UPDCC Ltd.
(A Government of Uttarakhand Enterprise)
Lakhwar Field Hostel,
Yamuna Colony, Dehradun-248001

NOTICE INVITING Expression of Interest

Notice No: 01/Dy.GM. (P&D)/ 2012-13

UPDCC Ltd. invites expression of interest from interested consultants for Consultancy work of Environmental Impact Assessment (EIA) surveys & studies and preparation of detailed and comprehensive EIA and Environmental Management Plan (EMP) Reports and obtaining clearance from MOEF, New Delhi for Tiuni-Plasu Hydroelectric Project (72 MW) as per EIA 2006 notification and subsequent amendments.

Date for uploading of EOI Document	:	25.04.2012
Last date of submission	:	23.05.2012 (Up to 16.00 hrs)
Date of opening	:	24.05.2012 (11.00 hrs).
Cost of Document	:	Rs. 5000.00 + 13.5 % Trade Tax

The EOI document can be downloaded directly from the Nigam's website www.updcc.org. Bidders shall submit cost of downloaded documents at the time of submission of Expression of Interest.

Deputy General Manager (P&D)
UPDCC, Lakhwar Field Hostel,
Dehradun

Expression of Interest

For

EIA Studies and Preparation of EIA and EMP reports

For

72 MW Tiuni-Plasu Hydroelectric Project,

District – Dehradun, Uttarakhand, India

April 2012

Expression of Interest for Consultancy work of Environmental Impact Assessment (EIA) surveys & studies and preparation of detailed and comprehensive EIA and Environmental Management Plan (EMP) Reports and obtaining clearance from MOEF, New Delhi for 72 MW Tiuni-Plasu Hydroelectric Project, District Dehradun, Uttarakhand as per EIA 2006 notification and subsequent amendments.

1. The UPDCC Ltd. (OWNER) intends to develop 72 MW Tiuni-Plasu Hydroelectric Project, on River Tons (Yamuna Basin) in District Dehradun, Uttarakhand (Salient features enclosed as Annexure-1)
2. TOR issued for 72 MW Tiuni-Plasu Hydroelectric Project by MoEF as per 2006 notification and subsequent amendments, is enclosed Annexure-2 for the scope of studies.
3. The purpose of the assignment is to conduct Environmental Impact Assessment(EIA) surveys & studies and prepare detailed and comprehensive EIA report and Environmental Management Plan(EMP) for 72 MW Tiuni-Plasu Hydroelectric Project, on the basis of Terms of Reference(ToR), approved by Ministry of Environment and Forest (MoEF), Government of India (GoI) and to obtain clearance from State Pollution Control Board and MoEF, GoI.
4. The following documents are enclosed to enable you to submit your proposal:
    i. Salient feature of the project
    ii. Terms of Reference (TOR)

5. **Eligibility/Pre-Qualification Criteria**
    i. Reputed consulting firm registered under the Partnership Act or the Companies Act.
    ii. Have at least five years experience in consultancy business in the field of environment and having successfully completed at least two EIA study including preparation of EIA & EMP reports of at least 50 MW and above Hydroelectric river valley project and obtained clearance from MoEF, GoI.
    iii. Have minimum annual turnover of not less than Rs. 1 crore for last three

years (2008-09, 2009-10, 2010-11) through consultancy business.

iv. The applicant should be accredited from NABET/QCI on the date of submission of their expression of interest.

Interested bidders are requested to submit documentary proofs satisfying the eligibility criteria. In the absence of relevant documentary proof, expression of interest of bidders will not be considered.

6. **Address for Communication**

All correspondence shall be addressed to:-
Deputy General Manager (P& D)
UPDCC Ltd.
Lakhwar Field Hostel,
Yamuna Colony,
Dehradun-248001
Tel: 0135-2530678
Mob:+919412027452

7. Clarification

7.1 Bidder seeking any clarification regarding the EOI Document may write to Deputy General Manager (P&D), UPDCC Ltd at the address specified in Clause 6 above.

8. **Submission of Proposal**

8.1 Language

The Proposal and all related correspondence shall be in English language only. Supporting documents and printed literature furnished by a Bidder may be in any other language provided that these are accompanied by certified translations in English. English version will be the only acceptable version. The interpretation shall be done only on the basis of English version of the documents submitted.

8.2 Terminology

The Bidders shall use clear terminology while submitting the proposals, with explanations and definitions wherever necessary.

9 **Cost of document for EOI** : This document can only be downloaded by the bidders from the official website of UPDCC Ltd www.updcc.org. Parties downloading the document from the official website of UPDCC Ltd shall enclose the demand draft amounting to Rs 5,675(inclusive of 13.5% trade tax) in favour of "**M/S Uttarakhand Project Development and Construction Corporation Ltd.**", payable at Dehradun along with their EOI as a cost of document.

10 **Evaluation Criteria:** Consultants/bidders who qualify the prequalification criteria will be issued RFP document along with format of financial proposal. Financial offer will be the basis for evaluation criteria for those Consultants/bidders who qualify the prequalification criteria as mentioned in clause 5.

Annexure-1

SALIENT FEATURES of TIUNI-PLASU HEP_72MW

1. LOCATION

State	:	Uttarakhand
District	:	Dehradun
Tehsil	:	Tiuni
Place	:	Tiuni
Stream	:	Tons, a tributary of the River Yamuna
Nearest Airport	:	Dehradun
Nearest Rail Head	:	Dehradun
Geographical Coordinates of Project site		
(a) Longitude	:	77^0 50'20"E to 77^0 51'30"E
(b) Latitude	:	30^0 55'0'' N to $30^0$57'20" N

2. HYDROLOGY

Gross Catchment Area	:	3320 sq. km
Snowbound catchment area	:	962 sq. km
Rainfed catchment area	:	2358 sq. km
Maximum design flood for Hydraulic Design	:	6946 cumec
Maximum design flood for Structural Design	:	7810 cumec
Maximum design flood for Free Board	:	12799 cumec

3. DIVERSION ARRANGEMENTS

Location :200m downstream of confluence of Pabar & Tons river

Geographical Coordinates of diversion site

(a)	Longitude	:	77^0 51'20"E
(b)	Latitude	:	30^0 57' 02" N

River Bed Level (above MSL)	:	908.00 m
Pond level (above MSL)	:	929.50 m
Type of diversion	:	Barrage
Crest level of under sluice	:	909.50 m
No. & width of under sluice bay	:	1no. & 15m.
Crest level of other bays	:	911.00 m
No. & width of other bays	:	7nos. & 15m each
Length of barrage	:	138.00 m
Type of gates	:	Radial

4. INTAKE STRUCTURE

Type	:	Side intake
Location	:	Left bank
Design discharge	:	181cumec
Crest level	:	917.50 m

5. DESILTING CHAMBER

Type	:	Underground Basin
No. & Size	:	2 Nos. of 360m(L)x20m(W)x21m(H)
Particle size to be removed	:	0.15 mm

6. HEAD RACE TUNNEL

2 Nos. Intake Tunnels each of

Size	:	6.00 m diameter
Shape	:	Circular
Discharging capacity	:	90.50 cumec
Length	:	2.035 km

Head Race Tunnel of

Size	:	7.60 m diameter
Shape	:	Circular
Discharging capacity	:	145.00 cumec
Length	:	1.850 km

7. SURGE TANK

Type	:	Restricted Orifice type
Dimension	:	35.00m dia & 28.00m deep

8. PRESSURE SHAFT /PENSTOCK

Penstock	:	3 Nos.- each of 4.0m dia.
Length of each Penstock	:	110 m.
Thickness of Penstock	:	16 mm to 22 mm

9. POWER HOUSE

Type	:	Surface Power House
Location	:	On left bank of river Tons near Village Newal & u/s of Sukher khud.

Geographical Coordinates of Power House site

(a) Longitude	:	77^0 50’ 23”E
(b) Latitude	:	30^0 55’ 0” N

Type of turbine	:	Vertical Francis

Maximum gross head	:	67.10 m
Installed capacity	:	72 MW
Nos. of Units	:	3 Nos. each of 24 MW
Normal TWL in receiving stream (Tons)	:	862.40m
Annual energy generated in 50% dependable year with 95% availability	:	423.29 MU
Annual energy generated in 75% dependable year with 95% availability	:	312.93 MU
Annual energy generated in 90% dependable year with 95% availability	:	279.20 MU

10. CONSTRUCTION PERIOD : 5 YEARS

11. COST ESTIMATE

Estimated cost of the project	:	Rs. 601.87 crores
Estimated cost of the project with escalation and IDC	:	Rs. 826.81 crores

12. Benefits

Sale price of energy in the first year of operation	:	Rs. 3.97 per kWh
Levelised sale price of energy	:	Rs. 3.55 per kWh

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कार्यालय मुख्य अभियन्ता (यमुना घाटी)
पंजी० संख्या ......6381........
पत्रावली संख्या ......
दिनांक 2-3 OCT 2010

BY SPEED POST

No. J-12011/39/2007-IA.I
Government of India
Ministry of Environment and Forests

Paryavaran Bhawan
CGO Complex, Lodhi Road
New Delhi –110 003

Telefax: 2436 2827

Dated: 12.10.2010

Shri Ameerul Hasan
Chief Engineer (Yamuna)
Irrigation Department
Government of Uttarakhand
Office of Chief Engineer
Yamuna Valley Projects
Yamuna Colony
Dehradun -248 001

Subject: Tiuni Plasu Hydro Electric Project – Enhancement of capacity from 66 MW to 72 MW and TOR – regarding.

Sir,

This has reference to your letter No. 5682 CE(Y)/CEA/P-2(O) dated 24th September, 2010 on the above mentioned subject. It has been noted that in the Detailed Project Report the installed capacity of the project has been estimated as 72 MW. The TOR was granted on 18th February, 2008 for generation of 66 MW which was based on the Pre-Feasibility Report. In the DPR, all the major project parameters, site conditions remained unchanged except the increase in design discharge.

2. The undersigned is directed to inform, as there is no change in project parameters, the Ministry has no objection for increasing the capacity from 66 MW to 72 MW. The TOR which was granted for 66 MW may be used for preparation of EIA report for 72 MW.

Yours faithfully,

(Dr. S. Bhowmik)
Additional Director

तार :
Telegram : PARYAVARAN,
NEW DELHI
दूरभाष :
Telephone : & FAX 2436 2827
टेलेक्स :
Telex : W-66185 DOE IN
FAX : 4360678

भारत सरकार
पर्यावरण एवं वन मंत्रालय
GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT & FORESTS
पर्यावरण भवन, सी. जी. ओ. कॉम्प्लेक्स
PARYAVARAN BHAVAN, C.G.O. COMPLEX
लोदी रोड, नई दिल्ली-110003
LODHI ROAD, NEW DELHI-110003

No.J-12011/39/2007-IA-I

Date: February 18, 2008

The General Manager (Development)
Uttarakhand Jal Vidyut Nigam Ltd
Ganga Bhavan
Yamuna Colony
Dehradun – 248 001

Subject – Tiuni Plasu HEP (66 MW) in Uttarakhand – for Scoping- regarding.

Sir,

This has reference to your letter No.386/GM(Dev)/TP/C-12 dated 9.4.2007 and subsequent letter No.407/DGM/TP dated 1.9.2007, 24.10.2007 and 10.12.2007 on the above mentioned subject.

2. The above mentioned project was considered by the Expert Appraisal Committee at its meetings held on 22.6.2007, 14.11.2007 and 17.1.2008.The committee noted that the Tiuni Plasu HEP is proposed on river Tons, a major tributary of the river Yamuna located at Tiuni in District Dehradun of Uttarakhand. The proposed project consist of 85 m. long barrage across river Tons and the power house is surface, located on the left bank of river Tons near village Sukher with installed capacity 2 x 33 MW capacity. The total project cost is about 332.6 Crores and will be completed in 5 years.

3. The Ministry of Environment and Forests hereby accord clearance for preconstruction activities in the proposed sites as per the provisions of Environmental Impact Assessment Notification, 2006 along-with the following "Terms of Reference (TOR)" for preparation of EIA report. The Detailed scope of the study, however, is listed in the following paragraphs:

Scope of Study

I. For Preparation of EIA Study

Study Area

The study area would comprise of:

- Project area to be acquired for various project appurtenances and area within 10 km from main Project components (i.e., Dam/barrage, Power House, etc.)
- Submergence area
- Catchment area for general land-use and terrain characteristics.

Rishi, AE

AE 29/2

Baseline Studies

- The baseline studies shall consist of three seasonal field data i.e. Pre-Monsoon, Monsoon and post-monsoon (lean) Season.
- The report would also include Salient Features of the project.
- Sampling location to be identified/indicated on a map.

1) Physical-Chemical Environment

i. Physical geography, Topography, Stratigraphy, Regional Geology of the catchment area. Landslide zone or areas prone to landslide existing in the study area especially along the periphery of the reservoir need to be examined.

ii. Tectonics and seismicity of the study area.

iii. Presence of important economic mineral deposit if any.

iv. Meteorology of the study area (*viz.* precipitation, temperature, relative humidity, wind speed/direction etc.)

v. Ambient air quality with parameters, *viz.* suspended particulate matter (SPM), respirable particulate matter (RPM) *i.e.* suspended particulate materials < 10 microns, sulphur dioxide (SO_2), oxides of nitrogen (NO_x) and carbon monoxide (CO) for the study area.

vi Existing noise levels and traffic density in the area.

vii. **Soil classification for HEPs:** Physical parameters (*viz.* texture, content, porosity, bulk density and water holding capacity) and chemical characteristics (*viz.* pH, electrical conductivity and nutrient status in the catchment area and the study area.

viii. Identification of free draining/directly draining catchment, core zone and buffer zone of biosphere reserve/sanctuary etc., (if any) in a map.

ix. Generation of thematic maps *viz.* slope map, drainage map, soil map, land use/ land cover map *etc.*

x. Delineation of sub and micro watershed in the catchment and their categorization and prioritization according to erosion intensity classes following the Silt Yield Index (SYI) method of the All India Soil and Land use Survey (AISLUS), Deptt. of Agriculture, Govt. of India and depicting sub-watershed-wise erosion categories in a map.

xi. Run off, discharge, water availability for the project, sedimentation rate *etc.* and also collect, analyze, interpret and report primary flow and sediment data. If such data are not available, then it will be in the interest of the project to establish simple stream gauging station to record these values over the three seasons of data collection for the EIA study.

xii. The 10% of the minimum flow of 90 per cent dependable year, amounting to 3.3 m^3/sec should be the assured minimum release. The intention of the EAC in respect of this issue was to suggest to the PA to estimate the ecological water need before deciding the minimum release. A flow of 3.3 m^3/sec may be of no value if based on the flow section geometry and flow velocity, the flow depth works out to be a few centimeters only at this discharge.

xii. Physical, Chemical and Bacteriological parameters of surface water such as temperature, pH, electrical conductivity, total dissolved solids (TDS), DO, turbidity, salinity, alkalinity, Ca, Mg and total hardness, chlorides, iron, manganese, arsenic, fluorides, nitrogen (organic, ammonia, nitrite and nitrate), phosphate, sulphate, sulphides, heavy metals (mercury, lead, chromium, cadmium and zinc), biochemical oxygen demand (BOD), chemical oxygen demand (COD), total organic carbon (TOC) and total oxygen demand (TOD) and Bacteriological parameters that comprises of fecal and total coliform.

xiii. Downstream water use demands and assured minimum water release. Method of sewage disposal of sewage generated in labour and staff colony.

2) Biological Environment

(Give separate details for the forest area to be submerged and surrounding area within 10 sq km)

i. Characterization of forest types in the study area and extent of each forest type should be detailed.

ii. General vegetation pattern and floral diversity *viz.* Angiosperms - trees, shrubs, grasses, herbs ; gymnosperms, pteridophytes – ferns, bryophytes and thallophytes- significant microflora *etc.*

iii. Species frequency, density, abundance need to be detailed. Biodiversity index (Shannon–Weaver index) and Importance Value Index (IVI) of the species must be calculated. Methodology used for calculating the various diversity indices along with sampling size, details of locations of quadrats, number and size of quadrats *etc.* must be reported.

iv. Economically important species *viz.* non-wood forest producing species, including medicinal plants, timber, fuel wood *etc.*

v. Flora under RET need to be categorized using World Conservation Union or International Union for the Conservation of Nature and Natural Resources(IUCN) and Botanical Survey of India's Red Data list along with population structure and economic significance.

vi. Cropping and Horticulture pattern and practices in the study area.

Vii Birds (resident, migratory), Land animals including reptiles, amphibians, fishes and insects and reported and surveyed in the study area need to be enlisted. Significant microflora must be enumerated. Details of endemic species found in the project area, if any with their population structure should be provided.

Viii. RET fauna species are to be classified in two ways *viz.* as per IUCN Red Data list and as per different schedule of Indian Wildlife Protection Act, 1972. Details of endemic species with their population structure should be provided.

Viii. RET fauna species are to be classified in two ways *viz.* as per IUCN Red Data list and as per different schedule of Indian Wilde Life Protection Act, 1972.

ix. Existence of barriers and corridors for wild animals, if any must be reported. Habitat fragmentation and destruction of wild animals due to project activity should be clearly indicated with area details.

x. Effect on fish migration and habitat degradation due to project. For fish migration provision of fish ladder may be explored. Justification should be given in case, it is not possible

xi. Existence of National Park, Sanctuary, Biosphere, Reserve Forest *etc.* in the project area or in the proximity of project area, if any needs to be detailed.

3) EMP comprising of

i. Resettlement and Rehabilitation (R&R) plan need to be prepared with due consultation with Project Affected Families (PAFs). It shall include community development strategies and a list containing name of PAFs, age, educational qualification, family size, sex, religion, caste, source of income, house with type and amount of land holding, house/land to be acquired, any other property, possession of cattle *etc.* The information of percentage of land left after land acquisition with the family needs to be furnished for PAFs likely to lose land. A PAF is a Total Affected Family (TAF) if 70% or more land holding of the family is acquired. The provision of the prepared R&R plan must be at per or better than National Policy of Resettlement and Rehabilitation of PAF (NPRR – 2003).Detailed budgetary estimates must be provided.

ii. Muck Disposal Plan

iii. CAT plan shall be prepared micro-watershed wise. Areas falling under 'very severe' and 'severe' erosion categories are required to be treated. Both biological and engineering measures need to be proposed in consultation with State Forest Department. Year wise schedule of work and monetary allocation shall be provided. CAT plan shall be completed prior to reservoir impoundment.

iv. Layout map showing land slide/land slip zones if any, around the reservoir periphery needs to be prepared. Suitable engineering and biological measures for the identified land slip zones treatment must be provided with physical and financial schedule.

v. Method of tunneling needs to be detailed. Use of Tunnel Boring Machine (TBM) needs to be explored. For conventional controlled blasting the charge density, the amount of delay and schematic plan *etc.* need to be provided.

vi. Public Health Management Plan and also providing drinking water to a region enjoys priority number 1 in the National Water Policy. Giving due regard to this, include drinking water supply as a component of any water resource development project.

vii. Compensatory Afforestation/green belt development in lieu of the forest land required for the project needs to be included. Choice of plant species for planting and number of plants/ unit of area must be prepared in consultation with State Forest Department and details provided.

viii. Suitable species of plants for the proposed green belt along periphery of reservoir (Reservoir Rim Treatment Plan), colonies, approach road, canals *etc.* must be suggested. Complete plan with physical and financial details and layout of the proposed sites of green belt development must be included.

ix. Suitable Biodiversity conservation plan in consultation with State Forest Department must be included.

x. Wild Life Conservation Plan

xi. Fishery Management Plan including base line data on catch composition, fish density, fish standing crop, fish population dynamics in and around project area, presence of migratory/endangered fish if any to be checked and mitigation measures should include monitoring the impact of the proposed construction on the fish resources.

xii. Dam Break Analysis and Disaster Management Plan.

xiii. Various maps providing salient features of the project need to be depicted in proper scale map of at least 1:15,000 like:

1. The location map of the proposed project.
2. The project layout shall be superimposed on a contour map of ground elevation showing main project features (*viz.* location of dam, head works, main canal, branch canals, quarrying *etc.*) shall be depicted in a scaled map.
3. Drainage map of the catchment up to the project site.
4. Soil map of the study area.
5. Geological and seismotectonic maps of the study area showing main project features.
6. Remote sensing studies, interpretation of satellite imagery, topographic sheets along with ground verification shall be used to develop the land use/land cover pattern of study area using overlay mapping techniques *viz.* Geographic Information Systems(GISs). False colour composite (FCC) generated from satellite data of study area shall be presented.

4. As per the provisions of the EIA Notification of 2006, you are requested to submit draft EIA/EMP report as per the above terms of reference to the State Pollution Control Board/Committee for conducting the Public Hearing/Public Consultation.

5. All the issues discussed in the Public Hearing/Public Consultations shall be addressed to and incorporated in the final EIA/EMP report and submitted to the Ministry for considering the proposal for Environment Clearance

Yours faithfully,

(Dr. S. Bhowmik)
Additional Director

Copy to:

1. The Secretary, Ministry of Power, Shram Shakti, Bhawan, Rafi Marg, New Delhi-110001.
2. The Adviser (Power), Planning Commission, Yojna Bhawan, New Delhi - 110001.
3. Principal Secretary (Irrigation & Power), Government of Uttarakhand, Dehradun
4. The Secretary, Department of Environment, Government of Utarakhand, Dehradun
5. The Chief Engineer, Project Appraisal Directorate, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.
6. The Regional Office, Ministry of Environment & Forests, Lucknow
7. Member Secretary, Uttarakhand Environment Protection & Pollution Control Board, E-115, Nehru Colony, Dehradun
8. EI- Division, Ministry of Environment & Forests, New Delhi-110003.
9. Guard file.

(Dr. S. Bhowmik)
Additional Director