

**DIRECTORATE OF ENERGY
GOVERNMENT OF HIMACHAL PRADESH
SHANTI BHAWAN, PHASE-III, SECTOR-VI, NEW SHIMLA-171009(HP)**

OFFICE ORDER

Directorate of Energy (DoE), Government of Himachal Pradesh, is pleased to accord Technical Concurrence (TC) to Lower Iku SHEP (1.00 MW) on Iku Khad, tributary of Beas river, Distt. Kangra, Himachal Pradesh allotted to "M/s Vishavkarma Hydel Power, V.P.O. Gaggal Tehsil & Distt. Kangra -176209", at an estimated cost of Rs. 1016.00 lakh (Rupees One Thousand and Sixteen Lakh only) including Interest During Construction (IDC), Escalation, Financial Charges (FC) and Local Area Development Fund (LADF) @ 1% (one percent) of total project cost with the following stipulations:-

1. i) The abstract of the Estimated Cost approved by DoE, GoHP is furnished at **Annex-I** and the Salient Features of the scheme are at **Annex-II**.
ii) The completion cost shall not exceed the above cost except on account of the following:-
 - a) Interest During Construction (IDC) and Financial Charges (FC) shall be as per actuals but not exceeding the amount as indicated at **Annex-I**, unless revised by DoE, GoHP while according concurrence under Section-8 of Indian Electricity Act 2003 after review of the financial package.
 - b) Change in rates of Indian taxes and duties such as Goods and Service Tax (GST), Custom Duty and levy of any other taxes/duties subsequent to issue of Technical Concurrence (TC).
 - c) Change in Indian law resulting in change in the cost.
2. The Technical Concurrence (TC) is subject to the fulfilment of the following conditions:-
 - i) Completed cost/Technical Concurrence (TC) shall not be re-opened due to the following:
 - a) Non acquisition of land.
 - b) Non- finalization of Power Purchase Agreement (PPA).
 - c) Delay in financial closure.
 - ii) The final financial arrangement shall not be inferior to the financing arrangement projected in the Detailed Project Report (DPR) for TC.
 - iii) The cost of the project cleared by the DoE, GoHP is indicative and shall have no binding on the regulator while fixing the tariff. The tariff of the project shall be regulated by the appropriate Electricity Regulatory Commission.
 - iv) The public issue expenses, if any, shall be reconsidered at the time of approval of completion cost based on documentary proof and in accordance with Security Exchange Board of India (SEBI) guidelines regarding regulation of public issue expenses.
 - v) Fulfillment of conditions stipulated in Central Electricity Authority (CEA)/Central Water Commission (CWC) guidelines in respect of civil works at the stage of detailed designs/execution.
 - vi) In case, changes are made in design parameters during construction due to site conditions or otherwise, the same shall be intimated and got concurred from DoE, GoHP before implementation of such changes.
 - vii) Any increase in the cost estimate due to design modifications and geological surprises would be absorbed by the Independent Power Producer (IPP) i.e. "M/s Vishavkarma Hydel Power, V.P.O. Gaggal Tehsil & Distt. Kangra -176209".
 - viii) No additional cost shall be allowed due to Resettlement & Rehabilitation (R & R) Plan.


S. N. Verma

- ix) Normal operation life of the hydro power plant shall be as per provisions of CWC/CEA guidelines or Central Electricity Regulatory Commission (CERC)/ Himachal Pradesh Electricity Regulatory Commission (HPERC) regulations.
- x) The statutory and administrative clearances as per **Annex-III** shall be obtained before execution/ implementation of the project.
- xi) For evacuation of power, the interconnection point with the State grid and interconnection facilities at the interconnection point shall be provided, operated and maintained at the cost of the IPP.
- xii) The cost of providing and/or strengthening/additions etc. of the system at and beyond the Interconnecting Sub-station, which may also include the cost of replacement of switchgear/ protection and provision of shunt capacitors, strengthening of bus bars, apart from other works required at injection voltage level and other one or more successively higher voltages, civil works relocation of existing bays etc. shall be recovered by HPSEBL, as per the regulations of HPERC read with the clarifications/decisions by HPERC and/or any other competent authority as may be finally applicable. The share of IPP on this account shall be paid by the IPP to Himachal Pradesh State Electricity Board Limited (HPSEBL)/ Himachal Pradesh Power Transmission Corporation Limited (HPPTCL) as per the final decision of the competent authority.
- xiii) Whereas the HPSEBL/HPPTCL shall endeavor to provide the power evacuation system at the earliest, the scheduled date for providing evacuation arrangements shall be spelt out in the PPAs on case to case basis inter-alia, keeping in view the time lines indicated in the relevant plan and approved by HPERC.
- xiv) The powerhouse generating equipments as well as other electrical equipments to be provided by the IPP shall be compatible for parallel operation with the State grid after interfacing. The IPP shall be responsible for any loss of generation on this account.
- xv) O&M charges for maintenance of inter connection facilities at the interconnection sub-station shall be paid by the IPP to HPSEBL/HPPTCL throughout the period, the IPP runs the project and the same shall be reviewed at the beginning of every financial year.
- xvi) For evacuation of power the IPP shall interface this project in joint mode through the existing 1.6 Km 11 kV Kand-Kardiana feeder subject to following conditions:-
1. The cost if strengthening / re-conductoring of 11 kV Kand-Kardiana feeder from AAAC 7/3.81 Sq. MM to AAAC 7/4.26 Sq. MM including reclosures at interconnection point along with appropriate protection equipments and other allied accessories shall be borne by IPP.
 2. No deemed generation shall be allowed to the IPP in case of break down and / or shut down of 11 kV HT line or 33/11 kV Jadrangal substation of HPSEBL.
 3. IPP has to bear the calculated line losses from interconnection point to 33/11 kV Jadrangal substation as per prevailing guidelines of HPERC/HPSEBL.
 4. Joint evacuation agreement between Lower Iku and Lower Iku-I has to be executed.
- xvii) The project line shall be provided, operated and maintained by the IPP at his cost as per normal conditions after obtaining approval of HP Govt. under Section 68(1) of Electricity Act, 2003.
- xviii) The above mentioned evacuation arrangements shall be subject to the HPERC approval of "Comprehensive area wise plan for augmenting and establishing of transmission/sub-transmission system for evacuation of power from small HEPs" which has already been submitted to HPERC. The Transmission/Distribution Licensee may however also evolve alternate system(s) depending on the site conditions and subsequent developments with the approval of HPERC.
- xix) The IPP shall develop, operate and maintain the Project including the dedicated transmission system subject to compliance with the following:
- a) Grid code and standards of grid connectivity.
 - b) Technical as well as Mechanical standards for construction of Electrical lines.
 - c) Norms of System Operation of the concerned State Load Dispatch Centre (SLDC) or Regional Load Dispatch Centre (RLDC).

- d) Directions of the concerned SLDC or RLDC regarding operation of dedicated transmission line.
- e) The IPP will only be allowed to inject power in HP system with the undertaking that necessary action to provide tele-metering to SLDC shall be provided by them and specifications required to be got approved from the office of SLDC, HP Load Dispatch Society, Shimla from compatibility point of view with existing Supervisory Control and Data Acquisition (SCADA) system.
- xx) The conditions on these lines shall have to be suitably included by the IPP in the PPA etc. apart from other standard conditions.
- xxi) The observations of DoE, GoHP and replies thereof shall form an integral part of the DPR.
- xxii) Minimum 15% release of water immediately downstream of diversion structure shall be ensured all the times including lean season as per prevailing GoHP notification. The necessary monitoring equipment as prescribed by the Pollution Control Board for the same shall be installed by the IPP during execution of the project.
- xxiii) The levels as specified and approved shall strictly be adhered to for construction of project, also the riparian distances within upstream and downstream projects as per allotment of projects or any other project specific directions / conditions shall be maintained.
- xxiv) The authenticity of benchmark considered for carrying out survey as ensured and intimated by IPP to DoE shall be the sole responsibility of the IPP.
- xxv) The proposed arrangement of laying water conductor system with length 496 m & penstock with length 146 m should be designed w.r.t. all necessary parameters of earth pressure/water pressure in empty/full condition, earthquake condition and with regard to all safety standards norms. The design should be vetted from an authorized & approved agency.
- xxvi) LADC/LADF amount and activities shall be implemented as per Power policy of HP Govt., 2006 and subsequent amendments thereof.
- xxvii) The additional 1% (one percent) free power from the project shall be provided and earmarked for a Local Area Development Fund (LADF) as per HP Govt. Notification No. MPP-F(1)-2/2005-V dated 30.11.2009.
- xxviii) The TC is based on the reports and data furnished by the IPP in the DPR and the relevant information provided by Himurja. It is presumed that information furnished is correct and has been collected reliably after carrying out detailed field investigations and surveys under the supervision of competent personnel. The scrutiny of DPR does not cover the examination of the detailed designs & working drawings of project components in regard to their structural, hydraulic and mechanical performance, safety and also of their positioning and fixing at site. This shall be ensured by the IPP as per standard norms & manuals.
- 3. The project shall be completed within 24 months from the date of start of the construction work.
- 4. The completion cost of the scheme shall be submitted to DoE, GoHP for approval within 3 months from the Commercial Operation Date (COD) of the plant.
- 5. The IPPs shall give free accessibility to the officers and representatives of DoE, Himurja and other relevant Govt. Departments, Commissions etc. to have on the spot assessment of various aspects of the project.
- 6. The firm financial package and tie-up of balance inputs/clearances shall be completed within the period as stipulated in the GoHP Hydro Power Policy, 2006 and subsequent amendments thereof / Implementation Agreement (IA) / Supplementary Implementation Agreement (SIA).
- 7. In case the time gap between the Technical Concurrence (TC) of the scheme and actual start of work on the project is three years or more, a fresh Technical Concurrence (TC) shall be obtained from DoE, GoHP before start of actual work.



- 8 The DoE, GoHP reserve the right to revoke the concurrence if the conditions stipulated above are not complied with to the satisfaction of the DoE, GoHP or parameters are found changed at any stage.

BY ORDER OF THE GoHP

Handwritten signature
03/09/2020
Chief Engineer,
Directorate of Energy, GoHP,
New Shimla-171009(HP).

No. DoE/CE(Energy)/TC-Lower Iku/2020- 4207 - 16

Dated: 03/09/2020

Copy for kind information and necessary action please, to the:-

1. Addl. Chief Secretary (MPP & Power) to H.P. Govt., Shimla-171002.
2. Addl. Chief Secretary (NES) to H.P. Govt., Shimla-171002.
3. Secretary, Ministry of Non-Conventional Energy Sources (MNES), Block No.14,CGO Complex, Lodhi Road, New Delhi-110003.
4. Director, Environmental & Scientific Technologies, Narayan Villa, Near Wood Villa Palace, Shimla-171002.
5. General Manager, HPPTCL, Himfed Bhawan, Panjari, Below Old MLA Quarters, Shimla-171005.
6. Chief Engineer (SP), HPSEB Ltd, Uttam Bhawan, Dogra Lodge, Shimla-171004.
7. Chief Engineer (Commercial), HPSEB Ltd, Vidyut Bhawan, Shimla -171004.
8. Chief Executive Officer, Himurja, 8A-SDA Complex, Kasumpti, Shimla-171009.
9. Deputy Commissioner, Kangra Himachal Pradesh - 176310.
- ✓ 10. M/s Vishavkarma Hydel Power, V.P.O. Gaggal Tehsil & Distt. Kangra -176209.

Handwritten signature
03/09/2020
Chief Engineer,
Directorate of Energy, GoHP,
New Shimla-171009(HP).

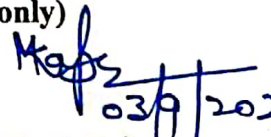
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Lower Iku SHEP (1.00 MW) in District Kangra of Himachal Pradesh allotted to "M/s Vishavkarma Hydel Power, V.P.O. Gaggal Tehsil & Distt. Kangra -176209"

ABSTRACT OF COST ESTIMATE

Sr.No.	Description of work	Cost (Rs. in lakh)	
a)			
i)	Civil works i/c other Misc. expenses	565.00	} Price level August, 2020.
ii)	Electro Mechanical Work	271.00	
iii)	Transmission Works	59.00	
	Sub-total (a)	895.00	
(b)			
i)	Interest During Construction (IDC)	65.82	
ii)	Escalation	37.81	
ii)	Financial Charges	7.34	
	Sub-total (b)	110.97	
	Total (a+b)	1005.97	
(c)	LADC @ 1.0% of (a+b)	10.06	
	Grand Total (a+b+c)	1016.03	
	Say	₹ 1016.00 Lakh	

(Rupees One Thousand and Sixteen Lakh only)


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SALIENT FEATURES

I. LOCATION

State	Himachal Pradesh
District / Tehsil	Kangra
Village	Kand (GP Kand Kardiyana)
River/Khad	Iku Khad, sub-tributary of Banganga
Vicinity	Diversion Weir of Lower Iku SHEP at EL±1225.00 m and surface power house on left bank of Iku Khad with Tail Race Level at EL±1158.00 m downstream of village Kand.
Accessibility	By Road 15 KM from Distt H/Q Dharamshala
	By Railway 120 KM from BG Pathankot
	By Air Gaggal Airport

Geographical Co-Ordinates

	Longitude	Latitude
• Weir Site	76° 24' 37.38"E	32° 10' 42.82" N
• Power House Site	76° 24' 31.03"E	32° 10' 24.07" N

SOI Toposheet 52 D/8

II. HYDROLOGY

Stream/nallah	Iku Khad
Tributary of/ Basin	Banganga Khad/Beas river
Catchment Area upto diversion site	30.50 sq.km.
Design Discharge	1.98 cumecs
Design Flood	168.72 cumecs
HFL	Weir site El ± 1226.00 m
	Power House site El ± 1157.42 m

III. PROJECT COMPONENTS:-

A. DIVERSION STRUCTURE / INTAKE:-

Type /Shape	Rectangular Trench weir
Size	15.00 m (L) x 1.80 m (W)
Depth	Varies from 0.80m to 2.00 m
Design Discharge	1.98 cumecs plus flushing & Over Loading discharge
Trash Rack River Bed level	EL ± 1225.00 m
Bed Slope	1 in 12.50
Size of Intake Tank	3.00 x 2.30 m x 2.30 m i/c Free Board
Shingle flushing Pipe	400 mm Dia.

B. APPROACH / CONVEYANCE CHANNEL (Intake to De-Silting Tank):-

Type/ shape	R.C.C. Rectangular Channel
Size	2.00 m (w) x 1.70 m (D) (i/c Free Board)
Length	± 10.00 m

Slope	1 in 500
Design Discharge	1.98 cumecs plus flushing & Over Loading discharge
Velocity	0.96 m/sec

C. DE-SILTING TANK:-

Type	Surface Central Silt Gutter Type
Size	20.00 m (L) x 6.00 (W) x 4.52 m
Design Discharge	1.98 cumecs plus flushing & Over Loading discharge
Particle size to be removed	± 0.25 mm and above
Flow velocity	0.20 m/sec.
Top Level	EL ± 1224.68 m
Full Supply Level (FSL)	EL ± 1224.18 m
Silt Flushing pipe	400 mm dia.

D. WATER CONDUCTER SYSTEM (from De-silting tank to Forebay tank)

Type	Free flow steel pipe
Length	496.00 m
Diameter	1500 mm dia.
Slope	1 in 500
Velocity	1.35 m/sec.
Design Discharge	1.98 cumecs plus Over Loading discharge

E. FOREBAY TANK AND SPILLWAY:-


Type	Surface RCC Tank
Size	10.00 m (L) x 7.00 m (W) x 7.00 m (H) i/c 1.00 m Free Board.
Design Discharge	1.98 cumecs plus Over Loading discharge
Live Storage capacity	285.12 cumecs
Peaking time	2 minutes
Top Level	EL ± 1224.49 m
Full Supply Level (FSL)	EL ± 1223.49 m
Mini. Drawdown Level (MDDL)	EL ± 1222.11 m
Penstock entry Level	EL ± 1218.39 m
Bed Level	EL ± 1217.49 m
Size of spillway	15.00 m (L) x 1.20 m (W)

F. PENSTOCK:-

Type	Circular, Surface steel penstock
Number/size of main penstock	One/1100 mm ϕ
Length of main penstock	146.00 m
Plate Thickness	Varying between 12mm to 16 mm
Velocity	2.50 m /sec
Material of steel liner	IS 2062 Grade C
Number of branches	Two
Size of branch penstock	15.00 m Long (each), 850 mm ϕ

G. POWER HOUSE:-

Type	Surface Power House
Size	15.00 m x 10.00 m x 8.00 m
C/L of Jet	EL ± 1160.00 m


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Installed Capacity	1.00 MW (2 units of 500 kW each)
Max. Gross Head	65.00 m
Rated Net Head	60.10 m
Power House Crane	6/2 Tonnes EOT Cranes

Turbine

Type	Horizontal Pelton Turbine
Number	Two
Rated Capacity	500 kW (each)
Rated Speed	500 rpm


Generator

Type	Horizontal Synchronous
Number	Two
Rated Capacity	500 kW (each)
Power Factor	0.90
Rated Voltage	0.415 kV+10%
Rated Frequency	50 Hz
Rated Speed	500 rpm
Overloading Capacity	10%

H. TAIL RACE:-

Type	RCC Box Type channel
Size	1.50 m x 1.40 m i/c Free Board
Length	10.00 m
Slope	1 in 500
Tail Race Level	EL \pm 1158.00 m


I. Construction Period	24 months
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103/9/2020
Chief Engineer,
Directorate of Energy, GoHP,
New Shimla-171009(HP).

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LIST STATUTORY AND ADMINISTRATIVE CLEARANCES REQUIRED

Sr.No.	ITEM	AGENCY	REMARKS
1.	WATER AVAILABILITY	1. State Govt. 2. CWC	Interaction with State Govt. Deptt. & CWC required. Relevant Irrigation Act of the State & Central Water Commission to be implemented.
2.	HPSEBL CLEARANCE	1. HPSEBL. 2. State Govt.	As per Indian Electricity Act, 2003.
3.	POLLUTION CLEARANCE WATER AND AIR	State/Central Pollution Control Board	Water (Prevention & Control of Pollution) Act, 1974 Air (Prevention & Control of Pollution) Act, 1981.
4.	FOREST CLEARANCE	1. State Govt. 2. MoEF & CC, GoI.	Coordination with State Forest Deptt./ Min. of Environment & Forest (MoEF & CC) regarding Forest (Conservation) Act, 1980.
5.	ENVIRONMENT & FOREST CLEARANCE	1. State Govt 2. MoEF & CC, GoI.	As per item (3) & (4) and Govt. Policy in force.
6.	REGISTRATION	Registrar of Companies.	Under Indian Companies Act, 1950.
7.	REHABILITATION & RESETTLEMENT OF DISPLACED FAMILIES BY LAND ACQUISITION	1. State Govt 2. MoEF & CC, GoI.	
8.	EQUIPMENT PROCUREMENT	Directorate General of Technical Development (India), Competition Commission of India	As per Import & Export Acts.


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