**SUMMARY**

Proposed Neri small hydroelectric power project is a run-of-river type project of Neri stream, a tributary of Beas River in district Mandi of Himachal Pradesh about 5 km from nearby town Jogindernagar. Jogindernagar is well connected to national Highway and a narrow gauge railway track.

This scheme envisages diversion of Neri Stream by constructing a diversion weir at El. + 1178 m above m.s.l near village siyuri. The diverted discharge will be carried through rectangular R.C.C. channel to a surface desilting tank which will extract all silt particles above 0.2mm size. The silt free water will be carried by a rectangular R.C.C. channel to forebay tank. The design discharge will be taken to power house situated near village majharoo by a surface penstock to feed three units of horizontal axis Francis turbines of 2x2.3 +0.4 MW capacity.

The proposed Neri small hydroelectric power project is proposed on the discharge of Shanan hydroelectric power project (110MW). 15% of total discharge available on tail race of Shanan hydroelectric power project has been taken for this project, which is the residual 15% discharge of the total discharge taken for Bassi hydroelectric power project (60MW). This project is feasible only on the condition that 15% discharge will be left from the Bassi hydroelectric power project diversion as directed by the department of MPP & Power and Govt. of Himachal Pradesh by letter no. MPP-F (1)-2/2005-V (clause ensuring minimum flow) dated 18/3/2009. This project does not interfere with any other hydroelectric project and other water schemes.

Development of Neri small hydroelectric power project will contribute to electrification of nearby un-electrified villages and better power supply to already electrified villages and towns. This leads to improve living and education standards of the area. Mini scale industries can be established and modern techniques can be applied for irrigation & agricultural production by getting assured power supply. There is a vast tourism scope in the area which can be improved further. This environment friendly project will help in developing a balanced eco environment and rise economic activities in the area.

**SALIENT FEATURES**

|  |  |  |  |  |  |  |  |  |  |
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| Name of the project | | | | | | Neri small hydroelectric power project | | | |
| SNo.1 | Location | | | | | | | | |
| A | | State | | | Himachal Pradesh | | | |
| B | | District | | | Mandi | | | |
| C | | Village/Town | | | Near Jogindernagar | | | |
| D | | Access from State head Quarter | | | Shimla, 215km | | | |
| E | | Access from district head Quarter | | | Mandi, 61km | | | |
| F | | Railway Line | | | Jogindernagar, 5 km (Narrow gauge) and Pathankot 168km (broad gauge) | | | |
| G | | Airport | | | Gaggal (Kangra) 65 km | | | |
| SNo.2 | Geographical Coordinates of the Project | | | | | | | | |
| Catchment Latitude | | | | 310-58’-24” | | | 320-02’-12” | |
| Catchment Longitude | | | | 760-47’-57” | | | 760-49’-54” | |
| At Weir | | | | 760-47-‘57” | | | 310-59’-44” | |
| At Power House | | | | 760-47’-48” | | | 310-58’-39” | |
| Reference of Toposheet | | | | 53 A/13 (Survey of India Maps) | | | | |
| SNo.3 | Type | | | | Run of the river scheme | | | | |
| SNo.4 | River Catchments | | | | | | | | |
| a | | | Total Catchments area | | | 10 Sq. Km. | |
| b | | | Stream | | | Neri Stream | |
| c | | | Tributary | | | Tributary of Beas River. | |
| d | | | Type of catchment | | | Snow fed | |
| e | | | Design Discharge | | | 5 cumecs | |
| SNo.5 | Design flood | | | | | | | | |
| a | | | Design Flood | | | 35.37 cumecs | |
| b | | | Maximum Flood discharge | | | 113.07 cumecs | |
| SNo.6 | Scheme | | | | | | | | |
| A | | | Diversion Structure | | | | | |
|  | 1 | | Type of Structure | | | Trench Type Weir | | |
| 2 | | Length | | | 20 mtrs | | |
| 3 | | Elevation | | | 1178 m | | |
| 4 | | Material | | | R.C.C. | | |
| B | | | Intake | | | | | |
|  | 1 | | Type | | | well type | | |
|  | 2 | | Size | | | 3 x 3 x 4 m | | |
| 3 | | Shape | | | Rectangular | | |
|  | 4 | | Material | | | R.C.C. | | |
| C | | | Water Conductor System | | | | | |
|  | 1 | | Reduced Level  Intake to Desilting Tank | | | RD=0 to RD=62.01  1:500 slope RCC Channel | | |
| 2 | | Desiltng Tank | | | RD=62.01 to RD=117.01 | | |
| 3 | | Desilting to forebay | | | RD=117.01 to RD=901.8  In 1:400 Slope | | |
| 4 | | Total Length of Channel | | | 784.79m | | |
| 5 | | Type | | | Rectangular Channel (Free Flow) 1.7m x 1.5m (effective) | | |
|  | 6 | | Material | | | R.C.C. | | |
| D | | | Desilting Tank | | | | | |
|  | 1 | | Location | | | RD=114.52 | | |
|  | 2 | | Size (L X W X D) | | | 55m X 8m X 6m | | |
|  | 3 | | Particle size to be removed | | | 0.20mm | | |
|  | 4 | | Material | | | R.C.C. | | |
| E | | | Forebay Tank | | | | | |
|  | 1 | | Location | | | RD 901.8m | | |
| 2 | | Size (L X W X D) | | | 45m X 2.9m X 3.2m | | |
| 3 | | Normal Water Level | | | Top=1175.99 | | |
| 4 | | Spillway length | | | 20 mtrs to nearest nallah | | |
| 5. | | Spillway Material | | | R.C.C. (Channel) | | |
| F | | | Penstock | | | | | |
|  | 1 | | Penstock Material | | | M.S. Plate | | |
|  | 2 | | Dia | | | 1350 mm internal Dia | | |
| 3 | | Number | | | One Penstock | | |
|  | 4 | | Length | | | 450 m | | |
|  | 5 | | Plate thickness | | | 8mm to 16 mm | | |
|  | 6 | | After bifurcation | | |  | | |
|  | 7 | | Dia | | | 900 mm internal Dia | | |
|  | 8 | | Plate thickness | | | 14 mm | | |
| G | | | Power House | | | | | |
|  | 1 | | Type | | | Surface Power House | | |
| 2 | | Plinth elevation | | | 1050m | | |
| 3 | | Size | | | 25m x 15m | | |
| 4 | | Gross Head | | | 128m | | |
| 5 | | Net head | | | 119.53m | | |
| H | | | Turbines | | | | | |
|  | 1 | | Type | | | Horizontal Shaft Francis turbine | | |
| 2 | | Number | | | 2 | | |
| 3 | | Installation Capacity | | | 2500Kw each unit | | |
| I | | | Generators | | | | | |
|  | 1 | | Type | | | Synchronous | | |
| 2 | | Number | | | 2 | | |
| 3 | | Output | | | 2500Kw each unit | | |
| 4 | | Excitation Systems | | | (SESR) Self Excited Self Regulated Brushless | | |
| J | | | Tail Race | | | | | |
|  | 1 | | Material | | | R.C.C. | | |
|  | 2 | | Shape | | | Rectangular | | |
| 3 | | Size | | | 40m x 2.5m x 2.5m | | |
| 4 | | Number | | | 1 No. | | |
| 5 | | Bed slope | | | 1 in 500m | | |
| SNo.7 | Energy Generation (MU) | | | | | | | | |
|  |  | 1 | | Annual Energy Generation | | | 22.21 MU | | |
|  |  |  | |  | | |  | | |
| SNo.8 | Project Cost (in lacs) | | | | | | | | |
|  | 1 | | Civil Works | | | 2177.39 Lacs | | |
|  |  | 2 | | Electromechanical works | | | 943.66 Lacs | | |
|  |  | 3 | | Transmission Works | | | 85 Lacs | | |
|  |  | 4 | | Total Estimated Cost | | | 3670.27 Lacs | | |
|  |  |  | |  | | |  | | |
| SNo.9 | Generation Cost | | | | | | | | |
|  |  | 1 | | Generation Cost (Rs./unit) | | | 2.61 | | |
|  |  |  | |  | | |  | | |