



QUOTATION NO: E4352/2023

**“CONSTRUCTION OF HV+HEADER TANK FOUNDATIONS AND  
HARDFILL FOR THE PROPOSED 12MW POWER STATION AT DOBEL  
SUB-STATION SITE, WESTERN HIGHLANDS PROVINCE, MT. HAGEN”.**

Prepared By: Team Leader Civil

Sign:  Dated: 21.02.2023

Endorsed By: Manager Generation Projects

Sign:  Dated: 21/02/23

Approved By: General Manager Asset Development

Sign:  Dated: 21/2/23

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## FRONTISPIECE

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### BRIEF DESCRIPTION OF WORK

Works under this contract involves the construction of civil works for the proposed 12MW Power Station at Dobel sub-station site, Western Highlands Province, Mountain Hagen.

Associated works include;

1. Construction of Hardfill Area for office/workshop building.
2. Construction of Header Tank Footing Foundations.
3. Construction of High Voltage Switchroom Footing Foundations.
4. Supply & Place 19mm aggregates to entire area as shown in the drawings.



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## PREFACE

### INVITATION TO QUOTE

Quotations close with:

*Quotation No: E4352/2023  
PNG Power Limited,  
P.O. Box 1105,  
BOROKO, NCD  
Papua New Guinea.*

**At 4:06 pm on the 27<sup>th</sup> February, 2023.**

The Quotation Submission shall consist of the original and one (1) copy of each of the following (Section 2), all duly completed;

- ❖ Form of Quotation.
- ❖ Quotation Data.
- ❖ Schedule of Rates for Variation.
- ❖ Any other information/document called for in the Specification or subsequent addenda.
- ❖ Additional information/documents offered by the Bidder to aid evaluation of the Quotation.

Enquiries during the Quotation period shall be addressed to:

*PNG Power Limited,  
P.O.Box 1105,  
BOROKO, NCD  
Papua New Guinea.*

#### **Attention:**

Mr. Vincent Pilakvue  
Manager Generation Projects  
Asset Development Business Unit

Telephone: 324 3260  
Fax: 325 0185  
Email: [VPilakvue@pngpower.com.pg](mailto:VPilakvue@pngpower.com.pg)

**SECTION 1**  
**DOCUMENTS TO BE SUBMITTED WHEN QUOTING**



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**(A) QUOTATION FORM**

Bidders are required to complete the blank spaces in this Quotation Form and complete the Schedules included in this Document.

To: **PNG Power Limited,  
P.O. Box 1105,  
BOROKO P.N.G.**

**Gentlemen;**

1. Having examined the Drawings, Specification and Scope of Works for the execution of the above named Works, we, the undersigned, offer to execute, complete and remedy defects in the whole of the said Works in conformity with the said Drawings, Conditions of Contract, Specification and Schedules for the sum of (words & figures) ..... (K.....) or such other sum as may be determined in accordance with the said conditions.
2. We undertake, if our Quotation is accepted, to complete and deliver the whole of the Works comprised in the Contract within Six (6) weeks subject to the said conditions.
3. If our Quotation is accepted we will, if required, obtain the guarantee of an Insurance Company or Bank or other sureties (to be approved by you) to be jointly and severally bound with us in a sum not exceeding five percent (5%) of the above-named sum for the due performance of the Contract.
4. We agree to abide by this Quotation for the period of **ninety (90)** days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before expiration of that period.
5. Unless and until a Formal Agreement is prepared and executed, this Quotation, together with your written acceptance thereof, shall constitute a binding Contract between us.

We understand that you are not bound to accept the lowest or any Quotation you may receive.

Signed and sealed for and on behalf of :)

..... )  
 by: ..... ).....  
 the:..... )  
 of the said Company thereunto )  
 Authorized in the presence of: ..... ).....  
 Address of Bidder: .....



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**(B) QUOTATION DATA**

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**(i) SUB-CONTRACTORS**

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Bidders shall list the sections of work and the names and address of sub-contractors nominated to carry out any portion of the works.

Portion of works;

Sub-Contractor's Name and Address

**(ii) CONTRACT SUPERVISION**

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Bidders shall list their proposed supervisory staff for this Contract. (Number and designation only).

### **(iii) STATEMENT OF EXPERIENCE**

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The Bidder shall state hereunder facts in detail describing previous experience and achievements in performing similar or comparable works together with the names of authorities for whom, and the dates when, such works was carried out.

### **(iv) STATEMENT OF RESOURCES**

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The Bidder shall state hereunder facts in detail sufficient to describe his resources, including technical, financial, manufacturing and constructional where applicable to indicate his ability to carry out the Contract.

**(v) BIDDER'S ORGANIZATION**

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**a. To be filled by a Corporation or Syndicate only**

1. Name: .....
2. Business Address:..... Phone: .....
- P.O. Box No: ..... Fax: .....
- ..... Email:.....
3. Date Organised/Registered: .....
4. Current Authorized Capital: .....
5. Current Subscribed Capital: .....
6. Current Paid-Up Capital:.....
7. Ownership of Company by Nationality: .....
8. Bank/Branch: .....

**b. To be filled by a partnership only**

1. Name: .....
2. Business Address:..... Phone:.....
- P.O. Box No: ..... Fax: .....
- ..... Email: .....
3. Date Organised/Registered Capital:.....
4. Type of Partnership: .....
5. Names and Address of Partners:
- a.....
- b.....
- c.....
- d.....
- e.....
6. Current Total Capital showing contribution of individual partners:
- Partner a:..... Partner b: .....
- Partner c:..... Partner d: .....
- Partner e:.....

**c. To be filled by an Individual Licensed Contractor only.**

1. Name: ..... Nationality: .....
2. Business Address: ..... Phone: .....
- P.O. Box No: ..... Fax: .....
- ..... Email: .....
3. Date Registered: .....
4. Capital: .....
5. Bank/Branch: .....

**d. To be provided by all Bidders.**

1. A declaration stating the proportion of National Ownership.
2. Documentation or evidence proving either NIDA Registration (or exemption) or IPA Certification of the Tender.
3. Certificate of compliance issued by the taxation office.
4. VAT Registration Number.
5. Updated Company Profile with recent work history to date.

**(vi) TECHNICAL INFORMATION**

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The Bidder shall provide, if considered necessary, the following information:

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a. Clause or Schedule No.	Departures from the Requirement of this Specification with Details of Alternative Proposal
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**b. Details of Specific Products when specifically called for in the Specification. (This should include Brand Names and Model Numbers**

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**c. Method Statement: Full Details shall be given Detailing the Proposed Method of Construction of Works.**

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**(vii) CONSTRUCTION SCHEDULE**

ITEM	ACTIVITY	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
1	Mobilisation						
2	Excavate to 1m depth and remove all black soil, vegetation and all unsuitable materials for the proposed hardfill area and dispose from site.						
3	Supply, place, spread, level & compact road base materials to office/workshop hardfill area and level with existing generator hardfill area.						
4	Construct 2x header tank footing foundations.						
5	Construct HV switch room footing foundations for both 20ft and 40ft HV containers.						
6	Supply and place 19mm aggregate to entire power station area covering hardfill areas, generator foundations and fuel tanks area.						
7	Clean up & Demobilise						

**\* This is only a guide but you will be required to provide your own Project Schedule on MS Project or other based on your Work Plan**

**(C) PRICE SCHEDULE**
**(i) LUMP SUM BREAKDOWN**

1.	Mobilisation & Demobilisation	K.....
2.	Excavate to a minimum of 1m depth and remove all black soil, vegetation and all unsuitable materials for the proposed office/workshop hardfill area and dispose off from site.	K.....
3.	Supply, place, level & compact road base materials to finish level of existing generator foundations hardfill area for the proposed office/workshop hardfill as shown on the drawings.	K.....
4.	Construct header tank footings inclusive of all formwork, reinforcements, concrete and all materials required to complete the works.	K.....
5.	Construct high voltage switch-room foundations for both 20ft and 40ft containers inclusive of all formworks, reinforcements, concrete and all materials required to complete the work.	K.....
6.	Supply and place visquin with 19mm aggregates to entire power station area covering the office/workshop area, the generator foundations area and fuel tanks area as shown on the drawings.	K.....
<b>SUB-TOTAL</b>		<b>K.....</b>
GST		K.....
<b>TOTAL LUMP SUM</b>		<b>K.....</b>

(Carried to Form of Quotation)

Name of Contractor: .....

Signature: .....

Date: .....

Witness: .....

**(ii) SCHEDULE OF RATES FOR VARIATIONS**

The Bidder shall list the rates for performance of the type of work listed in the Bill of Quantities below. These rates shall be used for calculating the Lump Sum Total and the amount of any variation to the contract involving that type of work. All time related overhead costs are to be included in these rates.

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Rate</u>
1.	Excavation and disposal of unsuitable material.	m <sup>3</sup>	K.....
2.	Supply and Placing of 19 mm Aggregates	m <sup>3</sup>	K.....
3.	Supply and Place River Gravel Material	m <sup>3</sup>	K.....
4.	Supply and Place Road Base Material	m <sup>3</sup>	K.....
5.	Supply and Placing of 25 MPa Concrete inclusive of formwork	m <sup>3</sup>	K.....
6.	Reinforcements;		
	(a) N16 Reinforcing steel bars.	tonne	K.....
	(b) N12 Reinforcing steel bars.	tonne	K.....

Name of Contractor: .....

Signature: .....

Date: .....

Witness: .....

**SECTION 2**  
**JOB SPECIFICATION AND SCOPE OF WORKS**

**(1) SCHEDULE OF PRELIMINARIES**

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**1.1 General**

The contractor shall carry out the work to be undertaken under this contract as detailed in the drawings and or inferred in this specification.

This specification describes the quality standards and functions required but is not to be considered as a detailed and exhaustive specification. Therefore the requirements are not solely limited to the descriptions hereafter. Items not explicitly mentioned shall be supplied and executed to the same quality standards as for the entire works for the project.

**1.2 Standards and Workmanship**

All works shall be carried out to the accepted standard trade practices, building codes and local authority regulations and the relevant PNG and Australian standards. The contractor shall be wholly responsible for the setting out, the accuracy and quality of his works. Superintendent's inspection of the work shall not be deemed as acceptance of the error. Corrections relating to such defects shall be at the contractor's own expense.

**1.3 Work Permits & Approvals**

The Contractor is responsible for obtaining all approvals in relation to any work carried out from the appropriate authority.

The Contractor must make all arrangements and obtain all other permits that are necessary to undertake the works under the Contract. Copies of documentary pertaining to all approvals, permits or certificates must be provided prior to commencement of the works.

**1.4 Nature of Contract**

This work shall be carried out in the form of a "Lump Sum Contract" with any approved variations paid for at the rates listed in the schedule of rates for variations where the type of work listed is the same or similar.

**1.5 Location of Site / Place of Work**

The site of the works is located within Dobel sub-station site, Timininga, Western Highlands Province, Mountain Hagen.

**1.6 Scope of Works**

The works covered in this specification includes:

- Construction of Hard-Standing Area;
- Construction of Header Tank Footings;
- Construction of High Voltage Switch-Room Foundations;

### **1.7 Site Inspection**

Prior to lodging bids, bidders must inspect the site to fully inform themselves of the conditions.

During the site visit, the Bidder shall collect clear information so that a correct price for the works is provided, without the need for later alterations.

### **1.8 Safety Requirement**

The Contractor shall ensure that all Work Place Safety Standards and requirements are adhered to when carrying out his works. All required safety wear to be used throughout the duration of the works. Any accidents shall be reported to the superintendent immediately. PNG Power shall bear no liability for any accidents due to contractor's negligence.

### **1.9 Use of Second-Hand Materials**

No second-hand material shall be used in the works except where indicated in the specification or shown on the drawings, or until they have been inspected and approved by the superintendent. Any materials reused shall be finished to "as new" condition.

### **1.10 Boundary Limits**

The Contractor shall ensure that he and all his personnel shall refrain from entering premises beyond the works area. PNG Power shall bear no liability for any damage or such to other properties due to the contractor's negligence.

### **1.11 Transport to Site**

The contractor is responsible for the transport of all materials and manpower to and from site.

### **1.12 Site Security**

The contractor shall be responsible for providing security for his work personnel and equipment/machineries on site. PNG Power shall not be held responsible for any damage or harm to any work personnel or any properties, equipment or machinery on site.

### **1.13 Time for Completion**

All required works shall be completed within Six (6) weeks from the Date of Possession of Site given in the Letter of Acceptance.

### **1.14 Terms of Payment**

The terms of payment shall be specified in the Letter of Acceptance.

### **1.15 Possession of Site**

The date of possession of Site will be stated in the Letter of Acceptance. The contractor shall be given such possession of the site as is considered necessary to carry out these works but such possession shall not be deemed to mean exclusive possession.

**(2) EXCAVATION AND BACKFILL WORKS**

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**2.1 Excavation****2.1.1 General**

The contractor shall carry out all excavation work accurately to the lines, levels and dimensions as shown on the drawings.

Any unsuitable material encountered immediately below the line of excavation for all works shall be identified with the superintendent who shall direct the extent of work to remove the materials and the replacement work of such materials to make good such foundations.

The soil sub-grade shall be compacted to 95 % of Maximum Dry Density (MDD) conforming to AS1289 E2.1 prior to any construction work or backfilling.

**2.1.2 Excavation for Hardstanding Area**

The contractor shall excavate to a minimum of one metre (1m) depth from the existing ground level and remove all grass and vegetation, black soil and all unsuitable materials and dispose off from site.

The contractor shall nominate a suitable disposal area and remove all unwanted materials from site.

The soil sub-grade shall be compacted to 95 % of Maximum Dry Density (MDD) conforming to AS1289 E2.1 prior to placing backfill materials.

**2.2 Backfill Materials****2.2.1 General**

The contractor shall supply, place, spread evenly and compact all fill materials to the lines, dimensions and finished levels or as shown on the drawings.

Fills shall be placed in loose layers not exceeding 200mm and compacted to 100% of standard dry density complying to AS 1289 Test E1.1.

**2.2.2 Backfill for Hardstanding Area**

The contractor shall supply, place, spread evenly and compact all fill materials to the lines and level as shown on the drawings. The contractor shall provide adequate fill materials along the end of the hardfill to allow for surface runoff.

The first 200mm layer shall be backfilled with coarse river gravel materials and compacted to maximum dry density. Remaining layers shall be backfilled with road base at layers of 300mm and compacted with road drum roller to maximum dry density. Finished level shall be the same as the adjacent hardstanding area and sloped gradually for surface runoff.

### **(3) CONCRETE WORKS**

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#### **3.1 Concrete Requirements**

All concrete works shall be in accordance with AS3600 and shall include all concrete materials and accessories required. Concrete work shall have a minimum target strength of 28 MPa. after 28 days. All concrete shall be batched under controlled and supervised conditions. Where concrete is mixed on site, the Contractor shall use the mix proportions as shown in the Standard Specification. Reinforcing steel to be Y16 'U' Deformed or as specified in the drawings.

Sampling will be in accordance with PNG 1002 and all costs associated with testing shall be borne by the Contractor. All concrete tests to be carried out and witnessed by the employer's representative and test results issued.

Concrete curing and all other concrete work applications shall be compliant to PPL's Standard Specification under Clause 3.

#### **3.2 Concrete Foundations & Footings**

The contractor shall supply and place 28Mpa concrete for all concrete footings and foundations to the levels and dimensions as shown on the drawings. Concrete blinding of 50mm shall be place for all concrete footings and foundations.

##### **3.2.1 High Voltage (HV) Switchroom Footing Foundations**

The contractor shall construct reinforced concrete footing foundations for a 20ft and 40ft containerised HV switchroom according to the design details as shown on Drawing Sheets 05 and 06.

##### **3.2.2 Header Tank Footing Foundations**

The contractor shall construct reinforced concrete footing foundations for two header fuel tanks according to the design details as shown on Drawing Sheet4 04 of 06.

### **(4) AGGREGATES**

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The contractor shall supply and place 19mm aggregate (chips) to the entire power station area as shown on the site layout plan. The area shall cover the office/workshop, generator area and fuel tanks area.

The contractor shall place a suitable polythene membrane layer or visquin before placing chips and spreading evenly to the entire construction area as shown on the drawings. Minimum thickness of aggregates shall be 50mm.

### **(5) CLEANING UP**

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Upon completion, the work area shall be left clean of all unused materials, surplus excavated materials to be evenly spread and any other materials or scrap shall be removed and disposed off from site.

**SECTION 3  
DRAWINGS**



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<b><u>Sheet No.:</u></b>	<b><u>Title</u></b>
Sheet 00 of 06	Cover and Drawing Index
Sheet 01 of 06	Site Survey and Locality Plan
Sheet 02 of 06	Hardfill Area & HV Foundations Site Layout Plan
Sheet 03 of 06	HV & Header Tank Foundations Site Layout Plan
Sheet 04 of 06	Header Tanks Foundation Plan and Details
Sheet 05 of 06	HV Switchroom Foundation Plan & Details
Sheet 06 of 06	HV Switchroom 40 ft Foundation Plan & Details