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 Thaltu Khor-I SHEP (5.00 MW) on Thaltu khor nallah, tributary of Uhl river which is further a tributary of Beas River, Distt. Mandi, Himachal Pradesh allotted to "M/s Cliff Finvest (P) Ltd., 1-41, DLF Industrial Area, Phase-I, Faridabad-121003", at an estimated cost of Rs. 4925.00 lakh (Rupees four thousand nine hundred twenty five 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.

1. The Techno Economic Clearance (TEC) is subject to the fulfillment 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 Cliff Finvest (P) Ltd., 1-41, DLF Industrial Area, Phase-I, Faridabad-121003".

viii) No additional cost shall be allowed due to Resettlement & Rehabilitation (R & R) Plan.

For Cliff Finvest Pvt. Ltd.

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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 at 33 /11 kV Tikkan substation subject to following conditions:-
On the present system connectivity for one project Thaltu Khor-I SHEP (5.00 MW) shall be granted. Connectivity for second project shall be granted only after augmentation of existing 33 kV line from Tikkan to Padhar along with execution of associated works for which the cost shall be borne by the IPP.

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

For Cliff Finvest Pvt. Ltd.

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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) LADC/LADF amount and activities shall be implemented as per Power policy of HP Govt., 2006 and subsequent amendments thereof.

xxvi) 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.

xxvii) 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

18/11/2015

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

For Cliff Finvest Pvt. Ltd.

Authorised Signatory

No. DoE/CE(Energy)/TEC- Thaltu Khor-I/2019-8106-14 Dated: 22/11/2019
Copy is forwarded to following for information and necessary action:

1. Principal Secretary (MPP & Power) to H.P. Govt., Shimla-171002.
2. Principal 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 Cliff Finvest (P) Ltd., 1-41, DLF Industrial Area, Phase-I, Faridabad-121003.

18/11/2019

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

For Cliff Finvest Pvt. Ltd.

Authorised Signatory

ANNEXURE-I

Thaltu khorh-I (5.00 MW) in District Kullu of Himachal Pradesh of "M/s Cliff Finvest (P) Ltd., 1-41, DLF Industrial Area, Phase-I, Faridabad-121003"

ABSTRACT OF COST ESTIMATE

Sr.No.	Description of work	Cost (Rs. in lakh)	
a)			
i)	Civil works i/c other Misc. expenses	33.58	Price level
ii)	Electro Mechanical Work	10.50	December,
iii)	Transmission Works	1.20	2016.
	Sub-total (a)	**45.28**	
(b)			
i)	Interest During Construction (IDC)	2.76	
ii)	Escalation	0.55	
ii)	Financial Charges	0.17	
	Sub-total (b)	**3.48**	
	Total (a+b)	48.76	
(c)	LADC @ 1.0% of (a+b)	**0.49**	
	Grand Total (a+b+c)	**49.25**	
	Say **Rs.**	**4925.00 lakh**	

(Rupees four thousand nine hundred twenty five lakh only)

18/11/2019

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

For Cliff Finvest Pvt. Ltd.

Authorised Signatory

ANNEXURE-II

Thaltu khorh-I (5.00 MW) in District Kullu of Himachal Pradesh of "M/s Cliff Finvest (P) Ltd., 1-41, DLF Industrial Area, Phase-I, Faridabad-121003"

1	**LOCATION**	
	State	Himachal Pradesh
	District/Tehsil	Mandi
	River/Stream	Thaltu khorh Nallah, a tributary of Uhl river which is further a tributary of Beas River
	Vicinity/ Proposal	Diversion weir site on Thaltu Khor Nallah at EL ± 1972.00 m near village Garaman and Power house on left bank of at EL ± 1768.00 m near village Thaltu khorh.
	Accessibility By Road	60 KM from Distt H/Q Kullu
	By Railway	BG- Kiratpur (Pb.)
	By Air	Bhuntar (Kullu)
	Geographical co-ordinates	
		Weir site / **Power House site**
	• Longitude	76° 55' 46''E / 76° 54' 41"E
	• Latitude	31° 59' 54'' N / 31° 58' 55" N
	SOI Topo sheet	52 H/4, 53 H/4
II	**HYDROLOGY**	
	Name of stream/nallah	Thaltu khorh Nallah
	Tributary of /Basin	Uhl River / Beas Basin
	Catchment area upto diversion site	22.00 Sq km
	Design Discharge	3.00 cumecs
	Design flood Discharge	260.00 Cumecs
	HFL	**Weir site** / **Power House site**
		EL ± 1974.60 m / EL ± 1766.20 m
III	**PROJECT COMPONENTS**	
A.	**DIVERSION STRUCTURE**	
	Type	Rectangular type trench weir
	Average Bed Level	El. ± 1972.00 m
	Full Supply Level	El. ± 1972.25m
	Crest Level	El. ± 1972.75m
	Size of weir	14.00 m Long, 2.00 m Wide
	Slope	1 in 10
	Design Discharge	3.00 cumecs plus flushing and OL discharge.
	Size of Shingle Flushing pipe	1000 mm dia, 77.40 m long
B.	**INTAKE STRUCTURE**	
	Type	RCC gated structure
	Number	One Number Service Gate and One No. Stop Log gate each of 1.80 m (W) x 1.50 m (H)
	Size	3.50 m (L) x 4.76 m (W) x 6.05 m (H)
	Design discharge	3.00 cumecs plus flushing & OL discharge.

For Cliff Finvest Pvt. Ltd.

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C. FEEDER PIPE (from inlet to desilting tank)

Type	Circular Steel Lined
Number	One
Size	30.00 m (L)
Diameter	1.80 m dia
Slope	1 in 50 m
Design discharge	3.00 cumecs plus flushing & OL discharge.

D. DESILTING TANK

Type	Surface De-silting Basin
Size	35.00 m (L) x 6.00 m (W) x 6.70 m (H) i/c FB
Design discharge	3.00 cumecs plus flushing discharge.
Particle size to be removed	All particles of 0.20 mm size and above
Flow through velocity	0.16 m/ sec
Full Supply Level	EL ± 1971.50 m
Silt flushing pipe	0.60 m dia and 85.00 m long
Flushing discharge	0.60 cumecs

E. COLLECTION POOL

Invert Level	El 1970.42 m
Size	10 m (L) x 6 m (W) x 3 m (H)
Crest Level of spillover from de-silting basin to collection pool	El 1971.00 m
Full Supply Level (FSL)	El 1971.50

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

CONNECTING PIPE (from Desilting Tank to HRT)

Type	Free Flow type
Length	116.00 m
Diameter	1.80 m dia
Slope	1 in 831

G. HEAD RACE TUNNEL (HRT)

Type	Concrete Lined Arch shaped
Size	1.80 m (W) x 2.25 m (H)
Length	2471.00 m
Velocity	1.58 m/sec

H. ADIT-I (FOR HRT CONSTRUCTION)

Type	D-shaped
Size	92 m (L) x 2.50 m (W) x 2.50 m (H),

I. FOREBAY TANK

Type /Shape	RCC Rectangular channel
Size	30 m (L) x 10 m (W) & height vary from 2.70 m to 6.05 m
Storage Capacity	396 cumces
Full Supply Level (FSL)	EL ±1967.85 m
MDDL in tank	El ±1967.10 m

For Cliff Finvest Pvt. Ltd.

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Top level of Tank	El ± 1969.50 m

J. ESCAPE TANK

Size	10.00 m (L) x 4.00 m (W) & height vary from 3.60 m to 6.05 m
Inver Level	El ±1963.45 m
Full Supply Level	El ±1967.85 m

K. PENSTOCK

Type	Surface Steel Pipe, IS 2002 Grade II steel
Number/size of main penstock	One / 1200 mm dia.
Length of main penstock	418 m (Main), 9.65 m (Bifurcated)
Number of branches	Two
Size of branch penstock	850 mm dia. each
Length of branch penstocks	9.65 m each
Plate Thickness	Varies from 8 mm to 16 mm
Velocity	2.65 m/sec
Anchor Blocks	12 No.

L. ESCAPE PIPE

Type	Surface
Number	One
Length	442 m
Size	1.00 m diameter for an initial upstream length of 15 m beyond that 0.80 m diameter and 427 m long upto energy dissipation tank
No. of Anchor Blocks	14 Nos.
Flow	Free flow upto 439 m upstream length and thereafter the flow will be pressurized.
Type of steel liner	IS:2002, Grade-II
Thickness of steel liner	8 mm

M. ENERGY DISSIPATION TANK

Size	6.00 m (L) x 3.00 m (W) x 4.0 m (H)
Invert level and Top Level	El ±1771.45 m & El ±1771.45 m

N. ESCAPE CHANNEL

Size	3.0 m (W) x 1.0 m (H)
Length	19 m
Slope	1 : 20

O. POWER HOUSE

Type	Surface Power House
Installed Capacity	5.00 MW (2 x 2.50 MW)
Size of Power House	29 m (L) x 20 m (W) x 15.90 m (H)
Gross Head	198.50 m
Net Head	196.00 m
C/L of Turbine jet	El ± 1769.35 m
Powerhouse Crane	32/8 Tones

Turbines

• Type	Horizontal Shaft Pelton Turbine
• Number of units	Two
• Rated Output	2500 KW each

For Cliff Einvest Pvt. Ltd.

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• Speed		428.60 rpm
Generator		
•	Type	Synchronous Generator
•	Rated Output	2 x 2.50 MW
•	Power Factor	0.85 lag
•	Speed	428.60 rpm
•	Voltage	6.6 kv

P Switchyard

Type	Surface Switchyard
Area	30 m x 15 m

Q Tailrace Channel

Type	RCC Rectangular
Number	Two
Size	14.00 m x 2.00 m x 1.40 m
Tail Water level	1766.15 m

18/11/2019

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

For Cliff Finvest Pvt. Ltd.

Authorised Signatory

ANNEXURE-III

Thaltu khorh-I (5.00 MW) in District Kullu of Himachal Pradesh of "M/s Cliff Finvest (P) Ltd., 1-41, DLF Industrial Area, Phase-I, Faridabad-121003"

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.

18/11/2019

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

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