

**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 Grahan Kasol SHEP (5.00 MW) on Grahan nallah, tributary of Parbati river, in District Kullu of Himachal Pradesh allotted to "M/s Dinesh Butail, Bundla Tea Estate, Palampur, Distt. Kangra-176061", at an estimated cost of Rs. 4773.00 lakh (Rupees four thousand seven hundred seventy three 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 enclosed at **Annex-I** and the Salient Features of the scheme are enclosed 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 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 "M/s Dinesh Butail, Bundla Tea Estate, Palampur, Distt. Kangra-176061."
 - 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 latest 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 Developer.
- 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/HPPTCL, 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 Developer on this account shall be paid by the Developer 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 Developer shall be compatible for parallel operation with the State grid after interfacing. The Developer 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 Developer to HPSEBL/HPPTCL throughout the period, the Developer runs the project and the same shall be reviewed at the beginning of every financial year.
- xvi) The power of Grahani Kasol SHEP (5 MW) can be evacuated subject to following conditions:-
- (1) The joint evacuation of 10 MW power of Kasol and Grahani Kasol HEPs (5 MW each) can be evacuated on 33 kV D/C Barsaini – Malana– I line after commissioning of 33/132 kV Barsaini substation and 132 KV Barsaini-Charor D/C line by HPPTCL and operation of 33 kV Barsaini substation of HPSEBL with 33/132 kV substation of HPPTCL in integrated mode.
 - (2) IPP shall provide 33 kV substation/breaker with suitable protection at Kasol in the vicinity of existing 33 kV line route (Barsaini to Malana-I) at their cost by providing LILO arrangement of existing 33 kV D/C Barsaini to Malana-I and the length of 33 kV LILO line shall not be more than 500 mtrs.
 - (3) Both the IPPs (Kasol 5 MW and Grahani Kasol 5 MW) will construct 33 kV line or lay 33 kV underground cable in joint mode up to LILO point without disturbing the existing 11 kV line structure of HPSEBL and will execute the joint evacuation agreement.
 - (4) The IPPs shall provide control of breaker at LILO point and real time monitoring of electrical parameters to HPSEBL at 132/33 kV Jari (Malana-I) at their cost.
 - (5) IPPs are to deliver power at their interconnection points and will have to make arrangements for delivery of power at interconnection point by constructing dedicated line joint evacuation/paying charges and losses for the system of other system owners in to delivery point.
 - (6) To interconnection point, the arrangement is of the IPP. The deemed generation in the event of outage of HPSEBL system up to delivery point will not be acceptable.
- xvii) The project line shall be provided, operated and maintained by the Developer 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/CERC approval of “Comprehensive area wise plan for augmenting and establishing of transmission/sub-transmission system for evacuation of power from HEPs” which has

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- already been submitted to HPERC. The Transmission/Distribution Licensee may however evolve alternate system(s) depending on the site conditions and subsequent developments with the approval of HPERC.
- xix) The Developer 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 Developer 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 Developer in the PPA etc. apart from other standard conditions.
- xxii) The observations of DoE, GoHP on the DPR 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 with length 2010 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 and subsequent amendments thereof.
- xxix) The TC is based on the reports and data furnished by the Developer 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 Developer 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 within 3 months from the Commercial Operation Date (COD) of the plant.



5. The project promoters/project authorities 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 HP Govt. 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 Concurrence shall be obtained from DoE, GoHP before start of actual work.
8. The DoE, GoHP reserve the right to revoke the TC, if the conditions stipulated above are not complied with to the satisfaction of the GoHP.

BY ORDER OF THE GoHP

KSHUMBU
21/9/2021
**Chief Engineer,
Directorate of Energy, GoHP,
New Shimla-171009(HP).**

No. DoE/CE(Energy)/TC-Grahan Kasol/2021- 4950-59

Dated: 09/09/2021

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. Deputy Commissioner, Kullu, Himachal Pradesh – 175101.
6. General Manager, HPPTCL, Himfed Bhawan, Panjari, Below Old MLA Quarters, Shimla-171005.
7. Chief Engineer (SP), HPSEB Ltd, Uttam Bhawan, Dogra Lodge, Shimla-171004.
8. Chief Engineer (SO), HPSEB Ltd, Vidyut Bhawan, Shimla –171004.
9. Chief Executive Officer, Himurja, 8A-SDA Complex, Kasumpti, Shimla-171009.
10. M/s Dinesh Butail, Bundla Tea Estate, Palampur, Distt. Kangra-176061.

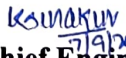
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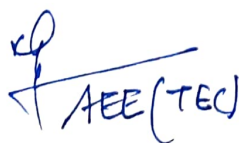
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Grahan Kasol SHEP (5.00 MW) in District Kullu of Himachal Pradesh allotted to "M/s Dinesh Butail, Bundla Tea Estate, Palampur, Distt. Kangra-176061"
ABSTRACT OF COST ESTIMATE

Sr.No.	Description of work	Cost (Rs. in lakh)	
a)			
i)	Civil works i/c other Misc. expenses	2859.16	} Price level March, 2020.
ii)	Electro Mechanical Work	1153.99	
iii)	Transmission Works	72.50	
	Sub-total (a)	4085.65	
(b)			
i)	Interest During Construction (IDC)	419.16	
ii)	Escalation	163.11	
iii)	Financial Charges	58.08	
	Sub-total (b)	640.35	
	Total (a+b)	4726.00	
(c)			
	LADC @ 1.0% of (a+b)	47.26	
	Grand Total (a+b+c)	4773.26	
	Say	₹ 4773.00 Lakh	

(Rupees four thousand seven hundred seventy three Lakh only)


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


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SALIENT FEATURES

I. LOCATION

State	Himachal Pradesh
District / Tehsil	Kullu
Village	Grahan
River/Khad	Grahan nallah
Vicinity	Diversion Weir on Grahan nallah at EL± 2110.00 m and surface power house on right bank of Grahan nallah with Tail Race Level at EL ± 1860 m near Village Grahan.

Accessibility	By Road	30 KM from Distt. H/Q Kullu 220 KM from Distt. Shimla
	By Railway	Nearest BG at Kirtpur (Pb.)
	By Air	Bhunter Airport

Geographical Co-Ordinates

	Longitude	Latitude
• Weir Site	77 ⁰ 20' 38.22"E	31 ⁰ 58' 10.14" N
• Power House Site	77 ⁰ 19' 42.37"E	31 ⁰ 59' 3.33" N

SOI Topo sheet 53 E/5, 1:50,000

II. HYDROLOGY

Stream/nallah	Grahan nallah
Tributary of/ Basin	Parbati river
Catchment Area upto diversion site	22.90 sq.km.
Design Discharge	2.55 cumecs
Design Flood	136.09 cumecs
HFL	Weir site Power House site El ± 2111.00 m El ± 1859.75 m

III. PROJECT COMPONENTS:-

A. DIVERSION STRUCTURE / INTAKE

Type /Shape	Drop type trench weir
Size	16.00 m (L) x 2.00 m (W)
Depth	Varies from 1.10 m to 2.50 m
Design Discharge	2.55 cumecs plus flushing & Over Loading discharge

Track Rack level	EL ± 2110.00 m
Bed Slope	1 in 11.43

Size of Intake	5.00 (L) x 2.00 m (W) x 3.00 m (D)
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B. FEEDER / CONVEYANCE CHANNEL (Intake to De-Silting Tank)

Type/ shape	R.C.C. Box type
Size	1.80 m (W) x 1.50 m (D)
Length	35.00 m
Slope	1 in 400 m
Design Discharge	2.55 cumecs plus flushing & Over Loading discharge

Velocity	1.72 m/sec
Full Supply Level (FSL)	EL ± 2108.61 m

C. DE-SILTING ARRANGEMENT

Type	Surface/Hopper type
Size	45.00 m (L) x 8.00 m (W) x 5.40 m (Avg. Depth)
Design Discharge	2.55 cumecs plus flushing discharge & Over Loading discharge
Particle size to be removed	± 0.25 mm and above
Flow velocity	0.20 m/sec.
Full Supply Level (FSL)	EL ± 2108.61 m
Size of Silt Flushing pipe	1000 mm dia.

D. WATER CONDUCTER SYSTEM**HEAD RACE TUNNEL & POWER CHANNEL IN HRT**

Type /Size	D-shaped, 1.80 m dia.
Length of Head Race Tunnel(HRT)	2069.00 m (Open channel 69.00 m + 2010 m HRT)
Type of channel	RCC Rectangular Box type section
Size of channel	1.80 m x 1.40 m
Bed Slope	1 in 500 m
Velocity	1.55 m/sec.
Design Discharge	2.55 cumecs plus Over Loading discharge
Full Supply Level at end	EL± 2104.35 m
Bed Level at end	EL± 2103.25 m

E. FOREBAY TANK

Type	Surface RCC rectangular
Size	10.00 m (L) x 8.00 m (W) x 8.00 m (H)
Live Storage capacity	524.00 cumecs
Peaking time	3.42 minutes
Top Level	EL ± 2105.35 m
FSL	EL± 2104.35 m
MDDL	EL± 2102.55 m
Bed level	EL ± 2097.35 m

F. PENSTOCK

Type	Circular, Surface steel penstock
Number/size of main penstock	One / 1100 mm ϕ
Length of main penstock	390 m
Plate Thickness	Varying between 8 mm-20 mm
Velocity	3.22 m /sec
Material of steel liner	IS: 2062 Gr-B
Number of branches	Two
Size of branch penstock	16.00 m (each), 750 mm ϕ

G. POWER HOUSE

Type	Surface power house
Size	25.00 m x 15.00 m x 10.00 m
C/L of Jet	EL 1860.00 m
Installed Capacity	5.00 MW (2 units of 2500 kW each)
Gross Head	244.35 m
Net Head	236.31 m
Power House Crane	25/5 Tonne

Turbine

Type	Pelton Turbine
Number	Two
Rated Capacity	2500 kW (each)
Rated Speed	600 rpm

Generator

Type	Synchronous, Brushless Type
Number	Two
Rated Capacity	2500 kW
Power Factor	0.85
Rated Voltage	33/ 0.415 kV
Rated Frequency	50 Hz
Rated Speed	600 rpm
Overloading Capacity	10%

H. TAIL RACE

Type	Free Flow cut and cover channel
Size	1.60 m x 1.40 m
Length	15.00 m
Slope	1 in 400
Tail water Level	EL ± 1860.00 m

I. Construction period 24 months

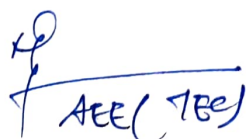
K. S. Dhillon
Chief Engineer,
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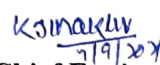
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LIST STATUTORY AND ADMINISTRATIVE CLEARANCES REQUIRED

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 Latest 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 Foreign Trade (DGFT)	As per Import & Export Acts & as notified in recent notification by Govt. of India (GoI)


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