



**Himachal Pradesh Power Corporation Limited**  
(A State Government Undertaking)

**Integrated Kashang, HEP, Reckong Peo Distt. Kinnaur (HP).**

**Phone/Fax No.: 01786-222001/223992**

**Regd.office: Himfed Bulding,BCS, New Shimla , Shimla(HP)-171009**

**Website:www.hppcl.gov.in**

**No. HPPCL/IK/E&F(K -IV)(XXII)/2023-24 -3623-**

**Dated: 07-02-2024.**

To

The Divisional Forest Officer,  
Kinnaur Forest Division,  
At Reckong Peo Distt. Kinnaur HP.

Subject:

**Diversion of 0.4148 hectare of additional forest land in favour of Himachal Pradesh Power Corporation Pvt. Ltd for the construction of Integrated Kashang HEP Stage-II & III (130MW) for some modification in the Project component construction of Silt Flushing Tunnel (SFT) within the jurisdiction of Kinnaur Forest Division, Distt. Kinnaur, Himachal Pradesh. (Online Proposal No FP/HP/HYD/49387/2020)**

Sir

In response to the EDS raised by CCF Rampur and further endst through your office Memo dated 29.01.2024, the point wise compliance to queries (stipulation wise) are as under :

Stipulation No. 2	In reply to this stipulation you have intimated that user agency had deposited the cost of CA and NPV and accordingly CA has been raised in various sites. In this regard you are required to send the detail along with supporting documents regarding deposition of cost of CA further into CAMPA account. In the reply cost of CA and NPV has been shown as deposited by user agency for Rs.2,78,21,479/- however, the Demand Draft has been attached for Rs.2,79,21,479/-. This variation needs to be clarified. From the perusal of your reply it is also not clear when the CA has been carried in the various sites	Pertains to DFO The project proponent had deposited the cost of CA & NPV as per the demand raised by concerned DFO which was Rs 2,78,21,479/-. Accordingly, the demand Draft was submitted for Rs. 2,78,21,479/- (the copy of the same is attached as Annex-I).
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	therefore, a tabulated statement may be prepared by mentioning Year of plantation, Name of Area, Name of Division/ Range/ Block/Beat, Spp. Planted, Expenditure incurred and survival %. The status of implementation of CA is required by Gol.																										
Stipulation No. 4	In reply to this stipulation you are required to send the status of rehabilitation of dumping sites, how many dumping sites have been rehabilitated and how many are remained balance.	<p>For execution of IKHEP Stage II &amp;III, 7 No.s dumping sites have been designated for muck dumping i.e DS-2, 3, 4, 5, 6, 7 &amp; 8. The status of rehabilitation of dumping sites are as follows:</p> <table><tr><th>S.N</th><th>Site diverted for Dumping</th><th>Location</th><th>Status</th><th>Remarks</th></tr><tr><td>1</td><td>DS-2&amp;3</td><td>Power House site near NH -05</td><td>Utilized/ reclaimed</td><td>Reclaimed</td></tr><tr><td>2</td><td>DS-4</td><td>Near Kasasng Khad on NH-05</td><td>Unutilized,</td><td>Handed back to HP Forest Department</td></tr><tr><td>3</td><td>DS-5, 6&amp;7</td><td>On intake road to Kashang</td><td>Unutilized</td><td>handed back to Forest Department</td></tr><tr><td>4</td><td>DS-8</td><td>On Old HT Road</td><td>Utilized</td><td>Reclaimed</td></tr></table> <p>The Project proponent has rehabilitated/Reclaimed 3 No.s of dumping sites i.e Dumping site No-2, 3 &amp; 8 with proper Geo-Jute Matting and with plantation of approximately 3155 Numbers of various local species like, Chilgoza (1575 no), Chulli(787), Bhemi(158) Akhrot (157) &amp; Rubinia (478).</p>	S.N	Site diverted for Dumping	Location	Status	Remarks	1	DS-2&3	Power House site near NH -05	Utilized/ reclaimed	Reclaimed	2	DS-4	Near Kasasng Khad on NH-05	Unutilized,	Handed back to HP Forest Department	3	DS-5, 6&7	On intake road to Kashang	Unutilized	handed back to Forest Department	4	DS-8	On Old HT Road	Utilized	Reclaimed
S.N	Site diverted for Dumping	Location	Status	Remarks																							
1	DS-2&3	Power House site near NH -05	Utilized/ reclaimed	Reclaimed																							
2	DS-4	Near Kasasng Khad on NH-05	Unutilized,	Handed back to HP Forest Department																							
3	DS-5, 6&7	On intake road to Kashang	Unutilized	handed back to Forest Department																							
4	DS-8	On Old HT Road	Utilized	Reclaimed																							
Stipulation No. 5 (ii)	It seems that the reply of user agency has been copied.	No comments.																									





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Stipulation  
No. 5 (iii)

It seems that the reply of user agency has been copied. In reply to this stipulation you are required to send the status of dumping sites which have been completed and reclaimed by stabilization and plantation work.

**No comments. Pertains to DFO.**

As already explained in the reply of stipulation 4, the user agency has reclaimed 3 no of dumping sites out of total 7 no. of dumping sites. 4 no. of dumping sites were handed back as unutilized by this office during 2017. However the table mentioned under stipulation 4 is reproduced here:

S.N	Site diverted for Dumping	Location	Status	Remarks
1	DS-2&3	Power House site near NH -05	Utilized / reclaimed	Reclaimed
2	DS-4 )	Near Kasasng Khad on NH-05	Unutilized,	Handed back to Forest Department
3	DS-5,6&7	On intake road to Kashang	Unutilized	handed back to Forest Department
4	Ds-8 (	On Old HT Road	Utilized	Reclaimed

Out of 7 dumping sites, 3 No.s of dumping site were utilized and 4 dumping sites (DS-4, 5, 6 & 7) were returned back to DFO Kinnaur with intimation to Asst. Inspector General of Forest (FC Division) MoEF&CC GoI, copy attached as (**Annex-II**).

The Project proponent has rehabilitated/Reclaimed 3 No.s of dumping sites i.e Dumping site No-2, 3 & 8 with proper Geo-Jute Matting and with plantation of approximately 3155 Numbers of various local species like, Chilgoza (1575 no), Chulli(787), Bhemi(158) Akhrot (157) & Rubinia (478).

The photograph of reclamation work carried out at designated dumping sites are as follows:





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Reclamation Works completed



Reclamation Works completedat Power  
House Site DS-3



Reclamation Works completedat  
DS-8







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Stipulation No. 6	You have intimated that HPPCL had already made a payment of Rs.9.42 for the management of wildlife in the area, but you have not intimated whether this amount is in Thousand or in Lakh and also no supporting document attached. The notification No. 1-20/2014 WL (Pt) Dated 24.11.2015 does not found attached with the reply. In this regard the status of implementation of the recommendation of standing committee of NBWL is also intimated.	Inadvertently after mentioning the amount the unit has not been mentioned. In the supporting document (copy attached) it is clearly mentioned that amount Rs. 9, 41, 92,000/-say (9.42 crore) has been deposited. As far as status of implementation of recommendation of standing committee of NBWL is concerned it is submitted that as per the stipulation of standing committee of NBWL, Project proponent had to deposit the 2% of project cost which is amounting to Rs.9, 41, 92,000/- to CAMPA. In compliance to this, project proponent had deposited the amount with concerned authority and now it is in the preview of DFO wild life Sarahan. Further it is submitted that Deputy Inspector General of Forests (Wildlife) has issued a letter on dated 25 <sup>th</sup> November 2021 regarding cost of mitigation measures due to impact of development activities in National Parks, Sanctuaries, their Eco-Sensitive Zones, Tiger Reserves and Tiger Corridors reg and the copy of the same is attached as <b>Annex-III</b> .				
Stipulation No. 10	The status of implementation of CAT Plan and the amount deposited as cost of CAT Plan is not clear from your reply. The reply of user agency has been copied.	<p>The CAT Plan in favour of Integrated Kashang HEP stage-I,II,III&amp;IV has been approved amounting to Rs. 30.5060 crore. Against this, project proponent has deposited Rs. 16.00 Crore. It is being apprised that this approved CAT plan is for Integrated Kashang Stage-(I, II ,III &amp;IV) whereas, the diversion of Stage-IV has yet not initiated by the project proponent.</p> <p>The bifurcation of the amount of CAT plan as mutually consented by HP Forest department &amp; project proponent on the basis of extent of land diverted are as under: -</p> <ul style="list-style-type: none"><li>(i) Kashang Stage-1 (Land Diverted 18.7242 ha.)= Rs. 3.03 (as revised 9.223) crores</li><li>(ii) Kashang Stage-II&amp; III (Land diverted 17.6857 ha.)= Rs 8.716 Crores</li><li>(iii) Kashang Stage-IV (Land to be diverted 25.500ha. )= Rs. 12.567</li></ul> <p>Details of funds deposited against respective stages of Integrated Kashang HEP are as under: -</p> <table border="1"><thead><tr><th>S.N.</th><th>Stage wise outlay of CAT plan (in</th><th>Fund deposited</th><th>Balance fund to be</th></tr></thead></table>	S.N.	Stage wise outlay of CAT plan (in	Fund deposited	Balance fund to be
S.N.	Stage wise outlay of CAT plan (in	Fund deposited	Balance fund to be			





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		<table><tr><td></td><td>crore)</td><td>against Stages of IKHEP (in crore)</td><td>deposited(in crore)</td></tr><tr><td>1.</td><td>Stage-1 (9.223)</td><td>9.223</td><td>Nil</td></tr><tr><td></td><td>Stage-II &amp; III (8.716)</td><td>6.777</td><td>1.939</td></tr><tr><td></td><td>Stage-IV (12.567)</td><td>-</td><td>FC case yet to be initiated</td></tr></table>		crore)	against Stages of IKHEP (in crore)	deposited(in crore)	1.	Stage-1 (9.223)	9.223	Nil		Stage-II & III (8.716)	6.777	1.939		Stage-IV (12.567)	-	FC case yet to be initiated
	crore)	against Stages of IKHEP (in crore)	deposited(in crore)															
1.	Stage-1 (9.223)	9.223	Nil															
	Stage-II & III (8.716)	6.777	1.939															
	Stage-IV (12.567)	-	FC case yet to be initiated															
		The utilization of Rs. 12, 72, 73,280 has been made up to 31.03.2023. The copy of utilization is also Attached as <b>Annexure-IV</b> .																
Stipulation No. 11	As per the stipulation green belt of adequate width shall be raised by the user agency around the reservoir at the cost of project, but you have replied as below:- Since no reservoir will be created hence plantation with suitable species will be carried out through project proponent under the supervision of this office, once the project is completed" But you have not mentioned the component of the project around which the above plantation will be raised.	As already conveyed by the project proponent that in Integrated Kashang stage-II & III there is no reservoir for the diversion of water from Kerang Khad for the generation of Hydro Electric. Only a small diversion structure i.e. Drop Down Trench Weir will be constructed for diversion of water. As per the approved EMP ( <i>Chapter IV "Green Belt Development Plan" copy attached as Annexure-V</i> of Integrated Kashang HEP) green belt will be developed around the Trench Weir site, Power House site and around the residential area and office complex to be constructed and around the road side of the project when project is completed.																
Stipulation No. 12	The copy of letter regarding final report in connection with study of Satluj basin submitted by ICFRI to MoEF&CC for approval be provided to this office.	Since the report has been submitted by ICFRE to MoEF & CC hence the copy of letter is not available with Project Proponent. The project proponent has tried to obtain the same but same has not been provided. It is also pertinent to mention here that this is a Cumulative Environment Impact Assessment Study for the entire Satluj Basin which shall be applicable on the																





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		entire basin not only HPPCL. HPPCL is committed to implement the outcome of the basin level study after the finalization of the same. The copy of last MoM of EAC regarding Satluj Basin is attached as <b>Annex-VI</b> . From this it is cleared that the report has been submitted to MoEF&CC and same is under consideration.
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This is for your kind information and further necessary action at your end please..

Thanking you.

Yours faithfully,

*[Handwritten Signature]*

**Dy. General Manager (C),  
HPPCL, IKHEP Stage II & III,  
Kinfed Bhawan, R/Peo.**

*07/09/24*

DA:- As above.





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**Phone/Fax No.: 01786-223662/223992**

Annex-1

**HPPCL/IKHEP/E&RR-IV/Vol-V/2010-11 - 11410-13**

**Dated 31-3-2011**

To

Divisional Forest officer  
at Reckong Peo, District Kinnaur,  
Himachal Pradesh

**Sub: - Diversion of 17.6857 ha of forest land for the construction of 130 MW integrated Kashang -II&III HEP in Favor of M/S HPPCL under Kinnaur forest Division in Kinnaur district of HP.**

**Ref:- Your letter No. 9199 Himachal Pradesh Forest Department dated 29-03-2011**

Sir,

Please refer to your letter on the above cited subject matter. In this context, as desired, vide above referred letter D.D. No 630041. dated 31-03-2011 amounting to rupees Rs 2,78,21,479/- (Two Crore Seventy Eight Lacs. Twenty one Thousand four Hundred and Seventy Nine only) in favour of HP State Forest Deptt.(CAMP) Shimla on account of cost of Compensatory Afforestation (CA) scheme (i.e. Rs.1,19,57,406/-) and Net Present Value (NPV)(i.e. Rs. 1,58,64,079/-) is enclosed herewith for further action at your end.

D.A. D.D.No.630041

Received  
D  
o/o DFO Kinnaur  
31/3/11

General Manager  
Integrated Kashang HEP,  
HPPCL, Kinfe Bhawan,  
Reckong - Peo.

CC:-

- Chief Environment Specialist, Uttam Bhawan, Dogra lodge Near 103 tunnels Shimla-5, for kind information please.
- DGM -II of this office for information please.
- AO/AFO of this office for information please.



Annex-1

Annex-I

कम्प्यूटर द्वारा मुद्रित होने पर ही वैध  
जारी करने वाले बैंक द्वारा मुद्रित  
Issuing Branch: REKONG PEO (HP)  
कोड क्र / CODE No: 04335  
Tel No. 01786-223938

केवल छः महीनों के लिये ही वैध  
VALID FOR SIX MONTHS ONLY

भारतीय स्टेट बैंक  
State Bank of India  
मांग ड्राफ्ट

DEMAND DRAFT

रु. Rs. 50,000/- एवं अधिक के लिए ड्राफ्ट को अधिकारियों द्वारा हस्ताक्षरित होने पर ही वैध है।  
DRAFTS FOR RS. 50,000/- ABOVE ARE NOT VALID UNLESS SIGNED BY TWO OFFICERS

दिनांक / DATE: 31/03/2011

Key: YUCJUS

Sr. No: 263943

मांगे जानेपर ON DEMAND PAY THE HP STATE FOREST DEPARTMENT (CAMPA)\*\*\*\*\*

\*\*\*\*\*THE HP STATE FOREST DEPARTMENT (CAMPA)\*\*\*\*\*

या उनके आदेश पर OR ORDER

रुपये  
RUPEES

TWO	SEVEN	EIGHT	TWO	ONE	FOUR	SEVEN	NINE
CRORES	LAKHS	LAKHS	TTHDS	THDS	HUNDS	TENS	UNITS

PAISE ZERO ONLY

रुRs. 27821479 पै Ps. 00

AMOUNT BELOW 27821480(2/8)

अदा करें।  
मूल्य प्राप्त / VALUE RECEIVED

भारतीय स्टेट बैंक

STATE BANK OF INDIA

अदाकर्ता शाखा / DRAWEE BRANCH: SHIMLA

कोड क्र / CODE No: 00718

IOI 000176630041

Key: YUCJUS Sr. No: 263943

प्राधिकृत हस्ताक्षरकर्ता / AUTHORISED SIGNATORY  
(हस्ताक्षर नमूना क्र० / S.S. NO.)

शाखा प्रबंधक / BRANCH MANAGER

(हस्ताक्षर नमूना क्र० / S.S. NO.)

K-10229

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Phone/Fax No.: 01786-222001/223992

Email address : gmikhep@gmail.com

Regd.office : Himfed Building, BCS, New Shimla(HP)-171009

Website:www.hppcl.gov.in

Annex - II

No. HPPCL/IKHEP/K-I (Vol-XVI)/2016-17-5749-HI.60

Dated:- 25-03-2017

To

The Divisional Forest Officer,  
Kinnaur at Reckong Peo,  
District Kinnaur (H.P)

Sub:-

Handing over the unutilized forests land diverted against Integrated  
Kashang HEP Stage-II & III thereof.

Sir,

In the subject cited matter, it is intimated that forest land measuring 17.6857 hact. was diverted to HPPCL vide MOEF, GOI office letter No. SHPC366/09-CHA dated 14-06-2011 for the construction of Integrated Kashang HEP stage -- II & III.

Since, the construction activities of IKHEP stage-I & III from village Pangi side are almost completed (except the Balancing Reservoir-III) and some of the land diverted against stage-II & III has also remain unutilized and hence declared surplus and the status-co of the land is maintained. The details of such land areas are as under;

S.N.	Purpose of land diverted	Khasra No.	Area (Ha)	Location
1.	Material stacking yard	685/629	2-65-03	Telangi
2.	Dumping Area near Kashang bridge, NH-22	483/1	0-49-36	Ragura
3.	Dumping Area on intake road to Pangi	629/587/44/1, 629/587/469/2, 629/587/469/3.	0-39-05 0-22-26 0-15-35	Ragura
4.	Job facility at old HT road (near) Intermediate Pressure Shaft	629/507/469/1	0-30-00	Ragura

Keeping in view of the condition no. 14 of the final Forest Clearance accorded in respect of IKHEP stage-II & III the land which was not utilized/ required shall be surrendered to the State Forest Department with intimation to the Ministry of Environment and Forests.



In view of the above stated facts the aforesaid tabulated land is hereby surrendered / returned back to the State Forest Department, Distt. Kinnaur, H.P. Acceptance in this regard may please be intimated to this office at the earliest.

This is for your information and further necessary action please.

Yours faithfully,

*21/02/2017*  
General Manager,  
Integrated Kashang HEP,  
HPPCL, Reckong-Peo.

**Copy to:-**

1. The Asstt. Inspector General of Forests (FC Division), MOEF, GOI, Indira Paryavaran Bhawan, Jorbagh Road, New Delhi-110003. for kind information please.
2. The Managing Director, HPPCL, Himfed Building, BCS, New Shimla, 171009 for information kind please.
3. The Director (Civil), HPPCL, Himfed Building, BCS, New Shimla, 171009 for kind information please.
4. The Chief Environment Specialist, HPPCL, Himfed Building, BCS, New Shimla, 171009 for kind information please.
5. The Dy. Commissioner, District- Kinnaur at Reckong Peo, for information please.
6. The Addl. Distt. Magistrate- Pooh, Tehsil- Pooh, Distt.- Kinnaur, for information please.
7. The Sub Divisional Magistrate, Kalpa at Reckong Peo, Distt. Kinnaur, for information please.
8. The Environmental Engineer, HP State Pollution Control Board at Rampur, Distt. Shimla for information please.
9. The Tehsildar-Kalpa, Tehsil- Kalpa, Distt. Kinnaur, Information and necessary action please
10. The Pradhan, Gram Panchayat- Telangi, PO Telangi, Tehsil Kalpa, Distt.- Kinnaur for information please.
11. The Pradhan, Gram Panchayat- Pangi, PO Pangi, Tehsil Kalpa, Distt.- Kinnaur for information please.



6-82/2021 WL  
Government of India  
Ministry of Environment, Forest and Climate Change  
Wildlife Division

1<sup>st</sup> Floor, Agni Wing,  
Indira Paryavaran Bhawan,  
Jor Bagh Road, Aliganj,  
New Delhi - 110003.

Date: 25<sup>th</sup> November 2021

To  
Chief Wild Life Wardens  
All States/UTs

**Sub: Cost of mitigation measures due to impact of developmental activities in National Parks, Sanctuaries, their Eco-Sensitive Zones, Tiger Reserves and Tiger Corridors - reg.**

Sir,

The Standing Committee of the National Board for Wild Life, in its 65<sup>th</sup> meeting held on 24<sup>th</sup> September 2021, discussed issues relating to mitigation measures that are required to be undertaken to reduce the impact of activities inside **National Parks, Sanctuaries, Eco-Sensitive Zones, Tiger Reserves** and tiger corridors. The Committee observed that the cost imposed on user agencies for implementing mitigation measures is often not based on the impact of the activities proposed in the project. The Committee also observed that instead of imposing a uniform cost on all projects, it would be more appropriate if mitigation measures are suggested by the Chief Wild Life Wardens for each project.

The Committee, therefore, decided that measures to mitigate the impact of projects should be part of project proposals. The Committee further decided that instead of imposing a fixed cost, mitigation measures and costs associated with such measures should be prescribed while recommending project proposals.

In view of the above, it is requested that project proposals submitted to the Standing Committee for its consideration should be accompanied with details of mitigation measures. It is further requested that instead of imposing a fixed cost on the user agency, the Chief Wild Life Wardens should mention the estimated cost of implementing the proposed mitigation measures.

Yours faithfully,

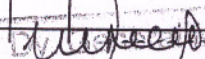
(Rakesh Kumar Jagenia)  
Deputy Inspector General of Forests (Wildlife)  
Email – digwl-mefcc@gov.in

Copy to: PPS to IGF (WL), MoEFCC, New Delhi

Signed by Rakesh Kumar  
Jagenia  
Date: 25-11-2021 19:45:02  
Reason: Approved

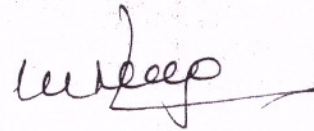


Name of CAT Plan			Integrated Kashang HEP					
Cost of CAT Plan			305060000					
Amount Deposited till date			180300000 ✓					
No.	Components/Activity	Name of Division	Total Provision			Year wise	Expenditure up to 31-03-2023	Balance
		Kinnaur	Units	Phy	Fin	(In Rupees)	(In Rupees)	
1	Afforestation Measure							
a	Nursery Development						1890000	
b	Normal Plantation (Irrigated)						0	
	Normal Plantation ( Non-Irrigated)						6910390	
c	Enrichment (Irrigated )						0	
	Enrichment ( Non-Irrigated )						1889438	
d	Conservation and developmet of Chilgoza pine						0	
	Sub Total of Afforestation				49556000		10689828	38866172
	Soil and water conservation endeavors						72218150	
2							7780000	
a	Landslides/Slip						3480000	
b	Nalla Treatment						2310000	
c	River Bank Stablization						2020000	
d	Avalaneghe control						0	
e	Van Sarovar							
	Sub Total Soil and water				65916000		87808150	-21892150
3	Prevent for Envirmental Service				32500000		0	32500000
4	Research, Farming and capacity build up Publicity & Awareness, Documentation				10600000		2200000	8400000
5	Infrastructure built up and Forest Protection						8877500	
a	Building Repair				10000000		700000	
b	Path				21440000		1500000	
c	Vehicle and operational Support				3523000		4511897	
d	Silt Monitoring				3600000		500000	
e	Forest Protection						0	
i	Boundary Pillar				3500000		0	
ii	Fuel Seving				12740000		700000	
iii	Sign and Board				1000000		0	
iv	Reward				500000		0	
	Sub total infrastructure and forest proction				56303000		16789397	39513603
6	Wild life measures				10000000		1000000	
	Protected Area						0	
	Out side protected area						0	
1	Planing						2300000	
2.1	Implementation				11100000		2200000	
2.2	Help to resolve to man-animal conflict						0	
2.3	Wildlife habitat magement						0	
3	Tranning				1525000		500000	
4	Resarch and Monitoring						0	
5	Contigenecies						0	

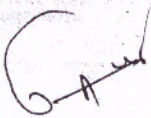
  
 Integrated Kashang HEP.  
 HPPCL, Reckong Peo.



7	Monitring adevaluation				15200000		0	15200000
8	Site specific work plan (Micro planing)				3050000		0	3050000
9	Contigenecies				49310000		725000	48585000
	Total CAT Plan Activities				305060000		124212375	180847625
	G. Total:							
<p>Note: Rs. 3060905/-has been booked up to 31-03-2006 and after 01-04-2006to 31-03-2023  expendture made Rs. 124212375/- and hence total expendture up 31-03-2023 Rs. 127273280/-  Balance as on 01-04-2023 Rs. 1772886720/-</p>								



Dy. General Manager (DMU)  
Integrated Kashang HEP,  
HPPCL, Reckong Peo.



Deputy Conservator of Forests,  
Kinnaur Forest Division at R/Peo H.P.





## CHAPTER - 4

### GREEN BELT DEVELOPMENT PLAN

#### 4.1 INTRODUCTION

In order to mitigate and minimize the environmental impacts arising due to construction of project from air pollution, noise pollution, soil erosion etc. the Greenbelt development around the project sites can provide the best solution. The green canopy not only absorbs some of these pollutants but also improves the aesthetic environment. Therefore, a "Green Belt Development Plan" has been proposed around the project area in general and along the project components in particular by using the local flora.

#### 4.2 DEVELOPMENT OF GREENBELT

The green belt is proposed to be developed within the project area along the network of approach roads, residential areas, office complex, trench weir sites, power house site and other working areas. The strategy worked out for development of green belt consists of following:

- Broad leaf trees growing above 10 m in height should be planted along the approach roads and colonies
- Plantation of trees should be undertaken in appropriate encircling rows.
- Generally local/indigenous fast growing trees shrubs should be planted.
- The trees should be protected by plantation of non palatable shrub species to avoid browsing by animals.
- Placement of Bamboo/Iron tree guards be provided to save the plants

The schematic arrangement of greenbelt plantation proposed along the roads and Office/Colony is presented in **Figure 4.1**. It is proposed that dense plantation in degraded forest land around the periphery of trench weir, power house and MAT will be taken up besides road side plantation along approach / haul roads. In areas wherever the private land falls along the periphery of the project area the plantation will be done by distributing saplings to villagers, if they are keen to take up plantation in their land.



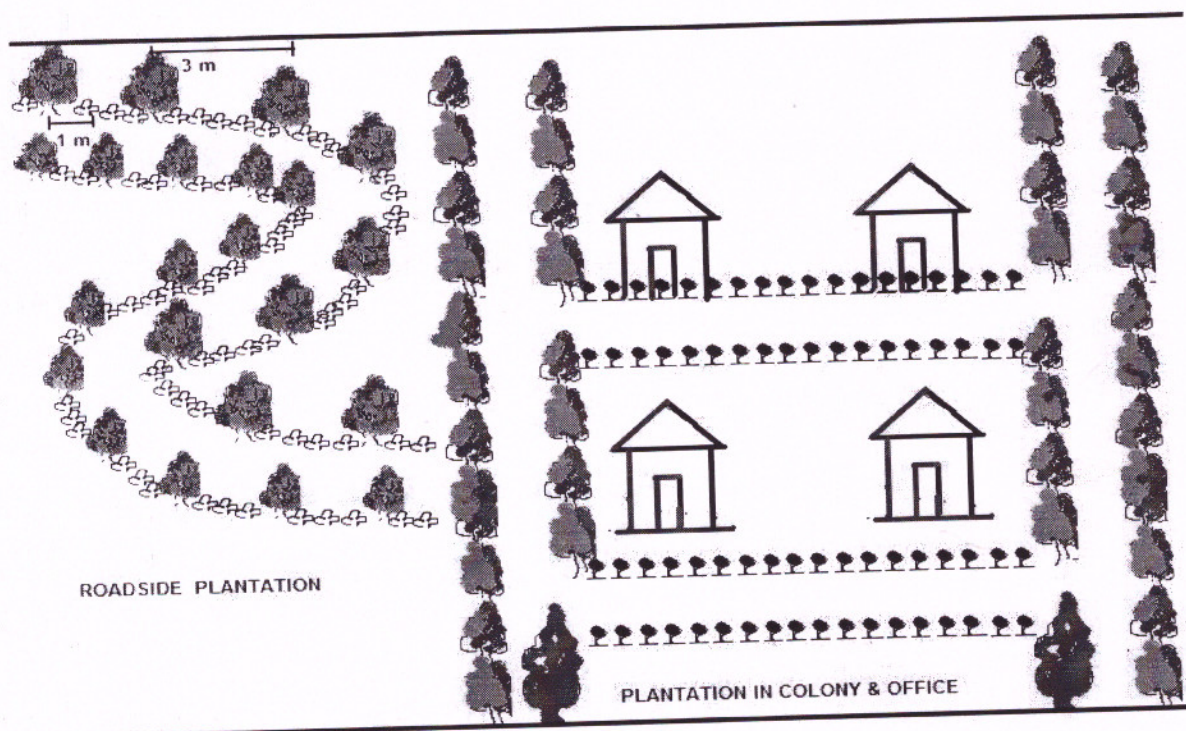


Figure 4.1: Schematic Arrangement of Greenbelt Plantation

#### 4.3 GUIDELINES AND TECHNIQUES FOR GREEN BELT DEVELOPMENT

Extensive survey in the project area was undertaken to observe the vegetation types and its density. The soil characteristics were also kept in mind. Based on this survey and environmental conditions suitable plants species have been proposed for green belt development plan. To meet the requirement of plants sapling for development of green belt, a nursery is a pre-requisite and calls for following considerations:

##### 4.3.1 Size of Nursery

The size of nursery depends upon the number and type of seedlings to be produced. To produce 1,80,000 plants a nursery of about 2.0 ha area would be required.

##### 4.3.2 Nursery Site Selection

A well-drained site near the areas where plantation is to be carried out is always preferred. Light shading site for the nursery is important for the protection of the young seedlings against sun, frost, hailstorms or heavy rains. Sites, which are prone to water logging, should not be selected and sites shall be selected in consultation with Forest Department preferably near the existing one. Modernization of existing nursery may also be explored. In the present case the modernization of forest nursery at Pangri (0.55 ha), Lippa (0.75 ha) and at Akpa (0.65 ha) is proposed to meet and the demand of 1,80,000 trees under the green belt development plan.





#### 4.3.3 Transportation

The nursery should be readily accessible all the year round in order to facilitate transportation of materials required in the nursery and dispatch of seedlings from the nursery.

#### 4.3.4 Fertilizer Application

The organic fertilizer produced through domestic organic waste coupled with vermin compost can be utilized for the nursery. Farmyard manure (FYM) can also be used but chemical fertilizer should be avoided. The compost/ vermin compost is proposed to be developed through solid waste management.

#### 4.3.5 Soil and Soil Fertility

The best site for raising the nursery is the area, which has got a thick layer of humus. The fertile and well-drained soil with sandy loam to loamy texture, pH varying from 5.5-7.5 should always be preferred for nursery sites.

#### 4.3.6 Water Supply and Drainage

The site should have perennial water supply. The drainage of soil has important bearing on the health of seedlings.

#### 4.3.7 Species to be Planted

A list of indigenous trees found suitable after identification of species for raising in the nursery and for development of green belt around the project area is given in Table 4.1.

Table 4.1: Suggested Plant Species for Green Belt Development

Botanical Name	Local Name
<i>Alnus nitida</i>	Kosh, Kunish, Nyun
<i>Betula utilis</i>	Bhojpatra, Pad
<i>Cedrus deodara</i>	Kelo, Diar, Kialmang
<i>Cupressus torulosa</i>	Devidiar
<i>Juniperus macropoda</i>	Guggal, Dhup, Shur
<i>Pinus gerardiana</i>	Neoza, Chilagoza, Ri
<i>Prunus armeniaca</i>	Chuli, Chul
<i>Juglans regia</i>	Akhrot
<i>Prunus cornuta</i>	Krun, Birdcherry
<i>Pinus wallichiana</i>	Kail
<i>Fraxinus xanthoxyloides</i>	Thum
<i>Populus ciliata</i>	Kramal
<i>Salix alba</i>	Shon

Beside, the above tree species, the shrub species identified for plantations are; *Cotoneaster bacillaris*, *Colutea nepalensis*, *Elaeagnus umbellata*, *Spiraea canescens* and *Rosa webbiana*.





#### **4.3.8 Precautions during Plantation**

Some important precautions should be taken during the plantation, which are as under:

- Open grazing is practiced in general in the area; therefore, protection should be provided in advance.
- Polyculture should be practiced. Mixture by group should be preferred over intimate mixture.
- Species mentioned should be planted in sufficient numbers so as to increase their population size in the area.
- Multipurpose species should be planted in large numbers, so as to provide direct benefit to people living around.

#### **4.4 GREEN BELT DEVELOPMENT**

In order to raise the green belt around project areas, trench weir sites and other components the total requirement of different species of plants will be about 1,80,000 saplings. Since the green belt is to be created over a period of five years the maintenance for a period of five years of nursery and plantation works will be required. The beating up of mortality may be done with the plant stocks proposed to be generated in the nursery over the complete duration of the plan.

##### **4.4.1 Road Side Plantation**

Cost of the plantation has been calculated as per the existing schedule of rate, material cost (plants, FYM, tree guard, etc.) and the total area of treatment. One row each for tree, shrub and bio-fencing has been proposed with a spacing of 3 m x 3 m for trees and 2 m x 2 m for shrubs (to take care of the mortality in the next season). The pit size has been recommended as 45 x 45 x 45 cm for trees and 30 x 30 x 30 cm for shrubs. The cost of pit digging and filling is estimated at Rs. 10 per pit. Input of FYM @ 2 kg/pit has been suggested costing around Rs.5/pit. Cost of plantation including transport has been estimated at Rs. 10/plant making the total cost of planting one tree as Rs. 25. For the protection of trees from the cattle and other losses, thorny bushes guards are required. Along the approach roads of about 38.8 km length plantation will be done on both sides wherever feasible, as such plantation of about 65000 saplings will be done. Plantation along roads must take into account visibility aspects on curves so as to ensure safe driving.





#### 4.4.2 Green Belt Around Trench Weir Site / Power House

Plantation at the intake sites and powerhouse sites for about 6 ha has been proposed for control of erosion and siltation of the stream and aesthetic importance. The total cost for planting in 6 ha area @ Rs. 88,125 / ha including establishment charges works out to be Rs. 5.5 lacs.

#### 4.4.3 Green Belt Around Residential Area and Office Complex

Plantation around the office complexes is proposed to be done so that greenery is developed. Precaution should be exercised by not planting large size trees around buildings and other similar structures as during winter the sun rays are obstructed by them invariably and much wanted sunshine is impaired. Besides this, it is also proposed to develop green belt around the working areas for trapping the dust and noise. Plantation of avenue, ornamental and fruit trees is proposed in these areas along with the area around office complex. The ornamental, fruit plants will be procured from the local market while the avenue plants will be raised in the project nursery. For providing green belt around residential areas and office complex a provision of Rs. 119.23 lakh has already been made under head M-Plantation in the DPR and it is proposed to plant 1,15,000 trees under the sub head.

#### 4.5 COST ESTIMATE OF GREEN BELT DEVELOPMENT

Table 4.2 Summary of Cost for Green Belt Development

Sl. No.	Component	Cost (in Lacs)
1.	Modernization of 3 No. existing nursery @ Rs. 3.0 lac each	9.0
2.	Maintenance of nursery @ 0.40 lacs/each year for 5 years	6.0
3.	Cost of planting of saplings around trench weir site, power house and site for 6 ha @ Rs. 88125/ha	5.29
4.	Maintenance cost for 4 years - 2 chowkidars @ Rs. 3000/- per month	2.88
5.	Thorny brush wood protection guard for 65000 saplings along road side @ 7.20/No.	4.68
6.	Live hedge fencing in 38.8 km length of approach road on either side @ Rs. 10.89 / RM	8.45
7.	Cost of planting 65000 saplings along road side @ Rs. 25/- each	16.25
8.	Contingency	2.00
	<b>Total</b>	<b>54.55</b>

Say Rs. 55.00 lacs.



**MINUTES OF THE 1<sup>st</sup> MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR RIVER VALLEY AND HYDROELECTRIC PROJECTS HELD ON 17<sup>TH</sup> - 18<sup>TH</sup> OCTOBER, 2023 FROM 10:30 AM – 05:30 PM BY HYBRID MODE (PHYSICAL- INDUS HALL, MoEF&CC AND ONLINE).**

The 1<sup>st</sup> meeting (hybrid mode) of the re-constituted EAC for River Valley & Hydroelectric Projects organized by the Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi, was held on 17<sup>th</sup> - 18<sup>th</sup> October, 2023, under the Chairmanship of Prof. G. J. Chakrapani. After initial introduction of all, the committee deliberated on the various issues and challenges for sustainable development of hydroelectric and river valley projects and expressed their absolute commitment, cooperation and team work for the EAC. The list of Members present in the meeting is shown in the Annexure.

**Agenda Item No. 1.1: Confirmation of Minutes of 51<sup>st</sup> EAC meeting**

The EAC confirmed the minutes of 51<sup>st</sup> EAC meeting held on 12<sup>th</sup> September, 2023.

**Agenda Item No. 1.2**

**Vijayanagar Pump Storage Project (130 MW) in an area of 127.54 ha at Village Kurekuppa, Sub District Sandur, District Ballari, Karnataka by M/s JSW Energy PSP Two Limited – Environmental Clearance (EC) – reg.**

**[Proposal No. IA/KA/RIV/444768/2023; F. No. J-12011/05/2022-IA.I (R)]**

**1.2.1:** The proposal is for grant of Environmental Clearance (EC) to the project for Vijayanagar Pump Storage Project (130 MW) in an area of 127.54 ha at Village Kurekuppa, Sub District Sandur, District Ballari, Karnataka by M/s JSW Energy PSP Two Limited.

**1.2.2:** The Project Proponent and the accredited Consultant M/s EQMS Global Pvt. Ltd., made a detailed presentation on the salient features of the project and informed that:

- i. The proposed Vijayanagar Pumped Storage Project is a self-identified, green field project by the JSW Renewable Energy (Vijayanagar) Ltd., a subsidiary of JSW Energy Limited, for captive use in JSW Steel Plant.
- ii. The project has been conceived as an off-stream closed loop pumped storage project of installed capacity 130 MW/845 MWH pumped storage component with twin cycle consisting of hydropower generation during morning and evening peaks by pumping twice during 24-hour period. The project shall be located in Vidya Nagar area of JSW Steel Plant, Taluka Sandur, District Bellary, Karnataka.
- iii. The project with an installed capacity of 130 MW by utilizing a design discharge of 108.01 cumecs with rated net head of 136.32 m for two daily cycles of peaking (4.0 hours in the morning and 6.50 hours in evening/night)



25	Expert required for study of impact on ecology, including fisheries, biodiversity of riverine ecosystem.	ICAR-DCFR a premier organization working in area of cold-water fisheries and ecology, resource assessment and aquaculture. Institute has completed number of impact assessment studies on HEPs including CIA & CC study of Sutlej basin and has enough expertise for study of impact on ecology, including fisheries, biodiversity of riverine ecosystem.  As Fish migration through different tags electronic/sensors is critical behaviour in determining the spawning ground, ICAR-CIFRI expertise may be consulted in this regard.
28	Impacts on fisheries due to fluctuations in Water Level, HEP components (hydraulic turbines, Spillways, penstock etc).	General recommendations on impacts on fisheries will be given based on the available data on the fluctuations in water level.

**The EAC during the present meeting deliberated on the modifications of modification of some additional TOR for conducting Cumulative Impact Assessment and Carrying Capacity Study (CIA & CCS) of Yamuna River Basin in Himachal Pradesh by Indian Council of Forestry Research and Education (ICFRE), finalised during 41<sup>st</sup> EAC meeting held on 15.02.2023.**

The EAC after detailed deliberations was of the view that the all additional points finalized by the earlier EAC is justified and well deliberated and essential for comprehensive assessment of carrying capacity and cumulative impacts of the anthropogenic proposed/ ongoing activities in the river basin. EAC member emphasised on Habitat Simulation or Micro-Habitat Modeling Methodologies for biological sustainability of aquatic ecosystem study and E-flow assessment on the basis of Velocity/Depth & cross section, Drone Based aerial survey in the CIA&CC of River basin. ICFRE needs to expand their resources to carry out said study in appropriate manner. The Committee members also desired to expedite the collection of Primary and Secondary base line data and regular perusing with concerned department. The EAC also suggested the Committee constituted by the Ministry to examine the other aspect of the study like increased expenditure on study through drone survey, fresh collection of baseline data for Uttarakhand etc. in consultation with ICFRE for timely completion of the study.

#### **Item No.- 1.10:**

**Cumulative Impact Assessment and Carrying Capacity Study (CIA & CCS) of Sutlej River Basin Study in Himachal Pradesh by Indian Council of Forestry Research and Education (ICFRE), Dehradun - Reconsideration of Study Report - reg.**

The Indian Council of Forestry Research and Education (ICFRE), Dehradun along with its partner institutions viz. Alternate Hydro Energy Center (AHEC/HRED), Indian Institute of Technology



(IIT), Roorkee; ICAR Directorate of Coldwater Fisheries (DCFR), Bhimtal and Salim Ali Centre for Ornithology and Natural History (SACON), Coimbatore, made a presentation before the EAC (River Valley and Hydroelectric Projects) on the draft report on "Cumulative Environmental Impact Assessment (CEIA) & Carrying Capacity Study (CCS) of hydroelectric projects in Sutlej river basin in Himachal Pradesh".

The ICFRE, Dehradun informed that:

- i. The CIA&CCS report for Sutlej River Basin for 38 HEPs (>10 MW), Himachal Pradesh part presented before EAC (RV&HEP) of MoEF&CC during its 91<sup>st</sup> meeting held on 08.02.2016.
- ii. During 91<sup>st</sup> EAC meeting it was suggested to include all HEPs including less than 10MW in CIA&CCS study; including Luhri project (775 MW) to be studied as Luhri stage I (210MW), stage II (170MW) & stage III (355MW).
- iii. Study Report including <10 MW HEPs submitted to MoEF&CC in November, 2018 & presented before EAC (RV&HEP) of MoEF&CC, New Delhi during its 21<sup>st</sup> meeting held on 28.01.2019.
- iv. The suggestions made by the EAC during its 21<sup>st</sup> meeting on the study report were compiled and incorporated in the corrected study report which was presented before EAC (RV&HEP) during its 29<sup>th</sup> meeting held on 05.12.2019.
- v. The recommendations of the study report were further corrected during the 30<sup>th</sup> EAC meeting held on 27.01.2020. Accordingly, the ICFRE, Dehradun has incorporated the corrections/ modifications in the final draft report on Cumulative Environmental Impact Assessment (CEIA) & Carrying Capacity Study (CCS) of Hydroelectric projects in Sutlej River Basin in Himachal Pradesh and submitted vide letter dated 10.06.2020 to MOEF&CC.
- vi. During examination of the report in the Ministry certain factual errors were observed and the same was communicated to ICFRE vide letter dated 26.10.2021.
- vii. The corrected final draft report on Cumulative Environmental Impact Assessment (CEIA) & Carrying Capacity Study (CCS) & Carrying Capacity Study (CCS) of Hydroelectric projects in Sutlej River Basin in Himachal Pradesh was submitted by the ICFRE vide letter dated 16.11.2021 to the MOEF&CC.
- viii. The corrected final draft report on Cumulative Environmental Impact Assessment (CEIA) & Carrying Capacity Study (CCS) of Hydroelectric projects in Sutlej River Basin in Himachal Pradesh was deliberated in 41<sup>st</sup> EAC meeting (15.02.2023). The EAC after detailed deliberations was of the view that the issues of Govt. of Himachal Pradesh related to report on Cumulative Environment Impact Assessment (CIA&CCS) Sutlej River Basin in Himachal Pradesh needs to be discussed by Government of Himachal Pradesh expeditiously with ICFRE, Dehradun on priority basis so that the same can be addressed before finalisation of the study report. The ICFRE may modified the report accordingly and submit for further deliberations by the EAC.
- ix. Accordingly, meeting of officials from DoE, GoHP, Shimla, SJVNL, NTPC, HPPCL held on 02.08.2023 at DHRE, IIT, Roorkee to discuss w.r.t recommendations of CIA & CCS of Sutlej River in Himachal Pradesh made in the 41<sup>st</sup> EAC meeting held on 15.02.2023 . During discussion with officials from Govt of Himachal Pradesh most of the issues were settled.



The EAC during the present meeting deliberated on recommendations of CIA & CCS of Sutlej River in Himachal Pradesh made in the minutes of the 41<sup>st</sup> EAC meeting (15.02.2023). During the meeting Govt of Himachal Pradesh officials were also present.

The EAC after detailed deliberation found that the corrected final draft report on "Cumulative Environmental Impact Assessment (CEIA) & Carrying Capacity Study (CCS) of Sutlej River Basin in Himachal Pradesh is in order and as per the TOR given by the Ministry. Accordingly, the EAC recommended the study report for acceptance by the Ministry.

**Item No.- 1.11: Cumulative Impact Assessment and Carrying Capacity Study (CIA & CCS) of Tirap Basin. Inclusion of Chinglum Hydroelectric Project in Subansiri Basin – Conducting study – Reg.**

The officials from Government of Arunachal Pradesh did not attend the meeting; hence EAC decided to defer the proposal.

**Item No.- 1.12**

**Proposal for conducting Cumulative Impact Assessment (CIA) & Carrying Capacity Study (CCS) of Ravi River Basin in Himachal Pradesh –Consideration of proposal – Reg.**

The Member Secretary, EAC (RV&HEP), MoEF&CC informed that:

- i. MOEF&CC vide letter dated 05.02.2015 written to Chief Secretary, Govt of Himachal Pradesh to hand over all records related to Carrying Capacity and CIA studies of River Basins in Himachal Pradesh.
- ii. Centre for Inter-disciplinary Studies of Mountain & Hill Environment (CISMHE), University of Delhi and WAPCOS were requested by MOEF&CC vide letter dated 03.02.2016 for preparing draft ToRs and submit to this Ministry.
- iii. The CISMHE, University of Delhi submitted draft TOR for conducting CIA&CCS study of Ravi River Basin in Himachal Pradesh.
- iv. The Centre for Interdisciplinary Studies of Mountain & Hill Environment (CISMHE) University of Delhi, made a presentation before the 1<sup>st</sup> EAC (River Valley and Hydroelectric Projects) on the TOR proposal for conducting CIA&CC study of Ravi River Basin in Himachal Pradesh.
- v. The CISMHE, Delhi University during discussion informed that they have prepared draft TOR covering following aspects:
  - a) Characteristics of Ravi Basin
  - b) Scope of Work
  - c) Approach and Methodology
  - d) Outcome of the Study
  - e) Organizational Set up and Staffing
  - f) Scheduled Work Plan

The EAC during the present meeting deliberated on the TOR proposal for conducting CIA&CCS study of Ravi River Basin in Himachal Pradesh presented by CISMHE, Delhi University.