

सिलबन्दी दरभाउपत्र आह्वानको सूचना

प्रथम पटक प्रकाशित मिति: २०८३/०५/११

मुसिकोट नगरपालिका/जलवायु परिवर्तन स्थानीय अनुकूलन परियोजना, रुकुम (पश्चिम भाग) बाट सञ्चालित वारीखोला हरले नयाँ गाउँ खानेपानी तथा सरसफाइ योजना र होल लिफ्ट खानेपानी तथा सरसफाइ योजनाहरूका लागि परियोजनाको खरिद निर्देशिका बमोजिम लिफ्ट योजना निर्माणमा प्रयोग हुने सोलार तथा इलेक्ट्रो-मेकानिकल सामग्रीहरू (पम्प, सोलार प्यानल, कन्ट्रोलर, तार, जि.आइ. पाइप, फिटीङ्गस् तथा औजारहरू आदि) खरिद तथा जडान गर्नुपर्ने भएकोले इच्छुक तथा योग्य आपूर्तिकर्ता/कम्पनी/फर्महरूबाट प्रस्ताव पेश गर्नका लागि संयुक्त खरिद समितिले खुला दरभाउपत्र आह्वान गर्दछ । तसर्थ, देहायका सर्तहरूको अधिनमा रही संलग्न दरभाउपत्र फाराममा प्रदान गरिएको परिमाण तथा तोकिएको स्पेसीफिकेशन, गुणस्तर र तौल अनुसार सामग्री आपूर्ति गर्न इच्छुक भ्याटमा दर्ता भएका तथा सम्बन्धित क्षेत्रमा कार्य अनुभव प्राप्त सप्लायर वा कम्पनी वा फर्महरूबाट सिलबन्दी दरभाउपत्र आह्वान गरिएको छ ।

शर्तहरू:

- विभिन्न आवश्यक सोलार, विद्युतीय तथा इलेक्ट्रो-मेकानिकल सामग्रीहरू (पम्प, सोलार प्यानल, कन्ट्रोलर, तार, जि.आइ. पाइप, फिटीङ्गस् तथा औजारहरू आदि) खरिद तथा जडान कार्य सम्बन्धी दरभाउपत्र फारम सम्बन्धित मुसिकोट नगरपालिकाको कार्यालयबाट वा मुसिकोट नगरपालिकाको वेब साइट <https://musikotmunrukum.gov.np> वा लक परियोजनाको आधिकारिक वेब साइट www.laccp.org.np बाट प्राप्त गर्न सकिनेछ ।
- सिलबन्दी दरभाउपत्र पेश गर्दा तोकिएको फारम र विभिन्न आवश्यक सोलार, विद्युतीय तथा इलेक्ट्रो-मेकानिकल सामग्रीहरू (पम्प, सोलार प्यानल, कन्ट्रोलर, तार, जि.आइ. पाइप, फिटीङ्गस् तथा औजारहरू आदि) खरिद तथा जडान कार्य सम्बन्धि दरभाउपत्र फारम प्रति फारम रु.३०००।— (अक्षरूपी तीन हजार मात्र) पछि फिर्ता नहुने गरी सूचना प्रकाशन भएको ७ औं दिन भित्र मुसिकोट नगरपालिकाको नेपाल बैंक लिमिटेड, रुकुम पश्चिम, मुसिकोट शाखामा रहेको मुसिकोट नगरपालिकाको आन्तरिक राजस्व खाता नं. ०७७०३०००००१००१०००००१ (राजश्व शिर्षक:१४२२९) मा जम्मा गरेको सुत्र अनलाइन भौचर सङ्कलै सहित फर्म/सप्लायरको लिखित निवेदनको साथमा फर्म/सप्लायर दर्ता नवीकरण प्रमाणपत्र, मूल्य अभिवृद्धि कर दर्ताको प्रमाणपत्र, यस आ.व.को कर चुक्ताको प्रमाणपत्र तथा कार्य अनुभवको प्रमाणपत्र सहित संलग्न गरी यो सूचना प्रकाशित भएको मितिले ८ औं (आठौं) (२०८३/०५/१८) दिनको १२:०० बजे भित्र मुसिकोट नगरपालिकाको कार्यालयमा वा जलवायु परिवर्तन स्थानीय अनुकूलन परियोजना, परियोजना सहयोग एकाइ, विरेन्द्रनगर, सुर्खेत वा विकास व्यवस्थापन संस्था (DMI Pvt.Ltd) प्रा.लि. शान्तिनगर-११, काठमाडौंमा पेश गरि सक्नु पर्नेछ । दरभाउपत्र फारम सिलबन्दी गरी सम्बन्धित उपभोक्ता समितिको नाम, ठेगाना र सोलार, विद्युतीय तथा इलेक्ट्रो-मेकानिकल सामग्रीहरू (पम्प, सोलार प्यानल, कन्ट्रोल, तार, जि.आइ. पाइप, फिटीङ्गस् तथा औजारहरू आदि) सप्लाइ सम्बन्धी दरभाउपत्र भन्ने व्यहोरा उल्लेख गर्नुपर्नेछ ।
- सिलबन्दी दरभाउ पत्र पेश गर्दा



- सप्लायरको आधिकारिक प्रतिनिधि आफै उपस्थित भई वा हुलाक वा कुरियर मार्फत समेत पेश गर्न सक्नेछ ।
- हुलाक वा कुरियर मार्फत पठाएको सिलबन्दी दरभाउपत्र सूचना प्रकाशित भएको मितिले ८ औं (आठौं) दिनको दिउसो १२:०० बजे भित्र प्राप्त भईसक्नु पर्नेछ ।
- सप्लाई हुने सामग्रीहरूको रकम भुक्तानी उपभोक्ता समितिहरूले नयाँगाउँ बर्मा थान र होलमा दुवानी तथा जडान भै प्राविधिक चेक जाँच भएपछि मात्र गर्नेछन । यसैले सिलबन्दी दरभाउपत्र सम्बन्धि धरौटी तथा बैक जमानतको आवश्यकता पर्ने छैन ।
- उपरोक्त अनुसार प्राप्त भएका दरभाउपत्रहरू संकलन गरी यो सूचना प्रकाशित भएको मितिले १४ औं (चौधौं) (२०८३/०५/२४) दिनमा मुसिकोट नगरपालिकाको कार्यालयमा दिनको १२:०० बजे उपभोक्ता समितिका खरिद समितिका प्रतिनिधिहरू, नगरपालिका कार्यालयका प्रतिनिधिहरू, जलवायु परिवर्तन स्थानीय अनुकूलन परियोजना प्रतिनिधि र दरभाउपत्र दाताहरू वा निजहरूको प्रतिनिधिको रोहवरमा खोल्नेछ । दरभाउपत्र दाताको प्रतिनिधि उपस्थित नभएमा दरभाउपत्र खोल्न कुनै बाधा पुग्ने छैन ।
- दरभाउपत्र दर्ता गर्ने तथा खोल्ने अन्तिम दिनमा सार्वजनिक विदा पर्न गएमा सोको भोलिपल्ट कार्यालय खुलेको दिन तोकिएको समय भित्र दर्ता गरिने वा खोल्नेछ ।
- दरभाउपत्रमा दररेट लेख्दा अंक र अक्षर दुबैमा स्पष्ट लेख्नुपर्नेछ । अंक र अक्षरमा फरक परेमा अक्षरमा लेखेकोलाई मान्यता दिइनेछ । अंक र अक्षरमा केरमेट भएकोमा दस्तखत र छाप लगाएको हुनु पर्नेछ । साथै डिजाइन वा इस्टिमेटमा केहि फरक पर्ने देखिएको खण्ड मा उक्त कुरा दरभाउ पत्रमा उल्लेख गर्नु पर्ने छ ।
- दरभाउपत्र फारममा तोकिएका लेख्ने स्थानहरू बाहेक, अन्यत्र कुनै पनि थप नोट, संकेत तथा कुनै जानकारी लेख्न पाइने छैन ।
- म्याद नाघी वा रीत नपुगी आएको दरभाउपत्र उपर कुनै कारवाही हुने छैन ।
- दरभाउपत्र स्वीकृत गर्ने वा नगर्ने वा आंशिक रुपमा स्वीकृत गर्ने सम्पूर्ण अधिकार उपभोक्ता समितिहरूमा सुरक्षित रहनेछ ।
- अन्य शर्तहरू परियोजनाको खरिद कार्यविधि २०८२ वमोजिम हुनेछ । थप शर्तहरू दरभाउपत्र साथै संलग्न गरिएको छ ।
- यो सूचनामा केहि संशोधन गर्नु परेमा सोको सूचना नगरपालिकाको सूचना पाटीमा तथा माथि उल्लेखित वेभसाईटमा जानकारी गराइनेछ ।
- अन्य थप जानकारी चाहिएमा मुसिकोट नगरपालिका वा जलवायु परिवर्तन स्थानीय अनुकूलन परियोजना, कलष्टर प्राविधिक सहयोग एकाई, खलंगा, सल्यानमा सम्पर्क गर्न सकिनेछ ।

खरिद समिति संयोजक

- वारीखोला हारले नयाँ गाउँ खानेपानी तथा सरसफाइ उपभोक्ता समिति, मुसिकोट-१२, रुकुम (पश्चिम भाग)
- होल लिफ्ट खानेपानी तथा सरसफाइ उपभोक्ता समिति, मुसिकोट-९, रुकुम (पश्चिम भाग)



**Joint Procurement Committee
Hola Lift Water Supply & Sanitation Scheme**

Musikot Municipality-9

And

Barikhola Harale Naya Gaun Water Supply & Sanitation Scheme

Musikot Municipality-12

Rukum West

REQUEST FOR QUOTATION (RFQ)

For

**Design, Supply, Delivery, Installation, Testing and Commissioning of Solar PV Water
Pumping System**

Issued by:

Joint Procurement Committee

Hola Lift Water Supply & Sanitation Scheme, Musikot Municipality-9

And

**Barikhola Harale Naya Gaun Water Supply & Sanitation Scheme, Musikot Municipality-
12**

Rukum West

Contract No.: 01/2083/084



August, 2026



Section I. Request for Quotation (RFQ)

Joint Procurement Committee

Hola Lift Water Supply & Sanitation Scheme and Barikhola Harale Naya Gaun Water Supply & Sanitation Scheme

Design, Supply, Delivery, Installation, Testing and Commissioning of Solar PV Water Pumping System

Date of Notice Publication: August 27, 2026

- 1. Joint Procurement Committee of Hola Lift Water Supply & Sanitation Scheme and Barikhola Harale Naya Gaun Water Supply & Sanitation Scheme** invites sealed quotations from registered suppliers for the design, Supply, Delivery, Installation, Testing, Commissioning, and After-Sales Service of a Solar PV Water Pumping System at Hola Lift Water Supply & Sanitation Scheme and Barikhola Harale Naya Gaun Water Supply & Sanitation Scheme, Musikot Municipality-9 and 12, Rukum West District.
- The VAT-registered suppliers can obtain the signed quotation form from Musikot Municipality, Rukum West, or LACC Project PSU, Birendranagar, Surkhet, or can be downloaded from the official sites of Musikot Municipality (<https://musikotmunrukum.gov.np/>) and LACC Project (www.laccp.org.np) within 7 days from the first publication date.
- Sealed quotation must be submitted to Musikot Municipality Office or Local Adaptation to Climate Change Project, Project Support Unit (PSU), Birendranagar, Surkhet or Liaison Office of LACC Project (DMI Nepal Pvt Ltd. Sanokharibot, Shantinagar, Kathmandu-31) before 12:00 PM on the 8th day from the first publication date. Documents received after this deadline shall not be accepted.
- Quotations must be valid for a period of 90 days from the day of the submission deadline.
- If the last date of submission and opening falls on a government holiday, then the next working day shall be considered the last day.
- The contractor/firm must sign and stamp all the copies of BoQ submitted, including all the documents mentioned in the quotation, along with Technical Specifications, and any other documents in the Quotation.
- The User committee reserves the right to accept or reject, wholly or partially, any or all the quotations without assigning any reason whatsoever.



Section II. RFQ Data

1	Name of the Purchaser: Hola Lift Water Supply & Sanitation Scheme and Barikhola Harale Naya Gaun Water Supply & Sanitation Scheme of Musikot Municipality, Rukum West District.
2	Name of Contract: Design, Supply, Delivery, Installation, Testing and Commissioning of Solar PV Water Pumping System.
3	Contractor's Eligibility Requirements are: Cover Letter for submission of the quotation. Tax Registration/Tax Payment Certificate issued by the Internal Revenue Authority evidencing that the contractor is updated with its tax payment obligations, or Certificate of Tax Exemption, if any such privilege is enjoyed by the Bidder. Certificate of Registration of the business, including Articles of Incorporation, or equivalent document if contractor is not a corporation Quality Certificate (e.g., ISO, etc.) and/or other similar certificates, accreditations, awards and citations received by the contractor, if any Valid ISO 9001 and ISO 14001 and IEC/IS/NEPQA Quality Assurance Certification of the proposed product, especially solar pump & panel. Company Profile and experience in design, supply, and installation of solar pumping schemes
4	Purchaser's Address: Hola Lift Water Supply & Sanitation Scheme, Ward no. 9, and Barikhola Harale Naya Gaun Water Supply & Sanitation Scheme, Ward No. 12, Musikot Municipality, Rukum West District. Technical Contact Person Mobile no: 9844907466 Nabin Acharya (Sub-Engineer), Musikot Municipality/LACC Project Email: nabin.acharya14@gmail.com Contact Person: Man Kumari Oli Position: Chairperson of Hola Lift Water Supply & Sanitation Scheme Contact no: 986756644320 Road Head: Jhulkhet Chaukhabang, Hola Road. Contact Person: Bhupal Prakash Oli Position: Chairperson of the above UC Contact no: 9822844835 Road Head: Bairagithati Ward Office, Barmathan Road.



5	Language of the Bid: English
6	Quote validity period: 90 days counted from the date of the bid submission deadline.
7	Deadline for RFQ submission : Date: 8th day of notice publication Time: 12:00 PM Place: Musikot Municipality Office, Musikot, Rukum West or Local Adaptation to Climate Change Project, Project Support Unit (PSU), Khajura, Birendranagar, Surkhet or Liaison office of LACC Project (DMI Nepal Pvt Ltd.) Sanokharibot, Shantinagar, Kathmandu-31)
8	Completion of Task as mentioned in the Scope of Work within 6 Months from the date of the Agreement.
9	<u>Total Estimated Amount of the Assignment including VAT: NPR 4,877,698.62</u> <u>In Words: Forty Eight Lakh Seventy Seven Thousand Six Hundred Ninety Eight Rupees Sixty Two Paisa Only</u>
10	Documentary evidence of technical and production capabilities: (i) At least three solar water supply lifting schemes design, supply, delivery, installation, and testing/commissioning projects within the last five years. An experience letter should be submitted with the sealed quotation.
11	Performance Security Amount: Not required, as payment will be made after materials have been received, verified, and technically approved at the Road Head.
12	Warranty: Minimum 5-year warranty against manufacturing defects of the Solar PV Module. 3-year replacement warranty of solar pump and standard warranty applicable for other components.
13	Defect liability period: Repair or replace any defects found during the Defect Liability Period of One Year.
14	Payment i. Upon Signing of the agreement and submission of Field verification report: Twenty (20) percent of the Contract amount ii. Upon receiving the materials at the road head: Fifty (50) percent of the contract amount



	iii. Upon Submission of Installation Completion, Testing & Commissioning report along with handover as per contract: A maximum Thirty (30) percent of the Contract amount. iv. After Sales Service: The company shall provide regular support and have a field visit atleast once (1) a year up to three years. Thereafter the company shall visit the site atleast once a year on paid basis.
15	Local representative of the company, if any: Name of the representative: Address: Contact no:

1. Design a solar PV pumping system based on the minimum criteria as mentioned in the technical specification: (I. Minimum Design Criteria- mentioned on the below page).
2. Field verification must be completed to assure the design & **submit the detailed design report** by the contractor's responsible Engineer after the award of the contract & **before the first installment.**
3. After the verification of the design, install the solar PV pumping system based on the components recommended at Bills of Quantities (BoQ).
4. Works required for sequential installation of Solar PV Pumping System including necessary civil works (fixing casing pipe, solar frame) for mounting structures of solar module, shall be done by the contractor. All the work related to the proper installation and functioning of the system shall have to be carried out by the contractor with the prices offered in the quotation.
5. After installation of the system, Testing and commissioning must be done in the presence of LG Engineer or Project Technical Officer, prepare & submit the technical report for further payment process.
6. The contractor/firm will make all necessary arrangements for satisfactory operation, maintenance and performance of the Pumping System for 2 year's Warrantee/ Guarantee period.
7. Warrantee/Guarantee will include rectification/replacement of all the defective and consumable components/items. During Warrantee/Guarantee period, all the arrangements for keeping the Solar PV Pumping System functional shall be the sole responsibility of the contractor.



8. The contractor shall conduct on-site training of the user committee personnel regarding the assembly, start-up, operation, maintenance and repairs of the Solar PV Pumping System.
9. All necessary Spare parts/Tools should be provided by the contractor.
10. Transportation of the components to the site till the road head site as per mention in BOQ.
11. Provide Sales Service for an additional 3 years (after 2 year's warrantee period) with a minimum of 1 site visit annually. This visit will be paid by UC.
12. Contractors should have made representative agents at a provincial level with availability of solar pumping components sales for the pumping system and must be made linked with user committee.
13. **More than three (3) Years** experience in solar lifting water supply scheme will be very advantages for this assignement.



Section IV. Technical Specification

4.1 Minimum Design Criteria

SN	Scheme's name and location	Design Data
1.	Hola Lift Water Supply & Sanitation Scheme, Musikot-9, Musikot, Rukum West Location: Distribution tank GPS 28.5803175", 082.488726"	System that must be able to lift a minimum of 5785 liters of water per day at 184.07 m dynamic head. Single lift system with 368.40m pumping pipe length.
2	Barikhola Harale Naya gaun Water Supply & Sanitation Scheme, Musikot-12, Musikot, Rukum West Location: Distribution tank GPS 28.5803175", 082.488726"	1st Stage: System that must be able to lift a minimum of = 17,955.00 liters of water per day at 223.00 m dynamic head with 418.00 meter pipe length from well to intermediate RVT. 2nd Stage: System that must be able to lift a minimum of = 17,955.00 liters of water per day at 240.00 m dynamic head with 412.00 meter pipe length from well to top DC. Double lift system proposed.

Contractor/Firm could submit the alternative more efficient & economic design in single stage lift as per mentioned technical data. The technical evaluation committee will consider if the proposed system justifies required design & installation as per field requirement.

4.2 Solar Submersible Pump Unit

The contractor must design the solar water pump unit and submit the detailed technical specification and the calculation showing the discharge of the pump to meet the **Minimum Design Criteria**. Contractor/Firm should submit the separate design with justification in change of pumping size meeting minimum require specification of technical part.



SN	Description	Specification	Contract or Proposal	Contractor's Remarks* (Fully Complaint/Nor Complaint)
1	Name of the manufacturer	Fully Stainless steel Submersible Pump, standard ISO 9001-2008 three phase or equivalent ,		
2	Brand/Model	As per specifications		
3	Pump Type	Submersible borehole pump or equivalent Water-filled (Oil must not be used for lubrication), Submersible centrifugal or positive displacement Solar Pump, fully stainless Steel, with necessary casing and protection. Pump Performance Curve I.e. Flow Vs Input Pump Power shall be provided at the Head of Project design. Warranty on the motor and pump: 2 years		
4	Minimum Efficiency	Pump motor efficiency must be at least 60 %		
5	Minimum Standard	Submersible borehole pump, suitable for pumping clean water. It can be installed vertically or horizontally. Pump carrying drinking water approval.		



		The pump and controller must be manufactured by the same company. Pumps suitable for applications in groundwater lowering, pressure boosting, and fountain applications. The suction interconnector is fitted with a strainer to prevent large particles from entering the pump. The suction interconnector is designed to comply with NEMA standards for motor mounting/dimensions.		
6	Material	All steel components made in stainless steel, EN 1.4301 (AISI 304), ensure high corrosive & wear resistance. Rotors and impellers must be made of stainless steel with a minimum grade of AISI 304 or higher.		
7	Control	The pump controller must have an MPPT control circuit. The pump or pump set must be capable of stopping operation in the event of dry running or insufficient energy supply. Must be equal to or greater than the capacity of the pump. Warranty on the pump controller: 2 years		



		Must be of the same brand of the Pump. The Bidder must submit the technical datasheet. A Manufacturer's Authorization letter provided by principal manufacturer in their letter head.		
8	Warranty	At least 2 years		
9	Protection Features	Dry run protection, Over and under voltage protection, Overload protection, Temperature Protection		



4.3 Solar PV Array

Note: The minimum estimated solar array is 335 Watt (0.335 KWp). The contractor must calculate the solar array size based on the pump designed. In both cases, the capacity proposed by the contractor must not be below the minimum estimated capacity of Solar PV capacity. It is the responsibility of the contractor to guarantee the minimum water as mentioned in **Minimum Design Criteria**.

SN	Description	Specification	Contractor Proposal	Contractor's Remarks*(Fully Complaint/Nor Complaint)
1	Name of the manufacturer			
2	Brand/Model	Seraphim, Jinko, Trina or Equivalent		
3	Minimum Capacity	335 Wp (can be redesigned based on the Note above.)		
4	PV Module Type	RETS Certified, Mono or Poly Crystalline, should be equal or more/less than 325Wp. The warranty period for the PV module must be at least first year- $\geq 97\%$ of stc power, 10 years- $\geq 90\%$ of STC power and 25 years- $\geq 80\%$ of STC power. All PV modules offered for the scheme must be of the same type, same model, same power rating and same manufacturer. Minimum 5 years warranty against manufacturing defects. The test certificates must be provided.		
		The PV Module should have the International Certification, IEC 61215:2005 2nd Edition or IEC 61215-1:2016 and IEC 61215-		



SN	Description	Specification	Contractor Proposal	Contractor's Remarks*(Fully Complaint/Nor Complaint)
		2:2016 for Terrestrial photovoltaic (PV) modules - Design qualification and type approval – Part 1: Test requirements and Part 2: Test Procedures. IEC 61730 for PV module safety qualification, IEC 62804 for detection of potential induced degradation (PID).		
5	Certifications	ISO 9001 / ISO 14000/NEPQA 2015 OHSAS 18001 certified production facilities.		
6	Power degradation	A letter provided by principal PV module manufacturer in their letter head stating the warranty period for their PV module. The warranty period for the PV Module must be at least 10 years against a maximum 10% reduction and 20 years against a maximum 20% reduction of output power at STC.		
7	Minimum Module efficiency	≥ 16%		
8	Peak Power Per Module	335 Watts Peak or greater		
9	Junction Box	IP 65		
10	Module Mounted Structure	Non corrosive support structures to be fixed on the ground		
11	Tilt Angle and direction	As per field		
12	Support structure	Wind Speed up to 180 km/hr		



SN	Description	Specification	Contractor Proposal	Contractor's Remarks*(Fully Complaint/Nor Complaint)
	design, distribution poles and foundation mounting arrangements should withstand			
13	Support Structure	Shall be manufactured with Aluminum or stainless-steel angles and channels; deep galvanized iron (GI). The support frame structure should be able to resist at least 20 years of outdoor exposure without suffering significant damage or corrosion. It shall support solar PV modules at a given orientation, absorb and transfer the mechanical loads to the ground properly.		
14	Structure Galvanization Requirement	The modules support structure shall be mild steel, hot dipped galvanized (120 micron) iron for holding the PV modules. The size of angle iron should not be less than 50x50x5 mm		
15	Clearance and fixing	Mounting structures shall have necessary clearance at least 60 cm or more between ground level and bottom edge of PV modules as per the requirements. PCC work of 0.3 m above the ground level for each foundation		
16	HDPE Dugwell (Casing Pipe) with complete fittings with	3 mtr 200 mm dia or As per Attached drawings		



SN	Description	Specification	Contractor Proposal	Contractor's Remarks*(Fully Complaint/Nor Complaint)
	washout provision at bottom			
17	Grounding System of DC surge protector, AC surge protector, DC MCB, AC MCB, Set of Earthing Electrode 2" dia and 2m length installed in earthing pit with the set of Backfill chemical connected by 16sqmm copper cable all complete, wire 7/18, junction box etc.	SPD (for voltage limiting) shall have a discharge capacity total of 40 kA (8/20 μ s). The earth-termination system with bare copper conductors (minimum cross-section of 16 mm ²) by connection to the earthing electrodes or to the buried bare copper conductor connecting the earthing electrodes. The length of each earthing electrode shall not be less than 1.5 meters and outer diameter less than 48 mm and an inner diameter less than 27mm.		

The following information should be provided by the contractor in regard to solar PV module.

- The bidder must be submitting the technical datasheet of PV Module.
- A manufacturer's Authorization letter should be provided by the principal manufacturer in their letter head.
- Catalogue and technical specification of solar PV module with I-V curve.



- Inedible labels must be firmly fixed on the solar PV module containing the following information:

- Name and brand of the manufacturer.
- Model and type.
- Manufacturer serial number.
- Maximum power in watt peak.
- Open circuit voltage in volt.
- Short circuit current in ampere.
- Maximum rated voltage in volt.
- Maximum rated current in ampere

4.0 Protection

4.1 Lightning Arrestor

The lightning protection system shall be of the enhanced type which is designed to attract lightning to a preferred point and safely convey the lightning energy to ground with minimal risk of side flashing via a pre-determined route.

The complete lightning protection system will comprise the following key components.

- a) Lightning Air Terminal
- b) Mounting support
- c) Dedicated down conductor
- d) Dedicated Earthing system

4.1.1 The Lightning Air Terminal

- The lightning air terminal shall be an Early Streamer Emission terminal which will respond dynamically upon leader activity in the near area.
- The lightning air terminal shall be configured as a spheroid which is comprised of separate electrically isolated panels surrounding an earthed central finial.
- The insulation material used to electrically isolate the panels shall be comprised of a base polymer which provides high ozone and UV resistance with a dielectric strength of 24 – 38 KV/mm.
- The external shape of the advanced lightning rod shall be such that it will limit the development of sharp point corona discharge under static thunderstorm conditions.
- The central finial shall be elevated above the spheroid to a length of 86mm.
- The upper section of the central finials shall be rated to withstand 200KA.
- An air gap shall be provided between the individual electrically isolated panels (4 panels) and the final tip of the central rod.
- Arcing shall occur between the panel sections of the spheroid and the finial tip only upon the progression of a lightning leader.
- The lightning air terminal shall have no moving parts and will have no dependence on external power supply or batteries.
- Under a normal atmosphere all components of the advanced lightning terminal shall be non-corroding.



4.1.2 Mounting Support:

- The mounting pole used to support the lightning air terminal shall be a circular mast at a minimum height of 2 meters. The pole will have an outside diameter of 68 mm.
- The mounting pole and supports shall be securely fixed with brackets and guy wires where required.
- Mounting structure shall be non-corrosive to be fixed on ground.
- PCC box of 300 mm ? above the ground level for the foundation or as per site.

4.1.3 Down Conductor:

The down conductor shall pass through the center of the pole for the entire length of the pole.

- Each lightning air terminal should be fixed with one down conductor. The down conductor should have a minimum size of 50 mm² and can be a bare or insulated round / flat copper conductor. The down conductor should be fixed securely every one meter.
- The main copper conductor shall allow for direct connection to the lightning rod through the use of a compression lug.

4.2 Surge Protector:

- The DC surge protection (SPD for voltage limiting or class C) device shall be installed in TT configuration and in parallel mode compatible with Nepal's electricity supply.
- The Class C arrester used in and neutral sides should be single pluggable MOV based and Spark Gap based plug.
- The class C arrester should have visual and remote indication both in phase-to-neutral and neutral to ground protection module.
- The neutral and phase plugs should have clear markings so that it fits to the respective bases only.
- The Class C arrester should not be less than 40 kA protection level at waveform of 8/20 μ s.
- The unit shall be compatible in mounting on DIN Rail Channel.
- The degree of protection should be IP20 and inflammability class should be V0.

4.2 Earthing/Grounding for Lightning Arrester/ For Electrical and Safety Earthing:

The earthing system shall be designed, supplied, installed, tested, and commissioned using copper-bonded earthing rods suitable for lightning protection, electrical earthing, and safety earthing applications. Each earthing electrode shall consist of a minimum 25 mm diameter and 2.5 m long copper-bonded earthing rod, complete with all necessary accessories. The earthing electrode shall be connected to the Main Earth Bar (MEB) using a minimum 25 mm $\times$ 3 mm copper strip, including suitable copper/brass clamps, connectors, nuts, bolts, and all required jointing accessories to ensure a reliable and corrosion-resistant connection.

Certified Bentonite-based Ground Enhancement Material shall be provided and installed around each earthing electrode, with a minimum quantity of 25 kg per electrode, or as recommended by the manufacturer, to improve soil conductivity and achieve the specified earth resistance. The complete earthing system shall be installed in



accordance with applicable standards and good engineering practices. The final installed earthing system shall achieve the specified earth resistance value under normal operating conditions.

4.5 Others:

The components of the Solar PV Pumping systems must conform to the latest edition of IEC/ equivalent BoS Standards as specified in table below:

BoS item/component	Applicable Standard	
	Standard Description	Standard
Transmission Cables	NS standard for PVC insulated cables and UV resistant for outdoor installation 3 core 16 sqm or as per design	NS Standard
Switches/Circuit Breakers / Connectors	General Requirements Connectors-safety	NS/ IS standard
Junction Boxes/ Enclosures	General Requirements	IP 65 (for outdoor)/ IP 21 (for indoor) or Equivalent
SPV System Design and Installation Practices	PV Stand-alone System design, verification and electrical installation of building requirements for SPV power supply systems	NS/ IS Standard

4.6 Civil Works

The civil works for the solar pumping system will be as under:

1. Solar PV array installation and fixing

Drawings: The details, drawings and calculations must be provided.



Section V. Bill of Quantity (BoQ)

S.N.	Component Description	Unit	Quantity			Rate		Amount	Re- marks
			Barikhola Solar Lift Scheme	Hola Lift DWS	Total	In Words (Rs.)	In Figures (Rs)		
	Electromechanical Cost								
A	Non Vat Applicable Components								
1	Solar Panel in Watt, Minimum 335Wp (Mono PERC) minimum 25 years warranty	Nos	44	10	54				
Sub Total (A)					0				
B	Vat Applicable Components				0				
1	Fully Stainless-steel Submersible Pump standard ISO 9001-2008 three phase or equivalent , minimum 7.5 HP (minimum pumping rate 70 LPM at 240 m Head dynamic head)- GROUNDFOs or PEDROLLO or LOWRENTZ or Penguin or Equivalent	Nos	3		3				
2	Pump Control Drive (Solar Pump Inverter) Minimum 7.5 KW With IP 65 Rated Enclosure -Compatible with above standard	Nos	2		2				
3	Fully Stainless-steel Submersible Pump standard ISO 9001-2008 three phase or equivalent , minimum 3 HP (minimum pumping rate 22 LPM @ 197 meter dynamic head)-GROUNDFOs or PEDROLLO or LOWRENTZ or Penguin or Equivalent	Nos		2	2				
4	Pump Control Drive (Solar Pump Inverter) Minimum 4 KW With IP 65	Nos		1	1				



S.N.	Component Description	Unit	Quantity			Rate		Amount	Re- marks
			Barikhola Solar Lift Scheme	Hola Lift DWS	Total	In Words (Rs.)	In Figures (Rs)		
	Rated Enclosure -Compatible with above standard								
5	Lighting Arrestor with Copper Cable	Nos	2	1	3				
6	Surge Protector	Nos	2	1	3				
7	Copper-Bonded Earthing Rod Electrode Ø25 mm × 2.5 m, including 25 × 3 mm copper strip connection to Main Earth Bar (MEB), copper/brass clamps, nuts, bolts, accessories, and Bentonite-based Ground Enhancement Material for achieving specified earth resistance.	Nos	2	1	3				
8	AC,DC Cable/Wiring, MCB and other electrical material etc	PS	2	1	3				
9	Armored copper cable 3 phase (6 mm2)	M	200	50	250				
10	Installation accessories (tapes, nut+bolts Tool Set - Multimeter, Screw Driver, Pliers, Wire Cutter, Tesseract, Pipe Wrench for 2.5")	Set	2	1	3				
11	Plumbing accessories(GI pipe, HDPE pipe welding, joining etc.)	Set	2	1	3				
12	Verification, Installation, After sales service (Minimum 2 field visit after instlation in year) and Commissioning	stage	2	1	3				
13	Unidentified Misc goods	L/S	2	1	3				



S.N.	Component Description	Unit	Quantity			Rate		Amount	Re- marks
			Barikhola Solar Lift Scheme	Hola Lift DWS	Total	In Words (Rs.)	In Figures (Rs)		
14	Panel Mounting Structure, Dipped GI Galvanized Iron With RCC Footing)	Set	44	10	54				
15	Pipe Support Block (Stone Masonary Structure 60*60*65 Cm Below Ground level, 45*45*20 Cm Above Ground Level, PCC (45*45*30 cm) & Plaster Work Above Ground Level)	Nos	0	62	62				
16	GI Pipe (25mm)-MC	RM	0	368.40	368.40				
Sub Total (B)					0				
C	Mechanical item				0				
1	GI, Brass(Nipple, union, elbow etc) all required fitting	Job	2	1	3				
2	Pressure Gauge	Nos	2	1	3				
3	CS Made Non Return valve 2"	Nos	2	1	3				
4	Pump casing pipe (HDPE made at least PN 10, 8" diameter, 10 feet long, inlet: 63mm, outlet: 25mm with proper vent pipes)	Set	2	1	3				
Sub Total (C)									
D	13% Vat on Vat Applicable Components								



S.N.	Component Description	Unit	Quantity			Rate		Amount	Re- marks
			Barikhola Solar Lift Scheme	Hola Lift DWS	Total	In Words (Rs.)	In Figures (Rs)		
Grand Total (A+B+C+D)									
1	Transportation of all electromechanical equipment's -Up to Road Head at site	Set	1	1	2				
	Total								

Important Note: Contractor/Firm can propose separate economical, efficient design & estimated BoQ by authorized Engineering designer with one of the pumping systems of **Grundfos or Pedrollo or Lorentz** or equivalent. Technical evaluation can consider the new design and proposed costing maintaining the minimum standards of technical specifications.

Transportation (Road Head locations): Hola, Musikot



Please tick the following information option as per your capacity:

Availability Pump & Panel in the stock	☐ Yes ☐ No
Time of materials delivery to the sites after agreement with UC:	☐ Within One month ☐ 1-2 month ☐ More than 2 months
Availability of spare parts of solar pump, Panel & other accessories in local Market:	Available in ☐ Musikot Bazar ☐ Tulsipur, Dang ☐ Nepalganj ☐ Kathmandu
Availability of Local Technical Agent for repair & maintenance of solar pump, Panel & other accessories in region:	Available in ☐ Musikot Bazar ☐ Tulsipur, Dang ☐ Nepalganj



Annex: 1 Cover Letter format

[On Firm's Letterhead]

<Insert date>

To: Joint Procurement Committee

Hola Lift Water Supply & Sanitation Scheme, Musikot-9 and Barikhola Harale
Naya gaun Water Supply & Sanitation Scheme, Musikot-12, Rukum West

We, the undersigned, provide the attached proposal in accordance with **RFQ** Design, Supply, Delivery, Installation, Testing and Commissioning of Solar PV Water Pumping System **dated** Our attached proposal is for the total price of <Sum in Words Rs Sum in Figures..... for the three systems) >. We honestly understood & accepted the technical specification and requirement of the WSUC for the given task.

I certify a validity period of days for the prices provided in the attached Bill of Quantities. Our proposal shall be binding upon us subject to the modifications resulting from any discussions.

Offeror shall verify here the items specified in this RFQ document.

We understand that the User Committee is not bound to accept any proposal it receives.

Yours sincerely,

Authorized Signature:

Name and Title of Signatory:

Name of Firm:

Address:

Telephone & contact Mobile no:

Email:

Company Seal/Stamp:



**ANNEX 10: SAMPLE SELF-DECLARATION LETTER TO BE
SUBMITTED BY THE SUPPLIER**

Ref.No.:

Date: [DD/MM/YYYY]

Dispatch No.:

Subject: Self Declaration Letter

To:

[Name] Water Supply and Sanitation / Irrigation / Forest / Agriculture User Committee [Rural
Municipality / Municipality], Ward No. []
(Under the Local Adaptation to Climate Change Project)

Dear Chairperson of Procurement Committee,

We, [Supplier Name], hereby declare that, under the LACC Project:

1. We have not previously refused to sign contracts or provide materials and services as per our bid proposals.
2. We have delivered materials on time in all previous agreements with Users Committees under this project.
3. We have not supplied low-quality materials in any previous agreements with Users Committees.
4. We have not violated any contract terms in the past.

We also confirm that we have submitted along with this declaration:

- Copy of Value Added Tax (VAT) registration certificate
- Copy of firm registration or renewal certificate
- Copy of tax clearance certificate for the previous fiscal year
- Proof or bank voucher of the prescribed fee payment

We understand that if any of the above information is found to be false or fraudulent, we shall be disqualified from the bidding process without any objection or claim.

Signature of Authorized Person: _____

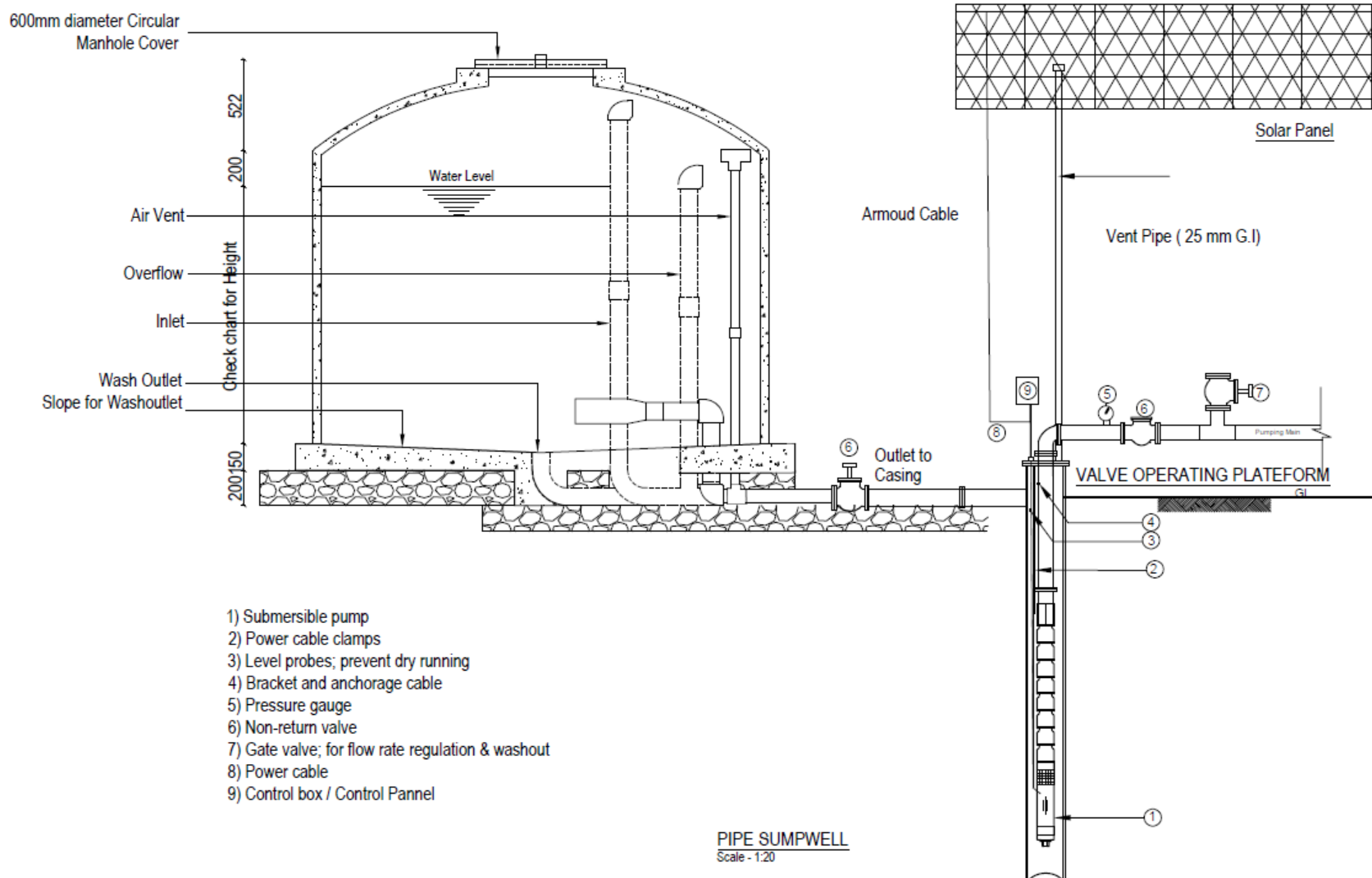
Name of Authorized Person: _____

Supplier Name and Address: _____

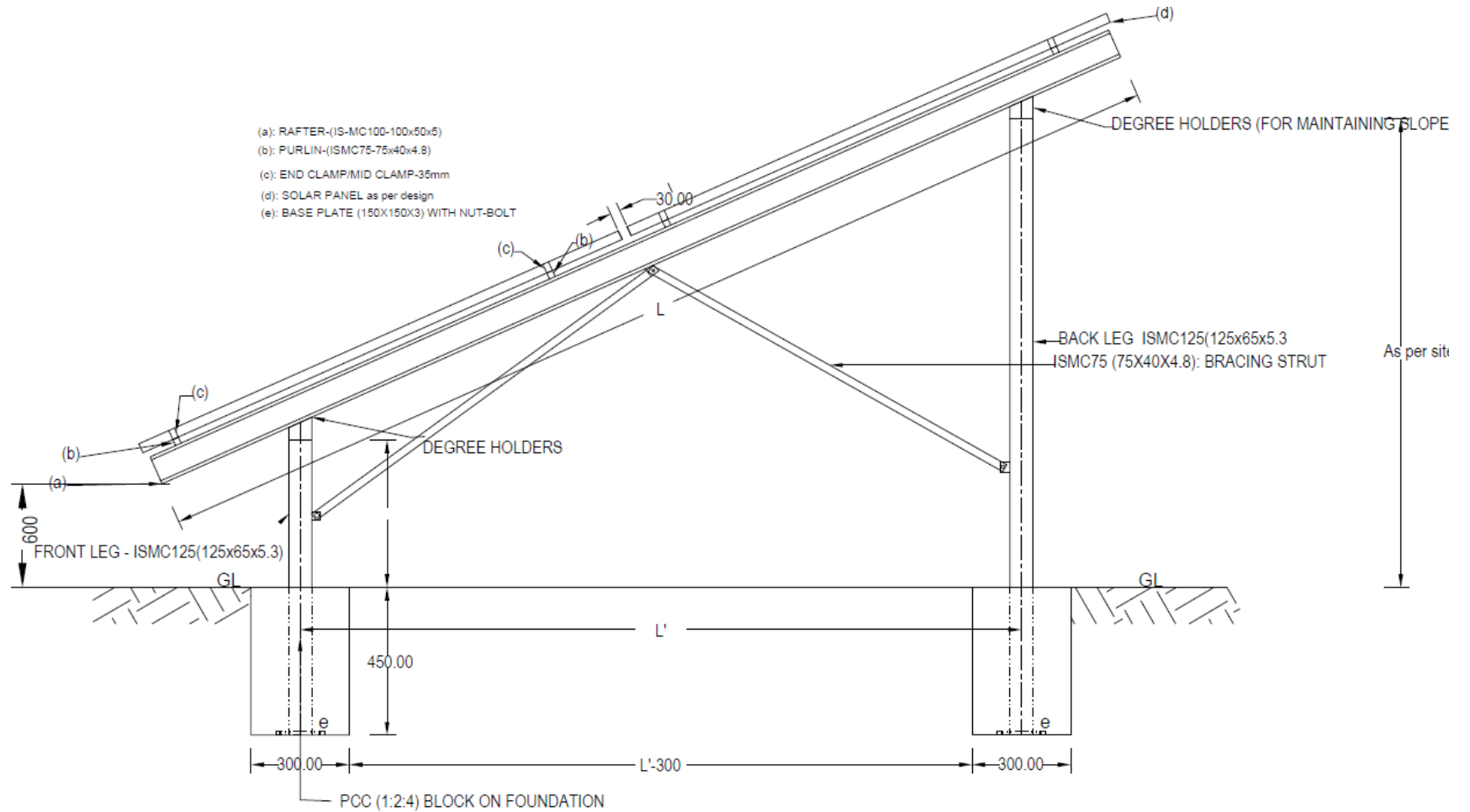
Stamp: _____



Annex: 2 Drawing of Casing Pipe



Annex :3 Drawing of Solar mounting frame



ELEVATION OF SOLAR MOUNTING STRUCTURE : POTRAIT MODE OF SOLAR PANEL INSTALLATION



A. Barikhol Harale Nayagaun WSSS, Mucikot Municipality, 12

B. Barikhol Harale Nayagaun WSSS, Mucikot Municipality, 12

Design of Pump				
Distance of pumping main, L			= 418.00 m	From Site Visit Conducted (w
Total level difference between Source and proposed reservoir			= 187.41 m	From Site Visit Conducted
The discharge to be pumped, Q			= 4002.45	L/Hr
			= 1.112	lps
By Lea's formula, economical size of pumping main, D is given then:				
D = 1.22√Q				
Hence,	D		= 40.68 mm	
However available size of GI pipe is:			= 40.00 mm	
		Hence, use 40 mmØ GI pipe having bore	= 40.00 mm	
Calculation of head loss :				
\		Here, Discharge, Q	= 1.112	Lps
		For 40 mmØ GI pipe		
		Pipe bore, D	= 40.00	mm
		For length, L	= 418.00	m
		Pipe material being used	GI	
		Velocity of flow, V = Q/A = 4Q/π D²	= 0.88	m/s
		Absolute roughness	= 0.15	mm
		Coefficient of friction, f	= 0.0315	From table
Using Darcy-Weisbach equation				
		Headloss, H ₁ = f .L/D.v²/2g	= 13.14	m
		Total headloss	= 13.14	
Total head for pumping = Level difference + headloss + Suction head				
Depth of collection tank (If deep boring keep that depth here)			= 2.00	m
However take the dyanamic level of water for submersible pump as 1.5 m below the collection tank				
			= 1.50	m
Additional Head Loss (10% of total static head measured)			= 18.74	
∴ Total dynamic head, H			= 222.79	m
Horse Power of Pump				
HP = $\frac{Q \rho g H}{746 \eta}$				
Where,				
Q = discharge, m³/s				
ρ = density of water, kg/m³				
g = acceleration due to gravity, m/s²				
H = total dynamic head, m				
η = efficiency of pump				
Assuming efficiency of pump as		= 50.00 %	(average eff. of pump available in market)	
The HP of pump required		= 6.50	= 4.85	KW
Requirement		66.7 LPM @223 Meter Total Dynamic Head		
Based on above pump design and available performance chart, submersible pump with performance of at least 50 L/M at 188 m				
From pump manufacturer's characteristic performance curve, following pump matches				
Name of pump :		Penguin		
Pump model :		PR-5040		
Phase of power supply :		Three Phase	Outlet: 40mm	1.75"
Power of pump :		5.60 kW	(7.5 HP)	
Discharge :		70 LPM at 240 m Head at "Duty Point"		
		From Pump Performance Cur		



C. Hola Lift Scheme, Mucikot Municipality-9, Rukum

Design of Pump				
Distance of pumping main, L		= 368.40 m	From Site Visit Conducted (with 10% mark up)	
Total level difference between Source and proposed reservoir		= 150.00 m	From Site Visit Conducted	
The discharge to be pumped, Q		= 1320.78 L/Hr	22.0 LPM	
		= 0.367 lps		
By Lea's formula, economical size of pumping main, D is given then:				
D = 1.22√Q				
Hence,	D	= 23.37 mm		
However available size of GI pipe is:		= 25.00 mm		
Hence, use 25 mmØ GI pipe having bore		= 25.00 mm		
Calculation of head loss :				
\		Here, Discharge, Q	= 0.367 Lps	
		For 25 mmØ GI pipe		
		Pipe bore, D	= 25.00 mm	
		For length, L	= 368.40 m	
		Pipe material being used	GI	
		Velocity of flow, V = Q/A = 4Q/πD²	= 0.75 m/s	
		Absolute roughness	= 0.15 mm	From table
		Coefficient of friction, f	= 0.0371	
Using Darcy-Weisbach equation				
		Headloss, H ₁ = f .L/D.v²/2g	= 15.57 m	
		Total headloss	= 15.57	
Total head for pumping = Level difference + headloss + Suction head			m	
Depth of collection tank (If deep boring keep that depth here)		= 2.00 m		
However take the dynamic level of water for submersible pump as 1.5 m below the collection tank		= 1.50 m		
Additional Head Loss (10% of total static head measured)		= 15.00		
∴ Total dynamic head, H		= 184.07 m		
Horse Power of Pump				
$HP = \frac{Q \rho g H}{746 \eta}$				
Where,				
Q = discharge, m³/s				
ρ = density of water, kg/m³				
g = acceleration due to gravity, m/s²				
H = total dynamic head, m				
η = efficiency of pump				
Assuming efficiency of pump as		= 40.00 %	(average eff. of pump available in market)	
The HP of pump required		= 2.22	= 1.65 KW	
Requirement		22 LPM @ 197 Meter Total Dynamic Head		
Based on above pump design and available performance chart, submersible pump with performance of at least 50 L/M at 188 meter head has been considered				
From pump manufacturer's characteristic performance curve, following pump matches				
Name of pump :	Penguin			
Pump model :	PT-3040			
Phase of power supply :	Three Phase	Outlet: 25mm	1"	
Power of pump :	2.24 kW	(3 HP)		
Discharge :	22 LPM at 197 m Head at "Duty Point"			From Pump Performance Curve

