

**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 Sajla SHEP (2.00 MW) within elevation range of El 2245 m to El 1945 m (weir to Tail race i.e. MTWL) on Kanoi stream, a tributary of Beas river in Beas basin of Distt. Kullu, Himachal Pradesh allotted to "M/s Seraj Hydro Power Developers, House No. 35, Ward No. 10, Devdhar, P.O. Dhalpur, Distt. Kullu-175101", at an estimated cost of Rs. 2189.00 lakh (Rupees Two Thousand One Hundred Eighty 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 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 Seraj Hydro Power Developers, House No. 35, Ward No. 10, Devdhar, P.O. Dhalpur, Distt. Kullu-175101".

 (TC)

- 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.
- 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 Sajla SHEP (2.00 MW) shall be evacuated through solid tap on 11 kV Sarsai feeder (at village Khakhnal) emanating from 2 x 5 MVA, 33/11 kV Naggar sub-station subject to the following conditions:-
1. The IPP shall have to bear the cost of 11 kV dedicated transmission line (0.426km), appropriate protection arrangement (i.e. 2 Nos. Autoreclosure along with SCADA control), interconnection facilities and associated allied works.
 2. The control of protection arrangement and interconnection facilities has to be given by the IPP to HPSEBL.
 3. The CT's of 11 kV Incomer panel & 11 kV Sarsai feeder emanating from 2x5 MVA, 33/11 kV Naggar sub-station shall have to be replaced at the cost of IPP with higher capacity i.e. T-1 incomer with 400-200/5-5-5-5 A/A and Sarsai feeder with 300-150/5-5-5-5 A/A. Also, the XPLE cable of 11 kV outgoing Sarsai feeder at 2x5 MVA, 33/11 kV Naggar Sub-station shall be replaced with higher capacity i.e. 240 mm² XPLE armoured cable at the cost of the IPP.
 4. The cost for augmentation/strengthening of existing 11 kV Sarsai feeder starting from 33/11 kV Naggar sub-station to Jagatsukh G.O. switch point with ACSR 6/1/4.72 conductor and along with all allied associated material i.e. additional poles, G.O. switches etc., shall be borne by the IPP.
 5. No deemed generation shall be allowed in case of shutdown/breakdown on 11 kV Sarsai feeder.
 6. The IPP shall bear the line losses from interconnection point to 2x5 MVA, 33/11 kV Naggar sub-station.

- 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 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 HP Govt. Swaran Jayanti Energy Policy, 2021.
- 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 by IPP including lean season as per HP Govt. Swaran Jayanti Energy Policy, 2021. 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 (WCS) i.e. feeder /approach pipe (from intake to de-silting-cum-forebay tank) and penstock with lengths 5.00 m & 2070.00 m respectively 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 HP Govt. Swaran Jayanti Energy Policy, 2021 at Chapter-V.
- 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. Swaran Jayanti Energy Policy, 2021 at Chapter-V.
- 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 of Sajla SHEP (2.00 MW).
4. The completion cost of the scheme shall be submitted to DoE, GoHP for approval within 6 months of the Commercial Operation Date (COD) of the plant as per HP Govt. Swarn Jayanti Energy Policy, 2021.
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. Swarn Jayanti Energy Policy, 2021 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 project developer shall submit monthly hydrological and meteorological data observed at the project site and monthly progress reports on the prescribed format along with expenditure actually incurred, duly certified by statutory auditors shall be submitted to the DoE, GoHP till the Commercial Operation of the plant.
9. 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-Sajla/2023- 19-27
Copy for kind information to the:-

Dated: 03-04-2023

1. The Secretary (MPP & Power), NES) to H.P. Govt., Shimla-171002
2. The Secretary, Ministry of Non-Conventional Energy Sources (MNES), Block No.14,CGO Complex, Lodhi Road, New Delhi-110003.
3. The Director, Environmental & Scientific Technologies, Narayan Villa, Near Wood Villa Palace, Shimla-171002.
4. The Deputy Commissioner, Kullu, Himachal Pradesh – 175101.
5. The General Manager, HPPTCL, Himfed Bhawan, Tutikandi Panjari, Near Old MLA Quarters, Shimla-171005.
6. The Chief Engineer (SP), HPSEB Ltd, Uttam Bhawan, Dogra Lodge, Shimla-171004.
7. The Chief Engineer (SO), HPSEB Ltd, Vidyut Bhawan, Shimla –171004.
8. The Chief Executive Officer, Himurja, 8A-SDA Complex, Kasumpti, Shimla-171009.
- ✓ 9. M/s Seraj Hydro Power Developers, House No. 35, Ward No. 10, Devdhar, P.O. Dhalpur, Distt. Kullu-175101.


Chief Engineer,
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Sajla SHEP (2.00 MW) in District Kullu of Himachal Pradesh allotted to "M/s Seraj Hydro Power Developers, House No. 35, Ward No. 10, Devdhar, P.O. Dhalpur, Distt. Kullu-175101".

ABSTRACT OF COST ESTIMATE

Sr. No.	Description of work	Cost (Rs. in lakh)	
(a)			
i)	Civil works i/c other Misc. expenses	1370.16	Price level March, 2022.
ii)	Electro Mechanical Work	559.64	
iii)	Transmission Works	17.24	
	Sub-total (a)	1947.04	
(b)			
i)	Interest During Construction (IDC)	160.60	
ii)	Escalation	59.96	
	Sub-total (b)	220.56	
	Total (a+b)	2167.60	
(c)	LADF @ 1.0% of (a+b)	21.68	
	Grand Total (a+b+c)	2189.27	
	Say ₹	2189.00	Lakh
	(Rupees Two Thousand One Hundred Eighty Nine Lakh only)		


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SALIENT FEATURES

I. LOCATION

State	Himachal Pradesh
District	Kullu
Village	Sajla
Tehsil	Manali
Vicinity	Diversion Weir of Sajla SHEP is at El 2244.80 m and surface power house on left bank of Kanoi stream near village Sajla with Center line of Jet at El 1947.50 m and Invert Level of Tailrace at outlet at El 1945.04 m.
Accessibility	By Road 35 Km-Bhunter-Kullu-Naggar-Sajla SHEP
	By Railway Nearest NG- Jogindernagar
	By Airlines Bhunter Airport

Geographical Co-Ordinates

	Longitude	Latitude
• Weir Site	77° 13' 0.52"E	32° 10' 08.09" N
• Power House Site	77° 11' 57.86"E	32° 10' 28.54" N
Sol Toposheet	52 H/4, 52 H/8	

II. HYDROLOGY

Khad/Nallah/Stream	Kanoi stream
Tributary/Basin	Tributary of Beas River /Beas basin
Catchment Area upto diversion site	9.94 sq.km.
Design Discharge	0.88 cumecs
Design Flood	72.78 cumecs
HFL	Weir site El 2245.50 m
	Power House site El 1942.00 m

III. PROJECT COMPONENTS:-

A. DIVERSION STRUCTURE / INTAKE

Type /Shape	Trench type weir/ Rectangular
Size	15.00 m (L) x 7.00 m (with 1.00 m Trench width)
Depth	Varies from 1.10 m to 2.10 m
Design Discharge	0.88 cumecs plus flushing & overloading discharge
Top Level at Trench weir	El 2246.00 m
Trash rack level	El 2245.00 m
River Bed level	El 2243.90 m to El 2242.90 m
Bed slope	1 in 15

INTAKE TANK

Type/ Shape	RCC well type, Head regulator/ Rectangular
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Size	2.00 m (L) x 1.50 m (W) x 3.00 m (D) with 0.60 m Freeboard
Full Supply Level (FSL)	El 2244.75 m
Bed Level at end	El 2242.35 m
Design Discharge	0.88 cumecs plus flushing & overloading discharge

B. WATER CONDUCTER SYSTEM (WCS)

FEEDER PIPE/ APPROACH PIPE (from intake to de-silting-cum-forebay tank)

Type/ shape	Open feeder pipe/ Circular
Size	0.75 m dia.
Length	5.00 m
Design Discharge	0.88 cumecs plus flushing & overloading discharge
Velocity	3.00 m/sec
Slope	1 in 100
Full Supply Level (FSL) at end	El 2243.75 m
Bed Level at end	El 2243.00 m

C. DESILTING-CUM-FOREBAY TANK

a. DESILTING TANK

Type	Open type
Shape	Rectangular
Size	20.00 m (L) x 4.00 m (W) x 2.80 m (D) i/c 1.00 m Freeboard
Design Discharge	0.88 cumecs plus flushing & overloading discharge
Particle size to be removed	0.25 mm & above
Flow velocity	0.22 m/sec.
Top level	El 2245.11 m
Full Supply Level	El 2244.11 m
Type of Flushing Pipe	Circular Steel pipe
Size of Flushing Pipe	15.00 m long, 400 mm Ø (dia.)

b. FOREBAY TANK

Type/Shape	Surface RCC/ Rectangular
Size	10.00 m (L) x 4.00 m (W) x 6.00 m with Live storage depth of 2.70 m
Live Storage capacity	174 cum
Peaking time	3 minutes
Top Level	El 2245.11 m
Max. Water Level (MWL)	El 2244.31 m
Min. Drawdown Level (MDDL)	El 2241.41 m
Bed Level	El 2239.11 m

SPILLWAY PIPE

No. of spillway pipe	One
Size	15.00 m long, 0.65 m dia.
Size of catchpit	7.00 m (L) x 1.60 m (W) x 2.20 m (D)

F. PENSTOCK

Type/Shape	Steel Penstock/ Open Circular
Number/size of main penstock	One / 650 mm ϕ
Design Discharge	0.88 cumecs plus overloading discharge
Length of main penstock	2070 m (including 8.00 m Aqueduct)
Plate Thickness	Varies from 6 mm to 16 mm
Velocity of main penstock	2.92 m/sec

Material of steel liner
Number of branches
Size of branch penstock

ASTM A516 GRADE 70
Two
490 mm ϕ (each), 10.00 m long (each)

G. POWER HOUSE

Type/Shape Surface/RCC framed structure
Size 20.00m (L)x 12.00 m (W)x 10.00 m (H)
C/L of Jet El 1947.50 m
Installed Capacity 2.00 MW (2 x 1000 kW)
Gross Head 295.54 m
Net Head 272.40 m
Power House Crane 15/3 Tonne Semi E.O.T. crane

Turbine

Type Horizontal Pelton Turbine
Number Two
Rated Capacity 1000 kW (each)
Speed 1000 rpm

Generator

Type Synchronous generator
Number Two
Rated Capacity 1000 kW (each)
Power Factor 0.85 (lag)
Rated Voltage 3.3 kV
Rated Frequency 50 Hz
Overloading Capacity 10 %

H. TAIL RACE

Type RCC Box section channel
Shape Rectangular
No. of branch Tail race Two
Size of branch Tail race 15.00 m (L) x 0.80 m (W) x 1.10 m (H) i/c 0.40 m
Freeboard (each)
Size of Main Tail race 25.00 m (L) x 1.20 m (W) x 1.10 m (D) i/c 0.40 m
Freeboard (each)
Bed Slope 1 in 400 m
Invert Level of Tailrace at outlet El 1945.04 m

I. Construction Period 24 months


Chief Engineer,
Directorate of Energy, GoHP,
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ANNEXURE-III

Sajla SHEP (2.00 MW) in District Kullu of Himachal Pradesh allotted to "M/s Seraj Hydro Power Developers, House No. 35, Ward No. 10, Devdhar, P.O. Dhalpur, Distt. Kullu-175101".

LIST OF 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, Gol.	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, Gol.	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, Gol.	
8.	EQUIPMENT PROCUREMENT	Directorate General of Foreign Trade (DGFT)	As per Import & Export Acts.


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