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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), Govt. of Himachal Pradesh, is pleased to accord the concurrence to Barod SHP (1.00MW) on Barod Nalla, a tributary of Beas river, Distt Kullu, Himachal Pradesh, allotted to **"M/s Dani Maha Mai Hydro Projects, Barod at Alu Ground, PO Kalath, Distt Kullu (HP)-175131"**, at an estimate cost of Rs 874.00 (Rupees Eight hundred seventy four lac) only including Interest During Construction(IDC), Escalation, Financial Charges(FC) and LADC @ 1.00 % of total project cost with the following stipulations:

- 1 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 Concurrence.
  - 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 Concurrence is subject to the fulfilment of the following conditions:
  - i) The Completed cost/Concurrence 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 the Independent Power Producer (IPP) i.e. **"M/s Dani Maha Mai Hydro Projects, Barod at Alu Ground, PO Kalath, Distt Kullu (HP)-175131"**
  - 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 CERC/HPERC regulations.

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- x) The statutory and administrative clearances as per Annex-II shall be obtained before execution/ implementation of the project.
- xi) 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/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 IPP on this account shall be paid by the IPP to HPSEBL/HPPTCL as per the final decision of the competent authority.
- xiii) Whereas the HPSEBL/HPPTCL shall endeavour 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.
- xiv) 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.
- 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 by constructing 2 Kms long 33 kV line including 33 kV bay and terminal equipment with 33kV sub station at Prini subject to following conditions:
  - a) The space and right of way shall have to be arranged by the IPP at his own risk and cost.
  - b) The interconnection facility shall be allowed after the completion of augmentation of conductor of Bajaura-Naggar S/C line and completion of work of interlinking of 33/11 kV sub-station Prini with A.D. Hydro.
- 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 SE(SLDC), HP Load Despatch Society, Totu, Shimla from compatibility point of view with existing SCADA system.

- xx) The conditions on these lines shall have to be suitably included by the developer in the PPA etc. apart from other standard conditions.
- xxi) The observations of DoE, GoHP on the DPR 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 Power Policy of HP Govt., 2006 and subsequent amendments thereof. The necessary monitoring equipment as per recommendations of the Pollution Control Board shall be installed by the IPP during execution of the project.
- xxiii) LADC/LADF amount and activities shall be implemented as per Power policy of HP Govt., 2006 and subsequent amendments thereof.
- xxiv) 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.
- xxv) The concurrence 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 broad technical aspects of the project proposal in the DPR have been scrutinized and it does not cover the examination of the detailed designs and 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 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 Concurrence to the scheme by DoE, GoHP and actual start of work by the Project Developer is three years or more, a fresh concurrence of DoE, GoHP shall be obtained by the Developer 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 GoHP.

BY ORDER OF THE GoHP

*[Signature]* 23/11/15  
Chief Engineer,  
Directorate of Energy, GoHP,  
New Shimla-171009(HP).

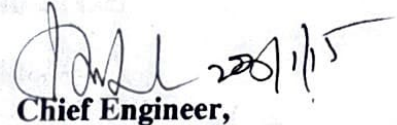
Dated: 23/01/2015 -

No. DoE/CE/TEC-Barod/2015- 9943-51  
Copy for information and necessary action to the:

1. Principal Secretary (MPP & Power) to H.P. Govt., Shimla-171002(HP).

*[Signature]*  
Dani Mahā May Hydel Project  
ALOGROUND, MANALI  
DISTT KULLU (H.P.)

2. Principal Secretary (NES) to H.P. Govt., Shimla-171002(HP).
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(HP).
5. General Manager(C&D), HPPTCL, Borowalia House, Khalini, Shimla-171002(HP).
6. Chief Engineer (SO&P), HPSEB Ltd, Vidyut Bhawan, Shimla-171004(HP).
7. Chief Engineer (Commercial), HPSEB Ltd, Vidyut Bhawan, Shimla -171004(HP).
8. Chief Executive Officer, Himurja, 8A-SDA Complex, Kasumpti, Shimla-171009(HP).
- ✓ 9. M/s Dani Maha Mai Hydro Projects , Barod at Alu Ground, PO Kalath, Distt Kullu (HP)-175131

 22/1/15

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

  
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**Annexure-I**

**Barod SHP (1.00 MW) in District Kullu of Himachal Pradesh of "M/s Dani Maha Mai Hydro Projects , Barod at Alu Ground, PO Kalath, Distt Kullu (HP)-175131"**

**ABSTRACT OF COST ESTIMATE**

The abstract of the cost estimate is as under: -

a)	(Rs in lac)	
1. Civil works i/c preliminary Expenses	428.96	} Price Level August, 2013
2. Electro Mechanical works	290.30	
3. Transmission works	59.00	
<b>Sub Total (a)</b>	<b>778.26</b>	
b)		
1. Escalation	18.52	
2. Interest During Construction(IDC)	59.83	
3. Financial Charges (FC)	8.88	
<b>Sub Total (b)</b>	<b>87.23</b>	
<b>Total (a+b)</b>	<b>865.49</b>	
c) LADC @ 1.% of (a+b)	8.66	
<b>Grand Total (a+b+c)</b>	<b>874.15</b>	
Say Rs.	<b>874.00</b>	

**(Rupees Eight hundred seventy four lac) only**

*[Signature]* 28/1/15  
**Chief Engineer,  
 Directorate of Energy, GoHP,  
 New Shimla-171009(HP).**

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**Annexure-II**

**Barod SHP (1.00 MW) in District Kullu of Himachal Pradesh of "M/s Dani Maha Mai Hydro Projects , Barod at Alu Ground, PO Kalath, Distt Kullu (HP)-175131"**

Sr. No.	ITEM	AGENCY	REMARKS
1.	WATER AVAILABILITY	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.	Section 44, E (S) Act, 1948 repealed by 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. Min. & E&F GOI	Coordination with State Forest Deptt./ Min. of Environ. & Forest (MOE&F) regarding Forest (Conservation) Act, 1980.
5.	ENVIRONMENT	1. State Govt. 2. Min. of E&F GOI	As per item (3) & (4) & 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 GOI	
8.	EQUIPMENT PROCUREMENT	DGTD, CCI&E	Import & Export Acts.

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Directorate of Energy, GoHP,  
New Shimla-171009(HP)  
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**Annexure-III**

**Barod SHP (1.00 MW) in District Kullu of Himachal Pradesh of "M/s Dani Maha Mai Hydro Projects, Barod at Alu Ground, PO Kalath, Distt Kullu (HP)-175131"**

**SALIENT FEATURE****I LOCATION**

State	:	Himachal Pradesh
District	:	Kullu
Tehsil	:	Manali
River/Stream	:	Barod, a tributary of beas river
Vicinity	:	Alu Ground
Proposal	:	Diversion weir is proposed on Barod nallah at an EL $\pm$ 2155.00 m and power house on left bank of Barod nallah at an El $\pm$ 1872.00 m.
Accessibility	:	By Road 64 Km from Kullu District Head quarter
Railway Line	:	Broad Gauge line at Kirtpur
Airport	:	Bhunter Air port
<b>Geographic Coordinates</b>		<b>Diversion Weir</b> <b>Power House</b>
Latitude		32°-12'-15"      32°- 12'-20"
Longitude		77°- 10'- 50"      77°- 11'- 35"
SOI Topo sheet reference		52H/4

**II HYDROLOGY**

Name of stream/nallah	:	Barod Nallah
Tributary of/Basin	:	Beas river/Beas Basin
Catchment area upto diversion	:	4.90 sq. km
Design Discharge	:	0.44 cumecs
Design Flood Discharge	:	10.57 cumecs
HFL at Power house site	:	EL $\pm$ 1869.60 m

**III PROJECT COMPONENTS****A. DIVERSION WEIR**

Type	:	Trench type weir
Size	:	10.00 m long, 3.00 m wide
Depth	:	Varies from 0.25 m depth to 2.50 m.
Trash Rack/River bed Level	:	EL $\pm$ 2155.00 m
Design discharge	:	0.59 cumecs i/c flushing and O/L dis.
Shingle flushing discharge	:	0.59 cumecs
Shingle flushing system	:	810 mm dia. MS pipe
<b>Intake tank</b>		
Size	:	3.00 m x 1.80 m x 1.50 m
Type / Shape:	:	Rectangular /Head regulator RCC well type
Maximum discharge capacity	:	0.59 cumecs

**B. WATER CONDUCTOR SYSTEM (From Intake to Desilting tank)**

Type /Shape	:	RCC Channel
Size	:	0.65 m x 0.75 m with 0.30 m free board



Length : 101.00 m  
Slope : 1:750  
Velocity : 2.04 m/sec

**C. DESILTING TANK CUM FOREBAY TANK**

**a) DESILTING TANK**

Type : Surfaced Hopper type  
Size : 20.00 m x 5.00m x 0.95 m i/c 0.50 m freeboard  
Particle size to be removed : All particles down to 0.25 mm size  
Flushing pipe : 300 mm dia., 1 No.

**b) FOREBAY TANK**

Type : RCC Surface tank  
Size of forebay : 6.00 m x 5.00 m x 2.50 m i/c 0.50 m freeboard  
Storage capacity : 60.00 cum  
Storage time : 2.00 min.  
Full Supply Level(FSL) : EL  $\pm$  2153.65 m  
MDDL : EL  $\pm$  2152.27 m  
Penstock entry level : EL  $\pm$  2152.02 m  
Spillway : 6.00 m x 1.00 m

**D. PENSTOCK**

Type : Surface penstock  
Number/size of main penstock : One/450 mm dia.  
Thickness : Varies from 8.00 mm to 10.00 mm  
Length of main penstock : 405.00 m  
Material of steel liner : ISI-2062 steel  
Velocity of flow : 3.11 m/sec  
Number of branches : Two  
Size of branch penstock : 350 mm dia. each  
Length of branch penstocks : 10.00 m each

**E. POWER HOUSE**

Type/Location : Surface on left bank of Barod nallah  
Size : 20.00 m x 15.00 m  
Installed capacity : 1.00 MW (2 units of 500 KW each)  
Gross Head : 283.65 m  
Net head : 274.64 m  
C/L of turbine jet : EL  $\pm$  1872.00 m  
Power house crane : 15.00 T, Semi EOT

**Turbine(s)**

- Type : Horizontal shaft, Pelton
- Number : Two
- Rated Capacity : 500 kW each
- Speed : 750 rpm

**Generator(s)**

- Type : Vertical shaft, Synchronous
- Number : Two
- Output : 500 kW each
- Speed : 750 rpm



- Frequency : 50 Hz
- Power factor : 0.9 lag
- Rated Voltage : 3.3 kV
- Generator excitation : AVR Brushless type
- Overloading capacity : 15 /5 ton

**F. TAIL RACE**

- Type : RCC Box Type channel
- Length : 25.00 m
- Size : 0.75 m x 0.8 m with 0.28 m Free board
- Number : 1 No.
- Bed slope : 1 in 250 m

*[Signature]*  
**Chief Engineer,**  
**Directorate of Energy, GoHP,**  
**New Shimla-171009(HP).**

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