

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 Duhangan- III SHEP (1.00 MW) within elevation range of El. 2032 m to El. 1967 m on Duhangan khad, tributary of Beas River in Distt. Kullu, Himachal Pradesh allotted to "M/s Jamdagni Hydro Power, Village & P.O. Jagatsukh, Tehsil Manali, District Kullu-175143.", at an estimated cost of Rs. 993.35 lakh (Rupees Nine Hundred Ninety Three Lakh and Thirty Five Thousand) 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 Concurrence.
 - c) Change in Indian law resulting in change in the cost.
2. The Concurrence is subject to the fulfilment of the following conditions:-
 - i) Completed cost/Concurrence 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 Concurrence.
 - 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) Fulfilment 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 Jamdagni Hydro Power, Village & P.O. Jagatsukh, Tehsil Manali, District Kullu-175143."
 - viii) No additional cost shall be allowed due to Resettlement & Rehabilitation (R & R) Plan.
 - 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.

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- 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 endeavour 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) The power of Duhangan- III SHEP (1.00 MW) can be evacuated as under :-
 - a. The power evacuation of Duhangan- III SHEP (1.00 MW) can be done through existing 11kV HT line of Jagatsukh feeder by making the solid tap arrangement on Jagatsukh feeder at Bhanara which is about 3Km from the power house.
 - b. The re- conductor of existing 11kV Jagatsukh feeder will be done by M/s Jamdagni Hydro Power from the solid tap point to 33/11 kV substation Prini with ACSR 6/1/4.72 mm conductor. The cost for strengthening/ re- conductor of existing 11kV Jagatsukh feeder shall be borne by the IPP.
 - c. No deemed generation shall be allowed to the firm.
 - d. The IPP shall back down the generation as and when directed by the HPSEBL and it reserves the right for disconnection of the above arrangement as and when required on technical grounds.
 - e. The IPP will not claim any deemed generation benefits due to back down of power generation on account of system constraints.
 - 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 Center

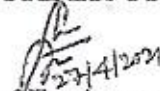
- (SLDC) or Regional Load Dispatch Center (RLDC).
- d) Directions of the concerned SLDC or RLDC regarding operation of dedicated transmission line.
 - e) The IPP will only be allowed to inject power in HP system with the undertaking that necessary action to provide tele-metering to SLDC shall be provided 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 Hydro generating units shall be capable of generating up to 110% of rated capacity (Subject to rated head being available) on continuous basis as per Sr. No 7 (Part-II) of Ministry of Power (Central Electricity Authority) notification No 12/X/STD (CONN) GM / CEA dated 15/10/2013 and subsequent amendments thereof.
 - xxi) The conditions on these lines shall have to be suitably included by the IPP in the PPA etc. apart from other standard conditions.
 - xxii) The observations of DoE, GoHP and replies thereof shall form an integral part of the DPR.
 - xxiii) 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.
 - xxiv) 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.
 - xxv) 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.
 - xxvi) The proposed arrangement of laying Water Conductor System (penstock) with length 225 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.
 - xxvii) LADC/LADF amount and activities shall be implemented as per Power policy of HP Govt., 2006 and subsequent amendments thereof.
 - xxviii) 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.
 - xxix) 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


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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.

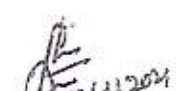
BY ORDER OF THE GoHP

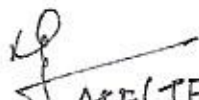

Chief Engineer,
Directorate of Energy, GoHP,
New Shimla- 171009 (HP)

No. DoE/CE(Energy)/TC-Duhangan- III/2021-678-87 Dated: 28/11/2021.

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

1. The Addl. Chief Secretary (MPP & Power) to H.P. Govt., Shimla-171002.
2. The Addl. Chief Secretary (NES) to H.P. Govt., Shimla-171002.
3. The Secretary, Ministry of Non-Conventional Energy Sources (MNES), Block No.14, CGO Complex, Lodhi Road, New Delhi-110003.
4. The Director, Environmental & Scientific Technologies, Narayan Villa, Near Wood Villa Palace, Shimla-171002.
5. The Deputy Commissioner, Distt. Kullu, Himachal Pradesh.
6. The General Manager, HPPTCL, Himfed Bhawan, Panjari, Below Old MLA Quarters, Shimla-171005.
7. The Chief Engineer (SP), HPSEB Ltd, Uttam Bhawan, Dogra Lodge, Shimla-171004.
8. The Chief Engineer (Commercial), HPSEB Ltd, Vidyut Bhawan, Shimla -171004.
9. The Chief Executive Officer, Himurja, 8A-SDA Complex, Kasumpti, Shimla-171009.
- ✓ 10. M/s Jamdagni Hydro Power, Village & P.O. Jagatsukh, Tehsil Manali, District Kullu-175143.


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ANNEXURE-I

Duhangan- III SHEP (1.00 MW) in Distt. Kullu of Himacal Pradesh allotted to "M/s Jamdagni Hydro Power, Village & P.O. Jagatsukh, Tehsil Manali, and District Kullu-175143."

ABSTRACT OF COST ESTIMATE

Sr.No.	Description of work	Cost (Rs. in lakh)	
a)			
i)	Civil works i/c other Misc. expenses	586.11	} Price level June 2020
ii)	Electro Mechanical Works	297.70	
iii)	Transmission Works	30.00	
	Sub-total (a)	913.81	
(b)			
i)	Interest During Construction (IDC)	55.65	
ii)	Escalation	6.88	
iii)	Financial Charges	7.18	
	Sub-total (b)	69.71	
	Total (a+b)	983.52	
(c)	LADC @ 1.0% of (a+b)	9.84	
	Grand Total (a+b+c)	993.36	
	Say ₹	993.35	Lakh

(Rupees Nine Hundred Ninety Three Lakh and Thirty Five Thousand only)


27/4/2021
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ANNEXURE-II

Duhangan- III SHEP (1.00 MW) in Distt. Kullu of Himachal Pradesh allotted to "M/s Jamdagni Hydro Power, Village & P.O. Jagatsukh, Tehsil Manali, and District Kullu-175143."

1)

SALIENT FEATURES**I. LOCATION**

State	Himachal Pradesh
District	Kullu
Tehsil	Manali
River/Khad	Duhangan khad, a tributary of Beas River.
Vicinity	Diversion Weir at El 2032.00 m & Power house is at an elevation of 1968.00 m on the left bank of Duhangan Khad with maximum tail water level (MTWL) at El 1969.00
Accessibility	By Road Kullu Manali State highway, 40 km from Kullu By Railway Kiratpur (Punjab) (BG) By Air Bhuntar (Kullu)

Geographical Co-Ordinates

	Longitude	Latitude
• Weir	77° 13' 15.51" E	32° 11' 44.71" N
• Power House Site	77° 12' 47.37" E	32° 11' 46.61" N
• SOI Toposheet	52 H/4	

II. HYDROLOGY

Stream/khad	Duhangan Khad
Tributary of river	Beas River
Catchment Area upto diversion site	27.00 sq.km.
Design Discharge	2.07 cumecs
Design Flood	715 cumecs
HFL	Weir site El 2036.00 m
	Power House El 1969.00 m

III. PROJECT COMPONENTS:-**A. DIVERSION STRUCTURE**

Type /Shape	Drop Type Trench Weir
Size	15.00 m (L) x 1.00 m (Trench Width)
Depth	Varies from 0.15 m to 0.58 m Design
Discharge	2.07 cumecs plus flushing & overloading discharge
Crest level at Weir	EL 2032.00 m
Bed Slope	1 in 7.00
Size of Intake Tank	5.00m (W) x 5.00 m (D)

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

Type/ shape	R.C.C Channel/ Box Type
Size	1.00 m (W) x 1.20 m (D)
Length	52.00 m
Slope	1 in 120
Design Discharge	2.07 cumecs plus flushing & overloading discharge
Velocity	2.73 m/sec
FSL at inlet	EL 2031.48 m
FSL at outlet	EL 2030.70 m

C. DESILTING CHAMBER

Type/Shape	Surface Central Gutter type
Size	40.00 m (L) x 4.00 m (W)
Depth	3.70 m
Design Discharge	2.07 cumecs plus flushing & overloading discharge
Particle size to be removed	0.20 mm and above
Flow velocity	0.20 m/sec
Dia of Flushing Pipe	300 mm

D. POWER CHANNEL (WATER CONDUCTOR SYSTEM)

Type/ shape	Box Type
Size	1.20 m (W) x 1.40 m (D)
Length	85 m
Slope	1 in 600
Design Discharge	2.07 cumec plus overloading discharge
Velocity	1.58 m/sec

E. FOREBAY TANK

Type	Surface Tank
Size	50.00 m (L) x 3.00 m (W) x 2.60 m (D)
Design Discharge	2.07 cumec plus overloading discharge
Live Storage capacity	409 cum
Peaking time	3 minutes
Top Level	El 2029.00 m
FSL	El 2027.52 m
MDDL	El 2024.92 m
Bed Level	El 2024.20 m

F. PENSTOCK

Type	Circular, Steel Penstock
Number/size of main penstock	One / 1200 mm ϕ
Length of main penstock	225.00 m
Plate Thickness	10 mm to 16 mm
Velocity	1.83 m/sec
Material of steel liner	ASTM A-537, Class- A or equivalent
Size of branch penstock	700 mm ϕ

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A.E.E (T.C.)

Length of branch penstock 15 m

G. POWER HOUSE

Type Surface Power House
 Size 20.00 m (L) x 13.00 m (W) x 9.00 m (H)
 C/L of Jet EL 1968.00 m
 Installed Capacity 1000 kW
 Gross Head 59.52 m
 Net Head 58.00 m
 Power House Crane EOT Crane 25/5 Tonne

Turbine

Type Horizontal Axis Francis Turbine
 Number Two number
 Rated Capacity 500 kW (each)
 Rated Speed 750 rpm


Generator

Type Horizontal Shaft Synchronous type
 Number Two number
 Rated Capacity 500 kW (each)
 Power Factor 0.90
 Rated Voltage 3.3 kV
 Rated Frequency 50 Hz
 Rated Speed 750 rpm
 Overloading Capacity 10%

H. TAIL RACE

Type Rectangular RCC Box
 Size 1.00 m (W) x 1.00 m (D)
 Length 15.00 m
 Slope 1 in 400
 Maximum Tail Water Level EL 1969.00 m

Construction Period 24 months


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