

Agenda No. 4

F. No. 8-82/2010-FC

Sub: Diversion of 313.88 Ha of Forest Land for construction of Tato-II Hydro Electric Project(700MW) on Siyom River in favour of M/s Tato Hydro Power Private Limited in West Siang District of Arunachal Pradesh – regarding.

The above proposal was considered in FAC meeting held on 17th to 18th September 2012, 13th to 14th August, 2013, 16-17th January, 2014 and 13-14th February, 2015 and 29-30th April, 2015. In the last FAC, after detailed discussion and examination of the proposal vis-a vis final reports on Cumulative Impact Assessment & Carrying Capacity Study of Siang - the Sub basin including Down Stream Impacts prepared by the Central Water Commission, the Committee recommended that the final decision of the Ministry about acceptance of report of the Cumulative Impact Assessment & Carrying Capacity Study may be awaited. In the meantime compliance of provisions of the Scheduled Tribe and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 as per the Ministry's advisory issued from time to time may be completed by the State Government.

2. The proposal was last considered by the FAC in its meeting held on **29th to 30th April, 2104** and after detailed discussion and examination of the proposal vis-a-vis final reports on Cumulative Impact Assessment & Carrying Capacity Study of Siang - the Sub basin including Down Stream Impacts prepared by the Central Water Commission, the Committee recommended that the **final decision on FC for the project will be taken only after the acceptance of the Cumulative Impact Assessment & Carrying Capacity Study by the MoEF&CC.** The Siang basin study has been accepted by MoEF&CC. The proposal will be placed before the FAC as soon as the FRA compliance is submitted by the State Govt. In the meantime the State Govt has been asked to comply with the provisions of FRA. Reply from the State Government is awaited.

3. In the meantime, The CIAS has been completed and the Ministry has accepted the study. The main features are as follows:-

- (i) The recommendations of the above study report have been approved by MoEF&CC. The recommendations as accepted are required to be considered as roadmap for development of hydropower projects in Siang river basin. The report outlines capacity, size, and location of HEPs commensurate with the basins environmental carrying capacity conforming to the accepted cumulative impacts. However, EIA/EMP shall have to be carried out for individual projects as per provision of EIA-Notification 2006 and its subsequent amendments. Modification in designs such as lowering of FRL wherever recommended need to be incorporated.
- (ii) For the remaining 29 projects, environmental flow release has been recommended are annexed as **Annexure-II**. These must be conditioned in the final approval of the projects.
- (iii) On main Siyom River, four projects in cascade taking about 55 km of the river stretch is impacting the river ecosystem. Therefore, there should be at least 1 km of free flowing river stretch between adjacent projects wherein river can flow in natural conditions in all the seasons to ensure habitat connectivity, rejuvenation and

- preventing landscape fragmentation. Accordingly, FRL of three projects viz. Tato II, Naying and Siyom Middle should be lowered so that free flowing river stretches of 1 km can be maintained between FRL and TWL of these four projects in cascade.
- (iv) Three large projects have been proposed on main Siang river viz. Siang Upper Stage-I (6000 MW), Siang Upper Stage-II (3750 MW) and Siang Lower (2700 MW). So far only Siang Upper Stage-II (3750 MW) has valid scoping clearance from MoEF&CC. (Study Report has discussed in detail cumulative impacts of these three large storage projects on Siang river covering biodiversity aspects, impacts on river ecology especially movement of Mahseer, downstream impacts of diurnal flooding at D'Ering Memorial WLS in lean season, converting over 70% of Siang river reach in India to reservoir with no free flowing stretch, etc. MoEF&CC has accepted the recommendations for freezing the total capacity in Upper Siang project at 9750 MW. The configurations of the projects within the approved capacity are to be decided by State Government/MoP. However, there would be a mandatory requirement of cumulative impact analysis of the projects in main Sian River to be carried out before environment clearance is accorded. There is also a need for an additional study to assess the impacts of various configuration of these projects on the main Siang River.
 - (v) Among four planned HEPS on SiyomriverNaying and Hironong are yet to get the EC from MoEF&CC. However, the HEPs should be asked to implement recommendation of design modification by lowering FRL.
 - (vi) Projects to be appraised henceforth shall explore the provision of longitudinal connectivity for smooth biota movement and silt transportation.

4. In view of recommendations of CIAS and its acceptance by the Ministry, the FRL of Tato-II requires to be lowered.

5. A background note on the proposal along with the fact sheet is placed below.

FACT SHEET

1.	Name of the Proposal	Diversion of 313.88 ha of forest land for construction of Tato-II Hydro Electric Project (700 MW) on Siyom river in favour of M/s Tato Hydro Power Private Limited in West Siang district of Arunachal Pradesh.
2.	Location: (i) State (ii) District	Arunachal Pradesh West Siang
3.	Particulars of Forests (i) Name of Forest Division (ii) Forest area involved (iii) Legal Status/Sy. No. (iv) Map	Aalo Forest Division 313.88 ha USF p-6 & 38/c

4.	Topography of the area	-
5.	(i) Vegetation	<i>TerminaliaMyriocarpa (HK), CedrellaToona (Pooma), Magnolia Spp (Sopa), CanariumSpp (Dhuna), CastonopsisSpp (Hingori), Phoebaattenrate (Mekahi), Altinzia excels (gutuli), Australian teak, Kadam, etc. (p-37/c).</i>
	(ii) No. of trees which will be affected	1,20,890 trees are required to be felled at p-35/c.
	(iii) Density	0.35
6.	Whether area is significant from wildlife point of view	It does not form part of any National Park, Sanctuary or Biosphere reserve, Tiger reserve, Elephant corridor, etc.
7.	<u>Details of Hydel Project :</u> 1. Total catchment area 2. Total command area 3. Full Reservoir Level 4. High Flood Level 5. Minimum Drawl Level 6. Break up of catchment area 7. Area of submergence at HFL including water body/river bed 8. Area of submergence at FRL including water body/river bed 9. Area of submergence at 2 m below FRL including water body/river bed 10. Area of submergence at Minimum Drawl Level including water body/river bed.	2560 sq km at p-63/c - EL 1020 m - EL 1023 m 2560 km sq - 8,71,308 m sq - - -
8.	Compensatory Afforestation	CA has been proposed over double degraded forest land i.e. 628.00 ha in Aalo Forest Division with a total financial outlay of Rs.7,59,17,500/- with 1 patch at p-41 & 42/c.
9.	Catchment Area Treatment	at p-59/c.
10.	Rehabilitation of Oustees	-

	a) No of families involved b) Category of families Details of rehabilitation plan	R& R plan at p-20 to 29/c
11.	Reclamation of mined area	Not Applicable
12.	Cost Benefit Ratio	Not Applicable.
13.	Recommendation i. DFO ii. PCCF iii. State Government	All have recommended the proposal P-34/c P-46/c P-49/c
16.	District Profile	
	(i) Total Geographical area	- 5049 sq km
	(ii) Total forest area of District Divisional forest area	Reserve Forest is 8847 ha, PRF-14,650 ha, PARF-500 ha
	(iii) Total area diverted since 1980	8,297.97 ha 124 no of cases
	(iv) Total CA stipulated since 1980	487 ha forest land & 62 ha non-forest
	(v) Total CA achieved up to	425 ha on forest land & 62 ha non-forest

Other Remarks:

1. The Tato-II HEP envisages construction of concrete dam, diversion tunnels with upstream and downstream coffer dams, Head Race tunnel, surge shafts, pressure shafts, underground power house complex and Tail race tunnel. The project will generate 3147.02 GWh design energy at 95% availability in a 90% dependable year at p-3/c.

2. The project is located in very remote area at approx. 140 kms from Along in West Siang district. The total land requirement for the construction of various components is 313.88 ha.

3. The purpose-wise break-up of total land required is given below at p-5/c:

Sl no	Components of projects	Area of Unclassified Forest	
		(in ha)	(in acre)
1	Reservoir Area	99.3	245.4
1A	Hirong quarry and approach road	19	46.9
2A	L/s dam area B/M plant, aggregate stock pile area & disposal of muck for intake and dam.	2.3	5.7
2B	HM Stock area, model/committee room	3.80	9.4
2D	Disposal Area Zone	5.2	12.8
3	R/s dam area aggregate plant, b/m plant, aggregate stock pile area & various workshops, access to l/s dam top, DT inlet, outlet and alignment.	2.1	5.2
5	Muck disposal area for dam and DT	12	29.7
6	Facilities of owner & contractor, offices, medical, recreational, religious, shopping, banking, and educational facilities, material testing & QA laboratory, fire fighting, security, work shop, POL outlet, LPG outlet.	13.8	34.1
6A	Infrastructure / temporary accommodation, open spaces / parks for public events/furnctions.	8.6	21.3
7	Dam and intake working area, and dam to PH road disposal area of Division tunnel	14.0	34.6
8A	Dam to power house road, HRT Adit, Explosive Magazine no. 2 area and approach road.	17.5	43.2
8B	Power house area, pothead yard, road from PH bridge, PH Muck Disposal area and TRT road	33.5	82.8
9	Tagurshit Quarry and Power house muck disposal	8.8	21.7
10	PH aggregate plant, b/m plant, stock pile area, workshops, disposal yard for ph muck, permanent access road.	12.4	30.6
11	Penstock Fabrication Yard, Steel Plates stock yard, fabricated ferrules stock yard, electrical warehouse, stores and contractor's colony.	6.2	15.3
12	Approach of Tato-Hirong road on right bank, DT portal and Dam abutment.	18.29	45.2
13.	Road from PH to Dam Site, Contractors camp & muck disposal area.	24.65	60.9

14.	Approach of Tato-Hirong road on left bank, Intake and Dam abutment, DT portals	3.25	8.0
15.	Surface Area above power house complex including HRT alignment and PH adits.	8.47	20.9
16.	Surface area for DT on left bank.	0.72	1.8
	Total Area	313.88	775.55

4. The Compensatory Afforestation has been proposed over double degraded forest land i.e. 628.00 ha in Aalo Forest Division with a total financial outlay of Rs.7,59,17,500/- with 1 patch at p-41 & 42/c.
5. The user agency has given an undertaking to bear the cost of CA at p-11/c.
6. The User Agency has given an undertaking to make the payment towards the Net Present Value at p-10/c.
- 7 The user agency has also submitted undertaking for obtaining Environment Clearance at p-13/c.
- 8 The user agency has submitted the R&R plan at p-20 to 29/c.
- 9 Employment likely to be generated: Sufficient Employment will be generated during construction and operation phase of the project at p-3/c.
- 10 The user agency has submitted the Minimum Forest land utilization certificate at p-12/c.
- 11 The user agency has submitted the certificate for Historical & Religious monuments at p-30/c.
- 12 There is no violation of Forest (Conservation) Act, 1980.
- 13 The DFO has certified that the donated area measuring 800 ha area under Loffa village which is community forest land is suitable for raising Compensatory Afforestation and also from the management point of view at p-39/c.
- 14 Total cost of the project at present rates is Rs.6,912.45crores at p-3/c.
- 15 The user agency submitted land use / land cover map of the influenced zone of the Tato-II HEP project at p-68/c.
- 16 There is no archaeological / heritage site / defence establishment or any other important monument located in the area.

17 The State Government has recommended the proposal.

SITE INSPECTION REPORT

The Site Inspection was carried out by the Regional Office, Shillong.

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

2. Unclassified State Forest (USF) near Tato village, Mechuka Range in Aalo Forest Division in West Siang district of Arunachal Pradesh and about 140 km from district town of Aalong.
3. Total cost of the project is Rs.6,912.45crores.
4. **Wildlife:** The area under Along Forest Division is large and inhabited by the following important faunal species – musk deer, clouded leopard, leopard cat, Red Panda, Slow loris, Common leopard, Pangolin, Assamese macaque, Black bear, Serrow, Blythstragopan, Varieties of sun bird, Wood peckers, Tree pies, Munia, Fly, Catchers, Snakes, Salamanders, Lizards, etc.
5. **Vegetation:** As enumerated by the State Forest Department about 1,20,890 no of trees above 60 cm, girth (385/ha) have been enumerated in the proposed diversion area. About 37,000 trees fall within 61-90 cm girth class and 64,678 trees fall in 91-120 cm girth class. Hollock (Terminaliamyriocarpa) and Siris (Albizia) are most prevalent species, others are Castonopsis, Toona, Magnolia, Canarium, Phoebe, Altingia, Kadam etc.
6. By the State Forest Dept. out of 800 ha of community forest land donated by local people under Lophavillage in Seppa Forest Division, 628 ha has been identified for CA against this proposed project. the land is in one block. The CA has been proposed over double the degraded forest land i.e. 628 ha with total financial outlay of Rs.7,59,17,500/- along with maintenance for 10 years.
7. No, violation of Forest (conservation) Act, 1980.
8. Due to acquisition of their land for project construction 51 families will be displaced and about a total of 376 families (including 51 displacements) shall be getting affected as has been informed by the project proponent.
9. About 1,20,890 trees are required to be felled.

No of trees of girth below 60 cm	-	Not enumerated
No of trees of girth above 60 cm	-	1,20,890

10. **Background note on the proposal:** The Tato-II Hydro Electric Project (THEP) is located on river Siyom near Tato village in West Siang district of Arunachal Pradesh. The project is named after the Tato village, which is 146 km from Along, the headquarters of West Siang district. The geographic location of the project falls under Survey of India (SOI) topsheet no. 82L/6. The river Siyom originates in higher Himalayas and flows generally in south-easterly direction. A series of large HEPs have been identified for development on the Siyom river. Starting from upstream, these are the 500 MW Hironag project, 700 MW Tato-II project, 1000 MW Naying project and 1000 MW Middle Siang (Siyom) project.

11. **Utility of the project: Number of Scheduled caste / Scheduled Tribes to be benefited by the project.**

- The project shall add much needed power supply to local area as well to the National Grid.
- Enhancement of economic development of the State by earning revenue from sale of free power to the State from the project.
- Creation of employment and business opportunity.
- Improvement of road communication as well as telecommunication.
- Improvement in health and educational facilities for locals.
- Opening of Banks, Post Offices and other Govt. establishments.

12. The CCF (central) while forwarding the proposal has recommended the following:

The increase in population increases demand for agricultural products, industrial growth, infrastructure development, and all-round economic growth of all region and for whole country. Growth and development require more and more power. Already there exists a big gap between demand and supply of power. Therefore country needs more and more power from different sources. Hydro-Electric power is a renewable form of energy where water is not used for consumptive use and this is comparatively less polluting source of power. Therefore harnessing Hydro Electric Power is actually a national need which justifies the installation of HEP projects.

Arunachal Pradesh is an undeveloped State and Hydro-Electric Power is the most important potential source of its future development due to fast flowing

Himalayan rivers criss-crossing the State with suitable gradient and plenty of water providing good scope for Hydro Electric Power generation. The Hydro-Electric Project construction phase provides opportunity to the locals for employment generation and thereafter increased economic activities brings opportunities of growth and employment to the locals. Besides, economic development these projects provides different services under its corporate liabilities like educational, medical, recreational, infrastructure development activities etc. to the population around the project areas. Therefore, this Hydro-Electric Project has lot of positive aspects justifying its establishment.

On the other side of the balance, the threats to the global environment have the potential to open our eyes and make us accept that the protection of environment is an essential feature of sustainable development. It is a known fact that without adequate environmental protection development is undetermined. Strong environmental management complement and reinforce sustainable development. Therefore, it is required to have a line of control over both these contingencies (development and conservation) whereby the degree of use of natural resources and its exploitation as well as the degree of economic development should be at such rate which will assure sustenance

Hence, proposal may be submitted for the consideration of the FAC, if agreed to.

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