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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 Karot Nain SHP(1.00MW) on Nain khad a tributary of Luni khad in Beas basin, Distt. Kangra, Himachal Pradesh allotted to " M/s Aryan Hydel Pvt. Ltd., 17/3330, Old Ranjeet Nagar, New Delhi-110008" at an estimated cost of Rs. 729.00 lac (Rupees seven hundred twenty nine lac) only including Interest During Construction(IDC), Escalation, Financial Charges(FC) and LADC @ 1.00% of total project cost with the following stipulations:

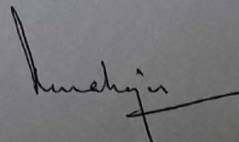
- i.i) The completion cost shall not exceed the above cost except on account of the following:
 - a) Interest During Construction(IDC) and Financial Charges(FC) shall be as per actuals but not exceeding the amount as indicated at Annex-I, unless revised by DOE, GoHP while according concurrence under Section-8 of Indian Electricity Act 2003 after review of the financial package.
 - b) Change in rates of Indian taxes and duties such as Excise Duty, Sales Tax/VAT, Custom Duty and levy of any other taxes/duties subsequent to issue of Techno Economic Clearance.
 - c) Change in Indian law resulting in change in the cost.
 - ii) 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-III.
2. 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) 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 Aryan Hydel Pvt. Ltd., 17/3330, Old Ranjeet Nagar, New Delhi-110008".
 - vii) No additional cost shall be allowed due to Resettlement & Rehabilitation (R & R) Plan.
 - viii) Normal operation life of the hydro power plant shall be as per provisions of CWC/CEA guidelines or CERC/HPERC regulations.
 - ix) The statutory and administrative clearances as per Annex-II shall be obtained before execution/ implementation of the project.
 - ix) 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.
 - x) The cost of providing and/or strengthening/additions etc. of the system at and beyond



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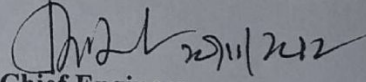
the Interconnecting sub-station which may also include the cost of replacement of switchgear/ protection and provision of shunt capacitors, strengthening of bus bars, apart from other works required at injection voltage level and other one or more successively higher voltages, civil works relocation 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 HPSEBL as per the final decision of the competent authority.

- xi) Whereas the HPSEBL shall endeavor to provide the 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.
- xii) The powerhouse generating equipment as well as other electrical equipment to be provided by the developer 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.
- xiii) O&M charges for maintenance of inter connection facilities at the interconnection sub-station shall be paid by the IPP to HPSEBL throughout the period, the IPP runs the project and the same shall be reviewed at the beginning of every financial year.
- xiv) For evacuation of power the IPP shall interface this project with 33 kV switchyard of Binwa Power House at 33 kV level in joint mode with Banu SHP (5 MW). The cost for the equipment required for evacuation of joint power of Karot Nain SHP and Banu SHP, one number terminal bay and the cost of cutting the hill adjoining to the 33 kV yard of Binwa Power House due to space constraint shall be shared by the developers of these projects on proportionate basis.
- xv) 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.
- xvi) 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.
- xvii) 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 SE(SLDC), HP Load Despatch Society, Totu, Shimla from compatibility point of view with existing SCADA system.
- xviii) The conditions on these lines shall have to be suitably included by the developer in the PPA etc. apart from other standard conditions.
- xix) The observations of DOE, GoHP and replies thereof shall form an integral part of the DPR.
- xx) Minimum 15% release of water immediately downstream of diversion structure shall be ensured all the times including lean season as per Power Policy of HP Govt., 2006 and subsequent amendments thereof. The necessary monitoring equipment as prescribed by the Pollution Control Board shall be installed by the IPP during execution of the project.



- xxi) LADC/LADF amount and activities shall be implemented as per Power policy of HP Govt., 2006 and subsequent amendments thereof.
- xxii) 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.
- xxiii) The TEC is based on the reports and data furnished by the IPP in the DPR and 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 which shall be ensured by the project authority/IPP.
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 Project Promoters/Project Authorities shall give free accessibility to the officers and staff of DOE, GoHP 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.
 7. In case the time gap between the Techno-Economic Clearance of the scheme and actual start of work on the project is three years or more, a fresh Techno-Economic Clearance 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.

BY ORDER OF THE GoHP

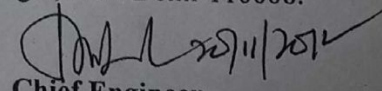

 Chief Engineer,
 Directorate of Energy, GoHP,
 New Shimla-171009(HP).

No. DOE/CE(TEC)/TEC-Karot Nain /2012- 5912-20

Dated: 20.11.2012

Copy for information and necessary action 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. General Manager(C&D), HPPTCL, Borowalia House, Khalini, Shimla-171002.
6. Chief Engineer (SP), HPSEB Ltd, Vidyut Bhawan, 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 Aryan Hydel Pvt. Ltd., 17/3330, Old Ranjeet Nagar, New Delhi-110008.


 Chief Engineer,
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ANNEXURE-I

Karot Nain SHP (1.00MW) in District Kangra of Himachal Pradesh allotted to "M/S Aryan Hydel Pvt. Ltd., 17/3330, Old Ranjeet Nagar, New Delhi-110008".

ABSTRACT OF COST ESTIMATE

Sr. No.	Description of works	Amount (In Rs lac)	
(a)			
1.	Civil works i/c preliminary Expenses	365.71	Price Level June, 2011
2.	Electro Mechanical works	229.77	
3.	Transmission works	48.30	
	Sub Total (a)	643.78	
(b)			
1.	Escalation	22.39	
2.	Interest During Construction(IDC)	50.42	
3.	Financial Charges (FC)	5.27	
	Sub Total (b)	78.08	
	Total (a+b)	721.86	
(c)	LADC @1.00 % of (a+b)	7.22	
	Grand Total (a+b+c)	729.08	
		Say Rs. 729.00 lac	

(Rupees seven hundred twenty nine lac only)

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27/11/2012
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Directorate of Energy, GoHP,
New Shimla-171009(HP).

ANNEXURE-II

Karot Nain SHP(1.00MW) in District Kangra of Himachal Pradesh allotted to "M/S Aryan Hydel Pvt. Ltd., 17/3330, Old Ranjeet Nagar, New Delhi-110008".

LIST OF STATUTORY AND ADMINISTRATIVE CLEARANCES REQUIRED

Sr.No.	ITEM	AGENCY	REMARKS
1.	WATER ABAILABILITY	1. State Govt. 2. CWC	Interaction between State Govt. Deptt. & CWC required. Relevant Irrigation Act of the State & Central Water Commission.
2.	SEB CLEARANCE	1. SEB. 2. State Govt.	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 Pollution) Act, 1981.
4	FOREST CLEARANCE	1. State Govt 2. Min.of E&F G.O.I.	Coordination with State Forest Deptt./ Min. of Environment & Forest (MOE&F) regarding Forest (Conserva-tion) Act, 1980.
5	ENVIRONMENT & FOREST CLEARANCE	1. State Govt 2. Min.of E&F G.O.I.	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. Min.of E&F G.O.I.	
8.	EQUIPMENT PROCUREMENT	DGTD, CCI& E	Import & Export Acts.

[Signature]
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SALIENT FEATURES**I LOCATION**

State	Himachal Pradesh
District	Kangra
Tehsil	Baijnath
Proposal	Weir site on Nain khad khad at EL±1480.00 m and power house on Left bank of khad at EL+1392.00 m.
Access Road	130 km from pathankot on Pathankot-Mandi NH and 14 km from Baijnath.
Rail	BG - Pathankot 130 km.
Airport	Pathankot(Pb.), Gagal, Kangra(HP)
Geographical co-ordinates of catchment	
• Latitude	32° - 06' - 30" N to 32° - 08' - 00" N
• Longitude	76° - 36' - 30" E to 76° - 37' - 30" E
SOI Toposheet	52 D/12

II HYDROLOGY

Name of stream	Nain khad
Tributary of/Basin	Luni khad / Beas basin
Catchment area	15.00 sq km
Design Discharge	1.60 cumecs
Design Flood Discharge	Weir site 83.00 cumecs Power house site 91.00 cumecs
HFL at PH site	EL ± 1391.00 m

III PROJECT COMPONENTS**A DIVERSION WEIR**

Type/shape	Trench type weir/Trapezoidal
River bed level	EL ± 1480.00 m
Size	10.00 m (L) x 2.00 m(W)
Depth	Varying from 1.30 m to 2.30 m
Slope of trash rack	1 in 15
Design discharge	3.25 cumecs i/c flushing and overloading
Intake chamber size	3.00 m x 3.00 m

B WATER CONDUCTOR SYSTEM**a) FEEDER CHANNEL(Fron Intake to Desilting tank)**

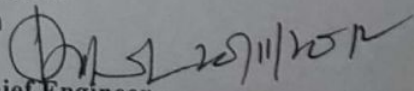
Type	Covered R.C.C. Channel
Size	1.50 m x 1.50 m
Length	± 30.00 m
Design Discharge	2.60 cumecs i/c flushing and overloading

b) DESILTING TANK

Type	Conventional hopper type
Size	40.00 m x 3.50 m x 3.00 m
Design discharge	2.60 cumecs i/c flushing and overloading
Particle size to be excluded	0.20 mm and above
Flushing pipe	600 mm dia.

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c)	POWER CHANNEL(From Desilting tank to Forebay)	
	Type	Covered R.C.C. Channel
	Size	1.50 m x 1.50 m
	Length	±540.00 m
	Design Discharge	1.60 cumecs + overloading
C	FOREBAY	
	Type	Surface
	Size	40.00 m x 3.50 m x 6.10 m
	Storage Capacity	384.00 cum
	Peaking time	4.00 min.
	Maxm Water Level	EL ± 1476.50 m
	Full Supply Level(FSL)	EL ± 1476.00 m
	Minm. Draw Down Level	EL ± 1473.50 m
	C/L of penstock entry	EL ± 1472.35 m
D	PENSTOCK	
	Type	Circular, surface steel penstock
	Number/Size of main penstock	One, 700 mm dia.
	Plate thickness	Varying between 8 mm to 16 mm,
	Length	145.00 m
	Velocity	4.00 m/sec.
	Design Discharge	1.60 cumecs
	Number of branches	Two
	Size of branch penstock	495 mm dia. each
	Length of branch penstock	12.00 m each
E	POWER HOUSE	
	Type	Surface
	Size	18.00 m x 7.00 m x 9.00 m
	Installed Capacity	1.00 MW (2 units of 500 KW each)
	Gross Head	± 84.00 m
	Net head	± 76.00 m
	Center line of machine	EL ± 1392.00 m
	Turbine(s)	
	• Type	Horizontal axis Francis
	• Number	Two
	• Rated capacity	500.00 kW each
	• Turbine Speed	1000 rpm
	Generator(s)	
	• Type	Horizontal axis synchronous
	• Number	Two
	• Rated output	500 KW each
	• Rated frequency	50 Hz
	• Power factor	0.9 lag
	• Rated voltage	3.3 kV
	• Continuous overload capacity	15 %
F	TAIL RACE	
	Type	Rectangular channel
	Size	1.50 m x 1.50 m
	Length	± 24.00 m


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