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लॉउ सीब लुम्बतंगेन
एम् टी सी के पास, शिलांग -७९३०२१
फैक्स/Fax -0364-2536041/2536983

No. 8-20/201-FC/ 4362

23rd March, 2020

To,

Shri Sandeep Sharma,
Assistant Inspector General of Forests (FC),
Government of India,
Ministry of Environment, Forest & Climate Change,
(Forest Conservation Division),
Indira Paryavaran Bhawan, Aliganj, Jor Bagh Road,
New Delhi – 110003.

Sub: Proposal for diversion of 1165.66 Ha. (Including 91.331 ha underground area) of forest land for construction of Etalin Hydro Electric Project (3097 MW) in Dibang Valley District of Arunachal Pradesh by M/s Etalin Hydro Electric Power Company Limited, Arunachal Pradesh.

Ref: (i) Letter F. No. 8-20/2014-FC Dated 30.01.2020 of Ministry of Environment, Forest & Climate Change (FC Division).

Sir,

In inviting a reference to the subject and letter cited above, I am to enclose herewith the report of the site visit of the FAC Sub-Committee on the Etalin Hydro – Electric Power Project, Etalin, Arunachal Pradesh from the 10th February to the 15th February, 2020 as desired by Ministry's letter mentioned above for your kind further necessary action.

Encl: A stated above.

भवदीय,

(W.I. Yatbon)

वन उप महानिरीक्षक (केंद्रीय)

/Deputy Inspector General of Forests(C)

8/c

REPORT OF THE SITE VISIT OF THE FAC SUB-COMMITTEE ON THE ETALIN HYDRO-ELECTRIC POWER PROJECT, ETALIN, ARUNACHAL PRADESH

Introduction: The proposal for diversion of forest land for the construction of the 3097 MW Etalin Hydroelectric Power was submitted to the State Forest Department in March' 2014 after revising drawings/maps for an area of 1165.66. State Govt., after completing due procedures forwarded the Proposal in October 2014 to MOEF & CC. Regional Office Shillong Conducted the Site Inspection of the Project from 2nd to 4th December 2014. Forest Diversion proposal of the Project was discussed in FAC Meeting on 28/01/2015 wherein it was recommended that the project shall be reviewed after completion of Dibang Basin Studies. Meanwhile the State Govt. was asked, among other things, to examine the Observations made by Regional Office in Site Inspection Report (SIR) and if required, may modify and resubmit the proposal after addressing the issues raised by Regional Office in its report.

The Government of AP has submitted the information as per the queries raised by the Ministry vide its letter dated 29th May 2015. The State has also addressed the issues raised by the SIR, namely, *(i) The reduction in area for Muck Dumping, Quarry area and Construction facilities area including Labour Camps. (ii) Tree enumeration and sampling intensity.*

The matter has been discussed in the FAC in a number of its sittings and in its meeting on 17/10/2019, the FAC recommended that the site visit of the Etalin HEP would be carried out with the specific mandate which is given below, namely,

- i) To check if the total land requirement could be reduced
- ii) To look into the concerns highlighted by the Regional Office in its SIR especially related to the process of tree enumeration
- iii) To look into the aspects highlighted in the biodiversity assessment study by WII

Site Visit: The site visit was carried out from the 10th February to the 15th February 2020 with the members as nominated by the Ministry as per Ministry's letter No F.NO.8-20/2014-FC dated 15.01.2020 with members as per list in the Annexure –I.

The Committee members were detailed about the project through a presentation by the User Agency on the evenings of 10th Feb 2020 at Roing and on 11th Feb at Etalin. Thorough discussion was made on all the aspects of the project and on the observations of the SIR and the related issues. The WII team also made their presentation on the 11th Feb 2020 at Etalin. The presentations were detail and was well-appreciated by the Sub-Committee, considering the difficulty under which the WII has to work.

The decisions of the Committee with respect to its mandate:

1. **Reduction in Area:** In its presentation, the User Agency gave detailed explanation of its purpose wise use of land and its proper utilization of the land stating, among others,
 - That the project is huge & lies in a very remote area having no infrastructural facilities, as such, all the infrastructure facilities have been

thoughtfully planned to cater the peak requirement which is anticipated as 11000 (including families).

- That the Entire project, with approximately 50 project components, is spread across a road distance of approx. 40 km, i.e., 22 km. on Dri side and 17 km. on Tangon side. Main Construction facility areas are; Aggregate Processing plants, Batching plants, Workshops, parking areas, explosive magazine, Oil Depot, Site Stores, Fabrication yards, Steel Yards, Facility areas for erection of DG sets & Ventilation Blowers & Compressors, Medical facility areas.
- To ensure effective construction planning so as to complete the project in most effective manner & to reduce the unnecessary transportation causing pollution, all the work locations are provided within the above construction facilities.
- That in Etalin HEP efforts were made to optimize and centralize the construction facilities in such a way that for two structures like Surge Shafts being in vicinity, the facilities are clubbed.
- That the location of Aggregate Processing Plants (APPs) & Batching Plants (BPs) are already so optimized that these are planned near the Quarry area or close to each other.
- That instead of providing APPs and BPs for each project component, these plants are so optimized that some of them are catering to multiple project components.
- The workshops, stores etc. are located in major project components only. Fabrication yard is centralized, wherever possible Steel Yards are also centralized and merged with other facility areas.
- That they have explored the non-forest land in the area, but have not been able to identify such like land in the vicinity of the Project for the purpose.

It was informed before the Sub-Committee that the User Agency has on its own reduced the area from 1360 ha initially proposed to the current 1165.66 ha after discussion with the local officers wherein 16 % of the area was reduced after taking away most of the very dense forests. The matter was discussed and studied threadbare by the Sub-Committee.

- The DFO Anini submitted before the Committee that the area that can be reduced at this point of time is the area already awarded to NHIDCL for their realignment. **The area of 15.58 ha would therefore stand reduced.**
- The User Agency has identified and made a commitment that it would **RETURN the land measuring 424.83 ha to the Forest Department immediately** after the COMMISSIONING of the project. The details of the area located in various pockets of land acquired are given in Annexure-II which includes the Undertaking, the statement and the relevant map.

It may be also mentioned that, the UA submitted that any further reduction in the area may render the project technically unfeasible. **In view of the above, the Sub-**

Committee has recommended the reduction of 15.58 ha from the proposed area of the proposal and the handing over of an area of 424.83 ha to the Forest Department after commissioning of the project.

2. **Tree Enumeration:** The observations/ objections raised by the SIR and the reply of the State Government to each of these concerns has been considered by the Sub-Committee and the three issues were discussed and the finding of the Sub-Committee is as follows:

i) **Sampling Intensity:** The SIR of the Regional Office has observed that in some of the patches (LAs) the sampling intensity was found to be only 4% which is very less. State Government has earlier submitted that the sampling intensity is 10% and not 4% as mentioned in the SIR of the Regional Office. The State Government has not submitted anything to the Ministry in support of the claim of 10% sampling intensity. At the time of the field visit, the DFO produced before the Committee few of the enumeration notebooks. In the absence of all the Enumeration notebooks and other details like number of plots and their sizes and locations (GPS locations), the Sub-Committee decided to ascertain from the available notebooks by checking some of the Land Patches (LAs) to see if the LAs for which 100% plots may be available whether these plot add up to 10% or not. It was found from the available enumeration notebooks that 07 LAs covered in these notebooks have the sampling intensity of around 10%. The details is attached as Annexure -III

ii) **Size of the sampling plots:** Regarding the observation of the Regional Office that because the sampling plots were measured along the slope the actual sizes (area) of the plots are less than what was calculated, the matter was discussed in detail. Since this is an anomaly, it is therefore recalculated as per actual projection area and the size of the plots were corrected accordingly. The area of each of the plots were recalculated based on the slope data and in the resultant extrapolation the number of trees has risen from current 280681 to 311858 (Annexure IV).

A. Total No of Trees to be felled projected as per earlier sampling area: 280681

B. Total no of trees projected to be felled as per corrected sampling area: 311858

C. No of trees falling in 15.58 ha which will not be part of this proposal: 6758

D. No of trees falling in FRL-4 (LA-20 and LA-21) is: 9320

Thus the total number of trees that are going to be felled in this proposal is $(N=B-C-D)$ **302,538**.

The Committee feels that the User Agency should as far as possible still further reduce the number of trees to be felled from the construction sites, the areas acquired for roads and other components of the projects. After detailed deliberation and practical discussion with DFO Anini, the User Agency has submitted an undertaking (Annexure-V) that it would reduce further the number of trees to be felled over and above the above by 24500 trees.

So, the total number of trees to be felled will be reduced further (302,538- 24500=278038).

Thus the total number of trees to be felled is : 278,038

- iii) **Non-accounting of the big-size trees:** The Regional Office has observed that huge trees were not mentioned or accounted for in the enumeration data. This matter was discussed and the submission of the State Government that the '*two huge trees were exceptional and could not be considered as true representation of the population*' has been considered by the Sub-Committee. After detailed discussion the Committee feels that as it would be difficult to establish the veracity of the claim due to the terrain of the area, the contention of the State Government is justified and accepted.

In view of the above submissions from the State Government, the Sub-Committee accepted the tree enumeration as per corrected figures.

3. Wildlife aspect and WII studies:

Observation of Multi Seasonal replicate study and wildlife conservation plan against Etalin Hydro Electric Project submitted by Wildlife Institute of India:

In accordance with recommendations of "Forest Advisory Committee" (FAC), MoEF & CC and letter No FOR-279/Cons/2010/Vol-I/836-40 dated 23rd June, 2017 from APCCF & Nodal Officer (FCA) Arunachal Pradesh to Director, Wildlife Institute of India, Dehradun, a multiple seasonal replicate studies along with wildlife and biodiversity conservation plan has been prepared and submitted. As per the study report and wildlife conservation plan, the multidisciplinary team undertook surveys within the Zone of Influence (ZOI) of EHEP. In the study mammals, birds, entomofauna, herpetofauna and plants were considered to represent terrestrial system and fishes and benthic invertebrates were included to represent aquatic system. The biodiversity status assessment of flora and different faunal groups showed record of 413 plants species, 159 species of butterflies, 113 species of spiders, 11 species of odorates, 14 species of amphibians, 31 species of reptiles, 230 bird species and 21 mammalian species, within the proposed project study area.

One of the main observation of the study is that conversion of 1165.66 ha of land for HEP will have direct loss of habitat on floral and identified faunal groups. Compensatory afforestation the first plan of action and mandatory to mitigate loss of habitat is not sufficient and therefore the study has recommended various action plans mainly three categories as below:-

- i) **Mitigation plan- Mandatory Action Plan:-** This include C.A, Greenbelt, Muck-dump management and restoration, technical and managerial interventions- noise

and vibration and technical and regulatory mechanism- mitigation for faunal mortality.

ii) **Biodiversity conservation plan :-** The activities proposed are development of open butterfly parks, development of reptile park, facilitating nesting niche-deploying nest boxes for cavity nesting avifauna, Habitat restoration overall biodiversity and possibly RET species, conservation of RET flora, Aquatic habitat and biodiversity conservation, maintain the stream morphology and impacts of hazardous and domestic waste disposal- river system.

iii) **Action plan for enhancement of bio resources for people-** The study has identified suitable activities to reduce impact on the ethnic group dependent on forest resources. The action plan identified are- selected natural resource enhancement, life quality enhancement, development of additional livelihood, peoples biodiversity register- programme and awareness, biodiversity- awareness and education and sustainable use of rare resources and issues related to migrant workers on biodiversity and cultural values.

Wildlife corridor and Tiger Movement:- The study reports that 78 cameras were deployed for 1552 trap nights/ days during four month survey, no tiger was camera trapped. 21 mammalian species were recorded in the study area. Further no pugmarks or scats of tigers during this survey was found. Therefore the tiger presence in study area was not established. Low abundances of prey species in general and absence of large prey species in specific along with human related disturbances in the area might have kept tiger away from the proposed project area. A long term monitoring study on mammalian fauna in Dibang WLS has recorded presence of few tigers outside sanctuary. The linear distance measured for three nearest records (location) of tiger outside DWLS and between boundary of proposed project site ranged from 10.2 km to 14.00 km from north (till end of submergence). The existing cumulative impacts such as presence of more villages, habitat degradation, hunting, high vehicle movements and low prey base, qualify the project area as not potential habitat for tiger to use or move across. Additionally, considering availability of large extent of suitable habitat in the surrounding environs well above the project area, this hydro power project is not visualized to restrict the movement of tigers occurring in and around the Dibang WLS into any direction in the entire Dibang Valley.

In view of above facts observed in the field and on examining the report presented before the committee by WII representatives, the members of the Sub-Committee are of the opinion that due consideration for Wildlife conservation has been addressed in the mitigation plan. **The project may be allowed subject to condition that the financial outlay of Wildlife conservation plan be deposited to Forest Department by User Agency.**


Recommendation:


1. The area of the proposal of the project stands reduced from 1165.66 ha to 1150.08 ha after reducing the area of 15.58 ha already allotted to NHIDCL.
2. The User Agency shall handover the area of 424.83 ha of land acquired to the Forest Department immediately after Commissioning of the project duly restored.
3. The Tree enumeration as corrected is accepted. The figures of trees to be felled stand corrected from 280677 nos to 311858. The number of trees to be actually felled is 278038.
4. The Wildlife Study done by WII is accepted *in toto* by the Sub-Committee along with all the recommendations with condition that the UA funds the Conservation Plan.


Further recommendations: The Sub-Committee also has heard and seen the difficulty of the Forest officers and staff due to lack of communication, lack of manpower (1 RFO, 1 Dy Ranger, 3 guards, 1 UDC, 1 peon in Anini Forest Division), and its remoteness wherein it is found that the forest staff are working in very difficult conditions. The Sub-Committee also noted that with the increase of the population and improvement in infrastructure and communication the exploitation and vulnerability of the forests has increased manifolds. Therefore the Committee feels that in order to strengthen the protection and monitoring of the forests:


- a) The User Agency shall purchase and install 1 VSAT along with maintenance for a period of 3 years.
- b) One field vehicle (Bolero) and 4 motorbikes for forest protection


The Sub-Committee also recommended that in order to prevent the muck rolling down the slopes, the UA should construct proper breast-wall/ river-bank protection wall to contain the muck and prevent it from going to the streams/ rivers.



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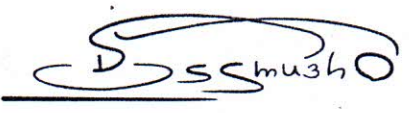
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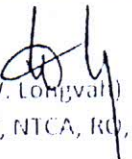
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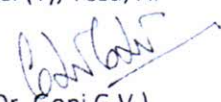
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EHEPCL

ETALIN HYDRO ELECTRIC POWER COMPANY LIMITED
CIN : U40101AR2009PLC008275

Etalin Hydro Electric Power Company Limited, Jindal Centre, 5th Floor, Tower 'B', Plot No - 2,
 Sector-32, Gurgaon-122001, Haryana.
 Phone No : +91-124-6612000
 Website : www.jindalpower.com;
 Email : EHEPCL@jindalsteel.com

Annex: III

**UNDERTAKING FOR ESTIMATED AREA WHICH CAN BE RECLAIMED AFTER THE COMMISSIONING
 OF THE ETALIN HYDRO ELECTRIC PROJECT (3097 MW) AS REQUIRED VIDE MINUTES OF
 MEETING (MOM) HELD ON 22-10-2018, ISSUED BY MOEF&CC-REGIONAL OFFICE SHILLONG,**

(THIS UNDERTAKING COVERS SERIAL NO-04 AND SERIAL NO-06 OF THE MOM)

Based on the discussions held on 22-10-2018 at MOEF&CC Regional Office, Shillong, wherein it was required that User Agency should give an undertaking mentioning the estimated area which can be reclaimed from the total forest land requirement of 1165.66 Ha considered for diversion in the forest proposal of Etalin HEP, EHEPCL, after preliminary studies on survey maps of project area, undertakes that, out of total 1165.66 Ha of land required for diversion in the forest proposal of the said project, an area of 424.83 Ha is estimated to be reclaimed subsequent to Commercial Operation Date (COD) of the Etalin Hydro Electric Project. This area includes the area to be reclaimed from limited Muck Dumping sites, project road areas, Quarry sites, construction facility areas and residential areas. Accordingly, subsequent to COD of the Etalin Hydro Electric Project, the said area shall be given back to State Forest Department for reuse.

For and on behalf of Etalin Hydro Electric Power Company Limited



Authorized Signatory

Date:

Place:

Registered Office: Flat No. 3, First Floor, Tashi Yang Apartment, Prem Norbu Khirmey Building,
 MOWB II, Opposite to Office of Director Urban Development, Itanagar, Arunachal Pradesh – 791111
Head Office: Jindal Centre, 12, Bhikaiji Cama Place, New Delhi – 110066

Land area Reclamation details (424.83 Ha)

LAND AREA DETAILS (AREA IN HECTARES)		
LA No.	Total land requirement updated after SIR Observations 2015	Estimated Area That Can be Reclaimed After Project COD
LA 1	58.02	-
LA 2	56.53	-
LA 3	20.05	20.05
LA 4	23.98	-
LA 4A	67.74	-
LA 5	2	-
LA 6	39.79	30.86
LA 6A	12.33	-
LA 7	80.56	36
LA 7A	6.38	4.39
LA 8	120.65	60.95
LA 9	20.81	-
LA 10	11.31	11.31
LA 10A	9.77	9.77
LA 11	41.38	10.91
LA 11A	17.2	17.2
LA 12	52.79	37.89
LA 13	8.33	5.44
LA 13A	1.5	1.5
LA 14	67.78	30.68
LA 14A	31.49	28.38
LA 14B	6.99	1.6
LA 15	79.18	49.07
LA 15A	14.3	7.29
LA 16	23.27	15.14
LA 17	16.24	13.78
LA 18	57.65	32.62
LA 19	32.82	-
LA 20	83.32	-
LA 20A	20.44	-
LA 20B	9.32	-
LA 20C	6.16	-
LA 21	36.12	-
LA 21A	6.89	-
Requirement (Ha)	1143.09	424.83

Corrected Tree value with Slope Correction for Etalin HEP						
S. No.	Plot	HD/SD	Plot Area	Projection	No. of Trees	Corrected Tree Value
1	LA-1	0.960714	58.02	55.7406429	12098	12592.71375
2	LA-2	0.809524	56.53	45.762381	19893	24573.70588
3	LA-3	0.982379	20.05	19.696696	5494	5592.547085
4	LA-4	0.989437	23.98	23.7266901	7048	7123.245552
5	LA-5	0.801653	2	1.60330579	595	742.2164948
6	LA-6	0.985348	39.79	39.2069963	9954	10102.01487
7	LA-7	0.898032	80.56	72.3454741	23078	25698.41036
8	LA-7A	0.912621	6.38	5.82252427		0
9	LA-8	0.895833	120.65	108.082292	20071	22404.83721
10	LA-9	0.992208	20.81	20.6478442	1699	1712.342932
11	LA-10	1	11.31	11.31	1325	1325
12	LA-11	0.864286	41.38	35.7641429	12143	14049.75207
13	LA-12	0.876522	52.59	46.0962783	5803	6620.486111
14	LA-13	0.968468	8.33	8.06734234	3376	3485.916279
15	LA-13A	0.890215	1.5	1.3353222		0
16	LA-14	0.977143	67.78	66.2307429	18408	18838.59649
17	LA-14A	0.984456	31.49	31.0005181		0
18	LA-14B	0.982558	6.99	6.8680814		0
19	LA-15	0.928058	79.18	73.4835971	28467	30673.74419
20	LA-16	0.832244	23.27	19.3663179	4842	5818.005297
21	LA-17	0.845235	16.24	13.7266164	4998	5913.148414
22	LA-18	0.865344	57.65	49.8870816	20643	23855.25294
23	LA-19	0.952315	32.82	31.2549816	7146	7503.818852
24	LA-20	0.842132	83.32	70.1664382	18969	22524.97233
25	LA-21	0.942145	36.12	34.0302774	4921	5223.187514
26	LA-4A	0.883895	67.74	59.8750562	22578	25543.75424
27	LA-6A	0.89375	12.33	11.0199375	3325	3720.27972
28	LA-10A	0.955312	9.77	9.33339824	2236	2340.59658
29	LA-11A	0.83241	17.2	14.317452	2489	2990.113045
30	LA-15A	0.964365	14.3	13.7904195	3672	3807.686924
31	LA-20A	0.901233	20.44	18.4212025	14250	15811.67134
32	LA-20B	0.803123	9.12	7.32448176		0
33	LA-20C	0.821413	6.16	5.05990408		0
34	LA-21A	0.91314	6.89	6.2915346	1160	1270.341897
			1142.69		280681	311858.3584
* This is secondary data from the records available in Field book and files generated before 2020						
					Divisional Forest Officer	
					Anini Social Forestry	
					ANINI (A.P)	
					Dibang Valley (A.P)	
					Suraj Singh, IFS	
					Divisional Forest Officer, Anini	

Sample plots from Field Book which has 10% of total area covered						
				Dated	14-Feb-20	
S. No.	Plot	Plot Area	Sampled Area	10 % area	Sample Trees	Trees /Ha
1	LA-2	56.53	5.88	5.653	1420	241.4966
2	LA-3	20.05	2.4	2.005	523	217.9167
3	LA-5	2	0.22	0.2	111	504.5455
4	LA-11	41.38	3.39	4.138	262	77.28614
5	LA-13	8.33	0.48	0.833	123	256.25
6	LA-14A	31.49	2.4	3.149	210	87.5
7	LA-16	23.27	2.4	2.327	325	135.4167
* This is secondary data from the records available in Field book and files generated before 2020						
					Divisional Forest Officer	
					Anini Social Forestry	
					ANINI (A.P)	
					Dibang Valley(A.P)	
					Suraj Singh, IFS	
					Divisional Forest Officer, Anini	

Annexure - V



ETALIN HYDRO ELECTRIC POWER COMPANY LIMITED
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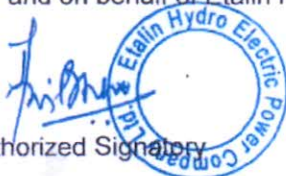
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Email : EHEPCL@jindalsteel.com

**UNDERTAKING FOR ESTIMATED NUMBER OF TREES WHICH MAY NOT BE FELLED BY EHEPCL
IN THE RECLAIMED AREA OF 424.83 Ha**

(THIS UNDERTAKING IS AS PER THE DISCUSSIONS HELD DURING FAC SUB-COMMITTEE VISIT
TO ETALIN HEP FROM 10-02-2020 TO 14-02-2020)

In Continuation to the Undertaking dated 23-11-2018 (Copy enclosed) and based upon the deliberations held during FAC Sub-Committee site visit of Etalin HEP during 10th to 14th February 2020, it is estimated that approximately 24,500 trees may not be felled by EHEPCL from the reclaimed area of 424.83 Ha. This estimated Number of trees is from LA-7, LA-8, LA-11, LA-14, LA-15 and LA-18 of the land acquisition areas mentioned in the Forest Proposal. However, this does not cover any unforeseen circumstances like Land Slides etc. while excavating the internal roads in these Land Acquisition areas.

For and on behalf of Etalin Hydro Electric Power Company Limited


Authorized Signatory

Date: 16-03-2020

Place: Gurugram (Haryana)