

## **ANNEXURE 11**

### **NYUKCHARONG CHU HYDRO ELECTRIC PROJECT (96MW)**

#### **PROJECT SUMMARY**

Government of India has launched the "50000MW Hydro- Electric Initiative" and accordingly the Government of Arunachal Pradesh has earmarked certain Hydro Electric Projects for allocation to private developers for the development of HydroPower in the state. **SEW Energy Ltd.**, (having its registered office at 6-3-871, Snehalatha, Green lands Road, Begumpet, Hyderabad, -500016), has identified **Nyukcharong Chu Hydro Electric Project (96MW)**, in Tawang District for development, on Build, Own, Operate and Transfer (BOOT) basis and entered in to a Memorandum of Agreement (MoA), with Government of Arunachal Pradesh on 21-2-2008. Copy enclosed as **Annexure 12**. The Executive Summary of the project is enclosed as **Annexure 12 A**.

As per the MOA, a Special Purpose Vehicle (SPV) for the Implementation of the project by name "**SEW NYUKCHARONG CHU POWER CORPORATION LTD**" has been incorporated and copy of Incorporation Certificate is enclosed as **Annexure 13**.

Required permission for conducting Survey & Investigations was issued by the Department of Environment & Forest, Government of Arunachal Pradesh, vide letter No: FOR.258/CONS/2009/4198-99 DT 22-3-2010. Copy enclosed as **Annexure 14**.

#### **Nyukcharong Chu Hydro Electric Project (96MW),**

Nyukcharong Chu H. E. Project is proposed to be developed as a run-of-the-river scheme on River Nyukcharong Chu, between elevations 2485 m and 2232 m, in Jang subdivision under Social Forestry Range Jang and Social Forestry Division Tawang in Tawang District. The project does not envisage major storage of water at the proposed location. The gross storage capacity is only 0.106 MCM at FRL of 2470m. The total catchment area up to diversion site is 2040 Sq.km.

#### **Project Location**

The Barrage is proposed at about 2.30 km upstream of the confluence of Mago Chu and Nyukcharong Chu (Latitude 27° 38' 21.30" N and Longitude 92° 00' 20.90" E) and the Power House is proposed near Marmang, about 0.2km upstream of the confluence. (Latitude 27° 37' 21.40" N, Longitude 92° 00' 41.20" E). The project is proposed in the limits of Rho and Jangda villages under Jang sub division in Tawang District. **The entire land on either side of the river is classified as Unclassified State Forest (USF).** Justification for proposing the project in the forest land is

enclosed as **Annexure 6**. Details of alternate sites considered and selection of present locations are explained in **Annexure 15** and the map showing the alternatives considered is enclosed as **Annexure 15A**

#### **Component Structures of the project**

A 22m high and 74.20m long barrage is proposed across Nyukcharong Chu and the water is proposed to be diverted through a concrete lined power tunnel of length 1271m and 4.8m diameter followed by surge shaft and then a single pressure shaft of 3.70m diameter and 211.70m long bifurcating near the power house in to two penstocks of diameter 3.00m and 2.20m having lengths 20.50m and 49m each. The 3m dia penstock again bifurcates in to two numbers of diameter 2.20m each with lengths 34.50m and 40.30m and leading to an underground power house of installed capacity **96 MW** to be located on the left bank of Nyukcharong Chu. The salient features of the project, is enclosed as **Annexure-16**. The project lay out map is enclosed as **Annexure 16A**.

#### **Power Potential**

The Project with an installed capacity **96 MW** is estimated to generate an annual energy of **466.12 GWh** in a 90% dependable year with a machine availability of 95%. The power generated from the project is proposed to be evacuated through Tawang II pooling station proposed to be constructed by PGCIL.

#### **Estimated Cost of the project**

The total estimated cost of the project is Rs.995.90Crores;including Rs.131.67 Crore towards escalation and 155.55 Crores for IDC based on July, 2013 price level. The levelised tariff comes to Rs. 4.66/kWh. The detailed Cost Benefit analysis is enclosed as **Annexure- 7**.

#### **Back ground of the Proposal**

The proposal for the Diversion of 36.83 ha of Forest Land required for Nyukcharong Chu HEP (96MW) , being developed by SEW Nyukcharong Chu Power Corporation Ltd., was uploaded in the web site with project Proposal No. **FP/AR/HYD/17229/2015**. But, the name of the User Agency was inadvertently considered as SEW Mago Chu Power Corporation Ltd. As per the MOA,

all the sanctions are to be obtained in the name of the Special purpose vehicle only i.e. SEW Nyukcharong Chu Power Corporation Ltd.

Further, due to the inclusion of the areas of the nallah crossings (within the plots), and small portions of adjoining areas etc., the area proposed to be diverted has been increased to **38.46 ha**, as against **36.83 ha** proposed earlier. In the circumstances, fresh proposal for diversion of forest land is being submitted in the name of the user agency, SEW NYUKCHARONG CHU POWER CORPORATION LTD. **There are no changes in the locations of component structures or locations of areas proposed for different purposes earlier.**

#### **Revised Land Requirement of the project.**

The requirement of land for various purposes/components of Nyukcharong Chu HEP is as follows;

##### **A. Surface Forest Land**

Land is required for proposed surface structures / components of the Project like Labour colony, Reservoir Submergence area, Head works, Intake, Desanding chambers, Facility areas, Quarry areas, Muck dump yards, Stack yards, Magazine, Colony areas, Approach roads, Portal of Silt Flushing Tunnel (SFT), Portals of Adits etc. The total requirement of surface forest land for the above purposes comes to **31.01 ha**.

##### **B. Notional Area for Underground Structures**

Notional Land is proposed for the proposed underground structures like Adits to various Underground structures, Feeder tunnels, Silt Flushing Tunnel, Head Race Tunnel, Power house, Pressure Shaft, Penstock, Main Access Tunnel, Tail Race Tunnel, etc. The total notional area required for the underground structures comes to **5.94 ha**. Thus the total bare minimum Forest land required for the project is as follows;

Surface area	31.01 ha
Notional area for underground structures	5.94ha
River	1.51ha
<b>Total</b>	<b>38.46ha</b>

The purpose wise breakup of total requirement of land is enclosed as **Annexure 2**. The map of the forest area required for diversion showing the boundary of the adjoining forest land, to a scale of **1:50,000**, is enclosed as **Annexure 4**. Also the map indicating the land identified for various purposes/ component structures is enclosed as **Annexure 5**.

### **Environmental Clearance**

Required clearance for the Preconstruction activities along with Terms of Reference (TOR) for preparation of EIA/EMP report was accorded by MoEF. Subsequently, the EIA/EMP report was prepared and public hearing conducted on 2-2-2015, by the State Pollution Control Board and the final EIA/EMP report was approved and conditional Environmental Clearance accorded by the MoEF on 3.3.2016. Copy of Environmental Clearance is enclosed as **Annexure 8**. Copies of the CAT Plan and Muck Disposal Plan as provided in the approved EIA/EMP Report are enclosed as **Annexure 10** and **Annexure 17** respectively. Further, NyukcharongChu H E Project has been recommended for implementation in the report of NEHU on the Cumulative Impact Assessment and Carrying Capacity Study of Tawang River Basin approved by MoEF&CC.

### **Employment likely to be generated.**

At present, most of the local population sustain on agriculture and allied activities. There are no major industries or other means of occupation in this area. The project will open a large number of job opportunities to the local population both during construction and operation phases.

As per the MoA, preference shall be given to the local people and the following criteria will be followed, subject to the conditions that the incumbents fulfilling the requirements of qualification for the positions.

- Managerial/professional post: 25%
- Ministerial/clerical post: 50%
- Skilled jobs: 25%
- Unskilled jobs: 75%

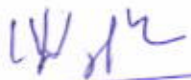
During the construction period of 42 months a total of about 52500 man days will be created, including staff and labour, at an average of about 500 people per day assuming 25 working days per month. During project operation period of 40 years, allocated as per MOA, about 80 people (including staff and labour) are required on a regular basis.

**Present stage of the project**

All the investigations, except drifting, have been completed and the Detailed Project Report (DPR) is under appraisal in CWC/CEA. The Techno Economic Clearance (TEC) from Central Electricity Authority (CEA) is expected shortly.

**Undertakings**

All necessary undertakings including those to bear the cost of Compensatory Afforestation, Cost of NPV, Cost of Forest Produces and that the construction activities will not be started before Final Forest Clearance etc. are also enclosed. The details of all the Undertakings/Certificates /Documents furnished are shown in **Annexure A**.

**Signature:****Name:**

Jayaprakash N.,

**Designation:** Business Associate.

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