

AGENDA ITEM NO. 5

Sub: Diversion of 52.8 ha of forest land (Surface forests land = 47.1 ha, Riverbed = 2.3 ha & underground area = 2.8 ha) for construction of Tato-I H.E. Project (186 MW) in West Siang District of Arunachal Pradesh by M/s Siyota Hydro Power Pct. Ltd. - reg.

F. No. 8-102/2013-FC

1. This relates to diversion of above mentioned proposal. The proposal was discussed in the meeting of Forest Advisory Committee held on 13th to 14th February, 2014 and the Committee, after detailed discussion on the proposal, recommended following:
 - i. The Committee recommended the State Government should be advised to re-examine the proposal in the light of the recommendations contained in the Cumulative Impact Assessment /Carrying capacity study for Siang/Siom basin made by the Central Water Commission and, if required, submit the revised proposal after incorporating the modification suggested by the study, if any.
 - ii. The Committee also recommended that the State Government should also submit following information along with proposal:
 - a. DGPS maps of the area proposed for diversion and for CA and the Forest cover map and 10 Km radius map showing the distance from the Protected Areas.
 - b. CAT plan or Environmental Management Plan prepared for obtaining Environment Clearance.
 - c. The compliance of provisions of the Scheduled Tribe and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 as per the Ministry's advisory dated 3.08.2009.
2. The above recommendation of the FAC were communicated to the State Government vide this Ministry's letter of even number dated 142.03.2014. The State Government vide their letter no. FOR. 313/CONS/2010/94 dated 20.01.2014 submitted the information as desired by the FAC. A brief summary of the information submitted by the State Government is given as under:

Para of MoEF's Letter	Additional information/ documents / clarification sought	Reply/Response
Para (i)	After detailed deliberation, the committee recommended the State Government should be advised to re-examine the proposal in the light of the recommendations contained in the Cumulative Impact Assessment/ Carrying Capacity Study for Siang/ Siyom basin made	As regard Cumulative Impact Assessment / Carrying Capacity Study, this is to be informed that a meeting was held recently at Itanagar between the sub-group of EAC, the state Govt. as well as Project Developers. The State Govt. as well as Project Developers' perspective on the draft report of the CIA Study was placed before the sub-

	by the Central Water Commission and if required, submit the revised proposal after incorporating the modification suggested by the study, if any.	group of EAC. However, there have been issues with regard to free flowing river stretch which have not been prescribed for Tato-I HEP. However, there have been issues with regard to free flowing river stretch stretches between the FRL of the downstream and TWL of the upstream HEPs and the environmental flow immediately downstream of the diversion structure to sustain the aquatic ecology and environment. In para 11.3.3 (iii) of the Chapter-11 of the CAI report, free flowing river stretch has not been prescribed for Tato-I HEP. However, it is mentioned that adequate Environmental Flow release as worked out for the project in Chapter-9 would help in mitigating the impacts. In the Table-12.2 the Environmental Flow of 20%, 15% & 15% has been recommended for Tato-I HEP in lean season, pre & post monsoon season and monsoon season respectively. The User Agency has informed that they have taken note of the report but the project components and the land requirement for the project components and the land requirement for the project will not change and will remain 52.80 ha only.
Para (ii)	The State Government should also submit following information along with proposal	
(a)	DGPS maps of the area proposed for diversion and for CA and the Forest Cover Map and 10 Km radius map showing the distance from the Protected Area.	The DGPS map of the area proposed for diversion and the proposed CA area and the Forest Cover Map of the Along Forest Division and the 10 Km radius map showing the distance from protected Area duly authenticated by the DFO, Along FD have been submitted (Pg /c).
(b)	CAT Plan or Environment Management Plan prepared for obtaining Environmental Clearance.	The copy of the CAT Plan submitted to the MoEF for approval as part of the Environmental Clearance process has been submitted.
(c)	The compliance of provisions of the Scheduled Tribes and Other Traditional Forest Dwellers	The User Agency has informed that an application has been submitted to the Deputy Commissioner, West Siang district Aalo

	(Recognition of Forest Rights Act, 2006 as per the Ministry's Advisory issued from time to time	requesting for recognition & settlement of rights over the forest land measuring 52.80 ha required for the project under the provision of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006. The process has been initiated by the Deputy Commissioner and "District Level Committee and sub- Division Level Committee have been constituted. The Deputy Commissioner has forwarded the case to the Additional Deputy Commissioner, Mechuka for further necessary action in accordance with the provision of FRA. Further, the User Agency has requested that their case may be processed for according in-principle (Stage-I) approval for diversion of forest land and compliance report about recognition of right under FRA will be submitted by them before seeking Stage-II approval as was the practice followed in all other forest clearance cases in the past. Therefore, the request of UA may be considered. Copy of the application of the UA addressed to DC, Aalo, notification issued by the DC constituted committees and the letter of the DC constituted committees and the letter of the DC addressed to the Addl. DC, Mechuka to take action for recognition of rights under FRA are enclosed as Annexure-VI, VII & VIII.
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3. From the above, it may be ascertained that the State Government/project proponent has submitted information on all points as desired by the FAC except compliance of FRA, 2006. It has been stated that compliance of Scheduled Tribe and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 is under progress with the State Authorities.

In view of the above facts, proposal is submitted for soliciting the further directions to submit the proposal for the consideration of the FAC in its forthcoming meeting.

Fact sheet of the proposal is as under:

FACT SHEET

Diversion of 52.8 ha of forest land (Surface forests land = 47.1 ha, Riverbed = 2.3 ha & underground area = 2.8 ha) in favor of M/s Siyota Hydro Power Pct. Ltd., for construction of Tato-I H.E. Project (186 MW) in West Siang District of Arunachal Pradesh.

1. The State Government of Arunachal Pradesh vide their letter No. FOR. 313/CONS/2010/94 dated 20.01.2014 submitted the above mentioned proposal seeking prior approval of the Central Government under Section-2 of the Forest (Conservation) Act, 1980.
2. The project envisages utilization of water of Yarjep River, a major tributary of Siyom River. The project is a run-of-river Scheme with a surface power house. The dam site is proposed near Gapo and Meing villages and power house near Heyo village.
3. Details of the requirement of the forest area for the project is give as under:

i. Surface forest land	-	47.7 ha
ii. Riverbed	-	2.3 ha
iii. Underground land	-	2.8 ha
Total		52.8 ha

4. Justification for locating the project in the forest area

- i. Being a run-of-the-river hydroelectric project, TATO-I HE project has minimal impact on the environment, notably because there is no reservoir, so that the submergence area would be only around 3 Ha (out of which around 1.8 Ha of river bed). The entire °reject has been planned to be as eco-friendly as possible, through the lowest possible impact on the environment.
- ii. However, as most of the Hydroelectric Projects located in Arunachal Pradesh, TA TO-1 HE Project is planned on hilly and relatively remote area covered with forest or degraded forest. Therefore the project requires unavoidable minimum Forestland, mainly for the construction of the Intake structure, the open air channel, the power house and the roads. Each of the project components have been designed in order to 'vault in the minimum possible land requirement. The detail requirement is shown under para. ns2.
- iii. In addition, since river bed is under falls under forest land, it is not possible to envisage a run of the river HE Project without impacting forest land
- iv. The size and the locations of all the components have been fixed after proper survey and investigations and after proper examination of available alternatives.

Alternatives considered

- i. Various locations for intake site have been worked out in the preliminary stages.
 - ii. Regarding the water intake site, the option without dam has been kept for technical-economical and environmental reasons. It has been envisaged to build a dam downstream Heo Pro, the cost-benefit analysis showed that it was not optimal.
 - iii. On the other hand, the option submitted without dam presents no submergence and no impact on local activities, and minor impacts on environment.
 - iv. Regarding the power house, there was only one option for location of a surface power house due to topographical reason. The power house is located near Heyo village area with no impact on houses and habitation.
5. Fact related to the proposal as contained in the State Government letter dated 20.01.2014 are given below in the form of fact sheet:

1.	Name of the Proposal	Diversion of 52.8 ha of forest land (Surface forests land = 47.1 ha, Riverbed = 2.3 ha & underground area = 2.8 ha) in favor of M/s Siyota Hydro Power Pct. Ltd., for construction of Tato-I H.E. Project (186 MW) 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 and Forest area involved. (ii) Legal status/Sy.No. (iii) Map	Along Forest Division, Aalo 52.8 ha Unclassified State Forest (USF) SOI toposheet - Pg-15-17/c DGPS Map – Not enclosed. Forest Cover Map – Not enclosed. 10 Km radius map showing PAs – Not enclosed.
4.	Topography of the area	-
5.	(i) Geology (ii) Vulnerability to erosion	- The proposed area for diversion is mostly rocky, has vegetation cover & is not prone to erosion. The topography seems to be fairly stable. Some areas may become vulnerable to erosion if devoid of vegetation.
6.	(i) Vegetation (ii) Density (iii) No. of trees to be felled	Walnut, Poma, Siris, Hingori, Jutuli, Mekahi, Moj, Mossing etc. Dense Forest (Density 0.4 to 0.5) Eco Class-1 Tropical semi evergreen. Number of trees i. At FRL - 186 trees ii. At FRL 2m - 82 trees iii. At FRL 4m - 55 trees iv. Area other than submergence – 7152 trees Total – 7448 trees including all girth classes
7.	Whether area is significant from wildlife point of view	No
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	The proposed area does not form part of National Park, Wildlife Sanctuary, Biosphere Reserve, Tiger Reserve, etc. Flora <i>Cedrella toona, Castonopsis, PHoeba cooperiana, Altingia excels, Juglans regia, Albizzia lebbek, Kydia calycinia, Albizia lucida</i>

	Wildlife Warden	Fauna <i>Capricors sumatruensis, Muscicapidge, Nectarinidae, Picidae, Strigidae, Cuculidae, Ratufa macrouru, Prosbytis phayrie, Varanus flavescenes, Felies virersina, etc.</i>
9.	Whether any RET species of flora and fauna are found in the area. If so details thereof	No rare/endangered/unique species of flora and fauna have been found/recorded in the area.
10.	Approximate distance of the proposed site for diversion from boundary of forest.	The proposed project site is approx. 41 km away from Mechuka St. R.F.; approx. 32 km away from Dibang Dihang Biosphere Reserve; approx. 79 km from Yordi Rabe Supse Wildlife Sanctuary and approx. 12 km from Mouling National Park.
11.	Whether any protected archaeological/ heritage site/defence establishment or any other important monuments is located in the area.	There is no protected archaeological/heritage site/defense establishment in the proposed area.
12.	Whether any work 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, if no recommended area item-wise with details of alternatives examined.	Yes, the requirement of land is unavoidable and barest minimum.
14.	Whether clearance under the Environment (protection) Act, 1986 is required?	Yes,
15.	Employment Opportunities	Highly skilled - 30 Skilled - 100 Semi-Skilled- 150 Unskilled - 120 Nos
16.	Compensatory Afforestation	Compensatory Afforestation (CA) has been proposed over double degraded forest land. It is reported by the

		State Government that CA will be carried in Along Forest Division of West Siang District in USF area. The land earmarked for CA is part of 217 ha of degraded USF identified as land bank for CA. The State Government has also submitted a copy of mutation certificate dated 29.07.2014 regarding mutation of 217 ha of degraded USF as Village Reserve Forest in favor of State Forest Department.
	(i) Details of non-forest area/degraded forest area identified for CA, its distance from adjoining forest, number of patches, size of each patches.	<ol style="list-style-type: none"> 1) USF area of 52.8 ha x 2=105.60 ha under Basar Forest Range near Chisi village is proposed for raising of CA 2) Distance from adjoining forest: 12 km appx. 3) Number of patch: 1 4) Size of patch: 105.60 ha
	(ii) Map showing non-forest/degraded forest area identified for CA and adjoining forest boundaries.	Enclosed at Pg-47/c
	(iii) Detailed CA scheme including species to be planted, implementing agency, time schedule, cost structure, etc.	CA scheme of 10 years with financial out lay of Rs. 1,83,22,000/- has been submitted Pg-55-57/c
	(iv) Total financial outlay for CA	Rs. 1,99,84,444/-
	(v) Certificate from the competent authority regarding suitability of the area identified for CA and from management point of view.	Pg-58/c
17.	Catchment Area Treatment	Not enclosed.
18.	Rehabilitation of Oustees <ol style="list-style-type: none"> a) No of families involved b) Category of families c) Details of rehabilitation plan 	NA NA NA
19.	Cost Benefit Ratio	Enclosed Pg-18-20/c
20.	Total Cost of the Project	Rs. 1161 Crores (At completion cost)
21.	Recommendation <ol style="list-style-type: none"> i. DFO ii. CCF 	Yes (pg-21) Yes (pg-63)

	iii. Nodal Officer	Yes (pg-65)
	iv SG	Yes (pg-66)
22.	District Profile	
	(i) Total Geographical area of the district	5049 Sq. Km.
	(ii) Total Forest area/Divisional Forest area	6719 Sq. Km (As per state of Forest report FSI, 2009). West siang District includes Along & Likabali Forest Division.
	(iii) Total area diverted since 1980	431.54 ha (14 cases)
	(iv) Total CA stipulated since 1980 (Forest land)	1137.88 ha
	a. Forest land including penal CA	
	b. Non Forest Land	
	(v) Progress of Compensatory Afforestation	657.28
	a. Forest land	
	b. Non Forest land	

6. The State Government has recommended the project without any specific conditions. The Chief Conservator of Forest has recommended the proposal with the following observation and conditions:

- a) The project will be carried out in high altitude cold areas where there is great to forest due to collection due to firewood for heating purpose , also for construction of houses as most of the houses in high altitude area use substantial volume of timber in construction. With improvement in the standard of living and with influx of more people into the area, there will be much more stress o forest around for firewood for heating purpose and also for timber , resulting in more degradation of forest areas around, leading to higher soil erosion in this kind of high, rainfall areas. So, there should be more stress on preservation and improvement of forest for the long sustenance of the project. There might not be sufficient fund in future, tor a long term, to ensure proper protection and improvement of forests a, forestry sector projects are carried for a particular period; and after the completion of the forestry projects there is hardly any money left to account for the future degradation or to take up unforeseen improvement works. To ensure regular fund flow, for protection and improvement of forest and environment, it should be ensured that, a particular portion of income generating out of the project is ploughed back to the forest sector ; may be around 10% of royalty that is coming to the state from the sale of

power be invested back into the forestry sector for maintenance, improvement and protection of forests , wildlife and environment. Out of the royalty that will flow back to the forestry sector, at least 10% of that amount should be invested in the areas just around the project.

- b) The power developer should provide all assistance to the forest department in protection in improvement of forest.
 - c) The power developer should green all the available areas in the project area, as per the guidance of the forest department , after commissioning of the project.
7. The project proponent has submitted undertaking to bear the cost of CA and NPV.
 8. The Government of Arunachal Pradesh has allotted the TATO-I HE Project to VELCAN Energy Holdings (Dubai) Ltd for the development of project on BOOT basis VPLCAN Energy Holdings (Dubai) has incorporated a dedicated Special Purpose Vehicle, namely Siyota Hydro Power Pvt. Ltd. (SHPPL) for the development of the Project within the allotted reach.
 9. SHPPL obtained the TOR approval from MOEF and the clearance for pre construction activities and Survey 8, Investigations first in September 2008. A second approval has been obtained on 22nd of March 2010 in order to record the revision of the capacity of the project (from 80 to 170 MIM, Then a second revision of the TORs has been granted on 20th October 2011, following the increase of capacity directed by the Central Electricity Authority on 27th April 2011. As per such directions, the Installed Capacity has been approved for 186 MW. Such increase has been arrived at based on the hydrology approved by CWC in July 2010, without any change in project layout.
 10. The Intake of TATO-I H. P. Project is located in the West Siang District of Arunachal Pradesh at latitude 28°32'32 N and longitude 94°18'43"E on Yarjep River. The entire project components are located in West Siang District, Mechuka Sub-division. The Project site is located 144 Km from Along, and 344 Km from Dibrugarh, which is nearest airport
 11. The project envisages utilization of water of Yarjep River, a major tributary of Siyom River. The project is a Run-of-River scheme with a surface powerhouse. The water intake is proposed near Gapo and Meing villages and power house near Heyo village.
 12. The Project will utilize a net design head of 153.4 m and design discharge of 133 cumec for generation of 186 MW (3 x 62 MW). The flow is diverted partly from the river toward a transverse water intake and partly from the flow outlet out of the Heo power house, the middle project of the three projects of Velcan Energy Group.
 13. After a 1100m race through an open air channel and 3912 m through a 6.4 m diameter tunnel, the flow is driven to the power house located on a platform on the left bank of the river near Heyo village. There will be no reservoir. A scour sluice is proposed on the left side of the transverse intake in order to clean the entrance of the water intake during operation.
 14. The energy generation shall be about 838 million units (MU) in a 90% dependable year at 95% machine availability. The generated energy would be pooled to Siang PP-2 pooling point through proposed 220 kV transmission line. The power from Siang PP-2 pooling point would be ultimately pooled directly through HVDC Link to the National Grid However transmission plans and construction schedule are still tentative as of the date of this

application.

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