

# **Expression of Interest (EOI)**

**For**

***MULTI CHANNEL ANALYSIS OF SURFACE WAVES IN HYDROELECTRIC  
PROJECTS***

**Method of Consulting Service: *National Consulting Service***

**Project Name** : MULTI CHANNEL ANALYSIS OF SURFACE WAVES IN  
HYDROELCTRIC PROJECTS  
**EOI** : NEC/DES/GEN/074/75-GEO-02  
**Office Name** : NEA ENGINEERING COMPANY LIMITED  
**Office Address** : 2ND FLOOR TRADE TOWER, THAPATHALI, KATHMANDU  
**Issued on** : JANUARY 10, 2018

Financing Agency:  
NEA ENGINEERING COMPANY LIMITED

## Abbreviations

BKHEP	-	Betan Karnali PRoR Hydro Electric Project
CV	-	Curriculum Vitae
DO	-	Development Partner
EA	-	Executive Agency
EOI	-	Expression of Interest
GON	-	Government of Nepal
JSHAP	-	Jagdulla Storage Hydro Electric Project
KAHEP	-	Kimathanka Arun Hydroelectric Project
NEA	-	Nepal Electricity Authority
NEC	-	NEA Engineering Company Ltd.
PAN	-	Permanent Account Number
PKHEP	-	Phukot Karnali peaking RoR Hydro Electric Project
PPA	-	Public Procurement Act
PPR	-	Public Procurement Regulation
TOR	-	Terms of Reference
VAT	-	Value Added Tax

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**Section - I**  
**Request for Expression of**  
**Interest**

## A. Request for Expression of Interest

NEA ENGINEERING COMPANY LIMITED (NEC)

Date: 10 JANUARY 2018

Name of Project: *MULTI CHANNEL ANALYSIS OF SURFACE WAVES (MASW) IN HYDROELCTRIC PROJECTS*

Financing by: NEA ENGINEERING COMPANY LIMITED

1. NEA ENGINEERING COMPANY LIMITED (NEC) has allocated fund towards the cost of Seismic Refraction tomography (SRT) of the projects including but not limited to the one or more of the followings:
  - a. Phukot Karnali Peaking RoR Hydro Electric Project-426 MW (NEC/DFES:PKHEP/074/75/GEO-02)
  - b. Betan Karnali PRoR Hydro Electric Project- 688 MW (NEC/DES:BKHEP/074/75/GEO-02)
  - c. Kimathanka Arun Hydroelectric Project- 450 MW (NEC/DES:KAHEP/074/75/GEO-02)
  - d. Jagdulla Storage Hydro Electric Project-307 MW (NEC/DES:JSHEP/074/75/GEO-02)

and intends to apply a portion of this fund to eligible payments under the Contract for which this Expression of Interest is invited for National consulting service.

2. The NEC invites Expression of Interest (EOI) from eligible consulting firms ("Consultant") to provide the following consulting services:  
Multi Channel Analysis of Surface Waves IN HYDROELCTRIC PROJECTS.
3. Interested eligible consultants may obtain further information and EOI document free of cost at the address NEA Engineering Company Limited during office hours on or before (24 January 2018, 17:00 hours local time) or visit the client's website [www.neaec.com.np](http://www.neaec.com.np).
4. Consultants may associate with other consultants to enhance their qualifications.
5. In case the last date of obtaining and submission of the EOI documents happens to be a holiday, the next working day will be deemed as the due date but the time will be the same as stipulated.
6. EOI will be assessed based on Qualification 30%, Experience 60%, and Capacity 10% of consulting firm and key personnel. Based on evaluation of EOI, only shortlisted firms will be invited to submit technical and financial proposal through a Request for Proposal.
7. Minimum score to pass the EOI is 60.

## **B. Instructions for submission of Expression of Interest**

1. Expression of Interest may be submitted by a sole firm or a joint venture of consulting firms.
2. Interested consultants must provide information indicating that they are qualified to perform the services (*descriptions, organization and employee and of the firm or company, description of assignments of similar nature completed in the last 7 years and their location, experience in similar conditions, general qualifications and the key personnel to be involved in the proposed assignment*).
3. This Expression of Interest is open to all eligible **consulting firms**.
4. The assignment is scheduled for a period of **Three (3) months from the date of letter to commence**. Expected date of commencement of the assignment is **March 2018**.
5. A Consultant will be selected in accordance with the **QCBS** method.
6. Expression of Interest should contain following information:
  - (i) A covering letter addressed to the representative of the client on the official letter head of company duly signed by authorized signatory.
  - (ii) Applicants shall provide the following information in the respective formats given in the EOI document:
    - *EOI Form: Letter of Application (Form 1)*
    - *EOI Form: Applicant's Information (Form 2)*
    - *EOI Form: Work Experience Details (Form 3(A), 3(B) & 3(C))*
    - *EOI Form: Capacity Details (Form 4)*
    - *EOI Form: Key Experts List (form 5).*
7. Applicants may submit additional information with their application but shortlisting will be based on the evaluation of information requested and included in the formats provided in the EOI document.
8. The Expression of Interest (EOI) document must be duly completed and submitted in sealed envelope and should be clearly marked as "EOI Application for Short-listing for the **MULTI CHANNEL ANALYSIS OF SURFACE WAVES IN HYDROELECTRIC PROJECTS**". The Envelope should also clearly indicate the name and address of the Applicant.
9. The completed EOI document must be submitted on or before the date and address mentioned in the "**Request for Expression of Interest**". In case the submission falls on public holiday the submission can be made on the next working day. Any EOI Document received after the closing time for submission of proposals shall not be considered for evaluation.

## C. Objective of Consultancy Services/Brief TOR

### Objective

The main objective of the services is to conduct the multi channel analysis of surface waves at the major structural sites of the project such as diversion structure weir/dam/spillway, de-sanding basin, headrace tunnel/canal, surge tank, shaft/penstock, powerhouse and tailrace as required for Detailed Engineering Study.

### Scope of the services:

The multi channel analysis of surface waves survey shall include, but not limited to

- To calculate the shear wave velocity (1D profile) of subsurface
- To calculate dynamic parameters such as  $E_{dyn}$ ,  $G_{dyn}$ ,  $V_{dyn}$ , natural period and natural frequency (resonant frequency) of the soil and site stiffness
- To calculate the ultimate bearing pressure of the layer and unit weight above the layer

The Consultant shall inform the Project office for any additional survey and investigation required to be carried out and the same shall be carried out after the approval of NEC.

The Consultant shall prepare a multi channel analysis of surface waves survey report describing the activities undertaken including all necessary basic data and records relating to the survey works. All the surveyed data and prepared sections and interpretations including map thus prepared shall be handed over to the Client in workable format (AutoCAD) along with report.

### Brief Information on Projects

#### 1. Phukot Karnali Peaking RoR Hydro Electric Project-426 MW

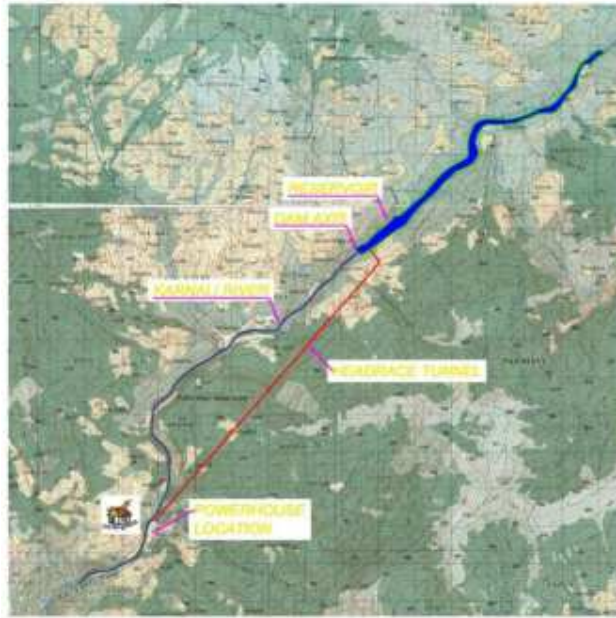
The proposed project is located in Kalikot District of Province no. 6 of Nepal. The project utilizes river discharge flowing in the Karnali River in the upper (Northern) catchment. The entire project lies in the left bank of Karnali River within Badalkot Village Development Committee. The Project lies approximately between the latitudes 29°9' 32" N to 29° 19' 03" N and the longitudes 81°45'00" E to 81° 35' 28" E.

The proposed intake of PKHEP is located at approximately 35 km upstream of the headworks of Upper Karnali Hydro Electric Project (900 MW).

The nearest all weather road available from the project site is at Manma Bazar, the district headquarter of Kalikot, along Karnali Highway, which is approximately 160 km north of Birendranagar Bazar in Surkhet. Moreover, powerhouse area of the project is located approximately at one-hour walking distance from Manma Bazar. Access to the damsite is located at additional two hours of walking distance from the proposed powerhouse area. Road access to the project sites is yet to be constructed from Manma Bazar.

#### Layout and Configuration of the Project

PKHEP is a peaking run of river project (PRoR). The available gross head is about 180.0 m and the design discharge is 278.0 m<sup>3</sup>/s giving total installed capacity of 426 MW. A 65.0 m high dam with crest elevation 945 masl is proposed to divert the design flow. The proposed site is in upstream of Upper Karnali HEP. Proposed location for the intake and settling basin are on the left bank of the Karnali River. The proposed powerhouse is located at 7 km upstream of the confluence of Karnali River and Tila River. A powerhouse is proposed on the left bank for the project with tail water elevation at 760 masl.



**Figure: General Layout of PKHEP**

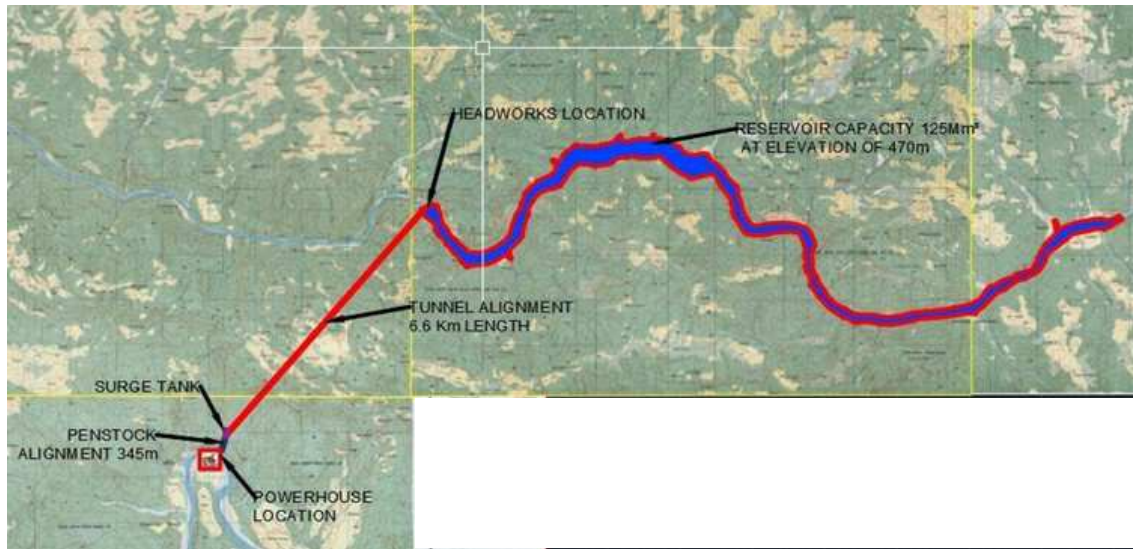
## 2. Betan Karnali PRoR Hydro Electric Project- 688 MW

The proposed Betan Karnali Hydroelectric Project is located in Achham and Surkhet Districts, Province No 6 of Nepal. The intake site lies at an elevation of 415m above mean sea level and powerhouse site lies at an elevation of 250 m (amsl). Betan Karnali is 645km away from Kathmandu in the western direction. Nearest market is Bazar Pathariya, which is 50km (approx.) from the headworks location. The Project lies approximately between the latitudes 28°50' 57" N to 28°56'04" N and the longitudes 81°11' 43" E to 81° 24' 42" E.

Table: Accessibility to the Betan Karnali Hydroelectric Project Site

S.N.	Distance from	To	Distance(Km)	Description Route
1	Kathmandu	Nepalgunj	367	By Plan
2	Nepalgunj	Surkhet	122.1	By Bus
3	Surkhet	Lyati Bindraseni	60	By bus (Karnali Highway)
4	Lyati Bindraseni	Dam Site	10	On foot





### 3. Kimathanka Arun Hydroelectric Project (KAHEP)- 450 MW

The proposed KAHEP is located in Sankhuwasabha District, Province no. 1 of Nepal. The project utilizes river discharge flowing in the Arun River in the upper (northern) catchment. The entire project component lies in the right bank of Arun River within Chepuwa Village Development Committee. The project lies approximately between the latitudes 27° 45' 25" N to 27° 50' 0" N and the longitudes 87° 24' 12" E to 87° 27' 25" E. The nearest airport from the project site is situated in Tumlingtar, Sankhuwasabha.

The proposed intake of KAHEP is at right bank of Arun River, approximately 48 km upstream of headworks area of 900 MW Arun-3 Hydro Electric Project. There are Upper Arun HEP 335 MW, Lower Barun HEP 132 MW (in the Barun River), Arun-3 HEP 900 MW and Lower Arun HEP 400 MW in the downstream of KAHEP 450 MW.

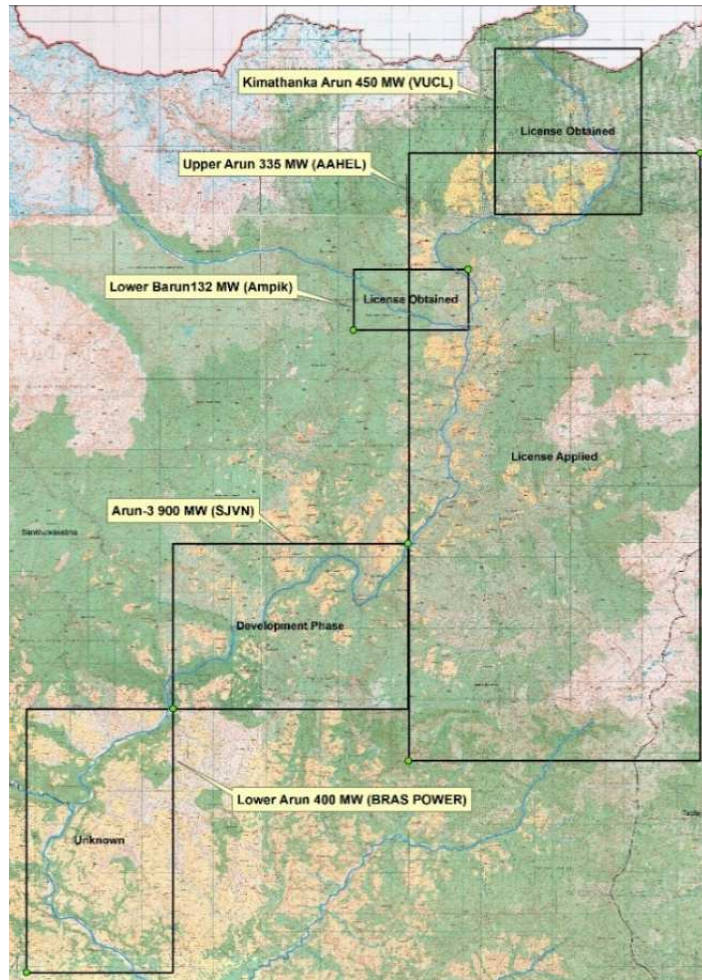


Figure: Hydropower Projects in Arun River Basin

### Layout and Project Configuration

KAHEP is a run of river project (RoR). Proposed location for the intake and settling basin are on the right bank of Arun River. Proposed powerhouse is located approximately at 1.2 Km downstream of Arun River and Chhujun Khola confluence.

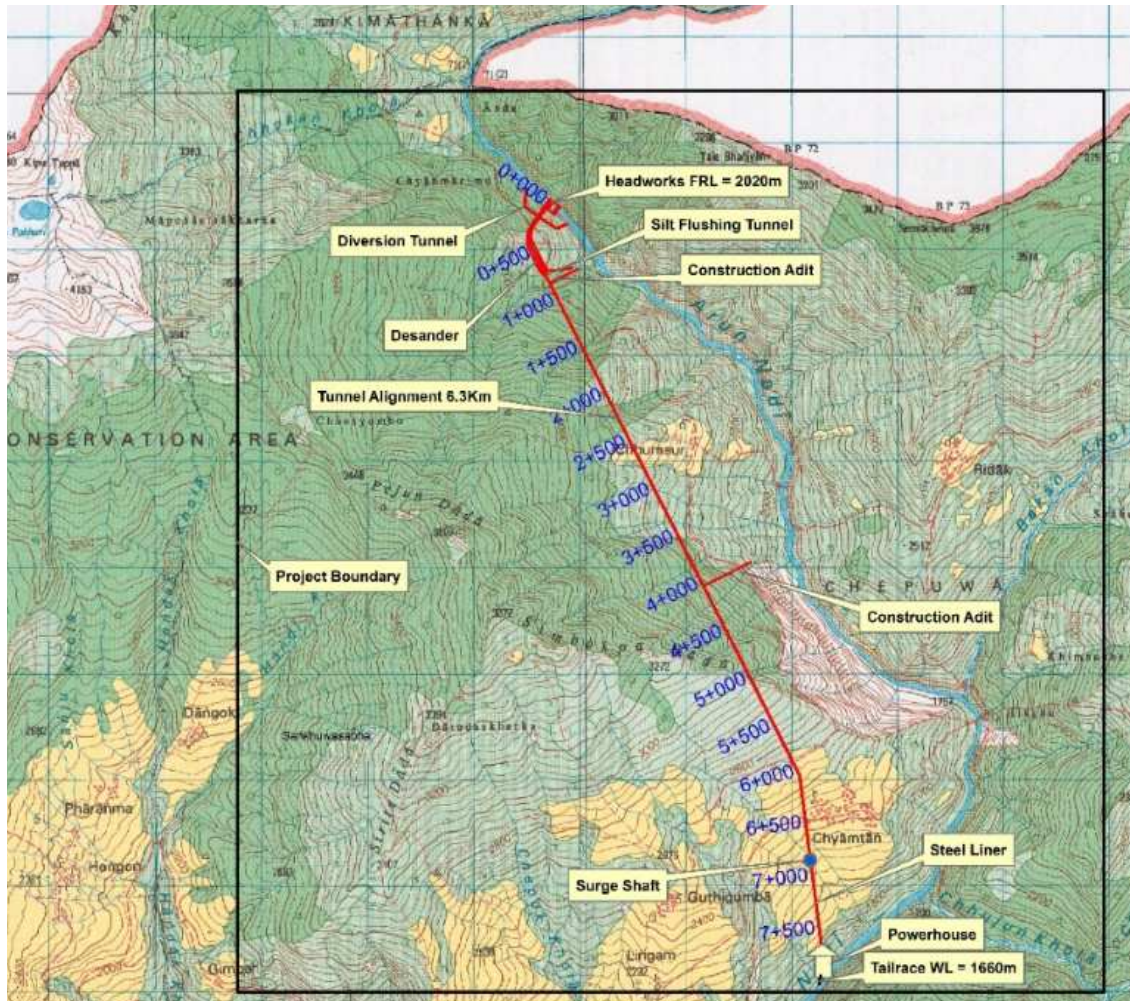


Figure: General Layout KAHEP

#### 4. Jagdulla Storage Hydroelectric Project (JSHEP)–307 MW

The proposed JSHEP is located in Dolpa District of Karnali zone in the Far Western Development Region of Nepal. The project utilizes river discharge flowing in the Jagdulla River in the upper (northern) catchment. The entire project component lies on the left bank of Jagdulla River within Kaigaun and Narku Village Development Committees. The project lies approximately between the latitudes 29° 00' 00" N to 29° 08' 11" N and the longitudes 82° 30'00" E to 82° 38' 32" E. The nearest airport from the project site is situated in Birendranagar, Surkhet.

The proposed headworks site of JSHEP is at left bank of Jagdulla River, approximately 22 km upstream of powerhouse area which is approximately 12 km from Triveni (along Chaurjhari-Dunai Road). Access to powerhouse and the dam site is yet to be constructed from Triveni.

The nearest all weather road available from the project site is at Triveni (along Chaurjhari-Dunai Road).

##### Layout and Project Configuration

JSHEP is a storage project. Available gross head is about 800 to 880 m and the design discharge 39.5 m<sup>3</sup>/sec giving total installed capacity of 307 MW. A 200 m high dam with crest elevation 2800 masl is proposed to divert the design flow. The proposed dam site is just downstream of confluence of Jagdulla and Phoigar River. Proposed location for the intake, tunnel and powerhouse are on the left bank of the Jagdulla River. The proposed powerhouse is located near



## D. Evaluation of Consultant's EOI Application

Consultant's EOI application which meets the eligibility criteria will be ranked on the basis of the Ranking Criteria.

<b>i) Eligibility &amp; Completeness Test</b>	<b>Compliance</b>
Copy of Registration of the Company/firm	
VAT/PAN Registration	
Tax Clearance/Tax Return Submission/Letter of Time Extension for Tax Return Submission <b>F.Y. 073/74</b>	
EOI Form 1: Letter of Application	
EOI Form 2: Applicant's Information Form	
EOI Form 3: Experience (3(A) and 3(B))	
EOI Form 4: Capacity	
EOI Form 5: Qualification of Key Experts	

<b>ii) EOI Evaluation Criteria</b>	<b>Score</b>	
<b>A. Qualification</b>		
<i>Qualification of Key Experts</i>	<b>10 %</b>	<b>30 %</b>
<i>Experience of Key Experts</i>	<b>20 %</b>	
<b>B. Experience</b>		
<i>General of consulting firm</i>	<b>10 %</b>	<b>60 %</b>
<i>Specific experience of consulting firm within last 7 years.</i>	<b>40 %</b>	
<i>Similar Geographical experience of consulting firm</i>	<b>10 %</b>	
<b>C. Capacity</b>		
<i>Financial Capacity</i>	<b>10%</b>	<b>10 %</b>

**E. EOI Forms & Formats**

Form 1. Letter of Application

Form 2. Applicant's information

Form 3. Experience (*General, Specific and Geographical*)

Form 4. Capacity

Form 5. Qualification of Key Experts

## 1. Letter of Application

(Letterhead paper of the Applicant or partner responsible for a joint venture, including full postal address, telephone no., fax and email address)

Date: .....

To,

Name of Client:

Address of Client:

Telephone No.:

Fax No.:

Email Address:

Sir/Madam,

1. Being duly authorized to represent and act on behalf of .....(hereinafter "the Applicant"), and having reviewed and fully understood all the short-listing information provided, the undersigned hereby apply to be short-listed by NEA ENGINEERING COMPANY LTD. as Consultant for ***MULTI CHANNEL ANALYSIS OF SURFACE WAVES SURVEY IN HYDROELECTRIC PROJECTS.***
2. Attached to this letter are photocopies of original documents defining:
  - a) the Applicant's legal status;
  - b) the principal place of business;
3. NEA ENGINEERING COMPANY LTD. and its authorized representatives are hereby authorized to verify the statements, documents, and information submitted in connection with this application. This Letter of Application will also serve as authorization to any individual or authorized representative of any institution referred to in the supporting information, to provide such information deemed necessary and requested by yourselves to verify statements and information provided in this application, or with regard to the resources, experience, and competence of the Applicant.
4. NEA ENGINEERING COMPANY LTD. and its authorized representatives are authorized to contact any of the signatories to this letter for any further information.<sup>1</sup>
5. All further communication concerning this Application should be addressed to the following person,

Hitendra Dev Shakya  
NEA Engineering Company Ltd.  
2<sup>nd</sup> Floor, Trade Tower, Thapathali, Kathmandu  
Telephone No.: 01-5111024, 01-5111025

Email: [md@nea.com.np](mailto:md@nea.com.np)
6. We declare that, we have no conflict of interest in the proposed procurement proceedings and we have not been punished for an offense relating to the concerned profession or business and our Company/firm has not been declared ineligible.

<sup>1</sup> Applications by joint ventures should provide on a separate sheet, relevant information for each party to the Application.

***EOI Document for Topographical Survey***

7. We further confirm that, if any of our experts is engaged to prepare the TOR for any ensuing assignment resulting from our work product under this assignment, our firm, JV member or sub-consultant, and the expert(s) will be disqualified from short-listing and participation in the assignment.
8. The undersigned declares that the statements made and the information provided in the duly completed application are complete, true and correct in every detail.

**Signed** :

**Name** :

**For and on behalf of (name of Applicant or partner of a joint venture):**



## **2. Applicant's Information Form**

*(In case of joint venture of two or more firms to be filled separately for each constituent member)*

1. Name of Firm/Company:
2. Type of Constitution (*Partnership/ Pvt. Ltd/Public Ltd/ Public Sector/ NGO*)
3. Date of Registration / Commencement of Business (*Please specify*):
4. Country of Registration:
5. Registered Office/Place of Business:
6. Telephone No; Fax No; E-Mail Address
7. Name of Authorized Contact Person / Designation/ Address/Telephone:
8. Name of Authorized Local Agent /Address/Telephone:
9. Consultant's Organization:
10. Total number of staff:
11. Number of regular professional staff:

*(Provide Company Profile with description of the background and organization of the Consultant and, if applicable, for each joint venture partner for this assignment.)*

### 3. Experience

#### 3(A). General Work Experience

*(Details of assignments undertaken. Each consultant or member of a JV must fill in this form.)*

S. N.	Name of assignment	Location	Value of Contract	Year Completed	Client	Description of work carried out
1.						
2.						
3.						
4.						
5.						
6.						
7.						

*Note: Applicants may attach additional sheets, if required.*

**3(B). Specific Experience**

**Details of similar assignments undertaken in the previous seven years**

*(In case of joint venture of two or more firms to be filled separately for each constituent member)*

Assignment name:	Approx. value of the contract (in current NRs; US\$ or Euro):
Country: Location within country:	Duration of assignment (months):
Name of Client:	Total No. of person-months of the assignment:
Address:	Approx. value of the services provided by your firm under the contract (in current NRs; US\$ or Euro):
Start date (month/year): Completion date (month/year):	No. of professional person-months provided by the joint venture partners or the Sub-Consultants:
Name of joint venture partner or sub-Consultants, if any:	Narrative description of Project:
Description of actual services provided in the assignment:  <b>Note: Provide highlight on similar services provided by the consultant as required by the EOI assignment.</b>	

Firm's Name: \_\_\_\_\_

**3(C). Geographic Experience**

**Experience of working in similar geographic region or country**

*(In case of joint venture of two or more firms to be filled separately for each constituent member)*

<b>No</b>	<b>Name of the Project</b>	<b>Location (Country/ Region)</b>	<b>Execution Year and Duration</b>
1.			
2.			
3.			
4.			
5.			
6.			
7.			

#### 4. Financial Capacity

(In case of joint venture of two or more firms to be filled separately for each constituent member)

Annual Turnover	
Year	Amount Currency

- Average Annual Turnover

(Note: Supporting documents for Average Turnover should be submitted for the above.)

**5. Key Experts** (Include details of Key Experts only)

*(In case of joint venture of two or more firms to be filled separately for each constituent member)*

<b>SN</b>	<b>Name</b>	<b>Position</b>	<b>Highest Qualification</b>	<b>Work Experience (in year)</b>	<b>Specific Work Experience (in year)</b>	<b>Nationality</b>
1						
2						
3						
4						
5						

(Please insert more rows as necessary)