PNG POWER Ltd

Tender No: 52/2019

"URGENT CONSTRUCTION OF REINFORCED STRUCTURAL CONCRETE WALL TO ROUNA 1/3 TO ROUNA 4 OPEN FLUME LINE.

Prepared By: Jonah Kinta

Checked By: Donald Tuheana

Approved By: William Karanta

DESCRIPTION		TABLE OF CONTENTS	PAGE NO.
FRONTISPIECE		Brief Description of Work	03
PREFACE		Invitation to Quote	04
SECTION 1		Documents to be Submitted when Quoting	05
	a)	Quotation Form	06
	b)	Quotation Data	07
		Subcontractors	07
		Contract Supervision	07
		Statement of Experience	08
		Statement of Resources	08
		Bidder's Organization	09
		Technical Information	10
		Construction Schedule	12
	c)	Price Schedule	13
		Lump Sum Breakdown	13
		Schedule of Rates for Variation	14
SECTION 2		Job Specification & Scope of Works	15
	1.0	Schedule of Preliminaries	16
		1.1 General	16
		1.2 Standards and Workmanship	16
		1.3 Nature of Contract	16
		1.4 Location of Site / Place of Work	16
		1.5 Scope of Works & BOQ	16
		1.6 Site Inspection	16
		1.7 Safety Requirement	16
		1.8 Use of Second Hand Materials	16
		1.9 Existing Equipment & Structures	17
		1.10 Boundary Limits	17
		1.11 Transport to Site	17
		1.12 Time for Completion	17
		1.13 Terms of Payment	17
		1.14 Possession of Site	17
	2.0	Hardfill	18
		2.1 Select Fill	18
	3.0	Cleaning Up	18
SECTION 3		Drawing & Sketches	19

FRONTISPIECE

BRIEF DESCRIPTION OF WORK

Works under this contract consists of the construction of reinforced structural concrete wall and backfill with hard standing and a Type 4 Open Channel Concrete Lined Drain to cater for future spill offs from the open flume line and the access road to the open flume line which is located between the Rouna 1/3 & Rouna 4 Tunnel which feeds Rouna 4 Head Pond, Sogeri, National Capital District.

PNG POWER Ltd

Tender No: 52/2019

PREFACE

INVITATION TO QUOTE

Tender close with

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

At 4pm on Friday, 30th August , 2019

The Quotation Submission shall consist of the Quotation Deposit together with 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:

1. Mr. Jonah Kinta
   Civil Specialist Engineer
   Cr.wards Drive , Hohola, NCD
   Call Centre: 7090 8000 \ 7500 8000

2. Hydro Specialist Engineer
   Angau Drive Boroko, PO Box 1105, Boroko, NCD, 111, Papua New Guinea
   Tel: 311 3189 | Call Centre: 7090 8000 \ 7500 8000
   Telephone: 324 3160
   Fax: 325 0185

SECTION 1
DOCUMENTS TO BE SUBMITTED WHEN QUOTING

PNG POWER Ltd

Tender No: 52/2019

(A) TENDER 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 «pcompletion»s 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 **«tvalid»** 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: .....

PNG POWER Ltd

Tender No: 52/2019

(B) TENDER DATA

(i) SUB-CONTRACTORS

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

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

(iii) STATEMENT OF EXPERIENCE

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

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

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.

(vi) TECHNICAL INFORMATION

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

a. Clause or Schedule No.	Departures from the Requirement of this Specification with Details of Alternative Proposal

b. Details of Specific Products when specifically called for in the Specification. (This should include Brand Names and Model Numbers

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

(vii) CONSTRUCTION SCHEDULE

ACTIVITY	1	2	3	4	5	6
MOBILISATION						
CLEARING , EXCAVATION & DISPOSAL OF UNSUITABLE MATERIALS						
CONSTRUCTION OF REINFORCED STRUCTURAL CONCRETE WALL						
BACKFILL, LEVELLING AND COMPACTION TO THE ENTIRE AREA						
CONSTRUCTION OF TYPE 6 OPEN CONCRETE LINED DRAIN						
CLEAN UP AND DEMOBILISE						

PNG POWER Ltd

Tender No: 52/2019

(C) PRICE SCHEDULE

(i)

PROJECT:		EMBANKMENT RECONSTRUCTION OF OPEN FLUME LINE CONNECTING ROUNA 1/3 TO ROUNA 4 OPEN FLUME LINE COLLAPSED				
		BILL OF QUANTITIES				
Item		**Description**	**Unit**	**Qty**	**Rate**	**Amount**
BILL A - PRELIMINARY						
1.00	**Mobilization**					
	1.01	Mobilize all materials, plants, tools, labour etc to Site to commence work promptly in time.	item	1		
	1.02	Demobilize all materials, plants, tools, labour etc from site promptly.	item	1		
	1.03	Transportation of Materials		1		
2.00	**Site Establishment**					
	2.01	Any existing services that is in the way of the construction, the Builder shall notify the Client before any corrective action be taken either to divert, seal off, disconnect, extend or remove.	item	1		
	2.02	Allow for temporary buildings that are necessary for smooth running of the works but not limited to Site Project Manager's office, toilet and other amenities/facilities, meeting rooms, site staff offices, loose furniture, joinery, secure storage sheds.... Etc .	item	1		
	2.03	Establish temporary site services for water, power and sewer as may be required during the contract period. Demolish and remove at completion.	item	1		
	2.04	If needed, allow for laydown area for storing, safe keeping, working space, etc for plant, materials and labour for the benefit of the works on site.		1		
	2.05	Provide all temporary fencing, hoardings, vehicular gates (1 No), pedestrian gates (1No), barricades, screens etc, as may be necessary to comply with regulations concerning the safety of human lives and properties.	item	1		
	2.06	Protect contiguous buildings liable to injury or damage through the carrying out of this Contract.	item	1		
3.00	**Site Operation Cost**					
	3.01	Maintaining temporary site services - water, power and sewer	item	1		
	3.02	Provide Night and Day Watch guards monitoring human, animal and vehicular traffic within the site so as to minimize or avoid disruption to owner's operation and construction progress.	item	1		

	3.03	Identification Tags shall be provided to all Contractor's employees. The Contractor shall be responsible for all nominated and selected Sub-Contractors' entry to the site works.	item	1		
	3.04	Allow for Health, Safety and Environment to the client's standard and local/statutory regulations.	item	1		
	3.05	First Aid kit supply to workers on site at all times.	item	1		
	3.06	Clean up rubbish of every description and every trade during the course of the Contract and remove from site on a daily basis.	item	1		
	3.07	During construction cover all finished works and fitouts to avoid dents, scratches, etc. Clean and polish at completion.	item	1		
	3.08	The Builder shall protect all existing services adjacent to the building site from any possible damage. Any damage caused to any existing services during the progress of the works shall be made good to the satisfaction of the client.	item	1		
4.00	**Site Overhead**					
	4.01	Allow mobilizing, maintaining Site Management (from Foreman to Site Manager) and Site Office Personnel/Staff. Demobilize on completion.	item	1		
	4.02	If needed, allow for site support staff such as clerks, cleaners, housekeepers, etc for the smooth running of the site.	item	1		
	4.03	Allow for major plant needed on site, eg, crane etc if needed	item	1		
	4.04	Allow for minor plant and equipment needed on site.	item	1		
	4.05	Provide, mobilize, control and maintain appropriate vehicle(s) on site to achieve a smooth work progress. Demobilise at completion.	item	1		
5.00	**Fees and Premiums**					
	5.01	Unless specified by the Condition of Contracts, the Builder shall provide cover for 1. Worker's Compensation, 2. Public Liability, 3. Surrounding Properties, 4. The Works under the contract.	item	1		
6.00	**Statuory Compliance**					
	6.01	Allow for complying with regulations governing building/construction with respect to the Contract covering but not limited to permits, licenses, fees, etc.	item	1		
7.00	**Miscellanies**					
	7.01	Allow for those conditions which would incur costs that are not otherwise allowed for in any or each of the trades. Care shall be taken to allow for special conditions only (Lump Sum). The Bidder shall supply details on request..	item	1		
	7.02	The Builder shall set out the works including all correct positions, levels, dimensions and alignment of all parts and take responsibility for the accuracy of the same. Provide all necessary profiles, templates etc, as may be required in the setting out. The Builder shall rectify any consequence of his error.	item	1		
	7.03	Allow for protection of datum and bench marks.	item	1		

8.00	**Testing**		item	1		
9.00	**Product Guarantee**		item	1		
10.00	**Materials Samples**		item	1		
11.00	**Construction Programme**					
	11.01	The Builder shall provide a Construction program as part of his bid showing the following features: All trades, resources (gangs and plants) and projected weekly cashflow and the Critical Path. The Program shall be tailored to achieve 'continuity in the client's daily operations/functions' as specified/required. This program shall be revised progressively during construction with genuine reasons and schedules of changes on each revision.	item	1		
12.00	**Scafolding**					
	12.01	Allow for all scaffolding requirements on site. The same shall be made available to all users including sub-contractors.	item	1		
13.00	**Care of Works**		item	1		
14.00	**Site Inspection**		item			
	14.01	The Contractor shall make a personal inspection of the site to ascertain the correct means of access thereto, and to acquaint himself with ground conditions, working space and surroundings, property adjacent to the site, the challenges of logistics and any other matter which may influence him in making up his Tender.	item	1		
15.00	**Site Meeting**					
	15.01	Facilitate efficient site meetings between the client and the Contactor and their agents or staff members. Minimize all disturbances during meeting period. Ensure security on site is aware while meeting is conducted and when Client's agents/reps are on duty as per the contract.	item	1		
	15.02	Conduct meetings as specified with the labour force on site to ensure the instructions are effectively passed down to the workforce for proper and timely workmanship on site.	item	1		
16.00	**Site Dairy**					
	16.01	The Builder shall keep a daily diary on site recording the activities carried out, elemental quantities of work done, personnel on site, Sub-Contractors on site, weather pattern (esp. time lost during inclement weather), accidents, force majeure (natural obstructions) etc. This site dairy shall be submitted to the client on a daily basis at close of business except for weekends and holidays to be submitted on the next working day.	item	1		
17.00	**Notice Board**					
	18.01	Supply and Erect Project Signboards - size 1 m x 2 m complete and erected in final position, all as specified. Remove at completion.	item	1		
18.00	**Progress Claims**		item	1		

19.00	**Variations**		item	1		
20.00	**Prime Cost Items**		item			
21.00	**Provisional Sum**		item			
BILL B - GROUND WORKS						
1.00	**Clearing**					
	1.01	Clear grub all grass and tress around the work site and excess road to the work site	m2	3200		
2.00	**Demolition**					
	2.01	Demolish existing overflow concrete drain which is narrow and shallow as shown on site	m2	60		
	2.02	Remove all demolished debrises and store on site to be reused on the fill and compaction to the slips	m3	30		
	2.03	Remove all calapsed gabions and gather all large stones in one place	m2	48		
3.00	**Gabion Walls**					
	3.01	Reconstruction the stone gabion walls to the required height and level as per drawings using new PVC coated wire gabions	m2	48		
4.00	**Fill and Compaction**					
	4.01	Supply, bulk fill the slip and compact every 600mm thick with hardcore fill material from the nearby quarry	m3	360		
	4.02	Supply, fill cavities and compact around footings of the walls of the concrete water channel	m3	8.64		
5.00	**Footing Excavations**					
	5.01	Excavate slab edge beam footings for the new concrete drain as per design to take the over flow run off water and stockpile spoils at norminate area on site	m3	36		
BILL C - CONCRETE WORKS						
1.00	**Blinding Concrete**					
	1.01	Supply and Place 50mm sand blinding to underside footing and slab of the run off concrete drain	m3	3.6		
2.00	**Waterproof Membrane**					
		Supply and Place all Waterproof membrance to underside of slabs	m2	72		
3.00	**Formwork**					
	3.01	Supply and construct temporary formwork equivalent to formwork type B to slab edge beams	m2	120		
5.00	**Reinforcements**					
		Supply, Cut , bend, tie and place all reinforcements as per the drawings				
	5.01	Fix Y12 starter bars into existing concrete slab, @ 400 centres vertically to install 200mm thick blocks to 800mm high.	lm	36		
	5.02	Install Y12 bars at 400 centres horizontally to block walls	lm	180		

	5.03	Supply and Place F72 mesh to the drain slab and walls as per the drawings	ton	11.03		
4.00	**Concrete Insitu**					
	4.01	Supply, place concrete for the run off drain using Readymix- 25MPA	m3	58.67		
BILL D - Block wall						
5.00	**200mm Series Standard Blocks**					
	5.01	Supply and install blocks onto the existing slab to 800mm high only	m3	120		
	5.02	Supply and mix mortors for placing between joints	m3	1		
	5.03	Supply and and corefill 20Mpa concrete to all Blocks	m3	3.44		

SUMMARY OF THE BILL OF QUANTITIES

BILL NO.	**TRADE**				
BILL A - PRELIMINARIES					
BILL B - GROUND WORKS					
BILL C - CONCRETE WORKS					
BILL D - Commission					
	TOTAL				
	VAT				
	GRAND TOTAL				
Amount in words:					

(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.

Item	**Description**	**Unit**	**Rate**
1.	Clearing and disposal of Unsuitable material	m³	K……..
2.	Supply and Place Select Fill	m³	K……..
3.	Supply and apply of concrete	m³	K……

Name of Contractor: …….....

Signature: …….....

Date: …….....

Witness: …….....

SECTION 2
JOB SPECIFICATION AND SCOPE OF WORKS

(1) SCHEDULE OF PRELIMINARIES

1.1 General

The contractor shall carry out the hard structural reinforced concrete wall pad footing foundations works 2m below the river bed and raise it to 7m to cater for the above backfill materials and baskets to be laid together with the type 4 spill off drainage and the site access road upgrading along the section outlined in the drawing or inferred in this specification. The contractor shall:

- locate and protect all existing utilities, whether indicated on the design drawings or discovered during the work. The Contractor shall immediately notify the Company's Authorized Representative when any utility not previously indicated or inaccurately indicated on the design drawing is discovered.
- The Contractor shall coordinate with the facility owner and shall allow entrance, opportunity, and ample time for all facility relocations, extensions, and modifications necessitated by the work.

1.2 Standards and Workmanship

All works shall be carried out to the accepted standard trade practices, 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 made at the contractor's own expense.

1.3 Nature of Contract

This works 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.

1.4 Location of Site / Place of Work

The work site is located between the Rouna 1/3 Hydro Station & Rouna 4 Head Pond – Rouna, Sogeri National Capital District.

1.5 Scope of Works

The works covered in this scope involves the contractor to construct a structural reinforced concrete wall, backfill with selected materials and building the collapsed embankment together with a Type 4 Open Channelled Lined Drain and the main access road.

1.6 Site Inspection

Prior to lodging bids, bidders must inspect the site to fully inform themselves of the conditions. This includes confirmation of measurements and identifying any additional works required that may have been overseen by the superintendent. Bidders should then advise the superintendent during the tendering phase to have the works included in the scope and as a separate component in their bid.

1.7 Safety Requirement

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

1.8 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.

1.9 Existing Equipment and Structures

The works will be carried out in and around a new substation site. Damages through recklessness on the part of the contractor will be made good at the Contractor's costs.

1.10 Boundary Limits

The Contractor shall ensure that he and all his personnel shall refrain from entering premises beyond the works area as shown on the site layout plan. PNG Power shall bear no liability for any damage or such to other properties or work personnel 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 Time for Completion

All required works shall be completed within one (1) week from the Date of Possession of Site given in the Letter of Acceptance.

1.13 Terms of Payment

As specified in the Letter of Acceptance.

1.14 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) REINFORCED STRUCTURAL CONCRETE WALL

3.1 Excavation

TRENCH SAFETY - The Contractor is responsible for obtaining and implementing the excavation safety program with the client or with other local existing service such as river systems. All care should be taken before doing any excavation. All man on site will be given a safety induction before works begins.

3.2 CONSTRUCTION

The thickness of concrete pad will be 2m below the river bed from any part of the stub angle to the nearest outer surface of the concrete in respect. All the properties of concrete regarding its strength under compressing , tension, shear, punching and bending etc. as well as well as workmanship will conform to PNGS 1004 Code of Practice For Reinforced Masonry Structures. (PNG Masonry Code), AS 1012Methods of Testing Concrete. All parts., AS 1302 – 1982 Steel Reinforcing Bars for Concrete.,AS 1500 – 1974 Concrete Building Blocks
The cement concrete used for the foundations shall be M-%)MPA, 1 : 2 : 4 : 4 mix ratio.
This slab construction and the wall erection must also be conformed with the drawings as per attached together with associated weep holes or drainages on the top.

This is a turnkey job. The Contractor shall supply all materials & equipment for this job including concrete/cement, formworks, necks, frames, ground rods, PVC conduit, concrete slabs, select backfill, pull ropes, and concrete viberators, excavator, backhoe, dump trucks concrete mixers etc., per required by the works specifications unless otherwise specified, in writing.

(3) CONSTRUCTION OF OPENED CHANNELED CONCRETE TYPE 6 LINED DRAIN

Supply and construct temporary formworks equivalent to formwork Type B for the slab and trench wall formwork on both sides of the wall.

Weep holes should also be placed together with all type 4 table drainage construction type.

(4) CLEAN UP

1.1 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 removed and disposed off from site

(5) DRAWINGS & SKETCHES