

**Sub: 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.**

1. The State Government of Arunachal Pradesh vide their letter No. FOR.279/CONS/2010/10012-18 dated 27.10.2014 was submitted a *revised proposal* seeking prior approval of the Central Government under Section-2 of the Forest (Conservation) Act, 1980. Proposal envisages 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.
2. **The Proposal was earlier considered by FAC on 28.01.2015, 28.02.2017 and 17.10.2019.**
3. The project is located in Anini Social Forest Division, Dibang Valley District of Arunachal Pradesh.
4. Legal status of the project is Unclassified State Forest (USF).
5. It is reported that due to the presence of vegetation in the nearby areas, the vulnerability of the forest area to erosion will be minimum.
6. **Vegetation density is 0.6.** Main species are Bola, Mekai, Wild walnut, Champa, Titasopa, Hollok, Mandhani, Siris, Birch, Sida, Amboke, Jatipoma, Poma, Jutuli, Urium, Hingori, Pichola, Paroli, Madhridima, Dalchini, Mauhita, Hinuwo, Khinuwo, Gohra, Neem, Mahuwa, Moliata, Depari, Chulatro, Putta, Utis, Rang Bang, Gogun, Tree Fern, etc.
7. It is reported that **280677 trees are proposed to be felled.**
  - Below 60 girth – 138823
  - Above 60 girth - 141854
8. The proposed area does not form part of National Park, Wildlife Sanctuary, Biosphere Reserve, Tiger Reserve, etc.
9. It is reported that no rare and endangered species were sighted during the inspection/enumeration period, the adjacent/fringe area's are the habitat of some of the rare/endangered/unique species of flora and fauna, and therefore, their presence is not ruled out. But the diversion will have negligible impact on the species.
10. The distance of the proposed site from the boundary of the notified forest area (Dibang Wildlife Sanctuary) is around 12 KM.
11. It is reported that there is no protected archaeological/heritage site/defense establishment in the proposed area.
12. It is reported that no work of violation of the Forest (Conservation) Act, 1980 has been carried out.
13. It is reported that the requirement of land is unavoidable and barest minimum for the Mining purpose.
14. The Compensatory Afforestation has been proposed over 1074.329 ha over an equivalent area with total financial outlay of Rs. 19,64,56,700.00 in the degraded community forest land at Bleteng proposed VFR.
15. The Land Suitability certificate for CA had not been given.
16. It is reported by Deputy Commissioner, Dibang Valley that suitable degraded non-forest land is not available in Dibang Valley to carry out compensatory afforestation.
17. The proposal has been recommended by DFO/CCF/Nodal Officer and State Government under section 2 (ii) of Forest (Conservation) Act, 1980.
18. State Government of Arunachal Pradesh decided to develop Etalin HEP in the Private Sector / Joint Sector on Build, Own, Operate and Transfer (BOOT) basis. Hydro Power Development Corporation of Arunachal Pradesh Limited (HPDCAPL), a public sector undertaking set up by the State Govt, of Arunachal Pradesh for development of Hydro Power Projects in the State was allotted the project by State Govt, of Arunachal Pradesh for its implementation under Joint Venture (JV) with Jindal Power Limited (JPL). Accordingly, a Memorandum of Agreement (MoA) to develop the project was executed between Government of Arunachal Pradesh, HPDCAPL and JPL.
19. Etalin HEP is proposed to be developed as a combination of two "run-of-the-river" schemes having diurnal storage which area being developed purely for hydroelectric power generation purpose. The Project envisages construction of concrete gravity dams on Tangon and Dri rivers and diverting the water through two separate

waterway systems to utilize the available head in a common underground powerhouse located just upstream of the confluence of Dri and Tangaon rivers.

20. Heights of dams, as envisaged for diversion of Dri and Tangaon rivers, are 101.5 m and 80 m respectively. The Installed Capacity for the scheme proposed on Dri limb is 1861.60 MW, comprising of a small hydro scheme of 19.60 MW at the toe of the dam on Dri River and six units of 307 MW each in the common underground powerhouse.
21. The Installed Capacity for the scheme proposed on Tangaon limb is 1235.40 MW, including a small hydro scheme of 7.40 MW envisaged at the toe of the dam on Tangaon River and four units of 307 MW each in the common underground powerhouse. The total Installed Capacity of the project is 3097 MW. Energy generation from the project in 90% dependable year with 95% machine availability is estimated to be 12,991.52 MU.
22. Clear justification for locating the project in the forest area giving alternatives examined and reasons for their rejection has been submitted.
23. **Justification for locating the project in the forest area giving alternatives examined and reasons for their rejection.**

The capacity addition requirement during 12<sup>th</sup> plan on All-India basis is 75,785 MW comprising of 9,204 MW from Hydro sector. The likely Hydro capacity addition of 9,204 MW during 12<sup>th</sup> plan includes 4,177 MW in North East Region (NER) and Sikkim (2,810 MW capacity additions in NER and 1367 MW in Sikkim). This includes 2,710 MW for Arunachal Pradesh. Also, the capacity addition requirement during 13<sup>th</sup> plan is 93,456 MW, comprising of 12,006 MW from Hydro sector.

Arunachal Pradesh state plans to harness its enormous natural resources like forests and hydro power and exploit its mineral wealth to usher in an era of economic development.

Considering the Projected Hydro capacity addition programme during 12<sup>th</sup> plan (9,204 MW) & 13<sup>th</sup> plan (12,006 MW) (Source: CEA), new schemes have to be taken up immediately and implemented to derive timely benefits. The most important source of power development in the north-eastern region is Arunachal Pradesh and other sister states.

Considering the growth of peak demand and anticipated addition of generating capacity in the state, the region and the country, and also from the current status of development of hydro power potential of Arunachal Pradesh, it is pragmatic that earnest efforts are made for developing the hydro power sector of the state. Implementation of Etalin Hydroelectric Project of 3097 MW capacity would contribute significantly towards meeting this objective.

The project is viable not only due to the reasonable tariff of Rs. 4.91-1<sup>st</sup> year tariff & Rs. 4.32-tariff for 35 years but also because the project is run of the river scheme and affects no other projects or catchments. The project has the support of the local populace and has no major environmental issue. In addition, it has remarkably favourable geological conditions for the region.

24. Site Inspection was carried out by Regional Office, Shillong. The SIR reproduced below:

**Introduction:** This is a Site Inspection Report of the Proposal for diversion of 1178.59 ha of forest land for the construction of the 3097 MW Etalin HEP located at Etalin in the District of Anini under Anini Social Forestry Division of Arunachal Pradesh.

State Government of Arunachal Pradesh decided to develop Etalin HEP in the Private Sector / Joint Sector on Build, Own, Operate and Transfer (BOOT) basis. Hydro Power Development Corporation of Arunachal Pradesh Limited (HPDCAPL), a public sector undertaking set up by the State Govt, of Arunachal Pradesh for development of Hydro Power Projects in the State was allotted the project by State Govt, of Arunachal Pradesh for its implementation under Joint Venture (JV) with Jindal Power Limited (JPL). Accordingly, a Memorandum of Agreement (MoA) to develop the project was executed between Government of Arunachal Pradesh, HPDCAPL and JPL.

Etalin HEP is proposed to be developed as a combination of two "run-of-the-river" schemes having diurnal storage which are being developed purely for hydroelectric power generation purpose. The Project envisages construction of concrete gravity dams on Tangon and Dri rivers and diverting the water through two separate waterway systems to utilize the available head in a common underground powerhouse located just upstream of the confluence of Dri and Tangon rivers. Heights of dams, as envisaged for diversion of Dri and Tangon rivers, are 101.5m and 80 m respectively. The Installed Capacity for the scheme proposed on Dri limb is 1861.60 MW, comprising of a small hydro scheme of 19.60 MW at the toe of the dam on Dri River and six units of 307 MW each in the common underground powerhouse. The Installed Capacity for the scheme proposed on Tangon limb is 1235.40 MW, including a small hydro scheme of 7.40 MW envisaged at the toe of the dam on Tangon River and four units of 307 MW each in the common underground powerhouse. The total Installed Capacity of the project is 3097 MW. Energy generation from the project in 90% dependable year with 95% machine availability is estimated to be 12,991.52 MU.

The forest area in which the project was proposed is in luxuriant USF forests which is in very steep slopes and remotely located. **The site inspection was carried out on the 3rd & 4th December 2014** accompanied by Shri Mori Riba, DFO, Anini Social Forestry Division, Basanta Taye, Forester, in the presence of Shri V.B. Gupta, Head of Project and other Officials of the User Agency. The dam axis of both the dams on the Dri river and the Tangon river were visited along with the area of submergence (photographs attached as Annexure-3) etc whichever were possible within the limited time.

**The detailed SIR (Pg. 174-184/c) is as under:**

- (i) **Legal status of the forest land proposed for diversion:** The forest land proposed under this proposal is Unclassified State Forest (USF).
- (ii) **Item wise break-up details of the forest land proposed for diversion:**  
The purpose-wise break-up of the land is given in the following abstract

Description	Surface Area (Ha)	Under Ground Area (Ha)	River Area (Ha)	Total Area (Ha)
Dri Limb	454.994	6.984	24.642	486.62
Tangon Limb	496.123	6.431	12.456	515.01
Notional Area	0	35.500	0	35.50
Power House	96.284	42.416	2.760	141.46
<b>Grand Total</b>	<b>1047.401</b>	<b>91.331</b>	<b>39.858</b>	<b>1178.59</b>

**From the detailed break-up of the land it is seen that the User Agency/ State Government has proposed:**

- 1) 5 sites of Stone/ Shoal Quarries over an area of 27.856 ha. It is felt that this area could be reduced if the quarries are located inside the submergence areas itself. This option may be explored.
- 2) 13 sites exclusively for dumping area which amount to 100.774 ha. The destruction of forests of this scale for dumping may be reconsidered for reduction of the same.

- (iii) **Whether proposal involves any construction of buildings (including residential) or not. If yes details thereof:** Yes, construction of building is involved which include the following:

Land Area (as classified by the U/A)	Sl.No	Name of the Component (as per	Surface Area (Ha)	Under Ground Area (Ha)	River Area (Ha)	Total Area (Ha)
<b>DRI LIMB</b>						
LA-1 (58.02 Ha)	1	Contractor/Owner office and store site	2.00	0.00	0.00	2.00
	2	Labour Camp -5	1.00	0.00	0.00	1.00

LA-2 (56.53 Ha)	1	Work Shop, Warehouse, Store & Parking Space -3 (Left Bank)	4.40	0.00	0.00	4.40
LA-4 23.98	1	Labour camps	1.00	0.00	0.00	1.00
LA-4A 67.74 ha	1	Store/work shop for package-B	1.00	0.00	0.00	1.00
	2	Batching plant /main workshop	1.20	0.00	0.00	1.20
	3	Contractors camp and owners camp office/residences	3.50	0.00	0.00	3.50
LA-6 (39.79 Ha)	1	Batching plant /main workshop	2.00			2.00
	2	Labour Camp-4	1.00	0.00	0.00	1.00
<b>TANGON LIMB</b>						
LA-10 (11.31 Ha)	1	Owners temporary colony and office	2.00	0.00	0.00	2.00
LA-11 A (17.20 Ha)	1	Contractors colony and office and facility areas	5.00	0.00	0.00	5.00
LA -12 (52.79 Ha)	1	Labour camps for Contractors Colony –EM, HM & Civil Works	3.00	0.00	0.00	3.00
LA-13 (8.33 Ha)	1	Site office and work shop	1.00	0.00	0.00	1.00
LA-13A (1.50 Ha)	1	Provision of facility Area	1.50	0.00	0.00	1.50
LA-14 (67.78 Ha)	1	Main Project Office and Residential Campus including school and hospital ( Left Bank)	15.20	0.00	0.00	15.20
LA-14 A (31.49 Ha)	1	Main work shop and batching plants	2.00	0.00	0.00	2.00
	2	Labour camps for contractor (Right Bank)	1.20			1.20
LA-14B (6.99 Ha)	1	Contractors colony	1.49			1.49
LA-15 (79.18 Ha)	1	Labour Camp-2	1.00	0.00	0.00	1.00
LA-16 (23.27 Ha)	1	Workshop and construction facility areas (Right Bank)	2.00	0.00	0.00	2.00
LA-18 (57.65 Ha)	1	Contractor & Departmental Office Space -1	1.50	0.00	0.00	1.50
LA-19 (32.82 Ha)	1	Workshop, Warehouse, Store & Parking Space-1	1.00	0.00	0.00	1.00
<b>POWERHOUSE</b>						
LA-8 (120.65 Ha)	1	Contractor & Departmental Office -2	1.50	0.00	0.00	1.50
	2	Labour Camps	2.50	0.00	0.00	2.50
	3	Main Store, Workshop and facility areas	3.00	0.00	0.00	3.00
LA-9 (20.81 Ha)	1	Dumping yard, Storage, Workshop, Warehouse, store parking	3.00	0.00	0.00	3.00
<b>TOTAL AREA UNDER CONSTRUCTION</b>						<b>64.99</b>

**Huge area under construction has been proposed which include 5 labour camps of 6.5 ha, 2 sites of labour camp for contractors' colony of 4.2 ha, 6 sites of Contractor/ Owner site office etc of 15.5 ha, apart from the other sites of main office, residential colony, contractors colony etc..**

**It is seen that the area can be drastically reduced if the colony areas were combined for both the contractors and the labour by centralizing their camps. Moreover in view of the Ministry's Guidelines 2004 Para No. 4.5, the User Agency/ State Government may be asked to minimize the forest land use for such house constructions especially when it comes to labour camps, temporary offices etc.. Area of such house construction should ideally be in non-forest land which the Project proponent and State Government should explore.**

- (iv) **Total cost of the project at present rates:** The total cost of the project is approximately Rs 25,296.95 crores.
- (v) **Wildlife:** Whether forest area proposed for diversion is important from wildlife point of view or not: The proposed area for the HEP is not recorded to be having important/rare/ endemic species of wildlife. However, given the biological richness of the state and the scanty research and investigation in the area, the presence of such rare/ endemic/ endangered species cannot be ruled out.
- (vi) **Vegetation:** The land in which the project is proposed is in pristine forests with riverine growth that once cut cannot be replaced. There is thick vegetation in all the area except for few patches near the villages.
  - (a) **Total number of trees to be felled:** The number of trees to be felled is kept at 280677 nos.
  - (b) From the enumeration list the numbers of trees to be felled of girth below 60 cms is 138823 numbers.
  - (c) From the enumeration list the numbers of trees to be felled of girth above 60 cms is 141854 numbers.

The area proposed as mentioned above, is mostly in thick forests that are truly irreplaceable. The type of forests appears to be predominantly Subtropical Evergreen broad-leaved forest and Subtropical rain forest. The vegetation is of multi-strata and can truly be said to be irreplaceable. While treading through the forests, it is seen that many of the areas are inaccessible due to the thick vegetation and the terrain of the area varying from gentle slope to very high slopes from 450 to almost vertical. While such area may be ideal for the dam axis location and construction of the dam but the access to such area is very difficult.

**ENUMERATION ABSTRACT OF THE SAMPLING PLOTS:** To assess the area of diversion and the veracity of the enumeration prepared by the State Government/ User Agency, the undersigned has visited the following sampling plots and measured the size of the trees, their members and verified the same against the field notes/registers maintained by them. The sizes of the sampling plots as mentioned in the records were not measured except for one which on ocular estimate appear to be less, this on measurement, it is found to be so as recorded below.

Date	Sl. No.	Particular of Land/LA	Size of Plot. (Mts)	Slope	No. of trees	Remarks
1	2		3	4	5	6
3/12/2014	1	L.A.-10A.	20x10	Steep	24	The measurement tallies with the records of the Deptt/ UA.
	2	L.A. -6 A.	30x50	Gentle	---	Area of the plot is much smaller than the size mentioned, On ocular estimation. It is found in actual measurement along the slope to be 27m x 44.5mts, less by about 300sq mts. Hence number of trees not counted.

	3	L.A.- 20A.	25x33	Gentle	56	The measurement was checked with the one in the records of the field work, and found matching. In this plot there were two trees of 832 cm and 802 gbh which were also recorded in the field book/ register(Photos of trees and field book attached as Annex-II). However on the enumeration list of trees under LA – 20A, no tree of this spp or any other species is mentioned to be above 390cm gbh and for <i>Toona ciliata</i> the trees of maximum gbh were shown to be in the girth class 91 – 120 cms.
4/12/2014	4	L.A. – 21 (LB).	30x15	Steep	17	This is a steep area but plot is in somewhat gentle slope spot. Measurement tally with records.
	5	L.A.-21 (RB)	30x40	Steep	62	This is a steep area but plot is in somewhat gentle slope spot. Measurement tally with records.
	6	L.A.- 19A.	40x40	Steep	44	Measurements match with records. Sample plot is near Aunli village
	7	L.A.- 15A.	60x20	Gentle	54	Measurements match with records.

**From the above checking of the sampling plots, it is seen that the enumeration is wanting/faulty in the following points:**

- 1) As mentioned above in Sl. No. 3 of the above table, some huge trees of > 800cms gbh have not been reflected in the Enumeration List of LA-20. Such omission in other areas cannot be ruled out as most areas have trees having gbh of more than 400 cms but the enumeration lists have not reflected that.
- 2) The size of one of the sampling plots at Sl. No. 2 above, which was measured on the field, was found to be much less than actually recorded. Actual measurement was not done for all plots for lack of time.

Moreover, the measurements of these plots have been taken along the slope, which is actually higher than the actual area. (In one of the sampling plots the slope was more than 50o). Since this small sampling area is extrapolated over a very large area, such calculation is going to bring huge cumulative difference.

- 3) The sampling intensity adopted for the enumeration on sample check was found to be less than 4% in one case (i.e. LA-2, 83.32 ha.) which is very less.

**In view of the above, though the effort of the User Agency/ State Government to carry out sampling in such difficult area is appreciated, the enumeration list in its current form cannot be accepted;**

- (vii) **Background note on the proposal:** As in the Introduction above.
- (viii) **Compensatory afforestation:** The Compensatory land was inspected by the Chief Conservator of Forests (C).
- (ix) **Whether proposal involves violation of Forest (Conservation) Act, 1980 or not. If yes, a detailed report on violation including action taken against the concerned officials:**No violation of Forest (Conservation) Act, 1980 was observed at the time of the inspection.

- (x) **Whether proposal involves rehabilitation of displaced persons. If yes, whether rehabilitation plan has been prepared by the State Government or not:** The project involves the displacement of about 95 families. But till date the State Government is yet to prepare the Rehabilitation Plan.
- (xi) **Reclamation plan:** Details and financial allocation: Not Applicable
- (xii) **Detail on catchment and command area under the project:** Catchment area treatment plan to prevent siltation of reservoir .The State Government is yet to make any Catchment Treatment Plan
- (xiii) **Cost benefit ratio:** The cost benefit ratio as submitted by the User Agency is only tentative and does not deserve mention. **In the absence of CAT plan, RR Plan, the calculation of CB ratio is of not much value.**
- (xiv) **Recommendations of the Principal Chief Conservator of Forests/State Government:** The Principal Chief Conservator of Forests/State Government has recommended the proposal.
- (xv) **Recommendations of Regional Chief Conservator of Forests along with detailed reasons:** Regional Chief Conservator of Forests shall give detailed comments on whether there is any alternative routes/alignment for locating the project on the non-forest land: **This is a site-specific project and alternatives for the dam location may not be possible. However with regards to the other utilities and facility areas, it is proposed as below:**
- 1) Area under construction of various labour sheds and Offices which together would cause a huge forest tract, i.e., **64.99 hectares should be reduced.**
  - 2) 5 (Five) **quarries have been proposed to be created with a total area of 27.56 hectares. This diversion can be avoided if the State Government and User Agency explored the possibility of using the area under submergence, dumping sites and other such land for the purpose.**
- (xvi) **Utility of the project:** The project will be of high utility for the power requirement of the country and for the development of the state. The project is likely to employ 3000 unskilled workers and 800 skilled workers during construction phase.
- Numbers of Scheduled caste/Scheduled Tribe to be benefited by the project: No specific figures have been given but since the State being a predominantly tribal state, the benefits accrued from the Project is presumed to benefit the tribal community as a whole.
- (xvii) **Whether land being diverted has any socio-cultural/religious value:** No such socio-cultural/religious value has been informed to exist in the land being proposed.
- Whether any scared grove or very old growth trees/forests exists in the areas proposed for diversion.
- There are no sacred groves in the proposed area, but area with old growths are seen in all those area. In one of the sampling plots, two trees of *Toona ciliata* of >800 cms gbh were seen. Also huge trees of *Betula utilis*, *Engelhardtia spicata*, *Castanopsis* spp are seen scattered in these pristine forests.
- Whether the land under diversion forms part of any unique eco-system:  
This land that is proposed is part of an ecosystem that cannot be said to be unique in terms of its presence
- (xviii) **Situation w.r.t. any P.A.:** The area proposed is said to be about 12kms aerial distance away from the nearest PA, that is the Dibang Wildlife Sanctuary.
- (xix) **Any other information relating to the project:** It has been observed as mentioned earlier:
- A) That the enumeration has not reflected the ground reality because (a) huge trees have not been reflected in the Enumeration List (b) The size of sampling plots were actually less than recorded and have been measured along the slope (c) the sampling intensity is too less for getting proper assessment

of the composition and structure of the forests, as mentioned in para 6 above; therefore enumeration needs to be redone to a sampling of minimum 10% sampling intensity after ensuring that representative areas are taken in sampling and that all tree-sizes area recorded.

- B) Huge area under construction i.e. 64.99 ha, has been proposed which include 5 labour camps of 6.5 ha, 2 sites of labour camp for contractors' colony of 4.2 ha, 6 sites of Contractor/ Owner site office etc of 15.5 ha, apart from the other sites of main office, residential colony, contractors colony etc..It is seen that the area can be drastically reduced if the colony areas were combined for both the contractors and the labour by centralizing their camps. Moreover in view of the Ministry's Guidelines 2004 Para No. 4.5, the User Agency/ State Government should try to minimize the forest land use for such house constructions and explore non-forest land for the same.
- C) That excessive areas like Stone/ Shoal Quarries over an area of 27.856 ha and 13 exclusive dumping areas which amount to 100.774 ha must be relooked into to as to minimize the use of forest land.

25. The Regional Office, Shillong in its Site Inspection Report (SIR) has observed as below:-

- a. This is a site-specific project and alternatives for the dam location may not be possible. However area of 5 sites of Stone/Shoal Quarries which are spread over an area of 27.856 ha could be reduced if the quarries are located inside the submergence areas itself. The State Government should explore this option. Also area of 13 sites exclusively for dumping which is spread over 100.774 ha can be considered by the State Government for reduction.
- b. Huge area under construction has been proposed which include 5 labour camps of 6.5 ha, 2 sites of labour camp for contractors' colony of 4.2 ha, 6 sites of Contractor / Owner site office etc of 15.5 ha, apart from the other sites of main office, residential colony, contractors colony etc. It is seen that the area can be drastically reduced if the colony areas were combined for both the contractors and the labour by centralizing their camps. Moreover in view of the Ministry's Guidelines 2004 Para No. 4.5, the User Agency/State Government may be asked to minimize the forest land use for such house constructions especially when it comes to labour camps, temporary offices etc. Area of such house construction should ideally be in non-forest land which the Project proponent and State Government should explore.
- c. The enumeration of trees has not reflected the ground reality because (a) huge trees have not been reflected in the Enumeration List (b) The size of sampling plots were actually less than recorded and have been measures along the slope (c) the sampling intensity is too less for getting proper assessment of the composition and structure of the forests, as mentioned in para 6 above; therefore enumeration needs to be redone to a sampling of minimum 10% sampling intensity after ensuring that representative areas are taken in sampling and that all tree-sizes are recorded.
- d. The project involves the displacement of about 95 families. But till date the State Government is yet to prepare the Rehabilitation Plan.

**In view of the above field observations the proposal cannot be recommended in its present form.**

26. The proposal with SIR done by RO Shillong was discussed in the meeting of **Forest Advisory Committee held on 28<sup>th</sup> January, 2015** and after through delebration it **recommended that the proposal will be considered after completion of the Cumulative Environment Impact Assessment Study (River Basin study) and its acceptance by the Ministry.** In the meantime, the State Government may take following actions.

- a) Examine the observations made by the Regional Office in its SIR and, if required, may modify and re-submit the proposal after addressing the issues raised by the Regional Office in its report.
- b) Submit the CAT Plan/Environment Management Plan.
- c) Submit the detailed R&R plan for rehabilitation of affected families.
- d) Submit DGPS maps of the CA land identified for CA along with land suitability certificate from competent authority.
- e) Submit the compliance of Scheduled Tribe and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, as per the MoEF&CC advisory.

27. The above recommendation of the FAC were communicated to the State Government vide this Ministry's letter of even number dated **13th March, 2015.**



28. The State Government vide their letter no. FOR.279/Cons/2007/604-07 dated 29th May, 2015 submitted the information as desired by the FAC. A brief summary of the information submitted by the State Government is given as under:

S. No.	Query	Reply
1.	Examine the observations made by the Regional Office in its SIR and, if required, may modify and re-submit the proposal after addressing the issues raised by the Regional Office in its report. (A copy of Site Inspection Report is available on website of the Ministry).	DFO, Anini has furnished the reply against the observations made by Regional Office in its SIR
2.	Submit the CAT Plan/Environment Management Plan.	A copy of the Environment Management Plan is enclosed herewith (Annexure-IV – ps. 266-634/c). CAT Plan forms a part of the EMP. The revised EMP was submitted to MoEF&CC in January, 2015 after conduct of Public Hearing of the Project for accord of Environment Clearance.
3.	Submit the detailed R&R plan for rehabilitation of affected families.	Detailed R&R Plan is attached The R&R Plan formed a part of the revised EIA/EMP submitted to MoEF&CC in January, 2015 after conduct of public hearing of the project for accord of Environment Clearance.
4.	Submit DGPS maps of the CA land identified for CA along with land suitability certificate from competent authority.	The DGPS map and land suitability certificate alongwith the relevant details of CA submitted by DFO, Tawang
5.	Submit the compliance of Scheduled Tribe and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, as per the MoEF&CC advisory.	The certificate against compliance of Scheduled Tribe and Other Traditional Forest Dweller (Recognition of Forest Rights) Act, 2006 issued by the Deputy Commissioner, Anini

29. IA-1 Division of MoEF&CC vide their letter No. J-1211/22/2013 IA-1 dated 23.09.2016 has forwarded approved study report on Cumulative Impact Assessment & Carrying Capacity Study of Dibang river basin in Arunachal Pradesh and informed that the major approved recommendations of the said study for Development of hydroelectric Power Projects (HEPs) in Dibang River basin are as follows:

- i. A total of 18 HEPs with Cumulative installed capacity of 9973 MW have been considered in the Dibang river basin study has been given in **Annexure-I of report. It includes Etalon Project at Sr. No.1 of the list.**
- ii. 15 HEPs more than 25 MW with Cumulative installed capacity of 9594 MW are recommended in the basin. The list of these projects with the e-flow is attached at **Annexure II.**
- iii. The list of two recommended projects (less than 25 MW) with Cumulative installed Capacity of 44 MW is placed Annexure III .
- iv. Simulation modeling could not be carried out in respect of Agoline HEP, Etabue HEP, Elango HEP and Ashupani HEP due to non- availability of data. Nevertheless, as per the prevailing norms, it is recommended that Environmental Flow of 20% in lean season, 25 % in non- lean non -monsoon months and 30% in monsoon season should be maintained for these projects.
- v. One project namely Malinye HEP 9335 MW has been recommended to be dropped as it falls within Dibang Wildlife Sanctuary and there is no possibility of shifting the project downstream in order to avoid falling with in the sanctuary. Besides, as informed by State government, there is no free stretch between Malinye and Attunli HEPs as the tail water level of the project matches with the FRL of Attunli HEP. The Malinye HEP shall not be re-allocated by altering their design features, location, names, etc.

- vi. One of the turbines of **Dibang Multi-purpose and Sissiri HEPs should run continuously to ensure sustenance of aquatic ecosystem.**
  - vii. The **executive summary** of the Basin study report as received from Consultant in this regard is attached as **Annexure IV.**
  - viii. On the other free stretches of Dibang river including its tributaries, no further HEPs should be planned/allotted in the entire Dibang basin even if they are of smaller capacity (less than 25 MW) and do not fall under the purview of EIA Notification, 2006.
30. The conclusion and recommendations pertaining to Etalin Project as given in the executive summary of the said Cumulative Impact Assessment & Carrying Capacity Study of Dibang river basin in Arunachal Pradesh are as follows:

**Dibang Multipurpose Project:** The project is in most advanced stage in basin, with environment and forest clearance in DPR and, DPR is under revision due to changes proposed during environment and forest clearance process. The project has reduced the dam height by 10 m leading to change of installed capacity from 3000 MW to 2880 MW. Environmental flow provisions as finalized during the environment clearance have been assessed by modeling study and are found to be adequate. Keeping this in view, no additional modification or changes are recommended for this project.

**Etalin Project:** In addition to Dibang Multipurpose Project, these two are the only projects which have made substantial progress in terms of survey and investigation and preparation of environmental impact assessment study reports. Etalin's DPR has already been accorded TEC by Central Electricity Authority; EIA & EMP studies have been completed along with public consultation process and have been discussed in EAC, however, environment clearance is not recommended because basin study was not complete at that time. Adequate free flow river stretch is maintained with upstream and downstream projects in both the cases and with the provision of environmental flow recommendations, impacts of reduced flow in dewatered stretch will also be mitigated. Therefore, no changes are required for these two projects as well.

31. The above facts of the proposal were considered by the **Forest Advisory Committee (FAC) in its meeting held on 28.02.2017 and the Committee**, after thorough deliberation recommended that :
- i. State government shall provide shape files of Forest land sought for diversion
  - ii. Approved CAT plan shall be submitted
  - iii. State government shall submit R and R plan, duly approved by competent authority.
  - iv. It is observed that project proponent had proposed huge area for construction and dumping. State government shall explore possibility to reduce area. Regional office in its site inspection had not recommended the proposal in the present form. State government, in consultation with regional office may propose a modified proposal after addressing the concerns raised in the inspection note of regional office.
  - v. There are two different proposals for diversion of forest land in favor of same user agency. Both the proposals shall be combined and one comprehensive proposal with total land requirement shall be placed before FAC for further consideration.
  - vi. The CA area shall be revised. State government shall provide shape file of CA land.
  - vii. The proposed project falls under the richest bio-geographical province of the Himalayan zone and falls under one of the mega bio-diversity hotspots of the world. The proposed project location falls at the junction of the Palearctic, Indo-Chinese, and Indo-Malayan bio-geographic regions having luxuriant forests and plethora of flora and fauna. About 6 Globally Threatened mammal species are found in this region of which 3 are endangered and 3 are under vulnerable category. About 680 bird species have been recorded from this region which is about 56% of total bird species of India. Among them 19 are Globally Threatened and 10 Near Threatened. It has 4 Critically Endangered, 2 endangered and 13 vulnerable species. This makes this area a very important place in terms of conservation of globally threatened bird species. It also has 3 very rare restricted range endemic bird species. This entire region falls under, IUCN management categories III, IV, Endemic Bird Area,

Global Biodiversity Hotspot, and Key Biodiversity Area indicating its importance at global scale. The Chief Conservator of Forest however, mentions few mammal and plant species. In fact this area has more biodiversity than any other part of the country. Another independent study using camera traps captured a total of 12 individual tigers and 8 individual clouded leopards at various locations in Dibang Valley. A large majority, above 60%, of the camera traps were placed outside Dibang Wildlife Sanctuary which shows that both species are not only abundant but also very widespread in the district. Therefore, FAC recommend conducting multiple seasonal replicate studies on biodiversity assessment by an internationally credible institute as the current study (EIA) is completely inadequate in this regard.

- viii. FAC also direct to take views of NTCA since this is vital tiger area of the region
- ix. There are a number of representations received regarding the project and project proponent is advised to provide clarification on the same.
32. Ministry vide its letter dated **28.03.2017 (Pg-915-916/c)** communicated the above recommendation to the State Government of Arunachal Pradesh for compliance. A copy of the letter was sent to the Member Secretary NTCA with a request to submit the views of NTCA on the proposal since this is vital tiger area of the region.
33. Government of Arunachal Pradesh vide their letter no. FOR 279/Cons/2010/Vol-1/2123-26 dated **12.02.2018 (Pg. 917-1429/c)** furnished the following information on Ministry's letter dated 28.03.2017. Summary of compliance is as under:

S. No.	Observation of FAC	Response of State Govt.
i.	State government shall provide shape files of Forest land sought for diversion	In this regard , that shape file of the forest land (1165.66 ha) sought for diversion has been provided .
ii.	Approved CAT plan shall be submitted	In this regard, it is stated by the State Govt. that a copy of approved CAT Plan is s attached and placed in file at <b>pg. 922-980/c</b> . The revised estimated amount of approved CAT Plan is <b>Rs. 4251.57649 lakh</b> .
iii.	State government shall submit R and R plan, duly approved by competent authority.	In this regard, it is stated by the State Govt. that a copy of approved R&R Plain is attached and placed in file at <b>(Pg. 981-1158/c)</b>
iv.	It is observed that project proponent had proposed huge area for construction and dumping. State government shall explore possibility to reduce area. Regional office in its site inspection had not recommended the proposal in the present form. <b><u>State Government, in consultation with regional office may propose a modified proposal after addressing the concerns raised in the inspection note of regional office.</u></b>	In this regard, it is stated by the State Govt. that the reply has already been submitted to the Minister vide letter No. 279/Cons/2007/604-07 dated 29.05.2015.
v.	There are two different proposals for diversion of forest land in favor of same user agency. Both the proposals shall be combined and one comprehensive proposal with total land requirement shall be placed before FAC for further consideration.	In this regard, it is stated by the State Govt. that Anonpani is a separate small hydro electric project located in the downstream of the proposed Tangon reservoir on Anonpani river. Etalin project is mainly utilizing the water of project is mainly utilizing the water of Dri river; it is a separate project on Dri river, origination from <b>Dri catchment area</b> , however dam is also using downstream water

		<p>from Tangon river.</p> <p>Further, Anonpani SHEP is located exclusively on Tangon river, which falls on the catchment of Tangon river. This river meets the Dri river at a distance of around 1.5 Km.</p> <p><b>In view of the above, the two proposals technically cannot be combined and hence need to be considered separately.</b></p> <p>Anonpani SHEP being a separate independent project, shall be taken up for construction after receipt of all statutory clearances.</p> <p><u>In-principle approval has been accorded to Anonpani SHEP by the Regional Office of Ministry, Shillong on 22.08.2017 as it deals with catchment area of Tangon river Annexure – IV. (pg. 1159-1160/c)</u></p>
<b>vi.</b>	The CA area shall be revised. State government shall provide shape file of CA land.	<p>In this regard, it is reported by the state govt. that the total requirement of CA land against the project is 2331.32 ha . An area of 490 ha has been identified by the DFO, social Forestry Division Tawang, at Shocktsen VFR (300 ha) and Bleteng VFR (190 ha). Necessary documents against 490 ha of land such as suitability certificate, Geo Reference of both the CA land and layout plan have been attached at <b>annexure-V (pg. 1161-1173/c)</b></p> <p>Remaining area i.e, 2331.32 ha – 490 ha = 1841.32 ha has been identified by the DFO, Anini Social Forestry Division in 25 plots. Necessary documents against 1841.32 ha such as suitability certificate, Geo Reference of the CA lands and layout plan have been attached at <b>annexure-VI (pg. 1174-1313/c)</b></p>
<b>vii.</b>	The proposed project falls under the richest bio-geographical province of the Himalayan zone and falls under one of the mega bio-diversity hotspots of the world. The proposed project location falls at the junction of the Paleoarctic, Indo-Chinese, and Indo-Malayan bio-geographic regions having luxuriant forests and plethora of flora and fauna. About 6 Globally Threatened mammal species are found in this region of which 3 are endangered and 3 are under vulnerable category. About 680 bird species have been recorded from this region which is about 56% of total bird species of India. Among them 19 are Globally Threatened and 10 Near Threatened. It has 4 Critically Endangered, 2 endangered and 13 vulnerable species. This makes this area a very important place in terms of conservation of globally threatened bird species. It also has 3 very rare restricted range endemic bird	<p>In this regard, it is reported by the state govt. that As per certificate issued by the Principal investigator Wildlife Institute of India, a team comprising of 15 persons will be visiting and conducting the study from January to September 2018 (<b>annexure-VIII Pg. 1314/c</b>)</p>

	species. This entire region falls under, IUCN management categories III, IV, Endemic Bird Area, Global Biodiversity Hotspot, and Key Biodiversity Area indicating its importance at global scale. The Chief Conservator of Forest however, mentions few mammal and plant species. In fact this area has more biodiversity than any other part of the country. Another independent study using camera traps captured a total of 12 individual tigers and 8 individual clouded leopards at various locations in Dibang Valley. A large majority, above 60%, of the camera traps were placed outside Dibang Wildlife Sanctuary which shows that both species are not only abundant but also very widespread in the district. Therefore, FAC recommend conducting multiple seasonal replicate studies on biodiversity assessment by an internationally credible institute as the current study (EIA) is completely inadequate in this regard.	
viii.	FAC also direct to take views of NTCA since this is vital tiger area of the region.	In this regard, it is reported by the state govt. that NTCA to furnish the views to FAC on this point.
ix.	There are a number of representations received regarding the project and project proponent is advised to provide clarification on the same.	In this regard, it is reported by the state govt. that as stated by the User Agency, representations received earlier have already been replied/clarified to the MoEF&CC. However, they are not aware of any representation (s) received regarding the project.

34. The shape file as provided has been examined by DSS Cell of FC Division and major observations in said report are as under:

- a) **In case of land proposed for Diversion:** Calculated area of forest land proposed for diversion is found 1164.10 Ha. Proposed area for diversion classified as Inviolable area as per DSS Decision Rule No. 1 & 2, falls under Inviolable category. Out of total forest area proposed for diversion, 134 ha. of land having the canopy density of Very dense forest, 267 ha. of land as Moderately dense forest, 625 ha. of land as Open Forest and 82 ha. of land as Non-Forest in terms of forest classes (as per the ISFR 2015) based on the interpretation of satellite data period 2013-2014.
- b) **In case of CA Sites:** CA sites of 488.08 Ha has been identified in Tawang Forest Division in two patches & CA sites of 1837.07 Ha has been identified under Anini Social Forestry Division in Twenty Five Patches. Thus, an area of 2325.15 Ha. CA land has been proposed instead of requirement of CA land of 2331.32 Ha (as per proposal). Thus, there is discrepancy of 6.17 Ha area as observed in CA land. Density classes of proposed CA patches (based on interpretation of satellite data period 2013-14) as per ISFR 2015, is given & may kindly seen in DSS report. Out of total 2325.15 Ha area proposed for identified CA land, 287 ha. of land having the canopy density of Very dense forest & 729 ha. of land as Moderately dense forest.

35. It has further been decided by the Ministry and communicated vide Ministry's letter dated 14.05.2018 (Pg.1435/c) that **APPCCF, Regional Office) may convene a meeting in RO Shillong to discuss the proposal with the concerned officials of State Government and submit the revised proposal, as sought by FAC for consideration in the Ministry.**

36. Member Secretary, NTCA was also reminded vide this Division's OM dated **14.05.2018(Pg.1436/c)** for their comments on the proposal.
37. The APCCF (C), RO (NEZ), Shillong vide his letter No. 8-20/2014-FC/3740-41 dated **15.02.2019 ( Pg.1437-1438/c )** referring to this Ministry's letter No. 8-20/2014-FC dated 14.05.2018 informed that the Regional Office, Shillong conducted meetings with Nodal Officer (FCA), Arunachal Pradesh and User Agency on 17.09.2018 and 23.10.2018. The Minutes of both the meetings were forwarded to Ministry by Regional office, Shillong vide letter No. 8-20/2014-FC/2078-80 dated 24.09.2018 and letter No. 8-20/2014-FC/2690-94 dated 24.10.2018 respectively.
38. It is further informed that the PCCF (A&V) & Nodal officer (FCA), Govt. of Arunachal Pradesh has forwarded the required information as per the minutes of the meeting vide State Govt. letter FOR.279/Cons/2010/Vol-I/203-205 dated 06.02.2019 (**Pg.1439-1601/c**) and the same in Original is forwarded herewith for further necessary action as deemed fit.
39. It is mentioned in the minutes of the meeting held on 23.10.2018 in the O/o APCCF, MoEF, NERO, Shillong on the issue of diversion of 1165.66 ha 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 that the Ministry of Environment and Forests vide Letter No. 8-20/2014-FC dtd. 14th May, 2018 directed the Regional Office, Shillong to convene a meeting to discuss the proposal with the concerned officials of State Govt. on the observations of FAC meeting held on 28.02.2017. **The FAC inter-alia observed that "project proponent had proposed huge area for construction and dumping. State Govt. shall explore possibility to reduce area. Regional Office in its site inspection had not recommended the proposal in the present form. State Govt. in consultation with the Regional Office may propose a modified proposal after addressing the concerns raised in the inspection note of Regional Office. But the State Govt. has submitted their response on Ministry's Letter of even number dtd. 08.03.2017 without consultation with Regional Office, Shillong".**
40. The Regional Office earlier conducted a meeting on 17.09.2018 and certain issues were to be clarified by the User Agency and State Forest Department. The meeting was again held on 23.10.2018. Shri Dheeraj Marwaha, Deputy General Manager (Hydro) and Shri Anil Dhar, Associate Vice President (Hydro) of Jindal Power, made a detailed presentation on the Project. The following points emerged for clarification in writing from the User Agency: -
- (i) CAT Plan and RR Plan copies have been provided by the User Agency during the meeting.
  - (ii) User Agency informed that Anonpani Hydro Electric Project of 22 MW is given 'in principle' approval and same shall be processed for final approval in due course. This Project is mainly required for construction purpose of Etalin Hydro Electric Project and later on the power generated shall be sold through the grid as the case may be.
  - (iii) User Agency informed that after approval of Dibang Basin Studies by MoEF&CC, proposal of Etalin HEP (3097 MW) for grant of Environment Clearance was again considered & discussed in the 1st and 2nd meeting of re-constituted Expert Appraisal Committee (EAC) for River, Valley and Hydroelectric Power Projects held during December' 2016 and January' 2017. EAC in its meeting of January' 2017 recommended the Environmental Clearance of Etalin HEP.
  - (iv) User Agency informed that the requirement of construction area has been reduced from 64.99 ha to 57.25 ha. It was discussed that the User Agency should give in writing as how many labour establishments (no. of units) is required during the peak construction days and how many units shall be required during operation stage. It may be also worked out as some area can be diverted only for temporary phase due to pre-fabricated structures and can be restored with green cover. Further, area required for muck dumping can also be reclaimed. It was also discussed that the area requirement for magazine, workshop, school, hospital, etc., seems to be on a higher side which has been justified by the User Agency in the presentation with the reasons being topographical factors.
  - (v) The User Agency justified that the exact breakup, in terms of length and width of the different units, cannot be given at this stage due to topography and undulating terrain .
  - (vi) It was clarified that NHIDCL is already taking up double-laning of existing Hunli-Anini road nearby and User Agency doesn't require any additional road in that aspect. However, in the Project area, different roads leading to 'Adits' shall be constructed. After the construction is over, the roads will be defunct and can be restored and reclaimed as green cover. The User Agency shall submit undertaking accordingly.
  - (vii) Regarding query on the transmission line, it was informed by User Agency that Central Transmission Utility (CTU) shall work on this and necessary process will be initiated later on.

- (viii) User Agency informed that Tail-Race Tunnel (TRT) is already included in the main segment of powerhouse. Regarding 35.5 ha of notional area, it was informed that it consists of 6.39 ha De-silting area, 14.27 ha Dri Head-Race Tunnel (HRT) and 14.84 Tangon Head-Race Tunnel (HRT).
- (ix) PCCF, Arunachal Pradesh & User Agency informed that the Chief Secretary's Certificate about non-availability of non-forest land for taking up CA is already furnished. Copy of the same may be provided to Regional Office for records.
- (x) Regarding Multiple-Seasonal Replicate studies, it was informed that Wildlife Institute of India has already submitted draft report. User Agency/Forest Department of Arunachal Pradesh shall send the same after finalization.
- (xi) Viewpoint of National Tiger Conservation Authority is still awaited.
- (xii) PCCF, Arunachal Pradesh and DFO, Anini Forest Division informed that an area of 1841.32 ha has been identified in degraded Village Reserve Forest in Anini Forest Division besides 490 ha in Tawang Forest Division. Regional Office doesn't have copy of details of area identified in Anini Forest Division and the same shall be provided by the State Government.

**41. The above facts were examined in light of recommendation of FAC held on 28.02.2017 and observed that:**

- (i) The proposal has neither been revised nor consolidated in light of recommendation of FAC.
  - (ii) WII Report has not yet been finalized.
  - (iii) Certain documents including CA details are yet to be received by RO, Shillong.
  - (iv) Views of NTCA are yet to be received.
42. Accordingly, Ministry vide its letter dated 05.03.2019 (**Pg.1612/c**) requested the State Government to provide the certain information as sought by RO, Shillong including final WII report to them and Regional Office, Shillong was also requested to **examine the proposal including CA sites in accordance with the recommendation of FAC and latest guidelines** .
43. NTCA was also reminded on 05.03.2019 (**Pg.1611/c**) again for their views on the instant proposal, but the same is still awaited.
44. Now, the Regional Office, Shillong vide their letter no. 8-20/2014-FC-2484-85 dated 30.09.2019 (**Pg.1931-2525/c**) in response to Ministry's letter dated 05.03.2019 informed that a revised 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 was submitted by M/s Etalin Hydro Electric Power Company Limited, Arunachal Pradesh. It is also intimated by RO, Shillong that the State Govt. submitted their response on Ministry's letter of even number dated 08.03.2017 without consultation with Regional Office. Hence, the Ministry decided that the Regional office, Shillong may convene a meeting to discuss the proposal with the concerned officials of State Govt and submit the revised proposals, as sought by FAC for consideration in the Ministry.

In response to Ministry's letter dated 14.05.2018, a meeting was held on 17.09.2018 in the Chamber of APCCF (C), MoEF & CC, NERO, Shillong wherein certain points were discussed as follows:

- i. *The CAT Plan and R & R Plan copies are not available with Regional Office, the Nodal Officer Arunachal Pradesh shall send the same which are duly approved by the Competent Authority for reference in the next meeting.*
- ii. **Another project by the same user agency viz Anonpani Hydro-Electric Project of 22 MW was given in-principle approval by the Regional Office, Shillong on 22.08.2017 and the User agency representative could not reply as to why compliance to in-principle approval has not been done as so far. He informed that this HEP of 22 MW is for construction purpose of the project of 3097 MW.**
- iii. *The status of environmental clearance was not confirmed through the representative informed that hearing process for the environmental clearance is over. In this connection, a reference was made to a representation submitted by villagers of Etalin.*
- iv. **In the proposal submitted the requirement of construction area for labour camps, contractors has been shown as 64.99 ha on enquiry that why this area could not be reduced in terms of combine colony for contractors and labourers, temporary sheds during construction stage only and two level residential structures the same could not be answered . It is also discussed as pointed out by representatives that there will be 12,000 labourers in total, the area may be considered for temporary diversion and after the construction is over it can be restored as forest .**

- v. The construction area was shown as total area without details of breakup in terms of length and width
- vi. The approach road of the project area was not made clear as whether only existing road will be used or there is widening of road or a new construction of road to the project site.
- vii. The area for transmission line from the power house to main feeder line has not been worked out in the project proposal.
- viii. In the proposal there is mention of 35.5 ha area as notional area. It was not made clear as what is the purpose of keeping this area.
- ix. There is no mention of tail race tunnel. The area requirement is also not clarified/ mentioned.
- x. The Chief Secretary's Certificate about unavailability of non-forest land has not been submitted so far.
- xi. The MoEF has made a mention that Multiple Seasonal Replicate Studies by an internationally credible institute to be made and submitted. The Nodal Officer informed that the Wildlife Institute of India has been engaged for the purpose and report is awaited.
- xii. The National Tiger Conservation Authority's (NTCA) viewpoint on the project has not been made available.
- xiii. Total requirement of CA against the project is 2331.32 ha an area of 490 has been identified by DFO, Social Forestry, Tawang and 1841.32 has been identified by DFO Anini, Social Forestry Division. This has been mentioned in the State Government's letter dated 12.02.2018 to Ministry but copy has been furnished without enclosures to Regional office.

45. The second meeting was held on 22.10.2018 for clarification on the above-mentioned matters in the chambers of APCCF (C), MoEF&CC Regional Office, Shillong and proceeding of the meeting are as follows:

- i. CAT plan and RR plan copies have been provided by the User agency during the meeting.
- ii. The Regional office vide its letter dated 15.02.2019 informed about the minutes of the meeting held on 17.09.2018 and 22.10.2018 wherein a copy has been forwarded to Ministry vide letter dated 24.09.2018 and 24.10.2018 respectively. It was also informed to Ministry that out of the total of 1165.66 ha land required for diversion in the forest proposal, an area of 424.83 ha is estimated to be reclaimed subsequent to commercial operation of the project. The user agency has revised the area required for construction activities for housing etc. **But the total area requirement remains the same as given in their Annexure IV. Hence, Regional Offices has requested Ministry for taking appropriate action accordingly.**

46. It is further reported by the Regional Office, Shillong that the State Government of Arunachal Pradesh vide its letter dated 04.09.2019 has furnished the replies and clarification in response to Regional office letter dated 24.10.2018 and 14.12.2018. The soft KML/ Shape files for total number of 25 CA patches proposed by State Govt have also been examined in this Regional office through DSS software and report enclosed (Pg.1934-1946/c).

It is mentioned by RO that the CA sites proposed may be considered. Even though there is a difference in the total area i.e. 1828 ha vis-a-vis 1841.32 ha (as stated by State Government) . *In View of the replies and clarification submitted by the State Government, Ministry may consider for further discussion in the FAC.*

47. The major observation made by the DSS Cell of Regional Office (C), Shillong is summarized below:

S. No.	Forest Division	Patch Name	CA site Area (Ha)	Area under VDF & MDF	Observation
1	Anini Social Forestry Division	Abayee-VFR	101	92	Google earth imagery dated 12.11.2015 shows that the proposed CA site located on the top of the hill may be considered as Scrub land.
2		Aguli-VFR	123	52	Google earth imagery dated 31.12.2018 shows that this CA site is devoid of trees.
3		Akobe-Yuron VFR	98	54	Google earth imagery dated 26.11.2018 one part of CA land proposed on the top of the hill seems to be a rocky land and the remaining part of CA land proposed on the surface of steep slope may considered as Scrub land.
4		Akobe VFR	40	28	Google earth imagery dated 12.11.2015 shows



					that this CA site is devoid of tree cover.
5		Amboli	52	7	Google earth imagery dated 31.12.2018 shows that this CA site is devoid of tree cover.
6		Angrim Valley VFR-II	226	46	As per Google earth imagery dated 18.11.2018, the CA site is proposed on extreme slope surface which is almost 32 degree gradient and may considered as degraded land.
7		Angrim Valley VFR-III	29	12	As per Google earth imagery dated 18.11.2013, the CA site is proposed on extreme slope surface which is almost 45 degree gradient and may considered as scrub land.
8		Anrim Valley-I	43	26	As per Google Earth imagery dated 26.11.2018 only 3.58 ha area of proposed CA land is covered with Vegetation.
9		Apayee-VFR	43	14	As per Google Earth imagery dated 31.12.2018 CA site is proposed on hill top and may considered as Scrub land.
10		Aropo-VFR	90	45	As per Google Earth imagery dated 23.11.2016 CA site is proposed on hill terrain at 30 degree inclination and may considered as Scrub land
11		Aunli-VFR	157	70	As per Google Earth imagery dated 23.11.2016 CA site is proposed on hill terrain at 35 degree inclination and may considered as Scrub land
12		Ayeso VFR	58	21	As per Google Earth imagery dated 23.11.2018 the CA site is devoid of vegetation cover
13		Chanli VFR-I	40	8	As per Google Earth imagery dated 22.11.2015 the CA site is devoid of vegetation cover
14		Chanli VFR-II	37	30	As per Google Earth imagery dated 26.11.2018 the CA site is devoid of vegetation cover
15		Emuli VFR	102	48	As per Google Earth imagery dated 26.11.2018 the CA site is devoid of vegetation cover
16		Idili VFR	55	41	As per Google Earth imagery dated 12.11.2015 the CA site is proposed on steep slope surface and may considered as degraded land.
17		Mawali VFR-I	75	16	As per Google Earth imagery dated 12.11.2015 the CA site is proposed on steep slope surface and may considered as degraded land.
18		Mawali VFR-II	106	18	As per Google Earth imagery dated 12.11.2015 the CA site is proposed on steep slope surface and may considered as degraded land.
19		Punli VFR-II	75	8	As per Google Earth imagery dated 12.11.2015 the CA site is proposed on steep slope surface and may considered as degraded land.
20		Punli VFR-III	65	41	As per Google Earth imagery dated 12.11.2015 the CA site is proposed on steep slope surface and may considered as degraded land.
21		Punli VFR-IV	24	8	As per Google Earth imagery dated 12.11.2015 the CA site is proposed on steep slope surface and may considered as degraded

					land.
22		Yuron VFR-I	77	32	As per Google Earth imagery dated 26.11.2018 the CA site is proposed on steep slope surface and may considered as degraded land.
23		Yuron VFR-II	45	28	As per Google Earth imagery dated 26.11.2018 the CA site is devoid of vegetation cover.
24		Yuron VFR-III	47	14	As per Google Earth imagery dated 31.12.2018 the CA site is proposed on steep slope surface and may considered as degraded land.
25		Yuron VFR-IV	20	18	As per Google Earth imagery dated 26.11.2018 the CA site is proposed on steep slope with a gradient angle of 37 degree and may considered as degraded land.

48. Despite repeated request made by FC division on 28.03.2017 ,14.05.2018 and 05.03.2019 to NTCA to furnish their comments as sought on the recommendation of FAC, requisite comments were not received from NTCA

49. After examination of above facts in the FC Division of MoEF&CC, the following observations are made:

- (i) The FAC on 28.02.2017 recommended as mentioned at para 2 (iv) that the State government shall explore possibility to reduce area. Regional office in its site inspection had not recommended the proposal in the present form and State government ,in consultation with regional office may propose a modified proposal after addressing the concerns raised in the inspection note of regional office. The State Govt. has not submitted the revised proposal after consulting with Regional Office Shillong.
- (ii) In compliance of para 2 (v) of FAC recommendation, the State Govt. reported that the proposal can not be combined in one proposal due to technical problem. Moreover, In-principle approval has already been granted to Anonpani SHEP by the Regional Office, Shillong on 22.08.2017 (pg. 1159-1160/c).
- (iii) In compliance of para 2 (vii) of FAC recommendation, the study entitled “multiple seasonal replicate study for preparation of Wildlife conservation plan for the impact of zone of Etalin HEP (3097MW) in Dibang valley District of Arunachal Pradesh” has been assigned to WII, Dehradun. The said study will be conducted during January to September, 2018.
- (iv) The comments as sought vide this Ministry’s letter dated 28.03.2017 on the recommendation of FAC from NTCA for the proposal is awaited.

50. The above facts related to the proposal was considered by FAC in its meeting on 17.10.2019. **Decision of FAC on 17.10.2019 and** after thorough deliberation and discussion with Dy DG, Regional office Shillong (through VC) and DIG (NTCA) observed that **the recommendations of last FAC meeting has not been complied fully and the replies submitted in compliance of all observations are not satisfactory. Moreover, FAC could not obtain viewpoints of representatives of user agency or state government, as no one was present for consultation and clarification of doubts.** In this regard, it was recommended that a subcommittee of FAC shall visit the site and check if the total land requirement could be further reduced. The subcommittee may also look into the concerns highlighted by regional office in its SIR especially related to tree enumeration process and the aspects highlighted in biodiversity assessments study by WII. Report of subcommittee shall be exhaustive with appropriate recommendation so that FAC could take appropriate decision. It is proposed that subcommittee shall have following as its member

- i. Sh. S.D Bora Member FAC.
- ii. Dr. Sanjay Deshmukh Member FAC.
- iii. Representative of Regional Office Shillong.
- iv. IG NTCA Regional Office Guwahati.

- v. Sh. G.V Gopi Wildlife Institute of India Dehradun.
- vi. CCF(T).
- vii. CCF(WL).

**FAC further observed that user agency shall depute some technical officer well conversant with the facts related to the project.**

- 51. As per recommendation of FAC on 17.10.2019, a sub-committee was constituted vide this Ministry's letter dated 15.01.2020 and the constituted committee visited the site during 10-14 February, 2020.
- 52. Now the report of the Committee as constituted on the decision of FAC vide this Ministry's letter dated 15.01.2020 has been received through RO Shillong's letter No.....dated .....(Pg..../ToC) and the same is reproduced below:

### **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 29<sup>th</sup> 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 10<sup>th</sup> February to the 15<sup>th</sup> 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(Pg.1894-1895/ToC)**.

The Committee members were detailed about the project through a presentation by the User Agency on the evenings of 10<sup>th</sup> Feb 2020 at Roing and on 11<sup>th</sup> 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 11<sup>th</sup> 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(Pg.1896-1897/ToC )** 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 detail is attached as **Annexure -III(Pg.1898/ToC)** .

- 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)(Pg.1899/ToC)** .

- 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)(Pg.1901/ToC)** 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 observations 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 of Sub-Committee:**

- i. 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.
- ii. 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.
- iii. 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.
- iv. 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.

The facts of the proposal along-with sub-committee report is placed before FAC in its meeting held on 23.04.2020 for examination and appropriate recommendation.

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