



পাম্পড স্টোরেজ প্রজেক্ট ডিপার্টমেন্ট
West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)
Pumped Storage Project Department

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Vidyut Bhavan (5th Floor)
Block-DJ, Sector-II
Bidhannagar, Kolkata – 700 091

Memo No. PSPD/2F2/ Turga-Forest (Compliance) / 253

Dated : 08 November 2021

To
The Divisional Forest Officer,
Purulia Forest Division,
Govt. of West Bengal
Purulia

Sub: 1000 MW Turga Pumped Storage Project in Purulia District of West Bengal
- Report on compliance of all conditions stipulated in In-Principle Approval for Diversion of total 234 Ha (578.22 Acres) of Forest Land at Ayodhya Hills in Purulia District for implementation of the Project under Purulia Forest Division
Final Compliance Report

Ref: i) MoEF&CC Forest Proposal No.: **FP/WB/HYD/8214/2014**
ii) In- Principle Approval accorded vide GoI, MoEF & CC no. **8-51/2017-FC, dt. 12.04.2018**

Dear Sir,

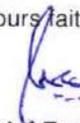
With reference to above, the Final Compliance Report of all relevant conditions stipulated in "In-Principle Approval" for Diversion of total 234 Ha (578.22 Acres) of Forest Land at Ayodhya Hills in Purulia District under Purulia Forest Division along with all desired documents and drawings are enclosed herewith for your kind perusal and taking further necessary action towards early diversion of forest land for the project implementation.

This is for your kind information please.

Thanking you.

Encl: Five (05) Sets of Final Compliance Report

Yours faithfully,


08.11.21
Chief Engineer
PSPD, WBSEDCL

Memo No. PSPD/2F2/ Turga-Forest (Compliance) /
Copy forwarded for kind information and necessary action:-

Dated : 08 November 2021

1. The Addl. PCCF (Central), MoEF&CC, GoI, Eastern Regional Office, Bhubaneshwar
2. The Addl. PCCF, CAMPA and Nodal Officer FCA-1980, Govt. of West Bengal
3. Asst. Inspector General of Forests (FC), MoEF&CC, GoI, New Delhi

Chief Engineer
PSPD, WBSEDCL

Status of Compliances
(Final Compliance)

Conditions Stipulated in the '*in-principle*' approval granted by the MoEF & CC, Government of India vide F. No. 8-51/2017-FC dated 12 April 2018 for diversion of 234 Ha of forest land for construction of 1000 MW Turga Pumped Storage Project of WBSEDCL.

Sl No	Stipulated Conditions	Compliances/Remarks
(i)	Legal status of the diverted forest land shall remain unchanged.	Noted.
(ii)	On analysis on DSS it is observed that the part of Non-Forest land proposed for CA for the project is falling in the category of recorded forest. The status of Non-Forest land proposed for CA shall be clarified along with documentary evidences. State Government shall also analyse the same on DSS prior to submission of clarification to MoEF&CC. The DSS report generated by State Government shall be submitted prior to Stage II approval. It is noted that CA land has been given in 12 patches, which are dispersed in Purulia & Jalpaiguri districts of West Bengal State. Based on DSS, Out of 12 patches proposed for CA, 6 CA Patches having the Legal status as Forest land.	Completed. One land patch vide Plot no. 631 of Mouza: Mangura Lalpur, Block: Hura, Dist: Purulia was not transferred to the Forest Department for Compensatory Afforestation purpose. In this aspect, please refer to the letter of Additional Principal Chief Conservator of Forests (CAMPA) and Nodal Officer, FCA 1980, Directorate of Forests, Government of West Bengal vide no.: 5581/ LA & LT/ 2M-1003 / 2013 dated 05.09.2018. Notification of the CA lands of Purulia District by the Forest Department is enclosed. - Attachment 1, 1(A), 1(B), 1(C) and 1 (D)
(iii)	On perusal of item-wise breakup statement submitted by the State Government and in SIR, it is observed that 10.239 ha, 18.387 ha and 8.537 ha have been proposed for Civil structures, Construction facility and other component respectively. State Government shall submit details of these three components. No residential or commercial complexes which are not ancillary and not site specific shall be permitted.	Complied. • Details of Component wise break-up of: Civil Structures - 16.332 ha (10.239 ha + additional 6.093 ha for underground structures & lower concrete dam), Construction Facilities - 18.387 ha and Other Project Components - 8.537 ha, have already been submitted to the State Forest Department by WBSEDCL. - Attachment 2 • Undertakings in respect of construction of no residential or commercial complexes within the diverted forest land, has been submitted to the State Forest Department. - Attachment 3
(iv)	Since water is a precious resource, the user agency shall take some measures for creation of water conservation / harvesting structures in the Catchment Area so that the water to be released for use of communities and agriculture, down streams, is not affected.	Complied. • Catchment Area Treatment (CAT) Plan has been approved by the Forest Department, Govt. of West Bengal and has been sent to MoEF&CC, Govt. of India vide letter No. 192-For /O/L/10T-12/ 2017 dated 18.01.2018. - Attachment 4, 4(A)/1, 4(A)/2 • Necessary payment of Rs. 4,09,65,000 i.r.o. Catchment Area Treatment has also been made to Ad-hoc CAMPA.

		<p>- Attachment 5 & 5(A)</p> <ul style="list-style-type: none"> • Undertaking is attached in Attachment 5 (B).
(v)	The user agency should also address the stone quarry within the leased area. After extraction of stones, the quarry should be reclaimed with soil and should be vegetated; thereby developing the mined-out land into an ecotourism spot enhancing the ecology & aesthetics of the site.	<p>Complied.</p> <p>WBSEDCL has made detailed Reclamation work plan of the Stone Quarry site in the Chapter 10 (Restoration, Stabilization & Landscaping of Quarry Sites) of EMP Report for Environmental Clearance which has duly been approved by the MoEF&CC, Govt. of India vide no. J-12011/13/2013-IA.I(R) dated 02.07.2018.</p> <p>- Attachment 6</p> <p>Undertaking is enclosed in Attachment 7</p>
(vi)	The user agency may also fence the quarry prior to reclamation to check possible casualty of wildlife due to accidental fall.	<p>Will be complied during project implementation.</p> <p>Undertaking is enclosed in Attachment 8</p>
(vii)	The State Govt. may report for additional forest lands required to be diverted for dismantling the irrigation dam and pillars have to be posted there with proper demarcation	<p>Complied.</p> <ul style="list-style-type: none"> • The additional forest lands required to be diverted for dismantling the irrigation dam has already been included in the in-principle approval. - Attachment 9 • Proper demarcation will be made before the project construction. • Undertaking is enclosed in Attachment 10
(viii)	The encroachment, as reported by CCF Northern Circle, West Bengal in the Proposed CA area shall be evicted prior to mutation of land in favour of Forest Department. State Government shall ensure that the Non-forest land shall be free from all encumbrances. A certificate duly signed by the Nodal Officer (FCA) may be furnished in this regard;	<p>Complied.</p> <p>Chief Conservator of Forests, Northern circle vide his letter no. 395 / 2M-84 dated 23.06.2017 confirmed that, there is no encroachment in 392.65 Acres of non-forest CA land at Purba Totgaon, J.L.No. 2, Jalpaiguri proposed for the Project.</p> <p>- Attachment 11</p>
(ix)	State Government shall prepare a wild life conservation plan with special emphasis to avoid Human elephant conflict in the area at project cost. The plan shall be duly approved by CWLW. The Amount shall be deposited in Adhoc CAMPA. The sanctity of elephant corridor shall not be disturbed. All possible mitigation measure to protect the elephant corridor shall be incorporated in wild life management plan.	<p>Complied.</p> <ul style="list-style-type: none"> • Wildlife Conservation Plan as prepared by the Forest Department, Govt. of West Bengal has been approved by the CWLW, Govt. of West Bengal. - Attachment 12 • An amount of Rs. 53,55,45,790.00 as approved by the CWLW, Govt. of West Bengal has already been deposited in the Ad-hoc CAMPA account. - Attachment 13
(x)	Compensatory afforestation shall be raised over non-forest land equal to the diverted forest land. At least 1000 plants per hectare (234 hectares X 1000 =	<p>Complied.</p> <ul style="list-style-type: none"> • WBSEDCL has already mutated the entire 234 Hectares (Ha) of land in favour of Forest Department for

	234000 plants) shall be planted over identified non-forest land with provision for ten years on subsequent maintenance.	<p>raising Compensatory Afforestation.</p> <p>- Attachment 14, 14 (A), 14 (B)</p> <p>•Based on the demand note from Addl. PCCF, CAMPA & Nodal Officer, FCA – 1980 vide letter memo nos 11026 / L&LT / 2M-1003 / 2013, Dt 15.02.2019 and 11185 / L&LT / 2M-1003 / 2013, Dt 19.02.2019 and further demand note from Divisional Forest Officer Medinipur Division vide letter memo 2082 / 8 dated 22.07.2021, WBSEDCL has paid Rs. 21,70,70,064 for Compensatory Afforestation over non-forest land with provision for ten (10) years of subsequent maintenance activities and demarcation on the 234 Ha of CA land.</p> <p>- Attachment 15, 15 (A), 15 (B), 5 and 16</p>
(xi)	25% of revised CA cost will be deposited extra by the user agency for soil and moisture conservation (SMC) activities on the CA land.	<p>Complied.</p> <p>•Based on the demand note from Addl. PCCF, CAMPA & Nodal Officer, FCA – 1980 vide letter memo nos 11026 / L&LT / 2M-1003 / 2013, Dt 15.02.2019 and 11185 / L&LT / 2M-1003 / 2013, Dt 19.02.2019, and further demand note from Divisional Forest Officer Medinipur Division vide letter memo 2082 / 8 dated 22.07.2021, WBSEDCL has paid Rs. 5,45,60,180.00 for Soil and Moisture Conservation (SMC) activities as 25% of revised CA cost on the 234 Ha of CA land mutated in favour of State Forest department.</p> <p>- Attachment 15, 15 (A), 15 (B), 5 and 16</p>
(xii)	The land identified for the purpose of CA shall be clearly depicted on a Survey of India topo-sheet of 1:50,000 scale;	<p>Complied.</p> <p>The entire 234 Ha of Compensatory Afforestation land transferred, mutated and notified in name of Forest Department have been depicted on Survey of India topo-sheets of 1:50,000 scale (Reference Survey of India Topo sheet nos. : 73 I /8, 73 I /11, 73 I /12, 78 B / 5, 78 B / 9 and 73 N / 6)</p> <p>Undertaking is enclosed in Attachment 17</p>

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(xiii)	The non-forest land identified for raising compensatory afforestation shall be transferred and mutated in favour of State Forest Department before issue of the Stage-II clearance and the said non-forest land as identified for raising Compensatory Afforestation shall be notified by the State Government as RF under Section-4 or PF under Section-20 of the Indian Forest Act, 1927 or under the relevant Section(s) of the local Forest Act, as the case may be, within a period of six months. The Nodal Officer (Forest Conservation) shall report compliance in this regard;	<p>Complied.</p> <ul style="list-style-type: none"> •WBSEDCL has already identified and mutated the entire 234 Ha of non-forest land in the Districts of Purulia, Paschim Medinipur and Jalpaiguri in favour of Forest Department for raising Compensatory Afforestation. •The said non-forest land as identified for raising Compensatory Afforestation has already been notified by the State Government as Protected Forest under the Indian Forest Act, 1927 vide nos. <ul style="list-style-type: none"> ➤ 412-For / O/ L/ 10T - 12/ 2017 dated 08.03.2019 ➤ 531-For / O/ L/ 10T - 12/ 2017 dated 25.03.2019. ➤ 851-For / O/ L/ 10T - 12/ 2017 dated 29.07.2021 <p>- Attachment 14, 14 (A), 14 (B)</p>
(xiv)	The User Agency shall transfer the cost of raising and maintaining the compensatory afforestation at the current wage rate in consultation with State Forest Department in the account of Ad-hoc CAMPA of the concerned State through online portal. The scheme may include appropriate provision for anticipated cost increase for works scheduled for subsequent years;	<p>Complied.</p> <p>Based on the demand note from Addl. PCCF, CAMPA & Nodal Officer, FCA - 1980 vide letter memo nos 11026 / L&LT / 2M-1003 / 2013, Dt 15.02.2019 and 11185 / L&LT / 2M-1003 / 2013, Dt 19.02.2019 and further demand note from Divisional Forest Officer Medinipur Division vide letter memo 2082 / 8 dated 22.07.2021, WBSEDCL has paid Rs. 21,70,70,064 for Compensatory Afforestation over non-forest land with provision for ten (10) years of subsequent maintenance activities and demarcation on the 234 Ha of CA land.</p> <p>- Attachment 15, 15 (A), 15 (B), 5 and 16</p>
(xv)	The User Agency shall transfer online, the Net Present Value (NPV) of the forest land being diverted under this proposal, as per the orders of the Hon'ble Supreme Court of India dated 28.03.2008, 24.04.2008 and 09.05.2008 in Writ Petition (Civil) No. 202/1995 and the guidelines issued by this Ministry vide its letter No. 5-3/2007-FC dated 05.02.2009. The requisite funds shall be transferred through online portal into Ad-hoc CAMPA account of the State Concerned;	<p>Complied.</p> <p>Based on the demand note from Addl. PCCF, CAMPA & Nodal Officer, FCA - 1980 vide letter memo nos 11026 / L&LT / 2M-1003 / 2013, Dt 15.02.2019 and 11185 / L&LT / 2M-1003 / 2013, Dt 19.02.2019, WBSEDCL has already transferred the claimed amount of Rs.18,79,02,000.00 in the account of Ad-hoc CAMPA of the Govt. of West Bengal through online portal as the cost of Net Present Value (NPV) of total 234 ha forest land proposed to be diverted.</p> <p>- Attachment 15, 15 (A), 5, 5 (A)</p>
(xvi)	The User Agency shall pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India;	<p>WBSEDCL will comply with the final decision of the Hon'ble Supreme Court of India.</p> <p>Undertaking is enclosed in Attachment 18</p>




(xvii)	The approved Catchment Area Treatment (CAT) Plan shall be implemented at the cost of the user agency and commensurate funds shall be deposited through on-line in the account of Adhoc CAMPA account;	<p>Complied. Based on the demand note from Addl. PCCF, CAMPA & Nodal Officer, FCA – 1980 vide letter memo nos 11026 / L&LT / 2M-1003 / 2013, Dt 15.02.2019 and 11185 / L&LT / 2M-1003 / 2013, Dt 19.02.2019, WBSEDCL has already transferred the claimed amount of Rs. 4,09,65,000.00 in Adhoc CAMPA account of the Govt. of West Bengal through online portal for implementing the approved Catchment Area Treatment (CAT) Plan.</p> <p>- Attachment 15, 15 (A), 5, 5 (A)</p>
(xviii)	The User Agency should ensure that the compensatory levies (CA cost, NPV, etc.) are deposited through challan generated online on web portal and deposited in appropriate bank online only. Amount deposited through other mode will not be accepted as compliance of the Stage-I clearance;	<p>Complied. Based on the demand note from Addl. PCCF, CAMPA & Nodal Officer, FCA – 1980 vide letter memo nos 11026 / L&LT / 2M-1003 / 2013, Dt 15.02.2019 and 11185 / L&LT / 2M-1003 / 2013, Dt 19.02.2019 and further demand note from Divisional Forest Officer Medinipur Division vide letter memo 2082 / 8 dated 22.07.2021, WBSEDCL has already transferred Rs. 1,03,60,43,034.00 as compensatory levies (CA cost, NPV etc.) through challan generated online on web portal and deposited in appropriate bank online.</p> <p>- Attachment 15, 15 (A), 15 (B), 5, 5(A) and 16</p>
(xix)	The Forest clearance will be for a period co terminus with the lease period specified in the lease agreement. The State Government will submit the lease agreement document specified in the lease agreement;	234 Ha of CA land has already been mutated in favour of Forest Department and notified as Protected Forest. It will be complied.
(xx)	The State Govt. ensure that the user agency shall implement the R&R Plan as per the R&R Policy of the State Government in consonance with National R&R Policy, Government of India before the commencement of the project work. The said R&R Plan will be monitored by the State Government/Regional Office of MoEF&CC along with indicators for monitoring and expected observable milestones;	<p>Complied.</p> <ul style="list-style-type: none"> • There is no R&R issue as per FRA Certificate issued by District Magistrate Purulia and also mentioned in the forest proposal under Form-A, Part – I, Sl. No. F. (i). <p>- Attachment 19 and 19 (A)</p> <ul style="list-style-type: none"> • In the Environmental Clearance of the Project, MoEF&CC, Govt. of India has ascertained that, issues related to Resettlement and Rehabilitation is not envisaged for the project. • However, if any R&R issue arises during the project tenure, WBSEDCL will comply in consultation with State Government as per Guidelines.

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(xxi)	The user agency in consultation with the State Government shall create and maintain alternate habitat / home for the avifauna, whose nesting trees are to be cleared in this project. Birds nests artificially made out of eco-friendly material shall be used in the area, including forest area and human settlements, adjoining to the forest area being diverted for the project.	Planning for Conservation of Avi-fauna has been detailed in the Chapter 3 (Biodiversity Conservation Management Plan) of EMP Report of the Environmental Clearance which has duly been approved by the MoEF&CC, Govt. of India vide no. J-12011/13/2013-IA.I(R) dated 02.07.2018. - Attachment 20 Undertaking is enclosed in Attachment 21
(xxii)	The boundary of the diverted forest land, mining lease and safety zone, as applicable, shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each incised with its serial number, distance from pillar to pillar and GPS Co-Ordinates	WBSEDCL has already deposited the entire amount of Rs. 4,03,26,612.00 in WBSFDA account as claimed by the State Forest Department for the work of boundary demarcation pillar, wildlife area fencing etc. which will be carried out by the State Forest Department. - Attachment 22
(xxiii)	The State Government shall complete settlement of rights, in terms of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, if any, of the forest land to be diverted and submit the documentary evidence as prescribed by this Ministry in its letter No. 11-9/1998-FC (pt.) dated 03.08.2009 read with 05.07.2013, in support thereof;	Complied. • District Magistrate, Purulia, Govt. of West Bengal vide memo no. 968/BCWP dated 13.06.2017 and 2024/BCWP dated 27.12.2017 has given consent in regard to the Forest Rights Act, 2006 in compliance to MoEF&CC letter No. 11-9/1998-FC (pt.) dated 03.08.2009 read with 05.07.2013. • The FRA Certificates as received from DM, Purulia was submitted to Addl. PCCF, CAMPA & Nodal Officer, FCA, 1980 Govt. of West Bengal vide letter no. PSPD/Turga PSP/ 2Ff/122 dated 22.06.2017 and PSPD/Turga PSP/ 2Ff/377 dated 28.12.2017 - Attachment 19 and 19 (A)
(xxiv)	The user agency shall carry out muck disposal at pre-designated sites in such a manner so as to avoid its rolling down	This will be complied during project implementation. Undertaking is enclosed in Attachment 23
(xxv)	The dumping area for muck disposal shall be stabilized and reclaimed by planting suitable species by the user agency at the cost of project under the supervision of State Forest Department. Retaining walls and terracing shall be carried out to hold the dumping material in place. Stabilization and reclamation of such dumping sites shall be completed before handing over the same to the State Forest Department in a time bound manner as per Plan.	Muck Disposal Plan has been detailed in the Chapter 9 of EMP Report of the Environmental Clearance which has duly been approved by the MoEF&CC, Govt. of India vide no. J-12011/13/2013-IA.I(R) dated 02.07.2018. - Attachment 24 Undertaking is enclosed in Attachment 25
(xxvi)	The State Government and the user agency shall ensure that the trees available between full reservoir level (FRL) and FRL - 4 metres are not felled	This will be complied during project implementation. Undertaking is enclosed in Attachment 26



(xxvii)	The User agency shall undertake afforestation along the periphery of the reservoir	Planning of afforestation along the periphery of the reservoir has been detailed in the Chapter 5 (Greenbelt Development Plan) of EMP Report of the Environmental Clearance which has duly been approved by the MoEF&CC, Govt. of India vide no. J-12011/13/2013-IA.I(R) dated 02.07.2018. - Attachment 27 Undertaking is enclosed in Attachment 28
(xxviii)	User agency shall provide free water for the forestry related projects;	<u>This will be complied in consultation with State Forest Department.</u> Undertaking is enclosed in Attachment 29
(xxix)	The User Agency shall obtain the Environmental Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required	<u>Complied.</u> •WBSEDCL has already obtained Environment Clearance from the Ministry of Environment, Forests and Climate Change, Government of India vide No. J-12011/13/ 2013-IA.I (R) on 02.07.2018. - Attachment 30
(xxx)	Any tree felling shall be done only when it is unavoidable and that too under strict supervision of the State Forest Department	<u>Noted for compliance.</u> Undertaking is enclosed in Attachment 31
(xxxi)	The layout plan of the proposal shall not be changed without the prior approval of the Central Government	<u>Noted and will be complied.</u> Undertaking is enclosed in Attachment 32
(xxxii)	No labour camp shall be established on the forest land;	<u>This will be complied during project implementation.</u> Undertaking is enclosed in Attachment 33
(xxxiii)	The User Agency shall provide fuels preferably alternate fuels to the labours and the staffs working at the site so as to avoid any damage and pressure on the nearby forest areas;	Planning for providing alternate fuels to the labours and the staffs working at the site has been detailed in the Chapter 13 (Energy Conservation Measures) of EMP Report of the Environmental Clearance which has duly been approved by the MoEF&CC, Govt. of India vide no. J-12011/13/2013-IA.I(R) dated 02.07.2018. - Attachment 34 Undertaking is enclosed in Attachment 35
(xxxiv)	The user agency will abide by the applicable recommendations of the State Government including State Forest/ Wild Life Department	<u>This will be followed.</u> Undertaking is enclosed in Attachment 36
(xxxv)	The forest land shall not be used for any purpose other than that specified in the proposal	<u>This will be complied.</u> Undertaking is enclosed in Attachment 37

(xxxvi)	The forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department of person without prior approval of the Central Government	<u>This will be complied.</u> Undertaking is enclosed in Attachment 38
(xxxvii)	No damage to the flora & fauna of the adjoining area shall be caused	During project implementation, adequate measures will be taken so that no damage to the flora & fauna of the adjoining project area is caused. Undertaking is enclosed in Attachment 39
(xxxviii)	The User Agency shall submit the annual self-compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and to this Ministry by the end of March every year;	<u>Complied</u>
(xxxix)	Any other condition that the concerned Regional Office of this Ministry may stipulate, from time to time, in interest of conservation, protection and development of forests & wildlife;	<u>Noted.</u>
(xl)	The user agency shall comply all the provisions of the all Acts, Rules, Regulations, Guidelines, Hon'ble Court Order (s) and National Green Tribunal Order (s) pertaining to this project, if any, for the time being in force, as applicable to this project.	<u>Noted.</u> Undertaking is enclosed in Attachment 40

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Surajit Chakraborty
Director (Generation)
W.B.S.E.D.C.L.

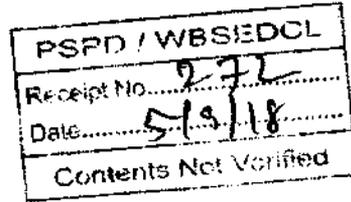


Government of West Bengal
Directorate of Forests
Office of the Principal Chief Conservator of Forests (HoFF),
Aranya Bhavan, LA-10A, Sector-III
Salt Lake City, Kolkata-700098
PH-2335-8581/7751, Fax No-23358756
E-mail : pccfwb@vsnl.net



Dated: 05.09.2018

No. 5587 L& LT/2M- 1003/2013



① ACE
Pl. note of forest...
accordingly,
05/9/2018
②
Pl follow up
in mutation of
CA land.
To
07.09.18

- (1) The Divisional Forest Officer
Purulia Forest Division,
Purulia
- (2) The Divisional Forest Officer
Kangsabati (North) Forest Division,
Purulia
- (3) The Divisional Forest Officer
Kangsabati (South) Forest Division,
Purulia
- (4) The Divisional Forest Officer
Baikunthapur Forest Division,
Siliguri

Sub.: Proposal for diversion of 234 ha. of forest land for construction of 1000 MW Turga Pumped Storage Project of WBSIEDCL in Ajodhya Hills under Purulia Forest Division (Proposal No. FP/WB/HYD/8214/2014)--Submission of approved CAT Plan- Reg.

- Ref.:
- (1) In-principle Stage – I approval vide file no. 8-51/2017-FC dt. 12.04.2018.
 - (2) Letter of DFO, Baikunthapur Division No. 1437/8-2 dt. 05.06.2017.
 - (3) Letter of CF, Northern Circle No. 395/2M-84 dt. 23.06.2017
 - (4) Letter of DFO, Kangsabati (North) Division No. 3341/28-54 dt. 17.08.2018.
 - (5) Letter of DFO, Kangsabati (North) Division No. 2816/28-54 dt. 04.07.2018
 - (6) Letter of DFO, Kangsabati (South) Division No. 1330/28- dt. 17.08.2018.

Inviting reference to the letters quoted above (copy enclosed) you are requested to raise demand to the 1000 MW Turga Pumped Storage Project of WBSIEDCL for payment of the cost of Net Present Value, cost of Compensatory Afforestation along with it 10 years maintenance, cost of Catchment Area Treatment, revised Soil and Moisture Conservation (SMC) on the CA land and other cost if any as per clause no. x, xi, xiv, xv, xvi, xvii and xviii for deposition of the amount by User Agency to Ad-hoc CAMPA account.

Further as per clause no. XIII of the In-Principle approval of MoEF&CC, the non forest lands identified for raising Compensatory Afforestation vide your above letters (except for Block: Hura, Mouza: Mangura Lalpur, RS. Plot No.: 631, Area: 21.64 Acres of Purulia District), may be transferred and mutated in favour of State Forest department and shall be notified as RF under section 4 or PF under section 20, of the Indian Forest Act, 1927 or under relevant section(s) of the local forest act, as the case may be.

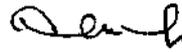
sd/
Addl. Principal Chief Conservator of Forests / CAMPA
&
Nodal Officer, Forest Conservation Act, 1980
West Bengal

No- 5582 LA</2M-1003/2013

Dated: 05.09.2018

Copy forwarded for information to:

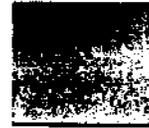
1. The Chief Conservator of Forests, Northern Circle, West Bengal – is requested to submit a report confirming if the Non-Forest land given by the UA is free from encroachment prior to transfer of Non-forest land. You shall please refer to Clause viii of the In-Principle Approval of MoEF&CC in this regard.
2. ~~The Divisional Forest Officer, Purulia Division with a copy of the enclosures.~~
3. The Chief Engineer, PSPD, WBSEDCL, Bidyut Bhawan, Kolkata – 700091 – is requested to arrange for suitable Non-Forest land of 21.64 Acres as replacement for CA purpose as mentioned by his letter no.: PSPD/Turga PSP/ 2F/229 dt. 28.08.2018. Payment to Ad-hoc CAMPA should be as per clause no. xviii of In-Principle approval from MoEF&CC.



Addl. Principal Chief Conservator of Forests / CAMPA
&
Nodal Officer, Forest Conservation Act, 1980
West Bengal



ACG
M. J. ...
S. J. ...



Government of West Bengal
Directorate of Forests
Office of the Divisional Forest Officer
Kangsabati South Division

Raghabpur More, P.O. & Dist. - Purulia, Pin - 723101

(Ph. No.- 03252-222604, Fax No. - 03252-222604 & E-Mail: dfoksd@gmail.com)

No.: 1330/28-

dated, Purulia, the 17 / 08 / 2018.

From :: Divisional Forest Officer,
Kangsabati South Division,
Purulia.

PSPD / WBS&DCL	
Receipt No. <u>247</u>	
Date <u>27/8/18</u>	
Contents Not Verified	

To :: The Chief Engineer PSPD
WBS&DCL
Vidyut Bhawan (5th Floor)
Block-DJ, Sector-II, Bidhan Nagar
Kolkata-700091.

Sub :: Diversion of 234 Ha. of Forest Land for construction of 108 MW Turga Pump Storage Project, WBS&DCL in Ajudhya Hills, Purulia District, Government of West Bengal, Directorate of Forest, State Serial No. 42 of 2013 regarding suitability report for compensatory afforestation.

Ref :: Your Memo No. PSPD/Turga-PSP/2F/41, dated- 04.05.2015.

With reference to the above, this is to inform you that as per field verification, joint inspection and verification of land records, the following Mouzas under Manbazar-I & Manbazar-II Range of this Division are suitable for compensatory afforestation on the above project.

Block	Mouza	RS JL No.	CS JL No.	Classification	RS Plot No.	CS Plot No.	Vested area available (Acres)	BL&LR Office Recorded Tenant of Vested Portion	Remarks
Manbazar-I	Darka	4	4	Danga	412	321	21.32	Collector	Suitable for plantation
Manbazar-I	Kelardi	106	327	GL Part	441	156	12.78	Collector	
Manbazar-II	Dhanda	261	316	Danga	288	40/39 (P), 1458, 1459	11.15	Collector	
Total :							45.25		

Ch. J.
Divisional Forest Officer
Kangsabati South Division
Purulia

No.: _____

dated, Purulia, the _____ / _____ / 2018.

Copy forwarded for information and necessary action to :

1. The Addl. Principal Chief Conservator of Forests, CAMPA & Nodal Officer, FCA, W.B. This is in connection with your Office Memo No.1635/LA & LT/2M-1003/2013 Dt. 23.05.2018
2. The Chief Conservator of Forest, South West Circle, West Bengal
3. The Conservator of Forest Working Plan & GIS.
4. The Divisional Forest Officer, Working Plan (South) Division-II, Bankura.

Sd. Dr. A. Chatterjee
Divisional Forest Officer
Kangsabati South Division
Purulia

Attachment(B)

Government of West Bengal
Directorate of Forests
Office of the Divisional Forest Officer
Kangsabati North Division

Raghupur More, P.O. & Dist - Purulia, Ptn - 723101
(Ph. No.- 03252-222231, Fax No. - 03252-227468 & E-Mail: dfoknd@sunat.com)

No.: 3341/28-54

dated, Purulia, the 17/08/2018.

From :: Divisional Forest Officer,
Kangsabati North Division,
Purulia.

To :: The Chief Engineer PSPD
WBSEDCL
Vidyut Bhawan (5th Floor)
Block-DJ, Sector-II, Bidhan Nagar
Kolkata-700091.

Sub :: Diversion of 234 Ha. of Forest Land for construction of 1000 MW Turgo Pump
Storage Project, WBSEDCL in Ajudhya Hills, Purulia District, Government of
West Bengal, Directorate of Forest, State Serial No. 42 of 2013 regarding
suitability report for compensatory afforestation.

Ref :: Your Memo No. PSPD/Turga-PSP/2F/41, dated- 04.05.2015 and this office letter No.
2816/28-54 dt. 04/07/2018

With reference to the above, this is to inform you that as per field verification, joint inspection
and verification of land records, the following Mouzas under Pancha & Hura Range of this Division are suitable
for compensatory afforestation on the above project.

Block	Mouza	RS IL No.	CS IL No.	Classific ation	RS Plot No.	CS Plot No.	Vested area available (Acres)	BL&LR Office Recorded Tenant of Vested Portion	Remarks
Pancha	Kuchung	20	562	GL Patit	2489	2236	17.15	Collector	Suitable for plantation
Pancha	Dhabani	8	594	Danga	789	1442 (P)	12.80	Collector	
Pancha	Dhabani	8	594	Danga	1717	1414 (P)	10.86	Collector	
Pancha	Haripur	30	571	Danga	1270	309	15.09	Collector	
Hura	Saharizi	22	439	Danga	487	305 (P)	23.86	Collector	
Hura	Mudhabpur	5	445	Danga	2150	1777 (P)	17.34	Collector	
Hura	Tilabani	4	444	GL Patit	1111	1717 (P)	21.58	Collector	
Sub Total :							118.69 acres		

The suitability report sent vide this office letter no. 3331/28-54, dt. 16/08/2018 may please be
considered cancelled.

Divisional Forest Officer
Kangsabati North Division
Purulia

No.: _____/

dated, Purulia, the _____/_____/2018.

Copy forwarded for information and necessary action to :

1. The Addl. Principal Chief Conservator of Forests, CAMPA & Nodal Officer, FCA, W.B
2. The Chief Conservator of Forest, South West Circle, West Bengal
3. The Conservator of Forest Working Plan & GIS

Divisional Forest Officer
Kangsabati North Division
Purulia



AIG
P.L.
J
1/11/2018



Government of West Bengal
Directorate of Forests
Office of the Divisional Forest Officer
Kangabati North Division
Raghobpur More, P.O. & Dist - Purulia, Pin - 723101
(Ph. No.- 03252-222231, Fax No. - 03252-227468 & E-Mail: dfoind@rediffmail.com)

No.: _____ / _____ dated, Purulia, the _____ / _____ /2018.

From :: Divisional Forest Officer,
Kangabati North Division, Purulia.

To :: The Addl. Principal Chief Conservator of Forests / CAMPA
& Nodal Officer, Forest Conservation Act, 1980
West Bengal

Sub :: Proposal for diversion of 234 ha. Of forest land for construction of 1000 MW
Turga Pumped Storage Project of WBSEDCL in Ajodhya Hills under Purulia
Forest Division (Proposal No. FP/WB/HYD/314/2014)

Ref :: Your letter No. 1096/LA&LY/234-1003/2013, dt- 23/03/2018

PSPD / WBSEDCL	
Receipt No.	182
Date	18/2/18
Contents Not Verified	

With reference to quoted above it is to state that, the reports of following Mouzas given below as per available office record and documents collected from concerned EL & L.R.Os related to compensatory afforestation.

Sl No	Mouza	RS - J.L.	C.S - J.L.	R.S Plot	C.S Plot	Classification	As per BL&L RO Record	Area	Remarks
1.	Hariharpur	30	571	1270	909	Danga	Vested area	15.09	R.O.R Attached
2.	Medhabpur	5	445	2150	1777(P)	Danga	Vested area	17.34	
3.	Tilaboni	4	444	1111	1717 (P)	G.L.Patit	Vested area	21.58	
4.	Manguria Lalpur	72	521	631	413 instead of 416	Jungle	Vested area	21.64	As per R.O.R the C.S Plot No 416 will be 413 in correspondence with R.S Plot No. 631. The entire plot is Jungle and area 55.21 acre is classified Forest under Calcutta Gazette Notification No 3982-FR/2P-II/65 dt 19 th Aug 1967.

It may kindly be noted that plots mentioned under mouzas Hariharpur, Medhabpur & Tilaboni may be suitable for compensatory afforestation if they are declared free from all encroachances by District Collector and demarcated in the field by the user agency.

However, regarding mouzas Manguria-Lalpur, the following fact may please be considered. Vide Calcutta Gazette Notification No. 3582-For/2P-11/65 dt. 19th Aug. 1967, C.S Plot No. 413 has notified forest area 55.21 acres. The same plot corresponds to JL No. 72, R.S. Plot No. 631. So until the total 55.21 acres of Forest Land is identified as RS Plots on record and in the field, it is not possible to identify non-forest land under this RS Plot No 631 for raising compensatory afforestation.

Enclosed :- Xerox copy of R.O.R Notification

Divisional Forest Officer
Kangsabati North Division
Purulia

No.: 2816/28-54 .

dated, Purulia, the 04/07/2018.

Copy forwarded for information and necessary action to :

1. The Chief Conservator of Forests, South-West Circle, West Bengal.
2. The Chief Conservator of Forests, WP & GIS, West Bengal.
3. The Chief Engineer, PSPD, WBSEDCL, Vidyut Bhawan (5th Floor), Block : DJ, Sector-II, Bidhanagar, Kolkata - 700091.
4. The Range Officer, Land Cell, Kangsabati North Division, Purulia
5. The Range Officer, Hara Range under Kangsabati North Division, Purulia.
6. The Range Officer, Pancha Range under Kangsabati North Division, Purulia.


Divisional Forest Officer
Kangsabati North Division
Purulia

Government of West Bengal
Department of Forests,
For Branch,
Aranya Bhavan (1st Floor), Block-LA-10A, Sector-III, Saltlake City
Kolkata-700 098.

No. 412 -For/O/L/10T-12/2017

Kolkata, the 8th March, 2019

NOTIFICATION

WHEREAS the Ministry of Environment, Forests & Climate Change, Govt. of India, have accorded their in-principle approval as per proviso laid down under Section 2 of the Forest (Conservation) Act, 1980 vide their Memo No. 8-51/2017-FC dt. 12.04.2018 for diversion of 234 ha of Forest Land under Purulia Forest Division, in favour of West Bengal State Electricity Distribution Ltd. for construction of 1000 MW Turga Pumped Storage Project.

AND WHEREAS the total area of non-forest land measuring 578.22 acres is to be transferred in favour of Forest Department, and out of that an area of 122.85 acres has been transferred whose situation are described in Schedule below (hereinafter referred to as the said area), in favour of State of West Bengal for the purpose of Compensatory Afforestation as per the condition laid down in the approval ibid.

AND WHEREAS the 'said area', is considered to be of adequate natural, ecological, faunal and botanical significance over which the (State) Govt. has proprietary rights.

NOW, THEREFORE, in exercise of the power conferred under Section 29 of the Indian Forest Act, 1927, the Governor is hereby pleased to declare that the 'said area' measuring 122.85 acres shall be Protected Forest with effect from the date of publication of this Notification in the official 'Kolkata Gazette Extraordinary'.

LAND SCHEDULE:

Dist.	Block	Mouza	J.L. No.	Plot No.	Area (in acre)
Purulia	Puncha	Dhabani	08	789	12.80
				1717	10.86
		Hartharpur	30	1270	15.09
	Hura	Saharjuri	22	487	23.86
		Tilaboni	04	1111	21.58
		Madhabpur	05	2150	17.34
	Manbazar-I	Durku	04	412	21.32
	Total:				

Area of land measures more or less 122.85 acres.

This substitutes this Deptt.'s earlier order no. 366-For/O/L/10T-12/2017 dt. 5th March, 2017.

By order of the Governor,

Sd/- P. Tantri
Joint Secretary to the Govt. of West Bengal

No. 412/1(1)-For/O/L/10T-12/2017

Kolkata, the 8th March, 2019

Copy forwarded for information to the Managing Director, Saraswati Press Ltd., 11, B.T. Road, Belgharia, Kolkata-700 056

He is requested to publish this Notification in Extraordinary Kolkata Gazette immediately for greater public interest and supply 50 copies of the same to this Deptt. for official use.

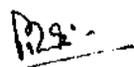

Joint Secretary to the Govt. of West Bengal

No. 412/2(19)-For/O/L/10T-12/2017

Kolkata, the 8th March, 2019

Copy forwarded for information to:

- 1) The P.S. to the Chief Minister, Govt. of West Bengal.
- 2) The P.S. to the MIC, Deptt. of Forests, Govt. of West Bengal.
- 3) The P.S. to the MIC, Finance Deptt., Govt. of West Bengal.
- 4) The P.S. to the Chief Secretary to the Govt. of West Bengal.
- 5) The P.S. to the Addl. Chief Secretary, Deptt. of Forests, Govt. of West Bengal.
- 6) The LRC & Principal Secretary, L & LR Deptt.
- 7) DM, Purulia District.
- 8) DLLRO & ADM (LR), Purulia District.
- 9) DFO, Purulia Forest Division.
- 10) DFO, Kangsabati (North) Division
- 11) DFO, Kangsabati (South) Division
- 12) Divisional Commissioner, Burdwan Residency.
- 13) The P.C.C.F. (HoFF), West Bengal.
- 14) The P.C.C.F. (General), West Bengal.
- 15) The P.C.C.F., Wildlife & Chief Wildlife Warden, West Bengal.
- 16) The Addl. P.C.C.F. (CAMPA) & Nodal Officer, FCA, 1980.
- 17) The CEO, WB CAMPA.
- 18) The Ministry of Environment, Forests & Climate Change, Govt. of India, Paryavaran Bhavan, JorBagh Road, Aliganj, New Delhi-110 003.
- 19) The C.F.(Central), The Ministry of Environment & Forests (Eastern Regional Office), Govt. of India, A/3, Chandrasehkarpur, Bhubaneswar-751 023, Orissa.


Joint Secretary to the Govt. of West Bengal

**West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)**

1000 MW Turga Pumped Storage Project, Dist.: Purulla, West Bengal

F.C. Proposal No.: FP / WB/ HYD/8214 / 2014

MoEF&CC File No.: 8-51/2017-FC

Details of Component Wise Break-up

CIVIL STRUCTURES

	Original Proposal	Revised as per recommendation of MoEF&CC, ERO, GoI	Remarks
	AREA (Ha.)	AREA (Ha.)	
UPPER ROCKFILL DAM (HYDRAULIC STRUCTURE)	6.83	6.83	THE REVISED AREA WAS SUBMITTED TO ADDL. PCCF, CAMPA & NODAL OFFICER, FCA, 1980, WEST BENGAL VIDE LETTER NO.: PSPD / TURGA PSP/ 2F/337 DATED 30.11.2017
LOWER CONCRETE DAM (HYDRAULIC STRUCTURE)	0.883	1.62	
LOWER SADDLE ROCKFILL DAM (HYDRAULIC STRUCTURE)	2.526	2.526	
UNDERGROUND STRUCTURES (TUNNELS AND CAVERNS)	0	5.356	
TOTAL FOR CIVIL STRUCTURES	10.239	16.332	

CONSTRUCTION FACILITIES

	AREA (Ha.)
CONSTRUCTION FACILITY FOR LEFT ABUTMENT OF CONCRETE DAM	0.860
CONSTRUCTION FACILITY FOR RIGHT ABUTMENT OF CONCRETE DAM AND LOWER SADDLE DAM	8.757
CONSTRUCTION FACILITY FOR SWITCHYARD AND PENSTOCK ASSEMBLY YARD	1.630
CONSTRUCTION FACILITY FOR UPPER DAM SPILLWAY	1.970
CONSTRUCTION FACILITY FOR LEFT BANK OF UPPER DAM	2.050
CONSTRUCTION FACILITY FOR DOWNSTREAM OF UPPER DAM	1.600
CONSTRUCTION FACILITY FOR RIGHT BANK OF UPPER DAM	1.520
TOTAL FOR CONSTRUCTION FACILITIES	18.387

OTHER PROJECT COMPONENTS

	AREA (Ha.)
PENSTOCK FABRICATION YARD	2.357
TEMPORARY LAB. / WORKSHOP	1.550
SWITCHYARD	1.510
PENSTOCK ASSEMBLY YARD	1.360
SPILLWAY	1.760
TOTAL FOR PROJECT COMPONENTS	8.537

Sy
27.04.18

**Surajit Chakraborty
Director (Generation)
W.B.S.E.D.C.L.**

West Bengal State Electricity Distribution Company Limited

(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Dist.: Purulia, West Bengal

F.C. Proposal No.: FP / WB/ HYD/8214 / 2014

MoEF&CC File No.: 8-51/2017-FC

UNDERTAKING

This is to certify that, West Bengal State Electricity Distribution Company Limited (WBSEDCL), A Government of West Bengal Enterprise, will not construct any residential or commercial complexes within the diverted Forest Land for construction of 1000 MW Turga Pumped Storage Project in District Purulia, West Bengal.


27.04.18
(Surajit Chakraborty)
Director (Generation)
WBSEDCL

Surajit Chakraborty
Director (Generation)
W.B.S.E.D.C.L.

Government of West Bengal
Department of Forests
For Branch
Aranya Bhavan(1st Floor), Block-LA-10A, Sector-III, Salt Lake City
Kolkata-700 098

No. 192-For/O/L/10T-12/2017

Kolkata, the 18th January, 2018

From: Smt M. Bandyopadhyay, IAS
Secretary to the Govt. of West Bengal

✓ To: The Assistant Inspector General of Forests (FC),
Ministry of Environment, Forests & Climate Change,
(Forest Conservation Division),
Govt. of India, Indira Paryavaran Bhawan,
Jorbagh Road, Aliganj,
New Delhi-110 003.

Sub: Proposal for diversion of 234 ha of forest land for construction of 1000 MW Turga Pumped Storage Project of WBSEDCL in Ajodhya Hills under Purulia forest Division.

Sir,

Please find enclosed a copy of the Catchment Area Treatment (CAT) Plan for diversion of 234 Ha of Forest land for construction of 1000 MW Turga Pumped Storage Project of WBSEDCL duly approved and forwarded for your information and taking necessary action.

Encl.: Copy of the Approved CAT Plan.

Yours faithfully,

M. Bandyopadhyay 18/01/18
Secretary

No. 192/1(3)-For

Kolkata, the 18th January, 2018

Copy forwarded for information & necessary action to:-

1. The Principal Chief Conservator of Forests (HoFF), West Bengal.
2. The Addl. Principal Chief Conservator of Forests (CAMPA) & Nodal Officer, FCA, 1980, W.B.
3. The Chief Engineer, PSPD, WBSEDCL, Bidyut Bhavan, Kolkata-700 091.

Secretary



Government of West Bengal
Directorate of Forests,

Office of the Divisional Forest Officer, Purulia Division.

Phone No. 03252-222329 & FAX No. : 03252 - 228323e-mail - dfopfd@gmail.com

Memo No. 107 /8-5/2(a) Dated, Purulia, the 16 /01/2018

From : Divisional Forest Officer,
Purulia Division.

To : The Chief Conservator of Forests,
South-West Circle, West Bengal

Sub : Approval of Catchment Area Treatment Plan
for Transfer of 234.00 hec. of forest land in favour of
WBSEDCL for construction of 1000 MW Turga Pumped Storage
Project in Ajodhya Hills in Purulia District – regarding
Proposal No. FP/WB/HYD/8214/2014

Ref. : Chief Engineer, PSPD, WBSEDCL Memo No. PSPD/TurgaPSP/2F/394,
Dated. 10.01.2018

The undersigned is duly approving the Catchment Area Treatment Plan(Pages 1-17) as submitted by Chief Engineer, PSPD, WBSEDCL vide Memo No. PSPD/TurgaPSP/2F/394, Dated. 10.01.2018 in connection with transfer of 234.00 hec. (578.22 Acres) of forest land in favour of WBSEDCL for construction of 1000 MW Turga Pumped Storage Project in Ajodhya Hills in Purulia District.

This is for your information and necessary action.

Enclo : As stated above.

Divisional Forest Officer,
Purulia Division.

[Signature]
16/01/18

CHAPTER-2
CATCHMENT AREA TREATMENT PLAN

2.1 INTRODUCTION

It is a well-established fact that reservoirs formed by dams on rivers are subjected to sedimentation. The process of sedimentation embodies the sequential processes of erosion, entrainment, transportation, deposition and compaction of sediment. The study of erosion and sediment yield from catchments is of utmost importance as the deposition of sediment in reservoir reduces its capacity, and thus affecting the water availability for the designated use. The eroded sediment from catchment when deposited on streambeds and banks causes braiding of river reach. The removal of top fertile soil from catchment adversely affects the agricultural production. Thus, a well-designed Catchment Area Treatment (CAT) Plan is essential to ameliorate the above-mentioned adverse process of soil erosion.

Soil erosion may be defined as the detachment and transportation of soil. Water is the major agent responsible for this erosion. In many locations, winds, glaciers, etc. also cause soil erosion. In a hilly catchment area, as in the present case, erosion due to water is a common phenomenon and the same has been studied as a part of the CAT Plan. Soil erosion leads to:

- Loss in production potential
- Reduction in infiltration rates
- Reduction in water-holding capacity
- Loss of nutrients
- Increase in tillage operation costs
- Reduction in water supply

The CAT plan highlights the management techniques to control erosion in the catchment area of a water resource project. The life span of a reservoir is greatly reduced due to erosion in the catchment area. Adequate preventive measures are thus needed for the treatment of catchment for its stabilization against future erosion.

The proposed project has two dams, upper dam and lower dam. The catchment area intercepted at the upper dam site and lower dam site is 8.29 km² and 12.66 km²

APPROVED.


Divisional Forest Officer
Purulia Division

respectively. The sub-watersheds in the catchment area considered for the present study are given in Figure-2.1

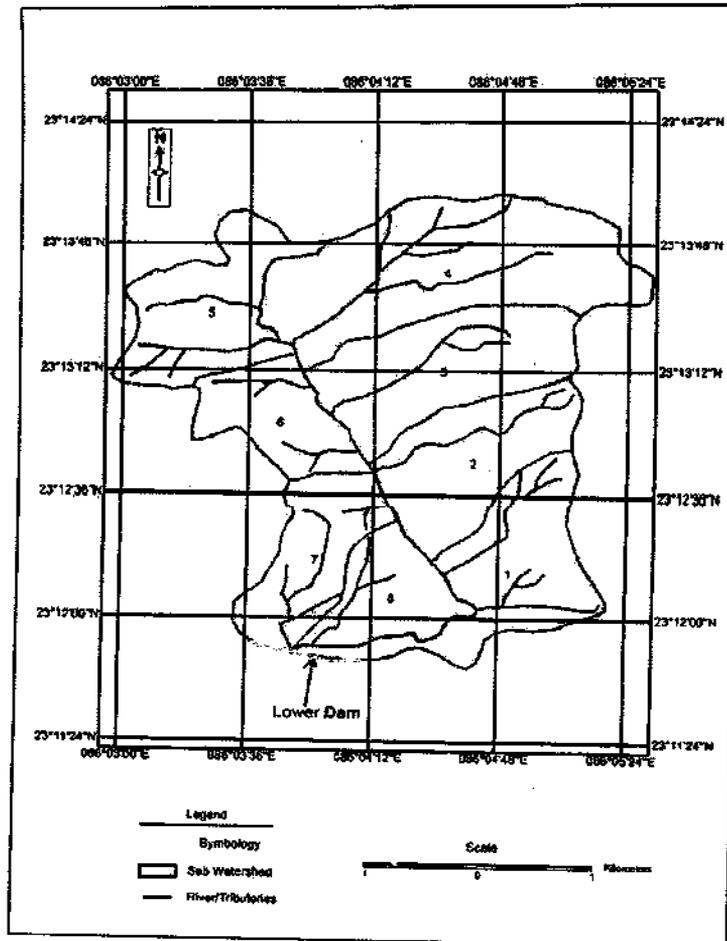


Figure-2.1: Sub-watersheds for catchment area for Turga HEP

The catchment area treatment involves

- Understanding of the erosion characteristics of the terrain and,
- Suggesting remedial measures to reduce the erosion rate.

In the present study 'Silt Yield Index' (SYI), method has been used. In this method, the terrain is subdivided into various watersheds and the erodibility is determined on

WAPCOS Limited

Approved:

Divisional Forest Officer
Purulia Division

relative basis. SYI provides a comparative erodibility criteria of catchment (low, moderate, high, etc.) and do not provide the absolute silt yield. SYI method is widely used mainly because of the fact that it is easy to use and has lesser data requirement. Moreover, it can be applied to larger areas like sub-watersheds, etc.

2.2 APPROACH FOR THE STUDY

A detailed database on natural resources, terrain conditions, soil type of the catchment area, socio-economic status, etc. is a pre-requisite to prepare treatment plan keeping in view the concept of sustainable development. Various thematic maps have been used in preparation of the CAT plan. Geographic Information System (GIS) is a computerized resource data base system, which is referenced to some geographic coordinate system. In the present study, real coordinate system has been used. The GIS is a tool to store, analyze and display various spatial data. In addition, GIS, because of its special hardware and software characteristics, has a capacity to perform numerous functions and operations on the various spatial data layers residing in the database. GIS provides the capability to analyze large amounts of data in relation to a set of established criteria. In order to ensure that latest and accurate data is used for the analysis, satellite data has been used for deriving land use data. Ground truth studies, too, have been conducted.

The various steps, covered in the study, are as follows:

- Definition of the problem
- Data acquisition and preparation
- Output presentation

The above mentioned steps are briefly described in the following paragraphs:

2.2.1 Definition of the Problem

The requirements of the study were defined and the expected outputs were finalized.

The various data layers of the catchment area to be used for the study are as follows:

- Slope Map
- Soil Map
- Land use Classification Map
- Current Management Practices
- Catchment Area Map.

Approved.

Divisional Forest Officer
Purulia Division

2.2.2 Data Acquisition and Preparation

The data available from various sources has been collected. The ground maps, contour information, etc. were scanned, digitized and registered as per the requirement. Data was prepared depending on the level of accuracy required and any corrections required were made. All the layers were geo-referenced and brought to a common scale (real co-ordinates), so that overlay could be performed. A computer program using standard modeling techniques was used to estimate the soil loss. The formats of outputs from each layer were firmed up to match the formats of inputs in the program. The grid size to be used was also decided to match the level of accuracy required, the data availability and the software and time limitations. Ground truthing and data collection was also included in the procedure.

For the present study, one Resources at-LISS III (path 106, row 056 dated 26.04.2013) digital satellite data was used for interpretation and classification. The data has been procured in raw digital format and has been geo-referenced using Survey of India topographical sheets with the help of standard data preparation techniques in standard image processing software. The interpretation of geo-referenced satellite data has been done using standard enhancement techniques, ground checks and experiences of qualified professionals. A detailed ground truth verification exercise has been undertaken as a part of field survey to enrich the image interpretation process. The classified land use map of the catchment area intercepted at Upper and Lower dam sites, considered for the study, is shown as **Figure-2.2** The land use pattern of the catchment area is summarized in **Table- 2.1**.

Derived contours from topographical maps were used for preparation of Digital Elevation Model (DEM) of the free draining catchment area and to prepare a slope map. The first step in generation of slope map is to create surface using the elevation values stored in the form of contours or points. After marking the catchment area, all the contours on the topographical maps were derived. The output of the digitisation procedure was the contours as well as points contours in form of x, y & z points. (x, y - location and z - their elevation). All this information was in real world co-ordinates (latitude, longitude and height in meters above sea level).

Approved.
✍

Divisional Forest Officer
Purulia Division

Table -2.1: Land use classification for free draining catchment at diversion site

Land use/Land cover	Area (ha)	Area (%)
River/ Water body	6	0.47
Vegetation	830	65.56
Agricultural Land	80	6.32
Barren Land/Rocky outcrops	162	12.80
Scrub	176	13.90
Settlements	12	0.95
Total	1266	100.00

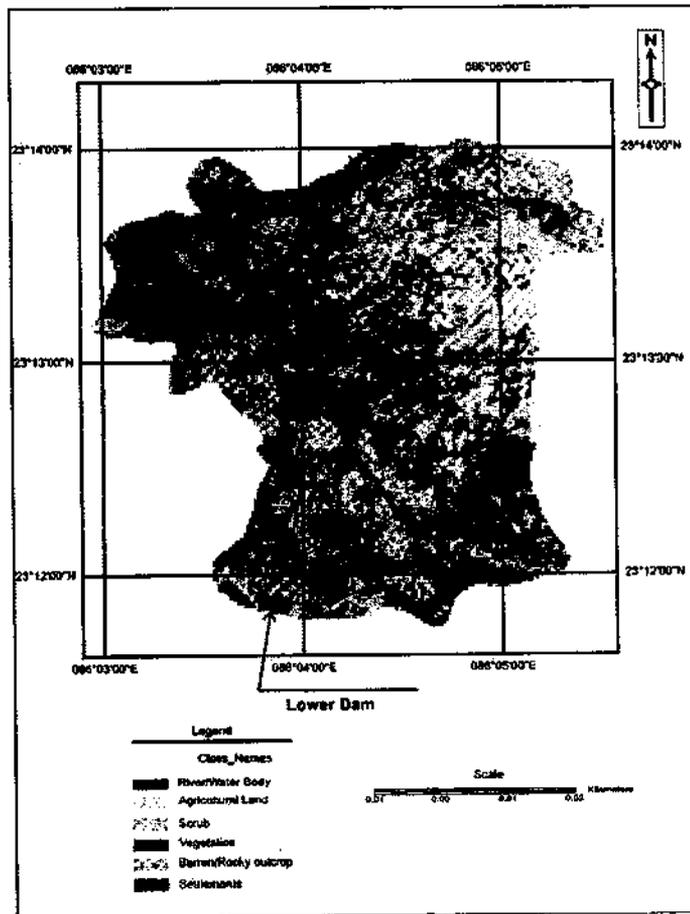


Figure-2:2 Classified imagery of catchment area for Turga HEP

Approved.
 [Signature]
 Divisional Forest Officer
 Purulia Division

A Digital Terrain Model (DTM) of the area was then prepared, which was used to derive a slope map. The slope was divided in classes of slope percentages. The slope map is enclosed as Figure-2.3. The Area under different slope categories are given in Table-2.2

Table 2.2: Area under various slope categories

Slope categories (%)	Area (ha)	Area (%)
0-10	807	63.73
10-20	392	30.96
20-30	56	4.46
30-40	11	0.85
>40	-	-
Total	1266	100.0

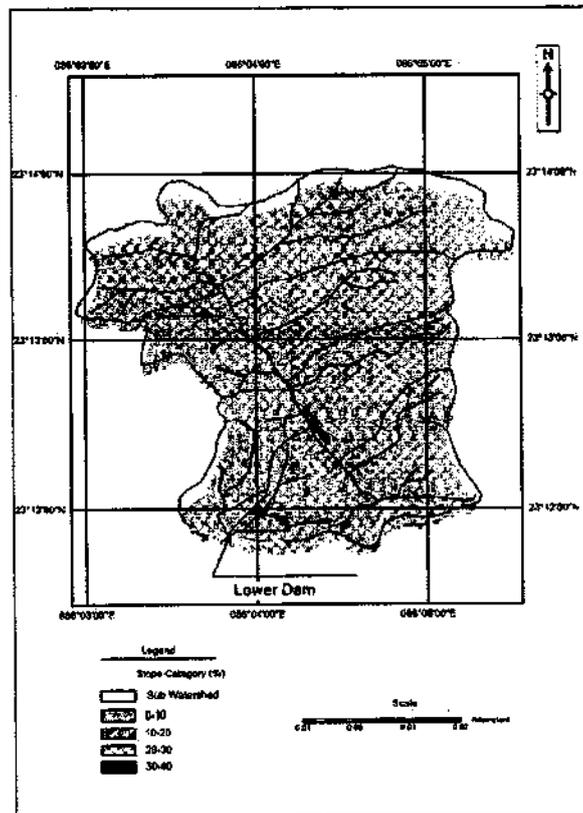


Figure-2.3: Slope Map of catchment area for Turga HEP

Approved,
 [Signature]
 Divisional Forest Officer
 Purulia Division

2.3 ESTIMATION OF SOIL LOSS USING SILT YIELD INDEX (SYI) METHOD

In 'Silt Yield Index' (SYI), method, the terrain is subdivided into various watersheds and the erodibility is determined on relative basis. SYI provides a comparative erodibility criteria of catchment (low, moderate, high, etc.) and do not provide the absolute silt yield. SYI method is widely used mainly because of the fact that it is easy to use and has lesser data requirement. Moreover, it can be applied to larger areas like sub-watersheds, etc.

The SYI model, considering sedimentation as product of erosivity, erodibility and arial extent was conceptualized in the All India Soil and Land Use Survey (AISLUS) as early as 1969 and has been in operational use since then to meet the requirements of prioritization of smaller hydrologic units within river valley project catchment areas.

The erosivity determinants are the climatic factors and soil and land attributes that have direct or reciprocal bearing on the unit of the detached soil material. The relationship can be expressed as:

Soil erosivity = f (Climate, physiography, slope, soil parameters, land use/land cover, soil management)

2.3.1 Silt Yield Index

SYI is defined as the Yield per unit area and SYI value for hydrologic unit is obtained by taking the weighted arithmetic mean over the entire area of the hydrologic unit by using suitable empirical equation.

2.3.2 Prioritization of Watersheds/Sub-watersheds

The prioritization of smaller hydrologic units within the vast catchments is based on the SYI of the smaller units. The boundary values or range of SYI values for different priority categories are arrived at by studying the frequency distribution of SYI values and locating the suitable breaking points. The watersheds/ sub-watersheds are subsequently rated into various categories corresponding to their respective SYI values.

The application of SYI model for prioritization of sub-watersheds in the catchment areas involves the evaluation of:

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- Climatic factors comprising total precipitation, its frequency and intensity,
- Geomorphic factors comprising land forms, physiography, slope and drainage characteristics,
- Surface cover factors governing the flow hydraulics and
- Management factors.

The data on climatic factors can be obtained for different locations in the catchment area from the meteorological stations whereas the field investigations are required for estimating the other attributes. The various steps involved in the application of model are:

- Preparation of a framework of sub-watersheds through systematic delineation
- Rapid reconnaissance surveys on 1:50,000 scale leading to the generation of a map indicating erosion-intensity mapping units.
- Assignment of weightage values to various mapping units based on relative silt-yield potential.
- Computing Silt Yield Index for individual watersheds/sub-watersheds.
- Grading of watersheds/sub-watersheds into very high, high, medium, low and very low priority categories.

The area of each of the mapping unit was computed and silt yield indices of individual sub-watersheds were calculated using the following equations:

2.3.3 Estimation of Silt Yield Index

To calculate SYI, the methodology developed by All India Soil & Land Use Survey (Department of Agriculture, Govt. of India) has been followed, where each erosion intensity unit is assigned a weightage value. When considered collectively, the weightage value represents approximately the relative comparative erosion intensity. A basic factor of $K = 10$ was used in determining the weightage values. The value of 10 indicates a static condition of equilibrium between erosion and deposition. Any addition to the factor K ($10+X$) is suggestive of erosion in ascending order whereas subtraction, i.e. ($10-X$) is indicative of deposition possibilities.

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Delivery ratios were adjusted for each of the erosion intensity unit. The delivery ratio suggests the percentage of eroded material that finally finds entry into reservoir or river/ stream. Area of each composite unit in each sub-watershed was then estimated.

SYI was calculated using following empirical formula:

$$SYI = \frac{\sum (A_i * W_i) * D_i * 100}{A_w}; \quad \text{where } i = 1 \text{ to } n$$

where

- A_i = Area of i^{th} unit (EIMU)
 W_i = Weightage value of i^{th} mapping unit
 n = No. of mapping units
 A_w = Total area of sub-watershed.
 D_i = Delivery ratio

Delivery ratios are assigned to all erosion intensity units depending upon their distance from the nearest stream. The criteria adopted for assigning the delivery ratio are as follows:

Nearest Stream	Delivery Ratio
0 - 0.9 km	1.00
1.0 - 2.0 km	0.95
2.1 - 5.0 km	0.90
5.1 - 15.0 km	0.80
15.1 - 30.0 km	0.70

The SYI values for classification of various categories of erosion intensity rates are given in Table 2.3.

Table 2.3: Criteria for erosion intensity rate

Priority categories	SYI Values
Very high	> 1300
High	1200-1299
Medium	1100-1199
Low	1000-1099
Very Low	<1000

The erosion category of various watersheds in the catchment area as per a SYI index has been estimated. The objective of the SYI method is to prioritize sub-watershed in a catchment area for treatment.

2.4 WATERSHED MANAGEMENT - AVAILABLE TECHNIQUES

Watershed management is the optimal use of soil and water resources within a given geographical area so as to enable sustainable production. It implies changes in land use, vegetative cover, and other structural and non-structural action that are taken in a watershed to achieve specific watershed management objectives. The overall objectives of watershed management programme are to:

- Increase infiltration into soil;
- Control excessive runoff;
- Manage & utilize runoff for useful purpose.

Following Engineering and Biological measures shall be suggested for the catchment area treatment depending upon the requirement and suitability:

a. Afforestation

- Normal Afforestation
- Enrichment Plantation
- Development of nurseries
- Pasture Development
- Vegetative Fencing
- Social Forestry

b. Soil & Water Conservation

- Check Dam
- Drainage line treatment

c. Research Training and Capacity Building

- Training and Capacity Building of Staff and communities
- Site Specific research

e. Infrastructure Development

- Holistic Support to Staff
- Operational Support to Staff
- Maintenance of Departmental Buildings and inspection paths

2.5 CATCHMENT AREA TREATMENT (CAT) PLAN

In the present report, CAT Plan as per the slope, land use pattern, soil characteristics has been suggested based on the prioritization of sub watersheds using SYI method. The objective of the SYI method is to prioritize sub-watershed in a catchment area for treatment. The erosion category of various watersheds in the catchment area as per a SYI index is given in Table-2.4. The details are shown in Figure-2.4. The area under different erosion categories is given in Table-2.5. The CAT plan has been suggested for Sub-watersheds with high erosion category.

Table-2.4: Erosion intensity categorization as per SYI classification

Watershed number	Area (ha)	SYI value	Category
W1	172	1210	High
W2	155	1220	High
W3	185	1142	Medium
W4	301	1136	Medium
W5	146	1156	Medium
W6	97	1208	High
W7	118	1148	Medium
W8	92	1214	High
Total	1266		

Table-2.5: Area under different erosion categories

Category	Area (ha)	Area (%)
Low	-	-
Medium	750	59.24
High	516	40.76
Total	1266	100.00

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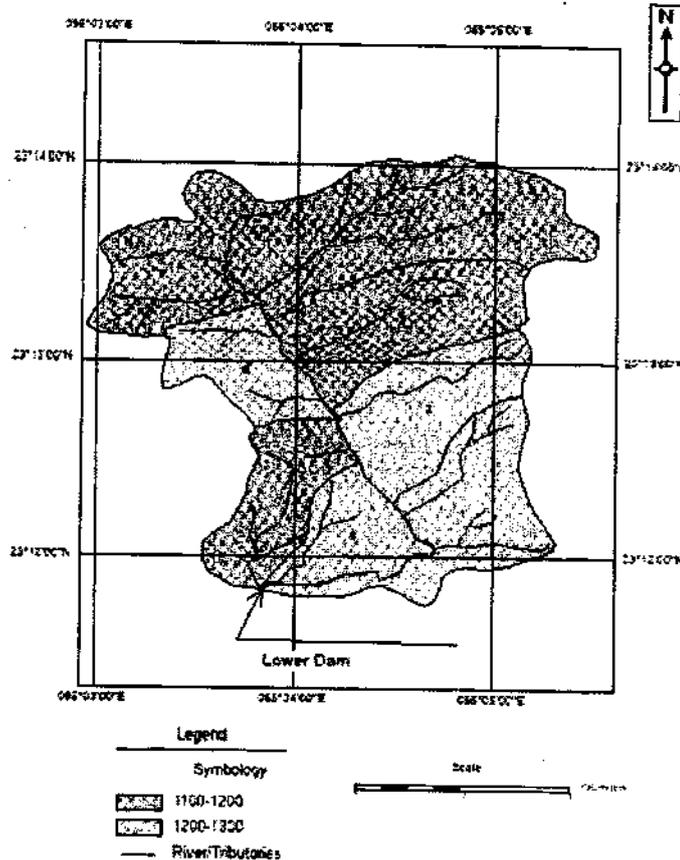


Figure-2.4: Prioritisation of Sub Watersheds for catchment area for Turga HEP

The area under high erosion category has to be treated by the project proponents, which accounts for about 42% of the total free draining catchment area. Sub-watershed wise proposed treatment measures are depicted in Figure 2.5. It is proposed that treatment measures shall be implemented by the Forest Department, State Government of West Bengal. CAT plan will be implemented within two years.

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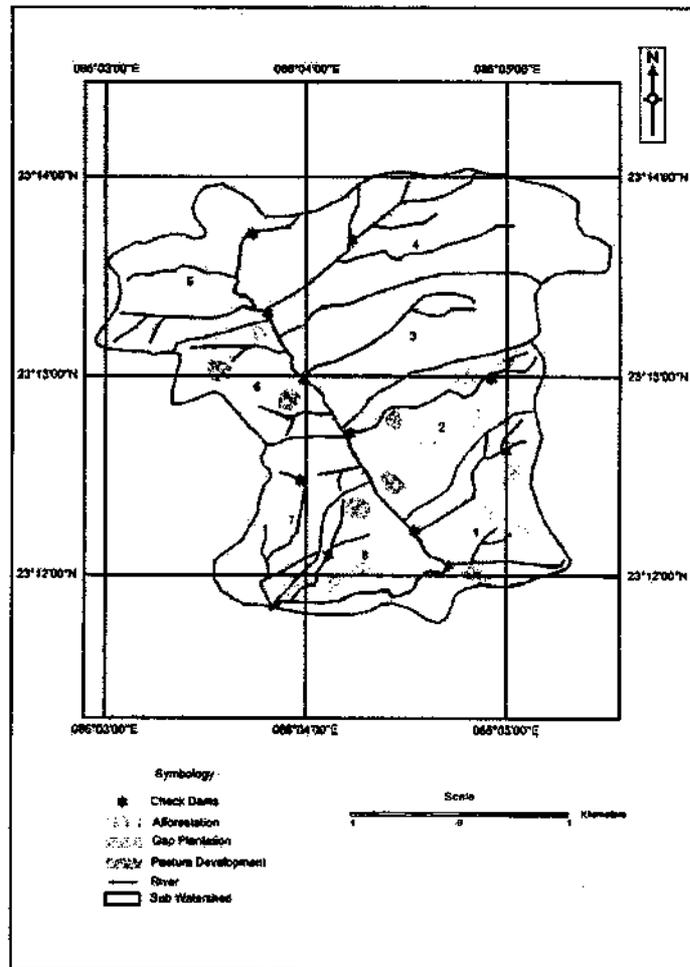


Figure-2.5: CAT Measures for catchment area of Turga HEP

2.6 CATCHMENT AREA TREATMENT MEASURES

2.6.1 Afforestation

An amount of Rs. 170.85 lakh has been earmarked for various afforestation measures. The details are given in Table-2.6.

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Table-2.6: Cost Estimate for implementation of Afforestation measures as a part of CAT Plan

S. No.	Item	Unit Rate (Rs.)	Unit	Target	
				Physical	Financial (Rs. lakh)
1.	Afforestation	1,80,000/ha	ha	15	27.0
2.	Maintenance of afforestation area	12,000/ha	ha	15	1.8
3.	Enrichment Plantation	60,000/ha	ha	40	24.0
4.	Pasture development	30,000/ha	ha	20	6.0
5.	Nursery development	10,00,000/no.	no.	2	20.0
6.	Vegetative fencing	65,000/km	km	5	3.25
7.	Watch and ward for 2 years average 10 persons per month	12,000/man-month	Man-months	240	28.8
8.	Rim Plantation	Lumpsum			50.0
9.	Social Forestry	Lumpsum			10.0
	Total				170.85

2.6.2 Soil & Water Conservation Works

An amount of Rs. 58.5 lakh has been earmarked for various Soil & Water Conservation measures. The details are given in Table-2.7.

Table-2.7: Cost estimate for implementation of Soil & Water Conservation measures as a part of CAT Plan

S. No.	Item	Unit Rate (Rs.)	Unit	Target	
				Physical	Financial (Rs. lakh)
1.	Check Dams	3,50,000	Nos.	11	38.5
2.	Drainage line treatment				20.0
	Total				58.5

2.6.3 Silt Observation points

One silt observation location for regular monitoring of silt load coming in tributaries of sub-watersheds falling under high category have been suggested. This would ensure monitoring efficacy of implementation various treatments measures suggested as in CAT plan. Monitoring would be undertaken for a period of 10 years including 2 years

for CAT plan implementation period. An amount of Rs. 115.3 lakh has been earmarked for this purpose. The details are given in Table-2.8.

Table-2.8: Cost earmarked for establishing Silt Observation points

S. No.	Parameter	Cost (Rs. lakh)
1	Cost of one laboratory - Rs 5,00,000/- for silt analysis per laboratory	5.0
2	One observation hut (@ Rs 5.0 lakh/site)	5.0
3	Cost for hiring services of one person (Average salary- Rs 10,000/- for 10 years) considering 10% escalation per year	19.1
4	Cost for hiring services of supervisor one person (Average salary Rs. 20,000/- for 10 years) considering 10% escalation per year	38.2
5	Consumables for the measurement Rs. 3.0 lacs per year for next 10 years, considering 10% escalation per year	48.0
	Total	115.3

2.6.4 Research Training and Capacity Building

An amount of Rs. 50 lakh has been earmarked for Training & Capacity building of forest staff as well as local community through State Forest Training Institutes and reputed organizations.

2.6.5 Infrastructure Development

The total budget kept for infrastructure development for Forest Department during the implementation of CAT Plan is Rs. 65.0 lakh. The details are given in Table-2.9.

Table-2.9: Summary of cost for infrastructure development for Forest Department

S. No.	Component/Item	No.	Unit Rate (Rs. lakh)	Total Cost (Rs. lakh)
1	Vehicle operation and maintenance including and	2 No.	10.0	20.0
2	GPS equipment	3 No.	3.0	9.0
3.	Maintenance of Departmental buildings			16.0
6.	Maintenance of Forest roads/inspection paths			20.0
	Total			65.0

2.7 COST ESTIMATES

The cost required for implementation of various measures is Rs. 409.65 lakh. The details are given in Table 2.10.

Table-2.10: Cost earmarked for implementation of CAT plan

S.No.	Activity	Amount (Rs. lakh)
1	Afforestation	170.85
2	Soil & Water Conservation Works	58.5
3	Silt Observation Points	115.3
4	Infrastructure Development	65.0
	Total	409.65

2.8 SCHEDULE FOR IMPLEMENTATION OF CAT PLAN

It is proposed to implement the CAT Plan in 2 years. The year wise implementation of physical and financial targets is given in Table-2.11.

Table-2.11: Year-wise implementation schedule for CAT Plan

S. No.	Activity	Year I		Year II		Total	
		Phy.	Fin. (Rs. lakh)	Phy.	Fin. (Rs. lakh)	Phy.	Fin. (Rs. lakh)
A.	Biological Treatment Measures						
i)	Afforestation	7 ha	12.6	8 ha	14.4	15 ha	27.00
ii)	Maintenance of afforestation area	-	-	-	1.8	-	1.8
iii)	Enrichment Plantation	20 ha	12.0	20 ha	12.0	40 ha	24.0
iv)	Pasture Development	10 ha	3.0	10 ha	3.0	20 ha	6.0
v)	Nursery Development	2 No.	20.0	-	-	2 No.	20.00
vi)	Vegetative Fencing	3 km	1.95	2 km	1.30	5 km	3.25
vii)	Watch and ward	80 man-months	9.64	160 man-months	19.2	240 man-months	28.84
viii)	Rim Plantation	-	25.00	-	25.00	-	50.00
ix)	Social Forestry	-	5.0	-	5.0	-	10.00
	Sub-Total (A)		89.19		81.7		170.85
B.	Soil & Water Conservation Works						
i)	Check Dams	6	21.0	5	17.5	11.0	38.50
ii)	Drainage line treatment		10.0		10.0		20.00
	Sub-Total (B)		31.0		27.5		58.5
C.	Silt Observation Points						
i)	Setting of one laboratory	1 No.	5.0	-	-	1 No.	5.00
ii)	One observation hut	1 No.	5.0	-	-	1 No.	5.00

S. No.	Activity	Year I		Year II		Total	
		Phy.	Fin. (Rs. lakh)	Phy.	Fin. (Rs. lakh)	Phy.	Fin. (Rs. lakh)
	at each site						
iii)	*Cost of hiring one person (Average Salary Rs. 10,000/- for 10 years) considering 10% escalation per year	-	1.20	-	1.32	-	2.52*
iv)	*Cost of hiring one supervisor (Average Salary Rs. 20,000/- for 10 years) considering 10% escalation per year	-	2.40	-	2.64	-	5.04*
v)	*Consumables (Rs. 3.0 lac per year for next 10 years and considering 10% escalation per year)	-	3.0	-	3.3	-	6.3*
	Sub-Total (C)		16.6		7.26		23.86*
D.	Infrastructure Development						
i)	Vehicle including O&M	2 No.	20.0	-	-	-	-
iv)	GPS	3 No.	9.0	-	-	2 No.	20.00
v)	Maintenance of Departmental Buildings	-	8.0	-	8.0	3 No.	9.00
							16.00
vi)	Maintenance of Forest Roads/Inspection Pattern	-	10.0	-	10.0	-	20.00
	Sub-Total (E)		47.0		18.0		
	Grand Total		259.79		196.46		65.0
							318.21

* Note: Cost of CAT Plan in Table-2.10 is 409.65 lakh and cost in Table-2.11 is 318.21 lakh. The difference is due to the fact that salary of manpower which has been taken for 10 years in Table-2.10, and in Table-2.11 salary for manpower has been taken for 2 years only.

Approved,


Divisional Forest Officer
Parulga Division



পাশ্চাত্তম স্টোরেজ প্রজেক্ট ডিপার্টমেন্ট

ATTACHMENT-5

West Bengal State Electricity Distribution Company Limited

(A Government of West Bengal Enterprise)

Pumped Storage Project Department

FAX : 033 2334-5855

Telephones : 033 2334-5821/2319-7628

E-Mail : wbsedclpspd@gmail.com

Memo No. PSPD/Turga PSP/2F/ 552

Vidyut Bhavan (5th Floor)

Block-DJ, Sector-II

Bidhannagar, Kolkata – 700 091

Dated : 26 March 2019

The Addl. Principal Chief Conservator of Forests,
CAMPA & Nodal Officer, FCA, 1980,
Directorate of Forests, Govt. of West Bengal,
Aranya Bhavan, Block-LA-10A, Sector-III
Salt Lake, Kolkata-700098

Sub: Proposal for Diversion of 234 Ha of Forest Land for construction of 1000 MW Turga Pumped Storage Project of WBSEDCL in Ajodhya Hills under Purulia Forest Division (Proposal No.: FP/WB/HYD/8214/2014)

- **Deposition of fund for Net Present Value (NPV), Catchment Area Treatment (CAT) and Compensatory Afforestation**

- Ref:**
- In-Principle Approval accorded vide Gol, MoEF&CC F. No. 8-51/2017-FC dated 12.04.2018
 - Order to APCCF, CAMPA, GoWB vide memo no.: PSPD/ Turga PSP/ 2F/ 546 dated 19.03.2019 and P.O. no.: 5300270516 dated 19.03.2019
 - Your letter vide Memo no.: 11185/L</2M-1003/2013 dated 19.02.2019
 - Your letter vide Memo no.: 11026/L</2M-1003/2013 dated 15.02.2019

Sir,

With reference to above please be informed that compliance to clause no. (x), (xi), (xiv), (xv), (xvii) and (xviii) of the Stage I Forest Clearance (In-Principle approval), WBSEDCL has deposited the amount of Rs. 47,33,99,244.00 (Rupees Forty Seven Crore Thirty Three Lakh Ninety Nine Thousand Two Hundred Forty Four) only for the work of 'Net Present Value (NPV) for 234 Ha of the forest land proposed for diversion, Catchment Area Treatment (CAT) Plan and Compensatory Afforestation, Soil Moisture Conservation (SMC) Work and Demarcation & erection of Boundary Pillar / Infrastructure for CA Protection of 208.62 Ha of CA Land' against your Demand Notes under ref. (iii) and (iv) above.

The details of payment are furnished below:

Mode of Payment:	Transfer of fund through RTGS / NEFT
Amount (Rs.):	Rs. 47,33,99,244.00 (Rupees Forty Seven Crore Thirty Three Lakh Ninety Nine Thousand Two Hundred Forty Four) only
UTR No.:	SBINR 52019032500074328
Beneficiary Name:	West Bengal CAMPA
Bank Name:	Corporation Bank, Lodhi Complex Branch, New Delhi
Account No.:	150915682140595
IFSC Code:	CORP0000371

A copy of the receipted challan after payment of the fund from the State Bank of India, Bikash Bhawan GOC to Corporation Bank, Lodhi Road Branch is hereby enclosed as proof of depositing the money to West Bengal CAMPA account.

This is for your information and kind confirmation of the receipt of the fund at your end.

Enclo: As stated

Yours faithfully,

Sd/-
Chief Engineer
PSPD, WBSEDCL

2F/ Forest Payment

Memo No. PSPD/Turga PSP/ 2F/ 552

Dated : 26 March 2019

Copy forwarded for kind information and necessary action:-

1. The Chief Conservator of Forests, South-West Circle, Govt. of WB, Asansol
2. The Divisional Forest Officer, Purulia Forest Division, Govt. of WB, Purulia
3. The Divisional Forest Officer, Kangsabati (North) Forest Division, Govt. of WB, Purulia
4. The Divisional Forest Officer, Kangsabati (South) Forest Division, Govt. of WB, Purulia
5. The Divisional Forest Officer, Baikunthapur Forest Division, Siliguri

Sd/-
Chief Engineer
PSPD, WBSEDCL

Memo No. PSPD/Turga PSP/ 2F/ 552

Dated : 26 March 2019

Copy forwarded for kind information and necessary action:-

1. The Director (Generation), WBSEDCL, Vidyut Bhavan, Kolkata
2. The Addl. C.E., PSPD, WBSEDCL, Vidyut Bhavan, Kolkata
3. The AGM (F&A), PSPD, WBSEDCL, Vidyut Bhavan, Kolkata

g. k. s. s.
26.03.19
Chief Engineer
PSPD, WBSEDCL

AGENCY COPY
NEFT / RTGS CHALLAN for Ad-HOC CAMPA

Date : 19-03-2019

Agency Name.	WEST BENGAL STATE ELECTRICITY DISTRIBUTION COMPANY
Application No.	5682140595
MoEF/SG File No.	8-51/2017-FC
Location.	WEST BENGAL
Address.	Vidyut Bhavan, Block -DJ, Sector - II, Bichannagar North 24 Parganas
Amount(in Rs)	473399244/-

Amount in Words :Forty-Seven Crore Thirty-Three Lakh Ninety-
Nine Thousand Two Hundred and Forty-Four Rupees Only

**NEFT/RTGS to be made as per following
details;**

Beneficiary Name:	WEST BENGAL CAMPA
IFSC Code:	CORP0009371
Pay to Account No.	150915682140595 Valid only for this challan amount.
Bank Name & Address:	Corporation Bank Lodhi Complex Branch, Block 11,CGO Complex, Phase-I, Lodhi Road, New Delhi -110003

- This Challan is strictly to be used for making
payment to CAMPA by NEFT/RTGS only
- This challan is valid only for seven days.

BANK COPY
NEFT/RTGS CHALLAN for Ad-HOC CAMPA

Date : 19-03-2019

Agency Name.	WEST BENGAL STATE ELECTRICITY DISTRIBUTION COMPANY
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- This Challan is strictly to be used for making
payment to CAMPA by NEFT/RTGS only
- This challan is valid only for seven days.

After making successful payment, User Agencies may send a line of confirmation through
Email: helpdeskampa@corpbank.co.in



West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Dist.: Purulia, West Bengal

FC Proposal No.: FP/WB/HYD/8214/2014

MoEF&CC File No.: 8-51/2017-FC

UNDERTAKING

(ref: Sl. no. iv of compliance report)

This is to certify that, West Bengal State Electricity Distribution Company Limited (WBSEDCL), A Government of West Bengal Enterprise, undertakes to take some measures through State Forest Department for creation of water conservation / harvesting structures in the Catchment Area so that the water to be released for use of communities and agriculture, down streams, is not affected.


01.04.2021
(Surajit Chakraborty)
Director (Generation)
WBSEDCL

CHAPTER-10
RESTORATION, STABILIZATION AND
LANDSCAPING OF QUARRY SITES

CHAPTER-10

RESTORATION, STABILIZATION AND LANDSCAPING OF QUARRY SITES

10.1 INTRODUCTION

The landscape and restoration plan targets towards overall improvement in the condition of the area. The landscape plan provides benefits to improve beautification and its utility. All the activities are aimed at restoring the areas where scars would be formed. The restoration would prevent soil erosion enhance forest cover and stabilize degraded areas.

10.2 QUARRYING OPERATIONS

The estimated requirements of construction material for the project are listed in Table-10.1.

The quantum of construction material available in various quarries is given in Table-10.2.

Table-10.1: Quantities of Construction Material Required

S. No.	Structure	Core Material (Lac m ³)	Filter Material (Lac m ³)	Rockfill Material (Lac m ³)	Fine Aggregate (Lac m ³)	Coarse Aggregate (Lac m ³)
1	Upper Dam	5.50	2.23	28.80	0.21	0.42
2	Lower Dam	-	-	-	3.78	7.55
3	Lower Saddle Dam	2.90	1.40	14.97	-	-
4	Power House and T.H.	-	-	-	0.25	0.50
5	Waterway	-	-	-	0.36	0.72
	Total	8.4	3.63	43.77	4.60	9.19

Table-10.2: Quantities of Construction Material Available

S. No.	Description	Name of Quarry	Quantity (lakh m ³)
1	Clay	• Jilingtadh	1.37
		• Hathinada	5.85
		• Purana tarpania	2.27
		• Kudna	1.49
		• Turga Lower Reservoir	0.18
		• Gosaidih	0.73
		• Drift Area and Bagmundi	1.03
2	Rockfill & Filter	• Kudna	220
		• Dulgubera	10
3	Coarse Aggregate & Fine Aggregate	• Turga	22
		• Dulgubera	10
		• Malti	50
		• Kudna	220
		• Hadhadi nala	75

The quarrying operations are semi-mechanized in nature. In a hilly terrain, quarrying is normally done by cutting a face of the hill. A permanent scar is likely to be left, once

quarrying activities are over. With the passage of time, the rock from the exposed face of the quarry under the action of wind and other erosion forces, get slowly weathered and after some time, they become a potential source of landslide. Thus it is necessary to implement appropriate slope stabilization measures to prevent the possibility of soil erosion and landslides in the quarry sites.

River Bed Material for Aggregates

The extraction of construction material can affect the water quality of Hadhadi nala due to increase in the turbidity levels. This is mainly because the dredged material gets released during one or all the operations mentioned below:

- Excavation of material from the river bed.
- Loss of material during transport to the surface.
- Overflow from the dredger while loading
- Loss of material from the dredger during transportation.

The cumulative impact of all the above operations will increase in turbidity levels. Good dredging practices can however, minimize turbidity. It has also been observed that slope collapse is the major factor responsible for increase in the turbidity levels. If the depth of cut is too high, there is possibility of slope collapse, which releases a sediment cloud. This will further move outside the suction radius of dredged head. In order to avoid this typical situation, the depth of cut be restricted to:

$$\gamma H/C < 5.5$$

where,

γ	-	unit weight of the soil
H	-	depth of soil
C	-	Cohesive strength of soil

10.3 RESTORATION PLAN FOR QUARRY SITE AND BORROW AREA

The measures adopted for landscaping of these quarry sites have been described below:

i) Measures to be adopted before quarrying

The top soil, wherever, available in the quarry will be removed before starting the quarrying activity or any other surface disturbance. This top soil will be kept separate and stock piled so that it can be reused after quarrying is over for rehabilitation of sites.

ii) Measures to be adopted after quarrying**Diversion of run off**

Effective drainage system will be provided to avoid the infiltration of run-off and surface waters into the ground of quarry sites. Garland drains around quarry site shall be constructed to capture the runoff and divert the same to the nearest natural drain.

Filling of depressions

Removal of rocks from quarry sites for different construction works will result in the formation of depression and/or craters. These will be filled by the dumping materials consisting of boulders, rock, gravel and soil from nearby plant/working sites.

Construction of retaining walls

Retaining walls will be constructed at the filled up depressions of quarry sites to provide necessary support particularly where there are moderately steep slopes. In addition concrete guards, shall be constructed to check the soil erosion of the area.

Rocks for landscaping

After the quarrying activities are over, these sites will be splattered with the leftovers of rocks and boulders. These boulders and rocks can support the growth of mosses and lichens, which will act as ecological pioneers and initiate the process of succession and colonization. The boulders of moderate size will be used to line the boundary of a path.

Laying of the top soil

The depressions/craters filled up with rock aggregates will be covered with top soil. Fungal spores naturally present in top soil will aid plant growth and natural plant succession. The top soil will be further enriched by organic manure and Vesicular-arbuscular mycorrhizal (VAM) fungi. This will help in the process of soil reclamation and the early establishment of juvenile seedlings.

Re-vegetation

The work plan formulated for re-vegetation of the dumping sites through 'Integrated Biological and Bio-technological Approach' would be based upon the following parameters:

- i) Evaluation of rock material for their physical and chemical properties to assess the nutrient status to support vegetation.
- ii) Formulation of appropriate blends of organic waste and soil to enhance the nutrient status of rhizosphere.

- iii) Isolation and screening of specialized strains of mycorrhizal fungi, rhizobium, azotobacter and phosphate solubilizers (bio-fertilizers inoculums) suitable for the mined out sites.
- iv) Mass culture of plant specific biofertilizer and mycorrhizal fungi to be procured from different institutions/organisations which are engaged in the phyto-remediation activity of degraded areas.
- v) Plantation at quarry sites/areas using identified blend and biofertilizer inoculum.

10.4 BUDGET

A provision of Rs. 60.0 lakh has been earmarked for quarry slope stabilization. The details are given in Table-10.1.

Table-10.1: Cost estimate for restoration of quarry site and borrow area

S. No.	Activities/purpose	Cost (Rs. lakh)
1.	Filling up the land with soil	5.0
2.	Cost of green manure	5.0
3.	Cost of saplings	7.0
4.	Cost of fertilizers and pesticides	5.0
5.	Fencing with RCC pillars and barbed wire	20.0
6.	Maintenance activities including cleaning of weeds @ Rs.1.2 lakh for 5 years	6.0
7.	Digging of pits	2.0
8.	Construction of garland drains	10.0
	Total	60.0

West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Dist.: Purulia, West Bengal

FC Proposal No.: FP/WB/HYD/8214/2014

MoEF&CC File No.: 8-51/2017-FC

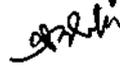
UNDERTAKING

(ref: Sl. no. v of compliance report)

This is to certify that, West Bengal State Electricity Distribution Company Limited (WBSEDCL), A Government of West Bengal Enterprise, undertakes that after extraction of stones, the quarry would be reclaimed with soil and would be vegetated; thereby developing the sites by enhancing the ecology & aesthetics, in line with the approved Environmental Clearance of Ministry of Environment, Forests and Climate Change (MoEF&CC), Govt. of India, for the implementation of 1000 MW Turga Pumped Storage Project, District: Purulia, West Bengal.


01.04.2021

(Surajit Chakraborty)
Director (Generation)
WBSEDCL



West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Dist.: Purulia, West Bengal

FC Proposal No.: FP/WB/HYD/8214/2014

MoEF&CC File No.: 8-51/2017-FC

UNDERTAKING

(ref: Sl. no. vi of compliance report)

This is to certify that, West Bengal State Electricity Distribution Company Limited (WBSEDCL), A Government of West Bengal Enterprise, undertakes to fence the quarry prior to reclamation work to check possible casualty of wildlife due to accidental fall, for the implementation of 1000 MW Turga Pumped Storage Project, District: Purulia, West Bengal.


01.04.2021

(Surajit Chakraborty)
Director (Generation)
WBSEDCL





West Bengal State Electricity Distribution Company Limited

(A Government of West Bengal Enterprise)

Pumped Storage Project Department

FAX : 033 2334-5855

Telephones : 033 2334-5821/2319-7628

E-Mail : wisedclpspd@gmail.com

Vidyut Bhavan (5th Floor)

Block-DJ, Sector-II

Bidhannagar, Kolkata - 700 091

Memo No. PSPD/Turga PSP/2F/1337

Dated : 30 November 2017

To

The Addl. Principal Chief Conservator of Forests (C),
Ministry of Environment, Forest and Climate Change,
Region Office (Eastern Zone), Govt. of India,
A/3, Chandrasekharpur, Bhubaneswar -751023

Sub: Diversion of 234.00 Ha of forest land for construction of 1000 MW Turga Pumped Storage Project of WBSEDCL in Ajodhya Hills under Purulia Forest Division

- Ref:**
- 1) Proposal No.: FP/WB/HYD/8214/2014 for Forest Clearance
 - 2) Letter no. 5-WBA097/2017-BHU dt. 13.11.2017 of the Technical Officer (Forestry), MoEF &CC (Eastern Zone), Bhubaneswar
 - 3) Letter no. 3-39/FCE, dt. 24.11.2017 of Conservator of Forests(C), MoEF &CC (Eastern Zone), Bhubaneswar

Dear Sir,

With reference to above and as advised during Power Point Presentation of the proposal on 14.11.2017 at Bhubaneswar as well as during site inspection of the Conservator of Forests (C) on 30.11.2017, we are submitting herewith the required additional documents/ data/ drawings for the said diversion proposal.

This is for your kind information and consideration for diversion of 234 Ha Forest Land for the project towards according approval of Stage -I Forest Clearance of the project.

Enclo: As stated (1 drawing + 4 documents)

Yours faithfully,
Sd/-
Chief Engineer, PSPD

Memo No. PSPD/Turga PSP/2F/1337

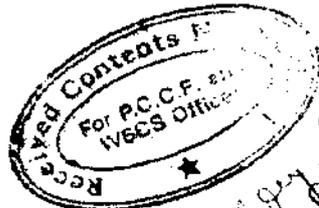
Dated : 30 November 2017

Copy forwarded for kind information to

- 1) The Addl. PCCF, CAMPA & Nodal Officer, FCA, 1980, West Bengal, Aranya Bhavan, Kolkata
- 2) The DFO, Purulia Forest Division, Directorate of Forests, Govt. of W.B

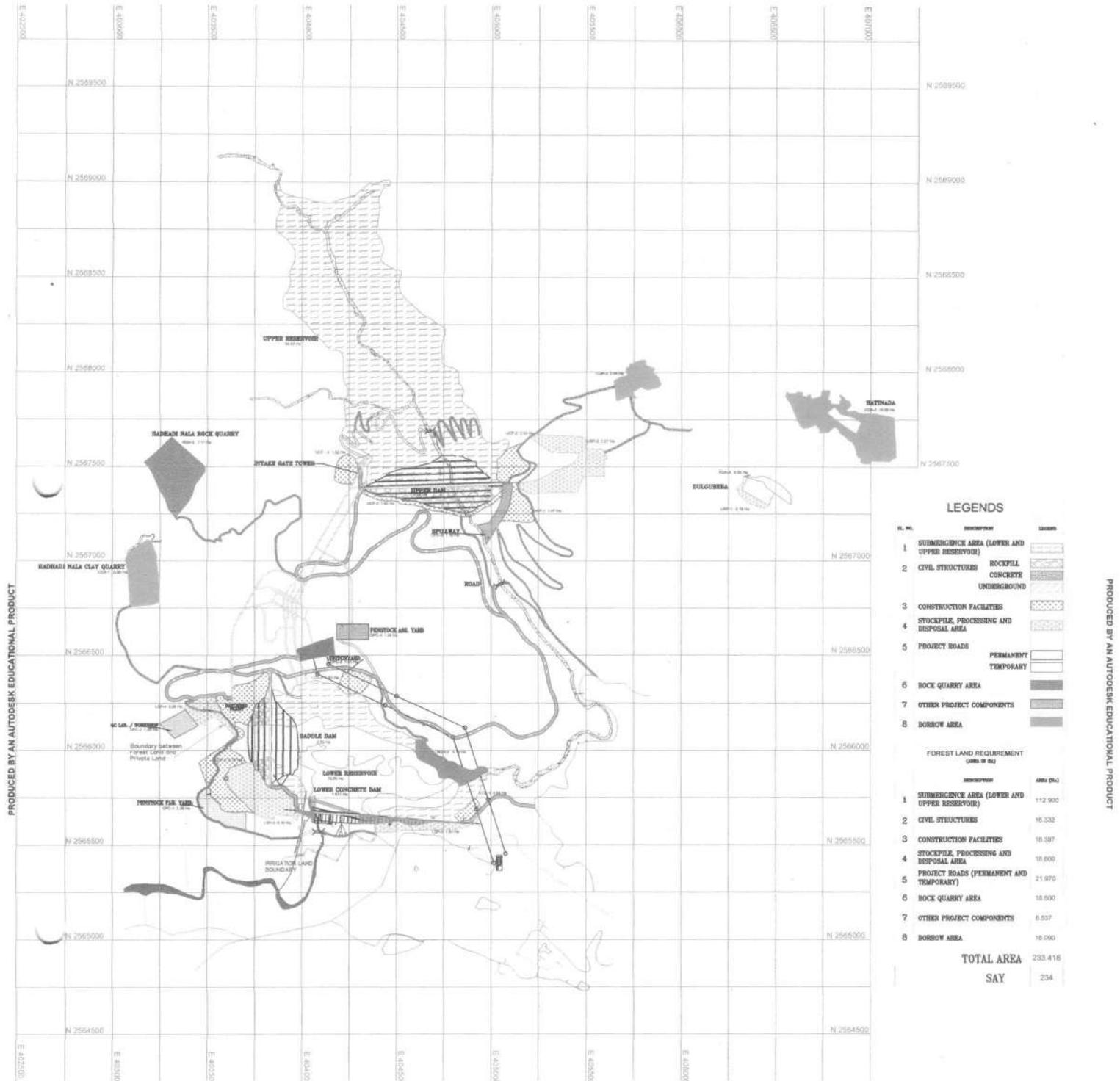
Sd/-
Chief Engineer, PSPD

Website: www.wbsedcl.in



CIN: U40109WB2007SGC113473

387
01/12/17



LEGENDS

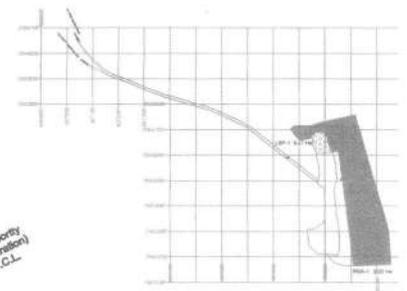
SL. NO.	DESCRIPTION	LEGEND
1	SUBMERGENCE AREA (LOWER AND UPPER RESERVOIR)	[Pattern]
2	CIVIL STRUCTURES	ROCKFILL CONCRETE UNDERGROUND
3	CONSTRUCTION FACILITIES	[Pattern]
4	STOCKPILE, PROCESSING AND DISPOSAL AREA	[Pattern]
5	PROJECT ROADS	PERMANENT TEMPORARY
6	ROCK QUARRY AREA	[Pattern]
7	OTHER PROJECT COMPONENTS	[Pattern]
8	BORROW AREA	[Pattern]

FOREST LAND REQUIREMENT (AREA IN HA)	
DESCRIPTION	AREA (HA)
1 SUBMERGENCE AREA (LOWER AND UPPER RESERVOIR)	112.900
2 CIVIL STRUCTURES	16.332
3 CONSTRUCTION FACILITIES	16.387
4 STOCKPILE, PROCESSING AND DISPOSAL AREA	18.800
5 PROJECT ROADS (PERMANENT AND TEMPORARY)	21.970
6 ROCK QUARRY AREA	18.000
7 OTHER PROJECT COMPONENTS	8.537
8 BORROW AREA	18.090
TOTAL AREA	233.416
SAY	234

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

0 500 1000 1500 m



Sanyal
23.11.17
Sanyal Chakraborty
Director (Generalist)
W.B.E.D.C.L.

Divyanshu Forest Officer
Purulia Division

WEST BENGAL STATE ELECTRICITY DISTRIBUTION CO. LTD.
1000 MW TURGA PUMPED STORAGE PROJECT, PURULIA
GEO-REFERENCE MAP OF FOREST LAND PROPOSED TO BE DIVERTED
USING TOTAL STATION
CO-ORDINATE: UTM / WGS 84

WEST BENGAL STATE ELECTRICITY DISTRIBUTION COMPANY LIMITED				
1000 MW TURGA PUMPED STORAGE PROJECT				
AREA OF FOREST LAND TO BE DIVERTED FOR NEW UNDERGROUND CONSTRUCTION AND FOR RECONSTRUCTION WORK WITHIN FOREST LAND ALREADY DIVERTED TO IRRIGATION & WATERWAYS DEPARTMENT, GOVT. OF WB.				
	<u>Description</u>	<u>Length (m)</u>	<u>Width (m)</u>	<u>Area (Sq. m)</u>
A.	Head Race Tunnel (HRT)			
1	Upper Reservoir to Bifurcation	1452.02	10.2	14810.604
2	Bifurcation to Power House	294.92	7.6	2241.392
B.	Tail Race Tunnel (TRT)			
1	Lower Reservoir to Bifurcation	680.58	11	7486.38
2	Bifurcation to Power House	368.62	8.2	3022.684
C.	Underground Structures			
1	Power House Cavern	160	25	4000
2	Transformer Cavern	139.17	16	2226.72
D.	Adit and Access Tunnels			
1	Main Access Tunnel (MAT)	1089.33	9	9803.97
2	MAT to PH Cavern	97.59	9	878.31
3	MAT to TRT	380.12	8	3040.96
4	Penstock Yard to Upper Penstock	478.75	10	4787.5
5	Cable Tunnel	177.8	5.3	942.34
6	Ventilation Tunnel	105.35	3	316.05
E.	Reconstruction Work within Forest Land (Diverted to I&W Deptt., GoWB)			
1	Dismantling of Existing Irrigation Dam and Spillway			2320
2	Construction of New Lower Concrete Dam			7370
Total Area to be diverted (Sq. m)				63246.910 (15.628 Acres)
Total Area to be diverted (Ha)				6.325

Shy
23.11.17

Surajit Chakraborty
Director (Generation)
W.B.S.E.D.C.L.

Shy
Divisional Forest Officer
Purulia Division

WEST BENGAL STATE ELECTRICITY DISTRIBUTION COMPANY LIMITED								
1000 MW TURGA PUMPED STORAGE PROJECT								
AREA OF FOREST LAND TO BE DIVERTED								
FOR NEW UNDERGROUND CONSTRUCTION AND FOR RECONSTRUCTION WORK WITHIN FOREST LAND ALREADY DIVERTED TO IRRIGATION & WATERWAYS DEPARTMENT, GOVT. OF WEST BENGAL								
SL. NO.	COMPONENT WISE BREAK UP	LAND AREA IN HECTARS						TOTAL AREA Ha.
		MOUZA : BAGHMUNDI				MOUZA : GOSAIDI		
		Sheet 1	Sheet 2	Sheet 3	Sheet 4			
		Plot No. 6	Plot No. 22	Plot No. 381	Plot No. 1507	Plot 2	Plot 8	
A. NEW UNDERGROUND CONSTRUCTION								
1	Head Race Tunnel	0.455	1.216	0.034	0.000	0.000	0.000	1.705
2	Power House Cavern	0.400	0.000	0.000	0.000	0.000	0.000	0.400
3	Transformer Cavern	0.223	0.000	0.000	0.000	0.000	0.000	0.223
4	Penstock Yard to Upper Penstock	0.000	0.198	0.281	0.000	0.000	0.000	0.479
5	Cable Tunnel	0.044	0.000	0.034	0.016	0.000	0.000	0.094
6	Ventilation Tunnel	0.032	0.000	0.000	0.000	0.000	0.000	0.032
7	Main Access Tunnel (MAT)	0.684	0.000	0.000	0.297	0.000	0.000	0.980
8	MAT to Power House Cavern	0.088	0.000	0.000	0.000	0.000	0.000	0.088
9	MAT to Tail Race Tunnel	0.101	0.000	0.000	0.203	0.000	0.000	0.304
10	Tailrace Tunnel	0.363	0.000	0.000	0.688	0.000	0.000	1.051
	SUB- TOTAL (A) (Ha)	2.388	1.415	0.348	1.204	0.000	0.000	5.356
B. RECONSTRUCTION WORK WITHIN FOREST LAND (DIVERTED TO I & W DEPTT. GoWB)								
	Dismantling Existing Irrigation Dam and Spillway	0.000	0.000	0.232	0.000	0.000	0.000	0.232
	Construction of New Lower Concrete Dam	0.000	0.000	0.168	0.072	0.480	0.017	0.737
	SUB- TOTAL (B) (Ha)	0.000	0.000	0.400	0.072	0.480	0.017	0.969
	TOTAL AREA (Ha)	2.388	1.415	0.748	1.276	0.480		6.325

23-11-17
 Surajit Chakraborty
 Director (Generation)
 W.B.S.E.D.C.L.

Divisional Forest Officer
 Tulla Division

Details of Transfer of **234.00 hec.** of forest land in favour of WBSEDCL
for construction of 1000 MW Turga Pumped Storage Project
in Ajothya Hills in Purulia District - regarding
Proposal No.: FP/WB/HYD/8214/2014
Division: Purulia Division

Sl. No.	Mouza	JL No.	Mouza Sheet No.	Plot No.	Total Area of Forest Land Required (Ha)	Remarks
1	Baghmundi	105	Sheet 1	2	0.135	
				3	0.11	
				4	0.066	
				5	0.062	
				6	24.136	Area of 2.388 Ha added for Underground Const. Work
				Sub-Total	24.509	
			Sheet 2	22	78.127	Area of 1.415 Ha added for Underground Const. Work Area of 2.280 Ha deducted from already diverted Forest Land for Purulia Pumped Storage Project, WBSEDCL
				21C	0.419	
				21E	0.226	
				334	3.28	
				357	0.064	
				35B	0.082	
			Sub-Total	82.228		
			Sheet 3	381	22.74	Area of 0.748 Ha added for Underground Const. and Reconstruction Work from Diverted Forest land of I&W Deptt.
			Sheet 4	1507	35.706	Area of 1.276 Ha added for Underground Const. and Reconstruction Work from Diverted Forest land of I&W Deptt.
Sub-Total Baghmundi		166.183				
2	Hatinada	107	Sheet 1	276	10.05	
	Sub-Total Hatinada			10.05		
3	Gosaidih	104		2	2.178	Area of 0.480 Ha added for Reccnstruction Work from Diverted Forest land of I&W Deptt.
				8	0.017	Area of 0.017 Ha added for Reccnstruction Work from Diverted land of I&W Deptt.
			Sub-Total Gosaidih		2.195	
4	Ranga	106		117	32.64	
				544	1.042	
				545	0.759	
				571	1.668	
			Sub-Total	36.309		
Sub-Total Ranga		36.309				
5	Teliabhasa	81	Sheet 2	659	2.766	
				677	0.168	
				679	0.094	
				743	0.066	
				Sub-Total	3.094	
Sub-Total Teliabhasa		3.094				
6	Barriya	103	Sheet 1	1	6.478	
				5	0.366	
				452	0.151	
			Sub-Total	6.995		
Sheet 4	5757	0.57				
Sub-Total Barriya		7.565				
7	Kudna	122	Sheet 3	1196	9.02	Area of 4.628 Ha deducted from already diverted Forest Land for Purulia Pumped Storage Project, WBSEDCL
	Sub-Total Kudna			9.02		
Total Area of Forest Land Reqd. (Ha)					233.416	
Say, Total Area of Forest Land Reqd. (Ha)					234	


 23-11-17
Surajit Chakraborty
 Director (Generation)
 W.B.S.E.D.C.L.
 Divisional Forest Officer
 Purulia Division

Details of Forest Land Proposed to be Diverted
for construction of 1000 MW Turga Pumped Storage Project
in Ajodhya Hills in Purulia District - regarding
Proposal No.: FP/WB/HYD/8214/2014
Division: Purulia Division

Village Wise Breakup

Sl. No.	Village	Forest Land (ha.)	Non-Forest Land (ha.)
1	Baghmundi	165.183	25.798
2	Hatinada	10.05	5.945
3	Barriya	7.565	5.784
4	Gosaidih	2.195	8.493
5	Kudna	9.02	11.98
6	Ranga	36.309	0
7	Teliabhasa	3.094	0
	Total	233.416	58

Component Wise Breakup

Sl. No.	Component	Forest Land (ha.)	Non-Forest Land (ha.)
1	Submergence Area (Lower and Upper Reservoir)	112.900	33.689
2	Civil Structures	16.332	0
3	Construction Facilities	18.387	0
4	Stockpile, Processing and Disposal Area	18.600	0
5	Project Roads (Permanent and Temporary)	21.970	0
6	Rock Quarry Area	18.600	0
7	Other Project Components	8.537	0
8	Borrow Area	18.090	24.311
	Total	233.416	58.00

Surajit Chakraborty
23.11.17

Surajit Chakraborty
Director (Generation)
W.B.S.E.D.C.L.

[Signature]
Divisional Forest Officer
Purulia Division

West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Dist.: Purulia, West Bengal

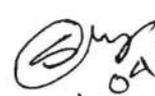
FC Proposal No.: FP/WB/HYD/8214/2014

MoEF&CC File No.: 8-51/2017-FC

UNDERTAKING

(ref: Sl. no. vii of compliance report)

This is to certify that, West Bengal State Electricity Distribution Company Limited (WBSEDCL), A Government of West Bengal Enterprise, undertakes to provide proper demarcation around the forest land area of the irrigation dam before Project Construction, by installing pillars, for the implementation of 1000 MW Turga Pumped Storage Project, District: Purulia, West Bengal.


01.04.2021

(Surajit Chakraborty)
Director (Generation)
WBSEDCL



27/6/17



GOVERNMENT OF WEST BENGAL
DIRECTORATE OF FORESTS
OFFICE OF THE CONSERVATOR OF FORESTS
NORTHERN CIRCLE, WEST BENGAL,
COLLECTORATE AVENUE, JALPAIGURI

Tel- 03561-231563, FAX - 03561-224582, e-mail - cft_nc@rediffmail.com

No. _____ / _____, Dated, Jalpaiguri, the _____ 2017.

To :: The Addl. Principal Chief Conservator of Forests,
North Bengal.

Sub. :: Handing over of 1156.96 acres of Govt. Land at Purba Totgaon in
Mouza - Targhera under Mal Block for compensatory afforestation.

Ref. :: This office endt. No. 160/2M-84, dated 15.03.2017
and 220/2M-84, dated 31.03.2017.

In continuation to this office letters quoted under reference, it is to bring to your kind notice that after necessary verification, the Divisional Forest Officer, Baikunthapur Division is of the opinion that out of 1156.96 acres of Govt. Land at Purba Totgaon, under Targhera Mouza of Mal Block proposed for handing over to this Department for compensatory afforestation towards implementation of 1000 MW Turga Pump Storage Power Project in Ayodha Hills in Purulia to be executed by the WBSEDCL and Barjora(North) Coal Mine to be implemented by WBPDC, only 392.65 acres of land could be earmarked which is suitable for compensatory afforestation, free from encroachment and all encumbrances. A copy of letter No. 1437/8-2, dated 05.06.2017 sent by the Divisional Forest Officer, Baikunthapur Division in this regard to the Chief Engineer, PSPD, WBSEDCL, Kolkata under intimation to this office is enclosed for ready reference.

Sd/- U. Ghosh
Chief Conservator of Forests,
Northern Circle, West Bengal.

Not in original

No. 395 / 2M-84, Dated, Jalpaiguri, the 23/06/ 2017.

Copy forwarded to the Divisional Forest Officers, Baikunthapur Division for information with reference to his endt. No. 1437/8-2, dated 05.06.2017.


Chief Conservator of Forests,
Northern Circle, West Bengal



Government of West Bengal
Directorate of Forests
Office of the Divisional Forest Officer
Baikunthapur Division
Rabindranagar, P.O. Rabindra Sarani, Siliguri - 734006

No. 1437 /8-2

Dated, Siliguri, the 05.06.2017.

From: The Divisional Forest Officer
Baikunthapur Division

To: The Chief Engineer, PSPD
WBSEDCL, Vidyut Bhawan (5th Floor)
Block-DJ, Sector-II, Bidhan Nagar,
Kolkata - 700 091

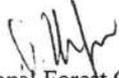
Sub: Handing over of 392.65 acres of Govt. land in Purba Totgaon under Mal Block.
Ref: BL & LRO, Mal Block Memo No. 317/BLLRO/MAL/JAL/2017 dated 26.05.2017.
& DI & LRO, Jalpaiguri Memo No. 170/5(6)/D/E/001/218/LMS-
1/DLLRO/JAL/2016 dated 27.02.2017.

In consonance with the above mentioned communications this is to mention that out of the **1156.96 Acres** of Govt. Land in Purba Totgaon in Mouza - Targhera of Mal Block proposed to be handed over to the Forest Department for compensatory afforestation towards implementation of 1000 MW Turga Pump Storage Power Project in Ayodha Hills in Purulia to be executed by WBSEDCL and Barjora (North) Coal Mine to be implemented by WBPDC, **392.65 Acres** have been earmarked. The earmarked land (392.65 Acres) pertains to WBSEDCL. The Schedule of the land is being mentioned herein below: -

Mouza	J.L. No.	Khatian No.	Plot No.	Proposed Area in Acres
Targhera	2	1	24(P)	25.83
			25(F)	1.17
			26(F)	10.78
			27(F)	74.58
			28(F)	77.12
			29(F)	6.22
			30(F)	32.60
			31(F)	13.52
			32(F)	9.52
			33(F)	22.89
			34(F)	14.56
			35(F)	16.07
			36(F)	87.50
			37(F)	0.14
38(F)	0.15			
TOTAL			392.65	

The above mentioned land has been found suitable for compensatory afforestation. Moreover there is no encroachment on the said 392.65 Acres of land earmarked for compensatory afforestation; hence it is free from all encumbrances.

This is for your kind information and taking necessary action.

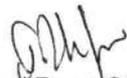

Divisional Forest Officer
Baikunthapur Division

No: 1437 /8-2

Dated, Siliguri, the 05.06.2017

Copy forwarded for information & taking necessary action to: -

1. The Chief Conservator of Forests, Northern Circle, West Bengal.
2. The District Magistrate, Jalpaiguri
3. The Additional Magistrate & District Land & Land Reforms Officer, Jalpaiguri.
4. The Block Land & Land Reforms Officers, Mal Block.
5. The Range Officer, Targhera Range.


Divisional Forest Officer
Baikunthapur Division

s/c



Government of West Bengal
Directorate of Forests,
Office of the Divisional Forest Officer,
Purulia Division.

Phone No. : 03252 - 222329 & FAX No. : 03252 - 228328

PSPD / WBSEDCL	
Receipt No.....	70
Date.....	23/06/21
Contents Not Verified	

No. 1615 18-5/2(a)

Dated, Purulia, the 07/06/2021.

From : The Divisional Forest Officer,
Purulia Division.

To : The Chief Engineer,
PSPD, WBSEDCL,
Vidyut Bhavan (5th Floor)
Block-DJ, Sector-II, Bidhannagar, Kolkata-700091.

Sub : Demand Note in connection with Proposal No. FP/WB/HYD/8214/ 2014 for diversion of 234 Ha of Forest land for construction of 1000 MW Hydel Pumped Storage Project at Ajodhya Hill under Purulia Forest Division.

Ref. Memo No: 338/L</2M-1003/2013, dated 19.04.2021

With reference to the subject cited above, the undersigned is raising demand as per approved of Wildlife Conservation Plan with respect to Turga Pumped Storage Project having a total amount of Rs. 53,55,45,790.00 (Rupees Fifty Three crore Fifty Five lakh Forty Five thousand Seven hundred Ninety) only.

Further undersigned is requesting you to deposit the above amount as per guideline given vide Memo no 338/L & LT/2M-1003/2013, dt.19/04/2021.

This is for your information and taking necessary action.


Divisional Forest Officer,
Purulia Division.

No. /

Dated, Purulia, the

/2021.

Copy forwarded for information to:

1. The Principal Chief Conservator of Forests & Head of Forest Force, West Bengal.
2. The Addl. Principal Chief Conservator of Forests & Nodal Officer, Forest Conservation Act, 1980.
3. The Chief Conservator of Forest, South-West Circle, West Bengal.
4. The Range Officer, Baghmundi Range, for information and taking necessary action.
5. The Section-in-Charge, FCA Cell, Purulia Division for proper filing.

Debashish Sharma, I.F.S

Divisional Forest Officer,
Purulia Division.



As
07/05/21

To Correspondence
Section for 2019

Government of West Bengal
Directorate of Forests

Office of the Principal Chief Conservator of Forests, Head of Forest Force
Aranya Bhawan, Block: LA-10A, Salt Lake City, Sector - III, Kolkata: 700 106
Phone - Fax: (033) 2335 8581/7751, e-mail : nfcawb@gmail.com
Visit us at: www.westbengalforest.gov.in



No. 338/L</2M-1003/2013

Dated : 19/04/2021

To: The Divisional Forest Office,
Purulia Division.

Sub : Proposal for diversion of 234 ha. of forest land for construction of 1000 MW Turga Pumped Storage Project of WBSEDCL in Ajodhya Hills under Purulia Division.

Ref. : The P.C.C.F, Wildlife & Chief Wildlife Warden, W.B's letter No. 911/WL/2M-196/2021 dated 16.04.2021.

The Wildlife Conservation Plan which has been approved by the P.C.C.F, Wildlife & Chief Wildlife Warden, W.B. is sent herewith so that Corresponding Demand Note may be raised at your end to the user agency under information to the undersigned.

EAA

Subi
Addl. Principal Chief Conservator of Forests &
Nodal Officer, FCA

No. / L</2M-1003/2013

Dated :

Copy forwarded for information and necessary action to :-

1. The Principal Chief Conservator of Forests, Wildlife & Chief Wildlife Warden, West Bengal with reference to his letter No. quoted above.
2. The Chief Conservator of Forests, South-West Circle, W.B.

Subi
Addl. Principal Chief Conservator of Forests &
Nodal Officer, FCA

ATTACHMENT - 13

PSPD WBSIEDCL <wbsiedclpspd@gmail.com>

1000 MW Turga PSP: Payment for Wildlife Conservation Plan

1 message

PSPD WBSIEDCL <wbsiedclpspd@gmail.com>

Wed, Sep 8, 2021 at 3:00 PM

To: helpdeskampa@corpbank.co.in

Cc: Divisional Forest Officer Purulia Division <dfopfd@gmail.com>, Chief Conservator of Forests South West Circle <ccfswcwb@gmail.com>, "Nodal Officer FCA, W.B." <nfcawb@gmail.com>

Dear Sir

For implementation of Wildlife Conservation Plan for Construction of 1000 MW Turga Pumped Storage Project under Purulia Forest Division, West Bengal, the amount of Rs. 53,45,55,790.00 (Rupees Fifty Three Crores Forty Five Lakhs Fifty Five Thousand Seven Hundred Ninety only) has already been made to Adhoc CAMPA Account through SBI ref no.: SBINR52021090841163500 Dated 08.09.2021 (Attached) in terms of Clause no ix, xiv & xviii of the In-Principle Approval accorded by MoEF & CC, Govt. of India Dated 12.04.2018.

**WBSIEDCL**

Office of the Chief Engineer
Pumped Storage Project Department
5th Floor, C-Block, Vidyut Bhavan, Block-DJ
Sector-II, Salt Lake, Kolkata- 700091
Phone: 033 2334 5821/ 2319 7746

2 attachments **Payment Ref No.pdf**
25K **Fund Transfer.pdf**
54K



Account Name : W B S ELEC DIST CO LTD C AC
Address : BIDYUT BHABAN BLOCK DJ SEC II, SALT LAKE KOL 91, WEST BENGAL, North Twenty Four Parganas
KOLKATA
WEST BENGAL-700091
IN
Date : 8 Sep 2021
Account Number : 00000034057518912
Account Description : CA-SURABHI-PUB OTH-ALL-INR
Branch : BIKASH BHAWAN GOC
Drawing Power : 0.00
Interest Rate(% p.a.) : 0.0
MOD Balance : 3,15,739.00
CIF No. : 81086212173
IFS Code : SBIN0007816
MICR Code : 700002114
Balance as on 8 Sep 2021 : 53,55,57,103.55

Account Statement from 8 Sep 2021 to 8 Sep 2021

Txn Date	Value Date	Description	Ref No./Cheque No.	Branch Code	Debit	Credit	Balance
8 Sep 2021	8 Sep 2021	CHQ TRANSFER- RTGS UTR NO: SBINR52021 09084116350 0-713849 WEST BENGAL CAMPA	/ 713849 WEST BENGAL CAMPA	7816	53,55,45,790.00		11,313.55
8 Sep 2021	8 Sep 2021	TRANSFER CREDIT-SWEEP DEPOSIT BY TRANSFER-	SWEEP FROM 40295170487 W B S ELEC DIST CO LTD /	7816		9,041.00	20,354.55
8 Sep 2021	8 Sep 2021	CASH CHEQUE- PAID TO GOUR DAS- 713850	/ 713850	7816	9,468.00		10,886.55

**This is a computer generated statement and does not require a signature.

West Bengal State Electricity Distribution Company Limited

(A Government of West Bengal Enterprise)

Pumped Storage Project Department

Vidyut Bhavan (5th Floor, Block-C), Bidhannagar, Block DJ, Sector-II, Kolkata-700091

Phone: 033-2334 5821/5854/5859, Fax : 033-2321 2584

Website : www.wbsedcl.in, e-mail : wbsedclpspd@gmail.com, amfapspd@gmail.com

CIN : U40109WB2007SGC113473



Ref No- PSPD/Acctt./Bank/Letters/16/183

Dated – 07/09/2021

To
The Branch Manager
SBI Bikash Bhawan, GOC
Salt Lake, Sector-II Branch
Kolkata – 91.

Sub- Transfer of fund through RTGS/NEFT
Ref:- A/C No-34057518912 of W.B.S.E.D.C.L.

Dear Sir,

You are requested to transfer fund as per details given below:-
TRANSFERER CHEQUE DETAILS

Chq. No.	713849
Ch. Date	07/09/2021
Amount in figure(Rs)	53,55,45,790/-
Amount in Words(Rs)	Fifty Three Crore Fifty Five Lakh Forty Five Thousand seven Hundred Ninety Only.

BENEFICIARY A/C DETAILS

Beneficiary Name	Bank Name	Branch Name	A/C No	IFS Code	Amount to be transferred (Rs.)
WEST BENGAL CAMPA	UNION BANK OF INDIA	LODHI COMPLEX	150915682140618	UBIN0903710	53,55,45,790/-

The above beneficiary detail has been emailed to sbi.07816@sbi.co.in for your reference.

This may please be treated most URGENT.

Encl:- As above.

Thanking you.

Yours faithfully


(Eepsita De)
Manager(F&A)
PSPD/ WBSEDCL
9830362245

537 NR 520210908411.63500

Government of West Bengal
Department of Forests,
For Branch,
Aranya Bhavan(1st Floor), Block-LA-10A, Sector-III, Saltlake City
Kolkata-700 098.

No. 412 -For/O/L/10T-12/2017

Kolkata, the 8th March, 2019

NOTIFICATION

WHEREAS the Ministry of Environment, Forests & Climate Change, Govt. of India, have accorded their in-principle approval as per proviso laid down under Section 2 of the Forest (Conservation) Act, 1980 vide their Memo No. 8-51/2017-FC dt. 12.04.2018 for diversion of 234 ha of Forest Land under Purulia Forest Division, in favour of West Bengal State Electricity Distribution Ltd. for construction of 1000 MW Turga Pumped Storage Project.

AND WHEREAS the total area of non-forest land measuring 578.22 acres is to be transferred in favour of Forest Department, and out of that an area of 122.85 acres has been transferred whose situation are described in Schedule below (hereinafter referred to as the said area), in favour of State of West Bengal for the purpose of Compensatory Afforestation as per the condition laid down in the approval ibid.

AND WHEREAS the 'said area', is considered to be of adequate natural, ecological, faunal and botanical significance over which the (State) Govt. has proprietary rights.

NOW, THEREFORE, in exercise of the power conferred under Section 29 of the Indian Forest Act, 1927, the Governor is hereby pleased to declare that the 'said area' measuring 122.85 acres shall be Protected Forest with effect from the date of publication of this Notification in the official 'Kolkata Gazette Extraordinary'.

LAND SCHEDULE:

Dist.	Block	Mouza	J.L. No.	Plot No.	Area (in acre)
Purulia	Puncha	Dhabani	08	789	12.80
				1717	10.86
		Hariharpur	30	1270	15.09
	Hura	Saharjuri	22	487	23.86
		Tilaboni	04	1111	21.58
		Madhabpur	05	2150	17.34
	Manbazar-I	Durku	04	412	21.32
Total:					122.85

Area of land measures more or less 122.85 acres.

This substitutes this Deptt.'s earlier order no. 366-For/O/L/10T-12/2017 dt. 5th March, 2017.

By order of the Governor,

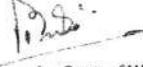
Sd/- P. Tantri
 Joint Secretary to the Govt. of West Bengal

No. 412/1(1)-For/O/L/10T-12/2017

Kolkata, the 8th March, 2019

Copy forwarded for information to the Managing Director, Saraswati Press Ltd., 11, B.T. Road, Belgharia, Kolkata-700 056

He is requested to publish this Notification in Extraordinary Kolkata Gazette immediately for greater public interest and supply 50 copies of the same to this Deptt. for official use.

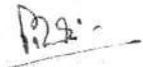

Joint Secretary to the Govt. of West Bengal

No. 412/2(19)-For/O/L/10T-12/2017

Kolkata, the 8th March, 2019

Copy forwarded for information to:

- 1) The P.S. to the Chief Minister, Govt. of West Bengal.
- 2) The P.S. to the MIC, Deptt. of Forests, Govt. of West Bengal.
- 3) The P.S. to the MIC, Finance Deptt., Govt. of West Bengal.
- 4) The P.S. to the Chief Secretary to the Govt. of West Bengal.
- 5) The P.S. to the Addl. Chief Secretary, Deptt. of Forests, Govt. of West Bengal.
- 6) The LRC & Principal Secretary, L & LR Deptt.
- 7) DM, Purulia District.
- 8) DLLRO & ADM (LR), Purulia District.
- 9) DFO, Purulia Forest Division.
- 10) DFO, Kangsabati (North) Division
- 11) DFO, Kangsabati (South) Division
- 12) Divisional Commissioner, Burdwan Residency.
- 13) The P.C.C.F. (HoFF), West Bengal.
- 14) The P.C.C.F. (General), West Bengal.
- 15) The P.C.C.F., Wildlife & Chief Wildlife Warden, West Bengal.
- 16) The Addl. P.C.C.F. (CAMPA) & Nodal Officer, FCA, 1980.
- 17) The CEO, WB CAMPA.
- 18) The Ministry of Environment, Forests & Climate Change, Govt. of India, Paryavaran Bhavan, JorBagh Road, Aliganj, New Delhi-110 003.
- 19) The C.F. (Central), The Ministry of Environment & Forests (Eastern Regional Office), Govt. of India, A/3, Chandrasehkarpur, Bhubaneswar-751 023, Orissa.


Joint Secretary to the Govt. of West Bengal

Government of West Bengal
Department of Forests,
For Branch,
Aranya Bhavan(1st Floor), Block-LA-10A, Sector-III, Saltlake City
Kolkata-700 098.

No. 531-For/O/L/10T-12/2017

Kolkata, the 25th March, 2019**NOTIFICATION**

WHEREAS the Ministry of Environment, Forests & Climate Change, Govt. of India, have accorded their in-principle approval as per proviso laid down under Section 2 of the Forest (Conservation) Act, 1980 vide their Memo No. 8-51/2017-FC dt. 12.04.2018 for diversion of 234 ha of Forest Land under Purulia Forest Division, in favour of West Bengal State Electricity Distribution Ltd. for construction of 1000 MW Turga Pumped Storage Project.

AND WHEREAS the total area of non-forest land measuring 578.22 acres is to be transferred in favour of Forest Department, and out of that an area of 122.85 acres was declared as 'Protected Forest' vide notification no. 412-For/O/L/10T-12/2017 dt. 8/03/2019 and now an area of 392.65 acres has been transferred whose situation are described in Schedule below (hereinafter referred to as the said area), in favour of State of West Bengal for the purpose of Compensatory Afforestation as per the condition laid down in the approval ibid.

AND WHEREAS the 'said area', is considered to be of adequate natural, ecological, faunal and botanical significance over which the (State) Govt. has proprietary rights.

NOW, THEREFORE, in exercise of the power conferred under Section 29 of the Indian Forest Act, 1927, the Governor is hereby pleased to declare that the 'said area' measuring 392.65 acres shall be Protected Forest with effect from the date of publication of this Notification in the official 'Kolkata Gazette Extraordinary'.

LAND SCHEDULE:

Dist.	Block	Mouza	J.L. No.	Plot No.	Area (in acre)
Jalpaiguri	Mal	Purba Totgaon	02	24(P)	25.83
				25	1.17
				26	10.78
				27	74.58
				28	77.12
				29	6.22
				30	32.60
				31	13.52
				32	9.52
				33	22.89
				34	14.56
				35	16.07
				36	87.50
				37	0.14
38	0.15				
Total:					392.65

Area of land measures more or less 392.65 acres.

By order of the Governor,

Sd/- I. Pandey

Additional Chief Secretary to the Govt. of West Bengal

No. 531/1(1)-For/O/L/10T-12/2017

Kolkata, the 25th March, 2019

Copy forwarded for information to the Managing Director, Saraswati Press Ltd., 11, B.T. Road, Belgharia, Kolkata-700 056.

-He is requested to publish this Notification in Extraordinary Kolkata Gazette immediately for greater public interest and supply 50 copies of the same to this Deptt. for official use.

12/2
Joint Secretary to the Govt. of West Bengal

No. 531/2(17)-For/O/L/10T-12/2017

Kolkata, the 25th March, 2019

Copy forwarded for information to:

- 1) The P.S. to the Chief Minister, Govt. of West Bengal.
- 2) The P.S. to the MIC, Deptt. of Forests, Govt. of West Bengal.
- 3) The P.S. to the MIC, Finance Deptt., Govt. of West Bengal.
- 4) The P.S. to the Chief Secretary to the Govt. of West Bengal.
- 5) The P.S. to the Addl. Chief Secretary, Deptt. of Forests, Govt. of West Bengal.
- 6) The LRC & Principal Secretary, L & LR Deptt.
- 7) DM, Jalpaiguri District.
- 8) DLLRO & ADM (LR), Jalpaiguri District.
- 9) DFO, Baikunthapur Forest Division.
- 10) Divisional Commissioner, Jalpaiguri Division.
- 11) The P.C.C.F. (HoFF), West Bengal.
- 12) The P.C.C.F. (General), West Bengal.
- 13) The P.C.C.F., Wildlife & Chief Wildlife Warden, West Bengal.
- 14) The Addl. P.C.C.F & Nodal Officer, FCA, 1980.
- 15) The CEO, WB CAMPA.
- 16) The Ministry of Environment, Forests & Climate Change, Govt. of India, Paryavaran Bhavan, JorBagh Road, Aliganj, New Delhi-110 003.
- 17) The C.F.(Central), The Ministry of Environment & Forests (Eastern Regional Office), Govt. of India, A/3, Chandrasehkarapur, Bhubaneswar-751 023, Orissa.

12/2
Joint Secretary to the Govt. of West Bengal

2/e

Government of West Bengal
Department of Forests,
For Branch,
Aranya Bhavan (1st Floor), Block-LA-10A, Sector-III, Saltlake City
Kolkata-700 098.

No. 851-For/O/L/10T-12/2017

Kolkata, the 29th July, 2021

NOTIFICATION

WHEREAS the Ministry of Environment, Forests & Climate Change, Govt. of India, have accorded its in-principle approval vide their Memo No. 8-51/2017-FC dt. 12.04.2018 for diversion of 234 ha of Forest Land under Purulia Forest Division, in favour of West Bengal State Electricity Distribution Ltd. for construction of 1000 MW Turga Pumped Storage Project.

AND WHEREAS the total area of non-forest land measuring 578.22 acres is to be transferred in favour of Forest Department, and out of that an area of 122.85 acres and 392.65 acres were declared as 'Protected Forest' vide notification no. 412-For/O/L/10T-12/2017 dt. 8/03/2019 and notification no. 531-For/O/L/10T-12/2017 dt. 25/03/2019 now an area of 62.72 acres has been transferred particulars of which are described in Schedule below (hereinafter referred to as the said area), in favour of State of West Bengal for the purpose of Compensatory Afforestation as per the condition laid down in the approval ibid.

AND WHEREAS the 'said area', is considered to be of adequate natural, ecological, faunal and botanical significance over which the (State) Govt. has proprietary rights and there are no further rights of anybody else and no rights as recorded on said area will be abridged or affected without due process of settlement.

NOW, THEREFORE, in exercise of the power conferred under Section 29 of the Indian Forest Act, 1927, the Governor is hereby pleased to declare that the 'said area' measuring 62.72 acres shall be Protected Forest with effect from the date of publication of this Notification in the official 'Kolkata Gazette Extraordinary'.

The Schedule

LOCATION:

Within district- Paschim Medinipur, P.S.-Salboni, Mouza-Rotalkuli, I.L. No.-326.

LAND SCHEDULE:

Plot No.	Area (in acres)
03	62.72
Total	62.72

By order of the Governor,

Sd/- Vivek Kumar
Additional Chief Secretary to the Govt. of West Bengal

No. 851/1(1)-For/O/L/10T-12/2017

Kolkata, the 29th July, 2021

Copy forwarded for information to the Managing Director, Saraswati Press Ltd., 11, B.T. Road, Belgharia, Kolkata-700 056.

-He is requested to publish this Notification in Extraordinary Kolkata Gazette immediately for greater public interest and supply 50 copies of the same to this Deptt. for official use.

Officer on Special Duty

Kolkata, the 29th July, 2021

No. 851/2(6)-For/O/L/10T-12/2017

Copy forwarded for information to:

- 1) The P.C.C.F. (HoFF), West Bengal.
- 2) The P.C.C.F. (General), West Bengal.
- 3) The P.C.C.F., Wildlife & Chief Wildlife Warden, West Bengal.
- 4) The Addl. P.C.C.F. & Nodal Officer, FCA, 1980.
- 5) The Ministry of Environment, Forests & Climate Change, Govt. of India, Paryavaran Bhavan, JorBagh Road, Aliganj, New Delhi-110 003.
- 6) The Inspector General of Forest (C), Ministry of Environment, Forests & Climate Change, Integrated Regional Office, IB-198, Broadway Road, IB Block, Sector-III, Salt lake City, Kolkata-700 106.

Officer on Special Duty

APP.
Phan mah.
G.P. Saha
30.07.2021

WZ
D.L. (C) M.
P.L. Receipt for
Authentic ref. B
30.07.2021

Dis (G)
OSD

29.07.2021
CE, PSPD
CE, Turga BSP
29.07.21
D/C

PSPD / WBSSEDCL	
Receipt No.....	631
Date.....	25.2.19
Contents Not Verified	



Government of West Bengal
Directorate of Forests

Office of the Principal Chief Conservator of Forests, Head of Forest Force

Aranya Bhawan, Block: LA-10A, Salt Lake City, Sector - III, Kolkata: 700 106

Phone - Fax: (033) 2335 8581/7751, e-mail : wbcampa@gmail.com

Visit us at: www.westbengalforest.gov.in



No- 11185 / L & LT/2M- 1003/2013

Dated: 19.02.2019

To The Chief Engineer, PSPD, WBSSEDCL,
Vidyut Bhavan (5th Floor), Block: DJ, Sector-II,
Bidhannagar, Kolkata - 700091

Sub.: Demand note for the proposal for diversion of 234 ha. of forest land for construction of 1000 MW Turga Pumped Storage Project of WBSSEDCL in Ajodhya Hills under Purulia Forest Division (Proposal No. FP/WB/HYD/8214/2014).

Ref.: (i) Assistant Inspector General of Forests (FC), Govt. of India, MoEF & CC, New Delhi letter no. F.No. 8-51/2017-FC dt. 12th April, 2018 according In-Principle approval.
(ii) DFO Kangsabati (north) letter no. 909/28-54 dt. 18.02.2019.

With reference to the DFO Kangsabati (north) letter no. 909/28-54 dt. 18.02.2019 (copy attached herewith), the following changes shall be paid as the revised Compensatory afforestation amount and the other charges will be same as per this office letter no.11026/L</2M-1003/2013 dt. 15.02.2019.

Charges for compensatory afforestation and soil moisture conservation works

Sl No	Division and area of CA in hectare.	Compensatory afforestation (Rs.)			SMC (Rs.)	Demarcation & erection of boundary pillar/ Infrastructure for CA protection (Rs.)	Total (Rs.)
		Nursery & Advance work	Plantation & Creation	Maintaining MY 1 to MY 10			
1	Kangsabati (north) 41.09 ha.	10730816 *	11008001	55701673	19360123 **	420000	97220613
Total	41.09 ha						97220613

* The previous amount of Rs. 1,08,45,552 is changed to 1,07,30,816 as per the DFO Kangsabati (north) revised estimate.

** The previous amount of SMC (25% of CA) is changed from Rs. 1,93,88,798 to Rs. 1,93,60,123.

Encl.: As stated.

Addl. Principal Chief Conservator of Forests / CAMPA

&

Nodal Officer, Forest Conservation Act, 1980

West Bengal

PSPD / WBSEDCL
Receipt No.....608
Date.....15.02.2019
Contents Not Verified



Government of West Bengal
Directorate of Forests

Office of the Principal Chief Conservator of Forests, Head of Forest Force
Aranya Bhawan, Block: LA-10A, Salt Lake City, Sector - II, Kolkata: 700 106
Phone - Fax:: (033) 2335 8581/7751, e-mail : wbcampa@gmail.com
Visit us at: www.westbengalforest.gov.in



No- 11026 / L & LT/2M- 1003/2013

Dated: 15.02.2019

To The Chief Engineer, PSPD, WBSEDCL,
Vidyut Bhawan (5th Floor), Block: DJ, Sector-II,
Bidhannagar, Kolkata - 700091

Sub.: Demand note for the proposal for diversion of 234 ha. of forest land for construction of 1000 MW Turga Pumped Storage Project of WBSEDCL in Ajodhya Hills under Purulia Forest Division (Proposal No. FP/WB/HYD/8214/2014).

Ref.: (i) Assistant Inspector General of Forests (FC), Govt. of India, MoEF & CC, New Delhi letter no. F.No. 8-51/2017-FC dt. 12th April, 2018 according In-Principle approval.

Inviting reference to the letter quoted above (copy enclosed) you are requested to pay the following amount described as per clause no. x, xi, xiv, xvi, xvii, xviii of Stage-I conditions given by the MoEF & CC. You shall pay the Net Present Value (NPV) for Rs 18,79,02,000.00 for the forest land (234 ha.) proposed to be diverted which is calculated for eco class-3 and density 0.3 (rates copy attached) and an amount of Rs. 4,09,65,000.00 as the cost of approved Catchment Area Treatment (CAT) plan as per Stage-I conditions no. xviii. The cost of compensatory afforestation (CA) and soil moisture conservation works (SMC) is detailed below. You shall be informed that payments of NPV, CA, SMC and CAT plan should be made online through the Ministry's website www.parivesh.nic.in. No other mode of payment shall be accepted.

Charges for compensatory afforestation and soil moisture conservation works

Sl No	Division and area of CA in hectare.	Compensatory afforestation (Rs.)			SMC (Rs.)	Demarcation & erection of boundary pillar/ Infrastructure for CA protection (Rs.)	Total (Rs.)
		Nursery & Advance work	Plantation & Creation	Maintaining MY 1 to MY 10			
1	Baikunthapur 158.90 ha.	7565229	53844060	35762034	26264427	2237732	125673482
2	Kangsabati (north) 41.09 ha.	10845552	11008001	55701637	19388798	420000	97363988
3	Kangsabati (south) 8.63 ha.	2385952	2551388	12245179	4295630	160000	21638149
Total	208.62 ha						244675619

Encl.: As stated.

Addl. Principal Chief Conservator of Forests / CAMPA
&
Nodal Officer, Forest Conservation Act, 1980
West Bengal

No- / L & LT/2M- 1003/2013

Dated: .02.2019

Copy forwarded for information and necessary action to:

1. The Chief Conservator of Forests, South West Circle, West Bengal.
2. The Chief Conservator of Forests, Northern Circle, West Bengal.
3. The Divisional Forest Officer, Purulia Forest Division.
4. The Divisional Forest Officer, Kangsabati (North) Forest Division.
5. The Divisional Forest Officer, Kangsabati (South) Forest Division.
6. The Divisional Forest Officer, Baikunthapur Forest Division.

Sdf

Addl. Principal Chief Conservator of Forests / CAMPA
&
Nodal Officer, Forest Conservation Act, 1980
West Bengal



Government of West Bengal
Directorate of Forests
Office of the Divisional Forest Officer
Medinipur Division

M.M.Nagar , Medinipur , PaschimMedinipurPin :: 721101
Phone& Fax No:: 03222-275869 , e-mail : dfomd@yahoo.com



Memo. No.- 2082 / 8 ; Dated, Medinipur, the 22-07-2021

From :: The Divisional Forest Officer,
Medinipur Division.

To :: The Chief Engineer
PSPD ,WBSEDCL
Bidyut Bhavan (5th Floor)
Block-DJ ,Sector-II ,Bidhannagar , Kolkata-700091

Sub :: Demand Note for Compensatory Afforestation in connection with proposal of diversion of 234 ha of Forest Land for construction of 1000 MW Turga Pump Storage Project at Ajodhya Hill, Purulia, West Bengal.

Ref. :: 1. Office of the PCCF(HoFF) ,W.B. Office letter memo No -1481/L</2M-1003/2013 dt. 06.07.2021
2. Office of the CCF(W.C.) ,W.B. Office letter memo No -839/4a-2 dt. 22-07-2021

Kindly find enclosed herewith the details Demand Note for Compensatory Afforestation on the above subject against 25.39 ha of alternate Compensatory Afforestation land in Medinipur Division amounting **Rs.2,70,98,500.00 (Two crore seventy lakh ninety eight thousand only)**. You are requested to take necessary steps for payment of above mentioned amount as detail below in compliance to Stage – I Clearance dated 12-04-2018 of MOEF & CC, Govt. of India F. No. 8 – 51 / 2017-FC dt. 12-04-2018.

1. Estimate of Boundary demarcation, felling logging etc over for the land proposed for diversion over 25.39 ha. –Rs.15,98,000.00
2. Estimate of Compensatory afforestation of the land in lieu of the diversion over 25.39 ha.—Rs..1,85,60,090.00
3. Estimate for digging Elephant Proof Trench around the CA area over 25.39 Ha.-. Rs 23,00,000.00

Total Rs. 2,24,58,000.00

Addition 25% for S.M.C Work i.e. Rs.46,40,000.00

Grand Total Rs.2,70,98,000.00 (Two crore seventy lakh ninety eight thousand only)

This is for your kind information and further necessary action.

Enclosed : As stated above.

[Signature]
Divisional Forest Officer,
Medinipur Division

Memo. No.- 2082 / 8;

Dated, Medinipur, the 22-07-2021

Copy forwarded for information and necessary action to :-

1. The Principal Chief Conservator of Forests (HoFF) , West Bengal.
2. The Principal Chief Conservator of Forests and CEO, CAMPA , West Bengal
3. The Additional Chief Conservator of Forests , CAMPA & Nodal officer , FCA , 1980 , West Bengal .
4. The Chief Conservator of Forests , Western Circle.
5. The Divisional Forest Officer, Working Plan(South-1) Division.

[Signature]
Divisional Forest Officer,
Medinipur Division

ATTACHMENT-16

PSPD WBSIEDCL <wbsiedclpspd@gmail.com>

1000 MW Turga PSP: Payment for Compensatory Afforestation in Paschim Medinipur District

1 message

PSPD WBSIEDCL <wbsiedclpspd@gmail.com>

Mon, Oct 25, 2021 at 3:28 PM

To: helpdeskampa@corpbank.co.in

Cc: "Nodal Officer FCA, W.B." <nfcawb@gmail.com>, dfomd@yahoo.com, Divisional Forest Officer Purulia Division <dfopfd@gmail.com>

Bcc: Director Generation <directorgen2019@gmail.com>

Dear Sir,

Dear Sir

For Construction of 1000 MW Turga Pumped Storage Project under Purulia Forest Division, West Bengal, the amount of Rs. 2,70,98,000.00 (Rupees Two Crores Seventy Lakhs Ninety Eight Thousand only) has already been made to Adhoc CAMPA Account on account of Compensatory Afforestation, SMC and Maintenance for 10 Years of CA Land under Block: Salboni, Paschim Medinipur through SBI ref no.: SBINR52021101847292288 Dated 18.10.2021 in terms of Clause no x, xi, xiii, xiv,xviii of the In-Principle Approval accorded by MoEF & CC, Govt. of India Dated 12.04.2018.

Thanking you,
Chief Engineer, PSPD

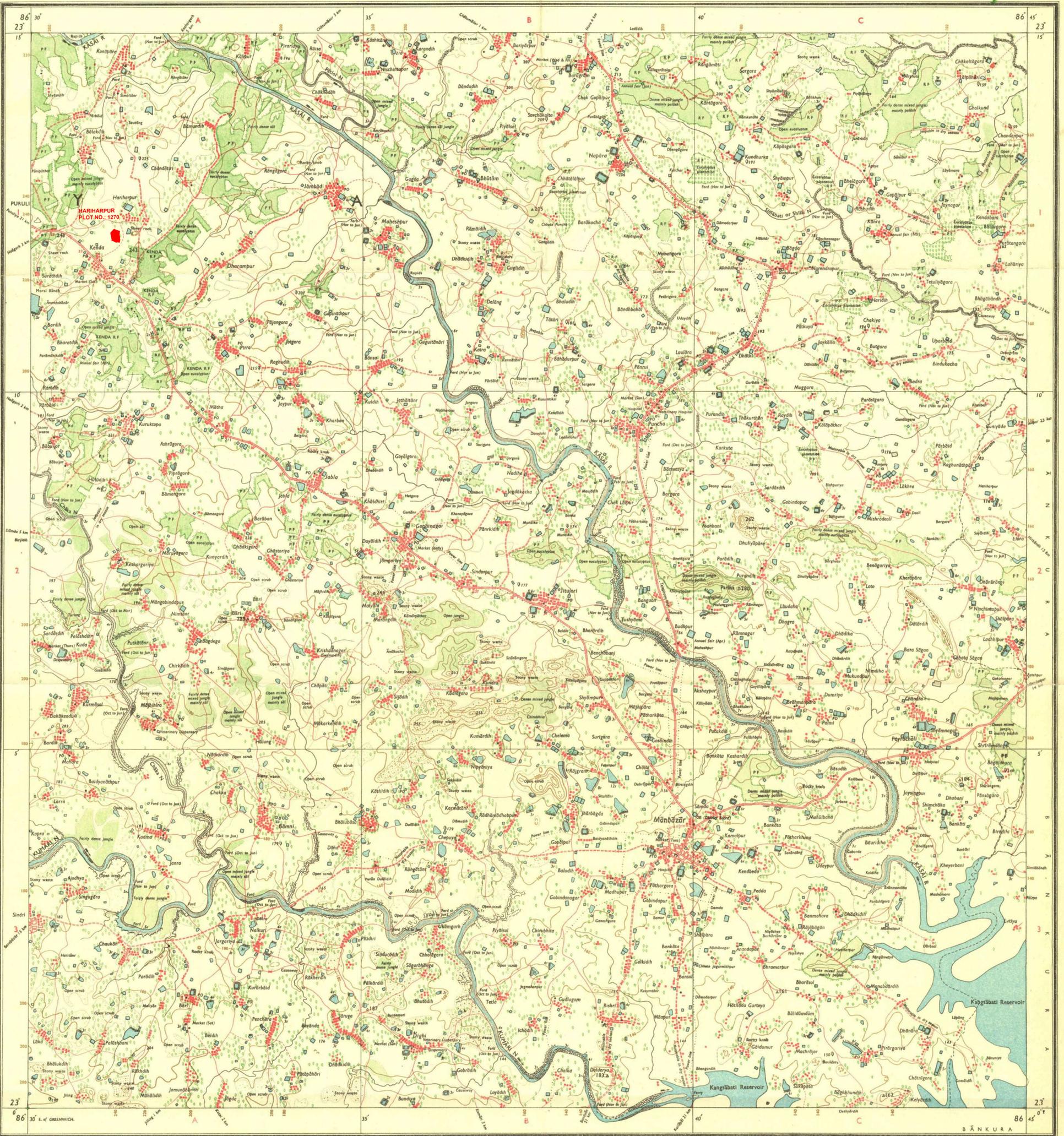
**WBSIEDCL**

Office of the Chief Engineer
Pumped Storage Project Department
5th Floor, C-Block, Vidyut Bhavan, Block-DJ
Sector-II, Salt Lake, Kolkata- 700091
Phone: 033 2334 5821/ 2319 7746

WEST BENGAL

BĀNKURA & PURULIYA DISTRICTS.

Surveyed 1973-74



Res. No. 4494/77 (D.O. 5.1.31.31) 814 77-6.20 2'4.

Roads metalled, according to importance: distance stone unmetalled, do.	20
Cart-track, pack-track and pass. Foot-path with bridge.	10
Bridges with piers without. Causeway. Ford or Ferry.	5
Streams with track to head, undefined. Canal.	1
Dams: masonry or rock-filled earthen. Weir.	1
River banks: shalving, steep, 3 to 6 metres; over 6 metres.	1
dry with water channel; with island & rocks. Tidal river.	1
Submerged rocks. Shoal. Swamp. Reeds.	1
Wells lined: unlined. Tube-well. Spring. Tanks: perennial. dry.	1
Embankments: road or rail. Broken ground.	1
Railways: broad gauge: double single with station under construction.	1
other gauges: do. do. with distance stone do.	1
Light railway or tramway. Telegraph line. Cutting with tunnel.	1
Contours with sub-features. Rocky slopes. Cliffs.	1
Sand features (bars, shoals, banks and dunes) surveyed. Shifting dunes.	1

1st Edition 1977.
(Previous Editions on 1-inch scale: 1st. 1928/1944; 2nd. 1963).

Index to Sheets

73 1/7	73 1/11	73 1/15
73 1/8	73 1/12	73 1/16
73 1/9	73 1/13	73 1/17

Published under the direction of Major-General K.L. Khosla, B.Sc. (E. Civil), F.I.S., F.I.E., FIGU., M.A.S.C.E. (U.S.A.), Surveyor-General of India, 1977.

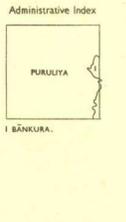
500 m to 1 cm
1:50,000
2 cm to 1 km

HEIGHTS & CONTOURS IN METRES
CONTOUR INTERVAL 20 METRES

*water features are shown in blue where they generally contain water.
*Cultivated areas are coloured yellow.
*The 'water' boundaries of areas Reserved or Protected Forests are shown by green ribands.
*Not applicable.

Contours are approximate.
A relative height, Δ ft., represents the approximate height, in metres, between the top and bottom of a steep slope.
Wooded areas are coloured green. Scattered trees and other vegetation are in green, but prominent surveyed trees are in black.

The kilometre stone numbers along roads are shown in slant type, e.g. '5' whereas milestone numbers are shown in upright type, e.g. '5'.



Towns or Villages: inhabited. deserted. Fort.

Huts: permanent. temporary. Tower. Antiquities.

Temple. Chhatra. Church. Mosque. Jagan. Tomb. Graves.

Lighthouse. Lightship. Buoy. Lighted. unlighted. Anchorage.

Mine. Vine on trellis. Grass. Scrub.

Palms: palmyra. other. Plantain. Coffee. Bamboo. Other trees.

Boundary: international. district. sub-division. taluk. village.

state demarcated. undemarcated.

district. sub-division. taluk or taluk forest.

Boundary pillars: surveyed. unlocated. village trijunction.

Height: orientated. station. point: approximate. 200. 200.

Bench-mark: geodetic. tertiary. canal. BM 63.3. BM 63.3.

Post office. Telegraph office. Combined office. Police station. PO. TO. PTO. PS.

Bungalows: dak or traveller. inspection. Rest-house. DB. BH. (Canal). BH. (Forest).

Circuit house. Camping ground. Forest: reserved. protected. CH. CG. BH. PF.

Spaced names: administrative. locality or tribal. KIKRI. NAGA.

REFER TO THIS MAP AS :- 1:50,000
SHEET 73 1/12 FIRST EDITION

IN SURVEY OF INDIA TOPMAP 73 1/12 THE FOLLOWING COMPENSATORY AFFORESTATION LANDS ARE PRESENT					
DISTRICT	BLOCK	MOUZA	JI. NO.	PLOT NO.	AREA (HECTARE)
PURULIA	PUNCHA	HARHARPUR	30	1270	6.1070

INDIA



No. F45J6
Scale 1:50,000

F45J4 (73N/4)	F45J5 (73N/5)	F45J9 (73N/9)
F45J2 (73N/2)	F45J6 (73N/6) Paschim Medinipur WEST BENGAL	F45J10 (73N/10)
F45J3 (73N/3)	F45J7 (73N/7)	F45J11 (73N/11)

1 Bardhaman, West Bengal
2 Purna Medinipur, West Bengal
3 Hugli, West Bengal

भारतीय सर्वेक्षण विभाग SURVEY OF INDIA

1st Edition 2010. Price: Rs. 70/-

CONVENTIONAL SYMBOLS

Express highway with toll, with bridge, with distance stone.	
Roads, classified according to importance.	
Unimproved road. Cart track. Pack track with pass. Foot path.	
Stream with bank in solid ground. Canal.	
Dam. Embankment or rock-fill. Weir. Mill.	
River dry with water channel, with island & rocks. Tidal river.	
Submerged road. Shoal. Swamp. Reeds.	
Weak track. Culvert. Trestle bridge. Trench. Tunnel. Perennial dry.	
Interlocking road or rail. Bank. Embankment.	
Railway, broad gauge; double, single with station under construction.	
Railway, other gauges; double, single with distance stone, etc.	
Mineral line or tramway. Kib. Cutting with tunnel.	
Cableway with suspension cables. Railway viaduct. Cable.	
Steel structure (R.R. Standard-gauge) (Stations) (Signalling).	
Tower or Village: established, deserted. Fort.	
Fort: permanent, temporary. Tower. Antennae.	
Temple. Church. Mosque. Jain. Tank. Dargah.	
Lighthouse. Light. Beacon. Signal. Telegraph. Aerial.	
Mine. Vee on India. Gull. Scar.	
Palma palmery, other. Parasol. Conifer. Bamboo. Other trees.	
Area cultivated, wooded. Buried tree.	
Boundary, international.	
State demarcated, undemarcated.	
District, subdivision, taluk or taluk, tehsil.	
Boundary system: surveyed, unsurveyed.	
Height in metres and above Indian sea level.	
Contour: 200, 300, 400, 500, 600, 700, 800, 900, 1000, 1200, 1500, 2000, 2500, 3000, 4000, 5000, 6000, 7000, 8000, 9000, 10000.	
Benchmark: geodetic, arbitrary, canal.	
Post office. Telegraph office. Overhead tank.	
Post house or inspection bungalow. Circuit house. Police station.	
Campsite ground. Forest, reserved, protected.	
Spaced names: administrative, locality or street.	
Hospital. Dispensary. Veterinary. Hospital (Dispensary).	
Aerodrome. Helipad. Tourist site.	
Power line, with pylons surveyed, with pylons unsurveyed.	

REFERENCES
P.W.D. Public Works Department. A.Y. 60 National Highway No. 85.

NOTES
Heights are in metres and above Indian sea level.
Contours are approximate.
A height of 0.30 indicates the height of the top of the canal embankment above the adjacent country.
A height of 0.30 represents the approximate height, in metres, between the top and bottom of a steep slope.

COMPILED INDEX

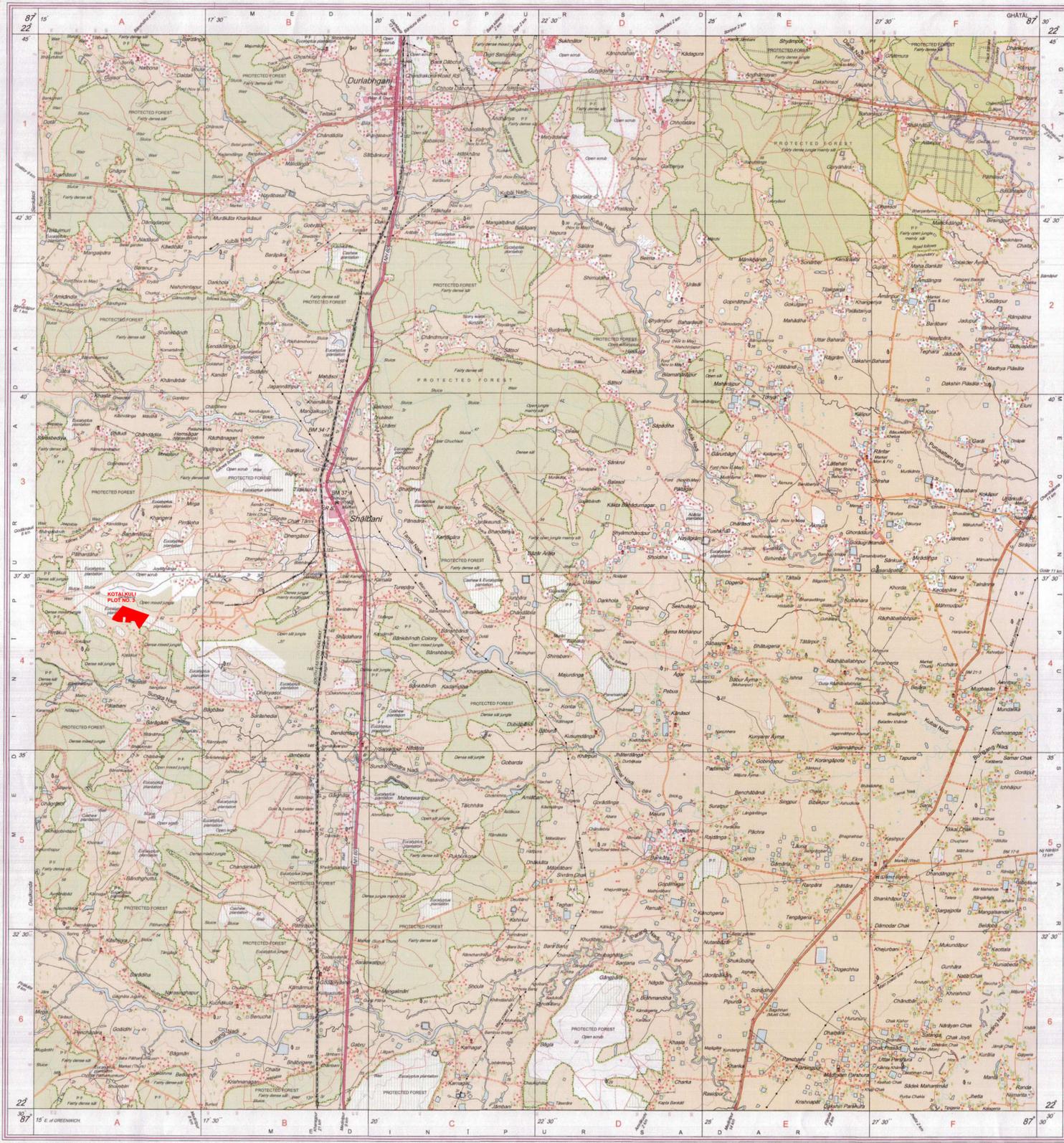
A	Compiled from 1:25,000 survey 1967-68. Updated for major works during 2005-06.
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Projection - UTM Datum - WGS 84
Magnetic Variation from True North about 1° West in 2005.
Please change regularly.
1:50,000
Scale 1:50,000
CONTOUR INTERVAL: 10 METRES
For further details about this map, please contact
Director
WB & SBHM Geo-Spatial Data Centre
Survey of India, 13 Wood Street,
Kolkata.

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IN SURVEY OF INDIA TOPOMAP 73N/6 THE FOLLOWING COMPENSATORY AFFORESTATION LANDS ARE PRESENT

DISTRICT	BLOCK	MOUZA	JL NO	PLOT NO.	AREA (HECTARE)
PASCHIM MEDINIPUR	SALBONI	KOTALKULI	326	3	25.3814

www.surveyofindia.gov.in
Published under the direction of Surveyor General of India.
Survey of India, Hibernikata Estate, Post Box No. 37, Dehra Dun-248001 (Uttarakhand)
Department of Science & Technology, Government of India.

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भारत के लिए नहीं है NOT FOR EXPORT

OPEN SERIES MAP

No. G45K5
Scale 1:50,000

G45E4 (58A/75)	G45E8 (58A/75)	G45E12 (58A/75)
G45K1 (58B/75)	G45K5 (58B/75)	G45K9 (58B/75)
G45K2 (58C/75)	G45K6 (58C/75)	G45K10 (58C/75)

Jalpaiguri, WEST BENGAL.

भारतीय सर्वेक्षण विभाग SURVEY OF INDIA
No. Edition 2011. Price: ₹ 75/-

CONVENTIONAL SYMBOLS

Boundaries of States and Union Territories	Boundaries of Districts	Boundaries of Taluqs	Boundaries of Panchayats	Boundaries of Gram Panchayats	Boundaries of Villages
Boundaries of Forest Reserves	Boundaries of National Parks	Boundaries of Sanctuaries	Boundaries of Wildlife Sanctuaries	Boundaries of Conservation Reserves	Boundaries of Biosphere Reserves
Boundaries of National Reserves	Boundaries of National Monuments	Boundaries of National Parks	Boundaries of National Sanctuaries	Boundaries of National Conservation Reserves	Boundaries of National Biosphere Reserves
Boundaries of National Reserves	Boundaries of National Monuments	Boundaries of National Parks	Boundaries of National Sanctuaries	Boundaries of National Conservation Reserves	Boundaries of National Biosphere Reserves

REFERENCES

1. Survey of India, Topographic Maps, Series G, Scale 1:50,000.

NOTES

1. The map is based on the Survey of India Topographic Maps, Series G, Scale 1:50,000.

COMPILED INDEX

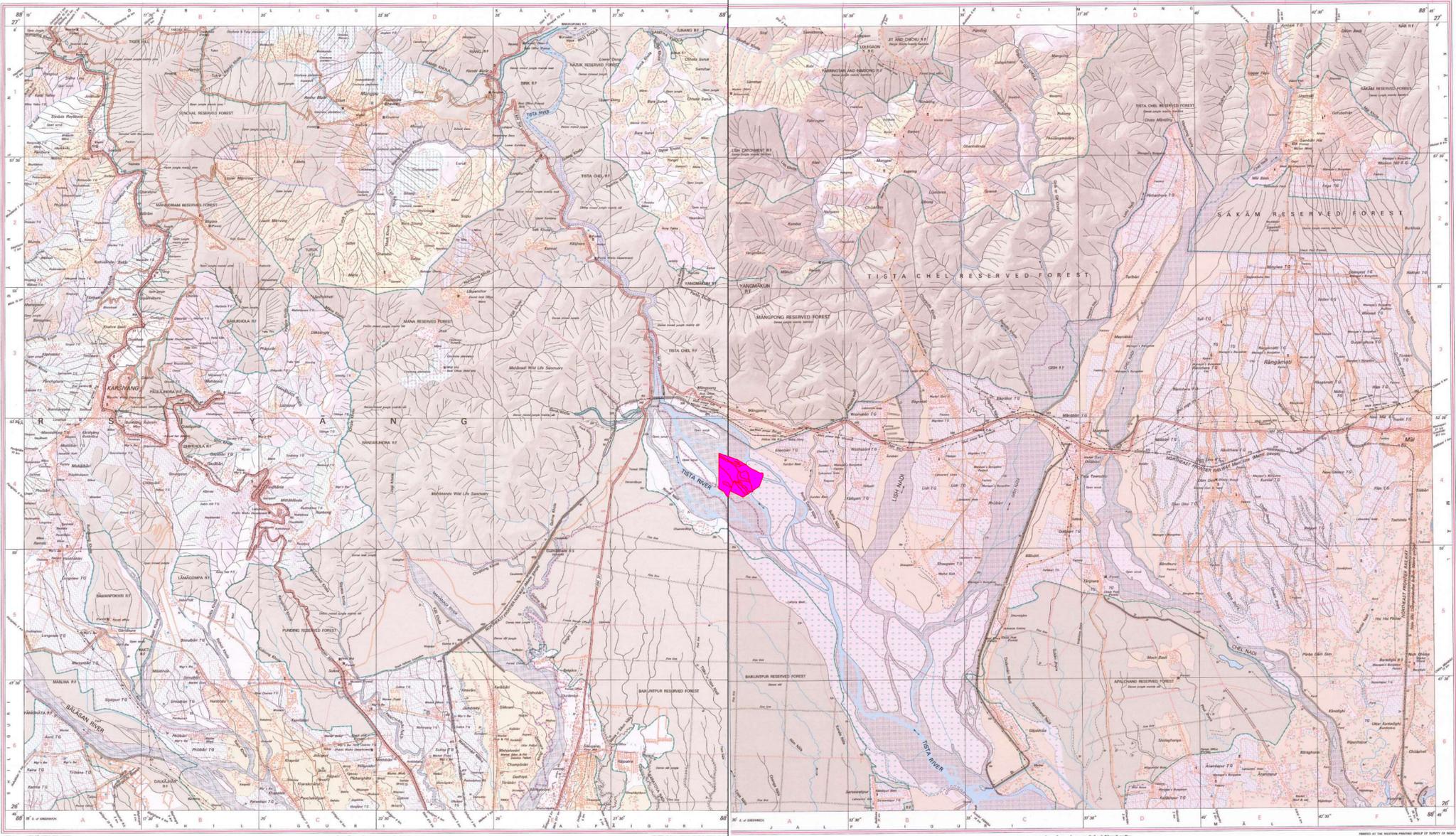
1. Survey of India, Topographic Maps, Series G, Scale 1:50,000.

Projection - UTM Datum - WGS 84
Magnetic Variation Zone Three North about 2° in 2000.
Scale 1:50,000

For further details about this map, please contact
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West Bengal & Tripura Geo-Spatial Data Centre
Survey of India, 33, West Street,
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INDEX

LAND IDENTIFIED FOR CREATION OF COMPENSATORY
AFFORESTATION IN JALPAIGURI DISTRICT



WEST BENGAL STATE ELECTRICITY DISTRIBUTION CO. LTD.
1000 MW TURGA PUMPED STORAGE PROJECT, PURULIA
LAND IDENTIFIED FOR CREATION OF COMPENSATORY AFFORESTATION
IN DISTRICT : JALPAIGURI, WEST BENGAL
SURVEY OF INDIA TOPOSHEET

West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Dist.: Purulia, West Bengal

FC Proposal No.: FP/WB/HYD/8214/2014

MoEF&CC File No.: 8-51/2017-FC

UNDERTAKING

(ref: Sl. no. xvi of compliance report)

This is to certify that, West Bengal State Electricity Distribution Company Limited (WBSEDCL), A Government of West Bengal Enterprise, undertakes to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India, for the implementation of 1000 MW Turga Pumped Storage Project, District: Purulia, West Bengal.


01-04-2021

(Surajit Chakraborty)
Director (Generation)
WBSEDCL





পাশ্পড় স্টোবেজ প্রজেক্ট ডিশাটমেন্ট
West Bengal State Electricity Distribution Company Limited
 (A Government of West Bengal Enterprise)
 Pumped Storage Project Department

FAX : 033 2334-5855
 Telephones : 033 2334-5821/2319-7628
 E-Mail : wbsedclpspd@gmail.com

Vidyut Bhavan (5th Floor)
 Block-DJ, Sector-II
 Bidhannagar, Kolkata – 700 091

Memo No. PSPD/Turga PSP/2F/ 122

Dated : 22 June 2017

The Addl. Principal Chief Conservator of Forests,
 CAMPA & Nodal Officer, FCA, 1980,
 Directorate of Forests, Govt. of West Bengal,
 Aranya Bhavan, Block-LA-10A, Sector-III
 Salt Lake, Kolkata-700098

Sub: 1000 MW Turga Pumped Storage Project in Purulia District of West Bengal
 - Submission of FRA Document from DM, Purulia and Non-encumbrances Certificate from DFO, Baikunthapur Division

Ref: MoEF&CC Proposal No.: FP/WB/HYD/8214/2014

Sir,

With reference to above please be informed that, WBSEDCL has obtained the following clearances necessary for obtaining Stage-I Forest Clearance in respect of 1000 MW Turga Pumped Storage Project, Dist: Purulia, West Bengal:

- 1) Forest Rights Act, 2006 document issued by the District Magistrate, Purulia on 13.06.2017 for the 234 Ha of Forest Land at Ayodhya Hills proposed to be diverted.
- 2) Non- encumbrances Certificate from DFO, Baikunthapur Division on 05.06.2017 for 392.65 Acres (158.9 Ha) of Non-forest Govt. land for Compensatory Afforestation purpose.

Thus, for Diversion of total 234 Ha (578.22 Acres) of Forest Land at Ayodhya Hills in Purulia District for implementation of the Project, following Non-forest Government land in Purulia and Jalpaiguri District have been arranged for Compensatory Afforestation purpose:

Sl. No	District	Block/ Range	Mouza	Area (Acres)	Reference letters of concerned DFO
1	Purulia	Manbazar-I&II	Durku, Ketyardi & Dhanda	45.25	1099/28 dt. 18.08.2015 of DFO, Kangsabati South Division, Purulia. (already uploaded in the website of MoEF&CC)

2	Purulia	Puncha	Kuchung, Dhabani & Hariharpur	55.90	2110/28-54 dt. 11.09.2015 of DFO, Kangsabati North Division., Purulia
3	Purulia	Hura	Mangura Lalpur, Saharjuri, Madhabpur, Tilaboni	84.42	(already uploaded in the website of MoEF&CC)
4	Jalpaiguri	Mal	Targhera	392.65	1437/8-2 dt. 05.06.2017 of DFO, Baikunthapur Division, Siliguri
Total				578.22	Acres
Say				234	Ha

WBSEDCL shall upload the necessary documents in the portal of MoEF&CC shortly against the above referred Proposal Number.

Necessary FRA Report from D.M., Purulia and Suitability Reports of the concerned Divisional Forest Officers for Compensatory Afforestation purpose are enclosed for your kind perusal and further necessary action please.

Encls: As stated above

Yours faithfully,

Sd/-
Chief Engineer
PSPD, WBSEDCL

Memo No. PSPD/Turga PSP/ 2F/

Dated : 22 June 2017

Copy forwarded for kind information and necessary action:-

1. The District Magistrate, Purulia, Govt. of West Bengal
2. The Divisional Forest Officer, Purulia Division, Directorate of Forests, Govt. of West Bengal

Sd/-
Chief Engineer
PSPD, WBSEDCL

Memo No. PSPD/Turga PSP/ 2F/

Dated : 22 June 2017

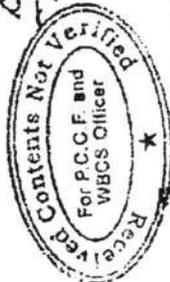
Copy forwarded for kind information and necessary action:-

1. The Executive Director (Generation), WBSEDCL, Vidyut Bhavan, Kolkata
2. The Addl. C.E., PSPD, WBSEDCL, Vidyut Bhavan, Kolkata

Sd/-
Chief Engineer
PSPD, WBSEDCL

Website: www.wbseedcl.in

CIN:U40109WB2007SGC113473



Annexure-I

FORM-I

Government of West Bengal

Office of the District, Purulia
Backward Classes Welfare, Purulia
Beside SP Office

Memo No. - 968/BCWP

Dated - 13-6-17

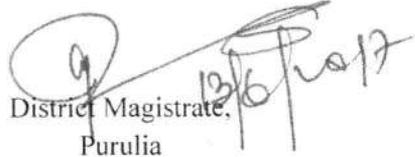
TO WHOMSOEVER IT MAY CONCERN

In compliance of the Ministry of Environment, Forest and Climate Change (MoEF & CC), Government of India's letter no. 11-9/1998-FC(pt) dated 3rd August 2009 wherein the MoEF & CC issued guidelines on forest land proposed to be diverted for non-forest purposes read with MoEF & CC's letter dated 5th February 2013 wherein MoEF & CC issued certain relaxation in respect of liner projects on submission of evidences for having initiated and completed the process of settlement of Rights under the Schedule Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 ('FRA', for short) on the forest land, it is certified that **234 Hectares** of forest land proposed to be diverted in favour of **West Bengal State Electricity Distribution Company Limited (Name of the User Agency) for implementation and installation of 1000 MW Turga Pumped Storage Project** in Purulia district falls within jurisdiction of Baghmundi, Bareria, Gosaidih, Kudna Mouza in Baghmundi Gram Panchayat and Ranga, Teliabhasa, Hatinada Mouza in Ajodhya Gram Panchayat under Baghmundi Block within Purulia Forest Division.

It is further certified that:

- a) The complete process for identification and settlement of rights under the FRA has been carried out for the entire **234 hectares** of forest land proposed for diversion. Copies of following letters enclosed,
 - vide no. 1071/BDO/BAG dated 27/03/2017 of BDO, Baghmundi
 - vide no. 182/BAGH/GP dated 23/03/2017 of Baghmundi Gram Panchayat
 - vide no. 22/AGP dated 24/03/2017 of Ajodhya Gram Panchayat
 - vide no. 1891/BDO/BAG dated 05/06/2017 of BDO, Baghmundi
 - vide no. 86/AGP dated 05/06/2017 of Ajodhya Gram Panchayat
- b) The proposal for diversion of forest land has been placed before each concerned Gram Sabha of forest-dwellers, who are eligible under the FRA.
- c) The diversion of forest land for facilities managed by the Government as required under section 3(2) of the FRA have been completed and the Gram Sabhas have given their consent.
- d) Neither any person has been given of patta under the Schedule Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006, nor any person is in possession of any portion of the forest land which is required for 1000 MW Turga Pumped Storage Project, Baghmundi, Purulia.

Encl: As Above


District Magistrate,
Purulia

GOVT. OF WEST BENGAL
Office of the Block Development Officer
Baghmundi Development Block
Baghmundi # Purulia

☎ : 03252-250207

☎ : 03252-250207

E-mail : bdo.baghmundi@gmail.com, baghmundi@nic.in

Memo No.: 1071 / BDO / BAG

Date: 27/03/2017

To
The Project Officer-cum-District Welfare Officer,
Backward Class Welfare Deptt.,
Purulia.

Subject : Gram Sabha resolution of Ajodhya and Baghmundi Gram Panchayat regarding No Objection Certificate for use of Forest Land with regard to 1000 MW Turga Pumped Storage Project.

Sir,

With regard to the above mentioned subject I am forwarding the gram sabha resolution along with no-objection certificate furnished by Ajodhya Gram Panchayat and Baghmundi Gram Panchayat under Baghmundi Development Block.

This is for your information and taking necessary action.

Thanking you,

Yours faithfully,

Encl.: As stated.

B. Das
27.03.17
Block Development Officer
Baghmundi Development Block

West Bengal State Electricity Distribution Co. Ltd.

(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Purulia, West Bengal

Mouza Wise - Plot Wise Details of Forest Land Required

Sl. No.	Mouza	Plot No.	Total Area of Forest Land Required (Ha)
1	Baghmundi		
	Sheet 1	2	0.135
		3	0.11
		4	0.066
		5	0.062
		6	21.748
		Sub-Total	22.121
		Sheet 2	22
	210		0.419
	218		0.226
	334		3.28
	357		0.094
	358		0.082
	Sub-Total		83.093
Sheet 3	381	21.992	
Sheet 4	1507	34.430	
2	Hatinada		
	Sheet 1	276	10.05
3	Gosaidih	2	1.698
4	Ranga	117	32.64
		544	1.042
		545	0.759
		571	1.868
	Sub-Total	36.309	
5	Teliabhasa		
	Sheet 2	659	2.766
		677	0.169
		679	0.094
		743	0.067
		Sub-Total	3.096

6	Barriya		
	Sheet 1	1	6.479
		5	0.366
		452	0.151
		Sub-Total	6.996
Sheet 4	5757	0.57	
7	Kudna		
	Sheet 3	1196	13.648
Total Area of Forest Land Reqd. (Ha)			234.00

WISE AREA (HA) OF LAND FOR COMPENSATORY AFFORESTION FOR 1000 MW TURGA PSP

DATED 31.01.2017

	Plot No.	Component	Area (Ha)	Part/Full	Remarks
1	5	Haghadinala Rock Quarry (RQA-3)	7.110	F	
	5	Haghadinala Clay Quarry (CQA-1)	5.000	F	
	6	Permanent Road	0.193	P	$A=(192.87*10)/10000=0.19287$ Ha
	6	Temporary Road	1.585	P	$(144.5643*10)/10000=0.1445$ 0.1445+1.440=1.5845 Ha
	4	Upper Reservoir	0.066	P	
	6	Upper Reservoir	7.860	P	(7.8270+0.0288)
	2	Upper Reservoir	0.135	P	
	3	Upper Reservoir	0.110	P	
	5	Upper Reservoir	0.062	P	
	22	Upper Reservoir	46.809	P	
2	357	Upper Reservoir	0.094	P	
	358	Upper Reservoir	0.082	P	
	22	Stockpile, Processing & Disposal Area (USP-1)	2.020	F	
	22	Stockpile, Processing & Disposal Area (USP-2)	7.270	F	
	22	Permanent Road	2.836	P	$(0.14+2.6625)=2.8025$ Ha. $L=(1171.7013+603.2722)$ m, $W=15$ m $L=(878.3634+496.2902+1300.5805+339.9521)$ m, $W=10$ m, $Area=3.0152+0.271=3.2862$
	22	Temporary Road	3.287	P	
	210	Temporary Road	0.419	P	$L=(188.0546+230.863)$ m, $W=10$ m
	218	Temporary Road	0.226	P	$L=225.1015$ m, $W=10$ m
	334	Temporary Road	0.240	P	$L=(176.34+63.3747)$ m, $W=10$ m
	22	Spillway (OPC-5)	1.760	F	
3	22	Construction facility (UCF-1)	1.970	F	
	22	Construction facility (UCF-2)	2.050	F	
	22	Construction facility (UCF-3)	1.600	F	
	22	Construction facility (UCF-4)	1.520	F	
	22	Rock Quarry Area (RQA-4)	1.040	F	
	334	Clay Quarry Area (CQA-3)	3.040	F	
	22	Upper Dam	6.830	F	
	381	Lower Reservoir Area	8.097	P	
	381	Penstock Assembly Yard (OPC-4)	1.360	F	
	381	Switch Yard (OPC-3)	1.100	P	
4	381	Construction facility (LCF-3)	1.630	F	
	381	Rock Quarry Area (RQA-2)	3.150	F	
	381	Permanent Road	4.348	P	$(0.27+3.6913+0.3529)$ Ha. $L=(2460.8668+235.2824+182.7768)$ m, $W=15$ m
	381	Temporary Road	2.307	P	$(0.291+0.467+1.5488)$ Ha. $L=(101.2554+348.4701+368.2687+730.8595)$ m
	1507	Permanent Road	2.778	P	$(0.57+1.8239)$ Ha. $(1215.954*15)/10000=1.8239$ Ha
	1507	Temporary Road	2.256	P	$(0.6582+1.471+0.1262)$ Ha. $(126.2768*10)/10000=0.1262$ Ha
	1507	Stockpile, Processing and Disposal Area (LSP-3, LSP-4)	8.160	F	6.10+2.06=8.16 Ha
	1507	Construction facility (LCF-2)	8.760	F	
	1507	Other Project Component (OPC-1, OPC-2)	3.910	F	2.36+1.55=3.91 Ha
	1507	Switch Yard (OPC-3)	0.410	P	
5	276	Hatinada Borrow Area (CQA-2)	10.050	F	
	2	Lower Reservoir	0.730	P	
6	2	Lower Concrete Dam	0.339	P	
	2	Stockpile, Processing & Disposal Area (LSP-2)	0.630	P	
7	117	Upper Reservoir	32.640	P	
	544	Upper Reservoir	1.042	P	
	545	Upper Reservoir	0.759	P	
	571	Upper Reservoir	1.868	P	
	659	Upper Reservoir	2.766	P	
8	677	Upper Reservoir	0.169	P	
	679	Upper Reservoir	0.094	P	
	743	Upper Reservoir	0.067	P	
	1	Permanent Road	0.690	P	
9	1	Construction facility (LCF-1)	0.860	F	
	1	Stockpile, Processing and Disposal Area (LSP-2)	0.986	P	
	5	Stockpile, Processing and Disposal Area (LSP-2)	0.229	P	
	452	Stockpile, Processing and Disposal Area (LSP-2)	0.096	P	
	1	Lower Concrete Dam	0.366	P	
	5	Lower Concrete Dam	0.114	P	
	452	Lower Concrete Dam	0.044	P	
	1	Lower Reservoir	3.577	P	
	5	Lower Reservoir	0.023	P	
	452	Lower Reservoir	0.011	P	
10	1196	Temporary road	0.388	P	
	1196	Stockpile, Processing and Disposal Area (LSP-1)	3.260	F	
	1196	Rock Quarry Area (RQA-1)	10.000	F	
11	5757	Temporary Road	0.570	P	
Total Area (Ha)			234.000		FULL - Marked in Red Part Plot- Marked in Black

OFFICE OF THE
BAGHMUNDI GRAM PANCHAYAT
BAGHUNDI – PURULIA

MEMO NO 182/BABH/BP

DATE 23/03/17

The Gram sabha verified the entire proposed land as mentioned in the following schedule and found that no person have been given patta under schedule Tribe & others Traditional Forest dwellers (Forest Rights) Act nor any person is in possession of any portion of that land . this is also to certify that this Gram Sabha has no objection if this portion of Forest land Used 100M.W Turga pumped storage Project purpose.

Schedule of land

Sl no	Mouza	Plot no	Jl. No	Area in hectars
1	Baghmundi-sheet 1	2,3,4,5,6,	105	22.121
2	Baghmundi-sheet -2	22,210,218,334,357,358,	105	83.093
3	Baghmundi sheet 3	381	105	21.992
4	Baghmundi sheet 4	1507	105	34.430
5	Gosaidih	2	94	1.698
6	Bareria sheet 1	1,5,452	103	6.996
7	Bareria sheet 4	5757	103	0.57
8	Kudna Sheet 3	1196	122	13.648


Pradhan
Baghmundi Gram Panchayat

Pradhan
Baghmundi Gram Panchayat

Meeting No. 14
 Date 20.03.17

উপস্থিত সভ্যগণের নাম
 NAME OF MEMBERS PRESENT

স্থান/Place G.P. Meeting
 সময়/Time ১১-৩০ p.m.

১	Shri K. K. K.	১৪১৪	M. L. Banerjee	১৪১১৫
২	Sabnam Parbin	১৪১১৬	Kanchan Banerjee	১৪১১৬
৩	Mukunda Kumar	১৪১১৭	Bhajan Kumar	১৪১১৭
৪	Rajni Nath Mahata	১৪১১৮		১৪১১৮
৫	Ashutosh Mahata	১৪১১৯		১৪১১৯
৬	Kanta Banerjee	১৪১২০		১৪১২০
৭	বাস্তবিক	১৪১২১		১৪১২১

ক্র/No.	রেজল্যুশন/Resolution Adopted
	১) ২০.০৩.১৭ তারিখে বাস্তবিক সভায় সভ্যগণের কার্যসূচীতে প্যারাগ্রাফ ১৫-এ উল্লিখিত বিষয় উপস্থাপিত হইলে সভ্যগণের দ্বারা তাৎক্ষণিকভাবে গৃহীত হইল। ২) ২০০৩ সালের ১৭-১৮ মার্চ তারিখে ৩-য় ইন্সটলমেন্ট ২৩০ মার্কিন ডলার প্রকল্পের অধীনে ১০০০ MW প্রকল্পের আওতাধীন স্থান নির্ধারণ করা হইবে এবং ১০০০ MW প্রকল্পের নাম।
	৩) প.ও.এ.স.ও (P.O.S.O) প্রকল্পের অধীনে নং ৩৪৬/১০০০ MW dt ০৫/০৩/১৭ তারিখের প্রকল্পের অধীনে ১০০০ MW প্রকল্পের নাম।
	৪) জাতীয় সচিব মহোদয়ের নির্দেশনায় ১) প্রকল্পের আওতাধীন স্থান নির্ধারণ করা হইবে এবং ১০০০ MW প্রকল্পের অধীনে স্থান নির্ধারণ করা হইবে।
	৫) মোকদ্দমার বাস্তবিক বাস্তবিক বাস্তবিক চার্জের অধীনে ১০০০ MW প্রকল্পের মোকদ্দমার অধীনে ১০০০ MW প্রকল্পের স্থান নির্ধারণ করা হইবে।
	৬) জাতীয় সচিব মহোদয়ের নির্দেশনায় ১) প্রকল্পের আওতাধীন স্থান নির্ধারণ করা হইবে এবং ১০০০ MW প্রকল্পের অধীনে স্থান নির্ধারণ করা হইবে।
	৭) জাতীয় সচিব মহোদয়ের নির্দেশনায় ১) প্রকল্পের আওতাধীন স্থান নির্ধারণ করা হইবে এবং ১০০০ MW প্রকল্পের অধীনে স্থান নির্ধারণ করা হইবে।
	৮) জাতীয় সচিব মহোদয়ের নির্দেশনায় ১) প্রকল্পের আওতাধীন স্থান নির্ধারণ করা হইবে এবং ১০০০ MW প্রকল্পের অধীনে স্থান নির্ধারণ করা হইবে।

Office of the
Ajodhya Gram Panchayat

AT+Po-ranga, P. S.-Baghmundi Dtst-Purulia

Memo No: 22/A/G/S

Date: 24.03.2017

To

The Block Dev, Officer

Baghmundi Dev, Block

Sub :NOC for diversion of forest land for 1000 M.W. Turga Pumped Storage Project in Baghmundi Block

Sir,

In pursuance of the Letter of District Project Officer vide memo no.-346/BCWP dated 06/03/2017 regarding the above mentioned subject Ajodhya Gram Panchayat have adopted a Resolution from the Gram Sabha verified the entire proposed land as mentioned in the following schedule and found that some person have been given patta under Schedule Tribes (Forest Rights Act).whose details is as follows:

Sl No	Name of Patta Recipient	Father	Plot No	Area
1	Kista Hansda	Lakkhan	659	45 decimal
2	Syamsing Hansda	Khiran	659	28 decimal
3	Lakkhan Murmu	Mangal	659	60 decimal
4	Bijoy Murmu	Sikhar	659	1 Acre

These Patta Recipient persons are agree to give NOC under the compensation ground .

This is also certify that this Gram Sabha has no objection except these patta recipient persons if this portion of forest land used 1000 M.W.Turga pumped Storage Project purpose.

Schedule of land

Sl. No.	Mouza	Jl No.	Plot No.	Area in Hectares
1	Hatinada(Sheet 1)	107	276	10.05
2	Ranga	106	117	32.64
			544	1.042
			545	0.759
			571	1.868
3	TeliabhasaSheet 2)	81	659	2.766
			677	0.169
			679	0.094
			743	0.067

This is for your kind information and taking necessary action.

Yours faithfully


PRADIP KUMAR
AJODHYA GRAM PANCHAYAT
AT+P.O.-RANGA

ଆକାଶ ମାତା

ତାରିଖ : ୨୭/୦୩/୨୦୧୭

ସମୟ : ସୁଦୂର ୧୨ ଟା

ବିଷୟ : ପୁସ୍ତକାଳୟ ବିକାଶ

ସ୍ଥାନ : ବାଲ୍ୟା ଶୁକ୍ରବର ଗୟାଦାନ

ପ୍ରକଳ୍ପର ଉଦ୍ଦେଶ୍ୟ ଉପସ୍ଥାପନ ଉପକ୍ରମ

ଉପସ୍ଥାପନ କରାଯାଇଥିବା ସ୍ଥାନଗୁଡ଼ିକ :

୧) Jswar Mandy Pradhon #idhy (୧୫)

୨) Bijay Mura

୩) ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ

୪) LTI of Lakham Mura

୫) ବିକ୍ରମ ଶ୍ରୀମତୀ

୬) ନିତ୍ୟ ଶ୍ରୀମତୀ

୭) ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ

୮) ଶ୍ରୀମତୀ ଶ୍ରୀମତୀ

LTI ମୁଖ୍ୟ ଶ୍ରୀମତୀ

୯)

୧୦) Balaram Sing Mura

୧୧) Mathur Tudu

୧୨) Basanti Harsda

୧୩) ବିକ୍ରମ ଶ୍ରୀମତୀ

୧୪) LTI ବିକ୍ରମ ଶ୍ରୀମତୀ

୧୫) ବିକ୍ରମ ଶ୍ରୀମତୀ

୧୬) ବିକ୍ରମ ୧

୧୭) ବିକ୍ରମ ୧

୧୮)

21 LTI 4/2/6 30/1

22) LTI 2/1/1/1 30/1

23) Khiren Mewar

24) Ganyoj Soren

GOVT. OF WEST BENGAL
Office of the Block Development Officer
Baghmundi Development Block
Baghmundi # Purulia

☎ : 03252-250207

E-mail : bdc.baghmundi@gmail.com - baghmundi.nic.in

☎ : 03252-250207

Memo No: 1851 / BDC / BAC

Date: 05.06.2017

To
The District Magistrate,
Purulia.

Subject: No Objection Certificate for diversion of forest land for 1000MW Turgo Pump Storage Project at Plot No. 659 of Lelhabasa Mouza (H. No.81) under Ajodhya G.P. of Baghmundi Development Block.

Ref: Memo No. 887/AGP Dated 05.06.2017 of the office of Ajodhya Gram Panchayat

Sir,

With reference to the above mention subject the undersigned is forwarding herewith No Objection certificate furnished by Pradhan, Ajodhya Gram Panchayat on the basis of field physical verification carried out on early morning of 05.06.2017 on Plot No. 659 of Lelhabasa Mouza (H. No) which will be required for 1000 MW Turgo Pump Storage Project.

This is for your information and taking necessary action.

Yours faithfully,

Encl: N/A furnished by Pradhan, Ajodhya G.P.
regarding diversion of forest land for 1000MW
Turgo Pump Storage Project in Baghmundi Block.

Block Development Officer
Baghmundi Development Block

Memo No: 1851 / 4 / BDC / BAC

Date: 05.06.2017

copy forwarded for kind information to

1. The Additional District Magistrate (Law & Public)
2. The Dykes Officers and District Welfare Officer, Purulia
3. The Sub-Divisional Officer, Thuda
4. The Chief Engineer, BSI (D) W&S, ECL, K.G. Thuda

Block Development Officer
Baghmundi Development Block

Office of the
Ayodhya Gram Panchayat
AT+P.O.: Ranga, P.S. : Baghmundi, Dist.: Purulia

H/c Pl.
take action
after getting
letter from
BDO, Baghmundi

Date: 05th June 2017

Memo: 86/AGP

To
The Block Development Officer,
Block Development Office
Baghmundi, Purulia

Sub: NOC for diversion of Forest Land for 1000 MW Turga Pumped Storage
Project in Baghmundi Block – Reg: Forest Rights Acts

Ref: Letter vide Memo No.: 22/AGP dated 24.03.2017

Sir,

A joint site visit and physical verification was carried out on 05th June 2017 by the undersigned along with the officials from Block Development Office, Baghmundi Block and WBSEDCL of the plot no. 659 of Teliyabhasa Mouza, JL No. 81 which will be required for 1000 MW Turga Pumped Storage Project.

It is found that, no person has been given patta under Schedule Tribe & Others Traditional Forest Dwellers (Forest Rights) Act, nor any person is in possession of any portion of the proposed 2.766 Ha of the Forest Land which is required for the above-mentioned project in plot no. 659 of Teliyabhasa Mouza, JL-No. 81, Block- Baghmundi, Purulia.

The undersigned has no objection for the plot no. 659 of Teliyabhasa Mouza, JL-No. 81, Block- Baghmundi, Purulia, if this portion of Forest Land is used for 1000 MW Turga Pumped Storage Project, Baghmundi, Purulia.

This is for your kind information and necessary action please.

This is also to certify that the undersigned has no objection to any other plots as mentioned in letter vide memo no. 22/AGP dt. 24.03.2017

Yours faithfully,


PRADHAN
AYODHYA GRAM PANCHAYAT
AT+P.O.-RANGA
BAGHMUNDI, PURULIA


PRADHAN
AYODHYA GRAM PANCHAYAT
AT+P.O.-RANGA
BAGHMUNDI, PURULIA

Attachment 19(A)



পাশ্পড় স্টোরেজ প্রজেক্ট ডিপার্টমেন্ট
West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)
Pumped Storage Project Department

FAX : 033 2334-5855
Telephones : 033 2334-5821/2319-7628
E-Mail : wbsedclpspd@gmail.com

Vidyut Bhavan (5th Floor)
Block-DJ, Sector-II
Bidhannagar, Kolkata - 700 091

Memo No. PSPD/Turga PSP/2F/ 372

Dated : 28 December 2017

The Addl. Principal Chief Conservator of Forests,
CAMPA & Nodal Officer, FCA, 1980,
Directorate of Forests, Govt. of West Bengal,
Aranya Bhavan, Block-LA-10A, Sector-III
Salt Lake, Kolkata-700098

Sub: 1000 MW Turga Pumped Storage Project in Purulia District of West Bengal
- Submission of FRA Document for 5.356 Ha of Forest Land from DM, Purulia

Ref: i. MoEF&CC Proposal No.: FP/WB/HYD/8214/2014
ii. Site inspection Report from MoEF&CC, Eastern Regional Office communicated vide memo no.: 5-WBA097/2017-BHU dated 18.12.2017

Sir,

Please find enclosed Forest Rights Act (FRA), 2006 document issued by the District Magistrate, Purulia on 26.12.2017 for 5.356 Ha of Forest Land at Ayodhya Hills proposed to be diverted for Underground Construction work in line with Site Inspection Report of Conservator of Forests (C), MoEF&CC, Eastern Region, Govt. of India (copy enclosed).

Thanking you,

Encl: As stated above

Yours faithfully,

Sd/-
Chief Engineer
PSPD, WBSIEDCL

Memo No. PSPD/Turga PSP/ 2F/

Dated : 28 December 2017

Copy forwarded for kind information and necessary action:-

1. The Addl. PCCF (C), MoEF&CC, Eastern Regional Office, Bhubaneswar
2. The Divisional Forest Officer, Purulia Division, Directorate of Forests, Govt. of West Bengal

Sd/-
Chief Engineer
PSPD, WBSIEDCL

Memo No. PSPD/Turga PSP/ 2F/

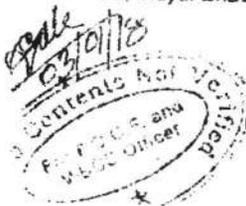
Dated : 28 December 2017

Copy forwarded for kind information and necessary action:-

1. The Director (Generation), WBSIEDCL, Vidyut Bhavan, Kolkata
2. The Addl. C.E., PSPD, WBSIEDCL, Vidyut Bhavan, Kolkata

Sd/- 28/12/2017
Chief Engineer
PSPD, WBSIEDCL

Website: www.wbsedcl.in



CIN:U40109WB2007SGC113473

Annexure-I

FORM-I

Government of West Bengal
Office of the District Magistrate, Purulia
Backward Classes Welfare, Purulia.
Beside SP Office

Memo No.-2024/BCWP

Dated - 27.12.2017

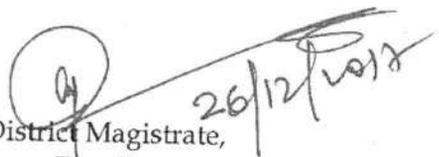
TO WHOM SO EVER IT MAY CONCERN

In compliance of the Ministry of Environment and Forest (MoEF), Government of India's letter no. 11-9/98-FC 9pt.) dated. 3rd August 2009 wherein the MoEF issued guidelines on proposed to be diverted for non-forest purposes read with MoEF's letter dated. 5th February 2013 wherein MoEF issued certain relaxation in respect of liner projects submission of evidence for having initiated and completed the process of settlement of rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 ('FRA', for short) on the forest land, it is certified that 5.356 Hectares of forest land proposed to be diverted in favour of West Bengal State Electricity Distribution Company Limited for 1000 M.W. Pumped Storage Project in Purulia district within jurisdiction of Baghmundi Mouza (J.L. No. 105, Plot No. 6,22,381 & 1507) In Baghmundi Block under Purulia Forest Division.

It is further certified that:

- a) The Complete process for identification and settlement of rights under the FRA has been carried out for the entire 5.356 Hectares of forest land proposed for diversion. A copy of letter no. BDO/BAGHMUNDI vide no. 4283/BDO/BAG. Dated. 18/12/2017 & copy of letter no. 747/BAGH/G.P. dated. 18/12/2017 in this regard.
- b) The diversion of forest land for facilities managed by the Government as required under section 3 (2) of the FRA have been completed and the Gram Sabhas have given their consent.
- c) It is also stated that no person has been given patta under Schedule Tribes & Other Forest Dwellers (Forest Right Act,) and no person is in position of the forest land which is required for 1000 M.W. Turga Pumped Storage Project, Baghmundi, Purulia.

Encl:- As stated above.


District Magistrate,
Purulia

GOVT. OF WEST BENGAL
Office of the Block Development Officer
Baghmundi Development Block
Baghmundi # Purulia

☎ : 03252-250207

☎ : 03252-250207

E-mail : bdo.baghmundi@gmail.com, baghmundi@nie.in

Memo No.: 4283 / BDO / BAG

Date: 18.12.2017

To
The District Magistrate,
Purulia.

Subject: Regarding No Objection certificate given by Baghmundi Gram Panchayat in respect of FRA for Additional 5.356 HA of Forest Land under Baghmundi Mouza.

Ref.: Memo No. PSPD/TurgaPSP/2F/341 Dated 01.12.2017 of Chief Engineer, PSPD, WBSIEDCL.

Sir,

With reference to the above mentioned subject the undersigned is forwarding the Gram Sabha resolution of Baghmundi Gram Panchayat expressing No Objection regarding FRA for additional 5.356 HA of Forest land under Baghmundi Mouza.

This is for your information and taking necessary action.

Thanking you,

Yours faithfully,

Encl.: Resolution of Baghmundi GP.


18.12.17
Block Development Officer
Baghmundi Development Block

Memo No.: 4283 / 3/ BDO / BAG

Date: 18.12.2017

Copy forwarded for information to:

1. The Project Officer-cum-District Welfare Officer, BCW Deptt., Purulia.
2. The Sub-Divisional Officer, Jhalda.
3. The Chief Engineer, PSPD, WBSIEDCL.


18.12.17
Block Development Officer
Baghmundi Development Block

2797
18/12/17

OFFICE OF THE
BAGHMUNDI GRAM PANCHAYAT

BAGHMUNDI - PURULIA

Memo no 747/BAGH/G.P.

Date 18.12.17

The Gram sabha verified the entire proposed land as mentioned in the following schedule and found that no person have been given patta under schedule tribe & others traditional forest dwellers (forest Right) act nor any person is in possession of any portion of that land . this is also certify that this Gram sobha has no objection if this portion of forest land used 100 M.W .Turga pumped storage Project purpose.

Schedule of Land

Sl no	Mouza	JL No	Mouza sheet No	Plot no	Total Area of Forest Land required Additionally (ha)
1	Baghmundi	105	Sheet -1	6	2.388
			Sheet -2	22	1.415
			Sheet -3	381	0.348
			Sheet -4	1507	1.204
Total Area of Forest land Required Additional (ha)					5.358


Pradhan
Baghmundi Gram Panchayat
Pradhan
Baghmundi Gram Panchayat

মিটিং রেজল্যুশন বই MEETING RESOLUTION BOOK

নং/No.

মিটিং নং/Meeting No.	
তারিখ/Date	

উপস্থিত সভ্যগণের নাম
NAME OF MEMBERS PRESENT

স্থান/Place	
সময়/Time	

১।	৮।৪	১৫।১৫
২।	৯।৭	১৬।১৬
৩।	১০।১০	১৭।১৭
৪।	১১।১১	১৮।১৮
৫।	১২।১২	১৯।১৯
৬।	১৩।১৩	২০।২০
৭।	১৪।১৪	২১।২১

নং/No.	রেজল্যুশন/Resolution Adopted	স্থান/Place
৭।	বাড়িকিন- II	স্বামী কালিন্দী
৮।	গোবিন্দপুর- I	বাসন্তী শাকি
৯।	গোবিন্দপুর- II	কামনা বরন কুমার
১০।	হাটমত- I	শ্রী অক্ষয় কুমার
১১।	হাটমত- II	দীপ্তি কুমারী
১২।	কুদুল	শ্রীমতী হুতা
১৩।	কুদুল	হুতা বরন শামা
১৪।	কুদুল	শ্রীমতী কুমার
১৫।	কুদুল	শ্রীমতী হুতা

সভায় উপস্থিত সকল সদস্যগণের সম্মতিতে
Joint Account Opening এর ক্ষেত্রে প্রস্তাব করা হইল।

১৬। অত্র প্রস্তাবিত বিষয় বিবিসি নিম্নে-
সভায় কুমার নামে ২০০০ টা - বাসভিত্তিক মোটর
২০০০ J.L. No. - ১০৫, Plot No. - ৬, ২২, ৩৪১, ১৫০৭ স্থানীয়
সরকারি প্রাইভেট হুতা নামে (১০০০ MW)
PUMP এর কাজ শুরু হইল। (সহ সভাপতি শ্রী হুতা
কোন কোন কাজে নাই) এবং কুমারের কাজ করার
জন্য কোন প্রাইভেট/সরকারি অফিসে অফিস প্রদান
নাই। সভায় উপস্থিত প্রাইভেট/সরকারি অফিস
কোন কোন কাজে নাই এবং কুমারের হুতা নামে
প্রাইভেট (১০০০ MW) কাজ শুরু হইল এবং কোন অফিস
স্বাক্ষর করা হইল। সভায় সভাপতি সভাপতি/স
করেন।

১৭। সভায় সভাপতি কোনও প্রস্তাবনা
না হওয়ায় অত্র সভায় সভাপতি সভাপতি/স
করেন।

Pradhan
Bachundi Gram Panchayat

Pradhan
Bachundi Gram Panchayat

**CHAPTER-3
BIODIVERSITY CONSERVATION AND
MANAGEMENT PLAN**

CHAPTER-3**BIODIVERSITY CONSERVATION AND MANAGEMENT PLAN****3.1 INTRODUCTION**

The proposed Turga Pumped Storage Project will not lead to acquisition of National Park, Sanctuary, Biosphere Reserve, or any other protected area. A detailed floral and faunal survey was carried out in the project area to assess the presence of various floral and faunal species. The rare and endangered species likely to be affected by the project were also assessed.

Conservation is the sustainable use of natural resources, so that it is preserved for future generation as well. Natural conservation involves proper management of natural wealth, places that sustain these resources besides the human pressure that affect the resources. The present chapter outlines the Bio-diversity Conservation Plan including plan for conservation of rare and endangered species as well.

The Forest Department of West Bengal is responsible for conservation and Management of forests in the state. The objective of the compensatory afforestation is to make up for the loss of forest land proposed to be diverted for construction of the proposed Turga Pumped Storage Project. The other objectives are to combat soil erosion, afforestation and last but not least to maintain and improve the ecological and environmental balance.

3.2 AFFORESTATION

The Indian Forest Conservation Act (1980) stipulates:

- If non-forest land is not available, compensatory plantation is to be established on degraded forest lands, which must be twice the forest area affected or lost.
- If non- forest land is available, compensatory forest are to be raised over an area equivalent to the forest area affected or lost.

The total land required for the project is 292 ha, of which 234 ha forest land. About 234 ha of Non-forest land would be acquired for compensatory afforestation purpose. The unit cost of afforestation on forest land is Rs. 96,200/ha. The cost for afforestation of 234 ha is Rs. 225.12 lakh. In addition to above the project proponent will pay for the NPV, which shall be estimated by the Forest Department. The indigenous species shall be used for afforestation, which shall be selected in consultation with the Forest Department. The species recommended for greenbelt are given in Table-3.1.

with success. The nest boxes shall be located in vicinity to reservoir and other water bodies in the study Area.

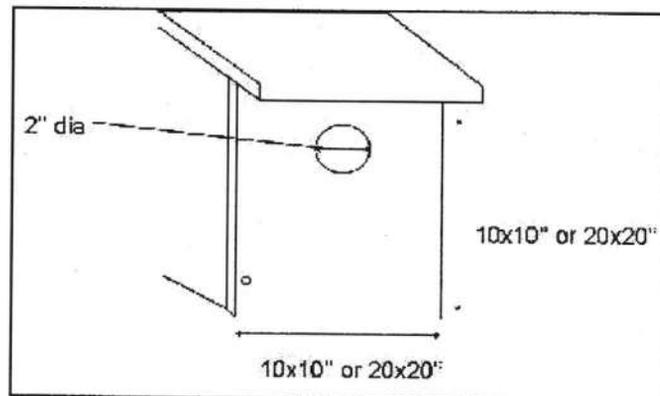


Figure-3.1: Nest Box

It is proposed that one qualified person be hired for a period of five years.

Other Measures

With the change in nature of landscape, its aquatic and terrestrial vegetation will change the habits of the aquatic birds. The aquatic culture i.e. both floral and faunal environments will change to the large extent e.g. in the initial years of the reservoir water storage. The other measures recommended for improvement of habitats are:

- Fodder and wild fruit plantation for wild animals and for roosting, breeding and hiding cover for migratory birds etc.
- Annual bird count of migratory birds by involving locals and bird experts.
- Removal of weeds and rehabilitation with local fruit bearing species in gaps.
- Anti-grazing drive in draw down area to protect the bird breeding areas in proximity to reservoir during breeding season.
- Construction of watch towers

An amount of Rs. 62.76 lakh shall be earmarked for habitat improvement of avi-fauna in the study area. The details are given in Table-3.1.

Table-3.1: Cost of habitat improvement for avi-fauna in the study area

S. No.	Particulars	Amount (Rs. lakh)
A	Non-recurring Cost	
1	Cost of nests of different sizes (10"x10" to 20"x20"; average cost Rs. 2000 per wooden box) and installation in the area along the green belt (200 Nos)	4.0

S. No.	Particulars	Amount (Rs. lakh)
2	Repair and maintenance of the nests	0.8
3.	Fodder and wild fruit plantation for wild animals and for roosting, breeding and hiding cover for migratory birds etc.	10.0
4.	Annual bird count of migratory birds by involving locals and bird experts.	8.0
5.	Removal of weeds and rehabilitation with local fruit bearing species in gaps.	8.0
6.	Anti-grazing drive in draw down area to protect the bird breeding areas in breeding season	5.00
	Sub-Total (A)	35.8
B	Recurring Cost (for 5 years)	
1	Salary for one qualified person @ Rs. 30,000 per month for implementation and data collection including 10% escalation	21.96
2	Contingencies (including avifaunal biodiversity awareness programme for the local inhabitants)	5.0
	Sub-Total (B)	26.96
	Total (A+B)	62.76

3.3.2 Wildlife Protection Measures

Anti-poaching Measures

There are no ecologically sensitive areas around the project sites. However, forests at the site and in the study area serve as a habitat for wildlife. Due to construction activities and increased human interferences, as a result of immigration of large labour population and their family members, some adverse impacts may take place on wildlife during construction phase; the increased human interferences can have adverse impact on wildlife in and around the project area.

It is recommended that check posts are installed along the following sites to prevent anti-poaching activities. In view of this it is recommended that 4 check posts be developed. The location of these check posts could be:

- Near Upper dam site
- Near Lower dam site
- Near Labour camp-1
- Near Labour camp-2

Each check posts will have 3 guards to ensure that poaching does not take place in the area. One range officers will supervise the guards of various check posts. The check post shall have appropriate transportation and communication facilities. Other infrastructure, like areas and communities, etc. too shall be provided.

The measures proposed for wildlife protection are outlined in the following paragraphs.

Purchase of anti-poaching kits: To capture and translocate wild animals out of human habitations or agricultural lands, various trapping equipments pertaining to anti-poaching activities are needed. For this an amount of Rs. 20 lakh has been earmarked. The anti-poaching kits will include equipments for self defense of the staff as well.

Infrastructure Development: This includes anti-poaching huts, rock shelters development and residential quarters for forest guards. For effective monitoring, one watch tower is also proposed to be established at an identified place having high pressure of biotic interference. The basic amenities for the field staff shall be provided to enable them to do effective patrolling in the areas. For watch tower and accommodation an amount of Rs. 30 lakh has been earmarked.

Purchase of Survey equipment and Vehicles: In order to improve network and vigilance it is required to procure communication equipment like walkie talkie, IT infrastructure to document and develop a database, altimeters, G.P.S., spotoscope, binoculars, video as well as digital still cameras are essential. Purchase of field vehicle will help in increased vigilance. For better communication and purchase of survey equipment an amount of Rs. 20 lakh has been earmarked.

Construction of Check posts: To improve vigilance for anti-poaching, better protection, enforcement for control grazing practices, control-grazing-cum-anti poaching check posts shall be constructed. An amount of Rs.25 lakh has been earmarked for this purpose.

Wildlife Protection Force

A team of forest personnel and guards shall be deployed for works under forest & wildlife protection plan and an amount of Rs. 90.62 lakh has been earmarked for this purpose. The details are given as below:

Salary

▪ Guards (12 nos.) @ Rs.8000 per month	Rs. 11,52,000
▪ One range officer @ Rs.20000 per month	Rs. 2,40,000
▪ Total cost for one year	Rs. 13,92,000
Cost for 63 months (Assuming 10% increase per year)	Rs. 90.62 Lakhs

An amount of Rs. 185.62 lakh has been earmarked for implementation of various measures as a part of Wildlife Protection Plan. The details are given in Table-3.2.

Table-3.2: Measures for implementation of Wildlife Protection Plan

S. No.	Particulars	Amount (Rs. lakh)
	Non-recurring	
1	Anti Poaching Kits	20.00
2	Infrastructure	30.00
3	Survey equipment & vehicle	20.00
4	Check posts	25.00
	Sub-Total (A)	95.00
	Recurring	
5	Salary for wildlife protection force	90.62
	Sub-Total (B)	90.62
	Total (A+B)	185.62

3.3.3 Training & Publicity Programmes

Under this programme, the following activities are proposed:

- Training shall be imparted to the school teachers in the project area for introduction of environmental education among the school children and exchange of knowledge on environment and ecology in village schools.
- Publishing of research documents, pamphlets, brochures, hoardings
- Advertisement of hazardous effect of fire through press, sign boards and public meetings will form the important activities under this component.

An amount of Rs. 10 lakh has been earmarked for this purpose.

3.4 BUDGET

A total provision of Rs. 483.50 lakh has been earmarked for biodiversity conservation. The details are given in Table-3.3.

Table-3.3: Estimated cost of Biodiversity Conservation and Management Plan implementation

S.No.	Particulars	Cost (Rs. lakh)
(A)	Compensatory Afforestation Plan	225.12
	Sub-total (A)	225.12
(B)	Biodiversity Conservation & Management Plan	
1	Habitat improvement for avi-fauna	62.76
2	Wildlife protection	185.62
3	Training and Publicity Programmes	10.00
	Sub-total (B)	258.38
	Total (A+B)	483.50



West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Dist.: Purulia, West Bengal

FC Proposal No.: FP/WB/HYD/8214/2014

MoEF&CC File No.: 8-51/2017-FC

UNDERTAKING

(ref: Sl. no. xxi of compliance report)

This is to certify that, West Bengal State Electricity Distribution Company Limited (WBSEDCL), A Government of West Bengal Enterprise, undertakes to create and maintain alternate habitat / home for the avifauna adjoining to the forest area being diverted for the project, in consultation with the State Government, whose nesting trees are to be cleared in this project, in line with the approved Environmental Clearance of Ministry of Environment, Forests and Climate Change (MoEF&CC), Govt. of India, for the implementation of 1000 MW Turga Pumped Storage Project, District: Purulia, West Bengal.


01.04.2021

(Surajit Chakraborty)
Director (Generation)
WBSEDCL



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পাম্পড স্টোরেজ প্রজেক্ট ডিপার্টমেন্ট
West Bengal State Electricity Distribution Company Limited
 (A Government of West Bengal Enterprise)
 Pumped Storage Project Department

FAX : 033 2334-5855
 Telephones : 033 2334-5821/2319-7628
 E-Mail : wbsedclpspd@gmail.com
 Memo No. PSPD/Turga PSP/2F/ 502

Vidyut Bhavan (5th Floor)
 Block-DJ, Sector-II
 Bidhannagar, Kolkata – 700 091
 Dated : 27 February 2019

The Divisional Forest Officer,
 Purulia Forest Division,
 Govt. of West Bengal
 Purulia

Sub: Proposal for Diversion of 234 Ha of Forest Land for construction of 1000 MW Turga Pumped Storage Project of WBSEDCL in Ajodhya Hills under Purulia Forest Division (Proposal No.: FP/WB/HYD/8214/2014)

- Deposition of fund for Tree felling, Boundary pillars installation work, etc

Ref:

- In-Principle Approval accorded vide Gol, MoEF&CC F. No. 8-51/2017-FC dated 12.04.2018
- Your requisition vide memo no.: 44/ 8-5/ 2(a) dated 07.01.2019
- Order to DFO, Purulia vide memo no.: PSPD/ Turga PSP/ 2F/ 448 dated 19.01.2019 and P.O. no.: 5300257462 dated 09.01.2019
- Your letter vide memo no.: 697 / 8-5 / 2(a) dated 20.02.2019
- Letter from APCCF/ CAMPA & Nodal Officer, FCA 1980, Govt. of WB vide memo no.: 11253 / L</ 2M-1003/ 2013 dated 20.02.2019

Dear Sir,

With reference to above please be informed that compliance to clause no. (xxii) and (xxx) of the Stage I Forest Clearance (In-Principle approval), WBSEDCL has deposited the amount of Rs. 4,03,26,612.00 (Rupees Four Crore Three Lakh Twenty Six Thousand Six Hundred Twelve) only for the work of 'Tree Felling, Boundary pillars installation work, etc for Diversion of 234 Ha of Forest Land for Implementation of 1000 MW Turga Pumped Storage Project in Ajodhya Hills, Purulia District' against your requisition under ref. (ii) above.

The details of payment are furnished below:

Mode of Payment:	Transfer of fund through RTGS / NEFT
Amount (Rs.):	Rs. 4,03,26,612.00 (Rupees Four Crore Three Lakh Twenty Six Thousand Six Hundred Twelve)
UTR No.:	SBINR 52019022600108369
Beneficiary Name:	West Bengal State Forest Development Agency

A copy of the receipted challan after payment of the fund from the State Bank of India, Bikash Bhawan GOC to Union Bank of India, Salt Lake Branch is hereby enclosed as proof of depositing the money to WBSFDA account.

This is for your information and kind confirmation of the receipt of the fund at your end.

Enclo: As stated

Yours faithfully,

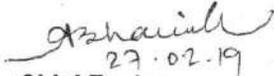
Sd/-
Chief Engineer
PSPD, WBSEDCL

Memo No. PSPD/Turga PSP/ 2F/ 502

Dated: 27 February 2019

Copy forwarded for kind information and necessary action:-

The Addl PCCF, CAMPA & Nodal Officer, FCA-1980, Directorate of Forests, Govt. of West Bengal


27.02.19
Chief Engineer
PSPD, WBSedCL



West Bengal State Electricity Distribution Company Limited

(A Government of West Bengal Enterprise)

Pumped Storage Project Department

Vidyut Bhavan (5th Floor, Block-C), Bidhannagar, Block DJ, Sector-II, Kolkata-700091

Phone: 033-2334 5821/5854/5859, Fax : 033-2321 2584

Website : www.wbsecl.in, e-mail : wbseclpspd@gmail.com, amfapspd@gmail.com

CIN : U40109WB2007SGC113473

Ref No- P/SPD/Acctt./Bank/Letters/16/496

stc

Dated - 25/02/19.

To
The Branch Manager
SBI Bikash Bhawan, GOC
Salt Lake, Sector-II Branch
Kolkata - 91.

Sub- Transfer of fund through RTGS/NEFT
Ref:- A/C No-34057518912 of W.B.S.E.D.C.L.

Dear Sir,

You are requested to transfer fund as per details given below:-
TRANSFERER CHEQUE DETAILS



Chq. No.	182835
Ch.Date	25/02/2019
Amount in figure(Rs)	4,03,26,612/-
Amount in Words(Rs)	Four Crore Three Lakh Twenty Six Thousand Six Hundred Twelve Only.

BENEFICIARY A/C DETAILS

Beneficiary Name	Bank Name	Branch Name	A/C No	IFS Code	Amount to be transferred (Rs.)
WEST BENGAL STATE FOREST DEVELOPMENT AGENCY	UNION BANK OF INDIA	SALT LAKE	460901010034297	UBIN0546097	4,03,26,612/-

The above beneficiary detail has been emailed to sbi.07816@sbi.co.in for your reference.

This may please be treated most URGENT.

Encl:- As above.

Thanking you.

Yours faithfully

Eepsita De

(Eepsita De)

Assistant Manager(F&A)

PSPD/WBSEDCL

9830362245

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**Government of West Bengal
Directorate of Forests,
Office of the Divisional Forest Officer,
Purulia Division.**

**Phone No. : 03252 - 222329 & FAX No. : 03252 - 228323
Email: dfopfd@gmail.com & dfopur-wb@nic.in**

No. /8-5/2(a)

Dated, Purulia, 07/01/2019.

From : The Divisional Forest Officer,
Purulia Division.

To : The Chief Engineer,
PSPD, WBSEDCL,
Turga Pumped Storage Project.

PSPD / WBSEDCL	
Receipt No.	524
Date	7.1.19
Contents Not Verified	

Sub. : Requisition of revised fund with regard to Forest Land Diversion
case of 234 ha of 1000 MW Turga Pumped Storage Project.

Ref. : 1) 68/MISC/CAMPA/16 dt. 13/10/2016.
2) F.No. 8-51/2017-FC dt. 12th April, 2018.

.....

With reference to the subject mentioned above, the undersigned is sending herewith the requisition of revised fund Rs. 4,032,6,612.00 (Rupees Four crore thirty two lakh six thousand six hundred twelve) only due to variations in GST rates the estimate amount is enhanced for tree felling, boundary pillars installation works etc of 1000 MW Turga Pumped Storage Project. As per estimate attached in the separate sheet.

You are requested to deposit the said fund in Head of Service 23-8443-00-109-Forest Deposits-002-Deposit at Treasury for deposit works-07-deposit under Purulia Treasury and submit the receipt to the undersigned for taking necessary action.

Encl: As stated.

*Divisional Forest Officer,
Purulia Division.*

No. 44 / 8-5/2(a)
Copy forwarded for information to:

Dated, Purulia, 07/1/2019.

1. The Addl. Principal Chief Conservator of Forests, CAMPA & Nodal Officer FC Act, 1980, WB.
2. The Chief Conservator of Forests, South-West Circle, West Bengal.

Sd/-R.P. Badana, I.F.S.

*Divisional Forest Officer,
Purulia Division.*

AF(c)
PL do lbr
mudjal.
07.01.19

TURGA PUMPED STORAGE PROJECT
GST IN: 19CALD05346F1DY
GOVERNMENT OF INDIA

ADDRESS	:	DIVISIONAL FOREST OFFICE, PURULIA DIVISION, RANCHI ROAD NEAR BUS STAND, PURULIA, PIN-723101.
INVOICE NO.	:	2536/8-5/2(a) dated 15.11.2018
Name of work	:	Tree felling, Boundary pillars installation works etc of 1000 MW Turga Pumped Storage Project of WBSEDCL in Ajodhya Hill, in Purulia District, West Bengal.
Date of Agreement	:	I. Memo No. 2536/8-5/2(a) dated 15.11.2018 II. F.No. 8-51/2017-FC dt. 12.04.2018.
Value of work	:	Rs. 4,03,26,612/- including GST
Due from Receiver	:	The Chief Engineer, Pumped Storage Project Department(PSPD), West Bengal State Electricity Distribution Company Ltd.
Address of the Receiver	:	Vidyut Bhavan (5th Floor, Block-C), Block-DJ, Sector-II, Bidhannagar, Kolkata-700091.
GSTIN of Receiver	:	19CALD05346F1DY
Place of supply	:	19-West Bengal
HSN code/Accounting code of service	:	9954, 9986 & 8501
Invoice reference:	:	Memo No. 2536/8-5/2(a) dated 15.11.2018

*Divisional Forest Officer,
Purulia Division.*

ESTIMATE UNDER TURGA PUMPED STORAGE PROJECT UNDER DIVISIONAL FOREST OFFICE, PURULIA DIVISION, PURULIA

Sl. No.	Description of Item	SAC/HSN Code	Sub Total	12% GST	Total	Cess 1%	Contingency 3%	Grand Total
1	Repairing of approach road for Timber Extraction	9954	3,662,250.00	439,470.00	4,101,720.00	41,017.20	123,051.60	4,265,788.80
2	Making of road for Timber depot	9954	6,022,000.00	722,640.00	6,744,640.00	67,446.40	202,339.20	7,014,425.60
3	Land developmnet scheme	9954	301,216.00	36,145.92	337,361.92	3,373.62	10,120.86	350,856.40
4	Drainage system around depot	9954	542,668.19	65,120.18	607,788.37	6,077.88	18,233.65	632,099.91
5	Lighting System & Electrical works repaire	9954	110,745.50	13,289.46	124,034.96	1,240.35	3,721.05	128,996.36
6	Water Tank Maintenance	9954	1,085,280.50	130,233.66	1,215,514.16	12,155.14	36,465.42	1,264,134.73
7	Construction of Watcher hut	9954	3,137,816.40	376,537.97	3,514,354.37	35,143.54	105,430.63	3,654,928.54
8	Depot Fencing Maintenance	9954	540,018.00	64,802.16	604,820.16	6,048.20	18,144.60	629,012.97
9	Timber Harvesting (Felling, Logging, Stacking & Carriage in the field	9986	1,328,659.00	0.00	1,328,659.00	0.00	39,859.77	1,368,518.77
10	Temporary Extraction path	9954	287,315.40	34,477.85	321,793.25	3,217.93	9,653.80	334,664.98
11	Boundary demarcation pillar	9954	7,265,700.00	871,884.00	8,137,584.00	81,375.84	244,127.52	8,463,087.36
12	Wild life area fencing	9954	10,282,200.00	1,233,864.00	11,516,064.00	115,160.64	345,481.92	11,976,706.56
	Total		34,565,868.99	3,988,465.20	38,554,334.19	372,256.75	1,156,630.03	40,083,220.97
Sl. No.	Description of Item	SAC/HSN Code	Sub Total	18% GST	Total	Cess 1%	Contingency 3%	
13	Timber Harvesting Equipment	8501	198,330.00	35,699.40	234,029.40	2,340.29	7,020.88	243,390.58
	Total		34,764,198.99	4,024,164.60	* 38,788,363.59	374,597.05	1,163,650.91	40,326,611.54

N.B.: Due to variations in GST rates the estimate amount is enhanced.

*Divisional Forest Officer,
Purulia Division.*



West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Dist.: Purulia, West Bengal

FC Proposal No.: FP/WB/HYD/8214/2014

MoEF&CC File No.: 8-51/2017-FC

UNDERTAKING

(ref: Sl. no. xxiv of compliance report)

This is to certify that, West Bengal State Electricity Distribution Company Limited (WBSEDCL), A Government of West Bengal Enterprise, undertakes to carry out muck disposal at pre-designated sites, in line with the approved Environmental Clearance of Ministry of Environment, Forests and Climate Change (MoEF&CC), Govt. of India, for the implementation of 1000 MW Turga Pumped Storage Project, District: Purulia, West Bengal.


01.04.2021

(Surajit Chakraborty)
Director (Generation)
WBSEDCL



CHAPTER-9 MUCK DISPOSAL PLAN

CHAPTER 9
MUCK DISPOSAL PLAN

9.1 GENERAL

The total quantity of muck expected to be generated has been estimated to be of the order of 32 lakh m³. Considering, 25% swelling factor, the total muck to be handled is 40 lakh m³. About 50% material shall be used as construction material Thus, 20 lakh m³ of muck is planned to be disposed. The component wise detail of muck to be generated and identified zones for accommodating the muck generated is given in Table-9.1.

Table-9.1: Component wise details of muck to be generated

S.No.	Description of Items	Unit	Quantity
A	DIVERSION CHANNEL(730m long)		
1	Open Excavation (Soil)	m ³	4200
2	Open Excavation (Rock)	m ³	420
b	COFFER DAM		
1	Open Excavation (Soil)	m ³	47530
2	Open Excavation (Rock)	m ³	7130
B-LOWER CONCRETE DAM (872 m long & 64m high)			
1	Open Excavation (Soil)	m ³	309773
2	Open Excavation (Rock)	m ³	132760
C-LOWER SADDLE DAM (595 m long & 50 m high)			
1	Open Excavation (Soil)	m ³	75680
2	Open Excavation (Rock)	m ³	88060
E-UPPER ROCKFILL DAM (732 m long & 63.5 m high)			
1	Open Excavation (Soil)	m ³	93400
2	Open Excavation (Rock)	m ³	304852
F-UPPER DAM SPILLWAY			
1	Open Excavation (Soil)	m ³	1350
2	Open Excavation (Rock)	m ³	5008
G-DIVERSION TUNNEL CUM BOTTOM OUTLET			
1	Open Excavation (Soil)	m ³	500
2	Open Excavation (Rock)	m ³	1000
INTAKE			
Inlet Structure			
1	Open Excavation (Soil)	m ³	365580
2	Open Excavation (Rock)	m ³	243720
head race &Penstock including Intake Gate Shaft			
Head race &Penstock			
1	Inclined Shaft Excavation	m ³	32,560
2	Tunnel Excavation (including Upper Penstock)	m ³	140,320
Intake Gate Shaft			
1	Open Excavation (Soil)	m ³	1070
2	Open Excavation (Rock)	m ³	710

S.No.	Description of Items	Unit	Quantity
INTAKE GATE SHAFT (Underground)			
1	Excavation	m ³	12560
WORK ADIT to HRT			
1	Open Excavation (Soil)	m ³	1150
2	Open Excavation (Rock)	m ³	4590
	Tunnel Excavation	m ³	49070
Work Adit to Lower Penstock			
1	Underground Excavation	m ³	27160
Tail Race			
Tail race Tunnel			
1	Tunnel Excavation	m ³	112870
Tailrace gate shaft (Tunnel)			
1	Gate Shaft Excavation	m ³	9610
Work Adit to TRT			
1	Tunnel Excavation	m ³	28380
TailRace Outlet outlet Structure			
1	Open Excavation (Soil)	m ³	408640
2	Open Excavation (Rock)	m ³	272430
POWER HOUSE			
1	Cavern Excavation	m ³	171010
2	Busbar Excavation	m ³	3580
DRAFT TUNNEL			
1	Tunnel Excavation	m ³	3160
Transformer Cavern			
1	Cavern Excavation	m ³	38180
2	Draft Gate shaft Excavation	m ³	3480
MAT			
1	Open Excavation (Soil)	m ³	6410
2	Open Excavation (Rock)	m ³	25640
3	Tunnel Excavation (UG)	m ³	46460
Top Heading Tunnel to Powerhouse			
1	Tunnel Excavation	m ³	2380
Cable Tunnel & Ventilation Tunnel			
1	Inclined Shaft Excavation	m ³	5720
2	Tunnel Excavation	m ³	1770
Switchyard			
1	Common Excavation	m ³	42540
2	Rock Excavation	m ³	63460
3	Excavation for Foundation	m ³	7370
TOTAL MUCK GENERATED			3203243
SWELL Factor @ 25%			4004054
Quantity to be used as Construction material @ 50%			2002027
Quantity to be disposed off			2002027, say 20 lakh cum

The total volume to be disposed is 20 lakh m³. The muck will be disposed in 3 muck disposal sites, as outlined in Table-9.2. The area of muck disposal sites is 11.04 ha. The capacity of of muck disposal sites 11.04 lakh m³. The remaining muck (8.96 lakh m³) will be disposed in Kudna and Dulgubera Quarry areas, which have a total capacity of 9.7 lakh m³.

Table-9.2: Muck Disposal Area and Capacities

Zone No.	Area (ha)
USP-1	2.20
USP-2	4.32
LSP-2	4.52
Kudna Quarry Area	9.80
Dulgubera Quarry Area	3.25
Total	24.09

9.2 IMPACTS DUE TO MUCK DISPOSAL

Muck, if not securely transported and dumped at pre-designated sites, can have serious environmental impacts, such as:

- Muck, if not disposed properly, can be washed away into the main river which can cause negative impacts on the aquatic ecosystem of the river.
- Muck disposal can lead to impacts on various aspects of environment. Normally, the land is cleared before muck disposal. During clearing operations, trees are cut, and undergrowth perishes as a result of muck disposal.
- In many of the sites, muck is stacked without adequate stabilisation measures. In such a scenario, the muck moves along with runoff and creates landslide like situations. Many a times, boulders/large stone pieces enter the river/water body, affecting the benthic fauna, fisheries and other components of aquatic biota.
- Normally muck disposal is done at low lying areas, which get filled up due to stacking of muck. This can sometimes affect the natural drainage pattern of the area leading to accumulation of water or partial flooding of some area which can provide ideal breeding habitat for mosquitoes.

9.3 RESTORATION OF MUCK DISPOSAL SITES

The unused muck (20 lakh m³) would be piled at an angle of repose at the proposed dumping sites. For the stabilization of dumped materials various engineering and phyto-remedial measures are being proposed in the management plan.

Phyto-remediation of Muck Disposal Areas

The work plan formulated for re-vegetation of the muck disposal areas through "Integrated Biological and Biotechnological Approach" is based on following parameters:

The pitting details are as follows:

- Total No. of pits : 1800 per hectare
- Size of each pit : 0.6 m x 0.6m
- Spacing between pits : 2.5m x 2.0m

The excavated material from the pits will be mixed with 43.2 litre of external soil, 10 kg of apple peel and 5 kg of farmyard manure, and 2 kg of vermi-compost. The pit will be refilled with the mixture, 10-15 gm of mycorrhizal inoculum near the root system is to be added. After this, plant saplings already inoculated with biofertilizers (Rhizobium and Azotobacter bacteria) would be planted and refilling will be done to cover the entire plant root system. The schematic technique of plantation is shown in Figure-9.1 Turfing (sodding) and suitable shrubs will be grown at slopes. About 5 cm of thick layer external soil will be spread on the slope area. Sod patches (40 cm x 20 cm) will be grown per square meter. Before sowing, the area will be properly amended with the manure @ of 2 kg/m².

Irrigation Facility

Generally, afforestation programme in the vicinity is not supplemented with any irrigation modalities and depends on rains. However, in order to ascertain quick greenery and growth in the spoil tip areas, irrigation, especially during the drought period is to be provided. For this, water-harvesting tanks will be constructed to supplement the drip irrigation facility in the downstream for the horticultural crops. Research trenches will also act as water harvesting structures to facilitate irrigation for the cash crops.

Fencing

All the sites will be properly fenced to protect the area from human and animal interference. About 4400 m of fence would be required at all the sites.

9.4 COST ESTIMATE FOR MUCK DISPOSAL PLAN

An amount of Rs. 120.0 lakh has been earmarked for stabilization of muck disposal sites. The details are given in Table-9.3.

Table-9.3: Summary of cost required for muck disposal

S. No.	Cost	Amount (Rs. lakh)
1.	Plantation on spoil tips (plain area) including bio-fertilizer cost	15.0
2.	Turfing on slopes	15.0
3.	Fencing cost	15.0
4.	Retaining Wall	75.0
	Total Cost	120.0

West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Dist.: Purulia, West Bengal

FC Proposal No.: FP/WB/HYD/8214/2014

MoEF&CC File No.: 8-51/2017-FC

UNDERTAKING

(ref: Sl. no. xxv of compliance report)

This is to certify that, West Bengal State Electricity Distribution Company Limited (WBSEDCL), A Government of West Bengal Enterprise, undertakes to stabilize and reclaim the dumping area for muck disposal by planting suitable species at the cost of project under the supervision of State Forest Department, in line with the approved Environmental Clearance of Ministry of Environment, Forests and Climate Change (MoEF&CC), Govt. of India, for the implementation of 1000 MW Turga Pumped Storage Project, District: Purulia, West Bengal.


01.04.2021

(Surajit Chakraborty)
Director (Generation)
WBSEDCL



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West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Dist.: Purulia, West Bengal

FC Proposal No.: FP/WB/HYD/8214/2014

MoEF&CC File No.: 8-51/2017-FC

UNDERTAKING

(ref: Sl. no. xxvi of compliance report)

This is to certify that, West Bengal State Electricity Distribution Company Limited (WBSEDCL), A Government of West Bengal Enterprise, undertakes that the trees available between full reservoir level (FRL) and FRL – 4 metres will not be felled, for the implementation of 1000 MW Turga Pumped Storage Project, District: Purulia, West Bengal.

Surajit Chakraborty
01.04.2021

(Surajit Chakraborty)
Director (Generation)
WBSEDCL

Surajit

**CHAPTER-5
GREENBELT DEVELOPMENT PLAN**

CHAPTER 5 GREENBELT DEVELOPMENT PLAN

5.1 INTRODUCTION

The forest loss due to the reservoir submergence and construction of other project appurtenances shall be compensated as a part of compensatory afforestation. However, it is proposed to develop a greenbelt around the perimeter of various project appurtenances, selected stretches along the reservoir periphery, etc. The main objectives of creating a greenbelt around a reservoir are to:

- Check soil erosion around the reservoir
- Check landslides and slips around the reservoir
- Develop the habitat for wildlife particularly avi-fauna

The general considerations involved while developing the greenbelt are:

- Trees growing up to 10 m or above in height with perennial foliage should be planted around various appurtenances of the proposed project.
- Planting of trees should be undertaken in appropriate encircling rows around the project site.
- Generally fast growing species should be planted.
- Since, the tree trunk is normally devoid of foliage up to a height of 3 m, it may be useful to have shrubbery in front of the trees so as to give coverage to this portion.

5.2 PLANTATION

The tree plantation will be done at a spacing of 2.5 x 2.5 m. About 1600 trees per ha will be planted. The maintenance of the plantation area will also be done by the project proponent. The treated waste water and the manure generated by composting of solid waste generated for labour camps will be used for the greenbelt development. The species recommended for greenbelt development are given in Table 5.1.

Table 5.1: Species recommended for greenbelt development for Turga PSP

Scientific Name	Local Name
Trees	
<i>Aegle marmelos</i>	Bael
<i>Albizia procera</i>	Safed Siris
<i>Albizia lebbek</i>	Kala siris
<i>Altsonia scholaris</i>	Saptarni
<i>Artocarpus lacucha</i>	Dahua
<i>Cassia fistula</i>	Amaltas
<i>Ficus bengalensis</i>	Bargad
<i>Holoptelea integrifolia</i>	Kanju

Scientific Name	Local Name
<i>Mallotus philippinensis</i>	Kamla
<i>Syzygium cumini</i>	Jamun
<i>Terminalia arjuna</i>	Arjun
<i>Terminalia bellirica</i>	Bahera
<i>Terminalia chebula</i>	Haritaki
Shrubs	
<i>Abutilon indicum</i>	Jhampi
<i>Annona squamosa</i>	Seethaphal
<i>Calotropis gigantean</i>	Akand
<i>Carissa spinarum</i>	Auka Kuli
<i>Zizyphus mauritiana</i>	Ber

5.3 COST ESTIMATE FOR GREEN BELT DEVELOPMENT

The cost of plantation per hectare is estimated at Rs. 84,000 per ha which includes sapling cost, nursery cost, labour cost, cost of manure, weeding etc. It is proposed to afforest about 20 ha of land as a part of Greenbelt development. The total cost works out to be Rs. 16.8 lakh.

West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Dist.: Purulia, West Bengal

FC Proposal No.: FP/WB/HYD/8214/2014

MoEF&CC File No.: 8-51/2017-FC

UNDERTAKING

(ref: Sl. no. xxvii of compliance report)

This is to certify that, West Bengal State Electricity Distribution Company Limited (WBSSEDCL), A Government of West Bengal Enterprise, undertakes to carry out afforestation along the periphery of the reservoir, in line with the approved Environmental Clearance of Ministry of Environment, Forests and Climate Change (MoEF&CC), Govt. of India, for the implementation of 1000 MW Turga Pumped Storage Project, District: Purulia, West Bengal.


01.04.2021

(Surajit Chakraborty)
Director (Generation)
WBSSEDCL



West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Dist.: Purulia, West Bengal

FC Proposal No.: FP/WB/HYD/8214/2014

MoEF&CC File No.: 8-51/2017-FC

UNDERTAKING

(ref: Sl. no. xxviii of compliance report)

This is to certify that, West Bengal State Electricity Distribution Company Limited (WBSEDCL), A Government of West Bengal Enterprise, undertakes to provide free water for the forestry related projects, in consultation with State Forest Department, for the implementation of 1000 MW Turga Pumped Storage Project, District: Purulia, West Bengal.


01.04.2021

(Surajit Chakraborty)
Director (Generation)
WBSEDCL



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No. J-12011/13/2013-IA. I (R)
Government of India
Ministry of Environment, Forest and Climate Change

3rd Floor, Vayu Block,
Indira Paryavaran Bhawan, Jor Bagh Road,
Aliganj, New Delhi-110003

Dated: 02.07.2018

To

The Chief Engineer
M/s. West Bengal State Electricity Company Ltd.
Planning Investigation & Design Department
Vidyut Bhavan, 5th Floor,
Block-DJ, Sector-II, Salt Lake
Kolkata-700091.

Sub: 1000 MW (4x250 MW) Turga Pumped Storage project on Turga Nalla in Purulia District of West Bengal by M/s West Bengal State Electricity Distribution Company Ltd.- reg. Environmental Clearance.

Sir,

The undersigned is directed to refer to your online application No. IA/WB/RIV/53889/2013 dated 09.05.2016 and online submission dated 8.5.2018 on the above subject. Terms of Reference (ToR)/Scoping Clearance for the above mentioned project has been issued vide Ministry's letter dated 4.11.2013.

2. It has been noted that you have proposed Turga Pumped Storage Project on Turga nalla, is located in Purulia district of West Bengal with installed power generation of 1000 MW. The Turga Pumped Storage Scheme envisages utilization of the water of the river Turga in Ayodhya hills for peak power generation on a Pumped storage type development. The coordinates of Upper Dam site are 23°12'47"N and 86°04'20"E. Coordinates of the lower Dam site are 23°11'49"N and 86°04'13"E. The project site is approachable by a jeepable road taking off from Balarampur - Baghmundi state highway. The nearest rail head is located at Barabhum and nearest airport is located at Ranchi.

3. The project envisages construction of Upper Dam (C.A. 8.29 Sq. km) across Turga nalla, a tributary of Subarnarekha river and a water conductor system with an underground Power House on the downstream of Upper Dam and a Lower main and saddle dams for the lower reservoir having intermediate catchment of 4.37 sq. km (total C.A. 12.66 sq. km). It is proposed to increase the gross storage capacity to 18 MCM (Live storage of 14.2 MCM at FRL: 316.5 m) by constructing the lower main dam just downstream of the existing Irrigation Dam and a Right Saddle Dam. The upper reservoir will have the gross storage capacity of 21.6 MCM (Live storage of 14.2 and pondage at MDDL is 3.8 MCM at FRL: 464.0 m). The Spillway for Upper Dam is proposed near the left abutment on the original course of Turga nalla. Considering the small design flood of 280 m³/s, an un-gated ogee overflow Spillway has been considered. The upper dam is a rock fill type dam with central impervious core and filter materials, rockshell material, etc. having length of 732 m maximum of height of 63.5 m. Main lower dam is a concrete gravity dam with dimensions of 872 m length and 64 m height. Further, lower

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saddle dam is a rock fill central impervious core with dimensions of 595 m length and 50 m height. Further, diversion tunnel, power intake, headrace tunnel, penstock, Power house (four units of pump turbine and motor-generator), tailrace tunnel will be built to cater to the installed power capacity of 4x250 MW with maximum of turbine discharge of 197 m³/s.

4. Land requirement for the proposed project is 292 ha out of which 234 ha is forest land. In-principle approval for diversion of 234.0 ha forest land has been accorded by the Ministry vide letter No.8-51/2017-FC dated 12.4.2018. Out of remaining 58 ha non-forest land/private land, 34 ha will be transferred from I & W Directorate, Government of West Bengal to Turga Pumped Storage Project. Remaining 24 ha of land to be arranged temporarily on leased basis. No family will be losing homestead. Some minimum private land is to be acquired on temporary basis and no permanent acquisition of private land is envisaged. Thus, issues related to Resettlement and Rehabilitation are not envisaged in the proposed Project. Further, there are no national parks, wildlife sanctuaries, eco-sensitive zone/areas and other protected areas within 10 km radius of the project.

5. The estimated requirement of construction material for the project are as below:

S.No.	Structure	Core Material (Lakh m ³)	Filter Material (Lakh m ³)	Rockfill Material (Lakh m ³)	Fine Aggregate (Lakh m ³)	Coarse aggregate (Lakh m ³)
1	Upper Dam	5.5	2.23	28.80	0.21	0.42
2	Lower Dam	-	-	-	3.78	7.55
3	Lower Saddle Dam	2.90	1.40	14.97	-	-
4	Power House and Turbine House	-	-	-	0.25	0.50
5	Waterway	-	-	-	0.36	0.72
Total		8.4	3.63	43.77	4.60	9.19

6. The total quantity of muck expected to be generated has been estimated to be of the order of 32 lakh m³. Considering, 25% swelling factor, the total muck to be handled is 40 lakh m³. About 50% material shall be used as construction material. Remaining 20 lakh m³ of muck is planned to be disposed. The muck will be disposed in 3 muck disposal sites. The area of muck disposal sites is 11.04 ha with the capacity of 11.04 lakh m³. The remaining muck of 8.96 lakh m³ will be disposed in Kudna and Dulgubera Quarry areas, which have a total capacity of 9.7 lakh m³.

7. Primary environmental baseline data has been collected for three seasons (Winter: December- January, 2014; Summer: April, 2014 and Monsoon: August-September, 2014).

8. The recommended environmental flows for Upper reservoir and lower reservoir are as below:

Month/Season	Flow in 90% Dependable Year 1978 (MCM)	Environmental Release (MCM)	Percentage of inflow as Environmental Flow

Upper Reservoir			
June	0.11	0.03	30%
July	0.38	0.011	30%
August	0.02	0.006	30%
September	1.55	0.47	30%
October	0.56	0.17	30%
Monsoon (Total-A)	2.63	0.786	30%
Non-monsoon (Total-B)	0.29	0.0725	25%
Annual (A+B)	2.92 MCM	0.8585 MCM	
Lower Reservoir			
June	0.17	0.05	30%
July	0.58	0.17	30%
August	0.04	0.01	30%
September	2.37	0.71	30%
October	0.86	0.26	30%
Monsoon (Total-A)	4.01	1.20	30%
Non-monsoon (Total-B)	0.44	0.11	25%
Annual (A+B)	4.45 MCM	1.3 MCM	

9. The cost of environmental management plan is as below:

Sr.No.	Activity	Cost in Rs. Lakhs
1	Catchment Area Treatment Plan	409.65
2	Compensatory Afforestation and Bio-diversity Conservation	483.5
3	Fisheries Management	88.7
4	Greenbelt Development	16.8
5	Water, air and noise pollution control measures	20
6	Environmental Management in Labour Camps (Solid Waste Management)	204.75
7	Public Health Delivery System	308.23
8	Muck Disposal Plan	120
9	Restoration, Stabilisation and landscaping of quarry sites	60
10	Restoration, Stabilisation and landscaping of construction sites	20
11	Environmental Management in road construction	40

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12	Energy Conservation Measures	312.37
13	Disaster Management Plan	40
14	Local Area Development Plan which includes infrastructure development as committed during Public Hearing.	2204
15	Plan to Preserve Cultural identity of the locals	98.12
16	Environmental Monitoring during construction phase	187.23
17	Purchase of Meteorological Instruments	4.5
18	Purchase of Noise Meters	1
Total cost of Environmental Management Plan		Rs.46.12 Crores

10. Public Hearing for the proposed project has been conducted by West Bengal Pollution Control Board at Banabitan Meeting Hall, Vill. & P.O Baghmundi, District Purulia on 2.2.2016. During Public Hearing, local people demanded few new infrastructure facilities such as Potable Water Supply (Digging new Wells), digging new ponds, development of play ground in three villages and development & renovation of two temples (Ram Mandir and Vaishno Devi Mandir).

11. The proposal has been considered in the 94th meeting of EAC (RV & HEP) held during 2-3.06.2016 and 14th meeting of Re-constituted EAC (RV & HEP) held on 28.5.2018. The Committee has recommended for increasing the cost for Local Area Development Plan from Rs.22.04 Crores to Rs.44.12 Crores. Cost for infrastructure development and Corpus fund for maintaining the infrastructure will be Rs.29.12 Crores and Rs. 15.9 Crores, respectively. Accordingly, the increased cost of budget for Environmental Management Plan is Rs. 68.30 Crores. Estimated Project Cost is Rs. 5,141.49 Crores. The estimated employment during construction phase is 1000 persons.

12. In acceptance of the recommendations of the EAC (RV&HEP) in its meeting held during 2-3.6.2016 & 28.5.2018, and in view of the clarifications/documents furnished, the Ministry hereby accords the prior Environmental Clearance under 1(C) River Valley Projects of Schedule of EIA Notification, 2006 and subsequent amendments issued time to time for the proposed project, subject to compliance of following conditions:

Part A: Specific Conditions

- Free Fuel / Energy Conservation Plan to be implemented as envisaged in the EIA / EMP report.
- Skill mapping be undertaken for the youths of the affected project area and based on the skill mapping, necessary trainings to the youths be provided for their appropriate engagements in the Project.
- Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead proposal for various uses may be made in the revised EIA/EMP report.
- Environmental Clearance for stone quarries shall be obtained separately. After extraction of stones, the quarry void shall be reclaimed with the soil preferably muck generated from the project and planted with the local species.

- v. The Catchment Area Treatment (CAT) Plan as proposed in EIA/EMP (Sections 2.7 and 2.8; April, 2016) shall be implemented with biological and engineering measures in consultation with West Bengal Forest Department. The CAT proposed for the area of 20.95 sq.km (8.29 sq.km for upper dam and 12.66 sq.km for lower dam) with the budgetary provision of Rs.4.1 Crores shall be fully implemented and not to be diverted for any other purposes. ✓

A.	Biological Treatment Measures	Year		Total
		I	II	
i.	Afforestation (ha)	7 ✓	8 ✓	15 ✓
ii.	Enrichment Plantation (ha)	20 ✓	20 ✓	40 ✓
iii.	Pasture Development (ha)	10 ✓	10 ✓	20 ✓
iv.	Nursery Development (No.)	2 ✓	--	2 ✓
v.	Vegetative Fencing (km)	3 ✓	2 ✓	5 ✓
vi.	Rim Plantation (Rs. in lakh)	25 ✓	25 ✓	50.00 ✓
vii.	Social Forestry (Rs. in lakh)	5 ✓	5 ✓	10.00 ✓
B.	Soil & Water Conservation Works			
i.	Check Dams (No.)	6 ✓	5 ✓	11 ✓
ii.	Drainage line treatment (Rs. in lakh)	10 ✓	10 ✓	20 ✓
C.	Silt Observation Points (Rs.)			23.86 ✓
D.	Infrastructure Development (Rs. in lakh)			318.21 ✓

* In case of change in CAT plan is envisaged in future, prior approval of the Ministry shall be taken for its implementation.

- vi. The project involves 292 ha out of which 234 ha is forest land and 58 ha is private/non-forest land. The R&R benefits for the land losers will have to comply with The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 as applicable. Adequate publicity of the compensation package should be circulated in the affected villages.
- vii. A monitoring Committee for R&R shall be constituted which shall include representatives of project affected persons including representative from SC/ST category and a woman beneficiaries.
- viii. All the conditions stipulated in the forest clearance for diversion of 234.0 ha forest land for the proposed project issued vide Ministry's letter dated 12.4.2018 shall be complied with. ✓
- ix. All commitments made during the Public Hearing should be fulfilled completely by the project proponent and records be maintained. ✓
- x. Consolidation and compaction of the generated muck should be carried out at the muck dumping sites. As proposed in the muck disposal plan, out of total muck generation of 40 lakh m³, 20 lakh m³ shall be utilised in the construction and remaining 20 lakh m³ shall be disposed at three muck disposal sites and Kudna & Dulgubera Quarry areas. The available volume of the three muck disposal sites is about 11.04 lakh m³ and volume of the both quarries is about 9.7 lakh m³. ✓

- xi. The proposed compensatory afforestation programme in 234 ha non-forest land shall be developed in consultation with State Forest Department. An amount of ~~Rs. 2.2512 Crores~~ has been allocated for this purpose and should be fully utilized and not to be diverted for any other purposes.
- xii. The Fisheries Development and Management Plan as proposed in the EIA/EMP report (April, 2016) for conservation of fish in river/Nallah & reservoir shall be implemented in consultation with the State Fishery Department. A budget of ~~Rs. 88.7 Lakhs~~ earmarked for fisheries management plan shall be utilized fully for the purpose and not to be diverted for any other purposes.
- xiii. The Biodiversity Conservation and Management Plan as proposed in the EIA/EMP report (April, 2016) should be implemented in consultation with State Forest Department. The allocated grant of ~~Rs. 2.584 Crores~~ should be fully utilized for this purpose and not to be diverted for any other purposes.
- xiv. Occurrence of stagnant pools/slow moving water channels during construction and operation of the project provide the breeding source for vector mosquitoes and other parasites. The river should be properly channelized so that no small pools and puddles are formed. Even after taking precautions, due to unforeseen situations, breeding of mosquito and resultant malaria or mosquitoes borne disease can increase. If such a situation arises, it will be the responsibility of project proponent to take all steps, i.e. residual insecticidal spray in all the project area and its surrounding of 3 km area keeping the flight range of mosquitoes in consideration.
- xv. The equipment likely to generate high noise levels during the construction period or otherwise shall meet the Ambient Noise Level standards as notified under the Noise Pollution (Regulation and Control) Rules, 2000 as amended in 2010 under the Environment (Protection) Act, 1986. Ambient Noise level monitoring shall be conducted on a monthly basis during the period of construction at suitable locations and copy of the test reports shall be submitted to concerned Regional Office on six monthly basis.
- xvi. Any other clearance from other organisations/departments, if required, should be obtained as and when necessary.

Part B: General Conditions:

- i. Adequate arrangements for providing free fuel like LPG/kerosene shall be made at the project cost for the labour force engaged during the construction work so that felling of trees located adjacent to the proposed project site is avoided.
- ii. Medical facilities as well as recreational facilities shall be provided to the labourers at the construction sites. First aid facility at the project site shall also be provided with proper signage.
- iii. The labourers to be engaged for construction works shall be thoroughly examined by health personnel and adequately treated before issuing them work permit to avoid contraction of any diseases to the local population.
- iv. Water sprinkling arrangements shall be made to control the fugitive dust, and ambient air quality, etc. be monitored during the period of construction according to the CPCB guidelines to meet the NAAQ standards.
- v. Potable drinking water and proper sanitary facilities shall be provided for the labour force. Any solid wastes generated at the colony of the labour force shall be collected and suitably disposed off.

- vi. Restoration of construction areas including muck dumping sites of excavated materials shall be ensured by leveling, filling up of borrow pits landscaping, etc. The area should be properly treated with suitable plant species preferable local indigenous species for better survival of plants and also to enrich the local habitat.
- vii. Environmental parameters shall be monitored and "six monthly monitoring reports" shall be submitted to the concerned Regional office of the Ministry as per guidelines.
13. The project Proponent shall provide full cooperation and all required documents/data shall be provided to the Officer (s) of the concerned Regional Office of the Ministry who would be monitoring the implementation of environmental safeguards.
14. The responsibility of implementation of environmental safeguards and carrying out environmental monitoring rests fully with the M/s West Bengal State Electricity Distribution Company Ltd.
15. Besides the above stated conditions, the Project Proponent shall also implement all environmental monitoring safeguards, as proposed in the EIA/EMP report and other reports from time to time. The concerned Regional Offices, MoEF&CC shall monitor implementation of EMP at regular intervals.
16. The Environmental Management Plan (EMP) shall be strictly adhered to. The total cost of implementation of mitigation measures as per EMP is Rs. 68.30 Crores which includes budget of Rs. 44.12 Crores for Local Area Development Plan, shall be fully utilized and shall not be diverted for any other purpose. In case of revision of the project cost or due to price level change, the cost of EMP shall also be updated proportionately. 68.29
17. In case of change in the scope of the project, the same shall be intimated to the Ministry and fresh approval, if required, shall be taken from the Ministry accordingly.
18. The Ministry reserves the right to add additional safeguard measures subsequently, if found necessary and to take action including revoking of the clearance under the provisions of the Environment (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time-bound and satisfactory manner.
19. The project proponent should advertise at least in two local newspapers widely circulated in the region around the project, one of which shall be in vernacular language of the locality concerned informing that the project has been accorded environmental clearance and copies of clearance letters are available with the State Pollution Control Board/ Committee and may also be seen at the website of the Ministry of Environment, Forest & Climate Change at <http://www.moef.nic.in>.
20. A copy of the clearance letter shall be marked to concerned Panchayat/Zilla Parishad/Municipal Corporation, Urban local body and local NGO, if any, from whom any suggestion/representations, were received while processing the proposal. The clearance letter shall also be put in the website by the project proponent. Compliance to the conditions shall be ensured by the project and intimated to the state accordingly.
21. State Pollution Control Board/Committee shall display a copy of the clearance letter at the Regional Office, District Industries Centre and Collector's/ Tehsildar's Office for 30 days.

22. The Environmental Clearance is valid for a period of 10 years from the date of issue of this letter for commissioning of the project.

23. After 5 years of the commissioning of the Project, a study shall be undertaken regarding impact of the project on the environment and downstream ecology. The Study shall be undertaken by an independent agency, decided in consultation with the Ministry.

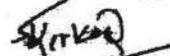
24. The project proponent shall also submit six monthly reports on the status of compliance of stipulated EC conditions including the results of monthly monitored data (both in hard copies as well as by email) to the Regional Office of MoEF&CC, Bhubaneswar.

25. A multi-disciplinary Committee (MDC) for monitoring the implementation of environmental safeguards during construction shall be constituted by the Project Proponent (PP) in consultation with the Ministry as early as possible. A panel may be proposed by the PP and submitted to Ministry and the Government of West Bengal. The project proponent shall organize six monthly meetings of the Committee and submit the monitoring report to the Ministry. The MDC will monitor specifically the stability and effectiveness of muck dumping sites during all visits and suggest remedial measures, if so required.

26. Any appeal against this environmental clearance shall lie solely with the National Green Tribunal, if preferred, within a period of 30 days from the date of issue, as prescribed under Section-16 of the National Green Tribunal Act, 2010.

This issues with the approval of the Competent Authority.

Yours faithfully,



(Dr. S. Karketta)
Director, IAI

Telefax: 011 24695314

Copy to:

1. The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi 110001.
2. The Chairman, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.
3. The Chairman, Central Water Commission, Sewa Bhawan, R.K. Puram, New Delhi-110606.
4. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
5. The Additional Principal Chief Conservator of Forests (C), Ministry of Environment, Forest and Climate Change, Regional Office (EZ), A/3, Chandrasekharpur, Bhubaneswar - 751023.
6. The Secretary, Department of Environment, 5th Floor, Pranisampad Bhawan, Block LB-II, Salt Lake, Sector III, Bidhannagar, Kolkata - 700 106
7. The Member Secretary, West Bengal Pollution Control Board, Paribesh Bhawan, 10A, Block-L.A., Sector-III, Salt Lake City, Calcutta - 700 106.

8. The District Collector, District Purulia, Office of The District Magistrate and Collectorate, Government of West Bengal, Purulia, West Bengal- 723101.
9. Guard/Monitoring file.
10. Website of MoEF&CC.

S. Kerketta

(Dr. S. Kerketta)
Director, I.A.I
Telefax: 011 24695314

West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Dist.: Purulia, West Bengal

FC Proposal No.: FP/WB/HYD/8214/2014

MoEF&CC File No.: 8-51/2017-FC

UNDERTAKING

(ref: Sl. no. xxx of compliance report)

This is to certify that, West Bengal State Electricity Distribution Company Limited (WBSEDCL), A Government of West Bengal Enterprise, undertakes that felling of trees shall be done only when it is unavoidable and shall be carried out under strict supervision of the State Forest Department, for the implementation of 1000 MW Turga Pumped Storage Project, District: Purulia, West Bengal.


01.04.2021

(Surajit Chakraborty)
Director (Generation)
WBSEDCL



West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Dist.: Purulia, West Bengal

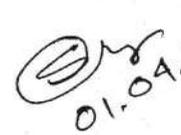
FC Proposal No.: FP/WB/HYD/8214/2014

MoEF&CC File No.: 8-51/2017-FC

UNDERTAKING

(ref: Sl. no. xxxi of compliance report)

This is to certify that, West Bengal State Electricity Distribution Company Limited (WBSEDCL), A Government of West Bengal Enterprise, undertakes that the layout plan of the project shall not be changed without the prior approval of the Central Government, for the implementation of 1000 MW Turga Pumped Storage Project, District: Purulia, West Bengal.


01.04.2021

(Surajit Chakraborty)
Director (Generation)
WBSEDCL



West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Dist.: Purulia, West Bengal

FC Proposal No.: FP/WB/HYD/8214/2014

MoEF&CC File No.: 8-51/2017-FC

UNDERTAKING

(ref: Sl. no. xxxii of compliance report)

This is to certify that, West Bengal State Electricity Distribution Company Limited (WBSEDCL), A Government of West Bengal Enterprise, undertakes that no labour camp shall be established within the forest land during construction, for the implementation of 1000 MW Turga Pumped Storage Project, District: Purulia, West Bengal.


01.04.2021

(Surajit Chakraborty)
Director (Generation)
WBSEDCL



CHAPTER-13
ENERGY CONSERVATION MEASURES

CHAPTER 13 ENERGY CONSERVATION MEASURES

13.1 INTRODUCTION

It is estimated that during the construction of the project, which would last for about 63 months, around 4000 labourers (including their family members) will be working. Majority of the labour force will be outsiders and it will be very important to meet their energy requirement in an ecologically sustainable manner.

For meeting the energy requirement of the workers, contractor/s will be made responsible to provide subsidized kerosene/LPG to their workers which will in turn discourage them from illegal tree felling and removal of fuel wood and timber from the adjoining forests. Further, community kitchen facilities would also be provided to the labourers by the contractors. In addition to above, efforts would be made towards energy conservation by installing non-conventional energy sources as discussed in the subsequent paragraphs.

13.2 ENERGY CONSERVATION DURING CONSTRUCTION PHASE

13.2.1 Provision of Free Fuel

As a part of EMP, following measures are proposed:

- Make a clause mandatory in the contract of every contractor involved in project construction to provide supply of fuel to their labourers, so that trees are not cut for meeting their fuel demands.
- Establish LPG godown within the project area for providing LPG cylinder to run community kitchens.
- Establish kerosene oil depot near project area with the help of state government to ensure proper supply of kerosene oil.

The project proponents in association with the state government should make necessary arrangements for distribution of kerosene oil and LPG.

The total cost required for provisions of fuel has been estimated as Rs. 312.37 lakh. The details are given in Tables 13.1.

Table-13.1: Cost estimate for LPG distribution

Year	No. of Employees	Annual requirement @1cylinder per 10 persons/ per month (No. of cylinders)	Total Cost @Rs. 1,000/cylinder (Rs. lakh) including 10% escalation every year
I	1000	4800	48.0
II	1000	4800	52.8
III	1000	4800	58.08
IV	1000	4800	63.89

Year	No. of Employees	Annual requirement @1cylinder per 10 persons/ per month (No. of cylinders)	Total Cost @Rs. 1,000/cylinder (Rs. lakh) including 10% escalation every year
V	1000	4800	70.28
VI 3 months	1000	1200	19.32
	Total		312.37

13.2.2 Other Energy Conservation measures during construction phase

The following energy conservation measures would be undertaken during construction works:

- Efficient work scheduling and methods that minimize equipment idle time and double handling of material
- Throttling down and switching off construction equipment when not in use
- Switching off truck engines while they are waiting to access the site and while they are waiting to be loaded and unloaded
- Switching off site office equipment and lights and using optimum lighting intensity for security and safety purposes
- Careful design of temporary roads to reduce transportation distance
- Designing roads on site to reduce transportation distances.
- Regular maintenance of equipment to ensure optimum operations and fuel efficiency
- The specification of energy efficient construction equipment.

13.3 ENERGY CONSERVATION DURING OPERATION PHASE

The following energy conservation measures would be implemented during operation phase:

- Use of CFL lights up to maximum possible extent.
- Awareness about the use of CFL lights by locals.
- Employing renewable energy sources such as day lighting and passive solar heating.

West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Dist.: Purulia, West Bengal

FC Proposal No.: FP/WB/HYD/8214/2014

MoEF&CC File No.: 8-51/2017-FC

UNDERTAKING

(ref: Sl. no. xxxiii of compliance report)

This is to certify that, West Bengal State Electricity Distribution Company Limited (WBSEDCL), A Government of West Bengal Enterprise, undertakes to provide alternate fuels to the labours and the staffs working at the site, in line with the approved Environmental Clearance of Ministry of Environment, Forests and Climate Change (MoEF&CC), Govt. of India, for the implementation of 1000 MW Turga Pumped Storage Project, District: Purulia, West Bengal.

Surajit
01.04.2021
(Surajit Chakrabortty)
Director (Generation)
WBSEDCL

West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Dist.: Purulia, West Bengal

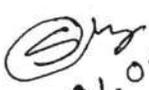
FC Proposal No.: FP/WB/HYD/8214/2014

MoEF&CC File No.: 8-51/2017-FC

UNDERTAKING

(ref: Sl. no. xxxiv of compliance report)

This is to certify that, West Bengal State Electricity Distribution Company Limited (WBSEDCL), A Government of West Bengal Enterprise, undertakes to abide by the applicable recommendations of the State Government including State Forest/ Wild Life Department, for the implementation of 1000 MW Turga Pumped Storage Project, District: Purulia, West Bengal.


01.04.2021

(Surajit Chakraborty)
Director (Generation)
WBSEDCL





West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Dist.: Purulia, West Bengal

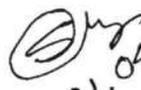
FC Proposal No.: FP/WB/HYD/8214/2014

MoEF&CC File No.: 8-51/2017-FC

UNDERTAKING

(ref: Sl. no. xxxv of compliance report)

This is to certify that, West Bengal State Electricity Distribution Company Limited (WBSEDCL), A Government of West Bengal Enterprise, undertakes that the forest land shall not be used for any purpose other than that specified in the proposal, for the implementation of 1000 MW Turga Pumped Storage Project, District: Purulia, West Bengal.


01.04.2021

(Surajit Chakraborty)
Director (Generation)
WBSEDCL



West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Dist.: Purulia, West Bengal

FC Proposal No.: FP/WB/HYD/8214/2014

MoEF&CC File No.: 8-51/2017-FC

UNDERTAKING

(ref: Sl. no. xxxvi of compliance report)

This is to certify that, West Bengal State Electricity Distribution Company Limited (WBSEDCL), A Government of West Bengal Enterprise, undertakes that the forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government, for the implementation of 1000 MW Turga Pumped Storage Project, District: Purulia, West Bengal.

Surajit
01.04.2021

(Surajit Chakraborty)
Director (Generation)
WBSEDCL

Surajit

West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Dist.: Purulia, West Bengal

FC Proposal No.: FP/WB/HYD/8214/2014

MoEF&CC File No.: 8-51/2017-FC

UNDERTAKING

(ref: Sl. no. xxxvii of compliance report)

This is to certify that, West Bengal State Electricity Distribution Company Limited (WBSEDCL), A Government of West Bengal Enterprise, undertakes that during project implementation, adequate measures shall be taken so that no damage to the flora & fauna of the adjoining project area is caused, for the implementation of 1000 MW Turga Pumped Storage Project, District: Purulia, West Bengal.


01.04.2021

(Surajit Chakraborty)
Director (Generation)
WBSEDCL



West Bengal State Electricity Distribution Company Limited
(A Government of West Bengal Enterprise)

1000 MW Turga Pumped Storage Project, Dist.: Purulia, West Bengal

FC Proposal No.: FP/WB/HYD/8214/2014

MoEF&CC File No.: 8-51/2017-FC

UNDERTAKING

(ref: Sl. no. xl of compliance report)

This is to certify that, West Bengal State Electricity Distribution Company Limited (WBSEDCL), A Government of West Bengal Enterprise, undertakes to comply all the provisions of the all Acts, Rules, Regulations, Guidelines, Hon'ble Court Order (s) and National Green Tribunal Order (s) pertaining to this project, for the implementation of 1000 MW Turga Pumped Storage Project, District: Purulia, West Bengal.


01-09-2021
(Surajit Chakraborty)
Director (Generation)
WBSEDCL

