

## SIX MONTHLY PROGRESS REPORT ON ENVIRONMENTAL ASPECTS

(For the period October-2022 to March-2023)

<b>1.</b>	<b>Name of the Project</b>	Subansiri Lower Hydroelectric Project (2000 MW)
<b>2.</b>	<b>Type of the Project</b>	Hydroelectric Power Project.
<b>3.</b>	<b>Clearance Letter(s) OM No. &amp; Date</b> a) Environmental clearance  b) Forest clearance	a) Environment Clearance Letter No. J-12011/40/2001-IA-I dated 16.07.2003  b) Forest clearance: Letter No.8-9-26/2000/RO-NE-AP/2906-8 dated 03.01.2002 Letter F.No. 8-100/2002-FC dated 12.10.2004. Letter No. 3-AS C059/2006-SHI/2484-86 dated 11.01.2008
<b>4.</b>	<b>Locations</b> a) District(s) b) State(s) c) Latitude d) Longitude	a) Kamle (formerly Lower Subansiri) & Dhemaji. b) Arunachal Pradesh & Assam. c) 27°32'43''N to 27°33'20''N d) 94°15'05''E to 94°15'43'' E
<b>5.</b>	<b>Address for Correspondence</b> a) <b>Address of concerned Project Head</b> (with pin code, telephone / fax nos.)  b) <b>Address of concerned HOD in Corporate Office</b> (with pin code & Telephone / fax no.)	a) Executive Director Subansiri Lower H.E. Project, NHPC Limited P.O. Gerukamukh Distt. Dhemaji, Assam, Pin Code - 787 035 Tel : 03752-269321, Fax : 03752-269215  b) Executive Director Environment and Diversity Management Division Corporate Office, NHPC Office Complex Sector-33, Faridabad, Haryana. Pin Code- 121 003 Tel : 0129-2254674
<b>6.</b>	<b>Details of Environmental Management Plans</b>	Enclosed as Annex-I.

7.	<b>Break-up of the Project area (land details)</b> a) Submergence area (forest & non-forest) b) Others	Total land : 4035.96 ha a) Forest land : 3436 ha (3071 ha in Arunachal Pradesh & 365 ha in Assam) Non-forest land : Nil b) Forest land : 594.56 ha Private land : 5.40 ha
8.	<b>Break-up of the Project affected population with enumeration of those losing houses/dwelling units only, agricultural lands only, both dwelling units and agricultural land and landless labourers/artisans.</b> a) SC/ST/Adivasis b) Others	No. of PAFs - 77 PAFs belong to two villages namely Gengi & Siberite in West Siang District, Arunachal Pradesh and some portion of diverted forest land coming under submergence is under cultivation by these PAFs. a) SC / ST : 77 (All PAFs are STs.) b) Others : Nil
9.	<b>Financial details</b> a) Project cost as originally planned and subsequent revised estimates and the years of price reference b) Actual expenditure incurred on the Project so far. c) Allocations made for the Environment Management Plan d) Actual expenditure incurred on EMP so far	a) CCEA sanctioned cost: Rs.6285.33 Crores (at Dec.2002 price level) RCE: Rs. 21247.54 Crores (at completion level) b) Rs. 19219.087 Crores (provisional, as on 31.03.2023) c) Rs. 8012.69 Lakhs, as per CCEA (Excluding 13754.00 Lakhs towards R&R, R&P and NPV) d) Rs. 11053.69 Lakhs (as on 31.03.2023) (Excluding expenditure on R&R, R&P and NPV)  Expenditure on R&R, R&P and NPV: Rs. 52926.71 Lakhs  (Details of total allocation and expenditure made in respect of EMP and other additional plans is given under Annex-I)



		Office, Guwahati visited the Project on 21st February 2023 regarding monitoring of EC, FC and Wildlife clearances and inspected various locations of the Project and also held meetings with the Project Head and Officers of NHPC.
<b>14.</b>	<b>Brief note on the status of compliance of the conditions stipulated by MOEF.</b>	The status of compliance of the conditions stipulated by MoEF&CC while granting environment clearance to the project is enclosed as Annex-II.

**Subansiri Lower H.E. Project (2000MW)**  
**Details of allocations and expenditure made in respect of Environmental Management Plans**  
**and other additional plans till March 2023**

Sl. No.	Name of Environmental Management Plans	Allocated fund (Rs. In lacs)	Expenditure incurred (Rs. In lacs)
<b>Cost of Environmental Management Plans</b>			
1	Catchment Area Treatment	817.27	817.27
2	Compensatory Afforestation	4928.19	8141.75
3	Anti-Poaching measure	203.30	40.93
4	Sustenance of riverine fisheries	580.00	22.50
5	Control of Air Pollution*	15.00	208.10
6	Landscaping	50.00	54.90
7	Public health/Health Delivery system*	488.80	280.82
8	Provision for free fuel/fuelwood distribution*	10.00	348.55
9	Solid waste management & sanitary facilities	103.40	82.09
10	Stabilization of muck disposal sites*	323.58	292.39
11	Management of impacts due to construction of roads	160.00	531.80
12	Construction of settling tanks in project colony	9.00	10.00
13	Environmental studies	50.00	85.82
14	Disaster Management	150.00	0.00
15	O&M cost	124.15	136.77
<b>Sub-Total (A)</b>		<b>8012.69</b>	<b>11053.69</b>
<b>Cost of Implementation of other management plans</b>			
16	Cost for implementation of R&R	8296.39	8267.39
17	Rights & Privileges of local people	5457.50	7504.41
18	Training in various trades given to local youths	0.00	6.72
19	Net Present value (NPV) <sup>#</sup>	0.00	30177.39
20	Half percent of the Project cost transferred to the State Forest Departments for carrying out different forestry/ wildlife activities in addition to the compensatory afforestation, catchment area treatment plan etc. in compliance to condition of In-Principle Forest Clearance letter dt. 10.06.2003.	0.00	3142.66
21	Preparation of Wildlife Management Plan by SFRI, Govt. of Arunachal Pradesh in compliance to condition of In-Principle Forest Clearance letter dt. 10.06.2003.	0.00	5.10
22	Expenditure for felling of trees in the submergence area as per compliance to condition of Forest Clearance letter dt. 12.10.2004.	0.00	3823.04
<b>Sub – Total ( B)</b>		<b>13753.89</b>	<b>52926.71</b>
<b>Grand Total ( A+B)</b>		<b>21766.58</b>	<b>63980.40</b>

\* Cost includes expenditure incurred by the contractors as per conditions of contract agreement.

# Total amount of Rs. 30000 lakh deposited in registry of Supreme Court of India and Rs. 177.39 lakhs in the office of PCCF, Assam.

**STATUS OF COMPLIANCE OF CONDITIONS STIPULATED BY MOEF, GOVT. OF INDIA**

Cond. No.	Conditions	Status of Compliance
<b>Part-A: Specific Conditions</b>		
i	<p>a) Constitution of Monitoring committee for implementation of R &amp; R Plan</p> <p>b) Rehabilitation as per R&amp;R Plan in EMP report</p>	<p>Committee was constituted by Deputy Commissioner (DC), West Siang District, Aalo vide letter No. WS/REV-09/27 dated 13.11.2003.</p> <p>Status of implementation of R&amp;R Plan is enclosed as Annex - A.</p>
ii.	The catchments area identified for treatment of 1663 ha is to be treated in three years as per CAT plan.	Details of implementation of CAT Plan is enclosed as Annex - B.
iii.	Minimum flow of water is to be 6 cumecs during the lean season in the pools immediately downstream of the dam.	Design provision exists in the concrete dam structure to release 6 cumecs of water downstream of dam during lean season.
iv.	Baseline data of coli form count is to be collected & monitored periodically as a part of the water quality analysis.	Water quality analysis is being conducted regularly with the help of Pollution Control Board Assam (PCBA).
v.	Identification of orchids at species level is to be carried out before the submergence of the area. Appropriate action shall be taken to ensure that rare orchid flora along with host trees are not threatened.	<p>Study on identification of Orchids in the submergence area of SLP was carried out by State Forest Research Institute (SFRI) Itanagar and a copy of report submitted to MoEF, GoI in Dec 2009. As per the recommendations, Two Orchidaria have been established, one at the project site, Gerukamukh and another at Tippi, SFRI, Arunachal Pradesh.</p> <p>The Orchidarium at SLP, Gerukamukh has been renovated using in-house resources under the guidance from Orchid Research Centre, Tippi and SFRI, Itanagar.</p>
vi.	A hatchery is to be created in the vicinity of the proposed Subansiri reservoir. The hatchery should have all the required aquaculture facilities for development of artificial seed	<ul style="list-style-type: none"> <li>As stipulated in the Environment Clearance letter for creation of hatchery having aquaculture facilities for development of artificial seed production of migratory fishes for stocking in the reservoir and river stretch, a study titled "Study</li> </ul>

<p>production of migratory fishes for stocking in the reservoir &amp; river stretch.</p>	<p>of migration of fishes in river Subansiri and Creation of hatcheries” was got carried out through Central Inland Fisheries Research Institute (CIFRI), Barrackpore, Kolkata which included details of migratory fishes available in the river Subansiri and details of hatcheries required for conservation. As per recommendation of the CIFRI report, construction of hatcheries for Mahseer, Snow Trout and other Minor carps shall be undertaken as a Fisheries Management Plan for SLP.</p> <ul style="list-style-type: none"> <li>• Department of Fisheries, Govt. of Arunachal Pradesh was approached for implementation of the Fisheries Management Plan. Subsequent to number of rounds of discussion and site visits, Department of Fisheries Govt. of Arunachal Pradesh requested for an advance payment of Rs. 25.00 Lakhs for preparation of DPR and associated activities.</li> <li>• Rs. 15.00 lakhs released as first installment to Department of Fisheries Govt. of Arunachal Pradesh for initiation of preparation of DPR on 23.05.2022.</li> <li>• Department of Fisheries Govt. of Arunachal Pradesh on 12.09.2022 forwarded the Consultancy Project proposal received from DCFR, Bhimtal for perusal and acceptance. Comments of NHPC on the Project Proposal were provided on 12.09.2022 and the same was forwarded to DCFR, Bhimtal by Department of Fisheries, Govt. of Arunachal Pradesh.</li> <li>• The proposal was finalized and an MoU between Department of Fisheries Govt. of Arunachal Pradesh and ICAR-DCFR, Bhimtal was signed on 14th October 2022 for consultancy for the project for 3 Years for an amount of Rs. 43.36 lakhs. Subsequently, an amount of Rs. 7.5 lakhs was released on 15.11.2022 to Department of Fisheries Govt. of Arunachal Pradesh for payment to ICAR-DCFR as an advance for First year.</li> </ul>
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vii.	The local aquatic fauna of the river, particularly the fishes, snails, prawns & crabs is to be documented & identified scientifically. Possible impact of reservoir creation on the availability or otherwise, of these aquatic fauna should also be assessed to enable long term conservation of these fauna, as well as ensure their availability to the local population.	Zoological Survey of India (ZSI), Shillong was entrusted to carry out documentation & scientific identification of aquatic fauna of river Subansiri. The study was successfully completed by ZSI and report was also submitted to MoEF, New Delhi & Regional Office, Shillong by the Director ZSI, Kolkata in Nov 2008.
viii.	A comprehensive one year study on biodiversity & habitat conservation with reference to the submerged area is to be undertaken. Efforts should also be made to identify the migratory routes of wildlife in the vicinity.	<p>“Biodiversity study in the submergence area of Subansiri Lower H.E. Project Floral Aspects” was got conducted by Department of Botany, Gauhati University, Guwahati. The report was submitted to MoEF, GoI vide letter dated 15.12.2010.</p> <p>A copy of report was also forwarded to Nodal Officer, Arunachal Pradesh State Forest department with request to give preference to the saplings of reported plant species under Compensatory Afforestation programme and Catchment Area Treatment Plan of Subansiri Lower H.E. Project for which desired funds have already been made available to State Forest department.</p>
ix.	Efforts must be made to employ maximum number of local people in not only unskilled category but also in semi-skilled & skilled categories by making provisions for imparting skills through training to selected locals.	<p>All efforts are being made to employ locals wherever necessary.</p> <p>So far NHPC has employed 190 locals under permanent category.</p> <p>In addition, 6773 people from Assam &amp; Arunachal Pradesh are engaged with contractors under indirect employment.</p>
x.	Once the construction of dam is completed the downstream flow will be reduced. Specifically from head race tunnel flow of the river will slow down substantially, which may give	The minimum flow downstream of the dam shall be maintained as per requirement of MoEF&CC. Further, as per direction of MOEF&CC, communicated vide letter no. 2/18(A) 2014-EOIA dated 27.04.2016 & 27.06.2016, one turbine shall



	<p>rise to breeding of mosquitoes. To check mosquito breeding in this portion a minimum rate of flow of water at 60 cm/sec should be maintained. This part of the river should be properly channelised so that no pools &amp; poodles are allowed to be formed. Specific measures to alleviate the problems of malaria/mosquito breeding will have to be made a part of this project.</p>	<p>be run continuously, to ensure a continuous flow of about 240 cumecs during lean season in the river d/s of project. Due to diurnal fluctuation in the back water level due to peaking, sufficient flow of water will be available between dam and powerhouse.</p>
<b>Part: B General Conditions</b>		
i.	<p>Adequate free fuel arrangement should be made for the labour force engaged in the construction work at project cost so that indiscriminate felling of trees is prevented.</p>	<p>Centralized mess facilities are being provided for the workers by the contractors. LPG is being used in the mess as a fuel.</p>
ii.	<p>Opening of fuel depot at the site to provide fuel (kerosene/wood/LPG) / medical &amp; recreational facilities should also be provided to the labourers.</p>	<p>One LPG depot has been opened in the project area after obtaining necessary permission. The major contractors are providing required fuel, medical &amp; recreational facilities to the labourers. NHPC has medical facilities for all the employees/workers at Gerukamukh (Assam) and Dollungmukh (Arunachal Pradesh).</p>
iii.	<p>All the labourers to be engaged for construction works should be thoroughly examined by health personnel &amp; adequately treated before issuing them work permit.</p>	<p>The Contractors for the major works of SLP have been advised for conducting thorough medical checkups of the laborers before engaging them. The regular submission of health checkup status of the laborers is being ensured through the contractors.</p> <p>NHPC is providing medical facilities to all employees/workers through the project hospitals. Besides, medical camps are being regularly organized at work sites to examine the workers for their health through team of experienced doctors available in the Project.</p>
iv.	<p>Restoration of construction area including dumping site of excavated materials should be ensured by leveling, filling up of burrow pits,</p>	<p>Muck generated during the construction activities are being dumped on the earmarked dumping sites. Crate works/RRM works have been undertaken to prevent spilling of muck. Various</p>

	landscaping etc. The area should be properly treated with suitable plantation.	species of plants like <i>Samanea saman</i> , <i>Chukrasia tabularis</i> , <i>Lagerstroemia speciosa</i> , <i>Altingia excelsa</i> , <i>Terminalia arjuna</i> / bushes like broom sucker and creeper like cover crop etc. have been planted along the slope and top surface of the dumped material to get it stabilized at right bank.  Presently, dumping is being done in the left bank dumping site.
v.	Financial provision should be made in the total budget of the project for implementation of the above suggested measures.	The provision of Rs. 80.12 crores had been earmarked under the head “X-Environment & Ecology” for implementation of suggested measures. However so far, total expenditure of Rs. 110.53 crores has already been incurred on environment and forest related activities including the expenditure incurred by the contractors.
vi.	A Multidisciplinary committee to be constituted with representatives from various disciplines of forestry, ecology, wild life, soil conservation, NGO etc. to oversee the effective implementation of the suggested safeguard measures.	A Multidisciplinary committee has been constituted vide project’s circular No. NH/SLP/GM/55/41 dated 20.04.2004.

**Status of Implementation of R&R Plan**

1. As per the socio-economic survey conducted by WAPCOS (A Govt. of India Undertaking) in 2000-01, 19 Project Affected Families (PAFs) from village Gengi & 20 PAFs from village Siberite, total numbering to 39 was identified.
2. Subsequently the list of PAFs was revised to 77 nos. (Gensi – 38 nos. & Siberite - 39 nos.) in the year 2007 by the concerned DC vide letter No. LM/WS-02/04 dt. 03.10.2007.
3. As per the R&R Agreement with Gram Budas of Village Gengi and Siberite dated 05.09.2001 duly counter signed by Deputy Commissioner, West Siang Distt. Along, rehabilitation grant @ Rs. 2.5 lakh per PAF amounting to Rs. 95.00 Lakhs was paid for 38 PAFs of village Gengi on 29.12.07 and Rs. 97.50 Lakhs was paid for 39 PAFs of village Siberite on 22.08.08.
4. Compensation for immovable properties to 77 PAFs amounting to Rs. 51.29 Crores was released to DC, West Siang District in three installments in the year 2009.
5. Memorandum of Agreement (MoA) for execution of R&R works of SLP (development of infrastructure works at Resettlement site) was signed between NHPC & Administrator of R&R works (i.e. Deputy Commissioner, West Siang, Aalo) on 19.07.2010.
6. Accordingly, an amount of Rs.2923.11 lakhs for execution of R&R works at Resettlement site was released to DC, West Siang, Administrator (R&R) during the year 2010-16.
7. As per the report submitted by O/O Deputy Commissioner, West Siang Distt., Aalo dated 07.02.2020, the following works have been undertaken at R&R sites: Formation cutting of approach road in both the R&R sites has been completed, Cross drainage & retaining works are under progress and construction of culverts completed. Work of WBM and construction of bridge is under progress. Construction of building, Community Hall, Primary School building, Primary Health Centre, common toilet blocks and play ground has been completed.
8. Further progress report on R&R works is awaited from O/O Deputy Commissioner, West Siang, Govt. of Arunachal Pradesh.
9. As per R&R Policy 2008 of Govt. of Arunachal Pradesh an amount of Rs. 75.04 Crores has been paid under Rights & Privileges (R&P) to Deputy Commissioners West Siang, Lower Subansiri & Upper Subansiri Districts. The detail break-up is as under:

Rights & Privileges (R&P)				
Sl. No.	Details of Payment	Amount (in Rs.)	District	Payment Date
1.	Payment for 699.65 ha forest land of Along Forest Division (i)316 PRF @ Rs 78000/ha(ii) 383.65 USF @ Rs 1,56000/ha (iii) 25 % of NPV @ Rs 9.39 Lakh, for 383.65 ha USF.	277536359	DC, West Siang, Aalo	12-05-2022
		87279619		22-12-2009
		29093206		21-05-2009
		58186412		02-04-2009
2.	Payment for 475 Ha USF of Hapoli Forest Division in Lower Subansiri District (25 % of NPV @ Rs 9.39 Lakh) (3 installments) (Nido clan and Kino Jokom clan).	37168750	DC, Lower Subansiri, Ziro	02-04-2009
		18584375		21-05-2009
		1261000		21-05-2009
		55753125		22-12-2009
		3783000		22-12-2009
3.	Payment for 475 Ha USF @ Rs 1,30,000 /ha and 463 ha RF @ Rs 65000/ha of Hapoli Forest Division in Lower Subansiri District (2 installments).	31398273		18-03-2004
		60446727		19-01-2005
4.	Payment for 508 ha RF of Banderdewa Forest Division in Lower Subansiri District @ Rs 65000/ha.	33000000		21-01-2008
5.	Payment for 97 ha RF of Panir Forest Division in Lower Subansiri District @ Rs 78000/ha.	2522000		02-04-2009
6.	Payment for 149.22 USF of Daporijo Forest Division @ Rs 1,30,000 /ha.	19400000	DC, Upper Subansiri, Daporijo	25-01-2008
7.	Payment for 149.22 USF of Daporijo Forest Division @ (25 % of NPV @ Rs 9.39 Lakh) in 3 installments.	11676465		02-04-2009
		5838232		21-05-2009
		17514697		22-12-2009
Total		750442240		

10. Under social obligation construction/improvement of road from village Taramori to village Tango for an amount of Rs. 13.89 Crores was deposited with Deputy Commissioners West Siang, Aalo during the year 2013-15 in three installments.
11. As per MOU between NHPC & Govt. of Arunachal Pradesh, an amount of Rs. 27.00 Crores was deposited with Secretary (Power), Govt. of Arunachal Pradesh for construction of Law College and Convention Centre at Itanagar on 30.03.2010.

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**Status of Implementation of Catchment Area Treatment (CAT) Plan**

1. Total catchment area of Subansiri River at dam site is 34,900 sq.kms. About 14,000 sq km (40%) of which lies in Tibet and rest 20,900 sq. kms falls in India.
2. As per the EMP, prepared by WAPCOS, the total catchment area to be treated is 1663 ha falling under 'High' category of Erosion Intensity rate. CCEA approved cost of CAT works is Rs. 817.27. The details of treatment measures is as follows:

<b>Sl. No.</b>	<b>Measures</b>	<b>Area</b>
1.	Afforestation Works (Including Nursery Development)	1247 ha
2.	Pasture Development	416 ha
	<b>Sub Total</b>	<b>1663 ha</b>
3.	Check dams	15 Nos.

3. As requested by the State Forest Deptt. Letter dated 25.03.2010, total amount of Rs. 817.27 Lakhs was released towards the implementation of CAT works by NHPC vide letter dated 01.05.2010.
4. A Committee was constituted for monitoring and evaluation of CAT works by PCCF & Principal Secretary (E&F) Govt. of Arunachal Pradesh vide Order 07.06.2011.
5. As per the map prepared by WAPCOS, the catchment area to be treated falls in two Forest Divisions, viz. Hapoli and Daporijo. The Division wise area to be treated is as follows:

<b>Activity</b>	<b>Hapoli Forest Division</b>	<b>Daporijo Forest Division</b>	<b>Total</b>
Afforestation	928 ha	319 ha	1247 ha
Pasture Development	309 ha	107 ha	416 ha
Check dams	07 Nos.	08 Nos.	15 Nos.

6. The Office of PCCF (A&V) & Nodal Office (FCA), Department of Environment & Forests, Govt. of Arunachal Pradesh vide its letter dated 24.11.2020 has forwarded progress of CAT works amounting to Rs 3.15 Cr.

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