Environmental Monitoring Report

Project Number: 43464-026
September 2017

Period: June 2015 – December 2016

IND: Himachal Pradesh Clean Energy Transmission Investment Program - Tranche 2

Submitted by

Himachal Pradesh Power Transmission Corporation Limited (HPPTCL)

Asian Development Bank

NK/ VRK.

H.P Power Transmission Corporation Limited
(A state Govt. Undertaking)
Himfed Bhawan, Panjari, Shimla-171005
Phone-0177-2833271

NO. HPPTCL/Proj/F-33/2017- 6058

Dated: 4/9/17

To

The Country Director,
India Resident Mission,
San martin Marg, Chankyapuri,
New Delhi -21

Sub: Environment Monitoring Report

Sir,

Enclosed please find herewith a hard copy of Environment Monitoring Report (EMR) for project No43464-026 Loan No 3001 for the reporting period June 2015 to December 2015 and January 2016 to December 2016.

DA-Hard Copy Page1-49

Yours faithfully,

Director (Projects),
HPPTCL Himfed Bhawan
Panjari, Shimla-5

Environmental Monitoring Report

Project Number: 43464-026

Loan No. 3001

Reporting Period June, 2015 to Dec 2016

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IND: Himachal Pradesh Clean Energy Transmission Program (Project -2)

Prepared by H.P. Power Transmission Corporation Limited (HPPTCL)

List of abbreviations and colloquial terms used

ADB	Asian Development Bank
AP's	Affected Persons
C/o	Construction of
Distt.	District
Deptt.	Department
EHV	Extra High Voltage
ESSP	Environment and Social Safeguards Policy of HPPTCL
FCA	Forest Conservation Act
FRA	Forest Right Act,2006
GIS	Gas Insulated Sub-Station
GOI	Govt of India
GRC	Grievance Redress Committee
Ha.	Hectare (10,000 sq. m. land)
NPV	Net Present Value
CA	Compensatory Afforestation
HPPTCL	H P POWER TRANSMISSION CORPORATION LTD.
IE Rule	Indian Electricity Rule
INR	Indian Rupee
NPV	Net Present Value
MPAF	Main Project Affected Family
MoEFCC	Ministry of Environment, Forest and Climate Change
Pvt. Land	Private Land
PIU	Project Implementing Unit
RRRCP	Resettlement, Relief, Rehabilitation and Compensation Policy of HPPTCL
RoW.	Right of Way

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A. INTRODUCTION

1. The hydro power potential of Himachal Pradesh is about 24,736 MW, which is about one-fourth of the total hydropower potential of India. The Government of Himachal Pradesh (GoHP) in its Hydropower Policy (2007), has fixed its targets to harness the hydro power with the goal to become the "hydropower state" of the country. The state's hydropower policy includes development of infrastructure such as road access and transmission interconnections to facilitate hydropower generation and its further evacuation so as to encourage investment from the state, central government and private sectors. Majority of the hydropower generation projects are run-off- the river type. Implementation of the hydro policy will improve state financial health by earning revenue from supplying surplus power to the National Grid. In addition to developing its hydropower resources, HP has to build out its electric transmission infrastructure so that the additional power can be efficiently transmitted within the state and exported to the national grid.
2. For improvement/ strengthening of existing infrastructures and addition of new infrastructure for effective power evacuation, the Government of Himachal Pradesh (GoHP) through the Government of India (GoI), has requested the Asian Development Bank (ADB) for a Multi-Tranche Financing Facility (MFF) to provide financial assistance to the power sector investment program in the state. The investment program covers investments for transmission of clean energy to National Grid of India by construction of pooling substations and EHV transmission lines. To implement this activity, Himachal Pradesh Government has established HP Power Transmission Corporation Limited (HPPTCL) vide HP Government Notification No.: MPP-A (1)-4/2006-Loose dated 11th September, 2008 as the State Transmission Utility (STU).
3. The $350 million investments in the MFF to be supported by Asian Development Bank (ADB), will contribute to support the economic development in Himachal Pradesh through expanded power supplies from clean energy sources, and support a sustainable state electricity sector in the state. The Himachal Pradesh Clean Energy Transmission Investment Program (HPCETIP) will produce the following outcomes: (i) increase in availability of clean energy downstream at pooling stations for effective power evacuation in a financially sustainable manner, (ii) improvement of state finances and power sector financial viability from sales revenue earned from power exports, (iii) improve sector governance, (iv) improve capacity in HP Power Transmission Corporation Limited (HPPTCL) for better planning, implementation and management of power evacuation infrastructure, and energy efficiency through a better power management program, and (v) Improvement in standards of environmental and social safeguards in the sector. With ADB support, the proposed program will sustain the energy sector reform agenda, and is expected to help attract other long-term financiers to the state.
4. The proposed Tranche II Project, located in Kinnaur, Kangra, Chamba and Shimla districts of Himachal Pradesh, consists of the following components: Table 1 gives the

sub-project details covered under Tranche II. All the sub-projects under tranche-II are category B.

Table 1: Details of sub-projects, tranche-II

Contract number	Description-scope	Contract Signing date	Name of the Contractor	Contract closing date
7-SS/66kV GIS SS URNI	66kV GIS Switching station at Urni - 1, 250 kVA, 22 / 0.433 kV LT Transformer - 66kV GIS, 5 Bays, 3 Future	11Jul14	Alstom T&D India	15 months from 14 Oct 2014 (Contract effective date) EOT up to Dec 2016 has been issued by HPPTCL
10-TL/66kV Trans Line (Rebidding)	66kV DC Line fr Urni SS to Wangtoo SS - 66kV D/C 49 Nos Tower with 85km of ACSR Wolf conductor (Line length 13.38km)	11Mar15	Karnimata Const. Co., Jodhpur	18 months from 07 May 2015 (Contract effective date) EOT up to Dec 2017 has been issued by HPPTCL Contract effective date for installation work to be mutually agreed and decided by contractor and HPPTCL
9-SS/400kV GIS LAHAL	33/220/400kV GIS Lahal Substation - 7 Nos., 4 x 105 MVA, 400 / 220 kV, 1 Phase Auto Transformer (one Spare) - 1 No., 50 / 63.5 MVA 3 Phase Power Transformer - 2 Nos., 630 kVA, 33 / 0.433 kV, 3 Phase Station Transformer - 400kV 1 and half BB GIS, 6 Bays, 2+1 Future - 220kV GIS, 8 Bays, 4 Future - 33kV GIS, 8 Bays, 4 Future	04Feb15	L & T Ltd., India	36 months from 28 Aug 2015 (Contract effective date) for 400kV and 24 months from 28 Aug 2015 (Contract effective date) for 220kV System
11-TL/220kV TL fr Lahal to Budhil	220 kV Line fr Lahal SS to Budhil HEP - 220kV D/C 8 Nos Tower with 7km of ACSR Zebra conductor (Line length 1.89 km)	09May15	M.J. Engg. Works Pvt. Ltd., New Delhi	12 months from 17 Sep 2015 (Contract effective date)
				12 months from 05 Apr 2016 (Contract effective date)
15-TL/220kV TL fr Sunda to Hatkoti	220kV DC Line from Sunda to Hatkoti - 220kV D/C 65 Nos Tower (Twin Moose) with 281km of ACSR Moose conductor (Line length 25.125 km)	11Aug15	Shyama Power India Ltd., Gurgaon	18 months from 05 Dec 2015 (Contract effective date) 18 months from 26 Aug 2016 (Contract effective date)

Contract number	Description-scope	Contract Signing date	Name of the Contractor	Contract closing date
14-SS/220kV GIS SUNDA 23-SS(Rebid)	132/220kV Pooling Station at Sunda	NA	NA	Re- Tendering process initiated
20-TL/132kV DC TL	LILO of 132kV Kangra-Dehra Line at Chambi - 132kV D/C 54 Nos Tower with 93km of ACSR Panther conductor (Line length 15.38 km)	03Mar16	Coal Mine-DITI JV, IND	18 months from 17 Mar 2016 (Contract effective date) Contract effective date for installation work to be mutually agreed and decided by contractor and HPPTCL
12-TL/220kV TL fr Charor to Banala	220kV Line fr Charor to 400kV Banala SS - 220kV D/C 49 Nos Tower (Twin Moose), 12 special Towers and two gantry towers with 224km of ACSR Moose conductor (Line length 17.542 km)	07Apr15	R.S. Infraprojects Pvt. Ltd., Noida	18 months from 04 Aug 2015 (Contract effective date) 18 months from 04 Jan 2016 (Contract effective date)
17-SS/220kV GIS Charor	132/220kV GIS Substation at Charor	NA	NA	Re- Tendering process initiated

B. PROJECT PROGRESS DURING THE REPORTING PERIOD

5. The overall progress of the sub-projects under tranche-II is given in **table 2.0.**

Table 2.0: Overall physical progress during the reporting period.

Contract number	Description-scope	Overall physical progress during the reporting period	Remarks
7-SS/66kV GIS SS URNI	66kV GIS Switching station at Urni - 1, 250 kVA, 22 / 0.433 kV LT Transformer - 66kV GIS, 5 Bays, 3 Future	GIS building completed. Control Room Building near completion. Erection Electric overhead travelling Crane (EOT) Crane in GIS building completed	Private Land acquired after negotiation
10-TL/66kV Trans Line (Rebidding)	66kV DC Line fr Urni SS to Wangtoo SS - 66kV D/C 49 Nos Tower with 85km of ACSR Wolf conductor (Line length 13.38km)	Work awarded. Check survey completed. 90% supply of material completed. Construction work pending due to non-availability of FCA approval	FCA case pending with regional officer, Dehradun for approval,
9-SS/400kV GIS LAHAL	33/220/400kV GIS Lahal Substation - 7 Nos., 4 x 105 MVA, 400 / 220	Work awarded. 10 % physical progress achieved	Private land acquired through compulsory acquisition and

Contract number	Description-scope	Overall physical progress during the reporting period	Remarks
	kV, 1 Phase Auto Transformer (one Spare) - 1 No., 50 / 63.5 MVA 3 Phase Power Transformer - 2 Nos., 630 kVA, 33 / 0.433 kV, 3 Phase Station Transformer - 400kV 1 and half BB GIS, 6 Bays, 2+1 Future - 220kV GIS, 8 Bays, 4 Future - 33kV GIS, 8 Bays, 4 Future		compensation amount paid.
11-TL/220kV TL fr Lahal to Budhil	220 kV Line fr Lahal SS to Budhil HEP - 220kV D/C 8 Nos Tower with 7km of ACSR Zebra conductor (Line length 1.89 km)	Work Awarded. FCA approval received. 6 no foundations completed. 10% physical progress achieved.	FCA approval accorded by MoEFCC, available at annexure V.
15-TL/220kV TL fr Sunda to Hatkoti	220kV DC Line from Sunda to Hatkoti - - 220kV D/C 65 Nos Tower (Twin Moose) with 281km of ACSR Moose conductor (Line length 25.125 km)	Work awarded. 10 no foundations completed. 50% supply of material completed. 5% physical progress achieved.	FCA approval accorded by MoEFCC, available at annexure V.
14-SS/220kV GIS SUNDA 23-SS(Rebid)	132/220kV Pooling Station at Sunda	No physical progress. Tendering under process	Private land acquired through compulsory acquisition and compensation amount paid.
20-TL/132kV DC TL	LILO of 132kV Kangra-Dehra Line at Chambi - 132kV D/C 54 Nos Tower with 93km of ACSR Panther conductor (Line length 15.38 km)	Work awarded. Construction activities pending due to non-availability of FCA approval.	FCA case pending with nodal officer Shimla.
12-TL/220kV TL fr Charor to Banala	220kV Line fr Charor to 400kV Banala SS - 220kV D/C 49 Nos Tower (Twin Moose), 12 special Towers and two gantry towers with 224km of ACSR Moose conductor (Line length 17.542 km)	3 No towers erected and Erection of 2 No towers in progress. 16 No Stubs completed and Stubbing of 11 No in progress. 5% physical progress achieved	FCA approval accorded by MoEFCC, available at annexure V.
17-SS/220kV GIS Charor	132/220kV GIS Substation at Charor	Tendering under process.	Private land acquired through compulsory acquisition and compensation amount paid.

C. Compliance status with National /State /Local statutory environmental requirements

6. The Status of Forest clearance applicable for the sub-projects is given in **table 3**.

Table 3.0: Status of Forest clearance applicable for the sub-projects

Description-scope	Details of forest clearance applicable for the project	Remarks, if any
66kV GIS Switching station at Urni - 1, 250 kVA, 22 / 0.433 kV LT Transformer - 66kV GIS, 5 Bays, 3 Future	Not required, as being private land	Private Land acquired after negotiation
66kV DC Line fr Urni SS to Wangtoo SS - 66kV D/C 49 Nos Tower with 85km of ACSR Wolf conductor (Line length 13.38 km)	FCA not available	FCA case pending with regional officer, Dehradun for approval,
33/220/400kV GIS Lahal Substation - 7 Nos., 4 x 105 MVA, 400 / 220 kV, 1 Phase Auto Transformer (one Spare) - 1 No., 50 / 63.5 MVA 3 Phase Power Transformer - 2 Nos., 630 kVA, 33 / 0.433 kV, 3 Phase Station Transformer - 400kV 1 and half BB GIS, 6 Bays, 2+1 Future - 220kV GIS, 8 Bays, 4 Future - 33kV GIS, 8 Bays, 4 Future	Not required, as being private land	Private land acquired through compulsory acquisition and compensation amount paid.
220 kV Line fr Lahal SS to Budhil HEP - 220kV D/C 8 Nos Tower with 7km of ACSR Zebra conductor (Line length 1.89 km)	FCA approval received	FCA approval accorded by MoEFCC, available at annexure V
220kV DC Line from Sunda to Hatkoti - - 220kV D/C 65 Nos Tower (Twin Moose) with 281km of ACSR Moose conductor (Line length 25.125 km)	FCA approval received	FCA approval accorded by MoEFCC, available at annexure V
132/220kV Pooling Station at Sunda	Not required, as being private land	Private land acquired through compulsory acquisition and compensation amount paid.
LILO of 132kV Kangra-Dehra Line at Chambi - 132kV D/C 54 Nos Tower with 93km of ACSR Panther conductor (Line length 15.38 km)	FCA not available	FCA case pending with nodal officer Shimla.
220kV Line fr Charor to 400kV Banala SS - 220kV D/C 49 Nos Tower (Twin Moose), 12 special Towers and two gantry towers with 224km of ACSR Moose conductor (Line length 17.542 km)	FCA approval received	FCA approval accorded by MoEFCC, available at annexure V
132/220kV GIS Substation at Charor	Tendering under process.	Private land acquired through compulsory acquisition and compensation amount paid.

7. The labor license and workman's compensation insurance applicable for the sub-projects have been obtained by the concern civil contractors and the details are provided in table 4.0.

Table 4.0: The labor license and workman's compensation insurance applicable for the sub-projects

Contract number	Description-scope	Name of the Contractor	Labour license and Workman Compensation Insurance (Validity periods)	Remarks, if any
7-SS/66kV GIS SS URNI	66kV GIS Switching station at Urni	Alstom T&D India	(a) Labour License- valid till 21.06.2018 (b)Workman's compensation Insurance-valid till 30.6.2018	
10-TL/66kV Trans Line (Rebidding)	66kV DC Line fr Urni SS to Wangtoo SS - (Line length 13.38km)	Karnimata Const. Co., Jodhpur		FCA pending Work not started
9-SS/400kV GIS LAHAL	33/220/400kV GIS Lahal Substation	L & T Ltd., India	(a)Labour License- valid till 07.03.2018 (b) Workman's compensation Insurance-valid till 30.03.2017	
11-TL/220kV TL fr Lahal to Budhil	220 kV Line fr Lahal SS to Budhil HEP - (Line length 1.89 km)	M.J. Engg. Works Pvt. Ltd., New Delhi	------(a) Labour License- valid till 17.03.2018 (b)Workman's compensation Insurance-valid till 30.03.2017	
15-TL/220kV TL fr Sunda to Hatkoti	220kV DC Line from Sunda to Hatkoti - (Line length 25.125 km)	Shyama Power India Ltd., Gurgaon	(a) Labour License- valid till 15.09.2018 (b) Workman's compensation Insurance-valid till 30.6.2018	
14-SS/220kV GIS SUNDA 23-SS(Rebid)	132/220kV Pooling Station at Sunda	NA		Yet to be awarded
20-TL/132kV DC TL	LILO of 132kV Kangra-Dehra Line at Chambi - (Line length 15.38 km)	Coal Mine-DITI JV, IND		FCA pending Work not started

Contract number	Description-scope	Name of the Contractor	Labour license and Workman Compensation Insurance (Validity periods)	Remarks, if any
12-TL/220kV TL fr Charor to Banala	220kV Line from Charor to 400kV Banala SS - (Line length 17.542 km)	R.S. Infraprojects Pvt. Ltd., Noida	(a)Labour License- valid till 21.06.2018 (b)Workman's compensation Insurance-valid till 30.6.2018	
17-SS/220kV GIS Charor	132/220kV GIS Substation at Charor	NA		Yet to be awarded

D. Compliance status with the environmental covenants as stipulated in the Loan Agreement

8. The compliance status during the reporting period with the environmental covenants as stipulated in the loan agreement is given in **table 5**.

Table 5: Compliance Status with the environmental covenants as stipulated in the loan agreement

Compliance Status with the environmental covenants as stipulated in the loan agreement Reference	As per ADB loan covenant	Status
Para-7, sehedule-5	The State and HPPTCL shall ensure that the preparation, design, construction, implementation, operation and decommissioning of each Subproject comply with (a) all applicable laws and regulations of the Borrower relating to environment, health, and safety; (b) the Environmental Safeguards; (c) the EARF; and (d) all measures and requirements set forth in the IEE and EMP, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.	Being complied
Para-12, sehedule-5	The State and HPPTCL shall ensure that all bidding documents and contracts for Works contain provisions that require contractors to: (a) comply with the measures and requirements relevant to the contractor set forth in the IEE, the EMP, the	Partially complied. The EMP shall be a part of the contract agreement and the corrigendum shall be issued

Compliance Status with the environmental covenants as stipulated in the loan agreement Reference	As per ADB loan covenant	Status
	RP and any IPP (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set out in a Safeguards Monitoring Report; (b) make available a budget for all such environmental and social measures; (c) provide HPPTCL with a written notice of any unanticipated environmental, resettlement or indigenous peoples risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP, the RP or any IPP; (d) adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction; and (e) fully reinstate pathways, other local infrastructure, and agricultural land to at least	
Para 13, of sehedule-5	Safeguards Monitoring and Reporting	This is report number 1 for the period June 2015 to Dec 2016. Subsequently, the semi-annual report shall be submitted to ADB.
	The State and HPPTCL shall do the following: (a) submit semi-annual Safeguards Monitoring Reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission; (b) if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP,	Being complied

Compliance Status with the environmental covenants as stipulated in the loan agreement Reference	As per ADB loan covenant	Status
	the RP or any IPP, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; and (c) report any breach of compliance with the measures and requirements set forth in the EMP, the RP or any IPP promptly after becoming aware of the breach.	
Para 14, of sehedule-5	The Borrower, the State and HPPTCL shall ensure that no proceeds of the Loan are used to finance any activity included in the list of prohibited investment activities provided in Appendix 5 of the SPS	Being complied
Para 15, of sehedule-5	The Borrower shall ensure or cause the State and HPPTCL to ensure that Works contracts follow all applicable labor laws of the Borrower and the State and that these further include provisions to the effect that contractors (i) carry out HIV/AIDS awareness programs for labor and disseminate information at worksites on risks of sexually transmitted diseases and HIV/AIDS as part of health and safety measures for those employed during construction; (ii) follow and implement all statutory provisions on labor (including not employing or using children as labor, equal pay for equal work), health, safety, welfare, sanitation, and working conditions; and (iii) maximize employment of women and local poor and disadvantaged persons for construction purposes, provided that the requirements for efficiency are adequately met. Such contracts shall also include clauses for termination in case of any breach of the stated provisions by the contractors.	Not complied The HIV/AIDs awareness program through approved NGOs shall be organized by the contractor and the Compliance report will be submitted along with next EMR for the reporting period June 2015 to December 2016.

E. Environmental management plan (EMP) implementation compliance status with during the reporting period

9. The status of EMP implementation for the sub-projects under tranche-II during the reporting period is given in table 6.

Table 6: Environmental management plan (EMP) implementation compliance status with during the reporting period

Project Activity	Potential Environmental Impact	Mitigation Action	Parameters to be Monitored	Standards/ Measurement/ Frequency	Institutional Responsibility	Implementation Schedule	Status during the reporting period	Follow-up action, if any
PRE-CONSTRUCTION PHASE								
A Physical Resources								
Equipment specifications and design parameters	Release of chemicals and harmful gases in receptors (air, water, land)	PCBs, Chlorofluorocarbons (CFCs), including halons not used in transformers, or any other equipment.	Transformers and other equipment specifications compliant with GoI rules/regulations & (International Electro-technical Commission) IEC standards	Exclusion of PCBs, CFCs stated in tender documents - Once.	HPPTCL	Detailed Design	The EMP has been missed out in contractor's contract agreement.	The HPPTCL will issue the corrigendum to include EMP as part of contractor's contract agreement
B Environment Resources								
Location of land for substations/transmission towers	Impact to the existing environment	Construction facilities should be placed at suitable distance from water bodies, natural flow paths, important ecological habitats and residential areas	Water and Air Quality	Air quality Standards and Water Quality standards – Once	HPPTCL	Detailed Design/ Planning Stage	Pre-construction environmental monitoring was carried out at 220/400 kv GIS substation at Lahal 66kv GIS substation	

Project Activity	Potential Environmental Impact	Mitigation Action	Parameters to be Monitored	Standards/ Measurement/ Frequency	Institutional Responsibility	Implementation Schedule	Status during the reporting period	Follow-up action, if any
							at Urni 132/220 substations at Sunda. 33/220kV Substation Charor	
Substation location and design	Noise generation Exposure to noise, Nuisance to neighbouring properties	Substation location/designed to ensure noise will not be a nuisance to neighbouring properties.	Expected noise emissions based on substation design, noise levels	Noise control regulations Noise levels to be specified in tender documents- Once	HPPTCL	Detailed Design/ Planning Stage	Being Complied	
Location of transmission towers and transmission line alignment and design	Impact on water bodies / land/ residences	Consideration of site location to avoid water bodies or agricultural land/orchards as much as possible. Careful site selection to avoid existing settlements	Site location, transmission line alignment selection (distance to dwelling, water and/or agricultural land)	Consultation with local authorities and land owners, water quality standards- Once	HPPTCL	Part of detailed project siting, survey and design.	Being Complied	
Interference with drainage patterns/Irrigation channels	Temporary flooding hazards/loss of agricultural production	Appropriate siting of towers to avoid channel interference	Site location and transmission line alignment selection	Consultation with local authorities and design engineers – Once	HPPTCL	Detailed alignment survey and design	Being Complied	
C Ecological Resources								
Encroachment into precious ecological areas	Loss of precious ecological	Avoid encroachment by careful site and	Floral and faunal habitats loss	Enumeration of flora and fauna at site	ESC of HPPTCL	Detailed design/planning stage	Being Complied	

Project Activity	Potential Environmental Impact	Mitigation Action	Parameters to be Monitored	Standards/ Measurement/ Frequency	Institutional Responsibility	Implementation Schedule	Status during the reporting period	Follow-up action, if any
	values/ damage to precious species	alignment selection and reconnaissance before final siting of facilities.		- Once				
D Human Environment								
Involuntary resettlement or land acquisition	Loss of lands and structures	Compensation paid for temporary/ permanent loss of productive land	Public complaints	Rates paid as per the Resettlement plan/Frame work for the project – Once	ESC of HPPTCL	Prior to Construction phase/land acquisition	Being Complied	
Encroachment into farmland	Loss of agricultural productivity	Avoid siting towers on farmland/orchards wherever possible Farmers compensated for any permanent loss of productive fruit trees that need to be trimmed or removed along RoW.	Tower location and transmission line alignment selection Statutory approvals for tree trimming /removal from Horticulture department Implementation of crop and tree compensation (based on affected area)	Consultation with local authorities and design engineers - Once	ESC of HPPTCL	Part of detailed alignment, survey and design.	Being Complied	
Location and design of Substation	Disturbance to adjacent lands and the people due to cut and fill operations	Maintain adequate clearance, construction of retaining structures,	Transformers and specifications and compliance with setback	Technical specification- Once Measure setback distances to	HPPTCL	Detailed design/planning stage	Being Complied	

Project Activity	Potential Environmental Impact	Mitigation Action	Parameters to be Monitored	Standards/ Measurement/ Frequency	Institutional Responsibility	Implementation Schedule	Status during the reporting period	Follow-up action, if any
		minimise cut and fill operations adjoining the dwellings	distances ("as-built" diagrams)	nearest house structures – Once				
Location of transmission towers and transmission line alignment and design	Exposure to Electro-magnetic Frequency (EMF) and other safety related risks	Setback of dwellings to overhead line route designed in accordance with Indian Electricity Act (Rule 77 & 80) for each permitted level of power frequency and its proper supervision at each tower site.	Tower location and transmission line alignment selection with respect to nearest dwellings – Once	Setback distances to nearest houses, clearance of conductor from ground – Once	HPPTCL	Part of tower siting survey and detailed alignment survey and design	Being Complied	
Explosions/Fire	Hazards to life	Design of substations to include modern fire control systems/firewalls . Provision of firefighting equipment to be located close to transformers, switchgear	Substation design compliance with fire prevention and control codes	Tender document to mention detailed specifications – Once	HPPTCL	Part of detailed substation layout and design/drawings	Being Complied	
CONSTRUCTION PHASE								
A Physical Resources								
Site clearance	Soil erosion and surface runoff	Construction near seasonal rivers, erosion and flood-prone areas should be	Soil erosion	Visual inspection (Turbidity and sedimentatio	Contractor through contract provisions under	Construction period	The EMP has been missed out in contractor's	The HPPTCL will issue the corrigendu

Project Activity	Potential Environmental Impact	Mitigation Action	Parameters to be Monitored	Standards/ Measurement/ Frequency	Institutional Responsibility	Implementation Schedule	Status during the reporting period	Follow-up action, if any
		restricted to the non-rainy season. Provision and maintenance of drains and retention ponds. Treat clearing and filling areas against flow acceleration and construction work should be carefully designed to minimise obstruction or destruction to natural drainage.		n) – Once	supervision of HPPTCL		contract agreement.	m to include EMP as part of contractor's contract agreement
Removal of disturbance to public utility services-Water supply, sanitation	Public inconvenience	Advance notice to the public about the time and the duration of the utility disruption. Use of well trained and experienced machinery operators to reduce accidental damage to the public utilities - pipelines Restore the utilities	Disruption to other commercial and public activities/public complaints	Technical specification – per public complaint – Once each time		Throughout construction period	Being Complied	

Project Activity	Potential Environmental Impact	Mitigation Action	Parameters to be Monitored	Standards/ Measurement/ Frequency	Institutional Responsibility	Implementation Schedule	Status during the reporting period	Follow-up action, if any
		immediately to overcome public inconvenience						
Equipment layout and installation	SF6 leakage during storage and erection of Switchgear	Record of all substation switchgear, cylinders located within secure casings	Switchgear casings and substation bounded area.	As per (International Electro-technical Commission) IEC standards - Once per year		throughout construction/erection	Being Complied	
Surplus earthwork/soil	Runoff to cause water pollution, solid waste disposal	Excess fill from tower foundation excavation to be reused on site or disposed of next to roads or around houses, in agreement with the local community or landowners.	Location and amount (m3) of fill disposal Soil disposal locations and volume (m3)	Appropriate fill disposal and dispersal locations - Quarterly		Construction Period	Being Complied (Ref Annexure VI)	
B Environment Resources								
Equipment layout and installation	Noise and vibrations	Selection of construction techniques and machinery to minimise ground disturbance.	Construction techniques and machinery	Minimal ground disturbance - Monthly		Construction Period	Being Complied	
Substation construction	Loss of soil	Cutting and filling for the substation foundations obtained by creating or improving local drainage system.	Borrow area siting (area of site in m2 and estimated volume in m3)	CPCB norms - Quarterly	Contractor through contract provisions under supervision of ESC,	Construction Period	Being Complied	

Project Activity	Potential Environmental Impact	Mitigation Action	Parameters to be Monitored	Standards/ Measurement/ Frequency	Institutional Responsibility	Implementation Schedule	Status during the reporting period	Follow-up action, if any
					HPPTCL			
	Water pollution	Minimize construction activities involving significant ground disturbance (i.e. substation land forming) during the monsoon season. Provide drains and retention ponds if required.	Water Quality (pH, BOD/COD, suspended solids, other) during major earthworks	GoI water quality standards – Once prior to start of construction activities		Construction Period	Being complied	
Provision of facilities for construction workers	Contamination of receptors (land, water, air)	Construction workforce facilities to include proper sanitation, water supply and waste disposal facilities.	Amenities for Workforce.	Presence of proper sanitation, water supply and waste disposal facilities - Once		Construction Period	Being Complied	
Mechanised construction	Noise, vibration and operator safety, efficient operation Noise, vibration, equipment wear and tear	Construction equipment to be well maintained. Construction techniques and Machinery selection to minimize ground disturbance. Proper maintenance and	Construction techniques and equipment - estimated noise emissions and operating schedules	Technical specifications, safety regulations, Noise control regulations - Quarterly	Contractor through contract provisions under supervision of HPPTCL	Construction Period	Being Complied	

Project Activity	Potential Environmental Impact	Mitigation Action	Parameters to be Monitored	Standards/ Measurement/ Frequency	Institutional Responsibility	Implementation Schedule	Status during the reporting period	Follow-up action, if any
		turning off plant not in use.						
Construction of roads for accessibility to substations	Increase in airborne dust particles Increased land requirement for temporary accessibility	Existing roads and tracks used for construction and maintenance access to the site wherever possible. New access ways restricted to a minimum of single carriageway width.	Access roads, routes (length and width of access roads)	Use of established roads wherever possible Access restricted to a minimum of single carriageway width-Once	Contractor through contract provisions under supervision of HPPTCL	Construction Period	Being Complied	
C Ecological Resources								
Site clearance	Vegetation	Marking of vegetation to be removed prior to clearance, and strict control on clearing activities to ensure minimal clearance.	Vegetation marking and clearance control (area in m2)	Clearance strictly limited to target vegetation-Once	Contractor through contract provisions under supervision of HPPTCL	Construction Period	Being complied	
Trimming/cutting of trees within RoW	Loss of vegetation and deforestation	Trees that can survive cutting should be pruned. Felled trees and other cleared or pruned vegetation to be disposed off by authorised	Species-specific tree retention as approved by statutory authorities (average and maximum tree height at maturity, in meters)	Presence of target species in RoW following vegetation clearance – Once.	HPPTCL, Contractor through contract provisions under supervision of forest department	Construction Period	Being Complied	

Project Activity	Potential Environmental Impact	Mitigation Action	Parameters to be Monitored	Standards/ Measurement/ Frequency	Institutional Responsibility	Implementation Schedule	Status during the reporting period	Follow-up action, if any
		agents/forest department.	Disposal of cleared vegetation as approved by the statutory authorities (area cleared in m2)					
Wood/ vegetation harvesting, cut and fill operations	Loss of vegetation and deforestation	Construction workers prohibited from harvesting wood in the project area during their employment.	Illegal wood/vegetation harvesting (area in m2, number of incidents reported)	Complaints by local people or other evidence of illegal harvesting – Once	HPPTCL, Contractor through contract provisions.	Construction Period	Being Complied	
	Effect on fauna	Prevent work force from disturbing the flora, fauna including hunting of animals and fishing in water bodies. Proper awareness program regarding conservation of flora, fauna including ground vegetation to all workers.	Habitat loss	Complaints by local people or other evidence of illegal hunting - Once		Construction Period		
D Human Environment								
Construction schedules for	Noise nuisance to	Minimize construction	Timing of construction	Construction as per	HPPTCL, Contractor	Construction Period	Being Complied	

Project Activity	Potential Environmental Impact	Mitigation Action	Parameters to be Monitored	Standards/ Measurement/ Frequency	Institutional Responsibility	Implementation Schedule	Status during the reporting period	Follow-up action, if any
substation	neighbouring properties	activities undertaken during the night and local communities informed of the construction schedule.	(noise emissions, dBA)	Scheduled timings only	through contract provisions			
Acquisition of cultivable lands	Loss of agricultural productivity	Avoid faming/harvesting season for field crops wherever possible for the project activities. Ensure existing irrigation facilities are maintained in working condition Protect /preserve topsoil and reinstate after construction completed Repair /reinstate damaged bunds etc. after construction completed Compensation for temporary loss in agricultural production	Land area of agriculture loss Usage of existing utilities Status of facilities (earthwork in m3) Implementation of crop compensation (amount paid, dates, etc.)	Loss of crops-work in post harvest period but before next crop – Once per site	HPPTCL, Contractor through contract provisions	Throughout Construction Period	Being Complied	

Project Activity	Potential Environmental Impact	Mitigation Action	Parameters to be Monitored	Standards/ Measurement/ Frequency	Institutional Responsibility	Implementation Schedule	Status during the reporting period	Follow-up action, if any
Temporary use of land	Losses to neighboring land uses/ values	Contract clauses specifying careful construction practices. As much as possible existing access ways will be used. Productive land will be reinstated following completion of construction Compensation will be paid for loss of production, if any.	Contract clauses Design basis and layout. Reinstatement of land status (area affected, m2). Implementation of Tree/Crop compensation (amount paid).	Incorporating good construction management, design engineering practices - Once. Consultation with affected parties immediately after completion of construction and after the first harvest – Once.	Contractor through contract provisions under supervision of HPPTCL	Construction Period	Being Complied	
Transportation and storage of materials	Nuisance to the general public	Transport loading and unloading of construction materials should no cause nuisance to the people by way of noise, vibration and dust Avoid storage of construction materials beside the road, around water bodies,	Water and Air Quality	CPCB Emission standards and Water Quality standards - Quarterly	Contractor through contract provisions under supervision of HPPTCL	Throughout the construction Period	Being Complied	

Project Activity	Potential Environmental Impact	Mitigation Action	Parameters to be Monitored	Standards/ Measurement/ Frequency	Institutional Responsibility	Implementation Schedule	Status during the reporting period	Follow-up action, if any
		residential or public sensitive locations Construction materials should be stored in covered areas to ensure protection from dust, emissions and such materials should be bundled in environment friendly and nuisance free manner						
Temporary outage of the electricity	Loss of power supply to the local community when distribution lines crossing the new transmission line are switched off	Advance notice to the public about the time and the duration of the utility disruption Restore the utilities immediately to overcome public inconvenience	Disruption of power supply to houses and commercial premises.	Regular monitoring during the period of construction - At each public complaint.	Contractor through contract provisions under supervision of HPPTCL,	Throughout the construction period	Being Complied	

Project Activity	Potential Environmental Impact	Mitigation Action	Parameters to be Monitored	Standards/ Measurement/ Frequency	Institutional Responsibility	Implementation Schedule	Status during the reporting period	Follow-up action, if any
Health and safety	Injury and sickness of workers and members of the public	Contract provisions specifying minimum requirements for construction camps Contractor to prepare and implement a health and safety plan and provide workers with required PPE. Contractor to arrange for health and safety awareness programmes including on AIDS and sexually transmitted diseases (STD).	Contract clauses (number of incidents and total lost-work days caused by injuries and sickness)	HPPTCL and ADB Health and safety standards - Monthly	Contractor through contract provisions under supervision of HPPTCL	Construction Period	Health and safety awareness programmes including on AIDS and sexually transmitted diseases (STD)" has not been initiated by the contractor.	
Capacity Building	Improve standards of implementation and monitoring	Training of HPPTCL staff	Training schedules	Number of training program - Yearly	HPPTCL-ESC	Construction Period	Being Complied	
OPERATION AND MAINTENANCE PHASE								
A Physical Resources								
Operation of Switchgear	Leakage of SF6 gas	Record of all substation switchgear located within secure casings	Switchgear casings and substation boundary	Ozone Depleting substances – Monthly	HPPTCL	Throughout the operation		
Add SF6 training etc								

Project Activity	Potential Environmental Impact	Mitigation Action	Parameters to be Monitored	Standards/ Measurement/ Frequency	Institutional Responsibility	Implementation Schedule	Status during the reporting period	Follow-up action, if any
B Environmental Resources								
Soil Erosion at tower base of transmission line	Removal of top soil	Planting of buffer zone species suitable for hilly terrain	Turbidity of water (Visual Inspection)	Visual inspection (Turbidity and sedimentation)-Quarterly	HPPTCL	Throughout the operation	The project is still in construction stage, hence not applicable.	
Oil spillage	Contamination of land/nearby water bodies	Substation transformers located within secure and impervious bundled areas with a storage capacity of at least 100% of the capacity of oil in transformers and associated reserve tanks.	Substation bounding ("as-built" diagrams)	Hazardous Waste (Management, handling, Trans-boundary Movement) Rules 2009 - Monthly	HPPTCL	Throughout the operation	The project is still in construction stage, hence not applicable.	
C Ecological Recourses								
Trimming/cutting of trees within RoW	Fire hazards	Trees allowed growing up to a height within the RoW by maintaining adequate clearance between the top of tree and the conductor as per the regulations. Regular pruning is required.	Species-specific tree retention as approved by statutory authorities (average and maximum tree height at maturity, in meters	Presence of target species in RoW following vegetation clearance) - Quarterly.	HPPTCL, with forest department	operation Period	The project is still in construction stage, hence not applicable.	
D Human Environment								
Maintenance of	Exposure to	Transmission	Required	Ground	HPPTCL	Operation Period	The project	

Project Activity	Potential Environmental Impact	Mitigation Action	Parameters to be Monitored	Standards/ Measurement/ Frequency	Institutional Responsibility	Implementation Schedule	Status during the reporting period	Follow-up action, if any
Transmission line	electromagnetic interference	line design to comply with the limits of electromagnetic interference from overhead power lines	ground clearance (meters).	clearance, standards on EMF – Annual			is still in construction stage, hence not applicable.	
Substation maintenance	Exposure to electromagnetic interference	Substation design to comply with the limits of electromagnetic interference within floor area	Required noise vibrations levels	Technical specifications – on public complaint	HPPTCL	Throughout the operation	The project is still in construction stage, hence not applicable.	
Noise generation	Nuisance to the community around the site	Provision of noise barriers near substation sites	Noise level	Noise level (dbA)- Once a year	HPPTCL	Throughout the operation	The project is still in construction stage, hence not applicable.	
Electric shock	Death or injury to the workers and public	Security fences around substation Establishment of warning signs Careful design using appropriate technologies to minimise hazards	Proper maintenance of fences and sign boards Usage of appropriate technologies (lost work days due to illness and injuries)	Periodic maintenance Number of programmes and percent of staff/ workers covered	HPPTCL	Throughout the operation	The project is still in construction stage, hence not applicable.	
Training for Electric safety	Raising awareness for electrical safety measures	Training of HPPTCL personnel.	Training schedules	Number of training program - Yearly	HPPTCL-ESC	Operations	The project is still in construction stage, hence not applicable.	

F. Monitoring of environmental receptors/ attributes

10. The ADB approved environmental monitoring plan is given in table 7.

Table 7: Environmental monitoring plan

Environmental component	Project stage	Parameters to be monitored	Location	Frequency	Standards	Implementation	Supervision
1.Air Quality	A. Pre-construction stage (The project once assigned to contractor)	PM10, PM2.5, SO2, NOx, SPM, CO along with Meteorological data-temperature Humidity, wind speed, wind direction	Inside and outside (0.5 km) of the proposed substation	One time	National Air quality standards of CPCB	Contractor by CPCB approved laboratory	Contractor/ PMU
	B. Construction Stage	PM10, PM2.5, SO2, NOx, SPM, CO along with Meteorological data-temperature Humidity, wind speed, wind direction	Inside and outside (0.5 km) of the proposed substation	Two times	National Air quality standards of CPCB	Contractor by CPCB approved laboratory	Contractor/ PMU
	C. Operation Stage	PM10, PM2.5, SO2, NOx, SPM, CO along with Meteorological data-temperature Humidity, wind speed, wind direction	Inside and outside (0.5 km) of the proposed substation	One time	National Air quality standards of CPCB	Contractor by CPCB approved laboratory	PMU
2.Water Quality	A. Pre-construction stage (The project once assigned to contractor)	EC, TSS, DO, BOD, PH Oil and grease, Pb,	Nearest downstream spring/handpump wells (2 wells) around the substation	One time	National water quality standards of CPCB	Contractor by CPCB approved laboratory	Contractor/ PMU

Environmental component	Project stage	Parameters to be monitored	Location	Frequency	Standards	Implementation	Supervision
	B. Construction Stage	EC, TSS, DO, BOD, PH, Oil and grease, Pb	Nearest downstream spring/handpump wells (2 wells) around the substation	Three times/year	National water quality standards of CPCB	Contractor by CPCB approved laboratory	Contractor/ PMU
	C. Operation Stage	EC, TSS, DO, BOD, PH Oil and grease, Pb	Nearest downstream spring/handpump wells (2 wells) around the substation	Yearly	National water quality standards of CPCB	Contractor by CPCB approved laboratory	PMU
3.Noise/ Vibration	A. Pre-construction stage (The project once assigned to contractor)	Noise level in dB (A)	Inside and outside (0.25 km) of the proposed substation	A single time	CPCB standards for Noise and vibrations	Contractor by CPCB approved laboratory	Contractor/ PMU
	B. Construction Stage	Noise level in dB (A)	Inside and outside (0.25 km) of the proposed substation	2 times/ year	CPCB standards for Noise and vibrations	Contractor by CPCB approved laboratory	Contractor/ PMU
	C. Operation Stage	Noise level in dB (A)	Inside and outside (0.25 km) of the proposed substation	Yearly	CPCB standards for Noise and vibrations	Contractor by CPCB approved laboratory	PMU
4. Soil	A. Pre-construction stage (The project after assign to contractor)	PH, Sulfate (SO3), Chloride, ORP, water Soluble salts EC, Organic Matter, Moisture Content	Inside and outside (just close to the proposed site, 2 locations) of the proposed substation	A single time	Technical specifications	Contractor by CPCB approved laboratory	Contractor/ PMU
	B. Construction Stage	PH, Sulfate (SO3), Chloride, ORP, water Soluble salts EC, Organic Matter, Moisture Content	Inside and outside (just close to the proposed site, 2 locations) of the proposed substation	Two times	Technical specifications	Contractor by CPCB approved laboratory	Contractor/ PMU
	C. Operation	PH, Sulfate (SO3),	Inside and outside (just	A single time	Technical specificati	Contractor by CPCB	PMU

Environmental component	Project stage	Parameters to be monitored	Location	Frequency	Standards	Implementation	Supervision
	Stage	Chloride, ORP, water Soluble salts EC, Organic Matter, Moisture Content	close to the proposed site, 2 locations) of the proposed substation		ons	approved laboratory	

ESC –Environment & Social Cell of HPPTCL

Abbreviations:
SO2- -Sulphur Dioxide; NO2- - Nitrogen Dioxide; CO- Carbon Monoxide; EC – Electric Conductivity;
Pb – Lead; PM2.5 - Particulate Matter <2.5; PM10 - Particulate Matter <10; TSPM- Total suspended Particulate Matter;
EC - Electrical Conductivity; DO - Dissolved Oxygen; TSS - Total Suspended Solids;
BOD - Biological Oxygen Demand; NAAQS - National Ambient Air Quality Standards;
NWQS - National water Quality Standards; HPPTCL – HP Power Transmission Corporation Limited;
ORP – Oxidation Reduction Potential.

Monitoring of environmental receptors/ attributes during the reporting period:

11. The environmental monitoring of ambient air quality, ambient noise levels, ground water quality and soil quality analysis have been done during the reporting period at Lahal, Urni Sunda and Charor sub-stations and the details of ambient air quality, ambient noise levels, surface and ground water quality monitoring are given in table 7.1, table 7.2, table 7.3 and table 7.4 respectively.

Table 7.1: Ambient air quality monitoring during the reporting period

Sr. No.	Location	Date
1	66KV Sub-Station, Urni	21.4.16
2	220/400KV SUB STATION, Lahal	6.10.16
3	66/66/220 KV Sub-Station, Sunda	9.5.16
4	33/220KV Sub-Station Chharor, HP	1.7.16

Table 7.2: Ambient Noise Levels monitoring during the reporting period

Sr. No.	Location	Date
1	66KV Sub-Station, Urni	23.04.16
2	220/400KV SUB STATION, Lahal	7.10.16
3	66/66/220 KV Sub-Station, Sunda	12.5.16
4	33/220KV Sub-Station Chharor, HP	4.07.16

Table 7.3: Ground water monitoring during the reporting period

Sr. No.	Location	Date
1	66KV Sub-Station, Urni	28.4.16

2	220/400KV SUB STATION, Lahal	16.10.16
3	66/66/220 KV Sub-Station, Sunda	19.5.16
4	33/220KV Sub-Station Chharor, HP	21.7.16

Table 7.4: Soil quality analysis during the reporting period

Sr. No.	Location	Date
1	66KV Sub-Station, Urni	29 0416
2	220/400KV SUB STATION, Lahal	19.10.16
3	66/66/220 KV Sub-Station, Sunda	22.5.16
4	33/220KV Sub-Station Chharor, HP33/132 KV Sub-Station Pandoh HP	24.7.16

Analysis of Monitoring results: All the monitoring results are within permissible limits and details of ambient air quality, ambient noise levels, ground water quality and soil quality analysis have been given in table 7.5, table 7.6, table 7.7 and table 7.8 respectively.

Table 7.5: Ambient air quality

At Urni sub-station

Sr. No.	Name of the Parameter	Standard limit	Results			Remarks
			Location 1	Location 2	Location 3	
1.	PM_{10} (µg/m^3)	100	35.9	36.9	26.1	All the results are within permissible limits
2.	$PM_{2.5}$ (µg/m^3)	60	24.2	25.9	18.3	
3.	SO_2 (µg/m^3)	80	1.22	2.95	3.41	
4.	NO_x (µg/m^3)	80	4.10	6.01	2.05	
5.	NH_3 (µg/m^3)	400	21.7	22.7	21.5	
6.	CO (mg/m^3)	4	1.15	2.18	1.07	
7.	O_3 (µg/m^3)	180	N.D	N.D	N.D	
8.	C_6H_6 (µg/m^3)	5	N.D	N.D	N.D	
9.	Benzo(a)Pyrene (ng/m^3)	1	N.D	N.D	N.D	
10.	Pb (µg/m^3)	1	N.D	N.D	N.D	
11.	As (ng/m^3)	6	N.D	N.D	N.D	
12.	Ni (ng/m^3)	20	N.D	N.D	N.D	

Ambient air quality at Lahal sub-station

Sr. No.	Name of the Parameter	Standard limit	Results			Remarks
			Location 1	Location 2	Location 3	
1.	PM_{10} (µg/m^3)	100	36.2	38.3	40.1	All the results are within permissible limits
2.	$PM_{2.5}$ (µg/m^3)	60	24.7	26.3	28.7	
3.	SO_2 (µg/m^3)	80	4.60	4.58	5.08	
4.	NO_x (µg/m^3)	80	2.58	2.14	3.78	
5.	NH_3 (µg/m^3)	400	26.30	23.2	27.80	
6.	CO (mg/m^3)	4	1.40	1.31	1.09	
7.	O_3 (µg/m^3)	180	N.D	N.D	N.D	
8.	C_6H_6 (µg/m^3)	5	N.D	N.D	N.D	
9.	Benzo(a)Pyrene (ng/m^3)	1	N.D	N.D	N.D	
10.	Pb (µg/m^3)	1	N.D	N.D	N.D	

11.	As (ng/m^3)	6	N.D	N.D	N.D	
12.	Ni (ng/m^3)	20	60.9	N.D	N.D	

Ambient air quality at Sunda sub-station

Sr. No.	Name of the Parameter	Standard limit	Results			Remarks
			Location 1	Location 2	Location 3	
1.	PM_{10} (µg/m^3)	100	42.4	44.2	40.2	All the results are within permissible limits
2.	$PM_{2.5}$ (µg/m^3)	60	28.4	22.4	20.6	
3.	SO_2 (µg/m^3)	80	2.08	1.56	2.08	
4.	NO_x (µg/m^3)	80	5.78	3.24	3.78	
5.	NH_3 (µg/m^3)	400	32.10	13.2	33.80	
6.	CO (mg/m^3)	4	2.01	1.41	1.01	
7.	O_3 (µg/m^3)	180	N.D	N.D	N.D	
8.	C_6H_6 (µg/m^3)	5	N.D	N.D	N.D	
9.	Benzo(a)Pyrene (ng/m^3)	1	N.D	N.D	N.D	
10.	Pb (µg/m^3)	1	N.D	N.D	N.D	
11.	As (ng/m^3)	6	N.D	N.D	N.D	
12.	Ni (ng/m^3)	20	N.D	N.D	N.D	

Ambient air quality at Charor sub-station

Sr. No.	Name of the Parameter	Standard limit	Results			Remarks
			Location 1	Location 2	Location 3	
1.	PM_{10} (µg/m^3)	100	23.0	18.1	23.5	All the results are within permissible limits
2.	$PM_{2.5}$ (µg/m^3)	60	18.50	22.5	17.2	
3.	SO_2 (µg/m^3)	80	2.08	1.75	1.60	
4.	NO_x (µg/m^3)	80	0.80	0.80	0.78	
5.	NH_3 (µg/m^3)	400	12.15	13.45	12.10	
6.	CO (mg/m^3)	4	0.50	0.50	0.50	
7.	O_3 (µg/m^3)	180	N.D	N.D	N.D	
8.	C_6H_6 (µg/m^3)	5	N.D	N.D	N.D	
9.	Benzo(a)Pyrene (ng/m^3)	1	N.D	N.D	N.D	
10.	Pb (µg/m^3)	1	N.D	N.D	N.D	
11.	As (ng/m^3)	6	N.D	N.D	N.D	
12.	Ni (ng/m^3)	20	N.D	N.D	N.D	

Table 7.6: Ambient Noise quality

At Urni sub-station:

Location	Limits of Leq in dB(A) (Standard)		Results		Remarks
	Day	Night	Day	Night	
1	75	70	63.6	58.5	The results are within permissible limits
2	75	70	64.1	58.9	
3	75	70	39.4	32.9	

Ambient Noise levels at Lahal sub-station:

Location	Limits of Leq in dB(A) (Standard)		Results		Remarks
	Day	Night	Day	Night	
1	75	70	56.3	49.8	The results are within permissible limits
2	75	70	53.6	50.1	
3	75	70	39.7	34.5	

Ambient Noise levels at Sunda sub-station:

Location	Limits of Leq in dB(A) (Standard)		Results		Remarks
	Day	Night	Day	Night	
1	75	70	52.8	46.3	The results are within permissible limits
2	75	70	51.6	48.1	
3	75	70	45.3	40.1	

Ambient Noise levels at Charor sub-station:

Location	Limits of Leq in dB(A) (Standard)		Results		Remarks
	Day	Night	Day	Night	
1	75	70	41.6	35.1	The results are within permissible limits
2	75	70	38.6	35.1	
3	75	70	30.5	25.3	

12. The Ground water monitoring has been done at Urni Lahal, Charor and Sunda sub-stations only and the results are given in table 7.7.

Table 7.7: Ground water quality results
At Urni substation

Sr. No.	Name of the parameter	Units	Requirement		Results			
			Acceptable limit	Permissible limit in absence of alternative source	Location 1	Location 2	Location 3	Location 4
1.	Color	NTU	5	15	0.14	0.1	0.2	0.11
2.	Hardness as $CaCO_3$	mg/L	200	600	52.95	55.10	51.21	52.65
3.	Odor	-	Odorless	Odorless				
4.	TDS	mg/L	500	2000	50.95	52.39	52.55	51.65
5.	Turbidity	NTU	1	5	2.30	0.7	0.2	0.11
6.	Cyanide as CN	mg/L	0.05	No Relaxation	N/D	N/D	N/D	N/D
7.	Chloride as Cl	mg/L	250	1000	16.45	15.21	16.12	14.72
8.	Flouride as F	mg/L	1.0	1.5	0.51	0.49	0.45	0.48
9.	Nitrate as NO_3	mg/L	45	No Relaxation	0.81	0.58	0.74	0.58
10.	pH	-	6.5-8.5	No Relaxation	7.77	7.9	7.8	7.95
11.	Sulphate as SO_4	mg/L	200	400	10.22	N/D	N/D	11.23
12.	Phenolic Compounds as C_6H_5OH	mg/L	0.001	0.002	N/D	N/D	N/D	N/D
13.	Arsenic as As	mg/L	0.01	0.05	N/D	N/D	N/D	N/D

Sr. No.	Name of the parameter	Units	Requirement		Results			
			Acceptable limit	Permissible limit in absence of alternative source	Location 1	Location 2	Location 3	Location 4
14.	Copper as Cu	mg/L	0.05	1.5	N/D	N/D	N/D	N/D
15.	Cadmium	mg/L	0.003	No Relaxation	N/D	N/D	N/D	N/D
16.	Iron as Fe	mg/L	0.3	No Relaxation	N/D	N/D	N/D	N/D
17.	Lead as Pb	mg/L	0.01	No Relaxation	N/D	N/D	N/D	N/D
18	Calcium as Ca^{2+}	mg/L	75	200	34.22	32.55	33.76	34.26
19.	Magnesium as Mg^{2+}	mg/L	30	100	5.24	4.85	4.68	5.12
20.	Manganese as Mn	mg/L	0.1	0.3	N/D	N/D	N/D	N/D
21.	Mercury as Hg	mg/L	0.001	No Relaxation	N/D	N/D	N/D	N/D
22.	Selenium as Se	mg/L	0.01	No Relaxation	N/D	N/D	N/D	N/D
23.	Zinc as Zn	mg/L	5	15	N/D	N/D	N/D	N/D
24.	Total Coliforms	mg/L	Absent	-	N/D	N/D	N/D	Absent
25.	Chromium as Cr	mg/L	0.05	No Relaxation	N/D	N/D	N/D	N/D
26.	COD		No guidelines	-	26.6	27.1	27.9	27.4
27.	BOD	mg/l	-	2	1.19	1.21	1.27	1.21
28.	DO	mg/l	-	6	0.25		2.0	
29.	Electrical Conductivity	µS/cm	750	0-2000	21.5	20.90	21.8	22.2

All the results are within permissible limits

At Lahal sub-station

Sr. No.	Name of the parameter	Units	Requirement		Results			
			Acceptable limit	Permissible limit in absence of alternative source	Location 1	Location 2	Location 3	Location 4
1.	Color	NTU	5	15	0.14	0.1	0.03	0.2
2.	Hardness as $CaCO_3$	mg/L	200	600	56.23	55.03	51.45	55.03
3.	Odor	-	Odorless	Odorless				
4.	TDS	mg/L	500	2000	50.25	52.25	51.30	54.10
5.	Turbidity	NTU	1	5	0.14	0.1	0.8	0.13
6.	Cyanide as CN	mg/L	0.05	No Relaxation	N/D	N/D	N/D	N/D
7.	Chloride as Cl	mg/L	250	1000	16.52	15.71	15.85	15.35
8.	Flouride as F	mg/L	1.0	1.5	0.50	0.59	0.80	0.65
9.	Nitrate as NO_3	mg/L	45	No Relaxation	0.80	0.89	0.89	0.77
10.	pH	-	6.5-8.5	No Relaxation	6.7	6.99	7.55	8.1
11.	Sulphate as SO_4	mg/L	200	400	N/D	10.79	11.23	10.62
12.	Phenolic Compounds as C_6H_5OH	mg/L	0.001	0.002	N/D	N/D	N/D	N/D
13.	Arsenic as As	mg/L	0.01	0.05	N/D	N/D	N/D	N/D
14.	Copper as Cu	mg/L	0.05	1.5	N/D	N/D	N/D	N/D
15.	Cadmium	mg/L	0.003	No Relaxation	N/D	N/D	N/D	N/D
16.	Iron as Fe	mg/L	0.3	No Relaxation	N/D	N/D	N/D	N/D
17.	Lead as Pb	mg/L	0.01	No Relaxation	N/D	N/D	N/D	N/D
18	Calcium as Ca^{2+}	mg/L	75	200	34.36	34.16	31.88	34.15
19.	Magnesium as Mg^{2+}	mg/L	30	100	5.28	5.08	5.45	5.05

Sr. No.	Name of the parameter	Units	Requirement		Results			
			Acceptable limit	Permissible limit in absence of alternative source	Location 1	Location 2	Location 3	Location 4
20.	Manganese as Mn	mg/L	0.1	0.3	N/D	N/D	N/D	N/D
21.	Mercury as Hg	mg/L	0.001	No Relaxation	N/D	N/D	N/D	N/D
22.	Selenium as Se	mg/L	0.01	No Relaxation	N/D	N/D	N/D	N/D
23.	Zinc as Zn	mg/L	5	15	N/D	N/D	N/D	N/D
24.	Total Coliforms	mg/L	Absent	-	Absent	Absent	Absent	Absent
25.	Chromium as Cr	mg/L	0.05	No Relaxation	N/D	N/D	N/D	N/D
26.	COD		No guidelines	-	27.9	27.9	25.8	27.7
27.	BOD	mg/l	-	2	1.27	1.27	1.20	1.22
28.	DO	mg/l	-	6		2.0		1.18
29.	Electrical Conductivity	µS/cm	750	0-2000	20.1	21.7	22.19	23.0

All the results are within permissible limits

At Charor sub-station

Sr. No.	Name of the parameter	Units	Requirement		Results			
			Acceptable limit	Permissible limit in absence of alternative source	Location 1	Location 2	Location 3	Location 4
1.	Color	NTU	5	15	0.1	0.11	0.09	1
2.	Hardness as $CaCO_3$	mg/L	200	600	53.24	51.25	55.20	51.78
3.	Odor	-	Odorless	Odorless				
4.	TDS	mg/L	500	2000	53.35	51.27	55.15	51.85
5.	Turbidity	NTU	1	5	0.1	0.13	0.09	1
6.	Cyanide as CN	mg/L	0.05	No Relaxation	N/D	N/D	N/D	N/D
7.	Chloride as Cl	mg/L	250	1000	15.75	15.18	15.60	15.35
8.	Flouride as F	mg/L	1.0	1.5	0.65	0.21	0.65	0.38
9.	Nitrate as NO_3	mg/L	45	No Relaxation	0.95	0.41	0.62	0.85
10.	pH	-	6.5-8.5	No Relaxation	6.9	6.8	7.2	7.11
11.	Sulphate as SO_4	mg/L	200	400	N/D	N/D	N/D	N/D
12.	Phenolic Compounds as C_6H_5 OH	mg/L	0.001	0.002	N/D	N/D	N/D	N/D
13.	Arsenic as As	mg/L	0.01	0.05	N/D	N/D	N/D	N/D
14.	Copper as Cu	mg/L	0.05	1.5	N/D	N/D	N/D	N/D
15.	Cadmium	mg/L	0.003	No Relaxation	N/D	N/D	N/D	N/D
16.	Iron as Fe	mg/L	0.3	No Relaxation	N/D	N/D	N/D	N/D
17.	Lead as Pb	mg/L	0.01	No Relaxation	N/D	N/D	N/D	N/D
18	Calcium as Ca^{2+}	mg/L	75	200	34.20	32.20	32.45	32.75
19.	Magnesium as Mg^{2+}	mg/L	30	100	5.15	3.10	3.32	3.55
20.	Manganese as Mn	mg/L	0.1	0.3	N/D	N/D	N/D	N/D
21.	Mercury as Hg	mg/L	0.001	No Relaxation	N/D	N/D	N/D	N/D
22.	Selenium as Se	mg/L	0.01	No Relaxation	N/D	N/D	N/D	N/D
23.	Zinc as Zn	mg/L	5	15	N/D	N/D	N/D	N/D
24.	Total Coliforms	mg/L	Absent	-	Absent	Absent	Absent	Absent
25.	Chromium as Cr	mg/L	0.05	No Relaxation	N/D	N/D	N/D	N/D

Sr. No.	Name of the parameter	Units	Requirement		Results			
			Acceptable limit	Permissible limit in absence of alternative source	Location 1	Location 2	Location 3	Location 4
26.	COD		No guidelines	-	28.20	27.85	28.32	28.85
27.	BOD	mg/l	-	2	1.29	1.15	1.35	1.19
28.	DO	mg/l	-	6	2		2.01	1.75
29.	Electrical Conductivity	µS/cm	750	0-2000	20.78	22.99	23.65	25.63

All the results are within permissible limits

At Sunda sub-station

Sr. No.	Name of the parameter	Units	Requirement		Results			
			Acceptable limit	Permissible limit in absence of alternative source	Location 1	Location 2	Location 3	Location 4
1.	Color	NTU	5	15	0.09	0.1	0.12	0.1
2.	Hardness as $CaCO_3$	mg/L	200	600	51.73	54.05	56.01	56.15
3.	Odor	-	Odorless	Odorless				
4.	TDS	mg/L	500	2000	53.25	51.95	52.25	52.45
5.	Turbidity	NTU	1	5	0.09	0.1	0.121	0.1
6.	Cyanide as CN	mg/L	0.05	No Relaxation	N/D	N/D	N/D	N/D
7.	Chloride as Cl	mg/L	250	1000	15.31	15.17	15.70	15.91
8.	Flouride as F	mg/L	1.0	1.5	0.33	0.20	0.58	0.65
9.	Nitrate as NO_3	mg/L	45	No Relaxation	0.53	0.39	0.87	0.95
10.	pH	-	6.5-8.5	No Relaxation	6.80	7.2	8.1	7.87
11.	Sulphate as SO_4	mg/L	200	400	N/D	N/D	N/D	N/D
12.	Phenolic Compounds as C_6H_5OH	mg/L	0.001	0.002	N/D	N/D	N/D	N/D
13.	Arsenic as As	mg/L	0.01	0.05	N/D	N/D	N/D	N/D
14.	Copper as Cu	mg/L	0.05	1.5	N/D	N/D	N/D	N/D
15.	Cadmium	mg/L	0.003	No Relaxation	N/D	N/D	N/D	N/D
16.	Iron as Fe	mg/L	0.3	No Relaxation	N/D	N/D	N/D	N/D
17.	Lead as Pb	mg/L	0.01	No Relaxation	N/D	N/D	N/D	N/D
18	Calcium as Ca^{2+}	mg/L	75	200	33.26	35.16	34.46	34.43
19.	Magnesium as Mg^{2+}	mg/L	30	100	4.62	4.78	5.18	5.23
20.	Manganese as Mn	mg/L	0.1	0.3	N/D	N/D	N/D	N/D
21.	Mercury as Hg	mg/L	0.001	No Relaxation	N/D	N/D	N/D	N/D
22.	Selenium as Se	mg/L	0.01	No Relaxation	N/D	N/D	N/D	N/D
23.	Zinc as Zn	mg/L	5	15	N/D	N/D	N/D	N/D
24.	Total Coliforms	mg/L	Absent	-	Absent	Absent	Absent	N/D
25.	Chromium as Cr	mg/L	0.05	No Relaxation	N/D	N/D	N/D	Absent
26.	COD		No guidelines	-	27.2	26.9	28.7	28.7
27.	BOD	mg/l	-	2	1.05	1.07	1.48	1.35
28.	DO	mg/l	-	6		1.0	2.1	1.98
29.	Electrical	µS/cm	750	0-2000	28.9	22.29	23.15	21.3

Sr. No.	Name of the parameter	Units	Requirement		Results			
			Acceptable limit	Permissible limit in absence of alternative source	Location 1	Location 2	Location 3	Location 4
	Conductivity							

All the results are within permissible limits

13. The soil quality analysis has been done at Urni Lahal, Charor, Sunda, sub-stations only and the results are given in table 7.8.

Table 7.8: Soil quality analysis

At Lahal sub-station

Sr. No.	Test parameter	Units	Results			
			Location 1	Location 2	Location 3	Location 3
1.	pH	-	7.32	7.11	6.72	6.87
2.	EC	dS/m	21.70	23.32	23.12	22.12
3.	TDS	mg/l	25.16	14.85	13.46	14.25
4.	SiO_2	%	67.28	69.18	68.11	69.78
5.	Al_2O_3	%	17.89	14.95	14.41	15.15
6.	Fe_20_3	%	2.18	2.05	1.62	1.90
7.	Na_2O	%	3.50	4.95	4.70	5.10
8.	K_2O	%	4.30	1.1	0.96	1.13
9.	CaO	%	1.01	0.94	0.91	1.01
10.	MgO	%	0.92	0.90	0.74	1.04
11.	P_2O_5	%	0.76	0.65	0.43	0.98
12.	TiO_2	%	0.74	0.71	0.85	1.25

All the results are within permissible limits

At Charor sub-station

Sr. No.	Test parameter	Units	Results			
			Location 1	Location 2	Location 3	Location 3
1.	pH	-	7	6.9	6.5	7.3
2.	EC	dS/m	34.4	29.5	32.60	21.9
3.	TDS	mg/l	22.36	19.18	21.19	14.23
4.	SiO_2	%	69.14	57.78	61.29	71.20
5.	Al_2O_3	%	19.28	14.98	20.17	20.29
6.	Fe_20_3	%	3.15	3.01	3.12	1.21
7.	Na_2O	%	1.06	1.23	3.80	1.90
8.	K_2O	%	1.60	0.78	0.64	4.60
9.	CaO	%	0.39	0.05	0.51	2.00
10.	MgO	%	0.71	0.20	0.17	1.90
11.	P_2O_5	%	2.01	073	0.37	0.55
12.	TiO_2	%	0.35	096	0.66	0.68

All the results are within permissible limits

At Urni substation:

Sr. No.	Test parameter	Units	Results

			Location 1	Location 2	Location 3	Location 3
1.	pH	-	7.14	7.2	7	7.2
2.	EC	dS/m	28.10	26.50	27.70	26.9
3.	TDS	mg/l	13.65	13.95	13.35	13.47
4.	SiO_2	%	68.88	68.95	68.30	68.55
5.	Al_2O_3	%	14.89	14.97	14.10	14.22
6.	Fe_20_3	%	1.85	1.90	1.24	1.28
7.	Na_2O	%	4.99	5.1	4.85	4.88
8.	K_2O	%	1.20	1.35	1.10	1.16
9.	CaO	%	1.28	1.32	1.08	1.10
10.	MgO	%	1.18	1.22	1.02	1.09
11.	P_2O_5	%	0.99	1.01	0.95	0.99
12.	TiO_2	%	1.45	1.50	1.10	1.09

All the results are within permissible limits

At Sunda

Sr. No.	Test parameter	Units	Results			
			Location 1	Location 2	Location 3	Location 3
1.	pH	-	6.8	7.13	6.98	7.19
2.	EC	dS/m	26.1	23.10	21.10	21.0
3.	TDS	mg/l	13.26	13.66	13.10	13.50
4.	SiO_2	%	67.91	68.31	67.88	67.48
5.	Al_2O_3	%	14.21	14.61	14.11	14.25
6.	Fe_20_3	%	1.42	1.62	1.35	1.47
7.	Na_2O	%	4.50	4.90	4.32	4.55
8.	K_2O	%	076	1.16	0.90	0.94
9.	CaO	%	0.71	1.11	0.82	0.88
10.	MgO	%	0.84	0.94	0.69	0.78
11.	P_2O_5	%	0.23	0.63	0.31	0.58
12.	TiO_2	%	0.65	1.05	0.75	0.97

All the results are within permissible limits

G. Any other environmental aspects, impacts observed during implementation, which were not covered earlier during environmental assessment of the project.

14. Nil.

H. Details of Grievance Redress Committee and complaints received from public and actions taken thereof to resolve

15. The Grievance Redressal Committee has been constituted by HPPTCL. The grievances if any are generally addressed at PIU level efficiently. There are eight nos of PIUs under HPPTCL. The initial Grievances are received at PIU level in case the grievance could not be attended at PIU level; the grievance is redressed by Head office level grievance redressal committee tabulated below. During the reporting period, no grievance was received.

Grievance Redressal Committee

1	Project Head	Chairman	Same provision exists in IEE report
2	Head of Finance wing at the project level	Member	
3	Representative of local Panchayat	Member	
4	Representative of contractor	Member	
5	Project Environment/RR staff	Member Secretary	

I. Public consultation during project implementation for the reporting period

16. Public consultations were carried out during environmental assessment of the sub-projects. During the construction stage, the public consultations during the reporting period have been carried out for Charor-Banala 220 kV line and for remaining works it shall be initiated and coved in next EMR along with outcomes of public consultation. The photographs and attendance sheet of public consultation carried out for "Charor-Banala" 220 kV line are given in Annexure-IV and Annexure VII respectively.

J. Institutional set-up for EMP implementation

17. The Environment and Social cell (ESC) at the corporate level monitors the policy and implementation related environmental impacts of all projects of HPPTCL. The Environmental Officer in the ESC assists PIUs in all environmental aspects of the projects in compliance with HPPTCL's Environment and Social Safeguards Policy, May 2011.

Sr.No		Name of The Firm	Name Of environment and Safety officer
1	66kV GIS Switching station at Urni	M/s G.E T&D India limited	Avinash Kumar
2	33/220/400kV GIS Lahal Substation	M/S L& T Limited	Mr.Debnath
3	220 kV Line fr Lahal SS to Budhil HEP	M/s M.J Engineering	Mr
4	220kV DC Line from Sunda to Hatkoti	M/S Shyama Power Ltd.	Mr.Manish Verma
5	220kV Line from Charor to 400kV Banala SS	M/S R.S Infra Ltd.	Mr.Soshit Kumar

K. Follow – up actions and conclusion:

18. The following are pending issues for immediate compliance:
    a) Appointment of full time Environment consultant for the project;
    b) Issuance of ADB approved EMP as corrigendum to contract agreement to all the contractors;
    c) The HPPTCL has the land transfer approval from MoEF. The 3.1715 hactare land

transferred from M/s JSW Limited to HPPTCL as the scope of line changed from JSW to HPPTCL. The Approval of transfer is available at annexure V

d) The environmental monitoring of ambient air, ambient noise, ground water quality, and soil analysis for all the sub-projects as per ADB approved monitoring plan;
e) Conduct Information, Education and Consultation Communication (IEC) campaigns such as Sexually Transmitted Diseases (STD)-or Sexually Transmitted Infections (STI) in general and HIV/AIDS in particular to all the site staffs and labour (including all the contractor's employee, all the drivers and crew making deliveries to site for construction activities) and to the immediate local communities and
f) Regular public consultation and documentation during project implementation for all the sub-projects.

Annexure I: Site photographs

Physical progress of Urni substation

Physical Progress of Urni substation

Annexure II

Physical Progress of Lahal substation

Physical Progress of Lahal substation

Annexure III

220 KV D/C Line from Chharor to Banala

Tower Erection in Progress Charor Banala Line

Annexure IV

Public Consultation at Charor Banala line

Annexure V

Copies of Forest clearance applicable for the sub- projects

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हिमाचल प्रदेश सरकार
वन विभाग

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File No.- FFE-B-F(2)-2/2016 Dated Shimla-171002, the 6 -03-2017

Order

Sub :- Diversion of 36.7296 ha of forest land for the construction of 220KV Double Circuit Transmission Line from Choror to Banala in favour of Himachal Pradesh Power transmission Corporation Ltd., within the jurisdiction of Parvati, Seraj and Mandi Forest Divisions, Districts Kullu & Mandi, H.P.

भारत सरकार पर्यावरण, वन एवं जलवायु परिवर्तन मन्त्रालय क्षेत्रीय कार्यालय देहरादून द्वारा वन (संरक्षण) अधिनियम 1980 की धारा–2 के अन्तर्गत जारी स्वीकृति पत्र संख्या **No. 8B/HPB/04/02/2015/1741 dated 30-01-17** के परिणामस्वरुप, राज्यपाल, हिमाचल प्रदेश उपरोक्त विषय में दर्शित **36.7296** हैक्टेयर वन भूमि को **Himachal Pradesh Power Transmission Corporation Ltd.,** को उपयोग के लिए स्वीकृति निम्नलिखित शर्तें पूरी करने पर प्रदान करते हैं:-

1. वन भूमि की विधिक परिस्थिति नहीं बदली जाएगी।
2. प्रतिपूर्ति पौधारोपण प्रस्ताव के अनुसार कुल 74.00 हे० वन भूमि [1/20 Cheri Thach (47.50 ha), Dalashani (25.50 ha) & Thalout-II (1.00 ha)] में प्रयोक्ता एजेंसी से प्राप्त राशि से किया जाएगा। प्रतिपूर्ति पौधारोपण इस पत्र के जारी होने की तिथि से एक से दो वर्षों के अन्दर पूर्ण किया जाना चाहिए।
3. Below each conductor or conductor bundle, 3m width clearance would be permitted for stringing purpose within the approved RoW.
4. The trees on such strips would have to be felled but after stringing work is completed, natural regeneration will be allowed to come up. Felling/pollarding/pruning of trees will be done with the permission of the local forest officer, wherever necessary, to maintain the electrical clearance. One outer strip shall be left clear to permit maintenance of the transmission line.
5. During construction of transmission line, pollarding/pruning of trees located outside the above width of the strips, whose branches/parts infringe with conductor stringing, shall be permitted to the extent necessary, as may be decided by local forest officer.
6. Pruning of trees for taking construction/stringing equipments through existing approach/access routes in forest areas shall also be permitted to the extent necessary, as may be decided by local forest officer. Construction of new approach/access route will however, require prior approval under the Act.
7. In the remaining width of right of way trees will be felled or lopped within the RoW to the extent required, for preventing electrical hazards by maintaining minimum clearance between conductor and trees as 4.6 m for 220 KV.
8. In places where adequate clearance is already available, trees will not be cut except those minimum required to be cut for stringing of conductors.

Contd./-

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एन.पी.वी. की दरों में अगर बढ़ोतरी होती है तो प्रयोक्ता अभिकरण बढ़ी हुई दरों पर एन.पी.वी. देने के लिए बाध्य होगा।

10 प्रयोक्ता अभिकरण द्वारा प्रस्तावित वन क्षेत्र के आस–पास मजदूरों /स्टॉफ के लिये किसी भी प्रकार का कैम्प नहीं लगाया जायेगा।

11 प्रयोक्ता अभिकरण वन विभाग की देख–रेख में प्रत्यावर्तित भूमि का RCC Pillars लगाकर सीमांकन करेगा जिन पर Forward तथा Back bearing भी अंकित किया जाएगा।

12 प्रयोक्ता अभिकरण के द्वारा निर्माण कार्य के दौरान स्थल पर कार्यरत मजदूरों एवं स्टॉफ के लिए रसोई गैस / कैरोसिन तेल की आपूर्ति की जायेगी, जिससे निकटवर्ती वनों को क्षति न पहुँचे।

13 परियोजना निर्माण से उत्सर्जित मलवे का निस्तारण प्रयोक्ता अभिकरण द्वारा प्रस्तुत मलवा निस्तारण योजना के अनुसार प्रभागीय वनाधिकारी की देख–रेख में किया जाएगा एवं निर्दिष्ट स्थानों के अलावा अन्यत्र मलवा नहीं फेंका जाएगा।

14 परियोजना के निर्माण व रख–रखाव के दौरान आस–पास के क्षेत्र की वनस्पतियों एवं जीव–जन्तुओं को किसी प्रकार की क्षति नहीं पहुँचायी जायेगी।

15 वन भूमि का प्रयोग प्रस्ताव में दर्शाये गये उद्देश्य के अलावा अन्य किसी उद्देश्य के लिए नहीं किया जायेगा।

16 कम से कम वृक्षों का कटान/ पातन किया जाएगा, जिनकी संख्या प्रस्ताव के अनुसार 221से अधिक न हो।

17 यदि कोई अन्य सम्बन्धित अधिनियम / अनुच्छेद / नियम / न्यायालय आदेश /अनुदेश आदि इस प्रस्ताव पर लागू होते हैं, तो उनके अधीन जरूरी अनुमति लेना प्रयोक्ता एजेंसी की जिम्मेवारी होगी।

18 ऐसी अन्य कोई भी शर्त जो भारत सरकार भविष्य में पर्यावरण, वन एवं वन्य जीवों के संरक्षण हेतु आवश्यक समझे।

उपरोक्त शर्तों में से किसी भी शर्त का कार्यान्वयन सन्तोषप्रद नहीं पाए जाने पर, मन्त्रालय इस स्वीकृति को तत्काल प्रभाव से निरस्त कर सकता है। वन विभाग हि० प्र० के माध्यम से इन शर्तों की अनुपालना सुनिश्चित की जायेगी।

आदेश अनुसार
अतिरिक्त मुख्य सचिव (वन)
हिमाचल प्रदेश सरकार शिमला –2

Endst. No **FFE-B-F(2)-2/2016** (FCA) Dated, Shimla-171001 the, 6 -03-2017

Copy is forwarded to :-

1. Additional Director General of Forests, MoEF, Paryavaran Bhawan, Aliganj, Jorbagh Road, New Delhi – 110003.
2. Additional Principal Chief Conservator of Forests, Regional Office, Dehradun. Pearson Road, New Forest, Dehradun.
3. The Pr.CCF (HoFF) with the request to ensure compliance of all conditions contained in the above order.
4. The Nodal Officer-cum- CCF(FCA) O/o HPFD HQ Talland Shimla for information.
5. The Deputy Commissioner, Kullu Distt., Kullu H.P.
6. The Deputy Commissioner, Mandi Distt., Mandi H.P.
7. The Chief Conservator of Forests Mandi, Distt., Mandi H.P.
8. The Chief Conservator of Forests Kullu, Distt., Kullu H.P.
9. The General Manager, HP Power Transmission Corporation Ltd.Khalini Distt. Shimla.
10. Guard File.

5113
9/3/17

(Sat Pal Dhiman) 6-3-2017
Joint Secretary (Forests) to the
Government of Himachal Pradesh.

PCCF(T)

9/3
CCF(FCA)

PCCF

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भारत सरकार
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
क्षेत्रीय कार्यालय,
पियर्सन रोड,
वन अनुसंधान संस्थान परिसर,
पो0ओ0 न्यू फॉरेस्ट ,देहरादून–248006
दूरभाष: 0135–2750809,
ईमेल / Email moef.ddn@gmail.com

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FORESTS & CLIMATE CHANGE, REGIONAL OFFICE,
Pearson Road, FRI Campus,
P.O. New Forest, Dehrdun – 248006
Phone: 0135-2750809

पत्र सं0 8B/HPB/04/43/2015 / 2335

दिनांक: 21/01/2016

सेवा मे,

अतिरिक्त मुख्य सचिव (वन)
हिमाचल प्रदेश सरकार,
आगर्सडेल हिल्डिंग,शिमला।

विषय : Diversion of 20.4857 ha of forest land in favour of H.P. Power Transmission Corporation Limited for the construction of transmission line 220 KV D/C Transmission Line Sunda to Hatkoti within the jurisdiction of Rohru Forest Division, Distt. Shimla, H.P.

संदर्भ: नोडल अधिकारी एवं अपर प्रधान मुख्य वन संरक्षक के पत्रांक संख्या एफ.टी. 48–2932 / 2015 (एफ.सी.ए.) दिनांक 04.06.2015

महोदय,

उपरोक्त विषय पर नोडल अधिकारी एवं अपर प्रधान मुख्य वन संरक्षक, हिमाचल प्रदेश के संदर्भित पत्र का अवलोकन करने का कष्ट करें जिसके द्वारा Online Proposal no. FP/HP/Trans/8834/2014(FCA) विषयांकित प्रस्ताव पर केन्द्र सरकार से वन (संरक्षण) अधिनियम, 1980 की धार–2 के तहत स्वीकृति मांगी थी।

इस कार्यालय के समसंख्यक पत्र द्वारा अतिरिक्त सूचना चाही गयी, जिसकी अनुपालना प्राप्त होने के उपरान्त प्रस्ताव पर Regional Empowered Committee (REC) की दिनांक 27 अगस्त, 2015 को हुई बैठक में चर्चा की गई। REC की संस्तुति तथा इस संस्तुति के साथ वांछित आवश्यक सूचनाओं / दस्तावेजों के अपर प्रधान मुख्य वन संरक्षक एवं नोडल अधिकारी, हिमाचल प्रदेश के पत्र दिनांक 20.10.2015 द्वारा प्राप्त होने के उपरान्त इस संदर्भ में मुझे आपको यह सूचित करने का निर्देश हुआ है कि केन्द्र सरकार Diversion of 20.4857 ha of forest land in favour of H.P. Power Transmission Corporation Limited for the construction of transmission line 220 KV D/C Transmission Line Sunda to Hatkoti within the jurisdiction of Rohru Forest Division, Distt. Shimla, H.P. हेतु सैद्धान्तिक स्वीकृति निम्नलिखित शर्तो पर प्रदान की जाती है:–

1. वन विभाग द्वारा प्रस्तावित वन भूमि के दुगुने वन भूमि पर अर्थात 40.9714 हे0 (UF Denwari, Ghatdhar, Jakha-D) पर प्रतिपूरक वृक्षारोपण एवं उसके 7 वर्षो तक रखरखाव हेतु (वर्तमान दरों को समाहित करते हुए यथासंशोधित) प्रयोक्ता अभिकरण से आवश्यक धन राशि जमा कराई जायेगी।

2. प्रयोक्ता अभिकरण द्वारा भारत सरकार के पत्र संख्या 5–3 / 2007–एफ.सी. दिनांक 05.02.2009 के तहत दिये गये आदेशानुसार शुद्ध वर्तमान मूल्य (एन.पी.वी.) की निर्धारित राशि जमा की जायेगी।

3. शुद्ध वर्तमान मूल्य की दर में अगर बढ़ोतरी होती है, तो बढ़ी हुई दर के अनुसार अतिरिक्त धनराशि प्रयोक्ता अभिकरण द्वारा जमा की जायेगी। इस आशय की प्रयोक्ता अभिकरण द्वारा बचन बद्धता प्रस्तुत की जाए।

4. प्रयोक्ता अभिकरण द्वारा प्रस्तावित ट्रांसमीशन लाईन के नीचे, RoW के अंदर जहाँ–जहाँ संभव हो, बौने पौधों (मुख्यतः औषधीय पौधों) के रोपण एवम् 7–10 वर्षो तक रख–रखाव हेतु आवश्यक धनराशि (वर्तमान दरों को समाहित करते हुए यथासंशोधित) जमा की जाएगी। इस कार्य के लिए वन विभाग द्वारा तैयार की गई वृक्षारोपण योजना एवम् प्राकलन, जिसके आधार पर प्रयोक्ता अभिकरण से राशि प्राप्त की जाएगी, की एक प्रति रिकार्ड हेतु इस कार्यालय को प्रेषित की जाएगी।

5. प्रयोक्ता अभिकरण द्वारा भारत सरकार के पत्र संख्या 5–3 / 2007–एफ.सी. दिनांक 05.02.2009 के तहत दिये गये आदेशानुसार उपरोक्त सभी निधिया प्रतिपूर्ति वृक्षारोपण निधि प्रबन्धन तथा योजना प्राधिकरण (CAMPA) के तदर्थ निकाय खाता संख्या 34490201010541 9 यूनियन बैंक ऑफ इण्डिया, सुन्दर नगर, नई दिल्ली–110003 में जमा कराई जाए एवं इस कार्यालय को सूचित किया जाए।

उपरोक्त सभी शर्तो की पूर्ण एवं बिन्दुवार सुस्पष्ट परिपालन आख्या प्राप्त होने पर ही वन (संरक्षण) अधिनियम, 1980 के तहत विधिवत स्वीकृति जारी की जायेगी। कृपया अपूर्ण परिपालना आख्या इस कार्यालय को प्रेषित न की जाये। राज्य सरकार द्वारा विधिवत् स्वीकृति तथा प्रयोक्ता अभिकरण को वन भूमि हस्तान्तरण की कार्यवाही तब तक नही की जायेगी जब तक वन भूमि हस्तान्तरण की विधिवत् स्वीकृति भारत सरकार द्वारा जारी नहीं की जाती।

राज्य सरकार द्वारा सैद्धान्तिक स्वीकृति की अनुपालन आख्या प्राप्त होने के पश्चात् विधिवत् स्वीकृति अन्य आवश्यक शर्तो सहित निम्नलिखित शर्तो के साथ प्रदान की जायेगी:–

1. वन भूमि की विधिक परिस्थिति नही बदली जाएगी।
2. प्रतिपूर्ति पौधरोपण प्रस्ताव के अनुसार 40.9714 हे0 प्रतिपूर्ति पौधारोपण (UF Denwari, Ghatdhar, Jakha-D) एवं ट्रांसमिशन लाइन के नीचे बौने पौधे (मुख्यतः औषधीय पौधे) पौधरोपण इस पत्र के जारी होने की तिथि से एक से दो वर्षो के अन्दर पूर्ण किया जाना चाहिए।
3. Below each conductor or conductor bundle, 3m width clearance would be permitted for stringing purpose within the approved RoW.
4. The trees on such strips would have to be felled but after stringing work is completed, natural regeneration will be allowed to come up. Felling/pollarding/pruning of trees will be done with the permission of the local forest officer, wherever necessary, to maintain the electrical clearance. One outer strip shall be left clear to permit maintenance of the transmission line.

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5. During construction of transmission line, pollarding/pruning of trees located outside the above width of the strip, whose branches/parts infringe with conductor stringing, shall be permitted to the extent necessary, as may be decided by local forest officer.

6. Pruning of trees for taking construction/stringing equipments through existing approach/access routes in forest areas shall also be permitted to the extent necessary, as may be decided by local forest officer. Construction of new approach/access route will however, require prior approval under the Act.

7. In the remaining width of right of way trees will be felled or lopped within the RoW to the extent required, for preventing electrical hazards by maintaining minimum clearance between conductor and trees as follows: 4.6 m for 220 KV.

8. In the case of transmission lines to be constructed in hilly areas, where adequate clearance is already available, trees will not be cut except those minimum required to be cut for stringing of conductors.

9. एन.पी.वी. की दरो में अगर बढ़ोतरी होती है तो प्रयोक्ता अभिकरण बढ़ी दरों पर एन.पी.वी. देने के लिए बाध्य होगा।

10. प्रयोक्ता अभिकरण द्वारा प्रस्तावित वन क्षेत्र के आस–पास मजदूरों/स्टॉफ के लिये किसी भी प्रकार का लेबर कैम्प नहीं लगाया जायेगा।

11. प्रयोक्ता अभिकरण के द्वारा निर्माण कार्य के दौरान स्थल पर कार्यरत मजदूरों एवं स्टॉफ के लिये रसोई गैस/केरोसिन तेल की आपूर्ति की जायेगी, जिससे निकटवर्ती वनो को क्षति न पहुँचे।

12. परियोजना के निर्माण व रख–रखाव के दौरान आस–पास के क्षेत्र की वनस्पतियों एवं जीव–जन्तुओं को किसी प्रकार की क्षति नहीं पहुचायी जायेगी।

13. वन भूमि का प्रयोग प्रस्ताव में दर्शाये गये उद्देश्य के अलावा अन्य किसी उद्देश्य के लिए नही किया जायेगा।

14. कम से कम वृक्षों का कटान/पातन किया जाएगा, जिनकी संख्या प्रस्ताव के अनुसार 130 से अधिक न हो।

15. प्रयोक्ता अभिकरण वन विभाग की देख–रेख में प्रत्यावर्तित भूमि का RCC Pillar लगाकर सीमांकन करेगा जिन पर Pillar no. , Forward तथा Back bearing तथा distance between pillars भी अंकित किया जाएगा।

16. परियोजना निर्माण से उत्सर्जित मलवे का निस्तारण प्रयोक्ता अभिकरण द्वारा प्रस्तुत मलवा निस्तारण योजना के अनुसार प्रभागीय वनाधिकारी की देख–रेख में किया जाएगा एवं निर्दिष्ट स्थानों के अलावा अन्यत्र मलवा नहीं फेंका जाएगा।

17. यदि कोई अन्य सम्बन्धित अधिनियम/अनुच्छेद/नियम/न्यायालय आदेश/अनुदेश आदि इस प्रस्ताव पर लागू होते है तो उनके अधीन जरूरी अनुमति लेना राज्य सरकार/प्रयोक्त एजेंसी की जिम्मेवारी होगी।

18. ऐसी कोई भी अन्य शर्त जो भारत सरकार भविष्य में पर्यावरण, वन एवम् वन्य जीवों के संरक्षण हेतु आवश्यक समझें।

यदि विधिवत् स्वीकृति में दी गई शर्तो का संतोषजनक अनुपालन नहीं किया जाता है तो स्वीकृति को तत्काल प्रभाव से निरस्त किया जा सकता है।

भवदीया,

O/C कमलप्रीत

(कमल प्रीत)
वन संरक्षक

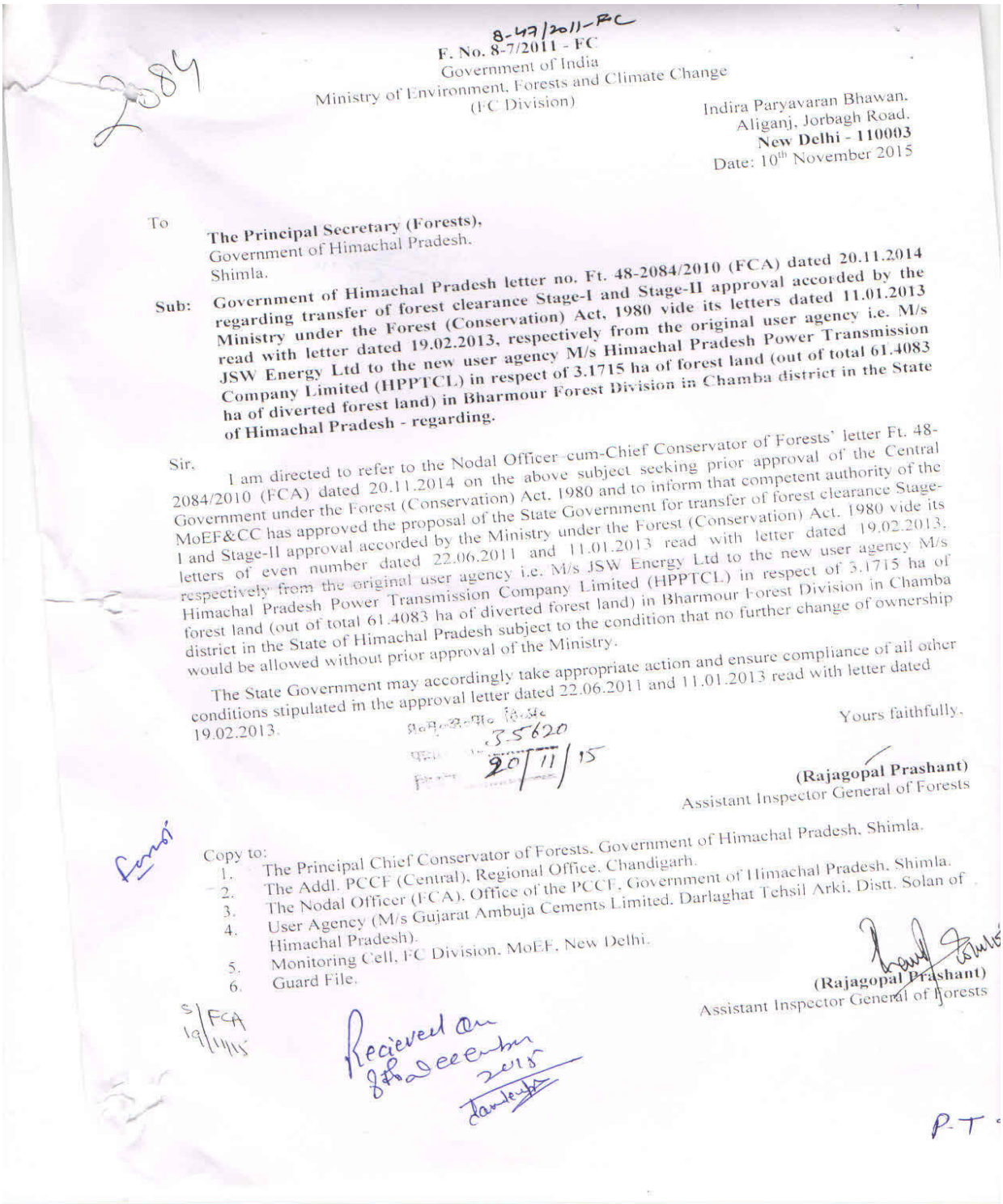
प्रतिलिपि सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषितः

1. अपर वन महानिदेशक (एफ0सी0), पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, इन्दिरा पर्यावरण भवन, जोरबाग रोड, अलीगंज, नई दिल्ली।
2. नोडल अधिकारी एवं अपर प्रधान मुख्य वन संरक्षक (एफ.सी.ए.) हिमाचल प्रदेश सरकार, वन विभाग, टालैंड, शिमला।
3. आदेश पत्रावली।

कमलप्रीत

O/C

(कमल प्रीत)
वन संरक्षक



F. No. 8-7/2011 - FC
Government of India
Ministry of Environment, Forests and Climate Change
(FC Division)

Indira Paryavaran Bhawan,
Aliganj, Jorbagh Road,
New Delhi - 110003
Date: 10th November 2015

To

The Principal Secretary (Forests),
Government of Himachal Pradesh,
Shimla.

Sub: Government of Himachal Pradesh letter no. Ft. 48-2084/2010 (FCA) dated 20.11.2014 regarding transfer of forest clearance Stage-I and Stage-II approval accorded by the Ministry under the Forest (Conservation) Act, 1980 vide its letters dated 11.01.2013 read with letter dated 19.02.2013, respectively from the original user agency i.e. M/s JSW Energy Ltd to the new user agency M/s Himachal Pradesh Power Transmission Company Limited (HPPTCL) in respect of 3.1715 ha of forest land (out of total 61.4083 ha of diverted forest land) in Bharmour Forest Division in Chamba district in the State of Himachal Pradesh - regarding.

Sir,

I am directed to refer to the Nodal Officer cum-Chief Conservator of Forests' letter Ft. 48-2084/2010 (FCA) dated 20.11.2014 on the above subject seeking prior approval of the Central Government under the Forest (Conservation) Act, 1980 and to inform that competent authority of the MoEF&CC has approved the proposal of the State Government for transfer of forest clearance Stage-I and Stage-II approval accorded by the Ministry under the Forest (Conservation) Act, 1980 vide its letters of even number dated 22.06.2011 and 11.01.2013 read with letter dated 19.02.2013, respectively from the original user agency i.e. M/s JSW Energy Ltd to the new user agency M/s Himachal Pradesh Power Transmission Company Limited (HPPTCL) in respect of 3.1715 ha of forest land (out of total 61.4083 ha of diverted forest land) in Bharmour Forest Division in Chamba district in the State of Himachal Pradesh subject to the condition that no further change of ownership would be allowed without prior approval of the Ministry.

The State Government may accordingly take appropriate action and ensure compliance of all other conditions stipulated in the approval letter dated 22.06.2011 and 11.01.2013 read with letter dated 19.02.2013.

Yours faithfully,

(Rajagopal Prashant)
Assistant Inspector General of Forests

Copy to:

1. The Principal Chief Conservator of Forests, Government of Himachal Pradesh, Shimla.
2. The Addl. PCCF (Central), Regional Office, Chandigarh.
3. The Nodal Officer (FCA), Office of the PCCF, Government of Himachal Pradesh, Shimla.
4. User Agency (M/s Gujarat Ambuja Cements Limited, Darlaghat Tehsil Arki, Distt. Solan of Himachal Pradesh).
5. Monitoring Cell, FC Division, MoEF, New Delhi.
6. Guard File.

(Rajagopal Prashant)
Assistant Inspector General of Forests

Lahal to Budhil transmission line was in the scope of JSW now the scope has been changed and the construction of transmission has been changed and HPPTCL is assigned the job to construct the line. The Land which was acquired by M/S JSW for construction of transmission line has been transferred in favour of HPPTCL vide above letter.

Annexure VI

Status of Muck Disposal Management:

As a result of construction related activities, soil and debris is generated. Improper disposal of the debris will have an impact on the surrounding ecology, public health and scenic beauty. If not planned properly, dumped materials interfere with the drainage pattern of the area, any water bodies, agricultural lands, marshlands and down slope or any environmental sensitive areas.

To avoid any impact on environment, spoil materials (soil, sand, rock) generated from construction activities is being used for site levelling and back-filling (wherever possible). Wherever, there is excess muck, it has to be disposed at pre-identified dumping site. Prior approval has to be obtained for such dumping grounds / land fill sites from relevant concerned authorities such as Forest, Roads, or Panchayats (local community) by the contractor as per contract provisions. Following is the status of Muck disposal Management of the project.

Switching station 66 kv Urni:

Site selection and development of layout design was such that the muck generated during construction was minimum and had been utilized in back filling and also used to raise the level of approach road. No extra land for the muck disposal was required. The quantity of muck which had been utilized for raising the level of approach road is 500 Cum.

220kV/400 kV Pooling Station Lahal:

5000 cubic meter muck has been used in back filling and remaining access muck was utilized in site development (bench works).

Annexure VII

Attendance Sheet of Public Consultation at Charor-Banala 220 kV line

S.No.	Name and Address of land owner	village	Date of consultation
1	Mr. Hari Singh	Chennour	17-10-2016
2	Mr. Mahender Singh	Chennour	18-10-2016
3	Smt. Neelama Devi	Chennour	19-10-2016
4	Smt. Asha Sharma	Chennour	19-10-2016
5	Mr. Devender Singh	Chennour	18-10-2016
6	Mr. Narayan Singh	Chennour	17-10-2016
7	Mr. Nayalu Singh	Chennour	18-10-2016
8	Smt. Lotama Devi	Chennour	17-10-2016
9	Smt. Indira Devi	Chennour	19-10-2016
10	Smt. Oma Devi	Chennour	19-10-2016
11	Smt. Ramana Devi	Chennour	17-10-2016
12	Mr. Om Prakash	Diyar	21-10-2016
13	Mr. Deendyal Sharma	Diyar	20-10-2016
14	Mr. Dhale Ram	Diyar	22-10-2016
15	Mr. Fateh Chand Sikari	Diyar	23-10-2016
16	Mr. Ram Prakash Sharma	Diyar	21-10-2016
17	Mr. Tule ram	Diyar	20-10-2016
18	Mr. Diya Singh	Diyar	23-10-2016
19	Mr. Dilip Kumar	Diyar	22-10-2016
20	Mr. Viru Ram	Tharas	25-10-2016
21	Mr. Subhash Gautam	Tharas	24-10-2016
22	Mr. Chatan Lal	Tharas	24-10-2016
23	Smt. Kalzung kizom	Tharas	25-10-2016
24	Smt. Nago Devi	Tharas	25-10-2016
25	Smt. Meera Devi	Tharas	24-10-2016
26	Smt. Gayatri Devi	Tharas	24-10-2016
27	Mr. Inder Singh	Tharas	25-10-2016
28	Mr. Kehar Singh	Tharas	24-10-2016
29	Mr. Hem Raj Diwan	Tharas	25-10-2016