C131	10
5	Salt Contamination Test	ASTM C441	
6	Alkaline Reactivity test	ISRM 1124 – ASTM C116	5

	– mortar bar test		
7	Petrographic analysis + petrographic	ISRM 1124 – ASTM C116	10
8	Durability	ISRM 1981 – ASTM C666	

Table 2: Laboratory tests on surface rock samples

All the associated costs for transportation of samples and laboratory tests will be covered by the Authority.

River water sampling and analysis

For area A, 3 samples of the river water will be taken while at area B, one sample will be taken at the following distinct locations for the purpose of chemical analysis:

- Area A:
 - Sample 1 at A 2
 - Sample 2 and 3 at the identified thermal springs between A3 and A5.
- Area B:
 - Sample 1 between B3 and B4

Geological mapping

The geological mapping aims to provide a detailed understanding of the surface and near-surface geological conditions at Site A and Site B. This includes stratigraphy, rock mass characteristics, structural geology, and potential hydrogeological and geothermal indicators, particularly where borehole data is limited

The geological mapping will examine the best accessible outcrops at each A and B sites and will aim at:

For the site A:

- Identify the number of lava flow successions and propose a comprehensive log of the bedrock in order to compensate as much as possible for the lack of bore holes.
- Evaluate the rock mass conditions (weathering, jointing...)
- Look for any hydrogeological (e.g., seepages, springs) and geothermal information (e.g., warm water, fumaroles, altered zones).

For the site B:

-
- Identify the number of sandstone's main layers successions and propose a comprehensive log of the bedrock in order to compensate as much as possible for the lack of bore holes.
 - Evaluate the rock mass conditions (weathering, jointing...)
 - Look for any hydrogeological and geothermal information.
 - Look for outcrops in relation with the hidden bedrock below the river. This research will follow the layer dip guideline along the river downstream of the B site.
 - Assess weathering, jointing, and rock fabric.

i. General Mapping Tasks

- Conduct detailed geological mapping of accessible outcrops within and around each site.
- Record and describe lithology, stratigraphy, weathering profiles, structural features, discontinuities, and other relevant geological features.
- Map joints, faults, bedding planes, shear zones, and fold structures with orientation data (dip and dip direction).
- Assess rock mass quality using standard classifications (e.g., RMR, Q-system).

Applicable Standards

All geological mapping shall be conducted in accordance with:

- BS 5930:2015+A1:2020 – *Code of practice for ground investigations*
- BS EN ISO 14689-1:2003 – *Geotechnical investigation and testing – Identification and classification of rock*
- BS EN ISO 14120-1:2004 – *Field logging of rock*
- International guidelines as applicable (e.g., ISRM, IAEG, and IGS)

ii. Deliverables

- Geological map (scale 1:1,000 or appropriate)
- Stratigraphic columns/logs for each site
- Rock mass classification sheets (RMR/Q-system)
- Photographic record of outcrops and structural features
- Geological cross-sections
- GIS-compatible shapefiles or KMZ layers for mapped features

-
- Report summarizing methods, findings, and interpretations

Works supervision

Given the high impact of the site condition on the work location and amount, permanent supervision will be performed by TRACTEBEL in coordination with the Employer representatives.

This supervision will be done simultaneously with the geological mapping works necessary at each site.

Location map

The map is provisional and only gives a tentative location. The main interest is to see the distances from site to site, the topography at each site, and the riverbed width.

Two profiles are indicated for each site; this indicates the possible range of variation of the profile's location. The same remark applies to the pits' location and numbers.

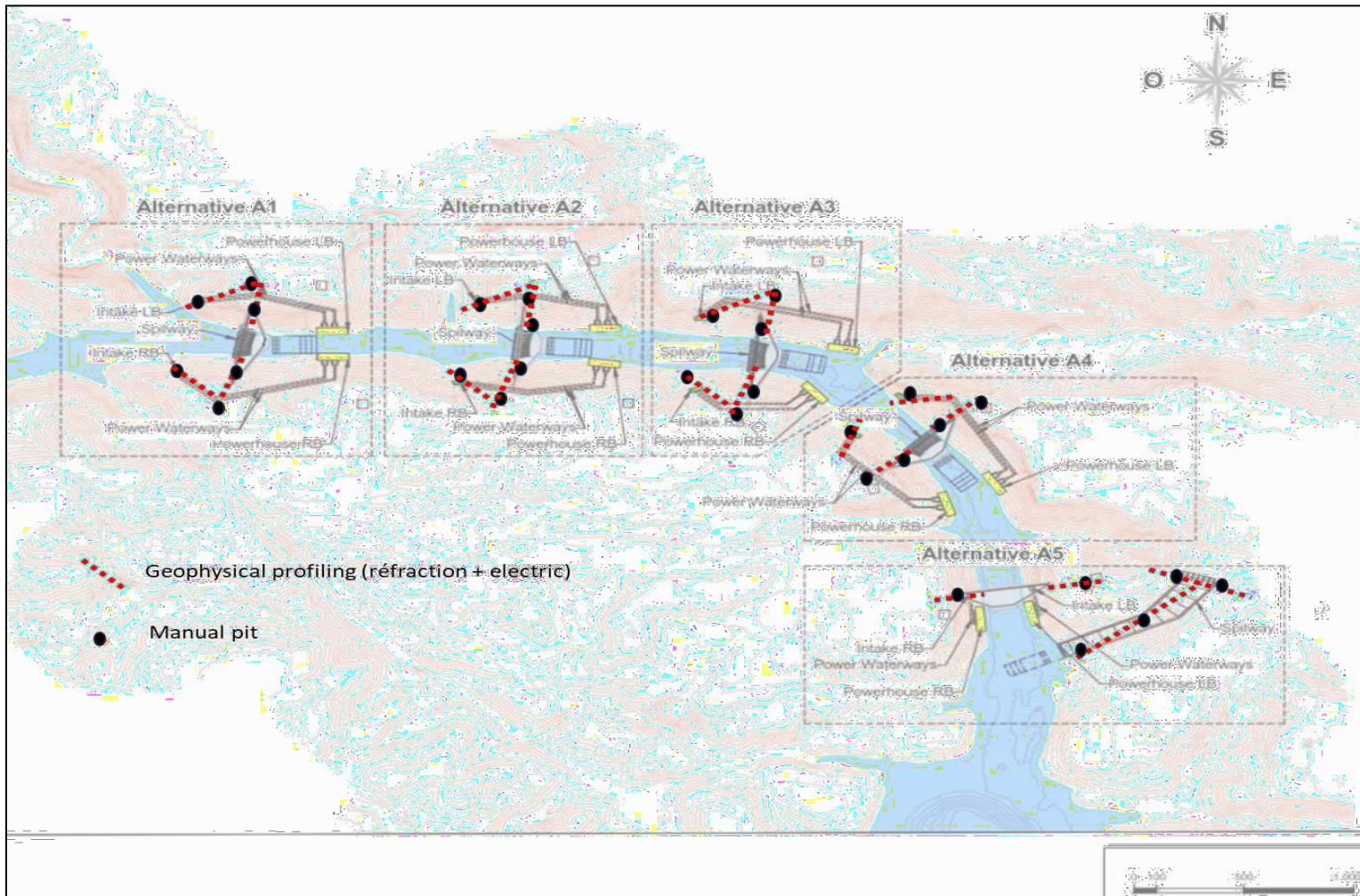


Figure 2: General location plan for investigation at area A (Focus will be A2, A3 and A5)

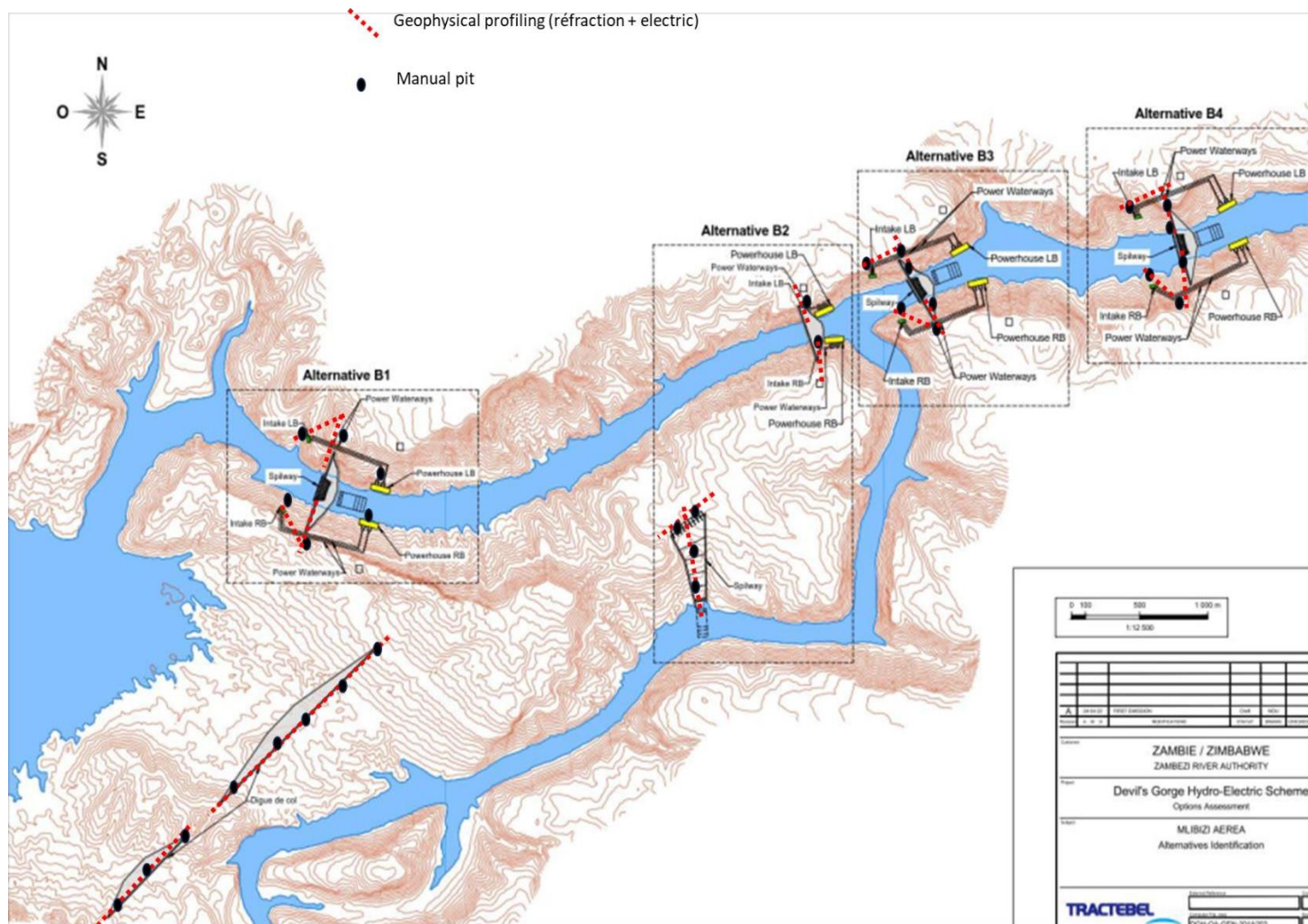


Figure 3: General location plan for investigation at area B (Focus will be B3 and B4)

The Proposed Technical Specifications

The following specifications aim at defining the result expected from investigation and at defining the basic set up deemed necessary to achieve the goal.

A lot of standards are defined by various organisation that help in ensuring the quality and homogeneity of the measurements from one contractor to another. Depending on the contractor's practice and know how such standards may be preferred to another.

Preference can be given to the Contractor's knowledge on the condition it provides the expected results and reliability and respects the minimum requirements set forth here-after. The Contractor will therefore be expected to detail his proposal in this regard.

Exact location of testing will be defined on site according to site condition and access possibilities. All testing points will be GPS located with minimum accuracy of 0.1 m.

4.1. Geological mapping

The investigated option site will be surveyed by an experienced geologist in the field of mapping and engineering geology.

The mapping will be performed at a scale allowing appropriate detailed features to be represented; typically, 1/5000 is deemed appropriate (or better if deemed necessary).

The mapping will encompass the site with a sufficient distance to allow good understanding of geological context; typically, one or two hundreds of meters around the site may be sufficient which results to 1km x 1km square centred on the site.

The mapping will enhance the various rock layers nature, organization, their attitude, and the faulting if any.

Discontinuity measurements will be performed at relevant places to describe the rock mass jointing, and associated rock mass rating will be performed according to RMR methodology.

A map of the site together with the necessary illustrating cross sections and a descriptive notice will be provided as a report.

The mapping and cross sections will include the information gained from the preliminary and detailed investigation phases.

4.2. Riverbed investigation

4.2.1. Bathymetry water depth

The measurements will be performed using a multi beam sonar offering sufficient depth penetration, ranging from 1 to 50 meters approximately.

A motion sensor shall be used to allow appropriate restitution of the altitude, roll and pitch variations.

Real time positioning by GPS is required along the surveyed profiles. The spacing between transverse profiles of the riverbed are spaced each 30m.

One long bathymetric profile will be surveyed along the riverbed deeper section (as per transverse profiles incomes).

4.2.2. Refraction seismic survey along riverbed for sediment filling

This investigation aims at defining the sediment thickness under the riverbed down to the bedrock. The depth of penetration is deemed to reach approximately 30 to 40 m.

Given the water depth above the riverbed floor and the stream strength, it is suggested to perform river-bottom measurements from the sediments surface.

The exact location of the refraction profiles will be decided on the base of the bathymetry survey where the river floor will be the best suitable.

The depth of investigation is expected to reach approximately 20 to 30 meters. To do so the following base array is recommended; preliminary site test will define the optimum array.

- i. 24 receivers per base.

-
- ii. Receivers spacing: 10 m.
 - iii. 5 shots per base.
 - iv. Source may be sparked, air gun or explosive, depending on contractor's know-how and local regulations.
 - v. Site equipment shall allow stack, filter, and recording.
 - vi. Pre-processing at site shall allow validation of the data quality.
 - vii. Optional electrical profiling may be proposed by the contractor, but conditions do not seem optimum for such kind of survey.

4.3. Surface geophysical profiling

4.3.1. Refraction seismic profiling

The main goal of the refraction seismic profiling is:

- i. Construction of the velocity profile where the various earth, soils, and bedrock envelopes can be highlighted with their respective Vp velocities.
- ii. Definition of the overburden coverage
- iii. Definition of the penetration depth of decompression/weathering of the bedrock
- iv. Specific velocity disruption such as voids, faults.

The depth of investigation is expected to reach approximately 20 to 30 meters. To do so, the following base array is recommended; a preliminary site test will define the optimum array.

- v. 24 receivers per base
- vi. Receiver spacing: 10 m.
- vii. 7 shots per base.
- viii. Location XYZ of shot and receiver points with 0,05 m accuracy.
- ix. Source may be sledgehammer, shotgun, weight drop.
- x. Site equipment shall allow for stack, filter, and recording.
- xi. Pre-processing at site shall allow validation of the data quality.

Long profiles exceeding the unitary base length will forego by rollover.

It is to be noted that the refraction seismic survey is part of the first phase of investigation, and it will not benefit of calibration holes. A first processing will be performed with semi qualitative depths. Calibration at site outcrops will be performed whenever possible. A second phase of investigation will take place later with bore holes; a second quantitative processing will then be performed from the same set of data.

4.3.2. Electrical profiling

The main goals of the multi-electrode electric profiling survey are:

- i. Construction of the 2D apparent resistivity profile where bedrock organisation and disruption can be highlighted.
- ii. Surface weathered material detection
- iii. Local anomalies such as highly weathered or altered rock masses.
- iv. Local discontinuities such as faults

The depth of investigation is expected to reach approximately 20 to 30 m. To do so the following array of investigations is suggested: a preliminary site test will define the optimum array.

- Electrode spacing 5 or 10 m depending on the site lab capacity.
- Location XYZ of electrodes points with 0,05 m accuracy.
- Schlumberger and Wenner array required.

The investigated profiles will be GPS surveyed for all the source and receivers' points with a minimum accuracy of 0.1 m. The final location of the profile will be decided according to site conditions and possibilities.

The various results will be posted on plates with all necessary details and coordinates to allow proper identification. Sections will be labelled and clearly scaled and oriented. A single scale for all plates is required.

The graphic representation of the measured parameters will be homogeneous for each method and for all profiles, the colour palette will provide with sufficient details.

4.4. Manual pits

Soils will be excavated manually down to 3m or to the bedrock, whichever is encountered first.

The safety of workers will be **ENSURED**; the pit will be secured from any accidental access.

The pit walls will be logged and photographed with orientation and ruler.

Two 25kg samples will be collected from the most representative layers.

Immediately after completion, the pit will be backfilled.

4.5. Geothermal activity

4.5.1. Ground surface or river water temperature measurement

Given the hydrothermal context, a ground surface temperature survey may reveal necessary according to bore hole incomes about in-depth temperature measurements, it will require further analysis about the existing satellite data and/or the feasibility of an airborne thermal mapping dedicated to the sites. **More simply, a series of temperature measurements inside the river water may bring additional information to the issue.**

4.6. Laboratory testing

4.6.1. Water testing

Both river and borehole sampling will be performed for chemical and mineral analysis.

Sampling, storage, and transportation shall be fast, and analysis conducted in the shortest period of time with minimal delays.

Borehole water sampling will be performed after washing of the hole and after review of the temperature log to decide the number and location of samples to be taken.

Sampling shall be performed in glass bottles and bottles shall be filled up to the brim to avoid dissolved gases exsolution.

Sample will be performed upstream of the Hydrothermal spots, at the hydrothermal spots and downstream.

4.6.2. Rock and soil sampling and testing

Soil samples may be generated from open pits or from borehole coring.

- From the pit, the contractor will have the equipment to collect disturbed (25kg) and undisturbed samples (thin wall samplers)
- From bore borehole, the contractor will use a triple core barrel in soil formations.

Rock samples may be collected from blocks or cores.

Testing will include all or part of the following, to be decided during the investigation progress:

Classification Tests	Procedure	Number of tests
- Moisture Content		
- Atterberg Limits		
- Specific Gravity		
- Particle Size Distribution		
- Organic Content		
Soil Chemical Tests		
- Sulfate Content		
- Chloride Content		
Rock Tests		
Specific Gravity		
Porosity		

Water Absorption		
Soundness		
Los Angeles Test		
Salt Contamination Test		
Alkaline Reactivity		
Petrographic analysis		
Durability		
Engineering Properties		
Dry Density / Moisture Content Relation		
Determination of Maximum and Minimum Dry Density		
Laboratory permeability tests on samples compacted to 95 % MDD		
Unconfined Compressive Strength of Rock		
Drained Or Undrained Shear Strength Test Or Undisturbed Samples		
Drained And Undrained Shear Strength Test On Samples Compacted to 95% MDD		
Oedometer test		

Number and type of tests might be modified by the Engineer, if opportune, during the execution of the assignment. All the data and results of the laboratory tests shall be presented on standard forms, in accordance with the standard specifications proposed by the Contractor and approved by the Engineer.

HEALTH, SAFETY, AND ENVIRONMENTAL OBLIGATIONS

5.1. Protection of the Environment

The Contractor shall take all necessary measures to:

- i. Protect the environment.
- ii. Comply with the environmental management plans for the works (if any);
and
- iii. Limit damage and nuisance to people and property resulting from pollution, noise, and other results of the contractor's operations and/or activities.

The contractor shall ensure that any other pollutants from the contractor's activities shall not exceed those prescribed by applicable laws of the Contracting State.

5.2. Health and Safety

The Contractor shall:

- iii. Comply with all applicable health and safety regulations and Laws of the Contracting state.
- iv. Comply with the Zambezi River Authority Health and Safety Obligations as Specified in the ZAMBEZI RIVER AUTHORITY HEALTH AND SAFETY ANNEX
- v. Comply with all directives issued by the Client's Safety, Health, and Environmental Officer

The Contractor shall provide the Contractor SHE Management Plan as evidence for compliance to the obligations before commencement of works on site.

In addition, the Contractor shall submit to the Employer details of any accident as soon as practicable after its occurrence and, in the case of any accident resulting in serious injury or death, shall inform the Employer immediately.

The Contractor shall maintain records, as specified in the ZAMBEZI RIVER AUTHORITY HEALTH AND SAFETY ANNEX and as the Employer may reasonably

require, maintain records, and make reports concerning the health and safety of persons and any damage to property.

MEASUREMENT AND PAYMENT

This section defines the units, basis, and conditions under which the Contractor shall be paid for the execution of geological and bathymetric works under this contract. All payments shall be made based on actual quantities of work performed, verified and approved by the Engineer, and in accordance with the rates provided in the Bill of Quantities (BoQ). The bided rates shall include all costs associated with the specific item of work in the Bill of Quantities, such as fees, materials, tests, transport, plant, labour, overheads, maintenance, etc.

General Conditions

- Only works explicitly described and measured in this document or approved by the Engineer in writing shall be paid.
- No payment shall be made for works undertaken at the Contractor's initiative without prior written approval.
- Provisional quantities and items, where provided, shall be executed only upon the Engineer's instruction and shall be measured and paid accordingly.
- The Contractor shall maintain detailed records of all activities and submit daily site logs, measurement sheets, and summary reports to facilitate verification and certification of completed works.

Units and Measurement

Activity	Unit	Remarks
Bathymetric Survey	linear metre (m)	Measured along valid profile lines accepted by the Engineer
Geophysical Survey – Seismic	linear metre (m)	Full profile length (excluding overlaps or repeats)
Geophysical Survey – ERI	linear metre (m)	Including complete data set and processed results

Test Pit Excavation and Logging	number (No.)	Includes excavation, logging, sampling, and backfilling
Bulk Soil Sampling	per sample (No.)	With complete lab-ready packaging and labels
Laboratory Testing – Soils	per test (No.)	As per testing matrix defined in specs
Laboratory Testing – Rocks	per test (No.)	Including UCS, point load, etc.
Geological Mapping	lump sum (LS)	Covers surface reconnaissance, structural data, and map production
Reporting	lump sum (LS)	Includes interim reports, final report, and all deliverables
Safety Compliance	lump sum (LS)	Pro-rated across the duration of the works

6.1. Basis of Payment

- Interim payments shall be made monthly based on quantities completed, supported by certified measurement records and progress reports.
- Final payment shall be made after:
 - Completion of all specified tasks
 - Submission and acceptance of all deliverables (reports, data files, logs, maps)
 - Resolution of any non-conformance issues identified during quality review

No additional payment shall be made for mobilisation, demobilisation, travel, or overheads, unless explicitly provided for in the BoQ or contract special provisions.

6.2. Non-Conformities and Rework

- Where data or works are rejected due to technical non-conformance, the Contractor shall re-perform the task at no additional cost to the Employer.

-
- Time extensions and cost claims based on unclear scope or omitted details shall not be entertained if the information was clearly defined herein or reasonably inferable.

6.3. Contingency Items

- The Engineer reserves the right to instruct additional works under contingency or provisional items.
- These will be measured and paid only upon instruction and at agreed unit rates.
- The Contractor shall not claim for contingency items unless duly authorized in writing.

7. ZAMBEZI RIVER AUTHORITY HEALTH AND SAFETY ANNEX

7.1. Principles

- The Contractor has understood the Zambezi River Authority objective of executing the Works with Zero Harm on site and fully commits itself together with any Subcontractor it appoints to achieve this stated objective by adhering without compromise to codes of good HSE practices.
- The Contractor is entirely and fully responsible for safety and shall respect and shall have all his/her personnel and the personnel of his/her sub-Contractors, suppliers, consultants, advisors, and visitors comply with all national, provincial and local laws and regulations as well as with the Authority's safety policy and H&S standards-attached- and the specific safety rules and practices described.
- Should the Contractor fail to respect or to implement the safety requirements, Zambezi River Authority shall request the Contractor in writing to take immediate action(s) to respect or implement the safety requirements. If in the opinion of the Authority, immediate and proper action(s) are not implemented or if urgent or temporary action(s) are needed, such action(s) shall be implemented by Zambezi River Authority at the Contractor's cost and risk.

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- Zambezi River Authority has the right to intervene and to stop the work on site at any time to control the risk without any compensation on either time or cost, as well as the right to not allow restarting the work until making sure that the required corrective/preventive actions have been implemented by the Contractor.
 - All or part of the contract with the Contractor may be terminated due to severe breach of H&S practices or at any breach to the H&S rules stated.
 - Zambezi River Authority has the right to stop access to or dismissing of any personnel from the site following safety violations.

7.2. Minimum Safety and Health Standards and Safe Work Procedures:

Without derogating from any legal requirement or any other aspect of this Document, the Contractor undertakes to ensure that he and/or his sub-Contractors and/or their respective employees will at all times comply with the following conditions:

- a. All work performed on the Zambezi River Authority premises and work site must be performed under the close supervision of people who are trained to understand all the H&S hazards associated with any work that the Contractor/Sub-Contractors perform on the stated premises/sites.
- b. The Contractor shall ensure that it familiarizes itself with the provisions of the contracting states' national/local laws that he/she, his/her employees and any sub-Contractors comply with them.
- c. The Contractor shall appoint competent employees who shall be trained on any H&S aspect pertinent to them or the work that is to be performed. In addition, before entering the site, all personnel shall receive a ZRA-specific induction.
- d. The Contractor shall issue Personal Protective Equipment as required and ensure that it is worn at all material times.
- e. No unsafe equipment/machinery and/or articles shall be used on the Zambezi River Authority project site. All equipment/machinery and/or articles shall comply with legal and Zambezi River Authority safety requirements.

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- f. The Contractor shall report all relevant HSE incidents and hazardous conditions to Zambezi River Authority immediately.
 - g. The Contractor shall not perform work for which the issuing of a permit is required before obtaining of a duly completed and approved permit.
 - h. Zambezi River Authority has the right to test the Contractor and his employees for alcohol/drugs.
 - i. The Contractor will establish and maintain equipped first aid medical facilities for the duration of the Works. This facility will cater to all the employees of the Contractor and its sub-Contractors.
 - j. The Contractor will, before commencing work, compile and implement an emergency procedure in their area(s) of responsibility. Zambezi River Authority must agree on the required procedure before work commences.
 - k. The Contractor will participate in joint H&S Audits and on-the-job observations.
 - l. Zambezi River Authority will prescribe Safety meetings and H&S measurements for the Contractor to comply with.

7.3. Health and Safety Standards

The Contractor working on the project is contractually obligated to comply with all applicable items of Zambezi River Authority Safety and Health policy, Safety Standards and all its amendments as following:

The main Site Safety Requirements consistent with these standards are the following:

7.3.1. Excavations:

No excavation shall be dug without first obtaining a written breaking ground certificate. Any excavations in which people may work and who may be at risk of injury in the event of an accidental collapse shall be properly supported. All

excavations shall be suitably marked and protected at all times to prevent persons tripping, slipping or falling into them. At night, lighting shall be provided.

7.3.2. Mobile Equipment:

Before commencing maintenance work on mobile Equipment, it shall be properly supported, isolated, and immobilized so it cannot be moved until work is completed. All drivers of mobile plant shall be competent and shall have a current certificate of competence issued by a recognized organization.

7.3.3. Personal Protective Equipment:

Safety helmets, safety footwear (with steel toe), and High visibility clothing shall be worn on site. Contractors shall provide their employees with the following protective equipment unless it has been established that it is not required because of the type or location of the work to be undertaken. Exceptionally, the Authority may provide this equipment for which a charge may be made for the PPE and for administration.

a. Gloves:

It shall be worn to protect hands from chemicals, hot materials, sharp or abrasive materials.

b. Hearing and Respiratory Protection

Hearing and Respiratory Protection shall be worn whenever conducting tasks that present such risk.

c. Eye Protection

vi. Whenever risk to the eyes, eye protection will be worn.

7.3.4. Vehicles

To be parked in appropriate parking areas. All traffic signs and speed limits shall be observed. Persons driving mobile plant shall be competent and possess certificates of competence by a third party, which shall be available for inspection. The seat belt must be fastened all the time in all seats in all kinds of vehicles (front and rear). Drivers should not be talking on the phone or texting while driving.

7.4. Contractors' Safety Plans/Method of Statement and Management System:

Contractor must complete and submit safety documentation, including but not limited to the following:

7.4.1. Documentation

Site-Specific Health & Safety Plan/Method Statement, task specific risk assessment forms, physical inspection and audit forms, weekly toolbox talks, Health & Safety statistical reports as prescribed by the Authority, competent person training records, all applicable safe work permits, and accident/incident reports.

Contractor is required to participate in a mandatory Pre-Planning Safety Review with Zambezi River Authority Team to review the Contractor's Projects Work Plan etc-Specific Health & Safety Plan.

Contractor to provide The Authority, prior to commencement of any new work the following complete documentation:

- Staff Competency Proof (Certifications, Training History, Driving License (For drivers and Plant Operators) ...etc.
- Statement of how the Contractor will ensure compliance of its Subcontractors.
- Statement of how Contractor will ensure compliance with applicable regulatory reporting, recordkeeping, and inspections.
- Outline of Contractor's induction training specific to the Project
- Project-Specific Health & Safety Plan

7.5. Induction

Contractor is required to attend Zambezi River Authority site safety orientation – such attendance is mandatory for Contractor, all its personnel including visitors and Subcontractors, to familiarize them with the Owner's Health & Safety policies, procedures, and requirements.

7.6. SHE Inspections and Audits

Contractor shall implement Health & Safety inspection and audit processes to ensure that its employees and Subcontractors continuously apply safe work practices.

PART 3 – Conditions of Contract and Contract Forms

Section VII. General Conditions of Contract

These General Conditions of Contract (GCC), read in conjunction with the Particular Conditions of Contract (PCC) and other documents listed therein, should be a complete document expressing fairly the rights and obligations of both parties.

These General Conditions of Contract have been developed on the basis of considerable international experience in the drafting and management of contracts, bearing in mind a trend in the construction industry towards simpler, more straightforward language.

The GCC can be used for both smaller admeasurement contracts and lump sum contracts.

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General Conditions of Contract

A. General

1. Definitions

1.1 Boldface type is used to identify defined terms.

- (a) The Accepted Contract Amount means the amount accepted in the Letter of Acceptance for the execution and completion of the Works and the remedying of any defects.
- (b) The Activity Schedule is a schedule of the activities comprising the construction, installation, testing, and commissioning of the Works in a lump sum contract. It includes a lump sum price for each activity, which is used for valuations and for assessing the effects of Variations and Compensation Events.
- (c) The Adjudicator is the person appointed jointly by the Employer and the Contractor to resolve disputes in the first instance, as provided for in GCC 23.
- (d) Bill of Quantities means the priced and completed Bill of Quantities forming part of the Bid.
- (e) Compensation Events are those defined in GCC Clause 41 hereunder.
- (f) The Completion Date is the date of completion of the Works as certified by the Project Manager, in accordance with GCC Sub-Clause 52.1.
- (g) The Contract is the Contract between the Employer and the Contractor to execute, complete, and maintain the Works. It consists of the documents listed in GCC Sub-Clause 2.3 below.
- (h) The Contractor is the party whose Bid to carry out the Works has been accepted by the Employer.
- (i) The Contractor's Bid is the completed bidding document submitted by the Contractor to the Employer.
- (j) The Contract Price is the Accepted Contract Amount stated in the Letter of Acceptance and thereafter as adjusted in accordance with the Contract.
- (k) Days are calendar days; months are calendar months.
- (l) Dayworks are varied work inputs subject to payment on a time basis for the Contractor's employees and Equipment, in addition to payments for associated Materials and Plant.

-
- (m) A Defect is any part of the Works not completed in accordance with the Contract.
 - (n) The Defects Liability Certificate is the certificate issued by Project Manager upon correction of defects by the Contractor.
 - (o) The Defects Liability Period is the period **named in the PCC** pursuant to Sub-Clause 33.1 and calculated from the Completion Date.
 - (p) Adjudicator means the single person appointed under Clause 23.
 - (q) Drawings means the drawings of the Works, as included in the Contract, and any additional and modified drawings issued by (or on behalf of) the Employer in accordance with the Contract, include calculations and other information provided or approved by the Project Manager for the execution of the Contract.
 - (r) The Employer is the party who employs the Contractor to carry out the Works, **as specified in the PCC**.
 - (s) Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.
 - (t) "In writing" or "written" means hand-written, type-written, printed or electronically made, and resulting in a permanent record;
 - (u) The Initial Contract Price is the Contract Price listed in the Employer's Letter of Acceptance.
 - (v) The Intended Completion Date is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is **specified in the PCC**. The Intended Completion Date may be revised only by the Project Manager by issuing an extension of time or an acceleration order.
 - (w) Materials are all supplies, including consumables, used by the Contractor for incorporation in the Works.
 - (x) Plant is any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.
 - (y) The Project Manager is the person **named in the PCC** (or any other competent person appointed by the Employer and notified to the Contractor, to act in replacement of the Project Manager) who is responsible for supervising the execution of the Works and administering the Contract.
 - (z) PCC means Particular Conditions of Contract

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- (aa) The Site is the area **defined as such in the PCC**.
 - (bb) Site Investigation Reports are those that were included in the bidding documents and are factual and interpretative reports about the surface and subsurface conditions at the Site.
 - (cc) Specification means the Specification of the Works included in the Contract and any modification or addition made or approved by the Project Manager.
 - (dd) The Start Date is **given in the PCC**. It is the latest date when the Contractor shall commence execution of the Works. It does not necessarily coincide with any of the Site Possession Dates.
 - (ee) A Subcontractor is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract, which includes work on the Site.
 - (ff) Temporary Works are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Works.
 - (gg) A Variation is an instruction given by the Project Manager which varies the Works.
 - (hh) The Works are what the Contract requires the Contractor to construct, install, and turn over to the Employer, **as defined in the PCC**.

2. Interpretation

- 2.1 In interpreting these GCC, words indicating one gender include all genders. Words indicating the singular also include the plural and words indicating the plural also include the singular. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Project Manager shall provide instructions clarifying queries about these GCC.
- 2.2 If sectional completion is **specified in the PCC**, references in the GCC to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).
- 2.3 The documents forming the Contract shall be interpreted in the following order of priority:
 - (a) This Contract Agreement
 - (b) Letter of Acceptance
 - (c) The Contractors' Quotation

		(d)	The Particular Conditions of Contract
		(e)	The General Conditions of Contract
		(f)	Specification / Scope of Works
		(g)	Drawings (n/a)
		(h)	Bill of Materials/Price Schedule
		(i)	any other document listed in the PCC as forming part of the Contract.
3. Language and Law	3.1		The language of the Contract and the law governing the Contract are stated in the PCC .
4. Project Manager's Decisions	4.1		Except where otherwise specifically stated, the Project Manager shall decide contractual matters between the Employer and the Contractor in the role representing the Employer.
5. Delegation	5.1		Otherwise specified in the PCC, the Project Manager may delegate any of his duties and responsibilities to other people, except to the Adjudicator, after notifying the Contractor, and may revoke any delegation after notifying the Contractor.
6. Communications	6.1		Communications between parties that are referred to in the Conditions shall be effective only when in writing. A notice shall be effective only when it is delivered.
7. Subcontracting	7.1		The Contractor may subcontract with the approval of the Project Manager, but may not assign the Contract without the approval of the Employer in writing. Subcontracting shall not alter the Contractor's obligations.
8. Other Contractors	8.1		The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Employer between the dates given in the Schedule of Other Contractors, as referred to in the PCC . The Contractor shall also provide facilities and services for them as described in the Schedule. The Employer may modify the Schedule of Other Contractors, and shall notify the Contractor of any such modification.

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- 9. Personnel and Equipment**
- 9.1 The Contractor shall employ the key personnel and use the equipment identified in its Bid, to carry out the Works or other personnel and equipment approved by the Project Manager. The Project Manager shall approve any proposed replacement of key personnel and equipment only if their relevant qualifications or characteristics are substantially equal to or better than those proposed in the Bid.
- 9.2 If the Project Manager asks the Contractor to remove a person who is a member of the Contractor's staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.
- 10. Employer's and Contractor's Risks**
- 10.1 The Employer carries the risks which this Contract states are Employer's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.
- 11. Employer's Risks**
- 11.1 From the Start Date until the Defects Liability Certificate has been issued, the following are Employer's risks:
- (a) The risk of personal injury, death, or loss of or damage to property (excluding the Works, Plant, Materials, and Equipment), which are due to
 - (i) use or occupation of the Site by the Works or for the purpose of the Works, which is the unavoidable result of the Works or
 - (ii) negligence, breach of statutory duty, or interference with any legal right by the Employer or by any person employed by or contracted to him except the Contractor.
 - (b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Employer or in the Employer's design, or due to war or radioactive contamination directly affecting the country where the Works are to be executed.
- 11.2 From the Completion Date until the Defects Liability Certificate has been issued, the risk of loss of or damage to the Works, Plant, and Materials is an Employer's risk except loss or damage due to
- (a) a Defect which existed on the Completion Date,
 - (b) an event occurring before the Completion Date, which was not itself an Employer's risk, or

	(c) the activities of the Contractor on the Site after the Completion Date.
12. Contractor's Risks	12.1 From the Starting Date until the Defects Liability Certificate has been issued, the risks of personal injury, death, and loss of or damage to property (including, without limitation, the Works, Plant, Materials, and Equipment) which are not Employer's risks are Contractor's risks.
13. Insurance	<p>13.1 The Contractor shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts and deductibles stated in the PCC for the following events which are due to the Contractor's risks:</p> <ul style="list-style-type: none"> (a) loss of or damage to the Works, Plant, and Materials; (b) loss of or damage to Equipment; (c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract; and (d) personal injury or death. <p>13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Project Manager for the Project Manager's approval before the Start Date. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.</p> <p>13.3 If the Contractor does not provide any of the policies and certificates required, the Employer may effect the insurance which the Contractor should have provided and recover the premiums the Employer has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.</p> <p>13.4 Alterations to the terms of an insurance shall not be made without the approval of the Project Manager.</p> <p>13.5 Both parties shall comply with any conditions of the insurance policies.</p>
14. Site Data	14.1 The Contractor shall be deemed to have examined any Site Data referred to in the PCC , supplemented by any information available to the Contractor.
15. Contractor to Construct the Works	15.1 The Contractor shall construct and install the Works in accordance with the Specifications and Drawings.
16. The Works to	16.1 The Contractor may commence execution of the Works on the

Be Completed by the Intended Completion Date	Start Date and shall carry out the Works in accordance with the Program submitted by the Contractor, as updated with the approval of the Project Manager, and complete them by the Intended Completion Date.
17. Approval by the Project Manager	<p>17.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Project Manager, for his approval.</p> <p>17.2 The Contractor shall be responsible for design of Temporary Works.</p> <p>17.3 The Project Manager's approval shall not alter the Contractor's responsibility for design of the Temporary Works.</p> <p>17.4 The Contractor shall obtain approval of third parties to the design of the Temporary Works, where required.</p> <p>17.5 All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Project Manager before this use.</p>
18. Safety	18.1 The Contractor shall be responsible for the safety of all activities on the Site.
19. Discoveries	19.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site shall be the property of the Employer. The Contractor shall notify the Project Manager of such discoveries and carry out the Project Manager's instructions for dealing with them.
20. Possession of the Site	20.1 The Employer shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the PCC , the Employer shall be deemed to have delayed the start of the relevant activities, and this shall be a Compensation Event.
21. Access to the Site	21.1 The Contractor shall allow the Project Manager and any person authorized by the Project Manager access to the Site and to any place where work in connection with the Contract is being carried out or is intended to be carried out.

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- 22. Instructions, Inspections and Audits**
- 22.1 The Contractor shall carry out all instructions of the Project Manager which comply with the applicable laws where the Site is located.
- 22.2 The Contractor shall permit, and shall cause its Subcontractors and subconsultants to permit, the Authority and/or persons appointed by the Authority to inspect the Site and/or the accounts and records of the Contractor and its sub-contractors relating to the performance of the Contract and the submission of the bid, and to have such accounts and records audited by auditors appointed by the Authority if requested by the Authority. The Contractor's and its Subcontractors' and subconsultants' attention is drawn to Sub-Clause 57.1 which provides, inter alia, that acts intended to materially impede the exercise of the Authority's inspection and audit rights provided for under Sub-Clause 22.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to THE AUTHORITY's prevailing sanctions procedures).
- 23. Appointment of the Adjudicator**
- 23.1 The Adjudicator shall be appointed jointly by the Employer and the Contractor, at the time of the Employer's issuance of the Letter of Acceptance. If, in the Letter of Acceptance, the Employer does not agree on the appointment of the Adjudicator, the Employer will request the Appointing Authority **designated in the PCC**, to appoint the Adjudicator within 14 days of receipt of such request.
- 23.2 Should the Adjudicator resign or die, or should the Employer and the Contractor agree that the Adjudicator is not functioning in accordance with the provisions of the Contract, a new Adjudicator shall be jointly appointed by the Employer and the Contractor. In case of disagreement between the Employer and the Contractor, within 30 days, the Adjudicator shall be designated by the Appointing Authority **designated in the PCC** at the request of either party, within 14 days of receipt of such request.
- 24. Procedure for Disputes**
- 24.1 If the Contractor believes that a decision taken by the Project Manager was either outside the authority given to the Project Manager by the Contract or that the decision was wrongly taken, the decision shall be referred to the Adjudicator within 14 days of the notification of the Project Manager's decision.
- 24.2 The Adjudicator shall give a decision in writing within 28 days of receipt of a notification of a dispute.
- 24.3 The Adjudicator shall be paid by the hour at the **rate specified in the PCC**, together with reimbursable expenses of the types **specified in the PCC**, and the cost shall be divided equally between the Employer and the Contractor, whatever decision is reached by the Adjudicator. Either party may refer a decision of the Adjudicator to an Arbitrator within 28 days of the

Adjudicator's written decision. If neither party refers the dispute to arbitration within the above 28 days, the Adjudicator's decision shall be final and binding.

- 24.4 The arbitration shall be conducted in accordance with the arbitration procedures published by the institution named and in the place specified **in the PCC**.

B. Time Control

25. Program

- 25.1 Within the time **stated in the PCC**, after the date of the Letter of Acceptance, the Contractor shall submit to the Project Manager for approval a Program showing the general methods, arrangements, order, and timing for all the activities in the Works. In the case of a lump sum contract, the activities in the Program shall be consistent with those in the Activity Schedule.
- 25.2 An update of the Program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work, including any changes to the sequence of the activities.
- 25.3 The Contractor shall submit to the Project Manager for approval an updated Program at intervals no longer than the period **stated in the PCC**. If the Contractor does not submit an updated Program within this period, the Project Manager may withhold the amount **stated in the PCC** from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program has been submitted. In the case of a lump sum contract, the Contractor shall provide an updated Activity Schedule within 14 days of being instructed to by the Project Manager.
- 25.4 The Project Manager's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Project Manager again at any time. A revised Program shall show the effect of Variations and Compensation Events.

26. Extension of the Intended Completion Date

- 26.1 The Project Manager shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work, which would cause the Contractor to incur additional cost.
- 26.2 The Project Manager shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Project Manager for a decision upon the effect of a Compensation Event or Variation and submitting full

supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

- 27. Acceleration**
- 27.1 When the Employer wants the Contractor to finish before the Intended Completion Date, the Project Manager shall obtain priced proposals for achieving the necessary acceleration from the Contractor. If the Employer accepts these proposals, the Intended Completion Date shall be adjusted accordingly and confirmed by both the Employer and the Contractor.
- 27.2 If the Contractor's priced proposals for an acceleration are accepted by the Employer, they are incorporated in the Contract Price and treated as a Variation.
- 28. Delays Ordered by the Project Manager**
- 28.1 The Project Manager may instruct the Contractor to delay the start or progress of any activity within the Works.
- 29. Management Meetings**
- 29.1 Either the Project Manager or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.
- 29.2 The Project Manager shall record the business of management meetings and provide copies of the record to those attending the meeting and to the Employer. The responsibility of the parties for actions to be taken shall be decided by the Project Manager either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.
- 30. Early Warning**
- 30.1 The Contractor shall warn the Project Manager at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price, or delay the execution of the Works. The Project Manager may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible.
- 30.2 The Contractor shall cooperate with the Project Manager in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Project Manager.

C. Quality Control

- 31. Identifying**
- 31.1 The Project Manager shall check the Contractor's work and

Defects	notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Project Manager may instruct the Contractor to search for a Defect and to uncover and test any work that the Project Manager considers may have a Defect.
32. Tests	32.1 If the Project Manager instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no Defect, the test shall be a Compensation Event.
33. Correction of Defects	<p>33.1 The Project Manager shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion, and is defined in the PCC. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.</p> <p>33.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Project Manager's notice.</p>
34. Uncorrected Defects	34.1 If the Contractor has not corrected a Defect within the time specified in the Project Manager's notice, the Project Manager shall assess the cost of having the Defect corrected, and the Contractor shall pay this amount.

D. Cost Control and Payments

35. Contract Price	<p>35.1 In the case of an admeasurement contract, the Bill of Quantities shall contain priced items for the Works to be performed by the Contractor. The Bill of Quantities is used to calculate the Contract Price. The Contractor will be paid for the quantity of the work accomplished at the rate in the Bill of Quantities for each item.</p> <p>35.2 In the case of a lump sum contract, the Activity Schedule shall contain the priced activities for the Works to be performed by the Contractor. The Activity Schedule is used to monitor and control the performance of activities on which basis the Contractor will be paid. If payment for Materials on Site shall be made separately, the Contractor shall show delivery of Materials to the Site separately on the Activity Schedule.</p>
36. Changes in the Contract Price	<p>36.1 In the case of an admeasurement contract:</p> <p>(a) If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent, provided the change exceeds 1 percent of the Initial Contract Price, the Project Manager</p>

shall adjust the rate to allow for the change.

- (b) The Project Manager shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 15 percent, except with the prior approval of the Employer.
- (c) If requested by the Project Manager, the Contractor shall provide the Project Manager with a detailed cost breakdown of any rate in the Bill of Quantities.

36.2 In the case of a lump sum contract, the Activity Schedule shall be amended by the Contractor to accommodate changes of Program or method of working made at the Contractor's own discretion. Prices in the Activity Schedule shall not be altered when the Contractor makes such changes to the Activity Schedule.

37. Variations

37.1 All Variations shall be included in updated Programs, and, in the case of a lump sum contract, also in the Activity Schedule, produced by the Contractor.

37.2 The Contractor shall provide the Project Manager with a quotation for carrying out the Variation when requested to do so by the Project Manager. The Project Manager shall assess the quotation, which shall be given within seven (7) days of the request or within any longer period stated by the Project Manager and before the Variation is ordered.

37.3 If the Contractor's quotation is unreasonable, the Project Manager may order the Variation and make a change to the Contract Price, which shall be based on the Project Manager's own forecast of the effects of the Variation on the Contractor's costs.

37.4 If the Project Manager decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event.

37.5 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning.

37.6 In the case of an admeasurement contract, if the work in the Variation corresponds to an item description in the Bill of Quantities and if, in the opinion of the Project Manager, the quantity of work above the limit stated in Sub-Clause 38.1 or the timing of its execution do not cause the cost per unit of quantity to change, the rate in the Bill of Quantities shall be used to calculate the value of the Variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the Variation does not correspond with items in the Bill of Quantities, the quotation by the Contractor shall be in the form of new rates

	for the relevant items of work.
38. Cash Flow Forecasts	38.1 When the Program, or, in the case of a lump sum contract, the Activity Schedule, is updated, the Contractor shall provide the Project Manager with an updated cash flow forecast. The cash flow forecast shall include different currencies, as defined in the Contract, converted as necessary using the Contract exchange rates.
39. Payment Certificates	<p>39.1 The Contractor shall submit to the Project Manager monthly statements of the estimated value of the work executed less the cumulative amount certified previously.</p> <p>39.2 The Project Manager shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor.</p> <p>39.3 The value of work executed shall be determined by the Project Manager.</p> <p>39.4 The value of work executed shall comprise:</p> <ul style="list-style-type: none"> (a) In the case of an admeasurement contract, the value of the quantities of work in the Bill of Quantities that have been completed; or (b) In the case of a lump sum contract, the value of work executed shall comprise the value of completed activities in the Activity Schedule. <p>39.5 The value of work executed shall include the valuation of Variations and Compensation Events.</p> <p>39.6 The Project Manager may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.</p>
40. Payments	<p>40.1 Payments shall be adjusted for deductions for advance payments and retention. The Employer shall pay the Contractor the amounts certified by the Project Manager within 28 days of the date of each certificate. If the Employer makes a late payment, the Contractor shall be paid interest on the late payment in the next payment. Interest shall be calculated from the date by which the payment should have been made up to the date when the late payment is made at the prevailing rate of interest for commercial borrowing for each of the currencies in which payments are made.</p> <p>40.2 If an amount certified is increased in a later certificate or as a result of an award by the Adjudicator or an Arbitrator, the</p>

Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.

40.3 Unless otherwise stated, all payments and deductions shall be paid or charged in the proportions of currencies comprising the Contract Price.

40.4 Items of the Works for which no rate or price has been entered in shall not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

41. Compensation Events

41.1 The following shall be Compensation Events:

- (a) The Employer does not give access to a part of the Site by the Site Possession Date pursuant to GCC Sub-Clause 20.1.
- (b) The Employer modifies the Schedule of Other Contractors in a way that affects the work of the Contractor under the Contract.
- (c) The Project Manager orders a delay or does not issue Drawings, Specifications, or instructions required for execution of the Works on time.
- (d) The Project Manager instructs the Contractor to uncover or to carry out additional tests upon work, which is then found to have no Defects.
- (e) The Project Manager unreasonably does not approve a subcontract to be let.
- (f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of the Letter of Acceptance from the information issued to bidders (including the Site Investigation Reports), from information available publicly and from a visual inspection of the Site.
- (g) The Project Manager gives an instruction for dealing with an unforeseen condition, caused by the Employer, or additional work required for safety or other reasons.
- (h) Other contractors, public authorities, utilities, or the Employer does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.
- (i) The advance payment is delayed.
- (j) The effects on the Contractor of any of the Employer's

Risks.

- (k) The Project Manager unreasonably delays issuing a Certificate of Completion.

41.2 If a Compensation Event would cause additional cost or would prevent the work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date shall be extended. The Project Manager shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.

41.3 As soon as information demonstrating the effect of each Compensation Event upon the Contractor's forecast cost has been provided by the Contractor, it shall be assessed by the Project Manager, and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, the Project Manager shall adjust the Contract Price based on the Project Manager's own forecast. The Project Manager shall assume that the Contractor shall react competently and promptly to the event.

41.4 The Contractor shall not be entitled to compensation to the extent that the Employer's interests are adversely affected by the Contractor's not having given early warning or not having cooperated with the Project Manager.

42. Tax

42.1 The Project Manager shall adjust the Contract Price if taxes, duties, and other levies are changed between the date 28 days before the submission of bids for the Contract and the date of the last Completion certificate. The adjustment shall be the change in the amount of tax payable by the Contractor, provided such changes are not already reflected in the Contract Price or are a result of GCC Clause 44.

43. Currencies

43.1 Where payments are made in currencies other than the currency of the Employer's country **specified in the PCC**, the exchange rates used for calculating the amounts to be paid shall be the exchange rates stated in the Contractor's Bid.

**44. Price
Adjustment**

44.1 Prices shall be adjusted for fluctuations in the cost of inputs only if **provided for in the PCC**. If so provided, the amounts certified in each payment certificate, before deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment amounts due in each currency. A separate formula of the type indicated below applies to each Contract currency:

$$P_c = A_c + B_c \text{ Imc/loc}$$

where:

P_c is the adjustment factor for the portion of the Contract Price payable in a specific currency "c."

A_c and B_c are coefficients⁶ **specified in the PCC**, representing the nonadjustable and adjustable portions, respectively, of the Contract Price payable in that specific currency "c;" and

Imc is the index prevailing at the end of the month being invoiced and loc is the index prevailing 28 days before Bid opening for inputs payable; both in the specific currency "c."

- 44.2 If the value of the index is changed after it has been used in a calculation, the calculation shall be corrected and an adjustment made in the next payment certificate. The index value shall be deemed to take account of all changes in cost due to fluctuations in costs.

45. Retention

- 45.1 The Employer shall retain from each payment due to the Contractor the proportion **stated in the PCC** until Completion of the whole of the Works.
- 45.2 Upon the issue of a Certificate of Completion of the Works by the Project Manager, in accordance with GCC 51.1, half the total amount retained shall be repaid to the Contractor and half when the Defects Liability Period has passed and the Project Manager has certified that all Defects notified by the Project Manager to the Contractor before the end of this period have been corrected. The Contractor may substitute retention money with an "on demand" Bank guarantee.

46. Liquidated Damages

- 46.1 The Contractor shall pay liquidated damages to the Employer at the rate per day **stated in the PCC** for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount **defined in the PCC**. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor's liabilities.
- 46.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Project Manager shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in GCC

Sub-Clause 40.1.

47. Bonus

47.1 The Contractor shall be paid a Bonus calculated at the rate per calendar day **stated in the PCC** for each day (less any days for which the Contractor is paid for acceleration) that the Completion is earlier than the Intended Completion Date. The Project Manager shall certify that the Works are complete, although they may not be due to be complete.

48. Advance Payment

48.1 The Employer shall make advance payment to the Contractor of the amounts **stated in the PCC** by the date **stated in the PCC**, against provision by the Contractor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the Employer in amounts and currencies equal to the advance payment. The Guarantee shall remain effective until the advance payment has been repaid, but the amount of the Guarantee shall be progressively reduced by the amounts repaid by the Contractor. Interest shall not be charged on the advance payment.

48.2 The Contractor is to use the advance payment only to pay for Equipment, Plant, Materials, and mobilization expenses required specifically for execution of the Contract. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Project Manager.

48.3 The advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance payment or its repayment in assessing valuations of work done, Variations, price adjustments, Compensation Events, Bonuses, or Liquidated Damages.

49. Securities

49.1 The Performance Security shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount **specified in the PCC**, by a bank or surety acceptable to the Employer, and denominated in the types and proportions of the currencies in which the Contract Price is payable. The Performance Security shall be valid until a date 28 days from the date of issue of the Certificate of Completion in the case of a Bank Guarantee, and until one year from the date of issue of the Completion Certificate in the case of a Performance Bond.

50. Dayworks

50.1 If applicable, the Dayworks rates in the Contractor's Bid shall be used only when the Project Manager has given written instructions in advance for additional work to be paid for in that way.

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- 50.2 All work to be paid for as Dayworks shall be recorded by the Contractor on forms approved by the Project Manager. Each completed form shall be verified and signed by the Project Manager within two days of the work being done.
- 50.3 The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks forms.
- 51. Cost of Repairs**
- 51.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

E. Finishing the Contract

- 52. Completion**
- 52.1 The Contractor shall request the Project Manager to issue a Certificate of Completion of the Works, and the Project Manager shall do so upon deciding that the whole of the Works is completed.
- 53. Taking Over**
- 53.1 The Employer shall take over the Site and the Works within seven days of the Project Manager's issuing a certificate of Completion.
- 54. Final Account**
- 54.1 The Contractor shall supply the Project Manager with a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Project Manager shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within 56 days of receiving the Contractor's account if it is correct and complete. If it is not, the Project Manager shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a payment certificate.
- 55. Operating and Maintenance Manuals**
- 55.1 If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates **stated in the PCC**.
- 55.2 If the Contractor does not supply the Drawings and/or manuals by the dates **stated in the PCC** pursuant to GCC Sub-Clause 55.1, or they do not receive the Project Manager's approval, the Project Manager shall withhold the amount **stated in the PCC** from payments due to the Contractor.
- 56. Termination**
- 56.1 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.
- 56.2 Fundamental breaches of Contract shall include, but shall not be

limited to, the following:

- (a) the Contractor stops work for 28 days when no stoppage of work is shown on the current Program and the stoppage has not been authorized by the Project Manager;
- (b) the Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 28 days;
- (c) the Employer or the Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation;
- (d) a payment certified by the Project Manager is not paid by the Employer to the Contractor within 84 days of the date of the Project Manager's certificate;
- (e) the Project Manager gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Project Manager;
- (f) the Contractor does not maintain a Security, which is required;
- (g) the Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as **defined in the PCC**; or
- (h) if the Contractor, in the judgment of the Employer, has engaged in corrupt or fraudulent practices in competing for or in executing the Contract, pursuant to GCC Clause 57.1.

56.3 When either party to the Contract gives notice of a breach of Contract to the Project Manager for a cause other than those listed under GCC Sub-Clause 56.2 above, the Project Manager shall decide whether the breach is fundamental or not.

56.4 Notwithstanding the above, the Employer may terminate the Contract for convenience.

56.5 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible.

57. Fraud and Corruption

57.1 If the Employer determines that the Contractor and/or any of its personnel, or its agents, or its Subcontractors, subconsultants, services providers, suppliers and/or their employees has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Employer may, after giving 14 days' notice to the Contractor,

terminate the Contractor's employment under the Contract and expel him from the Site, and the provisions of Clause 56 shall apply as if such expulsion had been made under Sub-Clause 56.5 [Termination by Employer].

57.2 Should any employee of the Contractor be determined to have engaged in corrupt, fraudulent, collusive, coercive, or obstructive practice during the execution of the Works, then that employee shall be removed in accordance with Clause 9.

57.3 For the purposes of this Sub-Clause:

- (i) "corrupt practice" is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party⁷;
- (ii) "fraudulent practice" is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation⁸;
- (iii) "collusive practice" is an arrangement between two or more parties⁹ designed to achieve an improper purpose, including to influence improperly the actions of another party;
- (iv) "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party¹⁰;
- (v) "obstructive practice" is
 - (aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede the Authority investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
 - (bb) acts intended to materially impede the exercise of the Authority's inspection and audit rights provided for under Sub-Clause 22.2.

58. Payment upon Termination

58.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Project Manager shall issue a certificate for the value of the work done and Materials ordered

less advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed, as **indicated in the PCC**. Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable to the Employer.

58.2 If the Contract is terminated for the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Project Manager shall issue a certificate for the value of the work done, Materials ordered, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works, and less advance payments received up to the date of the certificate.

59. Property

59.1 All Materials on the Site, Plant, Equipment, Temporary Works, and Works shall be deemed to be the property of the Employer if the Contract is terminated because of the Contractor's default.

60. Release from Performance

60.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Employer or the Contractor, the Project Manager shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which a commitment was made.

61. Suspension of Contractor

61.1 In the event that THE AUTHORITY suspends the Contractor pursuant to the Public Procurement Act of 2008:

- (a) The Employer is obligated to notify the Contractor of such suspension within 7 days of having received THE AUTHORITY's suspension notice.
- (b) If the Contractor has not received sums due it within the 28 days for payment provided for in Sub-Clause 40.1, the Contractor may immediately issue a 14-day termination notice.

Section VIII. Particular Conditions of Contract

A. General	
GCC 1.1 (r)	The Employer is: Zambezi River Authority

GCC 1.1 (v)	The Intended Completion Date:
GCC 1.1 (y)	The Project Manager is: xxxxxxxxxxxx
GCC 1.1 (aa)	The Site is located at: Devils' Gorge Hydroelectric Scheme Sites
GCC 1.1 (dd)	The Start Date shall be: fourteen (14) Days from the date of receipt of advance payment
GCC 1.1 (hh)	The Works consist of: see Bill of Quantities.
GCC 2.2	Sectional Completions are: N/A
GCC 2.3(i)	<p>The following documents also form part of the Contract:</p> <ul style="list-style-type: none"> (a) The Agreement (b) Letter of Acceptance (c) The Contractors' Quotation (d) The Particular Conditions of Contract (e) The General Conditions of Contract (f) Specification / Scope of Works (g) Drawings (h) Bill of Materials/Price Schedule
GCC 3.1	<p>The language of the contract is: English.</p> <p>The law that applies to the Contract is the law of Zambia.</p>
GCC 5.1	The Project Manager may delegate any of his duties and responsibilities.
GCC 8.1	Schedule of other contractors: N/A
GCC 13.1	The minimum insurance amounts and deductibles shall be: As per the applicable insurance laws.
GCC 14.1	Site Data are: To be advised at Contract signing
GCC 14.2	The Contract is an admeasurement contract.
GCC 20.1	The Site Possession Date: To be determined at the time of contract signing.
GCC 23.1 & GCC 23.2	Appointing Authority for the Adjudicator: <i>tba</i>
GCC 24.3	Hourly rate and types of reimbursable expenses to be paid to the Adjudicator: <i>tba</i>
GCC 24.4	Institution whose arbitration procedures shall be used: <i>tba</i>

B. Time Control	
GCC 25.1	The Contractor shall submit for approval a Program within <i>14</i> days from the date of the Letter of Acceptance.
GCC 25.3	The period between Program updates is xxxxx days. The amount to be withheld for late submission of an updated Program is: xxxx
C. Quality Control	
GCC 33.1	The Defects Liability Period is: xxxxx
D. Cost Control & Payments	
GCC 39.4	The contract an admeasurement contract. Payment will be in accordance with the value of work executed and completed in accordance with the activities in Bill of Quantities.
GCC 43.1	The currency of the Employer's country is: USD.
GCC 44.1	The Contract is NOT subject to price adjustment in accordance with GCC Clause 44, and the following information regarding coefficients <i>does not</i> apply.
GCC 45.1	The proportion of payments retained is xxxxx .
GCC 46.1	The liquidated damages for the whole of the Works are: 0.05% per day. The maximum number of liquidated damages for the whole of the Works is <i>10 percentage</i> of the final Contract Price.
GCC 47.1	The Bonus for the whole of the Works is: N/A
GCC 48.1	The Advance Payments shall be: 20% of the contract amount to be paid to the Contractor no later than thirty (30) days after receipt of advance payment guarantee.
GCC 49.1	The Performance Security amount is: (b) Performance Bond/security: 20% of the Contract amount
E. Finishing the Contract	
GCC 55.1	The date by which operating, and maintenance manuals are required is: tba
GCC 56.2 (g)	The maximum number of days is: 60 days.

GCC 58.1	The percentage to apply to the value of the work not completed, representing the Employer's additional cost for completing the Works, is 15%
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Section IX - Contract Forms

This Section contains forms which, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.

Table of Forms

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Contract Agreement 3-123

Performance Security 3-125

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Letter of Acceptance

[on letterhead paper of the Employer]

..... *[date]*

To: *[name and address of the Contractor]*

Subject: *[Notification of Award Contract No]*

This is to notify you that your Bid dated *[insert date]* for execution of the . . .
 *[insert name of the contract and identification number, as given in the*
Appendix to Bid] for the Accepted Contract Amount of the equivalent of . .
 *[insert amount in numbers and words and name of currency]*, 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 the of the Performance Security
 Form included in Section IX (Contract Forms) of the Bidding Document.

[Choose one of the following statements:]

We accept that _____ *[insert the name of Adjudicator*
proposed by the Bidder] be appointed as the Adjudicator.

[or]

We do not accept that _____ *[insert the name of the*
Adjudicator proposed by the Bidder] be appointed as the Adjudicator, and by
 sending a copy of this Letter of Acceptance to
 _____ *[insert name of the Appointing*
Authority], the Appointing Authority, we are hereby requesting such Authority to
 appoint the Adjudicator in accordance with ITB 42.1 and GCC 23.1.

Authorized Signature:

Name and Title of Signatory:

Name of Agency:

Attachment: Contract Agreement

Contract Agreement

THIS AGREEMENT made the day of, between
. **[name of the Employer]**. (hereinafter “the Employer”), of the one part, and . .
. . . **[name of the Contractor]**.(hereinafter “the Contractor”), of the other part:

WHEREAS the Employer desires that the Works known as **[name of the Contract]**.should be executed by the Contractor, and has accepted a Bid by the Contractor for the execution and completion of these Works and the remedying of any defects therein,

The Employer and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.
 - (i) This contract agreement
 - (j) the Letter of Acceptance
 - (k) minutes of contract negotiations
 - (l) the Bid
 - (m) the Addenda Nos **[insert addenda numbers if any]**.
 - (n) the Particular Conditions
 - (o) the General Conditions;
 - (p) the Specification
 - (q) the Drawings; and
 - (r) the completed Schedules,
3. In consideration of the payments to be made by the Employer to the Contractor as indicated in this Agreement, the Contractor hereby covenants with the Employer to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of **[name of country]**. . . .on the day, month and year indicated above.

Signed by: _____
for and on behalf of the Employer

Signed by: _____
for and on behalf the Contractor

in the
presence of: _____
Witness, Name, Signature, Address,
Date

in the
presence of: _____
Witness, Name, Signature, Address, Date

Performance Security

[Bank's Name, and Address of Issuing Branch or Office]

Beneficiary: ***[Name and Address of Employer]***

Date:

Performance Guarantee No.:

We have been informed that ***[name of the Contractor]***. (hereinafter called "the Contractor") has entered into Contract No. ***[reference number of the Contract]***. dated with you, for the execution of ***[name of contract and brief description of Works]***. (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Contractor, we ***[name of the Bank]***. hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ***[name of the currency and amount in figures]*** ¹. (***[amount in words]***.) such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the Day of , ², and any demand for payment under it must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458, except that subparagraph (ii) of Sub-article 20(a) is hereby excluded.

.....
[Seal of Bank and Signature(s)]

Note –

Advance Payment Security

[Bank's Name, and Address of Issuing Branch or Office]

Beneficiary: ***[Name and Address of Employer]***

Date:

Advance Payment Guarantee No.:

We have been informed that ***[name of the Contractor]***. (hereinafter called "the Contractor") has entered into Contract No. ***[reference number of the Contract]***. dated with you, for the execution of ***[name of contract and brief description of Works]***. (hereinafter called "the Contract").

Furthermore, we understand that, according to the Conditions of the Contract, an advance payment in the sum ***[name of the currency and amount in figures]***¹. (***[amount in words]***.) is to be made against an advance payment guarantee.

At the request of the Contractor, we ***[name of the Bank]***. hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ***[name of the currency and amount in figures]****. (***[amount in words]***.) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation under the Contract because the Contractor used the advance payment for purposes other than the costs of mobilization in respect of the Works.

It is a condition for any claim and payment under this guarantee to be made that the advance payment referred to above must have been received by the Contractor on its account number ***[Contractor's account number]***. at ***[name and address of the Bank]***.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor as indicated in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that eighty (80) percent of the Contract Price has been certified for payment, or on the . . . day of ,², whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

..... ***[Seal of Bank and Signature(s)]***.