

CHAMBA HYDRO VENTURES

HOTEL ALPS RESORTS, PO & TEHSIL DALHOUSIE DISTT. CHAMBA HP- 176304

Mob. No. 9418080340 Email Id—ranjan.upmanyu@gmail.com

Ref.No:- CHV/FCA/152/25

Dated 29/1/25

To,
The Divisional Forest Officer,
Forest Division Bharmour,
Distt. Chamba HP

Subject :- Diversion of 3.7463 hectares of forest land in favor of Chamba Hydro Ventures, Hotel Alps Resorts, PO and Tehsil Dalhousie, Distt. Chamba HP for the construction of Ghator Top SHEP (4.98MW) within the jurisdiction of Bharmour Forest Division Distt. Chamba HP (Online Proposal No. FP/HP/HYD/155802/2022) and Reply to observations thereof.

Reference- Online proposal No. FP/HP/HYD/155802/2022 EDSs raised by IRO Chandigarh on dated 21-03-2024

Dear Sir,

Kindly find here the reply to the observation raised by IRO Chandigarh in favour of Ghator Top SHEP 4.98 MW.

Sr. No.	OBSERVATIONS	REPLY
1	In Para E of part -I regarding employment likely to be generated, permanent/ regular employment is mentioned as 4 for permanent and temporary employment(number of person days) is mentioned as 4000 which does not appear to be correct keeping in view the cost of the project which mentioned as Rs. 40,51,000/- in Para A-I(VII). State Govt. shall clarify the same and provided justification.	Regarding employment from this project the 14 persons will be get engaged permannently after commissioning of the project and during execution of this project 37000 men days of temporary employmnet will be generated. The needful correction has been done and uploaded on portal.
2	Under Column M(ii)of part I, the total area in command has been mentioned as 0. Therefore, the State Govt. may review and rectify the same.	The needful correction has been done under this column.
3	Need to revise DGPS map PDF because Latitude and Longitude from side i.e. 32 25 41.7078 and 76 23 22.988 does not match with the project site.	Needful correction has been done and uploaded on portal.
4	The component wise detail proposed in forest land need to be duly authenticated by the concerned DFO.	Needful correction has been done and uploaded on portal.
5	In pursuance of the MoEF&CC advisory dated 27.12.2023 wrt to HEP and for the want of the cumulative ecological impact of the project; details of the Commissioned, under construction and proposed Hydro Electric Project(HEPs)in the catchment area of the proposed stream need to be submitted.	Ecological Impact on the Hydro Projects report has been uploaded on the Portal with E -flow mechanism and undertaking for same. The details of the projects in catchment area of this project with their status has also been uploaded on portal.

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6	A detailed list of approved/exiting/ proposed projects in the river basin area is to be provided along with KML file/maps and their distance from the nearest PA/ESZ	The detailed list of approved/existing/approved projects in the Ghator river basin has been uploaded with map and their distance from nearest Pas/Eco sensitive zones. The KML file can not be uploaded in portal in additional documents so kml is being sent on the email.
7	Since the proposed area falls under distt. Chamba, the local measurement unit especially used (i.e 1 Karam=1.48mtr) by the state Forest Dep. Implications of the same in the extant proposal need to be provided by the State Authority.	In Distt. Chamba of HP the Local measurement unit 1 Karam=1.42 Mtrs. Is used for all revenue works and the area can not be acquired in metres and below 1 Karam. So this Local unit for measurement has been used in the extant proposal for land acquasition.
8	A detailed and approved Power Evacuation plan (with relevant marking on appropriate scale map) along with Transmission line Details (dimension, length, RoW, Capacity, etc.) is required to be uploaded on the PARIVESH portal.	Needful has been done and uploaded on the Portal.
9	State Govt. need to clarify while proposing the construction of SHEP on the mountainous, steep slope whether comments of geologist has been sought or not?	Presently the Project is under clearence stage and have no need of geologist comments. After diversion of proposed land and during construction stage the geologist will be engaged for checking the bearing capacity where the large components of the project will be installed. If any deficiency is found in this matter then appropriate measures will be taken to remove it.
10	The proposal involves felling 57 trees in an area 3.7463 hac. However as per DSS report the VDF and MDF of more then 1 sq is observed, hence, the comments of DFO is required.	The matter pertains to your kind office Pls.
11	Clarification needs to be submitted for muck Disposal Sites:- (i) State Govt may reduce the number of duming sites proposed in the forest area by consolidating them at a single point for reclamation point of view. Comments of the concerned DFO may be provided. (ii) A document showing the capacity of muck dumping sited, muck dumped, balance capacity, and the amount of muck to be dumped in the tabulated form, duly authenticated by the concerned DFO may be provided. (iii) The UA needs to provide undertaking that no muck will be disposed off in the nearby forest, River/Stream except for the diversion area. Further, the Muck disposal plan needs to be duly authenticated by concerned DFO. (iv) The number of trees standing in dumping sites needs to be provided separately.	The matter pertains to your kind office pls. Uploaded on the Portal An Undertaking regarding this matter has been uploaded on the portal. There is not any tree standing in the Dumping sites. The report from the relevant officials has been uploaded on the portal.
12	As per the DSS report it seems that proposed CA site is landslide prone area and presently approx.02 (Ha.) appears under landslide prone area, out of 7.5 (ha.). Comments from the concerned DFO required.	The matter pertains to your kind office Pls.
13	State Govt. shall prove the certificate of non availability of NFL as per format in schedule-III from Chief Secretary for proposing DFL under	The Certificate of non availability of Non forest land as per format in SCHEDULE_III from Chief Secretary has been uploaded in additional information documents in

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	special provision Para 2.2 (iv) of Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 and Van (Sanrakshan Evam Samvardhan) rules, 2023 MoEF&CC.	column
14	As per Para 13(3) (c), of the consolidated guidelines and clarifications issued under Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 and Van (Sanrakshan Evam Samvardhan) Rules, 2023, if the proposed CA land is a wasteland falling under the category of protected forest and is neither demarcated on the ground nor transferred and mutated in the name of forests department in revenue record has to be declares as PF under IFA 1927. The state Govt. is requested to send clarifications in this regard for the CA land submitted in the instant proposal.	The matter pertains to your kind office Pls.
15	In Part II, column -14, the District profile and Geographical area are incorrect. Needful may be done in this regard.	The matter pertains to your kind office Pls.

Date-----

Place-----

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Geo-Reference Map on SOI Sheet 52-D-7 (1:5000) For 3.7463 Hect. of Forest Land to be Diverted for Construction of Ghator Top SHEP (4.98MW)



Deputy Conservator of Forests
Bharmour Forest Division
Bharmour, Chamba (H.P.)

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COMPONENT WISE DETAIL OF LAND REQUIRED FOR CONSTRUCTION OF GHATOR TOP SHEP

Sr. No.	COMPONENTS	LENGTH	BREADTH	Khasra Number / Survey or Compartment Number or Km Stone.	Forest Area proposed for Diversion (HA)
1	WEIR SITE	30	19.83	1/1	00-05-95
2	FEEDER CHANNEL	18	2.50	2/4	00-00-45
3	D- TANK	25	11.88	2/2	00-02-97
4	SILT FLUSHING	16	2	2/5	00-00-32
5	TUNNEL	701	2.645	2/1,11/8	00-18-54
6	SHURGE TANK	25	15.88	11/7	00-03-97
7	PENSTOCK	1398	2.84	11/5	00-39-70
8	POWER HOUSE	60	39.65	11/1	00-23-79
9	SWITCH YARD	30	19.85	11/4	00-05-95
10	ROAD	55.58	3.85	11/3	00-02-14
11	ROAD	638.70	3.85	1673/1	00-24-59
12	TRANSMISSION	661.52	11.15	1673/1	00-73-76
13	ROAD	500.51	3.85	1908/1	00-19-27
14	TRANSMISSION	518.65	11.15	1908/1	00-57-83
15	ROAD	8.57	3.85	1909/1	00-00-33
16	TRANSMISSION	8.87	11.15	1909/1	00-00-99
17	ROAD	5.97	3.85	1823/1	00-00-23
18	TRANSMISSION	6.09	11.15	1823/1	00-00-68
19	ROAD	70.12	3.85	1935/1854/1	00-02-70
20	TRANSMISSION	72.64	11.15	1935/1854/1	00-08-10
21	TRANSMISSION	205	1.42	1911/3/1	00-02-91
22	TRANSMISSION	172.52	1.42	1973/304/1	00-02-45
23	TRANSMISSION	508.4	1.42	375/1	00-07-22
24	TRANSMISSION	478.87	1.42	1923/551/1	00-06-80
26	TRANSMISSION	223.94	1.42	619/1	00-03-18
27	TRANSMISSION	181	1.42	638/1	00-02-57
28	TRANSMISSION	407.74	1.42	642/1	00-05-79
29	TRANSMISSION	494.36	1.42	970/1	00-07-02
30	TRANSMISSION	544.36	1.42	1087/1	00-07-73
26	TRANSMISSION	235.21	1.42	1095/1	00-03-34
31	DUMPING SITE-I	17	10	1673/2	00-01-46
32	DUMPING SITE-II	14.2	10	1673/3	00-00-99
33	DUMPING SITE -III	19.4	10	1908/2	00-01-13
34	DUMPING SITE-IV	15.6	10	2/3	00-08-94
35	DUMPING SITE -V	17	10	11/2	00-11-90
36	DUMPING SITE -VI			11/6	00-08-94

Total Area

3.7463 Hect.

Place : Bharmour
Dated :


 Deputy Conservator of Forests
 Bharmour Forest Division
 Bharmour, Chamba (H.P.)

For Bharmour Forest Division

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ECOLOGICAL IMPACTS OF HEPs

Introduction

Development of a nation has to be people friendly as well as environment friendly. Over-exploitation and over-exhaustion of the natural environmental resources can play havoc with the development of the people as depletion of resources on this finite planet will have dangerous implications for the future generations. Besides, to improve the quality of life of people, infrastructural development such as construction of dams, canals, power energy, roads, telecommunication, airways, waterways, irrigation network, etc. is significant but this may lead to various negative outcomes, one of these being involuntary displacement of population.

Developing countries planned and are planning to establish industries, dams and other developmental projects in the rural, as well as, urban areas without taking into consideration the environmental problems associated with the misuse of natural resources like soil, water and forests. They overlook and disregard the fact that there are many intended and unintended consequences of the development processes. For instance, while treating environment as a resource, there is an imminent threat to the natural environment of the developing countries with the rapid industrialization and urbanization. Hence, there is a need of 'sustainable development', which implies a kind of development which can sustain ecology, as well as, conserve and preserve the existing natural resources. Brundtland commission has projected the Sustainable development as development that meets the requirements of the current generation without compromising future generations' ability to meet their own needs.

The term "environment" comprises air, water, soil, flora and fauna, societies, habitats, and livelihood, among other things, and is a complex mix of diverse inter-relationships that these components of the environment have with one another. Today's priority is not just to preserve them for the current generation, but also to ensure that they are used by future generations. The future of the people is dependent upon the present acts and actions of ours, in conserving and sustaining this benign gift of God, that is Himalayan Environment.¹

The Himalaya mountains are one of the world's most vulnerable regions. They look to be powerful and intimidating, but they are weak and vulnerable in the environment, and the man-environment connection is dangerously balanced. Population growth, rapid urbanization, industrialization and the greed of man to overuse resources, have further accentuated the process of environmental degradation in the inhabited parts of Himalayas. The Himalaya has become an environmentally dangerous zone as a result of declining biota, soil erosion, and landslides caused by the loss of forest cover, and the entire hydrological cycle appears to have been disrupted.

Himachal Pradesh and Hydropower

The state of Himachal Pradesh, which forms a part of the Western Himalaya, is environmentally fragile and ecologically vulnerable. It has been passing through a state where evaluation of environmental problems has become necessary in order to identify the entire points and suggest strategies for sustainable development, which is socially relevant, economically viable, and environmentally safe and eco-friendly.¹

The Union Territory of Himachal Pradesh was elevated to the status of a full-fledged state on January 25, 1971, making it the Indian Union's 18th state. Currently, the state is divided into the following twelve districts:

1. Bilaspur, 2. Chamba, 3. Hamirpur, 4. Kangra, 5. Kinnaur, 6. Kulu, 7. Lahul-Spiti, 8. Mandi, 9. Shimla, 10. Sirmour, 11. Solan, and 12. Una.

The history of power generation in the state goes back to the year 1908 when the Chamba State under the administrative capabilities of the then Raja Sir Bhuri Singh set up a 35 K.W. D.C. hydel generating



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power house at Chamba. This was the first Power House in northern India and as such Chamba town had electricity much earlier than Lahore, the capital of Punjab.

Another hydro-electric power project (Chaba Project near Shimla) in the area which comprises now the State of Himachal Pradesh was set up way back in 1912. The then British Government initiated the Chaba Project near Shimla, to meet the requirements of this erstwhile capital of the British Raj. This was followed by commissioning of power house in Bharmour (Chamba District) in 1933 and also installing another 100 K.W. D.C. hydel generating set in Bhuri Singh Power House, Chamba in 1938 which was replaced by new 100 K.W. A.C. hydel generating set in 1957. The old 35 K.W. D.C. hydel generating set was also replaced by 100 K.W. A.C. hydel generating set by augmenting the power house, thus making the capacity of the power generation as 200 K.W. Further augmentation of Bhuri Singh power house was taken in hand in 1983 and completed in 1985 by installing a new generating unit of 250 KW by extending the existing power house building. With this augmentation the capacity of Bhuri Singh Power House has increased to 450 KW.

The Shanan Power House was built at Joginder Nagar (Mandi District), for the construction of which the Kangra railway line was laid down from Pathankot to Jogindernagar. Though in the late sixties a number of small projects were taken up, it was only after the formation of Himachal Pradesh as a full-fledged State in 1971 that systematic hydro-power development was undertaken.

The first significant dam was built at Village Pong in the Dehra-Gopipur tehsil of Kangra district in Himachal Pradesh, across the river Beas near the foothills of the Shivalik Range. The dam's construction began in 1961 and was finished in 1974. The dam's full reservoir level was 433.12 metres.

In 1975, the National Hydroelectric Power Corporation (NHPC) was formed. Over the course of its 45-year history, NHPC has grown to become India's largest organisation for hydropower development, with the ability to handle all aspects of hydropower project development, from inception to commissioning. Baira Siul Hydroelectric Project in Himachal Pradesh was the first venture to be taken up by the N.H.P.C. The Project is located in the District of Chamba. It utilizes flow of the three tributaries of the river Ravi - Baira, siul and Bhaledh. The Project construction was initially taken up in 1970 by the Central Hydroelectric Power Construction Board under Ministry of Irrigation and Power as a Central Sector Project. Subsequently, after the formation of N.H.P.C., Project was entrusted to NHPC on 21.1.1978. The project was commissioned in 1982 at a total cost of Rs.148.08 crores. The original installed capacity of the project was 180 MW. Subsequently, it has been increased to 198 MW by up-rating the capacity of each unit to 66 MW through Renovation and Modernization of the Plant during 1991-92.

The five largest rivers that run through Himachal Pradesh are the Chenab, Ravi, Beas, Sutlej, and Yamuna, which all originate in the Western Himalayas and flow through the state. These snow-fed rivers and its tributaries discharge a large amount of water throughout the year and run with high bed slopes, which are used to generate electricity. Himachal Pradesh is naturally suited for hydropower generation and accounts for around 25.9 % of India's total hydropower potential. It has been predicted that roughly 27,436 MW of hydroelectricity power can be generated in the state by developing various big, medium, small, and mini/micro hydel projects on the state's five river basins based on preliminary hydrological, topographical, and geological investigations.

The Satluj is the state's largest river system, with a catchment area of 20,398 km². It flows through the districts of Lahaul and Spiti, Kinnaur, Shimla, Solan, and Bilaspur before entering Punjab and flowing into the huge Bhakra dam.

The Beas formerly known as the 'Vipasa,' the Beas is the second-largest river in the country, having a catchment area of 13,663 km². It begins near the Rohtang pass at Beas Kund. It flows 286 kilometres from north to south west before entering the Pong Reservoir and Punjab.

The Chenab, also known as the Chandrabhaga, is the world's largest river by volume. It has a 7850 km² catchment area. At an elevation of 4891 metres, the Chandra and Bhaga originate on opposite sides of the Baralacha. Before entering Kashmir, it flows north-west.

The Yamuna is nourished by a number of tributaries before flowing into Uttar Pradesh in the south-eastern part of Himachal Pradesh.

The Ravi river rises in an amphitheatre-shaped basin in the Dhauladhar Range and flows southwards through the Dhauladur Hills, carving a wide valley. The Ravi flows approximately 130 kilometres before entering Punjab and Pakistan.

Ecological Consequences of Hydro-electric Power Project

Himachal Pradesh's rivers and catchments are under severe strain. Large-scale development initiatives, in combination with climate change, have a demonstrable impact on natural ecosystems and runoff characteristics. Water resource strategies will need to strike a careful balance between development and economic goals and basic requirements for conservation and environmental protection in vulnerable mountain and river ecosystems. Environmental flow maintenance is necessary in the environmental approval process, although it is rarely monitored or enforced. The assessment of acceptable environmental flow is difficult, and additional research is needed to ensure that rivers maintain a minimal level of ecological balance. Dams and abstractions must be strategically placed to limit their impact. Dams have now blocked the majority of rivers, obstructing fish migration. Future dams, on the other hand, might be properly placed to reduce their impact. The provision of fish passes should be taken into consideration.

Over the previous few decades, there has been an increase in environmental knowledge and concern. This has been related to proposals for better development approaches since the mid-1980s. More recently, there have been increasing efforts to understand the causes of these environmental problems and to address the policy for, and political aspects of, development and environment. Right from the outset, the building of a large-scale dam causes irrevocable environmental destruction. Sadly, this destruction does not end with the filling of the reservoir and the inevitable loss of land, forests and wildlife. In truth, there is scarcely an aspect of the dam's future operations which will not carry a heavy environmental cost.

Dams have the potential to cause earthquakes. Over 100 earthquakes have been found around the world that scientists believe were produced by reservoirs. It has only recently been recognized that the pressure applied to often fragile geological structures by the mass of water impounded by a big dam can – and often does – give rise to earthquakes. The 7.9-magnitude Sichuan earthquake in May 2008, which killed an estimated 80,000 people and was linked to the construction of the Zipingpu Dam, may be the most devastating occurrence. Dr. V. P. Jauhari wrote about this phenomenon, known as Reservoir-Induced Seismicity (RIS), in a paper prepared for the World Commission on Dams: "The most widely accepted theory for how dams cause earthquakes is that the extra water pressure created in micro-cracks and fissures in the ground beneath and near a reservoir causes earthquakes. When the pressure of water in the rocks rises, it works as a lubricant, lubricating faults that are already under tectonic strain but are prevented from slipping by friction between the rock surfaces".⁵

Environmental loss due to large dams has been described by Ramaswamy R. Iyer as under:-

Let us now look at the specifics of major dams' environmental impact. The phrase "environmental impact" is used in the broadest sense possible here. There is a curious view that the displacement of people is not an 'environmental' aspect. Whatever we may call it, it is certainly a very important aspect, and it is difficult to see how anyone can object to this issue being raised by the environmentalists. The environmental impact of large projects of this kind would include:

The loss of agricultural and forest land through submergence under the reservoir which is created;

The project's displacement of people and animals, as well as the loss of jobs, causing significant suffering to the landless and indigenous populations;

The displacement of wild animals and the possible extinction of some rare flora and fauna;

The public health issues that may arise as a result of large-scale water impoundment and possible climatic changes;

The inherent hazards of huge dams (the likelihood of breaches and dam-bursts, resulting in the flooding of wide areas), particularly in seismically active places, as well as the problem of reservoir-induced seismicity;

The loss of vegetation in the upper catchment, resulting in excessive run-off and loss of top soil, resulting in faster siltation of the reservoir and a reduction in its useful life (this might be considered an example of the project's environmental impact); and

The onset of water-logging salinity in the project's command area after several years of irrigation, resulting in the abandonment of important agricultural land.

Construction activities in the dam region nearly usually result in a large increase in dust levels in the air. Such dust not only harms the region's woods and other vegetation, but it also pollutes the river and other bodies of water. People who live and work in the region's health are also affected significantly. Construction activities, such as diverting the river through a tunnel, produce enormous disruptions and have negative consequences for the aquatic ecosystem. Vulnerable species with limited distribution or low tolerance often become extinct even before the dam is constructed.⁷

According to Patrick McCully, Executive Director of the International Rivers Network, few people are aware that the reservoirs behind dams are a major source of global-warming pollution. The huge hydropower business, which has been chastised for polluting rivers and evicting villages that stand in the way of its reservoirs, has taken the opportunity to rebrand itself as climate-friendly. When a large dam is built, the reservoir floods plants and soils that contain massive amounts of carbon. This organic waste rots underwater, releasing carbon dioxide, methane, and, in some cases, nitrous oxide, a highly strong global warming gas. Although emissions are highest in the first few years after the reservoir is built, they can last for decades. Because the river that feeds the reservoir and the plants that grow there will continue to offer additional organic matter to drive greenhouse gas production, this is the case. Some of the emissions make their way to the surface of the reservoir. The rest takes place at the dam. Like the fizz from an opened bottle of soda, methane-rich water shoots out of turbines and spillways, releasing its methane. When these 'fizz' emissions are taken into account, estimates of hydropower's global warming impact increase. Although reservoirs generate greenhouse gases in all temperature zones, these emissions are typically worse than those caused by fossil fuels in the tropics. He goes on to argue that given the large sums of money at stake in carbon-trading programmes and other measures to combat global warming, it's understandable that the hydropower business is concerned about being labelled as another global-warming contributor.⁸

In addition, it has been reported that, in Himachal Pradesh, hydel projects, in addition to slate mining and industrialization, have been a major source of interstitial lung diseases (ILDs) for the labourer class in recent years. Employees, particularly labourers, have developed silicosis and sarcoilosis as a result of hydel projects and slate mining. According to Dr. S. Kashyap, Principal of Indira Gandhi Medical College and Hospital, Shimla, the number of people suffering from these disorders has increased dramatically in the recent few years. He also stated that silicosis tuberculosis was a common and unusual condition among slate-mine workers in Chamba, Dharamsala, and other places. Large hydel projects in Kullu, Kinnaur, Lahaul-Sapiti, Mandi, and other areas of the districts have also exacerbated ailments among the working class.⁹

In India, the environmental and social consequences of major dams were poorly recognised, and the avoidance and mitigation of negative consequences were frequently overlooked in financial and commercial calculations. This has been stated by Shekhar Singh and Pranab Banerji. Though things have improved in the recent past, the situation remains far from satisfactory. Judge¹¹ in his paper argues that in the understanding of environmental management, the project-affected people should constitute the first priority. There is a need for taking stock of the nature and needs of human society as well as the logic and character of economic development. He further questions whether society should develop at the cost of destroying the socio-economic and ecological basis of a community, and is development benefiting the

privileged and further pauperizing the unprivileged. Hirsch said that the age of large dams is drawing to a close. Yet the number and scale of dams that are on the cards is indicative of the destruction that remains to be wrought on vulnerable people and fragile environments if these projects are allowed to go ahead. As a matter of logic, increasing scarcity of suitable sites for dam construction means that each new site tends to be in a more vulnerable area than the last.

Review of Literature

According to Rajeshwari Tandon, both man-made and natural heritage are areas of concern in terms of heritage the entire ambience and unique way of life, including the hill areas, must be maintained. There is a need for the State Government or Local Bodies to compile a list, document it, and enact legislation. A strategy on afforestation and soil conservation is also required, as is a policy on encroachments, road widening without causing harm, and a framework for controlled approaches for longer-lasting roads. Another crucial topic is disaster management, particularly in the case of earthquakes. The importance of community involvement cannot be overstated, as no programme can flourish without active community participation.

Tehri Dam, in Uttaranchal State's Garhwal Himalayas, requires the submersion of Tehri town and 23 villages in its vicinity, according to Vijay Paranjpye's¹⁴ assessment. A total of 72 communities in the surrounding area have been impacted in some way by this procedure. Around 85,000 people have been displaced as a result of the dam. Local residents have occasionally expressed their displeasure with the dam. They believe the Bhagirathi to be a sacred river, and they are concerned that the project will irrevocably ruin a number of holy sites downstream. People are also aware of the government's poor track record in rehabilitating dam oustees in other parts of the country where large-scale displacement occurred. They also fear that a large dam in the vicinity will break sooner or later due to the area's complicated geological and seismic circumstances, flooding the entire valley and destroying everything they hold dear and precious.

Mathur and Cernea contribute a large collection of empirical facts as well as critical analysis to the present settlement debate. Both voluntary and involuntary resettlements have been studied by the authors. This volume is well positioned to expand the policy debate and contribute to improving the practise of resettlement, as the concerns of displacement, resettlement, and rehabilitation have recently been more controversial and contested than at any other time in the past. Scudder¹⁶ shows the reader the human side of huge dams, past, present, and future: population resettlement, hydroelectric power benefits, water resource development, flood management, and ecosystem destruction. He finds that the traditional cost-benefit analysis of major dams has been proven to be fatally flawed.

Barrow¹⁷ examines the sources and implications of global environmental problems in the past, present, and future, and suggests, where possible, ways in which they might be reduced or avoided through prudent management. Some of these issues are caused by natural factors, while many environmental issues are the result of flawed development ethics.

Thus, it is clear that various problems have been surfacing frequently wherever river dams are being proposed and constructed at different locations all over the world and in India. It is with this in view that we decided to investigate the issue of displacement and resettlement by looking into the experiences of people affected by the construction of the Chamera Dam in Himachal Pradesh.

The Chamera Hydro-electric Power Project

The Chamera Hydro-electric power Project Dam has been constructed by the N.H.P.C. which generates electricity to the tune of 540 Mega Watt. It is a major project for accelerating development of hydropower in Himachal Pradesh. It is constructed as Indo-Canadian Joint venture by N.H.P.C. Actual construction work of the project was commenced in 1985 and the project was commissioned in March, 1994. The completion cost of the project is Rs. 2114.02 crores. The project comprises 140 metres high concrete dam, a 9.5 meters dia and 6.41 kms long Head Race Tunnel, a 25 M dia and 84 M high surge shaft, a 8.5 metres dia and 157 metres high pressure shaft and an underground Power House housing 3 nos Francis Turbines and generating units of 180 MW each.

Methodology

A survey approach has been selected as a principal means for data collection from the people affected by the construction of Chamera Hydro-electric power project in Chamba. The interview method was adopted for collecting data which was supplemented by on the spot observations and informal discussions. Head of the each family has been interviewed to get the basic information. Survey has been conducted with the help of a well designed interview schedule, which broadly covered aspects such as loss of green cover, loss of access to common property, loss of flora and fauna. The Interview Schedule has been flexible with some open ended questions having been included in it.

Four villages have been selected for the study, viz. Chakloo, Palehi, Thari and Bhanota. Because they are worst sufferers of the Dam. Eighty families have been selected (Twenty families from each village). The technique of systematic Random Sampling has been applied for the survey and 20 per cent of the affected families have been covered from each village. List of affected families was obtained from the office of the Relief and Rehabilitation Officer (RRO) of the Chamera Hydro-electric Power Project. All the respondents of the study are from rural area. The youngest respondent in our study was 25 years of age and the oldest 80 years old. The majority of respondents belong to the age group of 25 to 55 years.

Damage to Environment due to Construction of Chamera Dam

Development policies and programmes have consistently failed to pay careful attention to the issue of environment and adopt approaches that may result in many adverse impacts on the environment and the ecology of the area.

Developmental projects causing mass displacement, not only lead to erosion of cultural diversity, but also, cause the destruction of biological diversity. While ecological imbalance seriously threatens the survival of those dependent on it, the imposition of external technologies on it disrupts the natural genetic diversities that have taken years to evolve. The overall consequence of all this is a degradation that is almost irreversible.¹⁸

Loss of Green Cover

Dams which are normally constructed in the hill areas create large impact on environment of the area, as is the case in the construction of Chamera Dam Project shown in Figure 2. Out of the total eighty respondents, sixty one (76.25 per cent) complain of the loss of green cover, whereas, nineteen (23.75 per cent) respondents do not feel the loss of green cover.

Loss of Access to Common Property

Whether displaced people are resettled within a reservoir basin or elsewhere, a major cost of large dams to the indigenous people is loss of common property resources, such as forests, rivers and grazing lands etc.

we can infer that sixty three (78.75 percent) respondents out of the total of eighty believed that they suffered the loss of access to common property. Seventeen respondents, i.e., 21.25 per cent do not feel any loss to the common property resources. When we came in contact with Pritam Singh, one of the respondents, he told that, "Pahale paani ke chasme the jo doob gaye, paani bada achha tha. Samsan ghat tha jo ab nahin hai. Pashu charane ke jagah nahin rahi, gharat bhi chale gaye. Ab har kaam ke liye door jana padata hai." (Previously there were water springs which have been submerged. Drinking water was clean and pure. There was crematorium which is not there. There are no grazing fields now or the water mills. Now we have to go far off places for every work). So it is clear that the Chamera Dam has also caused damage to the common property resources as has been emphasised by Cernea.

Loss of Flora and Fauna

There are certain local species of plant and animals that are special to the area which are related closely enough to interbreed naturally. Such species are in danger when any developmental activity starts in the area. Figure 4 shows that twenty one (26.25 percent) respondents were of the view that there is a definite

loss of flora and fauna in the area due to the construction of Chamera Dam, whereas a majority of fifty nine (73.75 per cent) did not think so.

In the construction of Chamera Project, clearly much loss to the different environmental aspects has incurred. On environmental aspect, our data show that fifty nine (73.75) respondents believed that the area suffered the loss of green cover due to the construction of Chamera Dam. There were as many as twenty one (26.25 percent) respondents who felt the loss of flora and fauna. They said that the area was earlier full of natural orchards which bore local species of fruits. Those are now extinct and their children are unaware of such species of local fruits.

Additionally, sixty three (78.75 percent) respondents complained the loss of access to common property due to the impoundment of water in the reservoir. They are facing great hardships as the reservoir invariably submerged large tracts of forest and eco-systems, including grasslands etc. The people of Chakloo, Palehi, Thari and Bhanota villages told that they are the worst sufferers of the Dam. They have lost access to the common property, especially the natural water-springs. Besides, there were small water-mills (Gharats) on the banks of river where people of the nearby villages used to get various cereals, like wheat and maize, ground to make flour. Now they have to go to far-off distances to get the flour which costs them dearly as they would go in the morning and return in the afternoon after getting the flour ground through mechanical machines, which, they say, burn most of the energetic contents of the cereals. They have also lost natural grazing fields for their cattle. In addition, the local people have lost their traditional crematorium on the banks of the river and now the dead bodies have to be cremated on the fringe of the reservoir and as such the ash and the remains, which were considered sacred to be carried away by the running water of the river, are now seen floating on the surface of the reservoir water.

Another point that emerged when we further delved into the situation that our respondents have been facing due to construction of Chamera Dam, is the submergence of forests. Attempts to compensate for the loss are often made by seeking to reproduce such ecosystems elsewhere. Natural ecosystems, on the other hand, cannot be recreated. A plantation can be created, but not a natural forest or grassland. According to available research, compensatory afforestation is difficult to perform and, in some cases, was not completed until several years after the project was completed. If a specific type of forest is depleted in a given region as a result of the dam, it must be compensated by the creation of another forest in the same location. In many situations, compensatory afforestation is carried out in locations and ecosystems that are vastly different from those for which it was intended.

The history of dam construction includes many cases in which the ecological and environmental damage caused by sediment accumulation in reservoirs has been severe and difficult to repair. Sedimentation deposition is the most serious impact of dams which result in a loss of storage capacity of the reservoir due to deposited sediment. This has been seen in the Chamera Dam reservoir as well. Sedimentation deposition has extended some distance of the reservoir upstream. This has increased the surface and raised water level in the surrounding villages. In some areas deposits have been exposed during long periods of reservoir drawdown and some times wind-blown dust has become a significant problem. During the field work, some respondents told that in the rainy season when it rains heavily, the water of the rivulets, which form part of the reservoir, recedes and enters their fields and houses. These families live in fear of being washed away by flash floods which may occur during the rainy season.

There is also the loss of green cover due to the Dam construction and many rare local species of fruit plants and forests have been lost. People have also lost their grasslands etc. Moreover, there is soil erosion on the edges of Chamera Dam reservoir. It came to our notice that as promised, no land in lieu of land was given to the displaced families and no colonies have been made to resettle the displaced persons. All the respondents told that they lost much of their cultivated land due to the construction of the Project. Similarly Chamera -II 300MW, Chamera -III 231MW, Budhil 70 MW, Bajoli Holi 180MW, and Kuthar 240 MW are the largest schemes in the Ravi river which has been commissioned successfully but the ecological impacts can not be ignored although the Kuthar 240 MW is under construction.

Ecological comparison

As comparatively view with reservoir based and run of the river schemes the dam based projects leads to the submergence of amount of fertile lands, displacement of villages coming under the catchment of dam and involves the huge expenditures to rehabilitate the inhabitants affected as well as project construction. Similar ecological impacts were seen in the execution of Baira Suil, Chamera II and Chamera III HEPs. Where as in the run of the river scheme projects there is no need of submergence and not major effects on the ecology of the area. There are so many hydro power plants has been commissioned in surroundings area of this Ghator Top SHEP 4.98 MW. The Chirchind HEP 5 MW and Kiunr HEP 5MW has been commissioned successfully without any major effects on the ecology of the area i.e on environment, loss of green cover, access to common property, loss of flora and fauna etc. Some Hydro projects are under clearances which are being executed by IPPs in the vicinity and HP Govt. Sector i.e Chirchind-I 12MW, Ghator-I HEP 2.20MW, Samwra 2.50MW, Lower Bhagair 1 MW, Kalar SHEP 1.95 MW and Upper Bhagair 0.50 MW respectively are under clearance stage. All these projects are run of the river scheme projects so there do not seem any major effects on the ecology of the area due to installing these projects.

Conclusion

Since the construction of the project has been considered as an essential pre- requisite for the development of the area, adverse consequences and environmental degradation have been overlooked by the politicians, planners, policy makers as well as, administrators. It has clearly been forgotten that environmental degradation is not simply the ecology, flora and fauna, but also the quality of human life. Developing countries planned and are planning to establish industries, dams and other developmental projects both in rural and urban areas without taking into consideration the environmental problems associated with the misuse of natural resources like soil, water and forests. They overlook and disregard the fact that there are many intended and unintended consequences of the development processes. For instance, while treating environment as a resource, there is an imminent threat to the natural environment of the developing countries with the rapid industrialization and urbanization. The protection of environment should be considered as a crucial component of development planning. Development will be hampered without effective environmental protection, and without development, resources will be insufficient for much-needed investments in important economic and social areas. Therefore, a strong case for combining the concerns of environment, both must be designed to ensure sustainable development. Hence, there is a need of 'sustainable development', which implies a kind of development which can sustain ecology, as well as, conserve and preserve the existing natural resources.

It may be more beneficial, both economically and environmentally, to construct large number of small dams in the catchment areas of rivers. Such projects may cost less and may also prove more beneficial in the long run. Environmentally, small dams and hydro-electric projects may be more suitable in the fragile eco-system of regions like Himalayas. But micro hydro projects should not be allotted in an indiscriminate manner ignoring the traditional rights of the local people and the environment. Keeping in view the fragile hill strata, the Government should be very selective and should not allow more than one project on one stream. If large number of projects is allowed to come up, these streams, which are vital to the local eco-system, will be virtually wiped out. As a result, the people will lose their traditional sources of water which cater to their need for drinking, irrigation, livestock and even running the water mills. While ecological imbalance seriously threatens the survival of those dependent on it, the imposition of external technologies on it disrupts the natural genetic diversities that have taken years to evolve. The overall consequence of all this is degradation that is almost irreversible.

By the time the Government of Himachal Pradesh takes decision to do away with the construction of large projects in the state, it would be too late since much damage to the fragile ecology and environment of the hilly state would already have been done. Large-scale projects earn greater kudos for politicians and engineers alike; the more grandiose the scheme, the more prestige accrues to those involved in its construction. It is reasonable to assume that governments and other developmental agencies pay little

attention to the ecological and social problems caused by large dams. So there seems a remote possibility that the Government of Himachal Pradesh at this stage would review the policy of constructing large dams in the state since the work on the construction of many large dams has already been awarded to different sectors and many more are under construction. The fact of the matter is, that there has not been any definite policy of the Government and in the absence of such policy, people were made to suffer due to the ill-planned, badly executed, inadequate and inappropriate rehabilitation programme. There is thus a need to formulate a comprehensive national policy for the construction of various projects in the country with environmental, economic and socio-cultural impact assessment through national legislation.

Keeping in view the above points, some suggestions are offered. As the mega hydel projects result in submergence of large tracts of fertile lands, displace villages falling under the catchment area, involve huge expenditure as difficult terrains to be negotiated, the state of Himachal Pradesh should now concentrate on the mini-and-micro hydel projects. It may be more beneficial, both economically and environmentally because there is no need of any submergence and rehabilitation to inhabitants. Small amount of land needed for installing these projects and by maintaining the E flow in the river/nala there is no danger to the flora and fauna. So there are not any impacts on the ecology of the area and these types of projects are beneficial for the state.

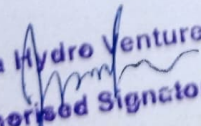
Chamba Hydro Ventures
Authorized Signatory



Deputy Conservator of Forests
Bharmour Forest Division
Bharmour, Chamba (H.P.)

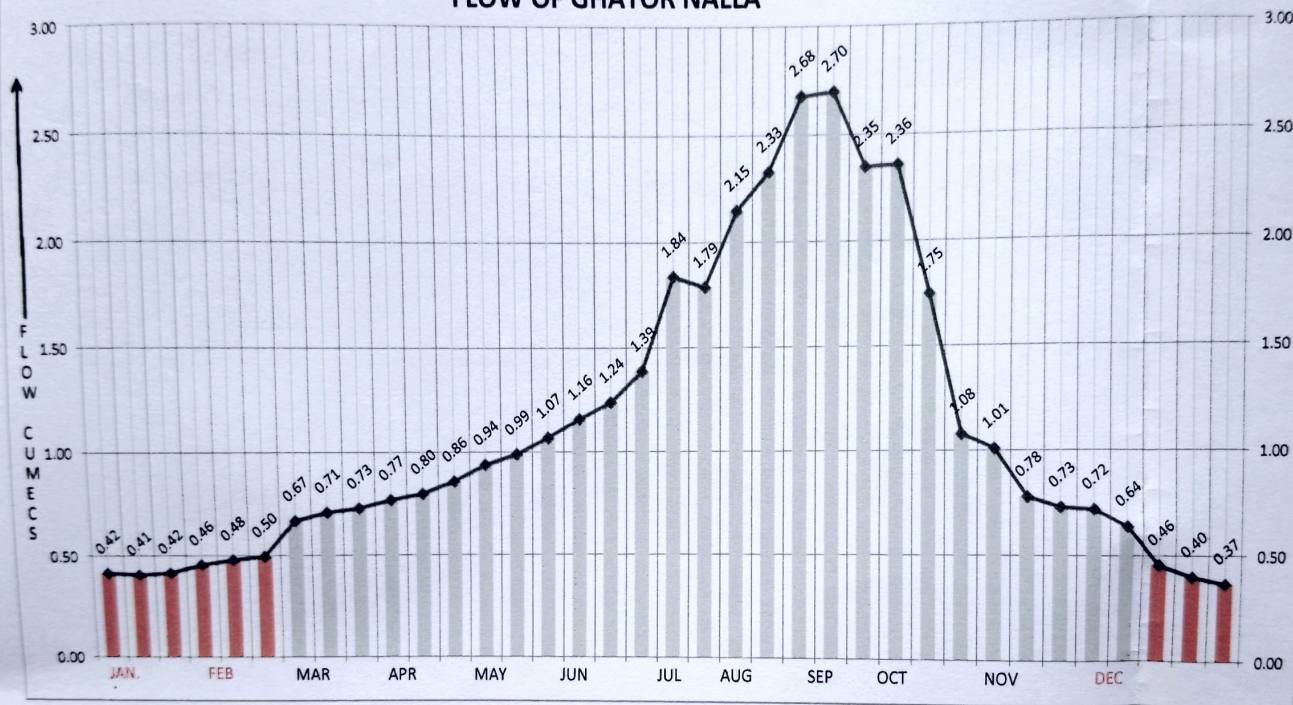
E FLOW MECHANISM ON DISCHARGE AVAILABILITY FOR 90% DEPENDABLE YEAR					
		DISCHARGE IN NALA	20% RELEASED DISCHARGE IN LEAN SESSON	DISCHARGE AVAILABILITY FOR GENERATION	REMARKS
JAN	I	0.52	0.10	0.42	LEAN SEASON
	II	0.51	0.10	0.41	LEAN SEASON
	III	0.52	0.10	0.42	LEAN SEASON
FEB	I	0.57	0.11	0.46	LEAN SEASON
	II	0.60	0.12	0.48	LEAN SEASON
	III	0.62	0.12	0.50	LEAN SEASON
MAR	I	0.67		0.67	
	II	0.71		0.71	
	III	0.73		0.73	
APR	I	0.77		0.77	
	II	0.80		0.80	
	III	0.86		0.86	
MAY	I	0.94		0.94	
	II	0.99		0.99	
	III	1.07		1.07	
JUN	I	1.16		1.16	
	II	1.24		1.24	
	III	1.39		1.39	
JULY	I	1.84		1.84	
	II	1.79		1.79	
	III	2.15		2.15	
AUG	I	2.33		2.33	
	II	2.68		2.68	
	III	2.70		2.70	
SEP	I	2.35		2.35	
	II	2.36		2.36	
	III	1.75		1.75	
OCT	I	1.08		1.08	
	II	1.01		1.01	
	III	0.78		0.78	
NOV	I	0.73		0.73	
	II	0.72		0.72	
	III	0.64		0.64	
DEC	I	0.57	0.11	0.46	LEAN SEASON
	II	0.50	0.10	0.40	LEAN SEASON
	III	0.46	0.09	0.37	LEAN SEASON

The avrage discharge in the Ghator nala is 1.11cumecs on 90 % dependable year. 20% discharge @0.11 cumecs will be maintaineddin the nala as E flow thorghout the year. For Generation of 4.98 mw with gross head of (at weair site2735.00m and power house2082.00m

Chamba Hydro Ventures

 Authorised Signatory


 Deputy Conservator of Forests
 Bharmour Forest Division
 Bharmour, Chamba (H.P.)

FLOW OF GHATOR NALLA



Chamba Hydro Ventures
 Authorised Signatory

Deputy Conservator of Forests
 Bharmour Forest Division,
 Bharmour, Chamba (H.P.)

CHAMBA HYDRO VENTURES

HOTEL ALPS RESORTS, PO & TEHSIL DALHOUSIE, DISTT. CHAMBA HP- 176304
Mob. No. 9418080340 Email Id—ranjan.upmanyu@gmail.com

Ref.No.- CHV/PCA/291/24

Dated 28/3/24

UNDERTAKING FOR MENTAIN E- FLOW MECHANISM

I Rajeev Kumar Upmanyu authorised signatory of M/S Chamba Hydro Ventures , hereby undertake that E- Flow mechanism will be mentained in the Ghator Nala throughout the year after commissioning of the Project as per the central as well as state Govt. policy in the C/O Ghator Top Small Hydro power project 4.98MW in Tehsil Bharmour Distt. Chamba HP.

Date--- 28/3/24

Place--- Bharmour

For Chamba Hydro Ventures
Authorized Signatory

Deputy Conservator of Forests
Bharmour Forest Division
Bharmour, Chamba (H.P.)

CHAMBA HYDRO VENTURES

HOTEL ALPS RESORTS, PO & TEHSIL DALHOUSIE, DISTT. CHAMBA HP- 176304
Mob. No. 9418050775,9418080340 Email Id—ranjan.upmanyu@gmail.com

Ref.No.-

Dated -----

DETAILS OF PROJECTS IN THE CATCHMENT AREA

This is to be certify that following Projects are situated in the catchment of the area of Ghator Top HEP 4.98 MW in Distt. Chamba HP including this proposed Project.

Sr. No.	Project name	River/Stream	Capacity	Location	Status
1.	Ghator Top	Ghator Nala	4.98 MW	Upstream	Under Clearence
2.	Chirchind-II HEP	Ghator Nala	12 MW	Downstream	Under Construction
3.	Ghator -I	Ghator Nala	2.20MW	Downstream	Under Clearence

Chamba Hydro Ventures
Authorized Signatory

Deputy Conservator of Forests
Bharmour Forest Division
Bharmour, Chamba (H.P.)




POWER GENREATION CAPACITY OF THE GHATOR NALLA

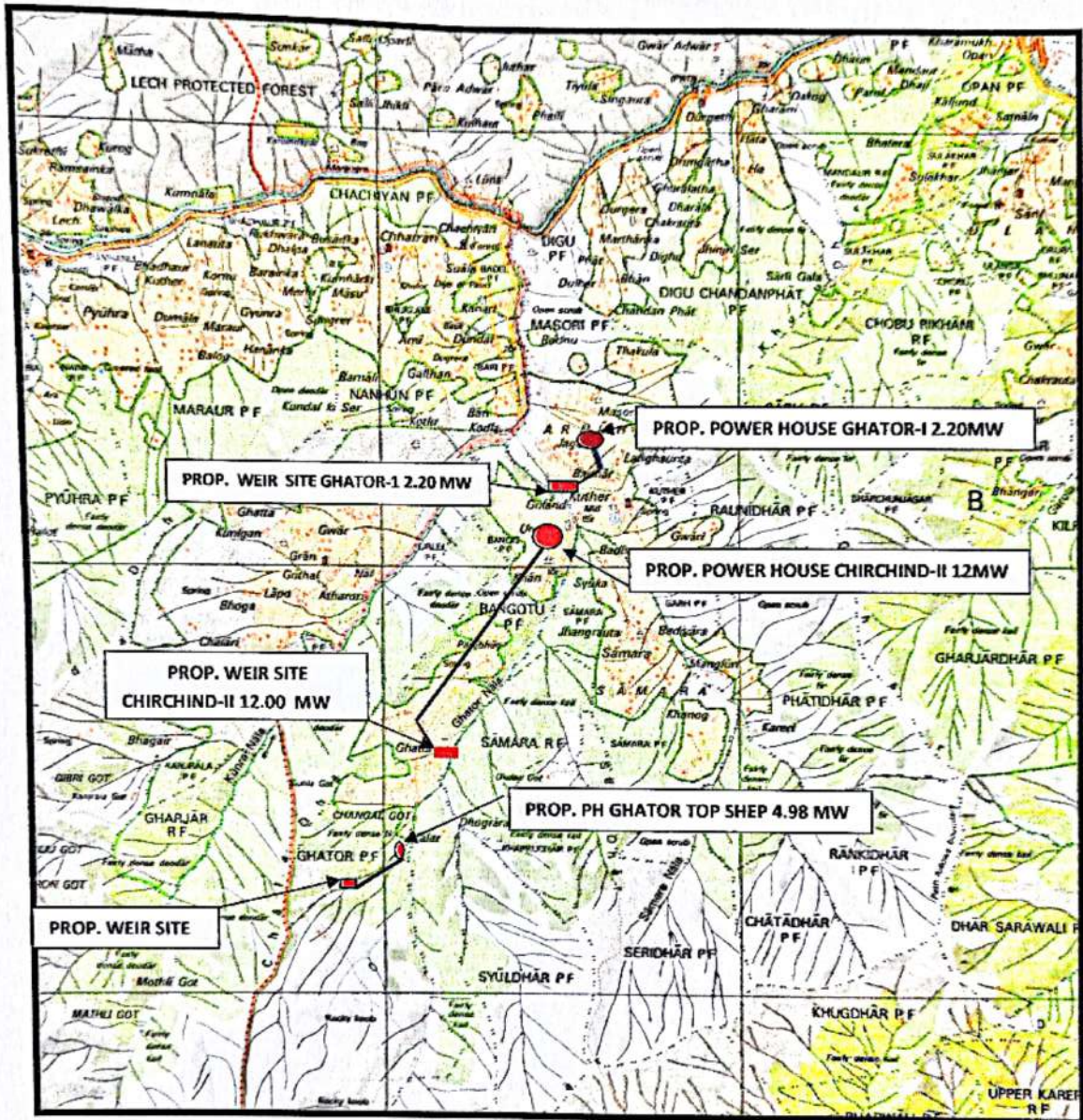
THIS IS TO CERTIFY THAT THERE ARE THREE PROJECT ALLOTTED IN THE STREAM/ NALLA WITH THEIR CAPACITY AS GIVEN BELOW :-

SR. NO.	NAME OF THE PROJECT	CAPACITY OF THE PROJECT IN MW	RIVER BASIN	STREAM/ NALLA	ELEVATION IN METERS.	
					WEIR SITE	POWER HOUSE
1	GHATOR -I	2.20 MW	RAVI	GHATOR	1580.00 M	1530.00 M
2	GHATOR TOP	4.98 MW	RAVI	GHATOR	2735.00 M	2080.00 M
3	CHIRCHIND -II	12.00 MW	RAVI	GHATOR	1995.00 M	1540.00 M

TOTAL CAPACITY OF THE STREAM/NALLA IS 19.18 MW


Deputy Conservator of Forests
Bharmour Forest Division
Bharmour, Chamba (H.P.)

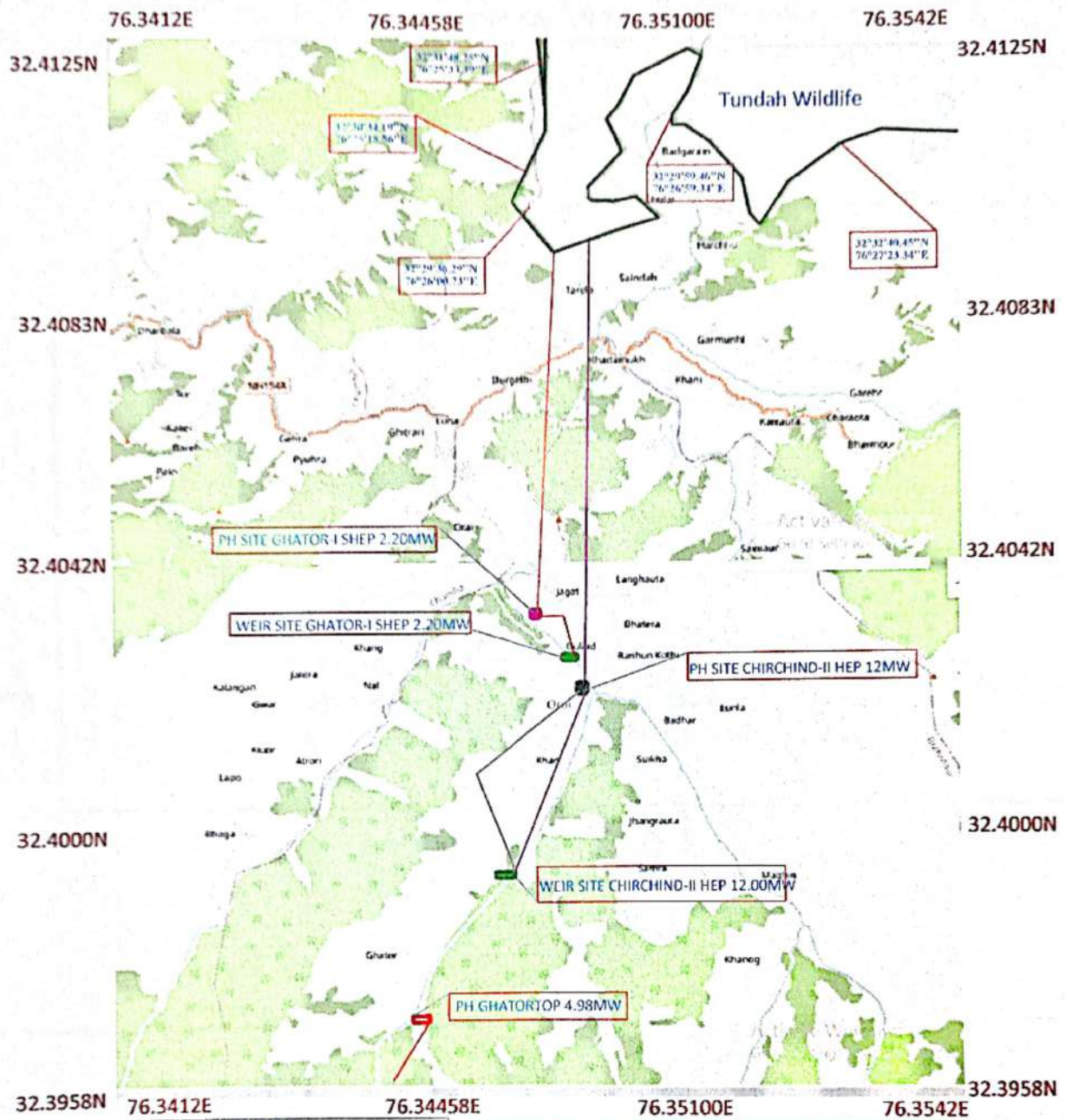
POWER GENERATION CAPACITY OF THE GHATOR NALLA



Chamba Hydro Ventures
 Authorised Signatory

Deputy Conservator of Forests
 Bharmour Forest Division
 Bharmour, Chamba (H.P.)

Aerial Distance Map of Commissioned/Proposed HEP's From Nearest WLS & ESZ IN THE Landscape of Ghator Top SHEP (4.98MW)



LEGEND

- Ghator Top upstream & downstream Projects
- PH. GhatorTop shep 4.98 MW
- PH. & Weir site Chirchind-II HEP 12MW
- Weir site Ghator-I SHEP 2.20MW
- PH.site Ghator-I SHEP 2.20MW
- WLS/ESZ Boundary
- River/Nalla

Aerial Distance For Nearest WLS/ESZ

- Ghator Top (4.98mw) From Tundah WLS=7.10KM ESZ=6.00KM
- Chirchind -II(12mw) From Tundah WLS=5.50KM ESZ=4.20KM
- Ghator -I (2.20mw) From Tundah WLS=3.00KM ESZ=2.00KM

Chamba Hydro Ventures
 Authorised Signatory

Deputy Conservator of Forests
 Bharmour Forest Division,
 Bharmour, Chamba (H.P.)

CONVERSION TABLE FOR CONVERTING LOCAL MEASURES INTO HECTARES

PART - B

(Applicable to the areas where the length of Karam is 56" and Bigha is equivalent to 968 Sq. Yards.)

(Applicable in Districts Mandi, Kullu, Chamba and Lahaul & Spiti)

1 inch	=	0.0254	Metre
1 Karam (56 inches)	=	1.4224	Metre
1 Sq. Karam (Biswansi)	=	2.02322176	Sq. metre
1 Biswa	=	40.4644352	Sq. metre
1 Bigha (968 Sq. yard)	=	99.288704	Sq. metre

Abbreviations			
1 Sq. metre	=	1 Centare	(Cent)
100 Sq. metres	=	1 Aro	(Are)
10,000 Sq. metres	=	1 Hectare	(ha.)

Chamba Hydro Ventures
Authorized Signatory

Deputy Conservator of Forests
Bharmour Forest Division
Bharmour, Chamba (H.P.)



NO. HPSEBL/CE(SP)/IPSP/DB-8(Chirchind)(5 MW)/2022-1564-71

Date: 19/01/2022

- To,
1. M/s Chamba Hydro Venture (Ghator Top SHEP),
Hotel ALP, PO & Tehsil Dalhousie,
Distt. Chamba (HP) - 176304.
 2. M/s Shree Hydro Power Pvt Ltd (Samwara SHEP),
193-A/S, Sainik Colony, Jammu (J&K)- 180013.
 3. M/s Gopal PowerPro Pvt Ltd (Siunr SHEP),
136, Functional Industrial Estate,
Patparganj, Delhi - 110092.
 4. M/s Pitambra Hydro Electric Project, (Channi SHEP)
Hydro Complex, Lane Opp. Embassy Hotel,
Dhangu Road, Pathankot (Punjab).

Sub: - Evacuation of power of Hydro Electric plants through 33kV dedicated transmission line of Chirchind SHEP (5 MW) - regarding signing of joint evacuation arrangement with other IPPs.

- Ref: - 1. The DoE, GoHP's order No. DOE/CE(Energy)/TEC-Ghator Top/2010-7072-80 dated 05.01.2012.
2. The DoE, GoHP's order No. DOE/CE(Energy)/TEC-Samwara/2011-4904-12 dated 29.08.2011.
3. HPSEBL's order No. HPSEB/CE/CC-Siunr/2004-252-260 dated 12.05.2004.

Sir,

"Jai Hind"

Please find enclosed M/s Chirchind Hydro Power Limited's (owner of Chirchind SHEP 5 MW) letter No. CHPL/HPSEBL/CE(SP)/ 2021-22/118 dated 24.03.2022 wherein the IPP has informed that it has successfully energized the 33kV dedicated transmission line from Chirchind SHEP's power-house site to 400/220/33kV Lahal sub-station. Reference is also invited to the DoE's (Directorate of Energy) orders under reference wherein it has been specified that the power of Ghator Top SHEP (4.98 MW), Samwara SHEP (2.5 MW), Channi SHEP (3 MW) and Siunr SHEP (1.5 MW) is to be evacuated in joint mode with Chirchind SHEP (5 MW) and other IPPs upto 400/220/33kV Lahal sub-station at 33kV level.

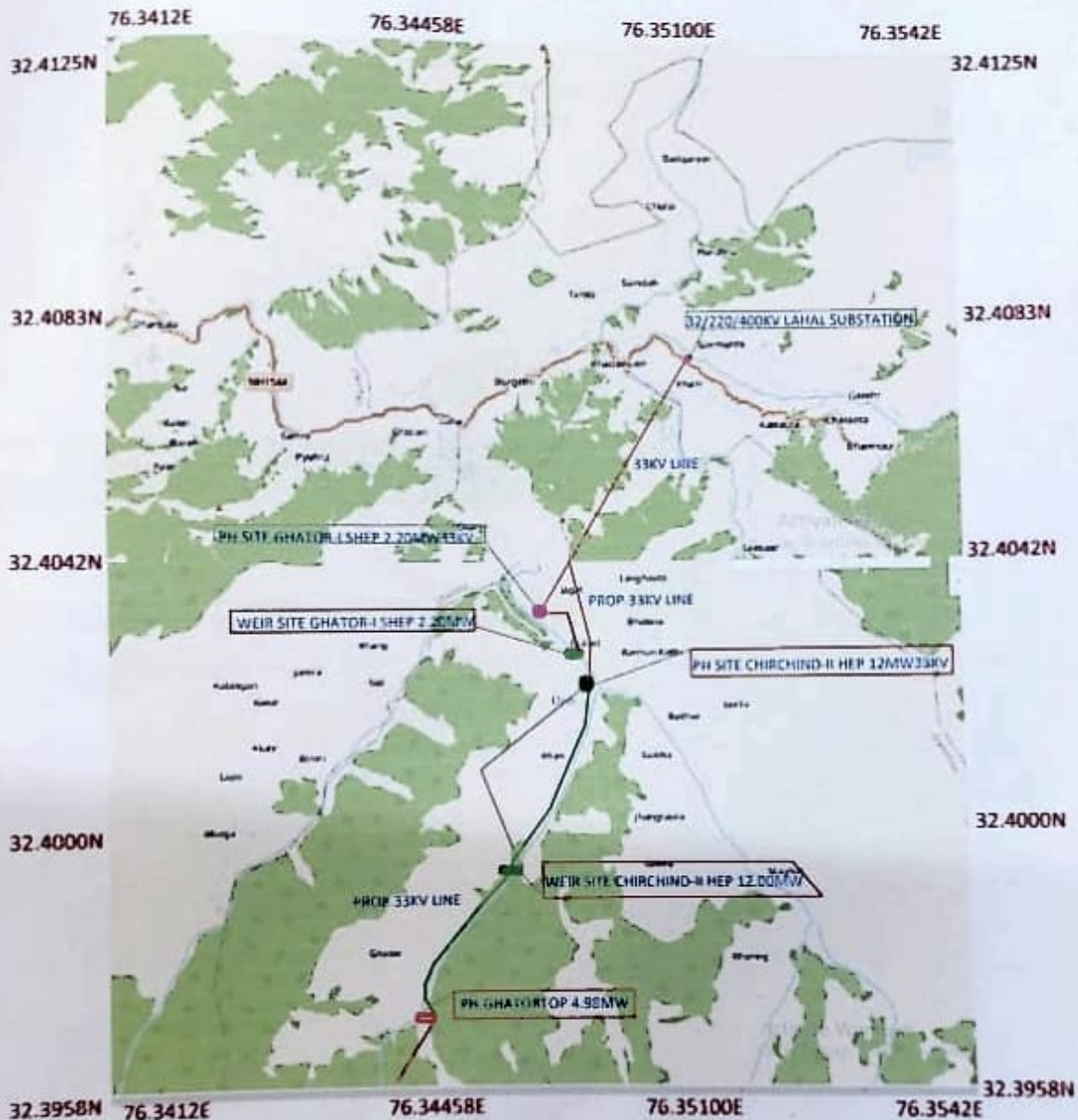
In view of above, it is, therefore requested to execute the joint evacuation agreement with M/s Chirchind Hydro Power Limited for finalization of modalities of sharing the dedicated transmission and interconnection facilities as per the TEC accorded to your firms at the earliest please.

DA: As Above

Yours sincerely,

(Fr. Lukesh Kumar)
Chief Engineer (SP),
HPSEBL, Uttam Bhawan,
Dogra Lodge, Shimla-171004.

Aerial Distance Map of Commissioned/Proposed HEP's From Nearest Transmission Line Ghator Top SHEP (4.98MW)



LEGEND

- Ghator Top upstream & downstream Projects
- PH: Ghator Top shep 4.98 MW
- Prop. Transmission Ghator Top to Chirchind-II 12mw
- PH & Weir site Chirchind-II HEP 12.00MW
- Prop. Transmission Chirchind-II to Chirchind-12mw to Lahal Substation

- Weir site Ghator-I SHEP 2.20MW
- PH site Ghator-I SHEP 2.20MW
- WLS/ESZ Boundary
- River/Nalla
- Substation

Chamba Hydro Ventures
 Authorised Signatory

Deputy Conservator of Forests
 Bharmour Forest Division,
 Bharmour, Chamba (H.P.)

(116)

DIVERSION OF 3.7463 HA. OF FORESTLAND FOR CONSTRUCTION OF GHATOR TOP
SMALL HYDRO PROJECT 4.98MW IN TEHSIL BHARMOUR, DISTRICT CHAMBA (H.P.)
FILE NO. : FP/HP/HYD/156608/2022
DATE OF PROOSAL :

ANNEXURE - "E"

PROFORMA - I (See Note Below Item No. 7)-----+*

**STATEMENT SHOWING TOWER TO TOWER REQUIREMENT OF DIFFERENT KINDS OF LAND FOR 33 KV
TRANSMISSION LINE FROM POWER HOUSE To POOLING STATION IN DISTRICT CHAMBA, HIMACHAL PRADESH**

Sr. No.	Tower no. & its type		Length in (mts) between n 2 & 3 (Total)	Length in		Name of forest land (Strip)	Width of right of way (mts)	Area to be used in		Total area to be used (9 +10)	No. of trees in forest land		Remarks
	From	To		Forest land (mts) (out of 4)	Non forest land (mts) (out of 4)			Forest Land (5 X 8)	Non forest Land (6 X 8)		Enumerat ed	To be felled	
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1.	Switch Yard	1	70	70	-	Urei DPF	15	1050	-	1050	0	0	Right of way taken as 15 meters includes the breadth of 3.85 m proposed for the construction of road
2.	1	2	93	93	-	Urei DPF	15	1395	-	1395	2	2	
3.	2	3	92	92	-	Urei DPF	15	1380	-	1380	2	2	

Chamba Hydro Ventures
Authorised signatory

Deputy Conservator of Forests
Bharmour Forest Division
Bharmour, Chamba (H.P.)

117

DIVERSION OF 3.7463 HA.OF FORESTLAND FOR CONSTRUCTION OF GHATOR TOP
SMALL HYDRO PROJECT 4.98MW IN TEHSIL BHARMOUR, DISTRICT CHAMBA (H.P.)
FILE NO .. : FP/HP/HYD/156608/2022
DATE OF PROOSAL :

ANNEXURE - "C"

PROFORMA - IV ((Refer item no. 9(I) to (IV))

**STATEMENT SHOWING DETAILS OF THE ROAD TO BE CONSTRUCTED FROM PWD ROAD NEAR HPPWD ROAD TO GHATOR TOP
POWER HOUSE IN DISTRICT CHAMBA, HIMACHAL PRADESH**

Sr. No	R.D no.from	R.D no. to	Distance in Meters			Width of right of way (meter s)	Area of the road			Name of village and forest nearby	Muck debris to be produced (Total) '000 M³ with swollen factor@45%	Muck debris to be used locally '000M³	Muck debris to be dumped '000M³	Remarks
			In forest land	In non forest land	Total		In forest land (sq.mt) (4 X 7)	In non forest land (sq.mt) (5 X 7)	Total (sq.mt) (4 X 7)					
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1.	0	100	100	NIL	100	3.85	385	NIL	385	Urei	98*45/100=44 98+44=142	56.8	85.2	40% of muck produced will be used for construction of Gabion wall(Crate), back filling of retaining/Brest walls, producing aggregates and filling up of culvert embankment etc.
2.	100	200	100	NIL	100	3.85	385	NIL	385	Urei	75*45/100=33.75 75+30.75=108.75	43.5	65.25	
3	200	300	100	NIL	100	3.85	385	NIL	385	Urei	71*45/100=31.95 71+31.95=102.95	41.18	61.77	
4	300	400	100	NIL	100	3.85	385	NIL	385	Urei	79*45/100=35.55 79+35.55=114.55	45.82	68.73	
5	400	500	100	NIL	100	3.85	385	NIL	385	Urei	76*45/100=34.2 76+34.2=110.2	44.08	66.12	
6	500	600	100	NIL	100	3.85	385	NIL	385	Urei	75*45/100=33.75 75+33.75=108.75	43.5	65.25	
7	600	700	100	NIL	100	3.85	385	NIL	385	Urei	71*45/100=32 71+32=103	41.2	61.8	
8	700	800	100	NIL	100	3.85	385	NIL	385	Urei	87*45/100=39 87+39=126	50.4	75.6	
9	800	900	100	NIL	100	3.85	385	NIL	385	Urei	78*45/100=35 78+35=113	45.2	67.8	
10	900	1000	100	NIL	100	3.85	385	NIL	385	Urei	76*45/100=34 76+34=110	44	66	
11	1000	1100	100	NIL	100	3.85	385	NIL	385	Urei	83*45/100=37.35 83+37.35=120.35	48.14	72.21	
12	1100	1200	100	NIL	100	3.85	385	NIL	385	Urei	68*45/100=30.6 68+30.6=98.6	39.44	59.16	
13	1200	1279	79	NIL	79	3.85	304	NIL	3.85	Urei	48*45/100=21.6 48+21.6=69.6	27.84	41.76	
Total											571	571	885.48	

Chamba Hydro Ventures
Authorized Signatory

Deputy Conservator of Forests
Bharmour Forest Division
Bharmour, Chamba (H.P.)

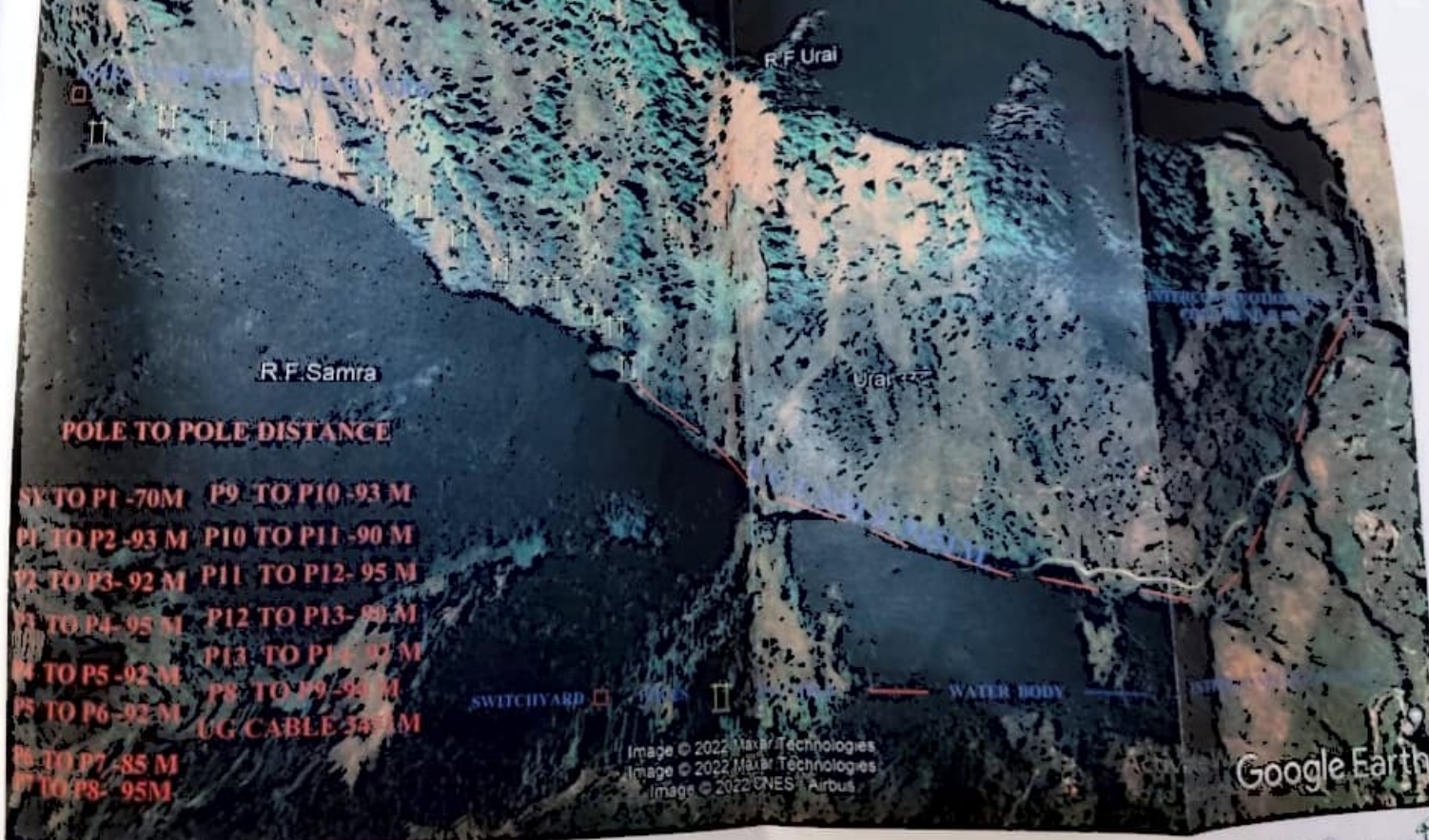
(118)

4.	3	4	95	95	-	Urei DPF	15	1425	-	1425	4	4	Right of way taken as 15 meters includes the breadth of 3.85 m proposed for the construction of road
5.	4	5	92	92	-	Urei DPF	15	1380	-	1380	3	3	
6.	5	6	92	92	-	Urei DPF	15	1380	-	1380	2	2	
7.	6	7	85	85	-	Urei DPF	15	1275	-	1275	5	5	
8.	7	8	95	95	-	Urei DPF	15	1425	-	1425	2	2	
9.	8	9	94	94	-	Urei DPF	15	1410	-	1410	4	4	
10.	9	10	93	93	-	Urei DPF	15	1395	-	1395	2	2	
11.	10	11	90	90	-	Urei DPF	15	1350	-	1350	4	4	
12.	11	12	95	95	-	Urei DPF	15	1425	-	1425	1	1	
13.	12	13	90	90	-	Urei DPF	15	1350	-	1350	2	2	
14.	13	14	92	92	-	Urei DPF	15	1380	-	1380	3	3	
15	14	Interface Point	3451	3451	-	Urei DPF	1.42 (Underground)	3451	-	4901	-	-	As per revenue scale the area less than 1 Karam can't be taken for acquisition so area for UG transmission line has been taken 1 Karam (1.42m).
Underground Transmission Line upto the interface point at Chirchind –II HEP Kodhla												No felling of trees involved in the laying of Transmission line in forest land	

Chamba Hydro Ventures
 Authorised Signatory

Deputy Conservator of Forests
 Bharmour Forest Division
 Bharmour, Chamba (H.P.)

TRANSMISSION PLAN OF GHATOR FOR CHIL 498 MW



[Handwritten signature]
Engineer in Charge of the
Electricity Division
Baramulla, Jammu (J&K)

MUCK DUMPING PLAN FOR GHATOR TOP SMALL HYDRO PROJECT 4.98 MW														
Sr. No.	Name of Component From Where Muck is To Be Produced	Actual Size Of Component in sqm.	Total Qty. Of Muck is to be Produced (in cum)	Factor of Increase in volume after excavation (45%)	Total Qty. Of Muck is to be Dumped on The Basis Of Increased Qty (in cum)	Qty. Of Muck TO Be utilised (in cum)	Total Qty. Of Muck Remaining After Utilisation	Nme of Dumping place	Size of Dumping Sites	Area of Dumping place in sqm	Remaining Height of Muck Dumped	Capacity of Muck To be Dumped	Quantity to be Dumped	Remarks
1	Intake/Trench Weir	30*19.83=595	595	595*45/100=267.75	862.75	301.96	560.78	Dumping Site-IV	40*22.35	894	2.4	2145.6	560.78	Out of total Muck Generated About 35% Shall Be Used in Construction of Crates, Aggregates, Road R/Walls, B/Walls, Rest Of The Muck including Swell Factor (45%) shall be Dumped in muck Dumping sites IV
2	Feeder Chennel	18*2.50=45	45	45*45/100=20.25	65.25	22.83	42.41						42.41	
3	Silt Flushing	16*2=32	30	30*45/100=13.50	43.5	15.22	28.27						28.27	
3	D-tank	26*11.42=297	594	594*45/100=267.30	861.3	301.45	559.84						559.84	
4	HRT INLET	250*2.50=625	1000	1000*45/100=450	1450	507.5	942.5						942.5	
5	HRT OUTLET	491.60*2.50=1229	1966.4	1966.40*45/100=884.88	2851.28	1140.51	1710.76	Dumping Site-VI	40*22.35	894	2.7	2413.8	1710.76	Out of total Muck Generated About 40% Shall Be Used in Construction of Crates, Aggregates, Road R/Walls, B/Walls, Filling, Rest Of The Muck including Swell Factor (45%) shall be Dumped in muck Dumping sites VI
6	Surge Tank	20*19.85=397	794	794*45/100=357.30	1151.3	460.52	690.78						690.78	
7	Penstock	1398*2.84=3970	425	425*45/100=191.25	616.25	246.5	369.75	Dumping Site-V	40*29.75	1190	2.5	2975	369.75	Out of total Muck Generated About 40% Shall Be Used in Construction of Crates, Aggregates, Protection works i.e R/Walls, B/Walls, Filling, Rest Of The Muck including Swell Factor (45%) shall be Dumped in muck Dumping sites V
8	Power House	60*39.65=2379	2025	2025*45/100=911.25	2936.25	1174.5	1761.75						1761.75	
9	Switch Yard	30*19.83=595	950	950*45/100=427.50	1377.5	551	826.5						826.5	
10	Road	1231.50*4=4926	985	985*45/100=443.25	1428.25	571.3	856.95	Dumping Site-III	11.30*10	113	2.45	276.85	270	Out of total Muck Generated About 40% Shall Be Used in Construction of Crates, Aggregates, Protection works i.e R/Walls, B/Walls, Filling, Rest Of The Muck including Swell Factor (45%) shall be Dumped in muck Dumping sites I to III
								Dumping Site-II	11*9	99	2.45	242.55	235	
								Dumping Site-I	14.60*10	146	2.45	357.7	352	
Total			9409.4		13643.63	5293.29	8350.29			3336	2.49	8411.9	8350.29	

Chamba Hydro Ventures
 Authorised Signatory

Deputy Conservator of Forests
 Bharmour Forest Division
 Bharmour, Chamba (H.P.)

DIVERSION OF 3.7463 HA. OF FORESTLAND FOR CONSTRUCTION OF GHATOR TOP
SMALL HYDRO PROJECT 4.98MW IN TEHSIL BHARMOUR, DISTRICT CHAMBA (H.P.)
FILE NO .. : FP/HP/HYD/156608/2022
DATE OF PROOSAL :

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**COST ESTIMATION OF DUMPING SITES & PLANTATION
GHATOR TOP (4.98MW) SHEP**

SR. NO.	DESCRIPTION	UNIT	QTY.	RATE (IN Rs.)	AMOUNT (Rs.)
1	Cost of Surveying and Investigation	Lumsum	1	25000	25,000
2	Cost of Carrying of muck to the dumping site and properly stacking.	Cum	8350.29	50	5,42,769
3	Earth work for the excavation of Gabion wall i.e trenches of different sizes with proper depth, removal of bushes and stumps, shoring and bracing etc.	Cum	245	450	1,10,250
4	Cost of crate wire of 4mm dia with carriage upto site.	Kg	1563	83	1,32,855
5	Providing RR Massionary and Stone Filled Gabion Wire Crates for protection Work.	Cum	423	750	3,17,250
6	Plantation of 480 plants @ Rs 35/- per plant.	Nos	480	35	16,800
7	Digging of pit for plantation.	Nos	480	55	26,400
8	Cost of Barbed wire Fencing for protection of Plants @ Rs. 145/- per plant with carriage and labour	kg	480	145	69,600
9	Salary for Gardener (1) for 4 years (48 Months) @ Rs.8800/- per month .	Months	48	8800	4,22,400
10	2 Nos. Beldar for protection of plantation for 2 years @ Rs.350/- per day.	Year	2	2,55,500	5,11,000
11	Reclamation and restoration.	Lumsum	1	1,50000	1,50,000
12	Landscaping and Beautification.	Lumsum	1	1,60000	1,60,000
13	Carriage of soil from road site	Cum	100	500	50,000
14	Collection of Grass seed	Kg	100	600	60,000
15	Broadcasting of grass seed plants	Nos.	100	400	40,000
Total					26,34,324

Place : Bharmour
Dated :

For Chamba Hydro Venture
Chamba Hydro Ventures
Authorized Signatory
Authorized Signatory

Deputy Conservator of Forests
Bharmour Forest Division
Bharmour, Chamba (H.P.)

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" ABSTRACT OF COST"

Name of work :- Construction of Ghator Top SHEP (4.98MW) in Tehsil Bharmour Distt.
Chamba being executing by M/s Chamba Hydro Ventures .

(Sub Head :- CONSTRUCTION OF WIRE CRATES TO THE DUMPING SITES)

S.NO	Item	Qty.	Rate	Unit	Amount
1	Earthwork in excavation for structure as per drawing and technical specifications clause 305.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50m, dressing of sides and bottom and backfilling in trenches with excavation suitable materials ordinary soil upto standard depth.	245	450	Per cubic Metre	1,10,250
2	RR Massionery and laying of boulder apron laid in wire crates with 4 mm dia GI wire conforming to IS:280 and IS :4826 in 100 mm X 100 mm mesh (woven diagonally) including 10 per cent extra for laps and joint laid with stone boulders weighing not less than 25 Kg each as per drawing and technical specifications Clause 1301.	423	750	Per cubic Metre	3,17,250
3	Provoide the GI wire of dia 4mm with all costs at site including Transportation and other charges.	1563	83	Kg	1,32,855
				Total	5,60,355.00

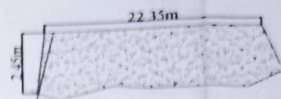
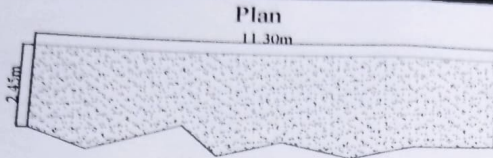
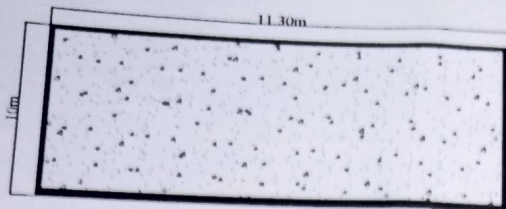

Er. Vijay Singh(Civil)

Naman Engineers and Consultants



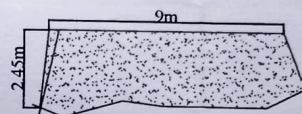
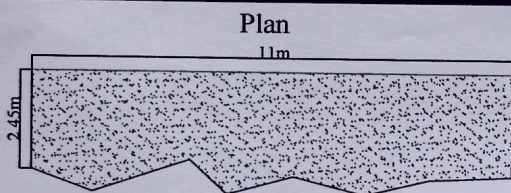
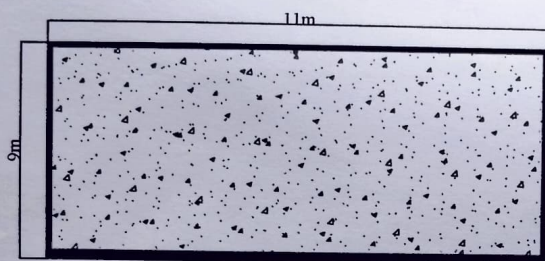

Chamba Hydro Ventures

Dumping Site No.III (Along the Road)



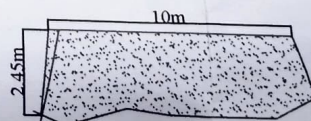
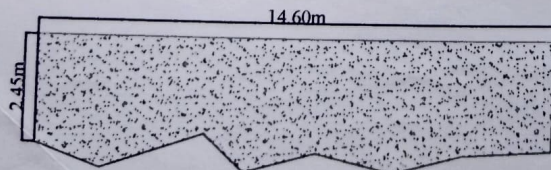
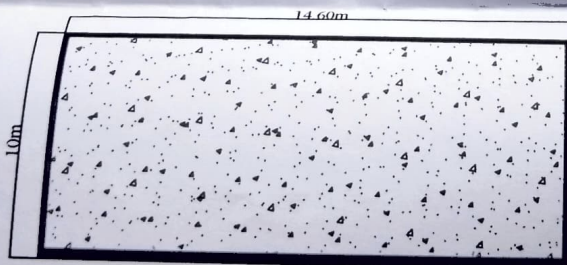
Area= 11.30mX10m=113Sqm
Averag height=2.45m
Capacity of Muk Dumping Site
113X2.45=276.85 Cum

Dumping Site No.II (Along the Road)



Area=11mX9m=99Sqm
Averag height=2.45m
Capacity of Muk Dumping Site
99X2.45=242.55 Cum

Dumping Site No.I (Along the Road)



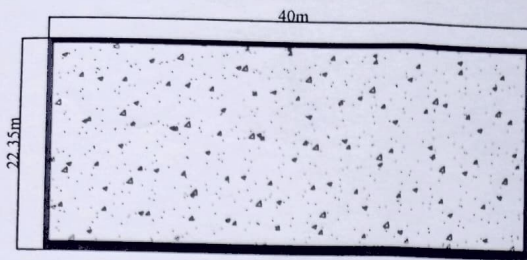
Area=14.60mX10m=146Sqm
Averag height=2.45m
Capacity of Muk Dumping Site
146X2.45=357.70 Cum

Section at X- X (L-section) Chamba Hydro Ventures

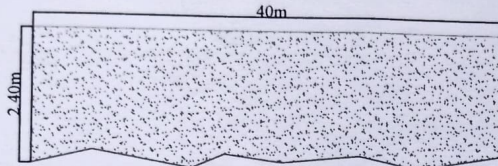
Authorized Signatory

Deputy Conservator of Forests
Bharmour Forest Division
Bharmour, Chamba (H.P.)

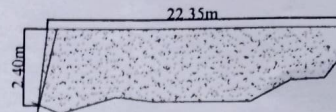
Dumping Site No.IV (Along the Intake/Trench Weir, Feeder Channel, Silt Flushing, D/Tank, and hrt inlet)



Plan



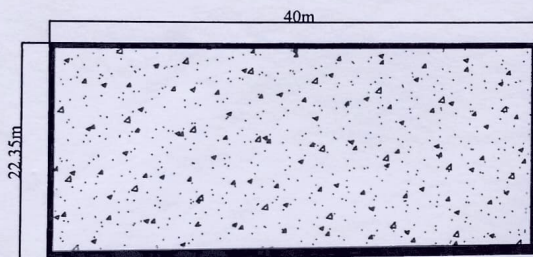
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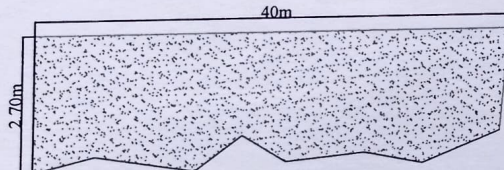
Section at Y- Y (Cross-section)

Area=40mX22.35m=894Sqm
Averag height=2.40m
Capacity of Muk Dumping Site
894X2.40=2145.60 Cum

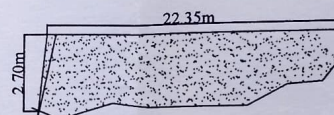
Dumping Site No.VI (Along the hrt outlet, and Shurg Tank)



Plan



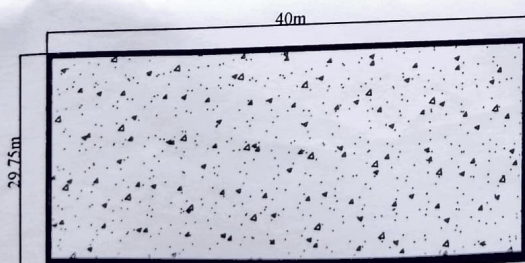
Section at X- X (L-section)



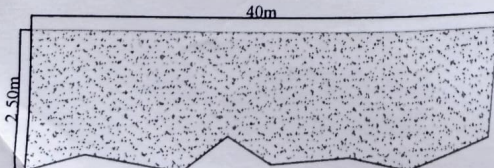
Section at Y- Y (Cross-section)

Area=40mX22.35m=894Sqm
Averag height=2.70m
Capacity of Muk Dumping Site
894X2.70=2413.80 Cum

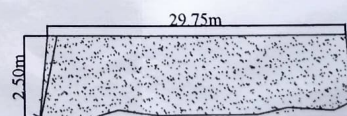
Dumping Site No.V (Along the penstock, Power House, and Switch Yard)



Plan



Section at X- X (L-section)



Section at Y- Y (Cross-section)

Area=40mX29.75m=1190Sqm
Averag height=2.50m
Capacity of Muk Dumping Site
1190X2.50=2975 Cum

Deputy Conservator of Forests
Bharmour Forest Division
Bharmour, Chamba (H.P.)

CHAMBA HYDRO VENTURES

HOTEL ALPS RESORTS, PO & TEHSIL DALHOUSIE, DISTT. CHAMBA HP- 176304
Mob. No. 9418080340 Email Id—ranjan.upmanyu@gmail.com

Ref.No.- CHV/FA/292/24

Dated 28/3/24

UNDERTAKING FOR DUMPING MUCK

I Rajeev Kumar Upmanyu authorised signatory of M/S Chamba Hydro Ventures , hereby undertake the muck generated from the construction of Ghator Top HEP will not be disposed off in the nearby forest,river/stream except in the diversion area for Dumping sites .

Date---- 28/3/24

Place--- Bharmour

For Chamba Hydro Ventures

Chamba Hydro Ventures
Authorized Signatory
Authorised Signatory

Deputy Conservator of Forests
Bharmour Forest Division
Bharmour, Chamba (H.P.)

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For Chamba Hydro Ventures
Chamba Hydro Ventures
Authorized Signatory
Authorized Signatory

Deputy Conservator of Forests
Bharmour Forest Division
Bharmour, Chamba (H.P.)



CERTIFICATE FOR NO TREES ON DUMPING SITES

This is to be certify that there are not any standing trees standing in the proposed Dumping sites for the execution of Ghator Top SHEP being executed by Chamba Hydro ventures , Hotel Alps resorts, Tehsil Dalhousie, Distt. Chamba HP.


Divisional Forest Officer
Forest Division Bharmour
Bharmour Chamba (H.P.)

SCHEDULE-III
CERTIFICATE OF NON-AVAILABILITY OF LAND FOR COMPENSATORY
AFFORESTATION IN THE STATE/UNION TERRITORY TO BE ISSUED BY THE
STATE GOVERNMENT//UNION TERRITORY ADMINISTRATION[See rule 13(4)]

No. 14505 Dated 6-12-2024

Subject :- Diversion of 3.7463 hect. of forest land in favour of Chamba Hydro Ventures for the Construction of GHATOR TOP small Hydro Project(4.98MW) to be built in Gram Panchayat Jagat, Tehsil Bharmour, Distt. Chamba Himachal Pradesh.


I, **Ritika**, Director Land Records, Government of Himachal Pradesh (Notified Nodal Officer to Issue such Certificate on behalf of the Hon'ble Chief Secretary Himachal Pradesh Vide Notification No. Rev- D (G)6 -1/2020- loose Dated 26/07/2024), do hereby certify that :-

- i. Relevant records pertaining to non-forest land, revenue lands, *zudpi jungle*, *chhote jhar ka jungle*, *bade jhar ka jungle*, *jungle jhari land*, *civil-soyam* lands and all other such categories of forest lands (except the forest land under the management and administrative control of the Forest Department) on which the provisions of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 are applicable, available in each District of Himachal Pradesh have been examined; and

- ii I have also conducted such further enquiry as is required to satisfy myself for issue of this certificate.

On the basis of examination of relevant records and such further enquiry, as was required for issue of this Certificate, I do hereby certify that non-forest land, revenue lands, *zudpi jungle*, *chhote jhar ka jungle*, *bade jhar ka jungle*, *jungle-jhari land*, *civil-soyam* lands and all other such categories of forest lands (except the forest land under management and administrative control of the Forest Department) on which the provisions of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 are applicable, which as per the extent guidelines of the Central Government may be utilized for creation of compensatory afforestation in lieu of forest land diverted for non-forest purpose, is not available in the entire Himachal Pradesh.

Issued under my hand and seal on this 07/12 day of 2024.


Director (Ritika) IAS
Himachal Pradesh
Director Land Record
Himachal Pradesh

Signature & Official Seal