

**STATUS OF SURVEY & INVESTIGATION OF HE SCHEMES
(PART I)**

| NAME OF SCHEME: | | Mawblei H.E Project - Storage, 2x38 MW |
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| GENERAL INFORMATION | | |
| 1 | State | Meghalaya |
| 2 | Location - | Damsite- West Khasi Hills District, near Nongmawlong village |
| (a) | Latitude of Dam | 25° 31' 36.96" N |
| (b) | Longitude of Dam | 91° 02' 14.40" E |
| General layout /Index map may please be furnished | | |
| 3 | District | West Khasi Hills District |
| 4 | Nearest G&D site | Damsite |
| 5 | Catchment Area near G&D site | 218.00 Sq.Km |
| 6 | Status of availability of G&D site | Established since May 2006. |
| 7 | Basin/River | Wahblei |
| 8 | Catchment Area (Sq.km) | 218.00 Sq.Km |
| 9 | Type of Scheme (ROR/Storage/PSS) | Storage scheme |
| 10 | Firm Power (MW) | 15.75 MW |
| 11 | Annual Energy Benefits (GWh) | 277.08 MU in 90 % Dependable year |
| 12 | Inter State Aspects | Does not arise |
| 13 | International Aspects | NIL |
| 14 | Defense aspects | No defense installations |
| 15 | R & R Aspects | Does not arise |
| 16 | Forests area involved | Detail Investigation to be taken up |
| 17 | Geological problems anticipated, if any | Sub-surface investigation in progress. |
| 18 | Accessibility-Nearest Rail head/ | Nearest Rail Head: Guwahati - 275 Km. |
| 19 | Road and distance from the project. | Nearest Road: Damsite and Power house;10 Km and 19Km from Mawkhap and Umdang villages respectively on the Shillong-Tura Highway. |
| 20 | Upstream scheme, if any - | Nil |
| 21 | Downstream scheme, if any. - | Kynshi Stage -II HEP. |
| HYDROLOGY | | |
| 22 | a) Catchment area at dam site | 218.00 Sq Km |
| | b) Average annual runoff | 543.33 M Cum |
| | c) 90% dependable annual runoff | 486.96 M Cum |
| | d) 50% dependable annual runoff | 537.02 M Cum |
| PROJECT FEATURES | | |
| RESERVOIR | | |
| 23 | a) Full Reservoir Level (FRL) | El 762.00 m |
| | b) Maximum Water Level (MWL) | El 762.00 m |
| | c) Minimum Drawdown Level (MDDL) | El 750.80 m |
| | d) Gross Storage at FRL | 34.23 M Cum |
| | e) Live Storage | 20.61 M Cum |
| | f) Area under submergence at FRL | 2.20 Sq Km |
| | g) Distance of the upstream most FRL from Dam site | |
| | h) Aerial distance | 4.31 Km |
| | i) Distance along the river | 5.98 Km |
| DIVERSION TUNNEL | | |
| 24 | a) Number | 1 No. |
| | b) Size | 2.40 m Φ |
| | c) Length | 250.00 m |
| | d) Diversion discharge (assumed) | 71.51 Cumecs |
| Dam | | |
| 25 | a) Type | Concrete gravity |
| | b) Top elevation of dam - | EL. 764.00 m |
| | c) Height of dam above the river bed level | 36.37 m |
| | d) Length of dam at top | 253.00 m (upto NSL) |
| | e) River bed level - | El. 727.63 m |
| SPILLWAY | | |
| 26 | a) Design flood (PMF) | 3253.59 Cumecs |
| | b) Type | Ogee |
| | c) Crest Elevation | El 743.80 m |
| | d) Number of bays | 3 |
| | e) Size of radial gates | 18.20 m x 8.60 m |
| | f) Length of Spillway | 82.60 m |
| | g) Energy dissipation | Ski-Jump Bucket |
| INTAKE | | |
| 27 | a) Invert level | El 744.00 m |
| | b) Number | 1 |
| | c) Fixed wheel vertical lift gate | 3.00 m x 3.40 m |
| | d) Trash rack | 4 of 12 m x 4.70 m |
| Head Race Tunnel | | |

| | | |
|----------------------|---|---------------------------------------|
| 28 | a) Type | Modified Horse Shoe |
| | b) Length | 3.68 km |
| | c) Diameter | 3.00 m Φ |
| | d) Design Discharge | 23.13 Cumecs |
| 29 | Pressure Shaft | |
| | a)Number | 1(Bifurcated into 2 of 1.6 m Φ) |
| | b) Length | 2915.00m |
| 30 | SURGE SHAFT | |
| | a) Type | Restricted Orifice |
| | b) Diameter | 10.00 m Φ |
| | e) Height | 40 m |
| | f) Diameter of orifice | 2.50 m Φ |
| 31 | POWER HOUSE | |
| | a)Type | Surface |
| | b)Installed capacity | 76 MW |
| | c)Number of Units | 2 of 38 MW |
| | d)Type of turbine | Francis turbine |
| | e)C.L of turbine | El 379.00 m |
| | f)Rated Head | 367.34 m |
| g)Transformer Cavern | 55 m x 12 m x 43.30 m | |
| 32 | CHANNEL | |
| | a)Size | 7.50 m x 2.50 m |
| | b)Length | 60.00 m |
| 33 | SWITCHYARD | |
| | Size Gas Insulated Switchyard (GIS) on the floor above the transformation/s in Transformer cavern | |
| 34 | POWER GENERATION | |
| | a)Installed Capacity | 76 MW (2 x 38 MW) |
| | b)Annual Energy Generation in 90% dependable Year | 277.08 MU |
| | c)Energy 50% dependable year | 322.20 MU |

Please give brief details about the HE Scheme and enclose a layout map.

Brief details on Mawblei H.E.Project:

Mawblei H.E.Project, proposed to be located in Mawshynrut C & R D Block, West Khasi Hills District of Meghalaya, is a storage type development which envisages construction of a concrete gravity dam of about El. 36.37m high on river Wah Blei, a tributary of river Kynshi, where the river bed is about El. 727.63 m to provide a live storage of 20.61 M Cum between the FRL of 762.00m and the MDDL of El 750.80 m, water from the reservoir are proposed to be diverted to the Surface power house through a 3.68 m long modified horse shoe shaped head race tunnel of 3.00 m dia. and a 2.915 Km long pressure shaft of 2.25 m dia. bifurcating into 1.6 m dia. for power generation. The power house would have an installation of 2 units of 38 MW each operating under weighted average gross head of 385.3 m (Net Head=373.37 m). The project is proposed to provide annual design energy generation of 227.08MU in a 90% dependable year. The salient features given for Mawblei HEP are tentative.

The detailed Topographical Survey and Geological mapping along the Alternative -I and Alternative -II of the Proposed Water Conductor System (WCS) have been carried out and based on the features of the alternative-I, the Power Potential Study have also been prepared wherein the install capacity of the project is about 76 MW whereas the Geological Report along the Alternative -III of the WCS is in progress.

Signature)

Name:Shri. Q. Marbaniang

Designation:Executive Engineer (C)

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**STATUS OF SURVEY & INVESTIGATION OF HE SCHEMES
(PART- II)**

Quarter Ending September,2020

| | NAME OF SCHEME SURVEY & INVESTIGATION | Mawblei HE Project (2x38 MW) | |
|---|---|---|---------------------|
| 1 | Date of commencement of S&I | 2006-2007(Hydrological observation) | |
| 2 | Date of Sanction | NEC/IRGN/MEG/2K/5/408 Dt.23.01.2009 | |
| 3 | Likely date of completion of S& I | 2021 | |
| 4 | Likely date of completion of DPR | 2021 | |
| 5 | Estimated cost of S&I/DPR and Phasing of Expenditure | Rs. 472.00 Lakh | |
| | Revised Estimate Cost | Rs. 892.00 Lakh | |
| 6 | Agency of Investigation (in case of Pvt.Agency, Name, | Meghalaya Power Generation Corporation Limited. | |
| 7 | Details of Progress @ | Quantity Done | Quantity to be done |
| | | 80% | 20% |
| a | Tracer Path & Approaches | Trace Path completed | |

| | | |
|--|--|---|
| b | Roads | In Progress |
| c | Construction of Temp. Building | Completed |
| d | Purchase of Special T &P | To be taken up |
| e | Topographic Survey/Investigation | 100% |
| f | Const. Material (CA&FA) | In progress |
| g | Hydrological observations | Data collection since June 2006 |
| h | Meteorological | Data collected since June 2006 |
| i | Environmental Survey | 15% |
| j | Programme of works during the year | <p>Observation, compilation and computation of hydrometeorological data of the project are persistent activities.</p> <p>I. January - March, 2020 Taking cross section of discharge site, compliance to CWC for revision of hydrological study, compilation and computation of hydrometeorological data, making of drift on both banks of dam axis, power potential studies.</p> <p>II. April - June, 2020 In-situ tests in the drifts, Estimation of tentative quantity of construction material, Physical & Chemical Test of CA & FA, Drilling works along WCS and Power house, Road detailed estimate including drawing and reports, River survey for Dam break study and logging of core samples of WCS and power house.</p> <p>III. July - September, 2020 Petrographic test, water sample (silt sample) to be collected during high flood, laboratory test of cores sample of dam site, WCS and power house.</p> <p>IV. October - December, 2020 EIA & EMP Report, DPR preparation.</p> |
| k | Overall progress of works | 80% |
| 1 | Geological and foundation Investigation | In progress |
| 8 | @ In case it is not possible to give tentative quantity it should be given as percentage Financial Progress. | |
| 9 | Estimated cost of Survey & Investigation with price level year | |
| 10 | Capital Expenditure incurred upto September 2020 | Rs 248.46 Lakh |
| 11 | Budget estimate | |
| | Revised Estimate | |
| <u>BOTTLE NECKS, IF ANY</u> | | |
| <p>Limited working days (approx. 6(six) months in a year), Difficult Terrain and remoteness of the project area, Shortage of Manpower, irregular allocation/release of fund, Inaccuracy of toposheet covering the project, account to revision of project components result in delay of S&I works.</p> | | |

(Signature)

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