

Invitation for Quotation (Bid Call Notice)
Tap Khola Hydropower Co-Operative Society Ltd.

Sapteswor VDC, Khotang, Nepal

First date of bid (quotation) call: 28th August, 2012

Name of Project: Tap Khola II- Mini Hydropower Project (303 kW)

Name of Contract: Supply, Construction/Erection, Supervision and Testing and Commissioning of Electro & Hydro-mechanical Works of Tap Khola II- Mini Hydropower Project (303 kW)

1. Tap Khola Hydropower Co-Operative Society Ltd (TKHCL) is developing **TAP KHOLA II-MINI HYDROPOWER PROJECT** of installed capacity **303 kW** with a subsidy support of **NRs. 46,207,500 (Forty Six Million Two hundred Seven Thousand and Five hundred rupees from "Rural Energy Fund (REF)"** under GoN/Alternative Energy Promotion Center (AEPIC)/National Rural and Renewable Energy Programme (NRREP). The project is aimed at electrifying about **2671 households** in **Jhalpa, Sapteswar, Makpa and Kharmi VDC of Khotang district**. The Co-Operative (community based Organization) intends to apply this subsidy or part of the subsidy to the eligible payments under the contract for which this invitation for quotation (Bid Call Notice) is issued. The Co-Operative will raise money from about 2671 beneficiary households and the remaining fund will be fulfilled from other sources or loans and local contribution.
2. The Co-Operative invites sealed bids (Tenders); that is separate technical proposal and financial proposal enclosed in separate envelope from eligible contractors for the **Supply, Construction/Erection, Supervision, Testing and Commissioning** of Electromechanical & Hydro mechanical Works of the Tap Khola II-Mini Hydropower Project (*Tender No. TKSMP-02-Electro/Hydro mechanical 2068/069*).
3. Applicants shall have following experiences during the last fifteen years as of August 2012
[Threshold criteria]:
 - a. The bid shall include certificates from the end users validating that the bidders has successfully completed design (If the Bid involves design), construction and commissioning of at least one hydro power project of installed capacity 200 KW or above .
 - b. The Bidder shall complete the construction, installation and commissioning the projects of cumulative power capacity of 500 KW.
4. The detail Term of Reference (ToR) pertaining to Bid Document can be downloaded from the website of TKHCL (www.tapkhola.org.np) or websites of REMREC (www.remrec.org) and AEPIC/NRREP (www.aepic.gov.np) or will provide via email. The appeal for Bid documents via email would be acceptable of five days prior to the last date of Bid submission within office hours. Applicant can request to email –I.D:raimrtanka@yahoo.com
5. Applicant require to submit the payment bank voucher (regarding Bid document) of a nonrefundable fee of NRs. 3000.00 to the Co-Operative account no. 009009000100 at the **Citizen Bank International Ltd. Koteswor Branch**, Kathmandu in favor of the TKHCL, before or during submission of Bid documents.
6. Bids must be submitted to the following offices (mention below) on or before 12:00 Noon on 15th day of Publication (2012/09/11).
7. Documents received after this deadline will not be accepted.
8. Bids shall be opened in the presence of Bidders' representatives who choose to attend at 14:00 PM on 16th day (2012/09/12) at the Co-Operative contact office, Koteswor, Kathmandu. Absence of any Bidder shall not affect opening of the Bids.
9. Bids must be valid for a period of 90 days after bid opening and must be accompanied by bid security; **Amount of Bid Security shall not be less than 2.5% of estimated cost of Bid Amount**, which shall be valid for 30 days beyond the bid validity period.
10. If the last date of purchasing, submission and opening falls on a government holiday then the next immediate working day shall be considered as the last day.
11. No Pre-Bid meeting will be held but Bidder could consult the concern authorities and will be clarify by means of phone, fax, email and other communication method whichever is available.
12. The Co-Operative will not be responsible for any cost or expenses incurred by the Bidders in connection with the preparation or delivery of Bids.
13. The Co-Operative reserves the right to accept or reject any Bids, partly or wholly, without assigning any reason whatsoever.

Addresses:

1) Tap Khola Hydropower Cooperative Society Ltd. (TKHCL) Sapteswor VDC, Khotang Tel.: 036-690305, 993364043 www.tapkhola.org.np	2) TKHCL c/o RRESC/REMREC PO box 019, Dhulikhel-2 Kavrepalanchowk, Nepal Tel: 011-490021 Fax: 011-490721 Email:- remrec@ntc.net.np www.remrec.org	3) Contact Office of TKHCL Koteswor, Kathmandu, Nepal Tel.: 01-2053350
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TAP KHOLA HYDROPOWER CO-OPERATIVE LTD.

Sapteswar V.D.C., Khotang, Nepal

DESIGN, SUPPLY, DELIVERY, INSTALLATION, TESTING AND
COMMISSIONING OF ELECTROMECHANICAL &
HYDROMECHANICAL EQUIPMENTS
FOR
HYDROPOWER PLANT AND SWITCHYARD
**Contract No. TKSMHP-02-Electromechanical &
Hydromechanical-2068/069**

TAP KHOLA-II MINI HYDROPOWER PROJECT

Sapteswar-7, Khotang District

TECHNICAL BID DOCUMENT

August, 2012

Bhadra, 2068

Issued to:

Contractor:

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Invitation for Bids

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Section I Instructions to Bidders

A. General

1. Scope of Works

The main scope of work is to Design, supply, delivery, installation, testing and commissioning of hydro and electro-mechanical equipments for hydropower plant and switchyard of the Tap Khola II Mini Hydropower Project.

The Employer invites bids for the construction of works as detailed in attached specifications, drawings and the bill of quantities provided herein.

2. Eligible Bidder

The invitation for Bids is open to all registered firms or Joint Venture association (JV) of firms with qualifications as described in the Bidding Data. In the case of a JV:

1. maximum number of partners in Joint venture association shall be as specified in Bidding Data
2. All parties shall be jointly and severally liable for execution of the Contract in accordance with the Contract terms, and condition.
3. the JV shall nominate a Representative who shall be authorized to conduct all business for and on behalf of any and all the parties of the JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution; and this authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the partners.
4. If a Bidder selected for contract award is a joint venture association then such JV shall register with the Inland Revenue Office for the PAN and VAT.

3. Qualification of the Bidder

- 3.1 All Bidders shall provide Qualification Information in Section III. To qualify for award of the Contract, the Bidders shall meet the following minimum qualifying criteria:
 - a. general Work Experience as a sole prime contractor or management contractor or partner of joint venture association or sub contractor as specified in the Bidding Data;
 - b. average annual volume of construction work completed as a sole prime contractor or management contractor or partner of joint venture association or sub contractor in the last ten (10) years of at least the amount specified in the Bidding Data;
 - c. successful specific experience as or management contractor or partner of joint venture association or sub contractor in the construction of at least the number of works, each with a value as specified in the Bidding Data of a nature and complexity equivalent to the Works in the last ten years (to comply with this requirement, works cited shall be at least 80 % complete);
 - d. Liquid assets and or credit facilities, net of other contractual commitments and exclusive of any advance payments which may be made under the contract, of no less than the amount specified in the Bidding Data;
 - e. a Contract manager with five years' experience in works of an equivalent nature and volume, including no less than three years as a Contract Manager; and other personnel as specified in the Bidding Data; and
 - f. Proposals for the timely acquisition (own, lease, hire, etc.) of the essential equipment, in working condition for the contract duration, as listed in the Bidding data.
- 3.2 The figures of each of the partners of a joint ventures shall be added together to

determine the Bidder's compliance with the minimum qualifying criteria of ITB Sub-Clause 3.1 above. However, for a joint venture to qualify, each of its partners must meet the qualifying criteria of 3.1 (a): at least the percentage specified in Bidding Data of minimum criteria Sub-Clause 3.1 (b) and (d) for an individual Bidder and the partner in charge at least the percentage specified in the Bidding data of minimum criteria of Sub-Clause 3.1 (b); 3.1 (c) and 3.1 (d). Failure to comply with this requirement will result in rejection of the joint venture's bid. Subcontractor's experience and resources will not be taken into account in determining the Bidder's compliance with the qualifying criteria, unless otherwise stated in the Bidding Data.

- 3.3 The value of turnover and specific work experiences pursuant to Sub-Clause 3.1 (b) and (c) shall be brought to the current value using the annual inflation rate (National Urban Consumer Price Index; Overall Index) published by Nepal Rastra Bank.

4. One Bid per Bidder

Each Bidder shall submit only one bid, either individually or as a partner in a joint venture. A bidder who submits or participates in more than one bid shall cause all the proposals with the Bidder's participation to be disqualified. A firm may participate in more than one bid only as a subcontractor.

5. Cost of Bidding

The Bidder shall bear all costs associated with the preparation and submission of his bid and the Employer will in no case be liable for these costs, regardless of the conduct or outcome of the bidding process.

6. Site Visit

The Bidders are encouraged to visit the site of the works at his own cost, responsibility and risk to acquire all necessary information for preparing the bid and entering into a contract for construction of works.

B. The Bidding Documents

7. Content of Bidding Documents

The Bidding Documents comprise the document listed below:

Invitation for Bids (IFB)
Instructions to Bidders (ITB)
Bid Data Sheet (BDS)
Sample Forms of Bid, Qualification Information, Letter of Acceptance and Agreement
General Conditions of Contract (GCC)
Special Conditions of Contract (SCC)
Technical Specifications and Drawings (TS)
Bill of quantities
Sample Forms of Securities

The Bidder is expected to examine all instructions, forms, terms, specifications and other information in the bidding documents. Failure to furnish all information required by the bidding documents or submission of a bid not substantially responsive to the bidding documents in every respect will be at the Bidder's risk and may result in rejection of its bid.

8. Clarification of Bidding Documents

A prospective Bidder may request clarification on the bidding documents in writing or by telefax or by email: *rainrtanka@yahoo.com* at the Employer's mailing address indicated in the Bidding Data. The Employer shall respond to such request received no later than seven (7) days prior to the deadline for submission of bids prescribed by the Employer. Written copies of the Employer's response (including an explanation of the query but not

identification of its source) will be sent to all the purchasers of the bidding documents.

C. Preparation of Bids

9. Language of Bid

All documents relating to the bid shall be in English or Nepali.

10. Documents Comprising the Bid

The bid submitted by the Bidder shall comprise the following:

- (a) Bid and Qualification / Eligibility Information
- (b) Bid Security
- (c) Priced Bill of Quantities

11. Bid Prices

The contract shall be for the whole works described in scope of works based on the priced Bill of Quantities submitted by the Bidder. The Bidder shall fill in rates and prices for all items of the works in **Nepalese rupees**. Items for which no rate or price is entered shall be deemed covered by the other rates and prices in the Bill of Quantities and shall not be paid by the Employer.

All taxes, duties, and levies payable by the Contractor under the contract shall be included in rates, prices and total price submitted by the Bidder.

12. Bid Validity

The bid shall remain valid for the period specified in the Bidding Data.

13. Bid Security

The Bidder shall furnish a bid security in Nepalese Rupees in the amount specified in the Bidding Data. The bid security shall remain valid for a period of 30 days beyond the original validity period for bid and any period of extension subsequently requested by the Employer.

The bid security shall be in the form of a bank guarantee from a commercial bank acceptable to the Employer or a cash voucher deposited in the Bank Account of the Employer specified in the Bidding Data.

Any bid not accompanied by an acceptable bid security shall be rejected by the Employer. The bid security of a joint venture must define as "Bidder" all joint venture partners and list them in the following manner: a joint venture consisting of ".....," and "....."

14. Format and Signing of Bids

One original and one duplicate copy of the bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as specified in the Bidding Data 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. Any entries or amendments including alterations, corrections or additions made shall be initialed by the same authorized person.

D. Submission of Bids

15. Sealing and Marking of Bids

The Bidder shall submit **one original and one duplicate copy of the bid**. These bids shall be placed in sealed envelopes. Both the sealed envelopes shall be placed in an outer envelope which shall also be sealed. The inner envelopes shall duly marked as **“ORIGINAL” and “COPY”** The envelopes shall be addressed to the Employer at the address given in the Bidding Data, bear name

and identification number of the contract and also the name and address of the Bidder.

16. Pre-Bid Meeting

A pre-Bid meeting if provided for in the Bidding data shall be held at least 10 days before the bid submission date at the place, date and time as mentioned in the Bidding data. Any amendment to be made in the Bid subsequent to the Pre-Bid meeting shall be issued within 5 days of the meeting and the addendum shall be circulated to all the purchasers of the Bidding Document. The addendum thus issued shall be a part of the Bidding document.

17. Deadline for Submission of Bids

Bids must be delivered to the Employer at the address specified, no later than the time and date stated in the Bidding Data.

18. Late Bids

Any bid received by the Employer after the bid submission deadline shall not be accepted and shall be returned unopened to the Bidder.

19. Modification and Withdrawal of Bids

19.1 Bidders may modify or withdraw their bids after it has been submitted by giving a written notice, duly signed by an authorized representative and shall include a copy of authorization in accordance with Clause 14 before the deadline prescribed in Clause 17. The corresponding modification of the bid must accompany the respective written notice.

19.2 The Bidder's modification or withdrawal notice shall be prepared, sealed, marked and delivered in accordance with Clause 16 with the outer and inner envelopes additionally marked "MODIFICATION" OR "WITHDRAWAL," as appropriate.

19.3 No bid may be modified after the deadline for submission of Bids.

E. Bid Opening and Evaluation

20. Opening of Bids by Employer

20.1 The Employer will open the bids in the presence of Bidders' representatives who choose to attend, at the time, date, and place specified in the Bidding Data.

20.2 First envelopes marked "WITHDRAWAL" shall be opened and read out and the envelope with corresponding bid shall not be opened. 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 envelop Marked "Modification" shall be opened and read out with 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 the bid opening shall be considered further.

20.3 The bidders' names, the Bid Prices, the total amount of each bid, any discounts, bid modifications and withdrawals, the presence or absence of Bid Security, difference of rate in words and figures, quoted price for alternate technical specification if proposed, whether the Bid Form has signature of the bidder or authorized representative, corrections / effacement or obliteration in bidding document, any remarks made by the Bidder in the Form, details of rates if required and such other details as the Employer may consider appropriate shall be announced by the Employer at the opening.

20.4 The Employer shall prepare and provide minutes of the bid opening, including

the information disclosed to those present.

21. Process to be confidential

Information relating to the examination, clarification, evaluation and comparison of bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced.

22. Clarification of Bids and Contacting the Employer

22.1 To assist in the examination, evaluation and comparison of Bids, the Employer may, at the Employer's discretion, ask any Bidder for clarification of the Bidder's bid, including breakdowns of the unit rates. The request for clarification and the response shall be in writing or by facsimile, but no change in the price or substance of the bid shall be sought, offered or permitted except as required to confirm the correction of arithmetical errors discovered by the Employer in the evaluation of the Bids in accordance with Clause 24.

22.2 Subject to Sub-Clause 22.1 no Bidder shall contact the Employer on any matter relating to his bid from the time of bid opening to the time the contract is awarded. If any Bidder wishes to bring additional information to the notice of the Employer, he should do so in writing.

22.3 Any effort by a Bidder to influence the Employer in the Employer's bid evaluation, bid comparison or contract award decisions may result in rejection of the Bidder's bid.

23. Examination of Bids and Determination of responsiveness

23.1 Prior to the detailed evaluation of bids, the Employer shall determine whether each bid (a) meets the eligibility criteria defined in Clause 2; (b) has been properly signed; (c) is accompanied by the required securities; and (d) is substantially responsive to the requirements of the bidding documents.

23.2 A substantially responsive bid is one that conforms to all the terms, conditions and specifications of the bidding documents without material deviation or reservation. A material deviation or reservation is one (a) that affects in any substantial way the scope, quality or performance of the Works; (b) which limits in any substantial way, inconsistent with the Bidding documents, the Employer's rights or the Bidder's obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.

23.3 If a bid is not substantially responsive, it shall be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation.

The Employer's determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence. The Employer may waive any minor informality, nonconformity or irregularity in a bid that does not constitute a material deviation.

24. Correction of Errors

24.1 Bids determined to be substantially responsive shall be checked by the Employer for arithmetic errors. Errors shall be corrected by the Employer as follows:

a. where there is a discrepancy between the amounts in words and figures, the amount in words shall govern; and

b. where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted shall govern, unless in the opinion of the Employer there is an obviously gross misplacement of the decimal point in the unit rate, in which case the line item

total as quoted shall govern, and the unit rate shall be corrected.

24.2 The amount stated in the bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and, with the concurrence of the Bidder, shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected amount, the bid will be rejected and the Bid Security may be forfeited.

25. Evaluation and Comparison of Bids

25.1 The Employer shall evaluate and compare only the Bids determined to be substantially responsive in accordance with Clause 23.

25.2 In evaluating the Bids, the Employer shall determine for each bid the evaluated Bid Price by adjusting any corrections for errors pursuant Clause 24;

25.3 Further the Employer shall evaluate:

(a) whether construction work plan, work performance schedule and mobilization period is consistent with the requirement of the bidding document or not,

(b) Whether the quoted item unit rates in the Bill of Quantities are reliable or not,

(c) Whether or not the quoted price is unbalanced due to unnaturally high rates quoted by the Bidder for work items to be completed in the initial stages of the contract or for work items whose quantities are assumed by the Bidder to be underestimated.

25.4 If the bid, which results in the lowest Evaluated Bid price, is unbalanced or frontloaded in relation to the Employer's estimate of the items of Work to be performed under the contract pursuant to Clause 25.3, ***the Employer shall ask the Bidder to give clarification with detailed rate analysis for any or all items of the Bill of Quantities.*** If the clarification is found satisfactory then the Employer shall increase at the expense of the Bidder the performance security set forth in Clause 29 by additional 8% of the quoted amount to protect the Employer against financial loss in the event of default of the successful Bidder under the contract and if the clarification is found unsatisfactory then the Employer may reject such bid.

25.5 The Employer reserves the right to accept or reject any variation, deviation or alternative offer. Variations, deviations, and alternative offers and other factors which are in excess of the requirements of the Bidding documents or otherwise result in unsolicited benefits for the Employer will not be taken into account in bid evaluation.

F. Award of Contract

26. Post-qualification

26.1 The Employer shall select and award the contract to the Bidder who has offered the lowest evaluated Bid Price, provided that such Bidder has been determined to be eligible in accordance with the provisions of Clauses 2 and 3 and no application for review of decision is received from other Bidders pursuant to Sub-Clause 26.3.

26.2 The Employer shall notify it's intention to award the contract to the selected Bidder in accordance with Sub-Clause 26.1 within 7 days of selection of his

bid. The Employer shall also provide information regarding the name, address and the contract amount of the successful bidder to all the bidders who participated in the bid.

- 26.3 Any Bidder who is not satisfied with the procurement process or Employer's decision provided as per Sub-Clause 26.2 and believes that the Employer has committed an error or breach of duty which has or will result in loss to the Bidder then the Bidder may give an application for review of the decision to the Employer with reference to the error or breach of duty committed by the Employer. The review application should be given within 7 days of receipt of information regarding the issue of letter by the Employer notifying its intention to award the contract to the successful Bidder.
- 26.4 If the review application is not received by the Employer as per Clause 26.3 then the bid of the Bidder selected as per Sub-Clause 26.1 shall be accepted by the Employer.

**27. Employer's
Right to
Accept Any
Bid and to
Reject Any or
All Bids**

The Employer reserves the right to accept or reject any bid, and to cancel the bidding process and reject all bids at any time prior to the award of contract, without assigning any reasons whatsoever and without thereby incurring any liability to the affected Bidder or Bidders.

**28. Notification of
Award and
Signing of
Agreement**

- 28.1 The Bidder whose bid is accepted with Sub-Clause 26.4, will be notified of the award by the Employer prior to the expiration of the bid validity period. This notification (called the "Letter of Acceptance") shall state the sum that the Employer shall pay the Bidder in consideration of the execution, completion and maintenance of the works as prescribed by the contract.
- 28.2 Within fifteen (15) days after receipt of Acceptance, the successful Bidder shall deliver to the Employer a Performance Security in the amount pursuant to Sub-Clause 29 and sign the Contract agreement.
- 28.3 If the successful Bidder fails to deliver the Performance security and sign the Agreement pursuant to Sub-Clause 28.2 and if required an additional amount pursuant to Sub-Clause 25.4 then the Employer shall forfeit of the Bid Security of the Bidder and accept the bid of immediately next lowest evaluated substantially responsive Bidder.
- 28.4 Upon furnishing by the successful Bidder of the Performance Security and signing of the Agreement, the Employer shall promptly notify the other Bidders that their bids have been unsuccessful.

**29. Performance
Security**

Within fifteen (15) days after receipt of Acceptance, the successful Bidder shall deliver to the employer a Performance Security in acceptable format to the Employer as specified in Section IX and equal to five percent (5%) of the Contract Agreement Amount.

**30. Advance
Payment**

The Employer shall make Advance Payment on Initial Contract Price as stipulated in the Letter of Acceptance, subject to a maximum amount as stated in the Bidding Data. Contractor has to submit bank guarantee of equivalent amount of advance payment.

31. Additional

The Contractor shall provide additional Performance Security pursuant to Sub-Clause 25.4.

Securities

32. Adjudicator

The Employer proposes the person named in the Bidding data to be appointed as Adjudicator under the Contract, at the hourly fee specified in the Bidding Data, plus reimbursable expenses. If the Bidder disagrees with this proposal, the Bidder should so state in his Bid. If, in the letter of Acceptance, the Employer does not agree on the appointment of Adjudicator, the Employer will request the Appointing Authority designated in SCC at the request of either party.

33. Conduct of Bidders

33.1 The Bidder shall be responsible to fulfill his obligations as per the requirement of the Contract Agreement, Bidding documents, and GON's Act and prevailing regulations.

33.2 The Bidder shall not carry out or cause to carry out the following acts with an intention to influence the implementation of the procurement process or the procurement agreement:

- a. give or propose improper inducement directly or indirectly,
- b. distortion or misrepresentation of facts,
- c. engaging or being involved in corrupt or fraudulent practice,
- d. interference in participation of other prospective bidders,
- e. coercion or threatening directly or indirectly to cause harm to the person or the property of any person to be involved in the procurement proceedings,
- f. Collusive practice among bidders before or after submission of bids for distribution of works among bidders or fixing artificial / uncompetitive bid price with an intention to deprive the Employer the benefit of open competitive bid price,
- g. Contacting the Employer with an intention to influence the Employer with regards to the bid or interference of any kind in examination and evaluation of the bids during the period after opening of bids up to the notification of award of contract.

34. Blacklisting Bidder

34.1 Without prejudice to any other right of the Employer under this contract, GoN, Public Procurement Monitoring Office may blacklist a bidder for his conduct up to three years on the following grounds and seriousness of the act committed by the bidder:

- a) If it is proved that the bidder committed acts pursuant to the clause 39.2,
- b) If the bidder fails to sign an agreement pursuant to clause 28.4,
- c) If it is proved later that the bidder/contractor has committed substantial defect in implementation of the contract or has not substantially fulfilled his obligations under the contract or the completed work is not of the specified quality as per the contract,
- d) If convicted by a court of law in a criminal offence which disqualifies the bidder from participating in the contract.
- e) If it is proved that the contract agreement signed by the bidder was based on false or misrepresentation of bidder's qualification information
- f) Other acts mentioned in the Bidding Data

34.2 A firm declared blacklisted and ineligible by the GoN and or Co-Operative shall be ineligible to bid for a contract during the period of time determined by the PPMO and/or Co-Operative

Section II Bidding Data

Instructions to Bidders Clause References

A. General	
ITB 1	<p>The Employer is: Tap Khola Hydropower <i>Society</i> Co-Operative.Ltd</p> <p>The main scope of work is to Design, supply, delivery, installation, testing and commissioning of hydro and electro-mechanical equipments for hydropower plant and switchyard of the Tap Khola II Mini Hydropower Project.</p> <p>The Employer invites bids for the construction of works as detailed in attached specifications, drawings and the bill of quantities provided herein</p> <p>The Intended Completion date is: As per Work Schedule submitted with Tender Document and from the date of contract signing</p>
ITB 2	<p>Bidder's Eligibility Requirement :</p> <ol style="list-style-type: none"> a. “Bidder” shall mean a legally registered entity submitting the bid proposal. The entity may be supplier or manufacturer of the tender goods or contractor or any combination of them in the form of joint venture as specified in qualification requirement. b. “Joint venture” shall mean a legally enforceable association constituted by legally registered entities with the purpose of committing the obligations required by the bid . c. “Goods” shall mean equipment ,plant, goods, materials etc to be supplied and installed for the completion of the work as particular described in the specification .Up to date Firm/Company Registration Certificate d. Business Registration License e. VAT and PAN Registration Certificate f. Tax Clearance Certificate or Submission of Tax Returns up to F/Y 2067/68 g. A written declaration made by the Bidder stating that the Bidder is not ineligible to participate in the Bid: has no conflict of interest in the proposed bid procurement proceedings and has not been punished for the profession or businesses related offence. h. Power of Attorney: The bid shall include notarized power of attorney authorizing the signatory of bid to commit the bid in behalf of the bidder. <p>Legal status : -</p> <ol style="list-style-type: none"> 1) For the bidder which is not a joint venture: The bidder shall be contractor legally registered for at least five (5) years. A notarized copy of legal registration certificate shall be submitted along with a bid. 2) For JV Bidder :- The number of partners in Joint Ventures is limited to three and share of each partner in the Joint Venture shall not be less than 25% while the share of lead partner shall be more than 40%. <ol style="list-style-type: none"> i) Original of Joint Venture agreement legally bidding on all JV partners shall be included in the Bid. The Joint Venture agreement shall bear the seal of the entities and signatures of personnel authorized by the respective entities forming the Joint Venture. All such authorization

	<p>documents shall also be included in the respective entity with stamp/seal of the entity.</p> <p>ii) The number of Joint Venture partners shall not exceed three (3).</p> <p>iii) The lead partner of JV shall be a contractor legally registered for at least five (5) years.</p> <p>iv) The other partners of the JV shall be contractors legally registered for at least three (3) years.</p> <p>v) Notarized copies of legal registration certificates for each JV partners shall be submitted along with the bid.</p> <p>vi) Joint Venture Authorization/ Agreement (if any).</p> <p>vii) Other documents as needed.</p>
ITB 3	<p>Basic Bidder's Experience Requirement:</p> <p>a. i. For the Bidder which is not a Joint Venture The bid shall include certificates from the end users validating that the bidders has successfully completed design (If the Bid involves design), construction and commissioning of at least one project of installed capacity 200 KW or above during last 15 years and should submit the number of contract of similar nature</p> <p>ii) The Bidder shall complete the construction, installation and commissioning the projects of cumulative power capacity of 500 KW.</p> <p>iii) The end user certificates included in the bid shall be on the end user's original letter head with valid address for correspondence and signed by or on behalf of the end users.</p> <p>b. For the JV Bidders :-</p> <p>i)The bid shall include certificates from the end users for the lead partner and each of the other partners validating that they have successfully completed design (If the Bid involve design),construction and commissioning of projects of the size stated i & ii above. The date of the end user certificates shall not be earlier than last five years from the last date of bid submission.</p> <p>ii)The JV partner together shall have successfully completed design (if the Bid involve design),construction & commissioning of projects having experience as stated in (i).</p> <p>c. Financial capacity of the Bidder:-</p> <p>i)Financial statements:-The bidder including joint venture partners, if any, shall submit audited Financial statements (Balance sheet and profit and loss Account) for the last three fiscal years. Balance sheet and profit & loss account sheet shall be signed and sealed by the registered Auditor(s).</p> <p>ii) Line of credit: - In the event that the working capital of the bidder (Including each of the JV partner) is to be supplemented with the line of credit from a bank, the bidder shall submit original letter of the bank pending unequivocally that the bank will provide required financial support in case of bidder is awarded the contract. The amount of line of credit shall be clearly mentioned in the bank letter. The bid title and the bid number shall also be mentioned in the bank letter.</p>

	<p>d. Average Annual turnover:-</p> <p>i) For the bidder which is not in the Joint venture:- The required average annual turnover of construction work shall be NRs 30 Million over any three years with maximum amounts within the last five years.</p> <p>ii) For the JV bidder: - The average turnover of the lead partner shall not be less than NRs 25 million. Average annual turnover of each of other partners shall not be less NRs 20 million. Aggregate annual turnover (with line of credit facilities) of all the JV partners shall not be less than.</p> <p>e. Availability of Financial Resources(Working Capital):-</p> <p>For the Bidder which is not a joint venture :-</p> <p>i) The bidder shall have working capital (defined as total current assets less total current liabilities) at least NRs.15 million in the last fiscal year. If the Bidders working Capital is inadequate, the bidder shall supplement working capital with banker’s letter confirming the availability of a line of credit such that aggregate of the bidder’s working capital for the last fiscal year and the line of credit shall not be less than required amount stated in this sub clause.</p> <p>ii) For the JV Bidder :- Working capital of the lead partner shall not be less than NRs 11 Million. Working capital of each of the partners shall not be less than Rs 5 million. Aggregate working capital (with line of credit facilities) of all the JV partners shall not be less than NRs 18(Eighteen) million. The bidder or any of the joint venture partners shall not be on the black list circulated by Public Procurement Monitoring office, Government of Nepal or Nepal Electricity Authority.</p> <p>Additional Personal requirement (if any): Project Engineer with at least one year experience or Project Overseer with at least 5 years experience in similar works.</p> <p>Minimum essential equipment: Concrete mixture and vibrator. Backup Sand By Generator etc.</p> <p>f. Technical Worked Experience criteria</p> <p>a. Bidder who has supplied turbine and generating equipments of not less than 150 kW capacity during the last 10 years to hydropower projects and the equipments have a successful operation record.</p> <p>b. Bidder who have been qualified to supply turbine and generating equipments of not less than 150 kW capacity during the last 10 years.</p> <p>d. Bidder should be able to supply the equipment as per the technical requirement of the bidding document.</p>

B. Bidding Documents	
ITB 8	<p>Address of Employer; telephone, and facsimile numbers [for clarification purpose]</p> <p>1) CSD Consult (P.) Ltd. Kathmandu, Nepal Tel. 977-1-4330945 Fax: 977-1- Email: csdconsult@gmail.com</p> <p>2) TKHCL c/o RRESC/REMREC PO box 019, Dhulikhel-2 Kavrepalanchowk, Nepal Tel: 011-490021 Fax: 011-490721 Email:-remrec@ntc.net.np www.remrec.org</p> <p>3) Contact Office of TKHCLKoteswor, Kathmandu, Nepal Tel.: 01-2053350 Email:</p>

C. Preparation of Bids	
ITB 9	The language of bid is: English or Nepali
ITB 10	Add the following: (d) Construction Schedule
ITB 12	The bid validity period shall be: <i>30 days from the last date of submission of bid</i>
ITB 13	Amount of Bid Security shall be: not less than 2.5% of estimated cost. The bid security validity period shall be not less than 120 days from the last date of
D. Submission of Bids	
ITB 16	Bidder must request for Pre-Bid meeting if it is require for him/her before 14 days of submission date and Employer arrange for the pre bid meeting which will be inform to all Concern Bidders.
ITB 17	<p>The Employer's address for bid submission purpose is:</p> <p>1) Tap Khola Hydropower Cooperative Society Ltd. (TKHCL) Sapteswor VDC, Khotang Tel.: 036-690305 www.tapkhola.org.np</p> <p>2) TKHCL c/o RRESC/REMREC PO box 019, Dhulikhel-2 Kavrepalanchowk, Nepal Tel: 011-490021 Fax: 011-490721 Email:-remrec@ntc.net.np www.remrec.org</p>

	<p>3) Contact Office of TKHCL Koteswor, Kathmandu, Nepal Tel.: 01-2053350</p> <p>The deadline for bid submission is: Date: 15th Day of Publication Notice Time: 12:00 Noon.</p> <p>In the event of the specified date for the submission of bids being declared a holiday for the Employer, the bids will be received up to the appointed time on the next working day.</p>
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E. Bid Opening and Evaluation	
ITB 20	<p>The bid opening shall take place at: <i>Place: Contact Office of TKHCL Koteswor, Kathmandu, Nepal</i> <i>Tel.: 01-2053350</i> <i>Time: 14:00 Hrs</i> <i>Date: 16th Day of Publication of Notice</i></p> <p>In the event of the specified date of bid opening being declared a holiday for the Employer, the bids shall be opened at the appointed time and location on the next working day.</p>
ITB 25.2	<p>Add following at the end: The price of optional items shall not be included in the evaluated bid price.</p>

F. Award of Contract	
ITB 30	The Advance Payment amount shall not be more than 10% of Contract value
ITB 32	Adjudicator shall be proposed by the Employer when it is required to solve the disputes between the Employer and Contractor

Section III

Sample Forms of Bid, Qualification Information, Letter of Intention to Award, Letter of Acceptance and Agreement

Notes to Bidders

The Bidder shall fill in and submit this bid form with the bid.

If the Bidder objects to the Adjudicator proposed by the Employer in the Bidding documents, he should so state in his bid, and present an alternative candidate, together with the candidate's daily fees and biographical data, in accordance with Clause 32 of the Instructions to Bidders.

Bid

Date:

To: The Project Manager,
Tap Khola II-Mini Hydropower Project
Tap Khola Hydropower Co-Operative Ltd.
Saptesowar #7, Khotang District, Nepal

We have examined the documents and offer to execute the works (Supply, Construction/Erection, Supervision and Testing and Commissioning of *Tap Khola II- Mini Hydropower Project (303 kW)*) in conformity with the Bidding Documents for the sum of NRs.
[amount in numbers and words] or such other sum as may be ascertained under the contract.

The bid is submitted in one original and one duplicate copy.

We accept the appointment of*[name proposed in Bidding Data]* as the Adjudicator.
[or]

We do not accept the appointment of *[name proposed in Bidding Data]* as the Adjudicator, and propose instead that *[name]* be appointed as Adjudicator, whose daily fees and biographical data are attached.

This bid shall remain binding until [date]. This bid and your written acceptance of it shall constitute a binding Contract between us. We understand that you are not bound to accept the lowest or any offer received for the works.

Signature:

Name and Title of Signatory:.....

Authorized to sign on behalf of :.....

Address:.....

Seal :

Qualification Information

1. Individual Bidders or Individual Members of Joint Ventures Association

1.1 Constitution or legal status of Bidder: *[attach copy]*

All Bidders shall submit following documents as pre- requisites for eligibility:

- a) Registration Certificate *[attach copy]*
- b) Place of Registration *[insert]*
- c) Principal place of Business *[insert address]*
- d) Business Registration License *[attach copy]*
- e) VAT and PAN Registration Certificates *[attach copy]*
- f) Tax Clearance Certificate or Submissions of Tax Returns as specified in Bidding Data *[attach copies]*
- g) A written declaration made by the Bidder stating that the Bidder is not ineligible to participate in the Bid; has no conflict of interest in the proposed bid procurement proceedings and has not been punished for the profession or businesses related offence.
- h) Joint Venture Authorization/ Agreement (if any)
- i) Power of Attorney

1.2 Total annual volume of construction work performed in the past Ten years, in Nepalese Rupees. Attach copy of Audited Balance Sheet as documentary evidence.

Annual turnover data (construction only)

Year (F/Y)	Turnover in NRs.	Remarks

1.3 3 Work performed as prime Contractor or member of a joint venture on works of a similar nature and volume over the last ten years. Also list details of work under way or committed, including expected completion date. Attach documentary evidence of the information provided.

Project name	Name of client and contact person	Type of work performed and year of completion	Completion date or Expected Completion date	Total Value of Contract	Value of remaining work	Applicant Share

1.4 Major items of Contractor's Equipment proposed for carrying out the Works. The equipment shown in the table shall be required at the minimum. List all information requested below. Refer also to Sub-Clause 3.1(f) of the Instructions to Bidders. If the equipment are to be leased/hired, submit papers making specific arrangement for leasing/hiring.

a) Instruments Required for Electromechanical works:

S.N	Item of equipment	Description, make, and age (years)	Condition (new, good, poor) and number available	Owned, leased (from whom?), or to be purchased (from whom?)
1.	Auto Level- 1sets			
2.	Welding Machine- 1 Set			
3.	Generator- 10 KVA- 1 Set			
4.	Chain Puller -1 Set			

b) Instruments Required for Hydro mechanical works:

S.N	Item of equipment	Description, make, and age (years)	Condition (new, good, poor) and number available	Owned, leased (from whom?), or to be purchased (from whom?)
1.	Diesel Generator (10 KVA)-1 No.			
2.	Welding Machine-1 No.			
3.	Level Machine Set- 1 No.			
4.	Chain Puller-1 Set (8 Ton Capacity)			
5.	Steel Wire- 120 m			

1.5 Personnel Requirement

a) The minimum personnel and their experience records shall be as follows for Electromechanical works :

S.N	Designation	Qualification	Total Experience (Years)	In Similar Work (Years)
1.	Electrical Engineer-1	B.E (Electrical)	5 yrs	3 yrs
2.	Supervisor-1	Diploma (Electrical)	2 yrs	3 yrs
3.	Supervisor-1	Diploma (Mechanical)	2 yrs	3 yrs

b) The minimum personnel and their experience records shall be as follows for Hydro mechanical works

S.N	Designation	Qualification	Total Experience (Years)	In Similar Work (Years)
1.	Hydropower Engineer-1	B.E (Mechanical)	5 yrs	3 yrs
2.	Supervisor-1	Diploma (Civil)	2 yrs	3 yrs

1.6 Evidence of access to financial resources to meet the qualification requirements: cash in hand, lines of credit, etc. List below and attach copies of support documents.

Source of financing	Amount in NRs.
1.	
2.	
3.	
4.	

1.7 Name, address, telephone and facsimile numbers of banks that may provide references if contacted by the Employer.

Name	Address	Telephone/fax number	E-mail address
1.			
2.			
3.			

1.8 A written declaration by the Bidder stating that the Bidder is not ineligible to participate in the Bid; has no conflict of interest in the proposed bid procurement proceeding and has not been punished for the profession or business related offence

1.8.1 Construction Schedule

A construction schedule showing required activities to complete the Works within 9 months shall be included with the bid.

For electromechanical work experience

Experience regarding manufacture/supply of Turbines, A.C.Generators, Power Transformers, Outdoor Type, Switchyard Equipment, Control and Protection Equipment etc. for hydroelectric projects. Applicant should have completed one project above 200 KW capacities or more during last 15 years.

S.N	Project Name	Owner Name	Description of Work	Contract Period (Start-Completion) Date	Contract Value/	Applicant Share

a) For Hydro mechanical work experience:

Experience of fabrication and installation of at least one penstock of min. internal dia. 50cm and 50 m long

Experience of Fabrication and Installation of Penstock.

S.N	Project Name	Owner Name	Penstock Dimension		Contract Value	Applicant Share	Contract Period (Start-Completion) Date
			Length (m)	Diameter (m)			

2. Joint Ventures

- 2.1 The information listed in 1.1 - 1.7 above shall be provided for each partner of the joint-venture.
- 2.2 Attach the power of attorney of the signatory (ies) of the bid authorizing signature of the bid on behalf of the joint venture.
- 2.3 Attach the Agreement among all partners of the joint venture (and which is legally binding on all partners), which shows that
 - (a) All partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms;
 - (b) one of the partners will be nominated as being in charge, authorized to incur liabilities, and receive instructions for and on behalf of any and all partners of the joint venture; and
 - (c) The execution of the entire Contract, including payment, shall be done exclusively with the partner in charge.

3. Additional Requirements

- 3.1 Bidders should provide any additional information required in the Bidding Data or to fulfill the requirements of the Instructions to Bidders, if applicable.

Letter of Intention to Award

Date:

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

This is to notify you in accordance with the Instruction to Bidders that it is our intention to award the contract *[name of the Contract and identification number, as given in the Contract Data and/or SCC]* to you as your Bid price of *[amount in numbers and words in Nepalese Rupees]*, as corrected and modified in accordance with the Instructions to Bidders, is determined to be substantially responsive and lowest evaluated Bid price.

Authorized Signature: _____

Name and Title of Signatory: _____

Name of Agency: _____

Letter of Acceptance

Date:

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

This is to notify you that your bid dated *[date]* for execution of the *[name of the Contract and Identification number, as given in the Contract Data and/or SCC]* for the Contract Price of the Equivalent, of *[amount in numbers and words in Nepalese Rupees]*, as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by our Agency.

You are hereby instructed to contact our office to sign the formal agreement on ... at ... [time]. As per. Instructions to Bidders you are also required to submit Performance Security, as specified in SCC, consisting of Bank Guarantee in an approved format or cash deposit voucher in favor of the Employer in the bank A/C No.....

The Employer shall forfeit the bid security, in case you fail to furnish the performance Security and to sign the contract.

Please convey your unconditional acceptance by signing on this letter and submit the required Performance Security, at the time of formal agreement.

Authorized Signature:

Name and Title of Signatory Name of Agency:

Agreement

This Agreement, made the *[day]* , *[month]*, *[year]* between *[name and address of Employer]* (hereinafter called “the Employer”) and *[name and address of Contractor]* (hereinafter called “the Contractor”).

Whereas the Employer is desirous that the Contractor execute *[name and identification number of Contract]* (hereinafter called “the Works”) and the Employer has accepted the bid for _____ *[insert the amount in numbers and words]* by the Contractor for the execution and completion of such Works and the remedying of any defects therein.

Now this Agreement witnessed as follows:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the General Conditions of Contract hereinafter referred to, and they shall be deemed to form and be read and construed as part of this Agreement.
2. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and Complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract.
3. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects wherein 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 thereto have caused this Agreement to be executed the day and year first before written.

The Common Seal of _____
was hereunto affixed in the presence of: _____

Signed, Sealed, and Delivered by the said _____
in the presence of: _____

Binding Signature of Employer _____
Binding Signature of Contractor _____

Section IV. General Conditions of Contract (GCC)

1. General Provisions

1.1 Definitions

In the Contract as defined below, the words and expressions defined shall have the following meanings assigned to them, except where the context requires otherwise:

The Contract

1.1.1 “**Contract**” means the Agreement signed between the Employer and the contractor and the other documents listed in the Special Conditions of Contract (SCC).

1.1.2 “**Specification**” means the document as listed in the SCC, including Employer’s requirements in respect of design to be carried out by the contractor, if any, and any variation to such document.

1.1.3 “**Drawings**” means the Employer’s drawings of the Works as listed in the SCC, and any variation to such drawings.

1.1.4 “**Bill of Quantities**” means the priced and completed bill of quantities forming part of the Tender.

1.1.5 “**Bid or Tender**” means the contractor’s priced offer to the Employer for the execution and completion of the Works and the remedying of any defects therein in accordance with the provisions of the Contract, as accepted by the Letter of Acceptance.

1.1.6 “**Letter of Acceptance**” means the formal acceptance by the Employer of the **bid** or Tender.

Persons

1.1.7 “**Employer**” means the person named in the Agreement and the legal successors in title to this person, but not (except with the consent of the contractor) any assignee.

1.1.8 “**Contractor**” means the person named in the Agreement and the legal successors in title to this person, but not (except with the consent of the Employer) any assignee.

1.1.9 “**Subcontractor**” means any person named in the Contract as a subcontractor, manufacturer or supplier for a part of the Works or any person to whom a part of the Works has been subcontracted in accordance with Sub-Clause 4.5, and the legal successors in title to such person, but not any assignee of such person.

1.1.10 “**Party**” means either Employer or the contractor.

1.1.11 “**Employer’s Representative**” means the person appointed by the Employer to act as Employer’s Representative for the purposes of the Contract and named as such in the Appendix to Tender, or other person appointed from time to time by the Employer and notified as such to the Contractor.

1.1.12 “**Dispute Adjudication Board**” means the person or persons

named as such in the Contract, or other person or persons appointed from time to time under Sub-Clause 20.3.

Date, Times and Periods

- 1.1.13 "**Base Date**" means the date 28 days prior to the latest date for submission of the Tender for acceptance by the Employer.
- 1.1.14 "**Effective Date**" means the date on which the Contract entered into legal force and effect.
- 1.1.15 "**Commencement Date**" means the date 7 (**Seven**) days after the date the Agreement comes into effect or any other date agreed between the Parties.
- 1.1.16 "**Day**" means a calendar day.
- 1.1.17 "**Time for Completion**" means the time for completing the Works as stated in the SCC (or as extended under Sub-Clause 7.3), calculated from the Commencement Date.

Money and Payments

- 1.1.18 "**Cost**" means all expenditure properly incurred (or to be incurred) by the contractor, whether on or off the Site, including overheads and similar charges, but does not include profit.
- 1.1.19 "**Contract Price**" is the price stated in the letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.
- 1.1.20 "**Retention Money**" means the aggregate of all monies retained by the Employer pursuant to Sub-Clause 11.3.

Other Definitions

- 1.1.21 "**Contractor's Equipment**" means all apparatus, machinery, vehicles, facilities and other things required for the execution of the Works but does not include Materials or Plant.
- 1.1.22 "**Country**" means Nepal.
- 1.1.23 "**Employer's Liabilities**" means those matters listed in Sub-Clause 6.1.
- 1.1.24 "**Force Majeure**" means an exceptional event or circumstance: which is beyond a Party's control; which such Party could not reasonably have provided against before entering into the Contract; which, having arisen, such Party could not reasonably have avoided or overcome; and, which is not substantially attributable to the other Party.
- 1.1.25 "**Materials**" means things of all kinds (other than Plant) intended to form or forming part of the permanent work.
- 1.1.26 "**Plant**" means the machinery and apparatus intended to form or forming part of the Permanent Works.
- 1.1.27 "**Site**" means the places provided by the Employer where the Works are to be executed, and any other places specified in

the Contract as forming part of the Site.

1.1.28 "**Variation**" is an instruction given by the Employer which varies the Works pursuant to Sub-Clause 10.1

1.1.29 "**Works**" means all the work and design (if any) to be performed by the contractor including temporary work and any Variation.

1.1.30 "**Permanent Works**" means the permanent works to be executed (Including Plant) in accordance with the Contract.

1.1.31 "**Temporary Works**" means all temporary works of every kind (other than contractor's Equipment) required in or about the execution and completion of the Works and the remedying of any defects therein.

1.1.32 "**Adjudication**" means the procedure to be adopted by the contractor and the Employer in solving the dispute if it is not solved amicably pursuant to Sub-Clause 15.1.

1.2 Interpretation

Words importing persons or parties shall include firms and organizations. Words importing singular or one gender shall include plural or the other gender where the context requires.

1.3 Priority of Documents

The documents forming the Contract shall to be taken as mutually explanatory of one another. If an ambiguity or discrepancy is found in the documents, the Employer shall issue any necessary instructions to the contractor, and the priority of the documents shall be in accordance with the order as listed in the SCC.

1.4 Law

The law of the Contract is stated in the SCC.

1.5 Communications

Where provision is made for the giving or issue of any notice, instruction, or other communication by any person, unless otherwise specified such communication shall be written in the language stated in the SCC as shall not be unreasonably withheld or delayed.

If a notice given pursuant to Sub-Clause 1.5 fails to be delivered due to failure to trace the address of the party then the notice shall be published as public notice in a National daily newspaper and when the notice is so published then the notice shall be considered to be delivered to the concerned party.

1.6 Statutory Obligations

The contractor shall comply with the laws of the countries where activities are performed. The contractor shall give all notices and pay all fees and other charges in respect of the Works.

2. The Employer

2.1 Provision of Site

The Employer shall provide the Site and right of access thereto at the times stated in the SCC.

- 2.2 Permits and Licenses** The Employer shall, if requested by the contractor, assist him in applying for permits, licenses or approvals which are required for the Works.
- 2.3 Employer's Instructions** The contractor shall comply with all instructions given by the Employer in respect of the Works including the suspension of all or part of the Works.
- 2.4 Approvals** No approval or consent or absence of comment by the Employer or the Employer's representative shall affect the contractor's obligations.
- 3. Employer's Representatives**
- 3.1 Authorized Person** One of the Employer's personnel shall have authority to act for him. This authorized person shall be as stated in the SCC, or as otherwise notified by the Employer to the contractor.
- 3.2 Employer's Representative** The Employer may also appoint a firm or individual to carry out certain duties. The appointee may be named in the SCC, or notified by the Employer to the contractor from time to time. The Employer shall notify the contractor of the delegated duties and authority of this Employer's representative.
- 4. The Contractor**
- 4.1 General Obligations** The contractor shall carry out the Works properly and in accordance with the Contract. The contractor shall provide all supervision, labour, Materials, Plant and contractor's Equipment which may be required. All Materials and Plant on Site shall be deemed to be the property of the Employer.
- During continuance of the of the contract, the contractor and his sub-contractors shall abide at all times by all labour laws, including child labour related enactments, and rules made there under.
- A child who has not attained the age of fourteen (14) years shall not be employed in any work as a labourer.
- 4.2 Contractor's Representative** The contractor shall submit to the Employer for consent the name and particulars of the person authorized to receive instructions on behalf of the contractor.
- 4.3 Subcontracting** The contractor shall not subcontract the whole of the Works. The contractor shall not subcontract any part of the Works without the consent of the Employer.
- 4.4 Performance Security** As stated in the SCC, the Contractor shall deliver to the Employer no later than the date specified in the Letter of Acceptance.
- 4.4.1 Pursuant to Clause no. 28 of ITB, the CONTRACTOR shall

furnish a Performance Security to the Tap Khola Hydropower Co-operative Ltd. in the amount of **five (5) percent** of his total Bid Price.

4.4.2 The Performance Security shall be in the form of a Bank Guarantee, acceptable to the employer, drawn on a commercial Bank in Nepal in the favor of employer. The Performance Security shall be valid for an initial period of one year pursuant to the conditions stated in these documents. Validity of Performance Bond shall be extended one month period to the expiry date of every extension.

4.4.3 The proceeds of the Performance Bond security shall be payable to the employer as compensation of any loss resulting from the CONTRACTOR'S failure to complete the works under the CONTRACT. The CONTRACTOR shall cause the validity period of the Performance Security to be extended for such periods as the CONTRACT performance may be pursuant to the General Conditions of Contract.

4.4.4 The Performance Security will be returned to the CONTRACTOR by the employer not later than thirty (30) days after the date of final acceptance of all works and submission to the employer by the CONTRACTOR of the Income Tax clearance certificate issued by the concerned GON Tax Office

5. Design by Contractor

5.1 Contractor's Design

The contractor *may* carry out design to the extent specified, as referred to in the SCC. The contractor shall promptly submit to the Employer all designs prepared by him. Within 15 days of receipt, the Employer shall notify any comments or, if the design submitted is not in accordance with the Contract, shall reject it stating the reasons. The contractor shall not construct any element of the permanent work designed by him within 15 days after the design has been submitted to the Employer or where the design for that element has been rejected. Design that has been rejected shall be promptly amended and resubmitted. The contractor shall resubmit all designs commented on taking these comments into account as necessary.

5.2 Responsibility for Design

The contractor shall remain responsible for his tendered design and the design under this Clause, both of which shall be fit for the intended purposes defined in the Contract and he shall also remain responsible for any infringement of any patent or copyright in respect of the same. The Employer shall be responsible for the Specification and Drawings.

6. Employer's Liabilities

6.1 Employer's Liabilities

In this Contract, Employer's Liabilities mean:

- a. war, hostilities (whether war be declared or not), invasion, act of foreign enemies, within the Country,
- b. rebellion, terrorism, revolution, insurrection, military or usurped power, or civil war, within the Country,
- c. riot, commotion or disorder by persons other than the contractor's personnel and other employees, affecting the Site and/or the Works,
- d. ionizing radiations, or contamination by radio-activity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosive, or other hazardous properties of any explosive nuclear assembly or nuclear component an assembly, except to the extent to which the contractor may be responsible for the use of any radio-active material, of such
- e. pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds,
- f. use or occupation by the Employer of any part of the Works, except as may be specified in the Contract,
- g. design of any part of the Works by the Employer's personnel or by others for whom the Employer is responsible,
- h. any operation of the forces of nature affecting the Site and/or the Works, which was unforeseeable or against which an experienced contractor could not reasonably have been expected to take precautions,
- i. Force Majeure,
- j. a suspension under Sub-Clause 2.3 unless it is attributable to the contractor's failure,
- k. any failure of the Employer,
- l. physical obstructions or physical conditions, other than climatic conditions, encountered on the Site during the performance of the Works, which obstructions or conditions were not reasonably foreseeable by an experienced contractor and which the contractor immediately notified to the Employer,
- m. any delay or disruption caused by any Variation,
- n. any change to the law of the Contract after the date of the contractor's offer as stated in the Agreement,
- o. losses arising out of the Employer's right to have the permanent work executed on, over, under, in or through any land, and to occupy this land for the permanent work, and
- p. Damage which is an unavoidable result of the contractor's obligations to execute the Works and to remedy any defects.

7. Time for Completion

7.1 Execution of the Works

The contractor shall commence the Works on the Commencement Date and shall proceed expeditiously and without delay and shall complete the Works within the Time for Completion.

7.2 Programme

The contractor shall submit to the Employer a program for the Works within the time stated in the SCC

7.3 Extension of Time

Subject to Sub-Clause 10.3, the contractor shall be entitled to an extension to the Time for Completion if he is or shall be delayed by any of the Employer's Liabilities.

The contractor shall submit an application to the Employer for extension of time, stating the causes for delay, 15 days before the expiry of the Contract completion date. On receipt of an application from the contractor, the Employer shall consider all supporting details provided by the contractor and shall extend the Time for Completion as appropriate.

7.4 Liquidated Damages for Delay

If the contractor fails to complete the Works within the Time for Completion, the contractor's only liability to the Employer for such failure shall be to pay the amount stated in the SCC for each day for which he fails to complete the Works. The total amount of Liquidated damages shall not exceed the amount stated in the SCC.

7.5 Bonus

Not applicable.

8. Taking-Over

8.1 Completion

The contractor may notify the Employer when he considers that the Works are complete.

8.2 Taking-Over Notice

The Employer shall notify the contractor when he considers that the contractor has completed the Works stating the date accordingly. Alternatively, the Employer may notify the contractor that the Works, although not fully complete, are ready for taking over, stating the date accordingly.

The Employer shall take over the Works upon the issue of this notice. The contractor shall promptly complete any outstanding work and, subject to Clause 9, clear the Site.

9. Remedying Defects

9.1 Remedying Defects

The Employer may at any time prior to the expiry of the period stated in the SCC, notify the contractor of any defects or outstanding work. The contractor shall remedy at no cost to the Employer any defects due to the contractor's design, materials, plant or workmanship not being in accordance with the Contract.

The cost of remedying defects attributable to any other cause shall be

valued as a Variation. Failure to remedy any defects or complete outstanding work within a reasonable time of the Employer's notice shall entitle the Employer to carry out all necessary work at the contractor's cost.

9.2 Uncovering and Testing

The Employer may give instruction as to the uncovering and/or testing of any work. Unless as a result of any uncovering and/or testing it is established that the contractor's design, materials, plant or workmanship are not in accordance with the Contract, the Contractor shall be paid for such uncovering and/or testing as a Variation in accordance with Sub-Clause 10.2.

10. Variations and Claims

10.1 Right to Vary

Variations of plus or minus 15% of the works specified in the BOQ shall be made without any change in the net price of the terms & conditions of the Contract.

Variations exceeding plus or minus 15% of the works specified in the BOQ / Price Schedule shall be made at a price and conditions mutually agreed between the Employer & the CONTRACTOR.

10.2 Early Warning

A Party shall notify the other as soon as he is aware of any circumstance which may delay or disrupt the Works, or which may give rise to a claim for additional payment. The contractor shall take all reasonable steps to minimize these effects.

The contractor's entitlement to extension to Time for Completion or additional payment shall be limited to the time and payment which would have been due if he had given prompt notice and has taken all reasonable steps.

10.3 Right to Claim

If the contractor incurs cost as a result of any of the Employer's Liabilities, the contractor shall be entitled to the amount of such cost. If as a result of any of the Employer's Liabilities, it is necessary to change the Works, this shall be dealt with as a Variation.

10.4 Variation and Claim Procedure

The contractor shall submit the Employer an itemized make-up of the value of Variations and claims within 30 days of the instruction or of the event giving rise to the claim. The Employer shall check and if possible agree the value. In the absence of agreement, the Employer shall determine the value.

11. Contract Price and Payment

11.1 Valuation of the Works

The Works shall be valued as provided for in the SCC, subject to Clause 10.

11.2 Monthly Statements or Running Bill

Payments to be the CONTRACTOR shall be made by the

EMPLOYER as promptly as possible, after receipt of the invoice /

Running Bill.

11.3 Interim Payments

Within 30 days of acceptance of each statement, the Employer shall pay to the contractor the amount shown in the contractor's statement less retention at the rate stated in the SCC, and less any amount for which the Employer has specified his reasons for disagreement. The Employer shall not be bound by any sum previously considered by him to be due to the contractor.

11.4 Payment of First Half of Retention

One half of the retention and any such other retention shall be paid by the Employer to the contractor within 15 days upon expiry of Defects Liability Period.

1.5 Payment of Second Half of Retention

The remainder of the retention shall be paid by the Employer to the contractor within 15 days after submission of evidence document from the concerned Internal Revenue Office that the contractor has submitted his Income Returns.

11.6 Final Payment

Within 45 days of the latest of the expiry of the defects liability period, the contractor shall submit a final account to the Employer together with any documentation reasonably required to enable the Employer to ascertain the final contract value.

Within 30 days after the submission of this final account, the Employer shall pay to the contractor any amount due. If the Employer disagrees with any part of the contractor's final account, he shall specify his reasons for disagreement when making payment

11.7 Currency

Payment shall be in the currency stated in the SCC.

11.8 Delayed Payment

The contractor shall be entitled to pay any interest at the rate stated in the SCC for each day the Employer fails to pay beyond the prescribed payment period.

11.9 Advance Payment

- a The Employer may make advance payment to the contractor of the amounts stated in the SCC within 15 days, 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 and validity period of such Advance Payment Guarantee shall be up to the Performance Bond validity period. The Guarantee shall remain effective until the advance payment has been repaid. Interest shall not be charged on the advance payment.
- b 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 Employer/ Engineer.

- c) The advance payment shall be deducted from the contractor's invoice amount / Running Bill. The balance amount shall be deducted from the final invoice (third invoice).

11.10. Price Adjustment

- a) The Contract is subject to price adjustment only for construction material in accordance with this clause. If the Contract Agreement is concluded following the Invitation for National Level Bidding and after the signing of the Contract Agreement if the price of the construction materials stated in the SCC increase or decrease in an unexpected manner in excess of ten (10%) percent in comparison to the base price stated in the SCC, then the price adjustment for the increase or decrease of price of the construction material beyond 10% shall be made by applying the following formulas:

For unexpected increase in price

$$P = [R_1 - (R_0 \times 1.10)] \times Q$$

For unexpected decrease in price

$$P = [R_1 - (R_0 \times 0.90)] \times Q$$

Where:

“ P ” is price adjustment amount

“ R₁ ” is the present price of the construction material

“ R₀ ” is the base price of the construction material

“ Q ” is quantity of the construction material consumed in construction during the period of price adjustment consideration

- (a) The Price Adjustment amount pursuant to the clause will be limited to a maximum of 25% of the initial Contract Amount unless otherwise is specified in the SCC.
- b) The Price Adjustment provision pursuant to Clause 11.10 (a) shall not be applicable if the contract is not completed in time due to the delay caused by the contractor or the contract is a Lump sum Contract or a Fixed Budget Contract.

11.11 Local Taxation & Value Added Tax

- a. The prices tendered by the Contractor shall include all taxes that may be levied in accordance to the laws and regulations in being in Nepal on the date 30 days prior to the closing date for submissions of Bids on the Contractor's equipment, plant and materials acquired for the purpose of the Contract and on the services performed under the Contract. Nothing in the Contract shall relieve the Contractor from his responsibility to pay any tax that may be levied in Nepal on profits made by him in respect of the Contract.
- b. The Contract is not exempted from value added tax. An

amount specified in the schedule of taxes shall be paid by the Contractor in the concerned VAT office within time frame specified in VAT regulation.

GON may impose the following taxes on the CONTRACTOR:

- i. Value Added Tax (VAT) of 13 (Thirteen) percent shall be imposed on construction unit prices quoted in the Price Schedule prior to any deductions.
- ii. Income tax shall be imposed on the CONTRACTOR in accordance with the prevalent rules and regulations of GON, which shall be deducted by the Project at the time of progress payments.

12. Termination of Contract

12.1 Default by Contractor

If the contractor abandons the Works, refuses or fails to comply with a valid instruction of the Employer or fails to proceed expeditiously and without delay or is, despite a written complaint, in breach of the Contract, the Employer may give notice referring to this Sub-Clause and stating the default.

If the contractor has not taken all practicable steps to remedy the default within 15 days after the contractor's receipt of the Employer's notice, the Employer may, by a second notice given within a further 22 days, terminate the Contract. The Contractor shall then demobilize from the Site leaving behind Materials and Plant and any contractor's Equipment which the Employer instructs in the second notice to be used until the completion of the Works.

12.2 Default by Employer

If the Employer fails to pay in accordance with the Contract, or is, despite a written complaint, in breach of the Contract, the contractor may give notice referring to this Sub-Clause and stating the default. If the default is not remedied within 7 days after the Employer's receipt of this notice, the contractor may suspend the execution of all or parts of the Works.

If the default is not remedied within 30 days after the Employer's receipt of the contractor's notice, the contractor may, by a second notice given within a further 22 days, terminate the Contract. The contractor shall then demobilize from the Site.

12.3 Insolvency

If a Party is declared insolvent under any applicable law, the other Party may by notice terminate the Contract immediately. The contractor shall then demobilize from the Site leaving behind, in the case of the contractor's insolvency, any contractor's Equipment which the Employer instructs in the notice is to be used until the completion of the Works.

12.4 Termination by Convenience

Notwithstanding the above, the Employer shall be entitled to terminate the Contract in public interest, at any time at the

Employer's convenience, by giving notice of such termination to the contractor.

12.5 Payment upon Termination

After termination, the contractor shall be entitled to payment of the unpaid balance of the value of the Works executed and of the Materials and Plant reasonably delivered to the Site, adjusted by the following:

- a. any sums to which the contractor is entitled under Sub-Clause 10.4,
- b. any sums to which the Employer is entitled,
- c. if the Employer has terminated under Sub-Clause 12.1 or 12.3, the Employer shall be entitled to a sum equivalent to 20% of the value of those parts of the Works not executed at the date of the termination,
- d. if the contractor has terminated under Sub-Clause 12.2 or 12.3, the contractor shall be entitled to the Cost of his suspension and demobilization together with a sum equivalent to 10% of the value of those parts of the Works not executed at the date of termination

The net balance due shall be paid or repaid within 30 days of the notice of termination.

13. Risk and Responsibility

13.1 Contractor's Care of the Works

The contractor shall take full responsibility for the care of the Works from the Commencement Date until the date of the Employer's notice under Sub-Clause 8.2. Responsibility shall then pass to the Employer. If any loss or damage occurs to the Works during the above period, the contractor shall rectify such loss or damage so that the Works conform to the Contract.

Unless the loss or damage occurs as a result of an Employer's Liability, the contractor shall indemnify the Employer, the Employer's contractors, agents and employees against all loss or damage happening to the Works and against all claims or expense arising out of the Works caused by a breach of the Contract, by negligence or by other default of the contractor, his agents or employees.

13.2 Force Majeure

If the event continues for a period of 90 days, either Party may then give notice of termination which shall take effect 30 days after the giving of the notice.

After termination, the contractor shall be entitled to payment of the unpaid balance of the value of the Works executed and of the Materials and Plant reasonably delivered to the Site, adjusted by the following:

- a. any sums to which the contractor is entitled under Sub-Clause 10.4,
- b. the Cost of his suspension and demobilisation,
- c. any sums to which the Employer is entitled.

The net balance due shall be paid or repaid within 30 days of the notice of termination.

14. Insurance

14.1 Extent of Cover

The contractor shall, prior to commencing the Works, effect and thereafter maintain insurances in the joint names of the Parties:

- a. for loss and damage to the Works, Materials, Plant and the contractor's Equipment,
- b. for liability of both Parties for loss, damage, death or injury to third parties or their property arising out of the contractor's performance of the Contract, including the contractor's liability for damage to the Employer's property other than the Works, and
- c. For liability of both Parties and of any Employer's representative for death or injury to the contractor's personnel except to the extent that liability arises from the negligence of the Employer, any Employer's representative or their employees.

14.2 Arrangements

All insurances shall conform to any requirements detailed in the SCC. The policies shall be issued by insurers and in terms approved by the Employer. The contractor shall provide the Employer with evidence that any required policy is in force and that the premiums have been paid.

All payments received from insurers relating to loss or damage to the Works shall be held jointly by the Parties and used for the repair of the loss or damage or as compensation for loss or damage that is not to be repaired.

14.3 Failure to Insure

If the contractor fails to effect or keep in force any of the insurances referred to in the previous Sub-Clauses, or fails to provide satisfactory evidence, policies or receipts, the Employer may, without prejudice to any other right or remedy, effect insurance for the cover relevant to such default and pay the premiums due and recover the same as a deduction from any other monies due to the contractor.

15. Resolution of Disputes

15.1 Adjudication

If any dispute shall arise out of or in connection with the Contract, including any valuation or other decision of the Employer, then the parties shall attempt to settle such dispute amicably within 15 days of the notification of the Employer's decision. However if the dispute is not settled amicably or no attempt is made to settle the dispute amicably then the dispute shall be referred by either Party to adjudication in accordance with the attached Rules of Adjudication ("The Rules"). The adjudicator shall be any person agreed by the Parties. In the event of disagreement, the adjudicator shall be appointed in accordance with the Rules.

15.2 Notice of Dissatisfaction

of If a Party is dissatisfied with the decision of the adjudicator or if no decision is given within the time set out in the Rules, the Party may give notice of dissatisfaction referring to this Sub-Clause within 30 days of receipt of the decision or the expiry of the time for the decision. If no notice of dissatisfaction is given within the specified time, the decision shall be final and binding on the Parties.

15.3 Arbitration

A dispute which has been the subject of a notice of dissatisfaction, as per sub clause 15.2 shall be referred to a single arbitrator under the rules specified in the SCC. In the absence of agreement, the arbitrator shall be designated by the appointing authority specified in the SCC. Any hearing shall be held at the place specified in the SCC and in the language referred to in Sub-Clause 1.5.

16. Conduct of Bidders

16.1 The Bidder shall be responsible to fulfil his obligations as per the requirement of the Contract Agreement, Bidding documents, GoN's Procurement Act and Regulations.

16.2 The Bidder shall not carry out or cause to carry out the following acts with an intention to influence the implementation of the procurement process or the procurement agreement :

- a) give or propose improper inducement directly or indirectly,
- b) distortion or misrepresentation of facts
- c) engaging or being involved in corrupt or fraudulent practice
- d) Interference in participation of other prospective bidders.
- e) coercion or threatening directly or indirectly to cause harm to the person or the property of any person to be involved in the procurement proceedings,
- f) collusive practice among bidders before or after submission of bids for distribution of works among bidders or fixing artificial/uncompetitive bid price with an intention to deprive the Employer the benefit of open competitive bid price..
- g) contacting the Employer with an intention to influence the Employer with regards to the bid or interference of any kind in examination and evaluation of the bids during the period after opening of bids up to the notification of award of contract

If a Party is or shall be prevented from performing any of its obligations by Force Majeure, the Party affected shall notify the other Party immediately. If necessary, the contractor shall suspend the execution of the Works and, to the extent agreed with the Employer, demobilize the contractor's Equipment.

Section V Special Conditions of Contract (SCC)

This SCC forms part of the Agreement

Item	Clause	Data								
Documents forming the Contract listed in order of priority	1.1.1	Documents a. Agreement b. Special Conditions of Contract c. General Conditions of Contract d. The Technical Specification e. The Drawings f. The (Priced) Bill of Quantities								
Time for Completion	1.1.12	9 months from signing of Contract								
Law of Contract	1.4	Applicable Law of Nepal								
Language	1.5	English								
Provision of Site	2.1	On the commencement date								
Authorized person	3.1	Project Manager/Managing Director, Tap Khola II Mini Hydropower Project Tap Khola Hydropower Cooperative Ltd. Khotang District, Nepal								
Name and Address of Employer's representative	3.2	CSD Consult Pvt.Ltd. Kathmanud, Nepal								
Performance Security: Amount	4.4	5 % of contract price								
Requirements for contractor's design (if any)	5.1	No								
Time for the submission of program	7.2	Within 7 days of the commencement date								
Liquidated Damage for Delay	7.4	0.05 % of Contract Price per day up to a maximum of 10% of sum stated in the Agreement								
Bonus or early completion (if any)	7.5	NA								
Period for notifying defects	9.1	Last of from the date stated in the notice under Sub-Clause 8.2.								
Day work rates (if any)	10.2 (e)	NA								
Valuation of the Works	11.1	As described in the technical specification.								
Percentage of retention	11.3	5% of each Payment made to the Contractor								
Currency of payment	11.7	Nepalese Rupees								
Rate of interest	11.8	10 % per annum								
Advance Payment	11.9 (a) 11.9 (c)	10-20% of the Contract Price 10-20% of the billed amount from each payment shall be deducted to recover the Advance Payment								
Price adjustment Base Price		The Contract is not subjected to Price adjustment. If there is any clause anywhere in bid document, they will be treated as undesirable and will not be taken into consideration.								
Insurances	14.2	<table border="1"> <thead> <tr> <th>Type of Cover</th> <th>Amount to Cover</th> </tr> </thead> <tbody> <tr> <td>The Works, Material, Plant and Fees</td> <td>The Sum stated in the Agreement plus 15%</td> </tr> <tr> <td>Contractor's Equipment</td> <td>Full Replacement Cost</td> </tr> <tr> <td>Third Party injury to persons and damage to property</td> <td>Rs. 100,000 per person, Up to five persons and Number of</td> </tr> </tbody> </table>	Type of Cover	Amount to Cover	The Works, Material, Plant and Fees	The Sum stated in the Agreement plus 15%	Contractor's Equipment	Full Replacement Cost	Third Party injury to persons and damage to property	Rs. 100,000 per person, Up to five persons and Number of
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		Workers	occurrences two As per Labour Act of Nepal
Adjudication	15.1	Appointing Authority: Nepal Council of Arbitration (NEPCA)	
Arbitration	15.3	Arbitration Rules: Nepal Council of Arbitration (NEPCA) Appointing Authority: Nepal Council of Arbitration (NEPCA) Place of Arbitration: Kathmandu Language: English	

SECTION VI-A : TECHNICAL SPECIFICATIONS FOR ELECTROMECHANICAL

**Salient Features
Of
Tap Khola-II Mini Hydropower Project**

1. Location/General

Development Region	: Eastern
Zone	: Sagarmatha
District	: Khotang
VDC	: Sapteswar - 7
River	: Tap Khola
Load Centers	: Kharmi, Sapteswar, Jalpa, Makpa

VDCs

Total Beneficiary Households	: 2671
Total Population	: 15380
Design Power	: 303KW
Average Subscribing Power	: 113watt/HH
Ownership	: Community
Airport	: Lamidada Khotang (Flight to Kathmandu)
Road head	: Kathmandu-Katari (Black Topped), Katari- (Gravel), Ghurmi-Site (65Km by Foot)

2. Hydrology

Catchment Area at Headworks Site	: 136.78 km ²
Mean Monthly Annual Flow	: 7.526 m ³ /s
Design Discharge (Q95%)	: 1.40 cumecs
Design Flood (1 in 20 year)	: 478 cumecs

3. Diversion Weir

Type	: Free Flow Cascade type
Length	: 19.00 m
Crest level	: El. 937.0 m
Flood Level at 20 Year Flood at weir	: El. 941.90 m

4. Undersluice

Type : Vertical gate
Size : 1.80m x 2.50 m
Crest level : El. 937.70 m

5. Intake

Type : Side Orifice
Size of Opening : 1.0 m x 0.90 m
Nos of gates : 2
Intake Invert Level : El. 936.00 m

6. Gravel Trap

Section : Rectangular, bottom hopper
Size (W x H) : 2.30 m x 1.50 m
Length : 4.00 m

7. Approach Canal

Section : Rectangular
Size (W x H) : 1.90 m x 1.74 m including free board
Length : 22.50 m

8. Desanding Basin

Type : Duffer, Intermittent flushing
Size (L x B x H) : 44.05 m x 5.00 m x 2.50 m
Desanding chambers : 1 no.
Nominal size of trapped particle : 0.20 mm

9. Headrace Canal

Section : Rectangular
Size (W x H) : 1.90 m x 1.10 m including free board
Length : 302.50 m

10. Forbay

Type : Rectangular
Size (W x H) : 7.00 m x 2.50 m
Length : 18.50 m
Length of spill way : 3 m
Minimum Submerged Height : 0.77m

11. Penstock Pipe Alignment

Length	: 149.53 m (Slope Length Up to
Bifurcation)	8.40m (After Bifurcation-Turbine Inlet
1)	4.25m (After Bifurcation-Turbine Inlet
2)	
Diameter	: 0.95 m
Minimum Shell Thickness	: 6 mm (average)

12. Powerhouse

Type of powerhouse	: Surface
Size (L x B x H)	: 13.20 m x 9.10 m x 3.10 m

13. Tailrace Conduit

Type	: Rectangular Stone Masonry Conduit
Size (B x H)	: 1.50 m x 1.50 m including free board
Length	: 12.0m

14. Turbines

Type	: Horizontal shaft, Francis
No. of units	: 2
Rated output per unit	: 177 kW
Rated net head	: 31 m
Rated discharge	: 1.4 m ³ /s
Rated speed	: 1000 rpm
Runaway speed	: 1500 rpm
Rated efficiency	: 80 %

15. Generators

Type	Synchronous, 3-phase, horizontal shaft, salient
pole	revolving field
No. of units	2
Rated output	225 kVA
Rated generation voltage	400V
Rated power factor	0.8 (lagging)
Rated efficiency	95.0 %
	VI-3

Rated frequency	50 Hz
Rated speed	750 rpm
No. of poles	8
Stator/ rotor insulation	Class F
Stator connection	Star with neutral earthed
Excitation	Brushless

16. Power and Energy

Type of Power Plant	: Run-of-river
Design Discharge	: 1.40 m ³ /s
Total Gross Head	: 31 m
Rated Net Head	: 29.03 m
Installed Capacity	: 303 KW
Average Annual Deemed Energy	: 2,558.08 MWh
Dry Energy	: 2430.18 MWh
Wet Energy	: 771.99 MWh

POWER HOUSE MECHANICAL EQUIPMENT

The study the Project reveals that the installation of one Turbine-Generator units will be more economical. The powerhouse mechanical equipment of the project mainly consists of the followings:

- Turbine
- Governor
- Turbine Inlet Valve
- Flywheel
- Cooling water supply system
- Drainage and dewatering system
- Compressed air system
- Grease lubricating system
- Oil handling system
- Ventilation and air conditioning system
- Fire protection system
- Powerhouse overhead travelling crane

TURBINE

For the given head and discharge, two units of Francis Turbine with Horizontal shaft have been proposed. The turbine will have a single runner attached to the end of turbine shaft. The runner will be made of integrally cast solid steel of minimum 13 % chromium and 4 % nickel. The runner will be protected against erosion by a coating of carbide-metal material deposited on it by a high velocity oxygen fuel thermal spray process to a thickness of 0.4 mm.

Guide vanes will be designed for the appropriate hydraulic pressure and constructed to produce the most uniform flow possible of water. They will be mechanically linked with a servomotor and operated under the appropriate command of governor. The guide vanes will be made of cast stainless steel of 13 % chromium and 4 % nickel. They will be protected against erosion by a coating of carbide-metal material deposited on it by a high velocity oxygen fuel thermal spray process to a thickness of 0.4 mm.

All turbine instrumentation such as unit control boards and governor control cabinets will be located close to the relevant units near to the turbine-generator units which are advantageous for operation, maintenance and service.

The main characteristics of the horizontal shaft Francis flow turbine will be as follows:

Type	Horizontal shaft, Francis
No. of units	2
Rated output per unit	177 kW
Rated net head	31 m
Rated discharge	1.4 m ³ /s
Rated speed	1000 rpm
Runaway speed	1500 rpm
Rated efficiency	80 %

TURBINE GOVERNOR

Each turbine will be supplied with an electro-hydraulic PID type governor which shall be capable of controlling speed and power. The governor will ensure stable governing operation in parallel grid connection mode as well as in island mode (when there is no grid supply).

The governor will be located near to the turbine.

The maximum speed rise caused by sudden full load rejection will not exceed 35 % of the rated speed and the maximum momentary pressure rise, when full load is thrown off under any conditions will not exceed 30 % of maximum gross head.

The governor regulation data will be as follows:

Type	Electro-hydraulic with PID
------	----------------------------

Adjustable range of permanent speed droop	0 - 5 %
Speed rise during full load rejection	≤ 35 %
Pressure rise during full load rejection	≤ 30 %

TURBINE INLET VALVE

One inlet valve will be provided in turbine-generator unit. The valve will be either spherical type or butterfly type. For safety reason and to reduce the required capacity of the drainage and dewatering system, each valve will be equipped with smaller by-pass valve for filling of the turbine distributor piping.

FLYWHEEL

An adequate sized flywheel shall be provided for each generating unit to guarantee the correct operation of the system in Island mode of operation. The flywheel shall be mounted on the alternator extension shaft between generator and turbine.

COOLING WATER SUPPLY SYSTEM

Cooling water supply system will provide necessary amount of water for cooling lubricating oil, governor oil, generators and transformers if necessary. In addition to supply for cooling water, water may have to be provided for shaft sealing and fire fighting system.

The water for heat exchangers and cooling coils may be taken from the penstock, the tailrace or a separate source. The details of cooling water supply system shall be carried out in the next phase of study.

DRAINAGE AND DEWATERING SYSTEM

The drainage and dewatering system will serve the following purpose:

- to drain the powerhouse seepage water
- to dewater the power conduit
- to drain the powerhouse in the event of emergency

The system will consist of drains leading to the drainage pit. Two drainage pumps and two dewatering pumps with associated valves and pipe works will be located in the drainage sump. These pumps will discharge to the tail water. To dewater the penstock and power conduit, a drain valve with piping work just upstream of main inlet valve will be provided for each unit. The details of drainage and dewatering system shall be carried out in next phase of study.

COMPRESSED AIR SYSTEM

Separate compressed air system will be provided for

- a service compressed air system
- a governor compressed air system
- mechanical brakes of the turbine-generator unit
- ring piping in the powerhouse for connection of pneumatic tools etc.

Two compressors of suitable rating will feed the system. Under normal operating conditions, one compressor will act as duty and the other as stand by. The governor air system will supply compressed air due to air lost by leakage or absorption for the air/oil pressure vessel of the governors.

GREASE LUBRICATING SYSTEM

A centralized automatic grease lubricating system will be provided for each generating unit for automatically injecting preset amount of lubricants for bushing and all working parts of the turbine inlet valves operating mechanism. A stand by hand operated pump for normal service is provided.

The system will have a means of controlling the volume of grease to each grease point and of assuring that each grease point is lubricated in sequence in the greasing cycle.

OIL HANDLING SYSTEM

An oil handling system will consist of an oil purifier capable of removing all contamination such as water solids, sludge etc. from lubricating oil system as well as high pressure oil system. It will also have oil pumps with appropriate length of flexible hose pipes. The capacity of the oil handling system will be determined in the next phase of study.

Ventilation and Air Conditioning System

The purpose of ventilation system for the powerhouse is as follows:

- to provide adequate fresh air to the working personnel
- to remove heat generated by mechanical and electrical equipment
- to provide smoke exhaust ventilation in case of fire to minimize the circulation of smoke and production of combustion

The ventilation and air conditioning system consists of fresh air handling unit and air conditioning unit. The air requirement and system sizing of ventilation and air conditioning system will be determined in the next phase of study.

FIRE PROTECTION SYSTEM

A suitable fire protection system will be installed at different location of turbine, generator and control room and other places as required by design. The details of fire protection system shall be studied in next phase of study.

POWERHOUSE OVERHEAD TRAVELLING CRANE

For unloading and erection of equipment in the powerhouse, an overhead travelling crane of sufficient capacity will be provided. The crane will be capable of lifting the heaviest piece of the equipment installed. The crane will have one main hoist and one auxiliary hoist. The span of the crane will be such that it will cover all the major equipment to be serviced. The approximate capacity of the crane has been estimated as 10 tons.

POWER HOUSE ELECTRICAL EQUIPMENT

GENERAL

The powerhouse electrical equipment of Project will mainly include generators, transformers, switchgears, protection scheme, control system, earthing system, lighting system, communication system etc. The ratings of the equipment are designed safely to cope with all normal and fault conditions, avoiding any overstressing of equipment. Also equipment will be of standard design, providing highest degree of safety, reliability, availability and ease in operation.

GENERATING EQUIPMENT

GENERATOR

One unit of horizontal shaft, three phase Synchronous generator will be installed to generate 303 kW power. The shaft of the generators will be directly coupled to the Cross flow turbine runner. Each generating unit will be provided with Exciter and AVR.

The stator winding of the generator shall be star-connected and neutral shall be grounded with neutral grounding resistor to limit the unbalance fault current. The insulation materials shall be of class F and the temperature rise shall be limited to 800 C. The cooling system and fire protection of the generator will be as suggested by the manufacture.

The main parameters of generator will be as follows:

Type	Synchronous, 3-phase, horizontal shaft, salient pole revolving field
No. of units	2
Rated output	225 kVA
Rated generation voltage	400V
Rated power factor	0.8 (lagging)

Rated efficiency	95.0 %
Rated frequency	50 Hz
Rated speed	750 rpm
No. of poles	8
Stator/ rotor insulation	Class F
Stator connection	Star with neutral earthed
Excitation	Brushless

EXCITATION SYSTEM

The excitation system installed for generator excitation will be of brushless type and will consist of an alternating current exciter (A.C. Exciter), rotatory rectifiers, field circuit breaker, excitation transformer and voltage regulating equipment.

The excitation system shall have sufficient capacity that the generator is capable of supplying continuous rated load at rated voltage, power factor and frequency. Provision shall be made for both automatic and manual control of exciter voltage.

The A.C. Exciter shall be directly coupled to the generator shaft. The A.C. Exciter shall be three phase rotating armature type generator and shall be self ventilating air cooled type. Sufficient numbers of rotating diodes; rectifier shall be installed in the rotor so that excitation current for generator shall be supplied through the main shaft insulated conductor strip.

The voltage regulating equipment will consist of an automatic voltage regulator (AVR) equipped with reactive power limiter, reactive power control equipment, thyristers and other accessories. The AVR shall be of high speed, quick response type.

The general requirements for AVR shall be as follows:

- The voltage control under steady state condition shall be ± 5 % of rated terminal voltage.
- Over voltage resulted due to sudden load rejection at any load shall not exceed above 30 % of the voltage held before the occasion of sudden load rejection.
- The AVR shall suppress the residual voltage through field discharge switch.

MAIN TRANSFORMER

One main transformer will be provided to step up the generation voltage from 0.4 kV to the transmission voltage 11 kV. The Lightning arrestors will be provided in 11 kV line side as well as 0.4 kV side to protect the equipments against over-voltages caused by lightning and switching surges.

The main parameters of the power transformer are summarized below:

Number of unit	1
Type	3-phase, oil-immersed
Installation	Outdoor
Rated capacity	450 kVA
Rated H.V. (Secondary)	11 kV
Rated L.V. (Primary)	400 V
Efficiency	98 %
Cooling	ONAN
Rated frequency	50 Hz
L.V. winding connection	Delta
H.V. winding connection	Star
Vector group	YNd11
Tap changer	Off-load, ± 5 % in steps of ± 2.5 %
Material of conductor	Copper

STATION SUPPLY TRANSFORMER

A 3-phase, 25 kVA, 0.4 kV / 400-230 V transformer will be provided for station supply. The primary side of station transformer shall be protected by Power Fuse and the secondary side shall be protected by MCCB.

Ratings of station supply transformer will be as follows:

Number	1
Type	Indoor type
Rated capacity	25 kVA
Rated primary voltage	0.4 kV
Rated secondary voltage	400-230 V
Primary connection	Delta
Secondary connection	Star
Vector group	Dyn11
Rated frequency	50 Hz

AUXILIARY SYSTEMS

- The Station service transformer will be of 0.4 /0.40-0.23 kV, 25 kVA capacity.
- DC supply will be provided by battery sets, supported by battery chargers for the control, protection, emergency lighting and communication system. For the purpose, a bank of maintenance free battery capable of supplying 110 V DC, 250

Ah shall be installed inside the powerhouse. The battery shall be connected to the distribution board and battery charger via fuse.

- Indoor and outdoor lighting system will be implemented to provide the adequate illumination level over different places.

PROTECTION SYSTEMS

Protection system will be provided to isolate faulty systems as quickly as possible, to limit damage and to maintain healthy systems in stable operating conditions. The system will feature a high degree of selectivity and discrimination between faulty and healthy circuits. The protection system will be provided for turbine, generator, transformer and transmission line.

TURBINE PROTECTION

The turbine shall be protected against following conditions:

- Bearing temperature extremely high/low
- Governor oil pressure extremely high/low
- Failure of governor
- Over speed
- Oil level of pressure oil tank low or high
- Regulating pond/ reservoir water level below the setting etc.

GENERATOR PROTECTION

Generator shall be provided with following protection schemes:

- Field loss protection
- Reverse power protection
- Over voltage and under voltage protection
- Over current protection
- Ground over current protection
- Over frequency and under frequency protection

MAIN TRANSFORMER PROTECTION

The main transformer shall be provided with following protection schemes:

- Over current and earth fault protection
- Buchholz relay protection
- Lightning protection by Lightning arrester

TRANSMISSION LINE PROTECTION

The transmission line and associated equipments at both ends shall be protected with the following protection schemes:

- Over current protection
- Ground over current protection
- Lightning protection by Lightning arrester

11 KV SWITCHGEAR

The rating of the equipment will be as follows:

a) 11 kV Circuit Breaker

One number of 11 kV Vacuum Circuit Breaker (VCB) shall be installed

The technical details of VCB will be as follows:

Type operation,	3-phase, single throw in Outdoor
Quantity required:	4
Voltage rating:	
Nominal system voltage	11 kV
Rated maximum voltage	12 kV
Current rating:	
Rated continuous current	630 A
Rated short circuit breaking current	25 kA
One min. power frequency withstand voltage (rms)	27 kV
Impulse withstand voltage (peak)	40 kV
Frequency	50 Hz

b) 11 kV Disconnecting Switch

Type	3-pole, Single throw outdoor
Voltage rating:	
Nominal system voltage	11 KV
Rated maximum voltage	12 KV
Frequency	50 Hz
Insulation level:	
Basic impulse level (BIL)	40 KV
Power frequency withstand voltage (1 min.)	27 KV
Current rating:	
Rated continuous current at 45oC ambient temp.	630 A
Rated short-time withstand current (r.m.s.)	25 KA
Rated peak withstand current	62.5 KA
Operating Mechanism	Manually gang operated

c) 11 kV Current Transformer

The technical details of current transformer will be as follows:

Type	Outdoor
Voltage rating:	
Nominal system voltage	11 KV
Rated maximum voltage	12 KV
Impulse withstand voltage (peak)	40 kV
Frequency	50 Hz
Short time thermal ratings	10 kA for 1 sec
Current ratio	25/5A
Burden	50 VA

d) 11 kV Potential Transformer

The technical details of potential transformer will be as follows:

Type	Outdoor
Rated primary voltage	11 KV / $\sqrt{3}$
Rated secondary voltage	110 V/ $\sqrt{3}$
Impulse withstand voltage (peak)	40 kV
Frequency	50 Hz
Burden	200 VA
Power factor	0.8

e) 11 kV Lightning Arrester

The Lightning arresters will be provided for protecting the substation equipment including main transformer against possible lightning strokes and other abnormal voltages.

The technical details of Lightning arrester will be as follows:

Type	Outdoor, gapless ZnO arrester
Frequency	50 Hz
System voltage	11 kV
Rated voltage	9 kV
Impulse withstand voltage (BIL)	40 kV
Power frequency withstand voltage	27 kV
Nominal discharge current	10 kA

0.4 KV SWITCHGEAR

0.4 kV switchgear which is provided for the generator circuits, the main transformer primary circuit and station supply transformer circuit will be of self supporting, indoor and metal enclosed cubicle type.

a) 0.4 kV Circuit Breaker

One number of 0.4 kV draw out type Vacuum Circuit Breaker (VCB) shall be installed. The VCB shall be of three phase with single throw in operation.

The technical details of VCB will be as follows:

Type	3-phase, single throw in
operation,	indoor, draw out type
Quantity required:	2
Voltage rating:	
Nominal system voltage	0.4 kV
Rated maximum voltage	0.6 kV

Current rating:	
Rated continuous current	2000 A
Rated short circuit breaking current	25 kA
Frequency	50 Hz

b) 0.4 kV Current Transformer

The technical details of current transformer will be as follows:

Type	Indoor
Voltage rating:	
Nominal system voltage	0.4 KV
Rated maximum voltage	0.6 KV
Frequency	50 Hz
Current ratio	600/5A

Burden	50 VA
--------	-------

c) 0.4 kV Potential Transformer

The technical details of potential transformer will be as follows:

Type	Indoor
Rated primary voltage	0.4 KV / $\sqrt{3}$
Rated secondary voltage	110 V/ $\sqrt{3}$
Frequency	50 Hz
Burden	200 VA
Power factor	0.8

BATTERY AND BATTERY CHARGER

The battery and battery charger is required for control, indication and protection circuit. The batteries shall be located in a battery room and will be connected to the distribution board and battery charger via a fuse box located on the wall in the battery room.

For protection and control, maintenance free battery with capacity 110 V DC, 250 Ah will be installed. It shall be provided with one set of battery charger.

GROUNDING

Providing of adequate earthing in a substation is extremely important for the safety of the operating personnel as well as proper system operation. The primary requirements of a good earthing system in a substation are;

- a. The impedance to ground should be as low as possible. In large substations it should not exceed 1 ohm and in small substation' 5 ohms.
- b. The step and touch potentials should be within safe limits as indicated in IEEE 80.

To meet these requirements normally the earthing system comprises an earthing mat buried at a suitable depth below the ground and provided with ground rods at suitable points. All the non-current carrying parts of the equipment in the substation are connected to this grid so as to ensure that under fault conditions, none of these parts are at higher potential than the grounding grid. The earthing substation has to be provided with fencing from the view point of touch and step potential in the area.

SECTION VI-A : TECHNICAL SPECIFICATIONS FOR HYDROMECHANICAL

Penstock Pipe

Total of 141.08 m(Slope Length Upto Bifrucation), 8.40m (After Bifrucation-Trubine Inlet 1) and 4.25m(After Bifrucation-Turbine Inlet 2) long penstock pipe has been proposed. The diameter varies from .95m to 0.7 at different stretches from Forbay to BF valve. The thickness of the pipe varies from 4 to 6mm and there are 6 bends and 5 expansion joints proposed in the open stretch of the pipe. The pipe shall rest on concrete saddle support at an interval of 6m c/c and the pipe shall be held on position by anchor blocks. The alignment of pipe is not accessible now, so there can be site adaptation during construction phase in the foundation of Anchor Blocks.

Expansion Joints

There are 6 expansion joints proposed for Tap Khola MHP penstock pipe, which have diameter of 0.95 to .70m and different length of pipe. They are categorized based on expansion length of pipe between IP to IP and the pressure range. The manufacturing, transportation, supply and erection are in single package which is included in metal works package.

Gates, Trash Rack and Stop logs

The gates trash rack and stop logs are planned at various locations according to hydraulic criteria for operation, control and maintenance purposes in the project. The drawings of gates and trash racks are produced to enable the contractor for quoting price for design, procurement, fabrication, transportation, erection, testing and commissioning, of each component at the desired locations. The design criteria have been listed in this chapter to guide the details works from the contractors.

There are several gates and stop logs, trash/course racks present in the scheme which are listed below, the supply shall include all its frame, plate, seal stiffeners, hoist, and accessories complete for the following items:

- i. Sluice Gate : One complete set of Sluice Gate with its guide frames and hoists with their accessories
- ii. Intake Inlet Gates: Two complete set of Desander Inlet Gate with its guide frames and hoists with their accessories
- iii. Gravel Trap Flushing Gates: One complete sets of Trap Flushing Gate with its guide frames and hoists with their accessories
- iv. Desander Inlet Gates: One complete set of Desander Inlet Gate with its guide frames and hoists with their accessories
- v. Desander Flushing Gates :One complete sets of Desander Flushing Gate with its guide frames and hoists with their accessories
- vi. Forbay Gate : One complete set of Tailrace Gate with its guide frames and hoists with their accessories
- vii. Penstock Inlet Gates: One complete set of Desander Inlet Gate with its guide frames and hoists with their accessories
- viii. Tailrace Gate :One complete set of Tailrace Gate with its guide frames and hoists with their accessories
- ix. Side Intake Course rack: Two complete sets of side Intake Trashracks with supporting beams and their accessories
- x. Gravel Trap &Desander Outlet Fine Trash rack :Two complete set of Desander Outlet Trash rack with supporting beams and their accessories
- xi. Side Intake Stoplog: Two complete set of Stoplogs with seals for side Intake and its accessories

Section VII.

Forms of Securities

Bid Security (Bank Guarantee)

Whereas, *[name of Bidder]* (hereinafter called “the Bidder”) has submitted his bid dated *[date]* for the construction of *[name of Contract]* (hereinafter called “the bid”).

Know all people by these presents that We *[name of Bank]* of *[name of country]* having our registered office at *[address]* (hereinafter called “the Bank”) are bound unto *[name of Employer]* (hereinafter called “the Employer”) in the sum of *[amount]*¹ for which payment well and truly to be made to the said Employer, the Bank binds itself, its successors, and assigns by these presents.

Sealed with the Common Seal of the said Bank this *[day]* day of *[month]*, *[year]*.

The conditions of this obligation are:

- (1) If, after bid opening, the Bidder withdraws his bid during the period of bid validity specified in the Form of Bid; or
- (2) If the Bidder having been notified of the acceptance of his bid by the Employer during the period of bid validity:
 - (a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders, if required; or
 - (b) fails or refuses to furnish the Performance Security, in accordance with the Instruction to Bidders; or
 - (c) does not accept the correction of the bid,

we undertake to pay to the Employer up to the above amount upon receipt of his first written demand, without the Employer’s having to substantiate his demand, provided that in his demand the Employer will note that the amount claimed by him is due to him owing to the occurrence of one or any of the three conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date *[number]* days² after the deadline for submission of bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

Date _____ Signature of the Bank _____

Witness _____ Seal _____

[signature, name, and address]

¹ The Bidder should insert the amount of the Guarantee in words and figures denominated in Nepali Rupees. This figure should be the same as shown in Clause 13 of the Instructions to Bidders.

² Usually 30 days after the end of the validity period of the bid. The date should be inserted by the Employer before the bidding documents are issued.

Performance Bank Guarantee

To: *[name and address of Employer]*

Whereas *[name and address of contractor]* (hereinafter called “the contractor”) has undertaken, in pursuance of Contract No. *[number]* dated *[date]* to execute *[name of Contract and brief description of Works]* (hereinafter called “the Contract”);

And whereas it has been stipulated by you in the said Contract that the contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

And whereas we have agreed to give the contractor such a Bank Guarantee;

Now therefore we hereby affirm that we are the Guarantor and responsible to you, on behalf of the contractor, up to a total of *[amount of Guarantee] [amount in words]*³ such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of *[amount of Guarantee]*⁴ as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed there under or of any of the Contract documents which may be made between you and the contractor shall in any way release us from any liability under this Guarantee, and we hereby waive notice of any such change, addition, or modification.

This Guarantee shall be valid for at least 30 days beyond the date of issue of Defects Liability Certificate.

Signature and seal of the Guarantor _____

Name of Bank _____

Address _____

Date _____

³ An amount is to be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract, and denominated in Nepalese Rupees.

⁴ The Unconditional (or “On-Demand”) Bank Guarantee has the merit of simplicity and of being universally known and accepted by commercial banks. The contracting community, however, strongly objects to this type of Security because the Guarantee can be called (or threatened to be called) by Employers without justification. Employers should recognize the contractual conditions governing non-performance by the Contractor and should normally act only on the advice of the Project Manager in calling a Performance Guarantee.

Bank Guarantee for Advance Payment

To: *[name and address of Employer]*

[name of Contract]

Gentlemen:

In accordance with the provisions of the Conditions of Contract, Sub clause 11.9(“Advance Payment”) of the above-mentioned Contract, *[name and address of contractor]* (hereinafter called “the contractor”) shall deposit with *[name of Employer]* a Bank Guarantee to guarantee his proper and faithful performance under the said Clause of the Contract in an amount of *[amount of Guarantee]* *[amount in words]*⁵

We, the *[Bank or Financial Institution]*, as instructed by the contractor, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to *[name of Employer]* on his first demand without whatsoever right of objection on our part and without his first claim to the contractor, in the amount not exceeding *[amount of Guarantee]* *[amount in words]*⁶

We further agree that no change or addition to or other modification of the terms of the Contract or of Works to be performed there under or of any of the Contract documents which may be made between *[name of Employer]* and the contractor, shall in any way release us from any liability under this Guarantee, and we hereby waive notice of any such change, addition, or modification.

The validity period of the guarantee shall be 30 days beyond the period scheduled for repayment of the advance payment and the guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until the *[name of Employer]* receives full repayment of the same amount from the Contractor.

Yours truly,

Signature and seal: _____

Name of Bank/Financial Institution: _____

Address: _____

Date: _____

⁵ An amount is to be inserted by the Bank or Financial Institution representing the amount of the Advance Payment, and denominated in Nepali Rupees of the Advance Payment as specified in the Contract.

⁶ An amount is to be inserted by the Bank or Financial Institution representing the amount of the Advance

Section VIII

Bill of Quantity (BoQ)

BILL OF QUANTITIES

Bill NO. 1 : Electromechanical

Ref. Dwg No. :

Item	Description	Qty	Unit	Rate NRS	Amount NRS	Remarks
1	Turbine-Generator Units					
1.1	Turbine ---Horizontal Francis turbine,177kW,750rpm, Gross water head 31 m, 1.4 m ³ /s, $\eta_T=80\%$	2	Nos.			Bidder may quote for one Turbine, One Governor, One Generator and accessories necessary for it.
1.2	Governor --- digital PID function, with pressure oil device	2	Nos.			
1.3	Generator ---Horizontal Brushless synchronous generator, , 225KVA, 50Hz, 0.4 kV, 0.8p.f.lag, 1000 rpm, Power factor 0.85 class "F" insulation with temperature rise limited to class "B"	2	Nos.			
1.4	Excitation systems ---Brushless excited device FLP-WG 1200/0.4	2	Set			
1.5	Turbine side panel and automatic element	2	Set			
2	Main valve					
2.1	spherical Valve	2	Set			
3	Crane					
3.1	Crane DL-15t	1	Set			Optional and may quote also Chain Pully regarding Crane alternative
3.2	Track	1	Lot			
4	Auxiliary equipment					
4.1	Compressed oil systems	1	Set			
4.2	Equipment for compressed air systems	1	Set			
4.3	Equipment for water supply and drainage system	1	set			
5	Electrical equipment (0.4kV)	2	Set			

BILL OF QUANTITIES

Bill NO. 1 : Electromechanical

Ref. Dwg No. :

Item	Description	Qty	Unit	Rate NRS	Amount NRS	Remarks
6	Automation protection and control systems including Grounding Systems	1	Set			
7	100AH D.C electric resource system	1	Set			
8	Step-up substation equipment					
8.1	Transformer ---450 KVA, three phase, 50Hz, 11±2×2.5%/0.4 kV, Ynd11	1	Set			
8.2	Station transformer 25kVA 0.4/0.4kV	1	Set			
8.3	11 kV substation electric device include follow:					
	9 kV 10kA lightning arrestors	4	Set			
	Indoor vacuum circuit breakers	4	Set			
	Isolators	4	Set			
	Current transformers					
	Voltage transformers					
	Total Price in U.S.Dollars		(\$US)			
	Total Price in NRs		(NRs)			
Total of Bill No. 1						
(Carried Forward to Summary , Page)						

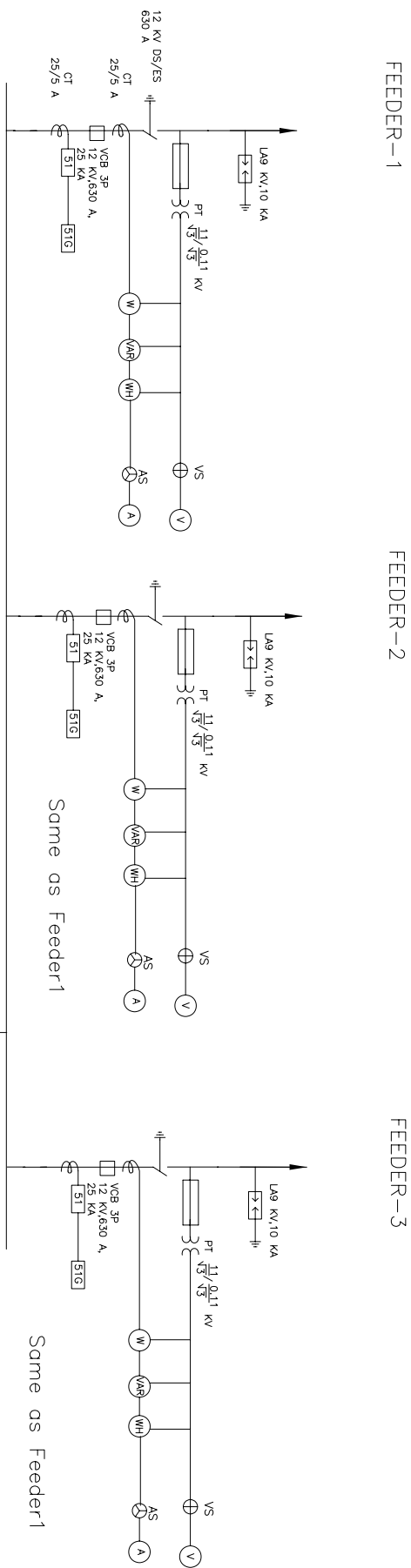
BILL OF QUANTITIES (Revised)

Bill NO. 2 : Hydromechanical

Ref. Dwg No. :

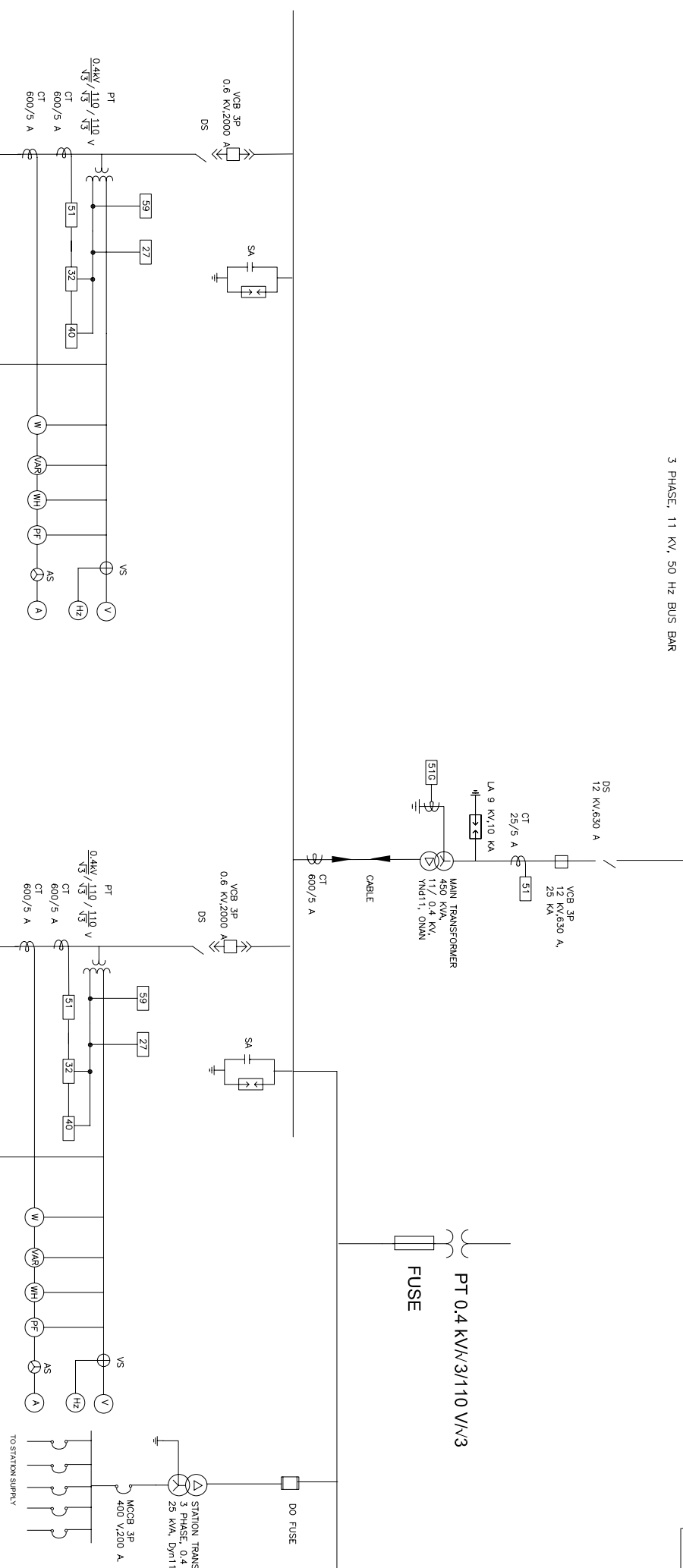
Item	Description	Qty	Unit	Rate NRS	Amount NRS	Remarks
1	Gates and Accessoris					
1.1	Intake Gate (0.80x2.50@2nos Vertical Gate at Undersluice	1034.07	Kg.			
1.2	(1.80x2.5@1nos) Vertical Stop Log at Undersluice	1575	Kg.			
1.3	(1.80x2.5@1nos) Gravel Trap Flushing Gate (0.50	1125	Kg.			
1.4	x 0.50 @1nos)	72.5	Kg.			
1.5	Inlet Gate at Desanding Basin (1.90 x 1.25 @1nos)	389.744	Kg.			
1.6	Outlet Gate at Desanding Basin (1.90 x1.10@1nos)	1028.92	Kg.			
1.7	Sand Purging Gate at Desanding Basin (1.0 x1.0@1nos)	164.103	Kg.			
1.8	Penstock Inlet Gate at Forebay (1.0 x 1.0@1nos)	164.103	Kg.			
1.9	Forbay Flushing Gate (0.80x 1.0@1nos)	131.282	Kg.			
1.9	Tailrace Gate(0.80x 1.05@2nos) Intake Trash Racks	275.692	Kg.			
1.1	(0.80x1.0@2nos) Stilling Racks at Gravel	743.007	Kg.			
1.11	Trap(1.90x0.40@1nos) Fine Stilling Racks at Settling	143.556	Kg.			
1.12	Basin(1.90x1.0@1nos)	358.889	Kg.			
2.2	Base Plates	8000	LS			
2	Penstock Pipe					
2.1	Steel plate for Penstock Pipe 0.95 m dia 141.08m and 0.70m dia. 8.40m in 0.006 m thick	19.73	Mt			
2.2	Manholes at Penstocks	4	No			
2.3	Expansion Joints 0.95 diameter	6	No			
2.4	Expansion Joints 0.70 m diameter	2	No			
Total of Bill No. 2						
(Carried Forward to Summary , Page)						

Section IX Drawings



LEGENDS

DEVICE NO.	DESCRIPTIONS
25	SYNCHRO CHECK RELAY
32	REVERSE POWER RELAY
40	LOSS OF EXCITATION RELAY
51	OVER CURRENT RELAY
51G	OVER CURRENT GROUND RELAY
59	AC OVER VOLTAGE RELAY
27	AC UNDER VOLTAGE RELAY
B7	DIFFERENTIAL CURRENT RELAY
V	VOLTMETER
EX	EXCITOR
AVR	AUTOMATIC VOLTAGE REGULATOR
CT	CURRENT TRANSFORMER
PT	POTENTIAL TRANSFORMER
PF	POWER FACTOR METER
WH	WATT HOUR METER
W	WATTMETER
HZ	FREQUENCY METER
A	AMMETER
LA	LIGHTNING ARRESTOR
SY	SYNCHRONSCOPE
DS	DISCONNECTING SWITCH
ES	EARTH SWITCH
12	OVER SPEED RELAY
13	SYNCHRONOUS SPEED RELAY
14	UNDER SPEED RELAY
41	FIELD CIRCUIT BREAKER
52E	EXCITATION CIRCUIT BREAKER



DWG. EL1: POWER HOUSE SINGLE LINE DIAGRAM

Tapkhola Hydropower Cooperative Ltd.	
ELECTRICAL DIAGRAM	
SINGLE LINE DIAGRAM	
SHEET 1 OF 1	
APPROVED	

Particular	Name	Initial	Date
Designed	ST		
Drawn	ST		
Checked	ABS		
Recomm.	CS		
Approved			

Rev.	Amendment	Date	By	Chk.	Rec.	Appr.

DETAILED ENGINEERING DRAWING
Advance Engineering Consultancy & CSD Consult Pvt. Ltd JV
 Engineering Department
 Kathmandu, Nepal
 Drawing No. **TKMHP-45-T01**
 Date: 25.10.2011
 e-mail: advance@advance.com.np
 Tel: [977144222222](tel:977144222222)
 Fax: [977144222222](tel:977144222222)