

**Sub: Diversion of 4577.84 ha (originally proposed 5056.5 ha) of forest land in favour of M/s NHPC Limited for construction of Dibang Multipurpose Project (3000 MW) on Dibang River in Lower Dibang valley district of Arunachal Pradesh.**

1. This relates to diversion of 5056.50 ha of forest land in favor of M/s NHPC for construction of Dibang Multipurpose project (3000 MW) on Dibang River in Lower Dibang Valley of Lower Dibang District of Arunachal Pradesh was submitted by the State Government vide their letter no. FOR.10-44/Cons./2003/Vol-I/312-16 dated 18<sup>th</sup> August 2011.
2. The Regional Office (North Eastern Zone), Shillong, vide this Ministry's letter dated 14.09.2011 was requested to carry out site inspection of the area proposed for diversion. However, the Regional Office Shillong vide letter dated 1.08.2012 informed the Ministry that due to reasons viz. poor connectivity, remoteness of the area, incessant rainy weather, and scarcity of officers in the Regional Offices, and non-submission of essential information by the State Government viz. complete tree enumeration list, GPS coordinates and suitability of the land identified for CA, site inspection of the area cannot be carried out so far.
3. The Regional Office had also informed that as per the details provided in the original proposal, part of the area of the project falls within 10 km radius of the Mchao Wildlife Sanctuary. Taking cognizance of this fact, the project proponent has informed that area falling within 10 km radius has been discarded and requirement of forest land reduced from 5056.50 ha to 5022.842 ha after discarding 33.658 ha of area falling within 10 km radius. However, the Regional Office has ascertained that even after discarding 35.658 ha of area, around 136.902 ha of non-forest land still falls within 10 km radius.
4. After receipt of site inspection report from the Regional Office, Shillong, the FAC considered the proposal in its meeting held on 12<sup>th</sup> July, 2013 and after detailed discussion on the proposal, the Committee recommended rejection of the proposal on the grounds viz. huge forest area with very good forest cover, irreparable and adverse impact on general eco-system of the area by felling of more than 3.5 lakhs of trees, several other HEP have been proposed in the same river valley apart from Dibang HEP, unavailability of study on cumulative impact of all the HEP, etc. The Committee is also of the opinion that ecological, environmental and social costs of diversion of such a vast track of forest land, which is a major source of livelihood of the tribal population of the State, will far outweigh the benefits likely to accrue from the project.
5. Subsequently, the proposal, along with the recommendation of the FAC, was also discussed in the meeting held between Secretary, Ministry of Environment and Forests and the Secretary, Ministry of Power on 13.08.2013 and after detailed deliberation on the proposal it was decided that the User Agency shall explore the possibility to reduce the requirement of forest land for the project and a revised proposal may accordingly be submitted to the MoEF for further consideration.
6. The proposal was also discussed in the meeting of the Cabinet Committee on Investment held on 9.12.2013. The Cabinet Secretariat vide their OM dated 13.12.2013 forwarded the minutes of the meeting of the meeting. The following extract of the minutes of the said meeting relates to the FC Division

*" The Committee considered the note dated 25.10.2013 from the Ministry of Power (Vidyut Mantralaya) and in the light of all relevant facts, decided that Ministry of Environment and Forests may grant the requisite clearance for diversion of forest land expeditiously. The Committee further directed that appropriate measures for increasing the environment flow in the 1.2 Km along stretch between the dam and*

*Tail Water Level (TWL) of the dam to Power House be taken and if required, adjustments in the project parameter be made at a later stage keeping in view the report of Water and Power Consultancy Services (India) Ltd."*

7. The State Government of Arunachal Pradesh vide their letter No. FOR.10/Cor./2003/Vol-IV/287 dated 13.02.2014 submitted revised proposal, involving diversion of 4577.84 ha of forest land, indicating following facts.
8. The State Government has reported that, NHPC Limited vide letter no. NH/DMP/GM/14/381 dated 10.02.2014 have proposed two alternatives for reduction of forest area to be diverted by reducing the dam height by 5 m and 10 m, which will reduce the requirement of forest land by 300 ha. and 445 ha. respectively. The above reduction in dam height will lead to reduction in power generation to the tune of 2.3% and 2.0% respectively. It is also anticipated that no. of trees to be affected will marginally come down from 3.55 lac to 3.24 lac by reducing forest area to 4577.84 ha. On discussion with the NHPC officials stationed at Itanagar, it is revealed that NHPC may not be in position to reduce the height of the dam any further, as it would significantly affect the power generation from the dam.
9. The revised forest proposal involving 10 m reduction in the dam height, which would reduce the requirement of forest land by 445 ha resulting in diversion of 4577.84 ha of forest land, is now submitted to the Ministry of Environment and Forests, Govt of India, New Delhi. Breakup of the forest land in question is as under:
  - a) Forest land with vegetation/ tree cover (surface Forest land) : 3340.922 ha.
  - b) Forest land falling under river bed : 1236.920 ha.
10. In view of the above the State Government has requested that the revised proposal of NHPC may be considered by the Ministry and approval of the Central Govt. Under Section-2 of the Forest (Conservation) Act, 1980 may be conveyed for diversion of 4577.84 ha. of forest land for the above project at the earliest.
11. However, corresponding details pertaining to the revised proposal, such as suitable map (SOI toposheet, DGPS map, forest cover map, etc) have not been submitted by the State Government. In addition to this compliance of Scheduled Tribe and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 has also not been submitted by the State Government.
12. Revised proposal submitted by the State Government of Arunachal Pradesh was considered by the FAC in its meeting scheduled to be held on 29<sup>th</sup> to 30<sup>th</sup> April, 2014 and the FAC after examination of proposal and interaction with representatives of user agency observed as below:
  - i. This proposal was rejected by the FAC during its meeting held on 12.07.2013 on the grounds viz. huge forest area with very good forest cover, irreparable and adverse impact on general eco-system of the area by felling of more than 3.5 lakhs of trees, several other HEP have been proposed in the same river valley apart from Dibang HEP, unavailability of study on cumulative impact of all the HEP, etc. The Committee is also of the opinion that ecological, environmental and social costs of diversion of such a vast track of forest land, which is a major source of livelihood of the tribal population of the State, will far outweigh the benefits likely to accrue from the project.

- ii. Subsequently, the proposal, along with the recommendation of the FAC, was also discussed in the meeting held between Secretary, Ministry of Environment and Forests and the Secretary, Ministry of Power on 13.08.2013 and after detailed deliberation on the proposal it was decided that the User Agency shall explore the possibility to reduce the requirement of forest land for the project and a revised proposal may accordingly be submitted to the MoEF for further consideration.
- iii. The proposal was also discussed in the meeting of the Cabinet Committee on Investment held on 9.12.2013. The Cabinet Secretariat vide their OM dated 13.12.2013 forwarded the minutes of the meeting of the meeting. The following extract of the minutes of the said meeting relates to the FC Division  
“ The Committee considered the note dated 25.10.2013 from the Ministry of Power (Vidyut Mantralaya) and in the light of all relevant facts, decided that Ministry of Environment and Forests may grant the requisite clearance for diversion of forest land expeditiously. The Committee further directed that appropriate measures for increasing the environment flow in the 1.2 Km along stretch between the dam and Tail Water Level (TWL) of the dam to Power House be taken and if required, adjustments in the project parameter be made at a later stage keeping in view the report of Water and Power Consultancy Services (India) Ltd.”
- iv. The State Government of Arunachal Pradesh vide their letter No. FOR.10/Cor./2003/Vol-IV/287 dated 13.02.2014 submitted revised proposal, involving diversion of 4577.84 ha of forest land.
- v. The State Government has reported that, NHPC Limited vide letter no. NH/DMP/GM/14/381 dated 10.02.2014 have proposed two alternatives for reduction of forest area to be diverted by reducing the dam height by 5 m and 10 m, which will reduce the requirement of forest land by 300 ha. and 445 ha, respectively. The above reduction in dam height will lead to reduction in power generation to the tune of 2.3% and 2.0% respectively. It is also anticipated that no. of trees to be affected will marginally come down from 3.55 lac to 3.24 lac by reducing forest area to 4577.84 ha. On discussion with the NHPC officials stationed at Itanagar, it is revealed that NHPC may not be in position to reduce the height of the dam any further, as it would significantly affect the power generation from the dam.
- vi. It was also brought to the knowledge of the committee that earlier the NHPC had submitted three alternatives directly to the Ministry wherein reduction in Dam height by 10m, 30m and 40m was proposed. However these alternatives did not any mention revised proposal from the State Government. .
- vii. Corresponding details pertaining to the revised proposal, such as suitable map (SOI toposheet, DGPS map, forest cover map, etc) have not been submitted by the State Government. In addition to this compliance of Scheduled Tribe and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 has also not been submitted by the State Government.
- viii. In the revised proposal no clarification about the non-suitability of the land identified for Compensatory Afforestation, as per observation of the Regional Office Shillong made in the Site Inspection Report, has been furnished by the state government..
- ix. The proposed forest land for Dibang Multipurpose Project is the major habitat of scheduled I flora and Fauna. All the major Schedule –I species like Elephant, Hollock

Gibbon, Clouded Leopard, Tiger, Leopard cat, Fishing cat, Mithun Slow Loris, Snow Leopard and Himalayan Black Bear etc are found in the area.

- x. The Density of the Forest in the proposed area varies from 0.10 to 0.70.
  - xi. As per the SIR of RO Shillong, there will be a significant effect on removal of trees in the general ecosystem of the area. As the proposed diversion site is having a steep slope with patches of Jhum cultivated area, removal of the trees will affect the micro climate of the area and the Wildlife and Flora endemic in the proposed submergence area. The trees and shrubs all along the submergence area should be removed so that they will not be left submerged thereby causing decomposition and lead to the accumulation of the methane gas causing Green House effect. The construction of the dam itself may lead to the increase in the temperature in the submergence area which may also affect the micro aqua habitat.
  - xii. CAT plan has not been submitted.
  - xiii. The committee was of the view that revised proposal envisages reduction in dam height by 10 meter which will bring down the submergence of the forest area by only 445ha, a reduction by less than 9%. Further number of affected trees is marginally coming down to 3.24 lakhs from 3.5 lakh. Such a marginal reduction in requirement of the forest land for the project may not be able to reduce the adverse impact of project on such a biodiversity rich mature forest ecosystem to the extent which could make the project environmentally as well as socio-economically viable in forest dependent tribal society of Arunachal Pradesh. The revised proposal, therefore, does not address the concerns raised by the FAC in its last meeting. Further if we look into the reduction in power generation due to reduction of the Dam height by 10 m it is to the tune of only 2.3%. The User Agency has not given any convincing justification for their stand of not reducing the Dam height by more than 10 meter. Impact of reduction of the Dam height on the economic feasibility of the project has not been put forth before the committee.
  - xiv. **In view of the above the committee has recommended for rejection of the proposal and felt that the proposed area is very rich in Bio-Diversity and a sensitive eco system being at the edge of hills and flood plains and having large number of endemic and endangered flora and fauna. Moreover, such project is most likely to have considerable downstream impact including impact on the Dibru-Saikowa NP in Assam which is not yet studied.**
  - xv. The above recommendation of the FAC, after soliciting the approval of the competent authority were communicated to the State Government vide this Ministry's letter of even number dated 22.08.2014.
13. Till a decision on the recommendation of the FAC was taken by the MoEF&CC, the Secretary Power has written a DO letter to Secretary, MoEF on 16.06.2014 to review the decision of FAC and accord the Stage-I forest clearance. In response to this a meeting was held on 19.06.2014 wherein it was decided that a report on sensitivity analysis of dam height reduction shall be submitted to MoEF. The matter was further discussed in a joint meeting of Ministry of Minc, Ministry of Steel, Ministry of Environment Forests and Climate Change and Ministry of Coal, attended by the Ministers and Secretaries of the respective Ministries. Necessary action will be taken after receipt of report on sensitivity analysis for dam height reduction by 40 M. Pursuant to the decision taken in the meeting dated 19.06.2014, the Addl. Secretary Power vide his letter dated 24.06.2014 submitted a report on the sensitivity analysis on the dam height reduction upto 20 meters.

However, examination of the same in the Ministry revealed that as decided in the meeting the sensitivity analysis report was not submitted by the project proponent. Accordingly, this Ministry vide its letter dated 5.09.2014 requested that sensitivity analysis of reduction of dam height upto 40 meters may please be submitted for further consideration by the MoEF&CC.

However, facts related to the revised proposal as contained in the proposal submitted by the State Government are given as under:

1.	Name of the Proposal	Diversion of 4577.84 ha (originally proposed 5056.5 ha) of forest land in favour of M/s NHPC Limited for construction of Dibang Multipurpose Project (3000 MW) on Dibang River in Lower Dibang valley district of Arunachal Pradesh.									
2.	Location (i) State (ii) District	Arunachal Pradesh Lower Dibang Valley									
3.	Particulars of Forests: (i) Name of Forest Division and Forest area involved.  (ii) Legal status/Sy.No.  (iii) Map	<p><b>Dibang Forest Division</b> 2019.042 ha  <b>Anini S. F. Division</b> 2558.800 ha  <b>Total</b> <b>4577.840 ha</b></p> <p>Community Forest (CF)/Unclassified State Forest (U.S.F)</p> <p>1. SOI Toposhcet -  2. Forest Cover map-  3. 10 kms radius map-  4. Digital DGPS map-</p>									
4.	Topography of the area	-									
5.	(i) Geology (ii) Vulnerability to erosion	-									
6.	(i) Vegetation         (ii) Density	<p><b>Dibang Forest Division:</b> The Dibang catchment receives a major portion of precipitation during south west monsoon in addition to snow at the higher reaches during winter months. Generally, the factors responsible for erosion are slopes together with the surface run-off at the high velocity over the surface. Though there is dense mixed vegetation in the catchment areas of present project, in some open patches natural soil erosion activity may take place in and round the area.</p> <p><b>Anini Forest Division:</b> The area is steep slope with deep gorge and is bounded with rock having loose soil. Therefore landslip may occur.</p> <p>Bola, Hollock, Nahar, Dhuna, Amari, Borpat, Makrisal, Siris, hatipoila, Poma, Khokan, Sopa, Jutuli, Jamuk, Hingori, Pichola, Mekhai, Pichola, Simul, Banderdima, Ghora, Neem, Udai, Paroli, Dewasali, Amora, Ghora Neem, Moder, Peepal, Panchpatti, Golmohar, Demaru, Karu, Sam Kathal etc.</p> <p><b>Dibang Forest Division:</b></p> <table border="1"> <thead> <tr> <th>S. No.</th><th>Particular of Density</th><th>Area (ha)</th></tr> </thead> <tbody> <tr> <td></td><td>Canopy Density Class - 0.4 to 0.7</td><td>965.69</td></tr> <tr> <td></td><td>Canopy Density Class - up</td><td>538.842</td></tr> </tbody> </table>	S. No.	Particular of Density	Area (ha)		Canopy Density Class - 0.4 to 0.7	965.69		Canopy Density Class - up	538.842
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		to 0.7		
		Non-Forest i.e. River Bed/ Water-body	514.51	
		<b>Total</b>	<b>2017.042</b>	
		<b>Anini Forest Division:</b>		
		Sl. No.	Particulars	Area (Ha)
(iii) No. of trees to be felled		1	Canopy density class- Up to 0.40	1230.39
		2	Canopy density class- > 0.40 & up to 0.70	606.00
		3	Non Forest i.e River Bed/water	722.41
		Total		2558.80
		Total 3,09,624.00 trees		
7.	Whether area is significant from wildlife point of view	Not mentioned		
8.	Whether forms part of National park, Wildlife Sanctuary, Biosphere Reserve, Tiger Reserve, Elephant Corridor, etc. (if so, details of the area and comments of the Chief Wildlife Warden	No		
9.	Whether any RET species of flora and fauna are found in the area. If so details thereof	<b>Dibang:</b> Not Sighted <b>Anni:</b> No endangered Flora & Fauna are found in the proposed project area.		
10.	Approximate distance of the proposed site for diversion from boundary of forest.	<b>Dibang:</b> Dam site is located more than 11 km (Approx), from Mchao Wildlife Sanctuary and 25.5 km from Dibang Reserve Forest. <b>Anni:</b> Approx – 20 to 22 Km from Mehao Wild Life Sanctuary & 40 to 60 Km approx from Dihang Dibang Biosphere reserves. The proposed site is located along the river bank of Dibang river and adjacent to forest area (USF/Community land).		
11.	Whether any protected archaeological/ heritage site/defence establishment or any other important monuments is located in the area.	No		
12.	Whether any work of in violation of the Forest (Conservation) Act, 1980 has been carried out (Yes/No). If yes details of the same including period of work done, action taken on erring officials. Whether work in violation is still in progress.	No		
13.	Whether the requirement of forest land as proposed by the user agency in col. 2 of Part-I is unavoidable and barest minimum for the project,	Yes, the requirement of forest land as proposed by the user agency is unavoidable and barest minimum for the project.		

	if no recommended area item-wise with details of alternatives examined.																																	
14.	Whether clearance under the Environment (protection) Act, 1986 is required?	-----																																
15.	Compensatory Afforestation																																	
	(i) Details of non-forest area/degraded forest area identified for CA, its distance from adjoining forest, number of patches, size of each patches.	<p>The total forest area required for diversion is 4577.842 ha. falling in two forest division i.e. in Anini FD 2558.80 ha &amp; in Dibang FD 2019.042 ha. Hence, compensatory afforestation has to be created over double the area in degraded forests i.e. <math>4577.842 \times 2 = 9155.684</math> ha. Identification off degraded forest land for compensatory afforestation has been done in Dibang Forest Division, namsai Forest Division and Anini S. Forest Division.</p> <table><tr><th>Division</th><th>Location</th><th>Area (ha)</th><th>Remarks</th></tr><tr><td rowspan="3">Dibang</td><td>Kcrim RF,</td><td>1209.00</td><td></td></tr><tr><td>Deopani RF,</td><td>466.684</td><td></td></tr><tr><td>Bishmaknagar RF</td><td>500.00</td><td></td></tr><tr><td rowspan="3">Namsai</td><td>Kamlang RF,</td><td>500.00</td><td></td></tr><tr><td>Lai RF,</td><td>500.00</td><td></td></tr><tr><td>Lohit RF</td><td>1000.00</td><td></td></tr><tr><td>Anini</td><td>CF/UF</td><td>4980.00</td><td></td></tr><tr><td></td><td><b>Total</b></td><td><b>9155.684 ha.</b></td><td></td></tr></table>	Division	Location	Area (ha)	Remarks	Dibang	Kcrim RF,	1209.00		Deopani RF,	466.684		Bishmaknagar RF	500.00		Namsai	Kamlang RF,	500.00		Lai RF,	500.00		Lohit RF	1000.00		Anini	CF/UF	4980.00			<b>Total</b>	<b>9155.684 ha.</b>	
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	(ii) Map showing non-forest/degraded forest area identified for CA and adjoining forest boundaries.	<b>Dibang-</b> 148/c <b>Anni -</b>																																
	(iii) Detailed CA scheme including species to be planted, implementing agency, time schedule, cost structure, etc.	<b>Dibang:</b> Detailed estimate for compensatory afforestation to be implemented by the Forest Department is prepared separately for Dibang and Namsai Forest Division. (Pg-156-173/c) <b>Anni:</b> (Pg-202-208/c)																																
	(iv) Total financial outlay for CA	<b>Dibang-</b> Rs. 39,92,38,580.00 (Dibang FD) + Rs. 37,19,24,340.00 (Namsai FD) <b>= Rs. 77,11,62,920.00</b> <b>Anni -</b> Rs. 80,37,31,944.00																																
	(v) Certificate from the competent authority regarding suitability of the area identified for CA and from management point of view.	<b>Dibang -</b> 174-176/c <b>Anni -</b> 209/c																																
16.	Catchment Area Treatment	Pg-41/c																																



17.	Rehabilitation of Oustees a) No of families involved b) Category of families c) Details of rehabilitation plan	115 families All families belong to Scheduled Tribe Pg-100-114/c
18.	Cost Benefit Ratio	62:11:1 (pg-14/c)
19.	Total Cost of the Project	Rs. 15886.39 Crores
20.	Recommendation i. DFO ii. CCF iii. Nodal Officer iv. SG	Recommended, Pg-125-199/c Recommended, Pg-236/c Recommended, Pg-240/c Recommended, Pg-241/c
21.	District Profile (i) Total Geographical area of the district  (ii) Total Forest area/Divisional Forest area  (iii) Total area diverted since 1980  (iv) Total CA stipulated since 1980 (Forest land) a. Forest land including penal CA  b. Non Forest Land  (v) Progress of Compensatory Afforestation a. Forest land  b. Non Forest land	<b>Dibang</b> – 3900.00 Sq Km <b>Anni</b> - 9029.00 Sq Km Approx  <b>Dibang</b> Reserve Forest = 719.61 Sq Km Mehao W/L Sanctuary = 281.50 Sq Km USF (under working scheme) = 535.30 Sq Km <b>Total</b> = <b>1536.41 Sq Km</b> <b>Anni</b> - 6655.00 Sq Km  <b>Dibang</b> - 26 ha (1 case) <b>Anni</b> - 426.80 ha Approx I. Hunli – Anini Road 207.75 ha (BRTF) II. Hunli – Anini Road – 40.90 ha (BRTF) III. Anini – Mipi Road – 60.00 ha (BRTF) IV. Anini – Dambeun Road – 46.50 ha (BRTF) V. Rtalini – Malini Road – 70.50 ha (BRTF) VI. Chini – Afra Road MHS – 0.43 ha (Power)  <b>Dibang</b> – Total 622.00 ha i.e. 570.00 ha against K.I.P brigade under Lohit forest Division and 52.00 ha against Koronu-Paya-B/Nagar Road under Dibang forest division. <b>Anni:</b> Nil  Nil  <b>Dibang-</b> 622.00 ha <b>Anni:</b> Nil  Nil

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Purpose wise bread-up of the total land require:

S. No.	Name of Project Component	USF		Non-Forest Land (ha)	Land under wet rice cultivation (ha)	Total (ha)
		Forest Land falling under Dibang Forest Division, Roing (ha)	Forest Land falling under Anini S.F Forest Division, Anni (ha)			
1.	Reserve Forest Land					Nil
2.	Submergence Area	534.96	1783.39		70	3564
3.	River bed of Submergence area	423.24	722.41			
4.	River bed area of project components	61.27		38.73		100
5.	Area for Dam, DT, HRT, Presure Shaft, Powr House, TRT, Cable Crane on right & left banks	88		12.06		100.06
6.	Area for muck disposal, batch pland, switch yard & aggregate processing plant on right bank just d/s of dam	20				20
7.	Area for NHPC contractor camp & office	Left Bank		19		19
		Right Bank		60.25		60.25
8.	Area for permanent magazine opposite to pathar camp on left bank			2.50		2.50
9.	Area for DT outlet & TRT outlet on right bank			13.30		13.30
10.	Area for muck disposal, fabrication yard & aggregate processing plant on right bank near pathar camp			40		40
11.	Epali Clay Quarry			4.52		4.52
12.	Colony Area			100		98.38
13.	Land for rehabilitation purpose			137.02		137.02
14.	Road land- New Road 24 m wide (Roing-Hunli road from 19 km point to project site on left bank – 22 km Road from Aka Korong to Dambuk – 22, realignment	124	53			177

	of road in Ithun valley – 20 km), Widening of existing road (12 m to 24 m) of Roing-Hunli road from 0					
15.	Area for towers for 66 KV line from Chimari to Project Site and substation at Chimari (5 towers/km with 9 sq m area for each tower & 250 sq m for substation)	0.23				0.23
16.	Area for Right of Way for 66 KV line form Chimari to Project Site (45 km long and 18 m wide)	81				81
17.	Eme river / Diri Korong Deposit	167				167
18.	Nizamghat-Sirki			108		108
19.	Aya Korong/Aka Korong fan deposit	339.342				339.342
20.	Rest Arca for project	150		165.92		315.92
	Total	2019.042	2558.80	701.30	70	5349.142

#### **SITE INSPECTION REPORT OF ORIGINAL PROPOSAL BY REGIONAL OFFICE, SHILLONG**

Site inspection was carried out by Shri B.S. Kharmawphlang, Chief Conservator of Forests accompanied by other officials of the Regional Office, North Eastern, Shillong and officials of the user agency carried out from 25.04.2013 to 28.04.2013 and have submitted the detailed report on his site visit along with the photographs taken at the various location and sites of the proposed area and the proposed compensatory afforestation site as given below:

#### **Background note on the proposal:**

The matter related to the observations of the Site inspection of Forest Diversion 5056.50 ha of forest land for construction of Dibang Multipurpose Project (3000 MW) on Dibang River was communicated to the Ministry vide letter No .8-85/2011-FC/1430 Dated 1/08/2012(copy enclosed as Annexure A). The State Government was requested by this Office letter No. 8-85/2011-FC/2996-99 Dated 13/12/12 (copy enclosed as Annexure B) to provide the necessary information. A site inspection was fixed on 28/1/2013 but due to non-availability of the Forest Officer Government of Arunachal Pradesh this was postponed for which the Principal Secretary Environment & Forests Department was informed vide this office letter No. 8-85/2011-FC/3460-01 Dated 21/01/13.

The 1<sup>st</sup> Site Inspection was carried out on the 16<sup>th</sup> & 17<sup>th</sup> February 2013 by Shri B.S.Kharmawphlang CCF(C ) and Shri Thoudam James Singh R.A of the Regional Office along with the officers and staff of the Forest Department Roing Forest Division viz. Shri M.Riba Divisional Forest Officer and the N.H.P.C officials viz. Shri. Raj Mal, Chief Engineer, Shri Santosh Kumar Environmental Officer. A visit was carried out on the right

bank of the river Dibang on all proposed forest area for diversion and the dam axis. The next day the compensatory afforestation site at Bismaknagar having an area of 500 ha was visited. The details of the number of trees to be affected could not be shown in sample plot, proposed forest area for diversion could not be identified properly on the ground, the site of the compensatory afforestation also could not be located in the ground though it is depicted in the map duly authenticated by the Divisional Forest Officer. The site inspection was incomplete and the observation made on these two days were sent to the Principal Secretary cum PCCF, Government of Arunachal Pradesh vide letter dtd. 25<sup>th</sup> Feb, 2013 a copy was also marked to Additional Director General of Forest (FC) Division **copy enclosed as Annexure-C.**

State Government was again requested to submit the required information for conducting the site inspection vide this office letter No.8-5/2011-FC/3410 Dated 26/02/2013 letter No.8-85/2011-FC/3532-33 Dated 19/03/2013 and letter No. 8-85/2011-FC/117-20 Dated 05/04/2013(**copies enclosed as Annexure D).**

The 2<sup>nd</sup> Site inspection was carried out on 25/04/2013 to 28/04/2013, the Divisional Forest Officer, Roing Forest Division informed that the sample enumeration of the trees to be affected by the project could not be carried out as on the date of the site inspection. The proposed Compensatory Afforestation site located at Namsai and Dibang Forest Division was inspected. The site located under Anini Forest Division was not inspected as the matter was subjudice in the High Court(**Copy of the Court Order Enclosed**) as **Annexure E.**

**1. Legal status of the forest land proposed for diversion.**

*The legal status of the proposed diversion of forest land 5056.50 ha for construction of 3000MW Multiple Purpose Project H.E.P over Dibang River is Unclassed State Forest and Community Forest Land. In such Unclassed and Community Forest lands no cadastral survey or any kind of survey have been carried out by the State Government of Arunachal Pradesh till date.*

**2. Item wise break-up details of the forest land proposed for diversion.**

S. No.	Name of project	Forest land falling Under Dibang Forest Division, Roing	Forest land falling Under Anini S.F Forest Division, Anini	Non-Forest Land (ha)	Land under Wet rice cultivation (ha)	Total (ha)	Area falling under 10 km radius of Mchao Wildlife Sanctuary
		(ha)	(ha)				
1	Submergence Area						
(i)	Dibang River	Left Bank	144.23	803.1			
		Right Bank	119.55	541.4			
(ii)	Ari Pani	Left Bank	52				
		Right Bank	50				
(iii)	Ilu Pani	Left Bank	81				
		Right Bank	102				
(iv)	Ithun	Left Bank	48	120			

	River	Right Bank	43	135				
(v)	Ithli River	Left Bank	19			70	4009	0
		Right Bank	21					
(vi)	Emra River	Left Bank		7				
		Right Bank		5				
(vii)	Alu River	Left Bank		86				
		Right Bank		49				
(viii)	Imu River	Left Bank		77				
		Right Bank		62				
(ix)	Ahi River	Left Bank		90				
		Right Bank		107				
	<b>Sub Total(i)</b>		<b>679.78</b>	<b>2082.5</b>				
(x)	River Bed area		453.42	723.3				
2	River Bed area		61.27		38.73		100	0
3	Area for Dam ,DT, HRT, Pressure		88		12.06		100.06	0
4	Area for muck disposal ,batch plant		20				20	0
5	Area for NIIPC, Contractor camp & Office	Left Bank			19		19	2.284
		Right Bank			60.25		60.25	10.279
6	Area for permanent magazine opposite to Pathar camp & Office				2.5		2.5	2.5
7	Area for DT outlet & TRT outlet on right Bank				13.3		13.3	0
8	Area for muck disposal,fabrication yard and & aggregate processing plant on right Bank near Pathar camp				40		40	40
9	Epali Clay Quarry				4.52		4.52	0
10	Colony Area				100		100	0
11	Land for rehabilitation purpose				137.02		137.02	0
12	Road land		124	53			177	0
13	Area for towers for 66 KV line from Chimari to Project site and Substation at Chimari(5 towers/km with 9 sq.m arc for each tower & 250 sq m for substation)		0.23	53			0.23	0



	Name of Project Component	USF		Non-Forest Land(ha)	Land under wet rice cultivation (ha)	Total (ha)	Area falling under 10 km radius of Mehao Wildlife Sanctuary (ha)
		Forest land falling under Dibang Forest Division, Roing (ha)	Forest land falling under Anini S.F Forest Division, Roing (ha)				
14	Area for Right of way for 66 KV line from Chimari to project Site(45 km long and 18 m wide)	81				81	0
15	Eme River/Diri Korong Deposit	167				167	0
16	Nizamghat-Sirki			108		108	0
17	Aya Korong/Aka Korong fan deposit					373	33.658 (Muck Disposal area 7.379 and Boulder collection Area for aggregate production-26.279)
18	Rest Area for project	150		165.92		315.92	81.942
	Total	2197.7	2858.8	701.3	70	5827.8	170.56

Forest land as per forest proposal(=2197.7+28258.8)

5056.5 ha

Private Land under wet rice cultivation(ha)

70 ha

Non-Forest land(ha)

701.3 ha

**Total Area Required for project:**

**5827.8 ha**

Area within 10 Km radius of Mehao Wildlife Sanctuary

170.56 ha

Total Area: **5657.24 ha**

The State Government vide letter No.FOR.10-44/Cons/2003/1918-22 Dated 16/04/2012 informed that out of the total 170.56 ha ,33.65 ha is the forest land and remaining 136.902

ha is Non-forests land. The revised Forest area required for the project is (5056.50 ha -33.65 ha )i.e.5022.842 ha.

3. Whether proposal involves any construction of buildings (including residential) or not. If yes details thereof.

**Details of Project Colony Development for Dibang Multipurpose Project (3000 MW),NHPC.**

**Proposed Land Requirement for project Colony Development**

1. At Roing (near Chimri) - 51.38 ha
2. At Project Site (Pathar Camp) -47.0 ha

Total Area =51.38 +47.0=98.38 ha

(a) Proposed Residential Buildings in the Complex:

(i) At Roing (near village Chimri)

Sl. No	Description	No.		Plinth Area as per norms (Sq.km)	Total Area		No of Blocks (for permanent Qtrs)	Type (for permanent Qtrs)
		Permanent	Temporary		Permanent	Temporary		
1	Ex.Director /General Manager (Type-VI(S)	1		225	225		1	Single Storey
2	C.E(C) Chiefs (Type Vi)	2	2	190	380	380	4	Single Storey
3	Sr.Managers/Managers CISF Commander(Type-V)	8	4	140	1120	560	3	Double Storey
4	Deputy Manager/Asstt. Manager/Asst Commandant (Type - IV)	16	8	100	1600	800	3	Triple Storey
5	Engineers /BO/AO/PO/ RO/Mo/ARO/AAO/ AE (Type-III)	30	24	80	2400	1920	5	Triple Storey
6	Sr.Acctt/JF/Sr.Sup/Sr.D. Man etc.(Type-II)	36	18	70	2520	1260	6	Triple Storey
7	AG-II/AG-III/D.Man/Para medical etc(Type-I (A)	6	6	50	300	300	1	Triple Storey
8	Foreman /Mechanic/Mason/ Pump operator/S.Guard/	36	18	40	1440	720	6	Triple Storey

	Driver/Attdt etc							
9	Filed Hostel for executives And non-executives	100	75	30	3000	2250	2	Triple Storey
10	CISF Staff-(Barrack)	30	20	25	750	500	1	Double Storey
	Total	265	175		13735	8690		
	<b>GRAND TOTAL</b>				<b>22425 sq.km</b>			

(ii) At the Project Site (Pathar Camp)

Sl. No.	Description	No.		Pinth Are as per norms(Sq.km)	Total Area (Sq.km)		No of Blocks(f or perman ent Qtrs)	Type (For Permanent Qtrs)
		Permanent	Temporary		Perman ent	Tempor ary		
1	Ex.Director /General Manager (Type-VI(S)	6		100	600		0	Triple Storey
2	Engineers /BO/AO/PO/ RO/Mo/ARO/AAO/ AE (Type-III)	18	6	80	1440	480	3	Triple Storey
3	Sr.Acett/JF/Sr.Sup/Sr.D .Man etc.(Type-II)	12	6	70	840	420	2	Triple Storey
4	AG-II/AG-III/D.Man/Para medical etc(Type-I (A)		6	50		300	0	Triple Storey
5	Foreman /Mechanic/Mason/ Pump operator/S.Guard/ Driver/Attdt etc		6	40		240	0	Triple Storey
6	Filed Hostel for executives And non-executives	180	45	30	5400	1350	4	Triple Storey
7	CISF Staff-(Barrack)	60	40	25	1500	1000	2	Single Storcy
	<b>Grand Total</b>							<b>13570 sq.km</b>

(b) Proposed Non-Residential Building

(i) At Roing (near Chimri)

Sl No.	Description	No	Plinth Area Required	Total Area	Type	
1	Administrative Block office	1	2000	4000	Double Storey	Permanent
2	Hospital /Dispensary	1	500	1000	Double	Permanent

3	V.I.P Guest House at Roing	1	1000	1000	Storey Single Storey	Permanent
4	Guest House at Roing	1	500	1000	Double Storey Double Storey	Permanent
5	School	1	500	1000	Double Storey	Permanent
6	Officers Club & Auditorium	1	500	300	Single Storey	Permanent
7	Staff Club/Union Office	1	300	300	Single Storey	Permanent
8	Shopping Centre	1	500	500	Single Storey	Permanent
9	Bank	1	200	200	Single Storey	Permanent
10	Telephone Exchange	1	100	100	Single Storey	Permanent
11	Canteen	2	200	400	Single Storey	Permanent
12	Model Room	1	150	150	Single Storey	Permanent
13	Stores	1	1000	1000	Single Storey	Permanent
14	Sub station	1	500	500	Single Storey	Permanent
15	Fire Station	1	200	200	Single Storey	Permanent
16	Water Supply, Filter Plant and pump houses	1	300	300	Single Storey	Permanent
17	Workshop	1	400	400	Single Storey	Permanent
18	DG Building	1	250	250	Single Storey	Permanent
19	CISF Store/Office	1	1250	1250	Single Storey	Permanent
20	LPG Godown	1	200	200	Single Storey	Permanent
<b>Grand Total</b>					15750 sq.km	

(ii) At the project (Pathar Camp)

Sl. No	Description	No	Plinth Area Required (Sq.km)	Total Area (Sq.km)	Type
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1	Office	1	750	1500		
2	Hospital /Dispensary	1	200	200		
3	Staff Club/Union Office	1	125	250		
4	Shopping Centre	1	200	400		
5	School	1	500	500		
6	Telephone Exchange	1	50	50		
7	Indoor Games Hall	1	500	500		
8	Sub Station	1	500	500		
9	LPG Godown	1	200	200		
10	DG Building	1	250	250		
11	Quality Control Lab	1	100	600		
12	Fire station	1	200	200		
13	Water Supply Filter Plant and Pump Houses	1	200	200		
14	Officers Club & Auditorium	1	250	500		
15	Stores	1	1000	1000		
16	Hangar,Helipad Office,Helipad	1	100	100		
17	Explosive magazine	1	200	600		
18	CISF Store/Office	1	1225	2450		
19	Workshop	1	200	200		
	GRAND TOTAL		10200 sq.km			

Total Building area at Roing (Chimri) 38175 sq.km

Total Buildup area at Project Site (Pathar Camp) 23770 sq.km

GRAND TOTAL 61945 sq.km

*The buildup area for Building and construction Project for the Dibang HEP(3000 MW) is more than 20,000 sq.mtrs and it attracts Para 8 (a) of Environment Impact Assessment Notification 2006.Further the site for proposed Colony at Chimri is within 4 Km of the Mehao Wildlife Sanctuary and it attracts the Ministry's letter No.5-3/2007-FC (Pt) Dated19/08/2010.*

#### 4. Total cost of the project at present rates.

*The Project is estimated to Cost of Rs.14530.48 crores at November 2005 price level excluding transmission portion. This includes RS.1269.89 crores as Hard Cost Rs.10780.36 crores for Civil Works and Rs.2189.53 crores for Electrical and Mechanical Works and Soft Cost as Rs.1560.59 crores as I.D.C and financing charges. The HEP Project is still in the process state for obtaining Environmental Clearance & Forest Clearance. As the Project Cost was estimated in 2005,the project cost will be inflated at the time of implementation in the future.*

#### 5. Wildlife

Whether forest area proposed for diversion is important from wildlife point of view or not.

*The site inspection report of the DFO Dibang Forest Division and Anini SF Division has stated that the Forests area is not important from the Wildlife point of view as mentioned in the Sl.no.5 of the Respective Site Inspection Reports as Annexure F & G. The DFO Dibang has submitted details of list of Fauna which are found in the proposed diversion area for the Dibang Multipurpose Project. The DFO has specifically mentioned "The proposed forest land for Dibang Multipurpose Project is the major habitat of scheduled flora and Fauna. All the listed fauna & Flora were not sighted during the field survey. However, they have been enlisted herewith based on secondary data available." The list of the Fauna is enclosed as Annexure H.*

*The DFO Anini has submitted the list of Fauna where he has mentioned that the Forest area of the proposed Dibang Multipurpose Project is the major habitat of scheduled species and IUCN red data book recorded species (copy enclosed as Annexure I).*

*The Chief Conservator of Forests Eastern Arunachal Circle in his site inspection report Sl.No.7 he has mentioned that "There is neither Wildlife Sanctuary, National Park, biosphere reserve, Corridor nor protected area in the vicinity of 15-20 kms. Despite non sighting of Wild animals, during inspection, movement of animals including Schedule-I in view of wide range of subtropical semi evergreen rain forest towards Dibang Forest Division cannot be ruled out". (copy enclosed as Annexure J).*

*During the site visit on the right bank of the proposed Forest area for diversion including the dam axis the slopes of the right bank and the left bank of Dibang river have good forest cover (moderate Forest cover) with few patches of dense forests in pockets. Such area is a habitat of Wild mammal Fauna and Avi, snakes etc.*

*The Divisional Forest Officer of the Dibang Forest Division and Anini SF Division by mentioning that the proposed diverted area is not important from Wildlife in sl.no 5 of the inspection report contradict themselves as they certified that important Wildlife Fauna area available as per the certified list. The presence of such Wild life Fauna has been supported by the Chief Conservator of Forests statement at Sl.No.7 of his site inspection report (copy enclosed as Annexure J).*

*From the proposal there is nothing ever mentioned that wildlife survey has been carried out before the finalization of this project. It is therefore suggested that a study on survey of Wild life species in this area may be taken up by the Wildlife Institute of India, Dehradun along with the Wildlife management plan.*

*It is suggested that the length of reservoir i.e. 43km on both sides of the bank of the river Dibang from the FRL level upto a distance of 100 m distance may be declare as the wild life sanctuary to protect the Wildlife Schedule-I species as mentioned by Chief Conservator of Forests Eastern, Arunachal Circle at Sl. No. 7 of his inspection report.*

## **6. Vegetation**

Total number of trees to be felled 3,55,614 as per statement submitted by the State Government.



Effect of removal of trees on the general eco-system in the area.

There will be a significant effect on removal of trees in the general ecosystem of the area. As the proposed diversion site is having a steep slope with patches of Jhum cultivated area, removal of the trees will affect the micro climate of the area and the Wildlife and Flora endemic in the proposed sub-mergence area. The trees and shrubs all along the sub-mergence area should be removed so that they will not be left sub-merged thereby causing decomposition and lead to the accumulation of the methane gas causing Green House effect. The construction of the dam itself may leads to the increase in the temperature in the sub-mergence area which may also effect the micro aqua habitat.

### Important species

A few of the important species listed in the enumeration list and as observed during the site inspection are:

Hollock (*Terminilia myriocarpa*), Khokon (*Duabanga grandiflora*), Borpat (*Ailanthus grandis*), Siris (*Albizia lebbak*) Amari (*Ameera wallichii*), Sellang (*Sapium baccatum*), Moj (*Albizia lucida*), Pichola (*Kydia calycina*), Simul (*Bombax ceiba*), JiaOporma, Makrisal (*Schima wallichii*), Hingori (*Castanopsis Indica*), Udal (*Sterculia villosa*), Gonsorai (*Cinnamomum*), Ghora Neem (*Melia (Aazederach)*), Urium (*Bischofia Javanica*),

- (i) Number of trees to be felled of girth below 60 cm. As per the enumeration lists Annexure.

Sl.No.	Name of the site	Annexures	No of Trees enumerated
1	Dambuk Project Site Road	1 (a)	255
2	Road Site	1 (b)	346
3	FRL Site	1 (c)	537
4	Dam Site	1 (d)	1228
5	Power house	1 (e)	750
6	FRL 2	1 (f)	127
7	FRL 4	1 (g)	235
<b>Total</b>			<b>3478</b>

- (ii) The number of trees below 60 cms as per the Abstract statement submitted by DFO Dibang Forest Division

Sl.No.	Name of the site	No of Trees enumerated
1	Dambuk Project Site Road	287
2	Road Site	346
3	FRL Site	537
4	Dam Site	1578
5	Power house	750
6	FRL 2	127
7	FRL 4	235
<b>Total</b>		<b>3860</b>

From the above there is difference in the number of trees below 60 cms from the list of enumeration and abstract statement submitted by the Divisional Officer, Dibang

- (i) Number of trees to be felled of girth above 60 cm. As per the enumeration lists Annexure

Sl.No.	Name of the site	Annexures	No of Trees enumerated
1	Dambuk Project Site Road	1 (a)	329
2	Road Site	1 (b)	4201
3	FRL Site	1 (c)	25047
4	Dam Site	1 (d)	16864
5	Power house	1 (e)	14434
6	FRL 2	1 (f)	345
7	FRL 4	1 (g)	940
<b>Total</b>			<b>61310</b>

- (ii) The number of trees above 60 cms as per the Abstract statement submitted by DFO Dibang Forest Division

Sl.No.	Name of the site	No of Trees enumerated
1	Dambuk Project Site Road	297
2	Road Site	4201
3	FRL Site	25047
4	Dam Site	16514
5	Power house	14434
6	FRL 2	345
7	FRL 4	940
<b>Total</b>		<b>61778</b>

*From the above there is difference in the number of trees above 60 cms from the list of enumeration and abstract statement submitted by the Divisional Officer, Dibang Forest Division.*

- (v) As per the statement submitted by the DFO, Anini Social Forestry Division the number of the trees of the proposed submergence area below 60 cm and above 60 cm are 55965 and 234011 respectively.

*Therefore the grand total number of trees/poles as per the enumeration list is  $3478+61,310+55,965+2,34011=3,54,764$ . However the State Government in the forwarding letter No.FOR.10-44/Cons./2003/Vol-I/312-16 dated 18.08.2011 has stated a total of 3,55,614 numbers of trees/poles. The difference in the total numbers of the trees to be felled is to be re-examine again by the forest department.*

*From the enumeration list, the numbers of the trees indicates that the area is moderately dense forest. The area are of the river bed included in this proposal is 514.70 ha under Dibang Forest Division and 723.30 ha under Anini Forest Division. The total riverbed devoid of trees is 1138 ha as per Part-II of the proposal therefore the forest area which have trees is 3918.50 ha and the number of trees per ha is approximately 905 nos. Sampling check of tree to be affected could not be carried out as the Divisional Forest Officer have not laid out the sample plot nor could identify the area for sample checking on the first site inspection visit and the second site inspection visit.*

## 7. Background note on the proposal.

The Dibang Multipurpose Project (MW) previously investigated by the Brahmaputra Board was transferred to the N.H.P.C by the Ministry of Water Resources (MoWR) during 20.12.2002 and was taken over by N.H.P.C on 24.12.2002 for establishment, operation and maintenance of the project.

Dibang Multipurpose Project (3000 MW) has been conceived on River Dibang which originates from snow covered southern flank of the Himalayas closed to Tibet border at an altitude of more than 5000 metres. The river emerges from the hills and enters the sloping plain area near Nizamghat in Arunachal Pradesh, from where the river flows a distance of 50 metres to meet the River Lohit. The total catchment area of the Dibang up to the confluence with Lohit River is 12015 sq km, which is almost entirely located in India.

The main project area is located in Lower Dibang Valley District with reservoir extending in Dibang Valley District of Arunachal Pradesh with negligible R & R problems and no submergence of archaeological/other installations.

The project envisages utilization of 233 m of net rated head by construction of a 288 m high concrete gravity dam above the deepest foundation level near Munli. An underground power house has been proposed on right bank located 250 m downstream of the dam axis. The water is lead to head race tunnel through six intake structures. Six 9 m diameter horseshoe shaped concrete lined head race tunnels have been proposed. The water from turbine shall be discharged back to river through six 9 m diameter tail race tunnel.

The reservoir created behind Dam will provide flood moderation benefit in the downstream. The back water in the reservoir will travel up to a length of 43 km in Dibang river and its various tributaries – Airi Pani, Ilu Pani, Imu Pani, Ahi River, Ithu River, Emra River etc, which will facilitate promotion of navigation by connecting inaccessible upstream villages/area. The project headquarter is proposed to be at Project site near Pathar Camp on right Bank about 6 km downstream of the Dam Axis. The project is about 43 km from Roing. The nearest broad gauge railhead is at Tinsukia which is 110 km from Roing (head quarter of Lower Dibang Valley District) and the nearest airport is at Mohanbari (Dibrugarh), which is further 45 km from Tinsukia.

The salient features of the project are :

- (a) The Project area is located in the Dibang River and the Dam site is 1.5 km upstream of confluence of Ashupani with Dibang.
- (b) The co-ordinates of the project site is Latitude 28°20' 7" NORTH and Longitude 95°46' 38" EAST.
- (c) The catchment area of the project is 11276 sq.km and the co-ordinates are Latitude 28°11' 50" to 29°25' 59" NORTH and Longitude 95°14' 47" to 96°36' 49" EAST.
- (d) The average annual rainfall of the catchment area is 4405 mm with the maximum temperature of 45°C and minimum of 2°C.
- (e) The maximum water level in the reservoir is 548 m. The full reservoir level is 545m. The total area under sub-mergence at the full reservoir level is 40.09 sq.km.
- (f) The height of the dam above the deepest foundation level is 288m and the top elevation of the dam is 500m. The length of the dam at the top is 816.3m.

## 8. Compensatory afforestation:

The compensatory afforestation for the diversion 5056.50 ha forest lands is proposed to be taken up in the three Forest Divisions as mentioned below:

### I (a). Compensatory afforestation proposed area under Dibang Forest Division

Sl. No	Name of Forest Division	Name of R.F/USF	Comptt No/Plot No	Area proposed for raising compensatory afforestation (Ha)
1	Dibang Forest Division	Kerim R.F	8,9,10,11,12,13,14,15,16,17,20&21	1209.00
2	Dibang Forest Division	Deopani R.F	93,101,125 parts of 84,104,109,110,116,117,124,133,145 &156	414.00
3	Dibang Forest Division	Deopani R.F		120.00
4	Dibang Forest Division	Korunu U.S.F	Plot No.1	100.00
5	Dibang Forest Division	Korunu U.S.F	Plot No.2	200.00
6	Dibang Forest Division	Korunu U.S.F	Plot No.3	200.00
7	Total			2243.00

(b). Whether land for compensatory afforestation is suitable for plantation and management point of view or not.

- (i) **Deopani R.F:** The Divisional Forest Officer, Dibang Forest Division on the date of site inspection could show this forest area, however the area is occupied by encroachers and there is biotic pressure from the cattle of the encroachers. On visiting part of the area it is observed that there are good growth of *Bombax ceiba* in the areas of 414.00 ha and 120.00 ha. The proposed area near the river bank is prone to flood and is not suitable. Though the co-ordinates were provided but the forest officials could locate only few in the field. As the area is covered by moderately dense growth of *Bombax ceiba* the blank area for the compensatory afforestation is less than 400 ha and 120 ha the forest department needs to resurvey the area excluding the moderately dense forest patch and the areas prone to flood and are required to locate the degraded forest area of 400 ha and 120 ha and to be depicted in a map excluding the moderately dense growth of *Bombax ceiba* plantation.
- (ii) **Kerim R.F:** The Divisional Forest Officer could show the Kerim R.F from the banks of Deopani river and explained that the site proposed for raising compensatory afforestation is not approachable. This cannot be accepted as it may not be possible for the forest staff to actually take up the plantation works and its maintenance, further it will be not possible for the officers of the Regional Office MoEF to monitor the implementation of the Compensatory Scheme over 1209 ha when the area is not approachable.

(iii). **Korunu U.S.F:**

On the day of the second site inspection it was observed that the G.P.S Co-ordinates of point near the road construction across the proposed site do not match with that depicted in the map. Further there still exist labour camps of the Border Road Organisation and the

area of 500 ha do contain moderately dense forest patches. Besides this it also includes eroded flood areas along the river Dilu which is not suitable for raising afforestation. As an inspecting officer I do not recommend this site for compensatory afforestation.

(c). Whether land for compensatory afforestation is free from encroachments/other encumbrances.

*The forest area under Deopani is not free from encroachment, though has been proposed for the compensatory afforestation.*

(d). Whether land for compensatory afforestation is important from Religious/ Archaeological point of view.

*The area is not important from religious / archaeological point of view.*

(e). Land Identified for compensatory afforestation is in how many patches, whether patches are compact or not.

*The forest land under Deopani R.F is in two patches 400 ha and 120 ha and is spread out in thirteen different compartment. The forest officials could not identify the compartment number during the site inspection.*

*The forest land under Kerim R.F is in one patches of 1209 ha and is spread out in twelve different compartment. This site could not be inspected as it is not approachable.*

(f). Map with details.

*Maps submitted along with the proposal but does not show the G.P.S coordinates however subsequently the co-ordinates are provided by the officials of NHPC on the day of site inspection.*

(g). Total financial outlay.

*The financial compensatory afforestation outlay under Dibang Forest Division as per documents submitted along with the proposal is Rs 32,61,85,950.00.00*

#### **II(a). Compensatory afforestation proposed area under Namsai Forest Division**

Sl.No	Name of Forest Division	Name of R.F/USF	Compt No/Plot No	Area proposed for raising compensatory afforestation (Ha)
1	Namsai Forest Division	Kamlang R.F	53,54 &55	500.00
2	Namsai Forest Division	Lai R.F	4,5,6,7,8,&12	500.00
3	Namsai Forest Division	Lohit R.F	30,31,32,33,34,35,36,37&38	1000.00
	Total			2000.00

(b). Whether land for compensatory afforestation is suitable from plantation and management point of view or not.

**(i). Lohit R.F:** *The Assistant Conservator of Forest, Namsai Forest Division along with the Range Forest Officer Namsai, on the date of site inspection could show this forest area, however the area is occupied by encroachers and there is biotic pressure from the cattle of the encroachers. On visiting part of the area it is observed that the is under cultivation by*



the encroachers and as such the area proposed is not free from encroachment and therefore not suitable for raising compensatory afforestation. The area occupied by the encroachers is surrounded moderately dense forest. The GPS Coordinates also does not match the map of the compensatory site depicted in the map. It was also informed by the Assistant Conservator of Forest in the site that 99.00 ha of plantation has been created during 2012-2013 in the same area proposed for compensatory afforestation. Therefore as an inspecting officer I do not recommend this site.

(ii).Kamlang R.F: The Assistant Conservator of Forests and the Range Forest Officer Namsai showed the site for raising compensatory afforestation. It was observed in the field that this site identified for raising compensatory afforestation have a profuse growth of Dalbergia sisso and the area have a moderately dense forest cover wherever the natural growth of Dalbergia sisso exist. As observed in the field and as an inspecting officer I do not recommend this site for the compensatory afforestation. The blank area do spread out in the area and it is very less than 500.00 ha. The Forest Department should therefore now identified new degraded forest area for raising compensatory plantation.

(iii).Lai R.F: The Assistant Conservator of Forests and the Range Forest Officer Namsai informed on the date of site inspection that the area is very far and is not approachable. On seeing the area of the two Reserved Forest identified for raising compensatory afforestation there is every possibility that the same observations may perhaps be aslo for this site. As I could not reach the site as an inspecting officer I do not recommend this site.

(c).Whether land for compensatory afforestation is free from encroachments/other encumbrances.

*The forest area under Lohit R.F is not free from encroachment, the area proposed for the compensatory afforestation at present as on date of site inspection are occupied by the encroachers. In Kamlang R.F it was observed there is no encroachment. The situation in Lai R.F cannot be ascertain as the area has not been inspected.*

(d). Whether land for compensatory afforestation is important from Religious/ Archaeological point of view.

*The area is not important from religious / archaeological point of view*

(e).Land Identified for compensatory afforestation is in how many patches, whether patches are compact or not.

*The forest land under Lohit R.F is in one patches of 1000 ha and is spread out in nine different compartment.*

*The forest land under Kamlang R.F is in one patches of 500 ha and is spread out in three different compartment.*

*The forest land under Lai R.F is in one patches of 500 ha and is spread out in six different compartment. This area could not be inspected.*

(f).Map with details.

*Maps submitted along with the proposal but does not show the G.P.S co ordinates however subsequently the co-ordinates are provided by the officials of NHPC on the day of site inspection.*



(g). Total financial outlay.

The financial compensatory afforestation outlay under Namsai Forest Division as per documents submitted along with the proposal is Rs 28,82,84,350.00.

**III(a). Compensatory afforestation proposed area under Anini Social Forestry Division**

Sl.No	Name of Forest Division	Name of R.F/USF	Comptt No/Plot No	Area proposed for raising compensatory afforestation( Ha)
1	Anini Social Forestry Division	Echanli V. R.F	Plot No.1	898.87
2	Anini Social Forestry Division	Echanli V. R.F	Plot No.2	493.76
3	Anini Social Forestry Division	Echanli V.R.F	Plot No.3	561.93
4	Anini Social Forestry Division	Echanli V.R.F	Plot No.4	560.50
5	Anini Social Forestry Division	Echanli V.R.F	Plot No.5	534.00
6	Anini Social Forestry Division	Echanli V.R.F	Plot No.6	638.00
7	Anini Social Forestry Division	Echanli V.R.F	Plot No.7	712.94
8	Anini Social Forestry Division	Biyanli V.R.F	Plot No.A	470.70
9	Anini Social Forestry Division	Biyanli V.R.F	Plot No.B	543.30
10	Anini Social Forestry Division	Biyanli V.R.F	Plot No.C	456.00
Total				5870

**The proposed compensatory afforestation under Anini Social Forestry Division was not inspected as these area mentioned above is pending in Guwahati High Court in the matter of W.P(C ) NO.177(A.P)/2011 Ngasi Mena petitioner Versus State of A.P Ors respondent (Copy of affidavit provided by the officials of N.H.P.C is enclosed as Annexure J). The Ministry of Environment & Forest , Government of India is not a respondent since the proposal for the diversion of forest land is yet to be consider for approval. As an inspecting officer I do not recommend these site as it attracts Para 2.1(vi) of the Forest Conservation Act 1980 Clarifications and Guidelines. The Forest Department should now identify another site for raising compensatory afforestation.**

9. 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.

***There is no such report from the State Government and no violation observed during the site inspection***

10. Whether proposal involves rehabilitation of displaced persons. If yes, whether rehabilitation plan has been prepared by the State Government or not.

***There are sixty families which will be displaced by this proposed project belonging to five villages viz. Sukla Nagar, New Anaya, Eprali, Kano and an unmanned village in Dibang Valley & Lower Dibang Valley Districts.***

Details be furnished specifically if rehabilitation plan would affect any other Forest area by translocating outsees in and around the said forest.

*Details of such rehabilitation plan is yet to be submitted by the N.H.P.C*

**11.Reclamation plan:**

Details and financial allocation

*Details of such rehabilitation plan is yet to be submitted by the N.H.P.C*

12.Details on catchment and command area under the project. Catchment area treatment plan to prevent siltation of reservoir.

*The details of the catchment and command area along with the Treatment Plan has been elaborated in the Detailed Project Report i.e. Environmental Management Plan of Dibang Multipurpose Project (3000 MW). However there is no document submitted in the proposal to confirm that this management plan has approval of the State Government.*

13.Cost benefit ratio.

*As submitted by the User Agency in the proposal.*

14..Recommendations of the Principal Chief Conservator of Forests/State Government.

*The State Government has recommended the proposal in Part V of the format.*

15..Recommendations of Regional Chief Conservator of Forest along with detailed reasons.  
From the report of the Chief Conservator of Forest(Central) the Forest Department on date of his second site inspection have not made ready the sample plot of the enumerated trees in the forest proposed area. It may be mentioned that with the coming monsoon season and the heavy rains it will not be possible for this office to visit the site again for the sample checking of the enumerated trees.

I agree with the site inspection report submitted by the Chief Conservator of Forest (Central).The Ministry may inform the State Government to take necessary action on the several observations made by the Regional Office and to submit a report to the Ministry at the earliest.

16.Regional Chief Conservator of Forests shall give detailed comments on whether there are any alternatives routes/alignment for locating the project on the non-forest land.

*As mentioned in the forwarding letter.*

17.Utility of the project.

Numbers of Scheduled caste/Scheduled Tribe to be benefited by the project.

18.Whether land being diverted has any socio-cultural/religious value.

Whether any sacred grove or very old growth trees/forests exists in the areas proposed for diversion.

*As mentioned in the site inspection note of the Chief conservator of Forests Eastern Arunachal Circle there are no records to show that the proposed area do not have any socio-cultural/religious values and no sacred grove exist in the proposed area.*

Whether the land under diversion forms part of any unique eco-system.  
*No such information mentioned by the State Government in the proposal but the proposed area is a moderately dense forest.*

**19. Situation w.r.t. any P.A.**

From the purpose wise break-up of the Forest land submitted by the NHPC. The area within 10 km radius of Mehao Wildlife Sanctuary is 170.56 ha. This also includes the proposed residential colony at Chimri which is within 5 kms from Mehao Wildlife Sanctuary.

**20. Any other information relating to the project.**

- (a) The Forest Department Government of Arunachal Pradesh should seriously identify the degraded forest area free from any encumbrances and demarcated the areas with boundary pillars along with G.P.S Co-ordinates and also to be delineated in a map to the scale. In case there exist dense or moderate dense forest patch such areas are to be avoided and to be depicted in a map. This will ensure the correct area requires for the compensatory afforestation.*
- (b) The compartments identified for raising compensatory afforestation is to be shown clearly in the map.*
- (c) Areas under encroachments and flood prone areas adjacent the river banks is to be avoided to prevent loss of afforestation and queries which may come up during Adhoc Campa Audit.*
- (d) The areas of reserved forest most of them are criss-crossed by streams and rivers it is suggested that the Forest Department should have its own departmental country boat along with accessories such as life jackets.*
- (e) In case no area is found suitable for raising compensatory afforestation under Namsai Forest Division, Dibang Forest Division and Anini Social Forestry Division, such areas may be identify elsewhere in the other \Forest Divisions in the State. However in case no such areas could be identified within the State the Ministry of Environment & Forests, New Delhi may take a decisions in this matter.*
- (f) In the details of the project colony development at Chimri and Pathar camp there is no mentioning of the site for sewage treatment plant and waste disposal site(Bio-degradable and non-biodegradable).*
- (g) The total number of trees to be affected as per enumeration by the Forest Department is more than 3,52,000 approximately with the approximate volume of 418902.77cum. When the project will be implemented the yield from the approved working plans of various Forest Division in the State is to be adjusted with these trees/volume to be affected in the project area.*
- (h) Removal of stone from the river bed of Eme river and Diri Dorong river in an area of 167 ha as mentioned in the land use break up shall be as per para 4.6 (iii) of the Forest (Conservation) Act 1980 Rules, Guidelines & Clarifications.*
- (i) The estimate for the Compensatory afforestation scheme under Dibang Forest Division i.e in Koronu VRF , Kerim R.F and Depoani R.F each has a component for purchase of one Light Motor Vehicle(L.M.V) and one Heavy Motor Vehicle(H.M.V) which amounts to three L.M.V and three H.M.V in one Division which is not justified. It is suggested that nursery within the site for compensatory afforestation be established for easy transportation of the seedlings. Therefore the compensatory*

- afforestation scheme for these three areas is to be revised excluding the vehicles but provisions for boats , boat- man, life jacket is to be included . This is necessary as the forest area in Deopani R.F and KerimR.F are criss-crossed with streams and river.*
- (j) *The estimate for the Compensatory afforestation scheme under Namsai Forest Division i.e in Kamlang R.F , Lohit R.F and Lai A.R.F each has a component for purchase of one Light Motor Vehicle(L.M.V) and one Heavy Motor Vehicle(H.M.V) which amounts to three L.M.V and three H.M.V in one Division which is not justified. It is suggested that nursery within the site for compensatory afforestation be established for easy transportation of the seedlings. Therefore the compensatory afforestation scheme for these three areas is to be revised excluding the vehicles but provisions for boats , boat- man, life jacket is to be included . This is necessary as the forest area in Lohit R.F, Lai A.R.F and KamlangR.F are criss-crossed with streams and river.*
  - (k) *It is suggested that the length of reservoir i.e. 43km on both sides of the bank of the river Dibang from the FRL level upto a distance of 100 m distance may be declare as the wild life sanctuary to protect the Wildlife Schedule-I species as mentioned by Chief Conservator of Forests Eastern, Arunachal Circle at Sl. No. 7 of his inspection report.*
  - (l) *The Forest Officials who accompanied the first site inspection from 16<sup>th</sup> and 18<sup>th</sup> Feb 2013 were Shri M. Riba ( Divisional Forest Officer, Dibang Forest Division) and Shri T, Rima( Range Forest Officer) and NHPC officials who accompanied were Raj Mal, Chief Engineer(C), Kumar Manoranjan Singh (Deputy Manager, Environment), Santosh Kumar (Deputy Manager, Environment), Mahesh Tondon, Manager(Civil).*
  - (m) *The Forest Department do not have any boat for crossing the river in Lohit R.F hence the boat of an encroacher was utilized while crossing the river in Lohit R.F. This only show the extend of encroachment inside the reserved forests.*
  - (n) *Disaster management plan for the downstream not mentioned in the proposal. Arunachal Pradesh being in a sensitive seismic zone the State Government may come up with such plan for taking necessary measures.*
  - (o) *The level of water in the river Dibang downstream of Dam will have to be maintained for ecological balance of aquatic fauna and flora habitat. The Project Authorities and the Forest Department may examine this and come up with a plan for such measures.*
  - (p) *Photographs on compensatory afforestation sites have also been submitted.*

#### **ANNEXURE XI (K):**

*Forest cover in Pathar Camp area proposed for construction of colony.It may be mentioned that this proposed colony is mentioned as non-forest land in the proposal.*

As observed in the field during the site visit, the area on the right bank of Dibang river is a forest land and there are no human habitation. In the area proposed for colony at Pather camp there is only one family living and practising jhum cultivation which is done in the forest area

The second site inspection was carried out on 26.04.2013 and 27.04.2013. The Forest Officials who accompanied on 26.04.2013 at Namsai Forest Division for the compensatory afforestation site were Shri. G.C. Doley (Assistant Conservator of Forests), A. Jerang (Range Forest Officer, Chowkhan), S.P. Verma (Range Forest Officer, Namsai), B. D. Deon (Range Forest Officer, Mesabhum) whereas NHPC officials who accompanied were Santosh Kumar

(Deputy Manager, Environment), Shri Hazarika(Surveyor). The Forest Official who accompanied on 27.04.2013 at Dibang Forest Division on 27.04.2013 for the compensatory afforestation site is Shri M. Riba (Divisional Forest Officer, Dibang Forest Division) whereas NHPC officials who accompanied on this day were V.K. Rattan (General Manager, NHPC), Raj Mal, ( Chief Engineer, Civil), Santosh Kumar (Deputy Manager, Environment), Mahesh Tondon, Manager(Civil).

Two site inspections has been carried out, but still the Forest Department could not show the sample plot for checking the numbers of trees to be affected which are more than 3,50,000 within the proposed area for forest diversion. Therefore not to further delay the submission of site inspection report, factual information as observed during the field visit is submitted for the Ministry to take further necessary action with the State Government.

In view of the above facts related to the proposal, if approved, the proposal may be submitted to the FAC for its considerations in its forthcoming meeting.

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**F. No. 8-85/2011-FC**

This Ministry vide its letter dated 5.09.2014 requested the State Government of Arunachal Pradesh to submit sensitivity analysis of reduction of dam height upto 40 meters for further consideration of the FAC and the Ministry. The user agency vide their letter no. NH/ENV/115/72 dated 8<sup>th</sup> September 2014 submitted the sensitivity report to this Ministry with a request that sensitivity analysis report may be placed before the FAC in its forthcoming meeting scheduled to be held on 22<sup>nd</sup> to 23<sup>rd</sup> September, 2014.

The project proponent has made following submission in the said report:

- i. Dibang Project has dual objectives of flood moderation and power generation. With reduction in the dam height up to 40 m, NHPC has to reduce power generation without change in the quantum of flood moderation.
- ii. The natural permanent submergence within the river for proposed dam is about 1177 ha. Further, about 514 ha of land will be used for temporary purpose and the same shall be returned to the Forest Department after construction of the project.
- iii. Total forest land requirement per megawatt (MW) varies from 1.59 to 1.78. This ratio is minimum i.e. 1.59 in case of 10 m reduction and maximum i.e. 1.78 in case of 20 m reduction. Total forest land requirement per MW is 1.67 at 40 m reduction which is equivalent to that of 0 m reduction of dam height.
- iv. With 10 m height reduction, the increase in tariff is negligible. The tariff is Rs. 5.66 per unit as compared to Rs. 5.64 per unit at 0 m height reduction. The tariff increases significantly with further height reduction. At 40 m reduction, the tariff is Rs. 6.24 per unit which may make the project unviable.
- v. Installed capacity of the project will be reduced by 60 MW (2%), 120 MW (4%), 300 MW (10%), 600 MW (20%), 650 MW (22%), 700 MW (23%), 740 MW (25%) and 780 MW (26%) for 5 m, 10 m, 15 m, 20 m, 25 m, 30 m, and 40 m reduction, respectively.
- vi. The annual energy generation will be reduced by 260 MU (2%), 563 MU (5%), 923 MU (7%), 1540 MU (14%), 1853 MU (16%), 2166 MU (19%), 2499 MU (22%) and 2832 MU (25%) for 5 m, 10 m, 15 m, 20 m, 25 m, 30 m, 35 m and 40 m reduction, respectively. Thereby, the loss of annual revenue varies from Rs. 169 crore (3%) to Rs. 1087 crore (17%) from 5 m to 40 m reduction.
- vii. Percentage reductions in forest land requirement are 6%, 9%, 11%, 15%, 17%, 20%, 23%, and 26% for 5 m, 10 m, 15 m, 20 m, 25 m, 30 m, 35 m and 40 m reduction, respectively. It is observed that beyond 10 m reduction of dam height, the land requirement is not decreasing significantly in comparison to the decrease in installed capacity.
- viii. In view of the above sensitivity analysis report, it has been proposed by the project proponent that the decrease in dam height and consequent sacrifice of power generation beyond 10 m reduction is not commensurate with the saving of forest land. Further, the tariff also increases significantly beyond 10 m reduction in dam height. Therefore, it can be concluded that 10 m reduction in dam height at which forest land requirement per MW is minimum and the tariff is minimum can be considered as optimum reduction in dam height.



This relates to diversion of 4577.84 ha (Originally proposed 5056.5 ha) of forest land (reduced to) of forest land in favour of M/s NHPC Limited for construction of Dibang Multipurpose Project (3000 MW) on Dibang River in Lower Dibang valley district of Arunachal Pradesh.

S. No.	Reduction in Dam height (m)	0	5	10	15	20	25	30	35	40
1	Dam Height (m)	288	283	278	273	268	263	258	253	248
2	Height required for Flood moderation of 1259 MCM	37.0	37.9	40.1	41.9	44.6	46.5	49.0	51.2	53.9
3(a)	Installed capacity (MW)	3000	2940	2880	2700	2400	2350	2300	2260	2220
3(b)	Reduction in Installed Capacity (MW)	0	60	120	300	600	650	700	740	780
3(c)	Percentage reduction in Installed Capacity	0%	2%	4%	10%	20%	22%	23%	25%	26%
4(a)	Annual Energy Generation(MU)	11330	11070	10767	10407	9790	9477	9164	8831	8498
4(b)	Reduction in Annual Energy Generation (MU)	0	260	563	818	1540	1853	2166	2499	2832
4(c)	Percentage reduction in Annual Energy Generation	0%	2%	5%	7%	16%	19%	22%	25%	25%
5(a)	1 <sup>st</sup> year tariff (Rs. per unit)	5.64	5.62	5.66	5.80	5.94	5.99	6.05	6.14	6.24
5(b)	Annual loss in revenue (Rs. in Crores)	0	169	296	304	575	713	846	968	1087
5(c)	Percentage annual loss in revenue	0%	3%	5%	5%	9%	11%	13%	15%	17%
6(a)	Natural Permanent Submergence within river	1177	1177	1177	1177	1177	1177	1177	1177	1177
6(b)	Submergence due to Project	2832	2532	2387	2279	2093	1966	1803	1664	1512
6(c)	Total Submergence (ha) (6 a+6 b)	4009	3709	3564	3456	3270	3143	2980	2841	2689
7(a)	Land for permanent infrastructure	500	500	500	500	500	500	500	500	500
7(b)	Land for temporary use-to be returned	514	514	514	514	514	514	514	514	514
8(a)	Total Forest Land Requirement (ha)	5023	4723	4578	4470	4284	4157	3994	3855	3703
8(b)	Forest Land Requirement for project (ha) after returning the forest land (8 a-7 b)	4509	4209	4064	3956	3770	3643	3480	3341	3189
8(c)	Net Forest Land Requirement for project (ha) after returning the forest land (8 b-6 a)	3332	3032	2887	2779	2593	2466	2303	2164	2012
8(d)	Reduction in Forest Land Requirement (ha)	0	300	445	553	739	866	1029	1168	1320
8(e)	Percentage reduction in Forest Land Requirement	0%	6%	9%	11%	15%	17%	20%	23%	26%
9(a)	Total Forest Land/ MW (8a/3a)† 43	1.67	1.61	1.59	1.66	1.78	1.77	1.74	1.71	1.67
9(b)	Net Forest land/MW (8b/3a)	1.50	1.43	1.41	1.47	1.57	1.55	1.51	1.48	1.44
9(c)	Net Forest land for project /MW (8c/3a)	1.11	1.03	1.00	1.03	1.08	1.05	1.00	0.96	0.91

In view of the above, the project proponent have requested this Ministry to pace the report on sensitivity analysis before the Forest Advisory Committee in its forthcoming meeting scheduled to be held on 22-23 September, 2014.