

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 Techno Economic Clearance (TEC) to Kandha SHEP (0.40 MW) on Kau Khad/Chainra nallah, the tributary of Satluj basin in District Mandi, Himachal Pradesh allotted to "M/s Bhagwati Power Project, C/o Mohan Singh Negi, Vill. Mumail, PO & Tehsil Karsog, Distt. Mandi- 171304", at an estimated cost of Rs. 329.00 lakh (Rupees three hundred twenty nine 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 Techno Economic Clearance (TEC).
 - c) Change in Indian law resulting in change in the cost.
2. The Techno Economic Clearance (TEC) is subject to the fulfilment of the following conditions:
 - i) Completed cost/ Techno Economic Clearance (TEC) 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 TEC.
 - 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 Bhagwati Power Project, C/o Mohan Singh Negi, Vill. Mumail, PO & Tehsil Karsog, Distt. Mandi- 171304".
 - 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.
 - x) The statutory and administrative clearances as per **Annex-III** shall be obtained before execution/ implementation of the project.

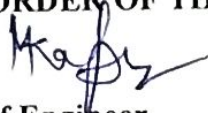
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- xi) For evacuation of power, the interconnection point with the State grid and interconnection facilities at the interconnection point shall be provided, operated and maintained at the cost of the IPP.
- xii) The cost of providing and/or strengthening/additions 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 be allowed through solid tap on nearest point on 22 kV HT line of LWSS Saindal subject to the following conditions:-
 1. The cost of 22 kV line from Kandha HEP (400 kW) to nearest tapping point about 0.50 Km including 22 kV auto-reclosures and interconnection facilities shall be borne by the developer.
 2. The cost for reconductoring of existing 22 kV HT line about 7 Km shall be borne by the IPP.
 3. No deemed generation shall be allowed to the developer in case of shutdown / breakdown of 22 kV feeder and 33 / 22 kV substation Karsog.
- 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.

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- 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) 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 TEC 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 Techno Economic Clearance (TEC) of the scheme and actual start of work on the project is three years or more, a fresh Techno Economic Clearance (TEC) 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)/TEC- Kandha/2020- 345 - 53
 Copy is forwarded to following for information and necessary action:

Dated: 20/5/2020

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. M/s Bhagwati Power Project, C/o Mohan Singh Negi, Vill. Mumail, PO & Tehsil Karsog, Distt. Mandi- 171304.


 19/5/2020
Chief Engineer,
Directorate of Energy, GoHP,
New Shimla-171009(HP).

Kandha SHEP (0.400 MW) in District Mandi of Himachal Pradesh allotted to "M/s Bhagwati Power Project, C/o Mohan Singh Negi, Vill. Mumail, PO & Tehsil Karsog, Distt. Mandi-171304"

ABSTRACT OF COST ESTIMATE

Sr.No.	Description of work	Cost (Rs. in Lakh)	
a)			
i)	Civil works i/c other Misc. expenses	196.015	} Price level October, 2018.
ii)	Electro Mechanical Work	100.00	
iii)	Transmission Works	4.50	
	Sub-total (a)	300.515	
b)			
i)	Interest During Construction (IDC)	22.67	
ii)	Escalation	nil	
ii)	Financial Charges	2.38	
	Sub-total (b)	25.05	
	Total (a+b)	325.565	
c)	LADF @ 1.0% of (a+b)	3.25	
	Grand Total (a+b+c)	328.82	
	Say	Rs. 329.00 lakh	

(Rupees Three Hundred and Twenty Nine lakh only)


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SALIENT FEATURES

I LOCATION

State	Himachal Pradesh
District/Tehsil	Mandi
River/Stream	Kau Khad/ Chainra Khad, the tributary of Satluj basin
Vicinity	Village Kandha, Chainra Khad, Karsog. Diversion weir site on Kau Khad/ Chainra Nallah at EL \pm 1065.00 m and Power house on right bank with Tail Water Level at EL \pm 1040.00 m near village Kandha.
Accessibility By Road	132 km from Mandi to Karsog Road 15 Km from HPPWD road upto Power House site
By Railway	Shimla (NG)
By Air	Chandigarh Airport
Geographical co-ordinates	Weir site Power House site
• Longitude	77° 04.648' 00''E 77° 14' 32.58''E
• Latitude	31° 19.512' 00''N 31° 19' 17.99''N
SOI Topo sheet	53 E/3,7

II HYDROLOGY

Name of stream/nallah	Kau Khad/ Chainra Nallah
Tributary of /Basin	Satluj Basin
Catchment area upto diversion site	120 cumecs
Design Discharge	2.4 cumecs plus flushing and OL discharge.
Design flood Discharge	435.078 cumecs
HFL	Diversion weir Power House
	EL \pm 1072.00 m EL \pm 1039.00 m

III PROJECT COMPONENTS

A. DIVERSION STRUCTURE

Type	Drop type trench weir
River Bed Level	El \pm 1065 m
Size of weir	6.00 m Long, 2.00 m wide
Design Discharge	2.4 cumecs plus Flushing & Over Loading discharge

B. CONVEYANCE CHANNEL	
Type & Size	Open Rectangular 2.0 m x 1.0 m
Length	30 m
Slope	1 in 500
Design discharge	2.4 cumecs plus Flushing & Over Loading discharge
Velocity	1.50 m/sec
C. DESILTING ARRANGEMENT	
Type	Surface Hopper type
Size	One Chamber of 32 m x 4.50 m x 4.00 m size with inlet & Outlet transition
Design particle size	Designed to exclude all particles down to 0.15 mm size.
Discharge	2.4 cumecs plus Over Loading discharge
D. WATER CONDUCTOR SYSTEM	
Type	Power channel (Open rectangular channel)
Size	2.00 m x 1.00 m
Length	600 m
Slope	1 in 700
Design discharge	2.4 cumecs plus Over Loading discharge
Velocity	1.20 m/sec.
E. FORBAY TANK	
Type	Surface tank
Size	20.00 m x 6.80 m x 4.00 m
Storage capacity	544 cumecs
Peaking time	± 3.00 minutes
FSL	El ± 1064 m
MDDL	El ± 1060.20 m
F. PENSTOCK	
Type	Circular, surface steel penstock
Size	850 mm dia.
Thickness of steel	Varying between 4 mm to 6 mm.
Length	± 40 m
Material	IS : 2062 Grade B
G. BIFURCATION	
Type	Circular, Surface Steel Pipe
Size	750 mm dia & thickness varying between 4 mm to 6 mm
Thickness of steel	Varying between 4 mm to 6 mm.
Length	± 8 m

H. POWER HOUSE

Type	Surface Power House
Size	18 m (L) x 8 m (W) x 8 m (H)
Gross Head	25 m
Net Head	20 m
High Flood Level	El 1039.00 m
Elevation at Power House (NTWL)	El \pm 1040.00 m
Center Line of turbine Jet	El \pm 1041.50 m

Turbines


Type	Horizontal axis Francis Turbine
Number	Two
Capacity	200 KW each
Speed	600 rpm

Generators

Type	Synchronous, Brushless
Installed Capacity	0.40 MW (2 units of 200 KW each)

I. Tailrace

Type	RCC Box Section Rectangular
Size	1.0 m x 0.5 m
length	\pm 15 m
Normal Tail Water Level	El \pm 1040.00 m
Construction period	24 months

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ANNEXURE-III

Kandha SHEP (0.400 MW) in District Mandi of Himachal Pradesh allotted to "M/s Bhagwati Power Project, C/o Mohan Singh Negi, Vill. Mumail, PO & Tehsil Karsog, Distt. Mandi-171304"

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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