

**APPRAISAL REPORT
OF
THE EXPERT GROUP CONSTITUTED FOR THE
EVALUATION OF SOCIAL IMPACT ASSESSMENT STUDY
OF THANA PLAUN HYDRO-ELECTRIC PROJECT (191 MW)
IN MANDI DISTRICT OF HIMACHAL PRADESH**



**Submitted to:
The Government of Himachal Pradesh, Shimla**

List of Abbreviations

SIA	Social Impact Assessment
SIAU	Social Impact Assessment Unit
HIPA	Himachal Pradesh Institute of Public Administration
SIMP	Social Impact Management Plan
R&R	Rehabilitation and Resettlement
PAFs	Project Affected Families
PAPs	Project Affected Persons
GoI	Government of India
PSU	Public Sector Undertaking
Requiring Body	HP Power Corporation Ltd.
LADF	Local Area Development Fund
LADA	Local Area Development Authority
FGD	Focused Group Discussion
PRA	Participatory Rural Appraisal
SHGs	Self-Help Groups
BPL	Below Poverty Line
SC	Schedule Caste
ST	Schedule Tribe
GWh	Giga Watt Hour
TP HEP	Thana Plaun Hydro Electric Project

1. Background

Thana Plaun Hydro-Electric Project (191 MW) is a “Run- off –River” hydro power project on Beas River conceived in the year 2009 and was proposed to be constructed without constructing tunnels by Himachal Pradesh Power Corporation Limited, hereinafter called HPPCL. As per the current development plan of river Beas, the river potential of 535 MW in a distance of approx. 150 Kms between the Pandoh Dam and Pong Dam is proposed to be harnessed in a systematic development by implementing three cascading hydro-electric projects namely- Thana Plaun HEP, Triveni Mahadev HEP and Dhaulasidh HEP. According to the pre-feasibility report prepared in June 2011, the capacity of the project was 141 MW. Later on the capacity has been revised to 191MW. Thana Plaun HEP has been envisaged as a storage scheme with 85 m high concrete gravity dam from bed level of Beas River(106.70m from deepest foundation level) with installed capacity of 191 MW comprising of 3 main units of 50.33 MW each and 2 number of environmental units of 20 MW each. This will generate 699.09 GWh per annum in 50% dependable year (680.88 GWh in 50% dependable year at 95% machine availability) and 692.61 GWh in 90% dependable year (668.07 GWh in 90% dependable year at 95% machine availability).

For the development of Thana Plaun HEP total land requirement is 432.67 hectares. This land is distributed as; 62% forest Land, 31% is Government land and only about 6% private land. Out of this total land, the private land area to be acquired under Thana Plaun Hydro-electric Project is 249 Bigha 19 Biswa and 14 Biswansi in twenty-one villages of twelve gram Panchayats of Mandi district owned by 709 landowners in the area.

The process of acquisition of the proposed land for the development of Thana Plaun HEP is to be executed as per the procedure and guidelines specified in:

- Right to The Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013 (RTFCTLARR Act 2013)
- &
- Himachal Pradesh Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Social Impact Assessment and consent) Rules, 2015 (HP RTFCTLARR Rules 2015)

As per Section 4 of the RTFCTLARR Act 2013, a Social Impact Assessment study is required to be carried out before initiating the land acquisition notifications under Section 11 of the Act. Accordingly consultation process was carried out with concerned Panchayats, villages and affected population for ascertaining social impact of proposed land acquisition on the affected villages and its inhabitants. For this SIA report was thus prepared by engaging the services of an expert agency AFC India Ltd., by the SIA unit of the HIPA, Government of Himachal Pradesh which provides detailed information on the:

- Enumeration of the Project affected families and persons
- Socio-economic and cultural profile of affected villages and Panchayats
- Number of families to be displaced
- Number of built-up structures to be affected and their nature of use
- Inventory of stakeholders and vulnerable groups
- Broad outline and procedure to be followed for land evaluation
- Assessment of extent and intensity of positive and negative social impact of land acquisition
- Displacement, Rehabilitation & Resettlement aspects
- Details of Public hearing
- Social Impact Management Plan (SIMP)

2. Constitution of expert group

As per the Act, once the SIA report is ready, it shall be evaluated by an expert group. In compliance to this stipulation Government of Himachal Pradesh, Department of Revenue vide notification No. Rev.B.A. (3)-3/2014-111 dated 13/09/2019 constituted an independent Multidisciplinary Expert Group of members for appraisal/ evaluation of the Social Impact Assessment Study (SIA) and Social Impact Management Plan (SIMP) for the construction of Thana Plaun Hydro-Electric Project in Mandi District. The Expert Group comprised of the following official/non-official members:

- Er. K.L. Thakur, Director, HIMURJA, Chairpersons & Technical Expert for the Specific Project i.e. Thana Plaun HEP.
- Prof. O.P. Monga, Professor of Sociology (Retd.), Non-Official Social Scientist
- Prof. S.K Sharma, Professor of Sociology (Retd.), Non-Official Social Scientist
- Sh. Kahan Singh Pradhan, Gram Panchayat, Kot (Tungal), Panchayat Representative from Mandi District
- Sh. Man Singh, Pradhan Gram Panchayat, Drubbal, Panchayat Representative from Mandi District
- Prof. Kulwant Singh Pathania, Director, ICDOEL HP University Shimla, Rehabilitation Expert
- Dr. V. B. Negi, Registrar, Administration IGNOU, New Delhi, Rehabilitation Expert.

3. Mandate of the expert group

The Expert Group constituted by the Government of Himachal Pradesh under sub-section (1) of Section 7 of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Re-settlement Act, 2013, after going through the Social Impact Assessment Study report should assess:

- Whether the Project serves any public purpose?
- Whether potential benefits outweigh the social costs and adverse social impacts?
- Whether the extent of land proposed to be acquired is the absolute bare minimum extent needed for the project?
- Whether there are other less displacing options available with effective rehabilitation plan?

4. Parameters adopted for evaluation

The committee after due deliberations considered following parameters for evaluation of SIA report:

- i. Appropriateness and completeness of the process adopted for the Social Impact Assessment study (SIA) .
- ii. Extent, transparency and participation of all stakeholders in the SIA process with which public consultation was carried out.
- iii. Public purpose served.
- iv. Social profile, social indicators and Identification of vulnerable groups .
- v. Public perception and redressal of public concerns.
- vi. Social costs *vis-a-vis* adverse social impact.
- vii. Minimum extent of Land needed and alternatives.
- viii. Displacement, Rehabilitation & Resettlement and SIMP .

i. Appropriateness and completeness of the process adopted for the SIA study

The Social Impact Assessment study is an essential component in the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (RFCTLARR Act, 2013), Chapter II Section 4 (1). Social Impact Assessment (SIA) study requires a significant perfection in terms of data authentication, quality with extremely, careful and in-depth assessment, presentation of balanced and comprehensive views, so as to function as a technical document based on which decisions about development of the proposed project can be made.

According to the SIA report, the study team collected required data and qualitative information from official records; consultation with stakeholders through Focused Group Discussion (FGD), representatives of the Gram Sabha, local PAFs and sample survey conducted on 709 families and indirectly affected families (those living near the proposed land acquisition). In addition, they also conducted field visits to assess the ground reality of the land acquisition and to prepare the SIA report. The SIA study conducted by the AFC India Ltd. has been designed with a methodology using qualitative and quantitative analysis. All the landowners in the twenty-one villages of Mandi district comprising about 709 families having

ownership rights over 249-19-14 bighas of private land, that is proposed for acquisition, were taken up for the study.

The committee is of the opinion that the methodology and procedure adopted in the study is appropriate as per guidelines prescribed in the Act & Rules laid down for this purpose.

ii. Extent, transparency and participation of all stake holders with which public consultation was carried out in the SIA process

Public hearings in all affected panchayats were conducted. Publicity of the notification for the conduct of SIA study were made available in local language through posters, print media and uploading on Government website as per procedure laid down in Rule 3, of HPRTFCTLARR (Social Impact Assessment and Consent) Rules, 2015. Participatory Rural Appraisal (PRA) exercises were conducted for participation and public consultations. Focused Group Discussions and elaborate public consultations were organized in PAAs, in which almost all stakeholders participated.

The committee expressed satisfaction over the process adopted in SIA study. Community participation was not only widespread but productive as well.

iii. Public Purpose Served

Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (RTFCTLARR Act, 2013) defines eight types of land acquisitions as public purpose, one of which is “Acquisition of land for railways, highways, ports, power and irrigation purposes for use by government or by government controlled corporations” (also known as public sector companies).

The proposed run off river “Thana Plaun Hydro-Electric Project” will generate clean renewable energy and will feed into the National Grid with an annual energy of 699.09 GWh at 50% dependable year / 692.61 GWh at 90% dependable year). The energy so produced will provide much needed additional renewable power for domestic, hospitals, schools and industries. By generating clean energy with minimal impact on the environment, the project has potential to avert the emission of CO₂ thereby helping in controlling global warming. While, the power generated will strengthen the National Grid, the State of Himachal Pradesh will receive 12% free power and 1.5% of project cost towards Local Area

Development Fund (LADF) from HPPCL to meet growing needs of its people and industry in the state.

The land is being proposed to be acquired in favor of HPPCL which is a Government PSU under Section 2 (1) (b) of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013. Therefore, consent provision as laid down under section 2 (2) of the Act, 2013 shall not apply on such Public Sector Undertaking as notified by Government of H.P., Department of MPP and Power vide notification No. MPP-(F) 2-1/2008 dated 22/09/2009.

Moreover, the proposed Thana Plaun Hydro-Electric Project serves public purpose as notified by the GOI Ministry of Finance, Department of Economic Affairs, notification No. F. No. 13/06/2009 INF. dated 27th March, 2012.

Thus, the committee is of the view that the proposed project is of immense public purpose.

iv. Social profile, social indicators and identification of vulnerable groups

Thana Plaun Hydro-electric Project location lies in the Shiwalik range of Himalaya in the lower hills of Mandi district. The altitude of this area varies from 350 to 15000 meter and have sub-tropical climate. The socio-cultural landscape is homogenous in nature. The affected area is predominantly agricultural and majority of the population are involved in farming. The total number of households to be affected by the proposed project is 709 as per the list obtained from the Revenue Department. The SIA report stated that detailed interviews could be conducted with 878 landowners from 626 enlisted households. These 878 respondents are the current right-holders of the land to be acquired. The ownership of the land has been distributed among the children in case of death of the original right-holders. The rest landowners from 83 households could not be met since either they have migrated elsewhere, refused to participate in this survey or residing at far-off places for livelihoods sources.

The total land requirement for the Thana Plaun HEP is 432.67 hectares. Out of total, 62% is forest Land, 31% is Government land and only about 6% is private land i.e. 249 Bigha 19 Biswa and 14 Biswansi in twenty-one villages of twelve Gram Panchayats. In this HEP more than 75% of the acquired land will be submerged and only 10% will be used for quarrying. Around 5% of the land will be used for Road or Job facility, 4% will be used for Dam body and its components, 2.39% land will be used for Dumping Site and 1.39% will be used for building the colony. The share for each of the project activities differ if the project activities or the requirements of the land altered.

Further, an aggregate level, 65% of the total private land under proposed acquisition comprises of cultivated land. In Bewla village, 97% of the land proposed for acquisition is cultivated, followed by 94% in Badagaon, Dawahan, 93% in Kot, 92% in Koon and 91% in Jandrola, Wah and Bhatwari. In case of Khadkalyana, Mathaniul, Banaroo Dom, Banogi, Charonjh and Jhannad, the entire land under proposed acquisition is non-cultivable.

Further the land under acquisition in Kot, Dawahan, Sadoh & Tarnoh in Kotli Tehsil, Tandu, Bijni & Bari Gummanu in Sadar Mandi Tehsil, Pipili & Nauhli in Joginder Nagar Tehsil and Silag, Badidhar & Kufri in Padar Tehsil would be submerged due to the storage dam. Five Panchayats, namely Banal, Bharauri, Tanehar, Bahri and Sidhpur in Dharampur Tehsil will be solely used as quarry sites. Land under proposed acquisition in Panchayats of Khalanu, Lagdhar in Kotli and Drubbal in Joginder Nagar sub division will be used for multiple purposes including dam body, road/job works and submergence etc.

In this project, directly affected Panchayats are Dawahan, Kot, Tarnoh, Sadoh, Khalanoo, Tandu, Nohli, Pipli, Drubbal, Silag, Badidhar and Kufri. In these Panchayats there are a total of 709 land losers. Nohli Gram Panchayat has the highest number (152) of directly affected families followed by Drubbal (139) and Pipli (132).

SIA study indicates that in 12 villages, 127 landowners will lose 100% land. However, majority of these landowners have ownership of land in more than one location.

Specific categories of the affected families are:

- No tenants in the land proposed for acquisition were reported during the interviews by SIA team in the surveyed villages. All the affected families use houses for staying with their families and the land to be cultivated by them.
- There is only one ST respondent during the survey. However, traditional forest dwellers that may have lost their forest rights could not be identified in the surveyed villagers.
- Most of the families depend on the common property resources such as the grazing land partially for the rearing of livestock, while a few of them also collect firewood and leaves for household usage. Therefore, the planned land acquisition will not deprive them of their livelihoods fully.
- The SIA team has not come across any family living in a land assigned by the state government under any scheme and such land in under acquisition.
- Almost 34% of the respondents of household survey shared that they have been earning their livelihood solely from agriculture. However, the dependence

on land being acquired is huge even for the rest of the population as agriculture has been practiced as a tradition.

According to the SIA, various acquisition related documents, Muhals/Villages were identified to be affected indirectly by the project activities. All families as mentioned in the report, residing 29 muhals/villages of 15 Panchayats spread over five tehsils will be indirectly affected due to the government/forest land to be acquired under TPHEP. In the most affected villages, where private land will be acquired, other families will also be indirectly affected.

Beside above mentioned Panchayats, there are three Panchayats namely: Hyun Paher, Saraskhan and Dharampur which will also be affected due to various project activities. Although there is no private land acquisition proposed for these locations, residents of these Panchayats will be affected due to noise pollution, dust and frequent vehicle movements.

The Lift Water Schemes are facilitated by the Agriculture department for the promotion of agriculture and diversification through subsidized water lifting equipment. Six of such schemes in the villages of Banroo, Abal, Banogi, Ropru, Balh, Banwar and Sadoh will be submerged due to the TPHEP activities. There are also religious structures including one temple and two Hanuman sculptures which will also be submerged due to the project activities. These are located along Rana Khad in Banogi Village, Beas river in Khadkalyana village and Arnodi Khad in Mhan Village.

- The affected villages are connected through a number of Ropeways, suspension and footbridges. These carry a lot of importance in lives of the existing population as the road network is poor and it takes hours to reach other side of the valley by road.
- Beside these, there are 40 crematories which will also be submerged due to the proposed project activities. Out of the total cremation facilities, two have permanent structure while rest of these are open places.
- As per the survey report there are about seventeen thousand trees, 18% of which bear fruits such as Plum, Pear, Mango, etc., in different seasons and the remaining are non-fruit bearing trees.
- As per the household survey, almost 20% of the total respondents earn between 1 lakh to 2.5 lakhs rupees in a year. More than 14% earn less than fifty thousand in a year and another 14% earn between 2.5 lakhs to 5 lakhs rupees. A large share (27%) of the respondents could not share their annual income with the survey team.
- Among the respondents, 92 hold Below Poverty Line cards issued by Himachal Pradesh government in the latest enumeration of BPL households.
- The proportion of general category among the project affected households was 91%, 8% comprised of Scheduled Castes and only 1% belongs to other Backward Classes (OBC). The SC respondents belong to Banogi, Banwar, Megal and Mahan villages

while all the respondents belonging to OBC are from Mahan village. The lives of people are simple and close to the nature. They speak in local dialect called Mandyali.

- Out of all the families surveyed, 125 are headed by women. From the survey, it was observed that 81 of the households hold BPL cards issued after the latest Himachal Pradesh government process of Below Poverty Line households enumeration. There are 52 widows/ divorcees among the families surveyed. There are 16 physically/mentally challenged members, and six minor orphans in the families surveyed (one each in Banroo Dom and Mahan and four in Megal).
- All of respondents belong to Hindu religion. One respondent did not share about his religion. Worshipping of kuldevis and devtas is traditionally common in this area. Beside special religious festivals, people gather in the religious places like temples to offer prayers and worship their respective deities regularly. About 34% respondents shared that their primary occupation is agriculture, while another 34.5% shared earn their livelihoods primarily from Service (govt/ private). Almost 23% are either old or inactive and depend on their family members for household expenses. Around 4% depend on labour work for their livelihoods and another 3.8% are self-employed. Other than those who depend primarily on agriculture, many other partially depend on the agriculture as their secondary source on income or for household consumption. There are 57.7% male and 48.3% female in the surveyed households, out of all surveyed families, 107 reported to be possessing unmarried boys aged above 21 years. And, 50 families stated to be possessing unmarried girls aged more than 18 years.
- As observed in the SIA, 34.5% of the respondents are engaged in the govt. / private jobs for which many of the service-holders stay away from their family. In such cases, the women, children and the old family members manage the household on their own.
- In all households, women play a major role in managing the agricultural work, livestock rearing and taking care of the children and the old people. Almost 6% of the households have female members who are engaged in employment other than agriculture. In many of the households, the women take the entire responsibility of the farming-ploughing, sowing, irrigating, cutting, storing of the produce etc.
- The major gap in the healthcare services is the lack of access to hospital. The major barrier in accessing the healthcare is poor road network and lack of transportation services. More than 96% respondents depend on the Government Hospital (Rural Hospital) for the treatment of women, around 4% access primary health centre or sub-centre in the nearby village/ town. There is no private hospital in the affected area. To access the nearest hospital (government) many a times the people have to travel 25-30 km one way, which involves more time and money which increases risks for patients.
- As per the SIA study report, women in the project affected area mainly suffer from common cold and fever, cough, jaundice, typhoid and allergy. The health issues like joint pain, diabetes, blood pressure, heart problems and urine related problems have seen a recent increase among women aged above 35 years.
- When the women encounter with any of the health problems, 98% respondents prefer Allopathic treatment for faster recovery as compared to 2% who prefer Ayurvedic medicines. Rarely people go for Homeopathic treatment.

- Majority of the households receive water through pipeline provided by Irrigation and Public Health Department. For purpose of drinking and other activities, many depend on the natural water sources as well. All households have an electricity connection however the supplies vary. Each household has a private toilet facility.
- The respondents shared that the indebtedness is low in the affected area. Only 12 percent shared about taking loans for agricultural purposes, followed by eight respondents who took a loan for construction of their homes, six people took loan to buy private/commercial cars and one person primarily for his business.
- According to the SIA study during the household survey, 97% respondent's shared that they received notification from the government officials while 2% came to know about the project and land acquisition from inhabitants of the adjacent villages. Almost 1% stated to be aware through print media.

The committee is of the view that above indicators namely vulnerable groups, income level, extent of land and structures being acquired are sufficient for evaluation of socio-economic conditions of PAFs and PAAs.

v. Public perceptions and redressal of public concerns

Based on FGDs, Public consultations and hearing, the SIA team identified following perceptions of the public.

- a) Amount, timing and hassle-free delivery of compensation package.
- b) Employment to displaced families.
- c) Strengthening and providing of Health, safe drinking water and irrigation facilities, road connectivity and public utilities.
- d) Restoration/Protection of cultural heritage and other.

Public concerns identified by SIA team need to be addressed and resolved in proper prospective.

The Expert Group is in agreement with the public perceptions of various issues and their redressal as per the policy of Government.

vi. Potential benefits vis-à-vis social cost

The strategy followed in Himachal Pradesh for exploitation of hydro electric power is to produce as much energy as possible with minimum cost and with minimum environment negative impacts. The proposed Thana Plaun Hydro-Electric Project shall have significant benefits both for the GoHP and the project affected population.

Expected power generation of TPHEP will be 699.09 GWh per annum in 50% dependable year and 692.61 GWh in 90% dependable year. The total project cost is estimated to be 2223.59 crores. And the expected revenue for the state would be around 200 crores per year during the project is functional in its full capacity. During the pre-

construction phase, during the construction and after the commencement of the project, employment would be generated for skilled, semi-skilled and unskilled labourers. As per the HP Government Hydro Power Policy, 70% of employment should be reserved for the residents of Himachal Pradesh.

The total land area belonging to the private land comes to 249-19-14 Bighas, for which on the basis of Computation of Compensation Formula, the tentative land compensation (excluding Compensation for standing crops) works out to Rs. 1163022862/-. At 12 per cent rate of interest on the compensation of land an amount of 139562743.4/- has been estimated for payment as per section 30(3) of Act 2013.

The compensation for trees is estimated at Rs. 58537000/- . However, the number of trees will be enumerated and the actual value will be assessed by the competent authorities. However, this doesn't include compensation for standing crops. The cash compensation against crops will be provided at market cost of mature crops based on the average production. The entitlements for R&R expenses are totaling to Rs. 6428000/-. Thus, after including 10% miscellaneous cost, the total cost for land acquisition including R&R is estimated Rs. 1504305666/- only, excluding cost of the Mitigation Plan.

This project will improve the cost economic health of the State by receiving 12 percent share of free power and 1.5% of project cost towards Local Area Development Fund (LADF). In addition, 1% free power shall be given to Govt. of H.P and revenue generated from 1% free power shall be distributed among residents of the project affected panchayats for entire life span of the project under LADA policy. The PAFs shall also get 100 units free electricity power in terms of cash for 10 years. There is also an entitlement for compensation in terms of cash on account of damage to standing crops during the period of construction. Monetary compensation has potential to transform life style of the PAFs. Generation of new job opportunities and livelihood options may have positive impact on lives of affected families. The need for the project also arises, to fulfill a steady increase in peak electricity demand and the growing energy deficit in the Northern Region.

Development of Hydro Electric Project is generally associated with risks of landlessness, joblessness, homelessness, marginalization, increased morbidity, loss of access to common property, services and community disarticulation, etc. Economic impact of the land acquisition include: loss of agriculture/ horticulture land, houses or businesses, which may be either temporary or permanent in nature. The influx of workers and other economic migrants to the area at different phases of project implementation may have negative impacts on community.

From the SIA report, it is observed that Thana Plaun Hydro-Electric Project is expected to impact lives of people in project area. However, The potential benefits to the State mentioned above and those which will benefit PAFs in terms of compensation for land and other assets, free power, employment & business opportunities, and contribution towards Local Area Development

Fund (LADF) would certainly outweigh negative impact on society in the long run. Social and psychological costs are difficult to measure. However, if negative social impacts are resolved through intelligent measures, their intensity and extensity may become negligible. The suggested mitigation and R&R measures as stipulated in the SIA document if properly implemented will have potential to offset all adverse social impacts resulting due to land acquisition. It is also evident from the report that the potential benefits from the proposed project shall outweigh the social costs.

vii. Minimum extent needed & alternatives

Thana Plaun Hydro-Electric Project has undergone detailed scrutiny of the experts as its design and location has been modified a number of times on account of environmental considerations. Alternative studies carried out to explore appropriate selection of the project layout are as under:

Alternative I- Construction of 106.70 m high, from deepest foundation level and 85 meters from River Bed level, concrete gravity dam at village Thana 575 m downstream of confluence of Arnodi Khad with Beas River in district Mandi where the bed level of the river is EL 634.0M. The water will be diverted through an intake on the right bank through 6.46 km long horse shoe shape HRT leading to an open to sky restricted orifice surge shaft proposed near village Neri. From the surge shaft, the water is conveyed through penstock to a surface power house at village Gunini on the right bank and then ultimately to Beas river through a short Tail race channel.

Alternative II- Headwork will remain the same as in alternative-1, except that the surge shaft and power house have been shifted upstream and located on the right bank 600m upstream of Kandapatan Bridge. The water will be diverted through 4.2 km HRT leading to surge shaft from where the water is conveyed through penstock to an underground power house.

Alternative III- This is a Dam Toe Type arrangement on the right bank with a short HRT(HRT-I-108.17m long and HRT 146.89m long). The proposal comprises of head works at the same location as in Alternative-I. The HRTs lead directly to pressure shaft/penstock and underground Power House located just downstream of dam and the water is discharged back into the Beas river through a short TRT.

After careful study of each alternative, and from the above series of studies carried out to finalize the layout to be adopted for DPR and based on optimum techno-economic benefits, it emerges that ALT III (Dam near village Thana) with a short water conductor system with underground power house housing the main as well as the environmental units, is the most techno-economically viable layout (with lowest tariff) and recommended to be adopted for completing the DPR.

In view of the above, the proposed Project requires land for establishment of power house, construction of administrative buildings, reservoir, dumping area, roads and bridge etc. After examining meticulously less displacing option and all elements of the project, acquisition of private land has been kept at the bare minimum. It is only 432.67 hectares and out of this, 249 Bigha 19 Biswa and 14 Biswansi private land is required for the project.

The committee is, therefore, satisfied that present specifications have been worked out after elaborate iteration process and meticulous planning. The land projected for acquisition has been kept at bare minimum i.e. 249-19-14 Bighas of private land which could not be avoided.

viii. Displacement, Rehabilitation & Resettlement, SIMP and ameliorative measures

Land is a precious resource for the farmers, landowners and also an important source of livelihood. For undertaking development works land is the basic requirement, but with the acquisition of land for such activities, there will be involuntary displacement of local communities from their land leading to serious economic, social and cultural disruption. The SIA study suggest components to be included in R&R as under:

A. Suggested Components for R&R

a) Compensation

- Compensation of land and other assets is one of the major components, therefore, it should be included in R&R plan strictly in accordance with policy of the State.
- Provision of basic public services and amenities i.e. health/school/community centers, etc., in affected area.
- Special measures for vulnerable groups such as BPL, SC/ST Families, Widows, Physically and mentally retarded persons, and other vulnerable families of the affected area.
- Preservation of cultural heritage.

b) Economic rehabilitation

- Providing assistance for agricultural /horticultural and economic, and other related activities.
- Transportation cost for household items and cattle.
- Financial assistance for construction of cattle sheds.

c) Training

- Vocational training to develop entrepreneurial skills among villagers especially youth.
- Organization of financial literacy programmes.
- Cultivation and management of soil, water conservation, identification /selection of best varieties of crops, as well as other modern agriculture practices for better production, etc.

d) Resettlement Grant

SIA report suggested that PAFs whose land is acquired and become landless should be given compensation as per HP Rules 2015 and notification dated 2nd April, 2012, as under:

1. Families whose land before acquisition was more than 5 Bighas and left with one biswa or no agriculture no land after acquisition, Rs.2.5 lakh lump sum.
2. Families whose land before acquisition was less than 5 bighas and is left with 1 biswa or no agriculture land after acquisition, Rs.1.5 lakh lump sum.
3. Families whose land holding is left with more than 1 viswa and less than 2-10-0 bighas land after acquisition, Rs.1.0 lakh lump sum.
4. Family whose land holding left with more than 2-10-0 and less than 5 bigha of land after acquisition Rs.75,000/- lump sum.
5. Other families whose land has been acquired and land-holding left after acquisition Is more than 5 bighas, amount equal to the land compensation paid subject to a minimum of Rs.5000/- and maximum of Rs.50,000/-.
6. Family whose cattle shed is acquired in the project area, shall get one time financial assistance of Rs.10,000/-. In no case the grant shall exceed Rs.25000/- per family.

Each PAF rendered landless as well as houseless (both) or houseless will be provided an independent house with a built up plinth area of 150sqm. Alternatively, PAF can also be offered a plot of size 250 Sqm, which allows construction of built up house of 150 sqm. Plinth area plus does not opt for house/plot but constructs a house at own cost with a plinth area of 150 Sqm or more shall be paid the construction cost of the house of Rs. 5000 per Sqm (upto a plinth area of 150 Sqm maximum) options from such families will be asked at an appropriate time. In case any of such family constructs house of less than 150 Sqm. Plinth area on his own plot or plot offered by the project then amount to be given will be worked out on pro-mtn basis.

This facility will be available in the event of acquisition of dwelling houses in the farm land (Dogari) also.

The Committee is satisfied with the efforts made for identification of the vulnerable groups and suggests that the resettlement plan must consider needs of vulnerable groups and ensure that they are included in resettlement planning and application of mitigation measures and for providing possible assistance as admissible under the R & R Policy of the acquiring body and government of Himachal Pradesh.

B. Social Impact Management Plan (SIMP)

In order to mitigate the impacts and risks likely to emerge from the Thana Plaun Hydro-Electric Project, SIMP has been evolved taking into consideration outcome of the SIA and concerns expressed by people at different levels. Suggestions have been made for development, income restoration and welfare of farmers and community as under:

Development measures

Suggested development measures are: Afforestation, Providing Lift irrigation facilities, strengthening water supply and its quality, strengthening health services (Hospital), Schools and Scholarships, Technical Institutions, All weather Roads, Free Power Supply to the Project Affected Families, Promotion of sports, Awareness Camps , development of drainage system, bridge over Beas River and model village etc.

Initiatives for income generation

SIA team suggested following initiatives for generation of income:

Promotion of Tourism, Promotion of Fisheries, Animal Husbandry, strengthening of Self-help groups, food processing units and cold storage, institutional linkage for income restoration and project based Employment.

Development of farmers & community-oriented set up

These measures include establishing seed banks, establishing Gaushala to control the menace of stray animals and facilitating the establishment of local Mandi or rural huts. It is mentioned in the report that there is need to address human costs and measures to be taken in order to create trust and hope among the PAPs. There is need to develop an objective SIMP to minimize risk, help to enhance income, create employment opportunity of PAPs and provision of unemployment gratuity for the PAFs.

After deliberating on initiatives suggested as a part of the SIMP, the committee observed that the suggested mitigation plan has covered almost all aspects of acquisition of land identified as a part of SIA. The mitigation plan has also tried to address concerns expressed by the people during public consultation. It is further suggested that while developing detailed R&R and mitigation plan, priority should be given to the following:

- a) **Plan must suggest ways for providing alternative employment to PAFs who shall undergo displacement and will lose 100% of their agricultural land on account of acquisition.**
- b) **Mapping of skills of all PAFs should be done so that pragmatic skill development programmes can be developed priority to improve the employability of PAFs.**
- c) **Plan should be developed for increasing the agricultural and horticultural productivity of land by developing irrigation facilities, providing technological inputs and market linkages to farmers. To lay emphasis on GoHP schemes of organic and zero budget farming with the services of experts from scientific organizations.**
- d) **It is also observed that even though rearing of cows is a common occupation of majority of PAFs, yet this activity has not developed on commercial scale. There is need to provide required thrust to this activity for enhancing income avenues and empowering women groups.**
- e) **Restoration of public utilities that are likely to be affected such as village paths, crematoria, water sources, ropeways etc., should be taken up simultaneously and on priority with the acquisition of land.**
- f) **Development of model villages should also be explored.**
- g) **Committee also observed that while planning for the development of colony for displaced families, lessons learnt from past experience in the development of the HEP in the state should be taken into consideration.**

C. Ameliorative measures

To mitigate negative impacts and problems of the PAFs and PAFs following ameliorative measures have been suggested in SIA study report.

- All PAFs should be provided better healthcare and education along with creation of employment and business opportunities and development of skills in PAA. The apprehension and fears arising from acquisition of land and displacement should be resolved amicably.
- The problems of vulnerable groups should be addressed as per their need.
- Loss of livelihood should be compensated either through monetary benefits or by creating earning opportunities.
- To allow the use of reservoir water for irrigation purpose in affected Panchayats.
- Ferry services for river crossing should be permitted through the reservoir which would be quite beneficial to restore and improve connectivity between both banks.
- Time bound disbursement of compensation.
- Fixed time plan for acquisition of land to enables PAFs to plan in advance the future.
- The definition of landless needs to be clarified. As in a few cases, the land of a person is being partially acquired rendering the remaining piece of land unusable/unviable.
- Provisions of permission to open reservoir for water sports & recreation activities which in turn would boost tourism in the area.

The committee is in agreement with various ameliorative measures suggested above for resolving issues which are likely to crop-up due to proposed Thana Plaun Hydro-Electric Project.

5. Concerns of people of the area

Construction of Thana Plaun Hydro-Electric Project (191 MW) shall have direct and indirect impact at various stages of construction and operation on affected persons, families, households, communities, and other groups. Mitigation is provided through compensation and assistance to project affected persons, families, households and eligible groups. These social units are entitled for compensation and assistance as per the policy framework of the Government of HP and adopted by the project authorities. This policy provides mitigation for loss of assets, including land, house or work place; loss of livelihood or income opportunities and collective impacts on groups, such as loss of community assets, common property resources, and others etc.

- The SIA report mentioned that demand of the affected people of the area to provide employment along with monetary compensation for the loss of land or house or both. However, generating large scale employment for all PAFs could be a great challenge for the requiring body who may not find required adequately skilled workers at local level. At the most, they can get absorbed in jobs like housekeeping, security and other supportive functions in limited numbers, in and around the project site.
- As a part of SIMP, the PAFs who loose cent per cent of their cultivable land or whose house is fully affected under the acquisition or PAFs with BPL status, women-headed land losers or physically or mentally challenged, the project authorities must provide employment to one of the members of such project affected family. All these activities need coordinated approach by the project authorities, district administration and other respective departments and local body. One of the concerns of people is loss of assets such as: directly affected Panchayats are Dwahan, KOT, Tarnoh, Sadoh, Khalanoo, Tanduu, Nohli, Pipli, Drubbal, Silag. Badidhar and Kufri. In these Panchayats there are a total of 709 land losers. Nohli Gram Panchayat has the highest number (152) of directly affected families followed by Drubbal (139) and Pipli (132) along with in the 12 villages, 127 landowners will lose 100% land. Total eight residential houses were identified which will be affected due to submergence or other project related activities. The structures comprise of Houses, Huts, Gharats and Cattle sheds. Further, a total of 38 Gharats and 8 Kulhs spread across 14 villages in various working conditions are going to be affected by the proposed land acquisition for TPHEP.
- It is advisable that acquiring authority must organize, “Financial Literacy Camps” in affected project area with the help of external agencies to educate people about the financial management to prevent misutilization of compensation money.

- It is suggested that vulnerable groups should be provided with additional support in terms of skill development and income restoration to at least one member from each vulnerable family.
- Landowners expected negative impacts include: loss of land, increase in pollution levels, sudden drop in activities dependent on the private and forest land, influx of outside population and resultant drop in the safety-security issues, rise in social conflict etc. It is stated in the SIA report that in public hearing the affected people of the area requested authorities for afforestation, irrigation system, safe drinking water supply, hospital of appropriate level, scholarships, all weather roads, free power supply to the project affected families, promotion of sports, awareness camps relating to health, education and financial literacy etc., promotion of tourism, forming and strengthening self-help groups (SHGs), food processing units and cold storage, institutional linkages for income restoration, Project based employment, seed banks, Gaushala and regulated Mandi may be provided as part of mitigation and rehabilitation plan according to the policy guidelines of the government .
- Project authorities and district administration should take care of rights of vulnerable groups particularly in agriculture labour, tenants, artisans and persons who have right under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 etc. for the betterment of their future.

In addition to above, major issues/concerns raised during the public hearing are summarized as under:

1. To provide drinking water, connectivity and irrigation facilities in areas where such facilities are being disturbed due to acquisition and also to entire Panchayats
2. The villagers were skeptical of authorities regarding nature and type of employment to be provided to them.
3. Regarding employment to landless and PAFs, they were also doubtful of what are provisions for persons of old age and those having the skillset of only agriculture.
4. Villagers also demanded transparency regarding R&R and other related issues.
5. What would happen to the agriculturist status of a farmer who shall become landless? This question is particularly important in case of Himachal Pradesh where a non-agriculturist cannot buy agriculture land.
6. Another concern is that the fringe areas of reservoir stand vulnerable.
7. Revision of circle rates before calculation of compensation.
8. Villagers are of the opinion that the existing provisions of R&R are inadequate and need to be revised.

The Project site was visited by the Expert Group on 9.11.2019 and 10.11.2019. In addition to above, following concerns were brought to notice of the committee by public representatives in the Expert Group representing affected panchayats in District Mandi.

- a) Providing of irrigation facilities to the famers of affected villages.
- b) Land owners having less than one Bigha shall be declared as a displaced family.
- c) Revision of circle rates of affected panchayats of district Mandi because existing rates are insufficient. Compensation is to be determined in accordance with the new Land Acquisition Act.
- d) Community assets such as natural sources of water, cremation ground, pipelines, pump-house, roads, bridges, schools which shall submerge in the reservoir should be constructed before execution of the project, so that people may not face any problem in this regard.
- e) Person losing 100% land should be declared as displaced and employment should be provided before start of the project construction.
- f) Person losing 100% land be considered for providing agriculturist certificate till next generation.
- g) At least one member from each affected family should be provided permanent employment as per the qualifications.
- h) Providing of 75% free electricity for period of 100 years to all the project affected area.
- i) To develop one numbers of model villages in every affected Panchayat.
- j) Pension to the PAFs where there is no family member eligible for job.
- k) Free medical treatment to PAFs.
- l) Upgradation of Civil Hospital, Kotli and Ayurvedic dispensary in Drubbal Gram Panchayat.
- m) Irrigation scheme to each Project affected Panchayat.
- n) Construction of Rest House, Community Centre and Play ground near the Project Area.
- o) Awareness campus be organized on regular interval to create awareness about benefits of project and social issues among the people.
- p) Strengthening of Mahila Mandals and Yuvak Mandals.
- q) Upgradation of Police Cowki, Kotli.
- r) Plantation on Both banks of River Beas.
- s) Transmission line be laid from this project upto Mandi Town so that 24x7 power supply could be ensured to Mandi District.
- t) Primary Health Centre on both Banks of Project Site.
- u) Since most of the project components fall in Drubbal Panchayat, therefore, project colony be located at Drubbal and other offices be located near project site.

7. Observations, Conclusions, and Recommendations of the Committee

As per Section 7 (4-5), the Expert Group has to examine and evaluate the SIA study in depth and based on the SIA Report has to ascertain, whether the project would serve public purpose or not. At the same time, group should also examine whether the potential benefits also outweigh the social costs and adverse social impacts. Hence, the 'Expert Group' thoroughly examined the SIA Report and other related

issues raised in the public hearings in surrounding villages mentioned in the reports as follows:

- Majority of the stake holders including the PAFs and local administration unequivocally expressed that the project work should start at the earliest.
- State and requiring body should recognize in right spirits the policy of Social Impact Mitigation Plan (SIMP) and chalk out strategies to make up loss of structures and assets of titleholders. State government should evolve mechanism to help losers of land and residents in purchasing land and assets in near proximity of PAA.
- Response and reaction of people during public consultations suggest that they are very much convinced of positive impact of the project and with upcoming of the Thana Plaun Hydro-Electric Project, they will experience much desired development and prosperity in their lives. Majority of PAFs favored construction of Thana Plaun Hydro-Electric Project.
- The project is 'Run-off-River Type' and water shall be stored mainly for short duration. Moreover, water flow of 20% in lean season, 30 % during monsoon season and 25% during normal season will be maintained, for conservation and protection of downstream ecology.
- It is recommended that adverse socio-economic impacts should be offset by evolving specific R& R plan for empowering displaced families with alternative employment options and by providing them with tools to create sustainable new livelihoods. Hence, Land shall be acquired strictly in accordance with provisions of The Right to Fair Compensation and Transparency in Land Acquisition and Rehabilitation and Resettlement Act, 2013.
- R&R Plan may consider demands of land owners including loss of built-up and ancestral property, loss of livelihood, etc., strictly in accordance with the Act.
- The size of private land proposed for acquisition is only 249-19-14 Bighas is bare minimum and cannot be avoided.
- An R&R and SIM plan incorporates required mitigation and ameliorative measures and adequately addresses concerns of the PAFs raised during public consultations. It is expected that the suggested mitigation and R&R plans shall directly benefit communities and help in providing improved communication, connectivity, health and education facilities, and other livelihood opportunities that are sustainable.
- Government may reconsider revision of certain components of R&R and monetary benefits in view of inflation during the last five years.
- It is recommended that small patches of land left out of the purview of acquisition and are not productive, may be considered for acquisition after obtaining necessary permission from the competent authority

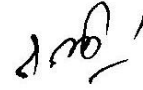
In consideration of above deliberations and observations, the Expert Group is of the considered opinion that the Thana Plaun Hydro-Electric Project (191 MW) besides fulfilling public interest considerations and its potential benefits, will add 699.09 GWh in 50% dependable year/ 692.61 GWh at 90% dependable year into the National Grid. The Expert Group, further recommends that the cumulative benefits of the proposed project will outweigh the social costs and adverse social impacts. Therefore, the

proposed acquisition of land serves Public Purpose and the extent of land required is bare minimum for the project, and there is no other less displacing option.

Hence, it is strongly recommended that process of land acquisition be initiated at the earliest and project should be taken up on priority.



(Prof. S.K. Sharma)
Prof. of Sociology (Retd.)
Non-official Social Scientist



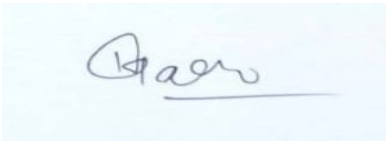
(Prof. O.P. Monga)
Prof. of Sociology (Retd.)
Non-official Social Scientist



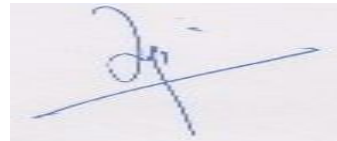
(Man Singh)
Pradhan, G.P. Drubbal
Panchayat Representative Distt. Mandi



(Kahar Singh)
Pradhan, G.P. Kot (Tungal)
Panchayat Representative Distt. Mandi



(Prof. K.S. Pathania)
Director, ICDOEL, HP University,
Shimla, Rehabilitation Expert



(Dr. V B Negi)
Registrar, IGNOU New Delhi
Rehabilitation Expert

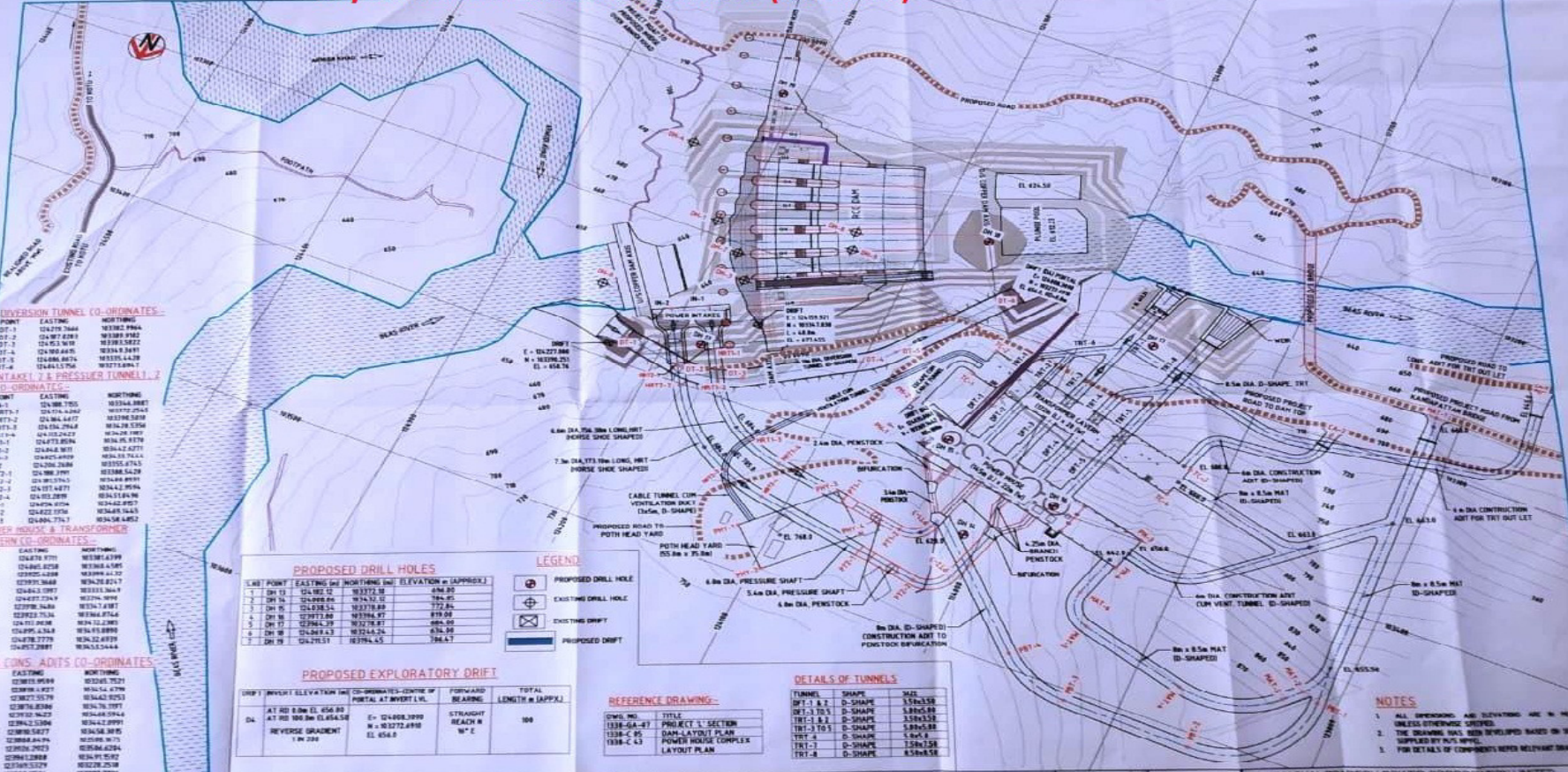


(Er. K.L. Thakur)
Chairperson & Technical Expert
Director, HIMURJA

Salient Features

Hydrology	
Catchment area at Dam site	7378 Sq. Km
Standrad project flood	10.530 cumecs
River Diversion	
Diversion Scheme	Through DT and coffer Dam
Dia and Shape of DT	11.00 m.
Length of DT	453.503 m.
Dam	
Type of Dam	Roller Compacted Concrete Dam(RCC)
Top of the Dam	719.00 m.
Dam height from river bed	85.00 m.
Length of Dam at top	225.93 m.
Spillway	
Type	Breast wall sluice spillway
Length of spillway	85.00 m.
No. of gate	5 nos. Under sluices m.
Pressure Shaft	
Number of pressure shafts	2 nos. (5.7m. & 6.00m.)
Power House	
Type	Underground with Drainage Gallery
Size of machine hall	145.00m.(L)x21.00m.(W) x 28.00 m.(H)
Normal tail water level	632.70 m.
Rated Head	72.97 m. (main units) 73.17m. (Environmental units)
Turbine Type	Vertical Francis
No. of units	5 (3x50.33 +2x20.00)
Total installed capacity	191 MW
Tail Race Tunnel	
No. and Type	02 nos. & Pressure Flow Tunnels
Reservoir	
Tail Reservoir level(FRL)	716.00 m.
Minimum draw down level(MDDL)	697.00 m.
Construction period	58 months

Layout Plan of Thana Plaun HEP (191 MW)



DIVERSION TUNNEL CO-ORDINATES:

POINT	EASTING	NORTHING
DT-1	02479.2464	02398.4946
DT-2	02487.8283	02398.5182
DT-3	02493.3078	02398.5222
DT-4	02498.6675	02398.5287
DT-5	02498.8674	02398.5439
DT-6	02484.1576	02375.8941

INTAKT. 1 & 2 PRESSURE TUNNELS CO-ORDINATES:

POINT	EASTING	NORTHING
IN-1	02498.7955	02394.8881
IN-2	02494.4407	02398.5089
IN-3	02493.2423	02398.5254
IN-4	02493.2423	02398.5254
IN-5	02494.9671	02394.8271
IN-6	02497.8094	02398.5279
IN-7	02496.2088	02395.4743
IN-8	02498.7797	02388.5429
IN-9	02493.2423	02398.5254
IN-10	02493.2423	02398.5254
IN-11	02494.9671	02394.8271
IN-12	02497.8094	02398.5279
IN-13	02496.2088	02395.4743
IN-14	02498.7797	02388.5429
IN-15	02493.2423	02398.5254
IN-16	02493.2423	02398.5254
IN-17	02494.9671	02394.8271
IN-18	02497.8094	02398.5279
IN-19	02496.2088	02395.4743
IN-20	02498.7797	02388.5429

POWER HOUSE & TRANSFORMER CO-ORDINATES:

POINT	EASTING	NORTHING
PH-1	02487.8771	02381.6399
PH-2	02486.8208	02384.8794
PH-3	02495.4289	02394.4132
PH-4	02493.3649	02382.8217
PH-5	02483.1087	02383.3649
PH-6	02487.3249	02374.4094
PH-7	02496.3688	02381.4987
PH-8	02493.7134	02384.8746
PH-9	02491.9688	02382.2083
PH-10	02499.4348	02391.8899
PH-11	02498.2778	02382.8939
PH-12	02487.2881	02383.5444

MAT & CONS. ADITS CO-ORDINATES:

POINT	EASTING	NORTHING
MAT-1	02385.8858	02385.7571
MAT-2	02389.1827	02384.4794
MAT-3	02387.3579	02382.8753
MAT-4	02383.8298	02382.8997
MAT-5	02392.9622	02384.8746
MAT-6	02394.1386	02384.8746
MAT-7	02395.5277	02384.8746
MAT-8	02398.8494	02389.8175
MAT-9	02398.8494	02384.8746
MAT-10	02394.1386	02384.8746
MAT-11	02395.5277	02384.8746
MAT-12	02398.8494	02389.8175
MAT-13	02398.8494	02384.8746
MAT-14	02394.1386	02384.8746
MAT-15	02395.5277	02384.8746
MAT-16	02398.8494	02389.8175
MAT-17	02398.8494	02384.8746
MAT-18	02394.1386	02384.8746
MAT-19	02395.5277	02384.8746
MAT-20	02398.8494	02389.8175

PROPOSED DRILL HOLES

NO.	DRILL NO.	EASTING	NORTHING	ELEVATION (M)	DIAMETER (mm)
1	DH 11	02492.12	02372.38	484.80	75
2	DH 12	02488.88	02372.32	484.80	75
3	DH 13	02493.14	02378.89	772.85	75
4	DH 14	02497.80	02394.47	879.00	75
5	DH 15	02484.29	02372.81	484.80	75
6	DH 16	02484.43	02344.24	634.90	75
7	DH 17	02475.51	02394.45	784.67	75

PROPOSED EXPLORATORY DRIFT

DRIFT	INVERT ELEVATION (M)	CO-ORDINATES-CENTRE OF PORTAL AT INVERT LVL.	FORWARD BEARING	TOTAL LENGTH (M) (APPRX.)
ED	AT 100 100 M EL. 654.50	E = 02489.7000 N = 02372.8910 EL. 654.5	STRAIGHT BEARING N N° E	100
	REVERSE GRAZEMENT	1 in 200		

REFERENCE DRAWING:

CDWG. NO.	TITLE
1338-GA-07	PROJECT 1: SECTION
1338-C-05	DAM LAYOUT PLAN
1338-C-43	POWER HOUSE COMPLEX LAYOUT PLAN

DETAILS OF TUNNELS

TUNNEL	SHAPE	SIZE
INT-1 & 2	D-SHAPE	3.5m x 3.5m
PH-1 TO 3	D-SHAPE	3.5m x 3.5m
TRT-1 & 2	D-SHAPE	3.5m x 3.5m
TRT-3 TO 5	D-SHAPE	3.5m x 3.5m
TRT-6	D-SHAPE	5.4m x 5.4m
TRT-7	D-SHAPE	1.5m x 1.5m
TRT-8	D-SHAPE	4.5m x 4.5m

NOTES

- ALL SPREADING ARE ELEVATIONS ARE IN METERS UNLESS OTHERWISE STATED.
- THE DRAWING HAS BEEN DEVELOPED BASED ON DATA SUPPLIED BY PWS NPL.
- FOR DETAILS OF COMPONENTS REFER RELYANT DRAWINGS.

<p>REVISIONS:</p> <table border="1"> <thead> <tr><th>NO.</th><th>DATE</th><th>DESCRIPTION</th></tr> </thead> <tbody> <tr><td>1</td><td>24.09.13</td><td>ISSUED FOR APPROVAL</td></tr> <tr><td>2</td><td>10.08.13</td><td></td></tr> <tr><td>3</td><td></td><td></td></tr> </tbody> </table>	NO.	DATE	DESCRIPTION	1	24.09.13	ISSUED FOR APPROVAL	2	10.08.13		3			<p>HIMACHAL PRADESH POWER CORPORATION LTD. Corporation Promoting Civil Hydroelectricity Sector: Gurgaon, Gurgaon, Haryana Phone: 011-26220111, 26220112 Fax: 011-26220111 Website: www.hppc.co.in</p>	<p>SCALE: 1:500</p>	<p>SMEC 100, Phase 1, T-1 Building No. 8 Tower C, ICF, Cyber City, Phase 8 Gurgaon, Haryana (India) Tel: 0124-457817 Fax: 0124-457819 Email: info@smecon.com Website: www.smecon.com</p>	<p>Client: HIMACHAL PRADESH POWER CORPORATION LIMITED</p> <p>Project: THANA PLAUN HYDRO ELECTRIC PROJECT (CAPACITY: 191 MW)</p> <p>Sheet No: 1338-GA-08</p> <p>Designing: P. AGRAWAL</p> <p>Checked: A1</p> <p>Approved: D.P.R.</p> <p>Scale: 1:500</p> <p>Date: 1338-GA-08</p>
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