ASTHA PROJECTS (INDIA) LIMITED

(Hydro Power)

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October 19, 2007

The Secretariat
CDM Executive Board
UNFCCC,
Bonn, Germany

Dear Sir,

Sub: Request for review for: "5 MW Upper Awa small hydroelectric project, Himachal Pradesh, India" (1252) – submission of response to the comments raised by the review team – Reg.

Please refer to your communication dt.11th October'07 in respect of "5 MW Upper Awa small hydroelectric project, Himachal Pradesh, India" (1252). We are pleased to furnish in the enclosure the issues raised by members of the board and our response thereof.

Thanking you

Yours faithfully

For **Astha Projects (India) Limited**

M.Keshav Reddy
Managing Director

Encl: as above

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Sl. No.	Comments	Replies
1.	The PP shall further demonstrate the additionality of the project activity	The project is a small scale (5 MW) hydroelectric power project. As such the applicable methodology is *Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities***.** Accordingly, the project proponent has demonstrated the additionality of the project through barrier analyses, viz., prevailing practice (common practice), investment barrier and technological barrier like lack of infrastructure and geological risks such as landslides, earthquakes and hydrological risks vide page 13-17 and 19 of the PDD. The barrier analyses conclusively prove that the project would not occur due to these barriers in the absence of CDM benefits as by implementing the project, the project proponent would run enormous risk. Though not required as per the methodology, the project proponent, in order to reinforce the conclusion (i.e., imperativeness of CDM benefits) has also chosen to further demonstrate the additionality of the project through benchmark analysis. Both barrier analysis and the benchmark analysis demonstrate the additionality of the project activity in uncertain terms.
2.	Clarification is required on how the common practice analysis can be considered a barrier which prevents the implementation of this specific project activity	It is basic economics that the entrepreneurs flock to a particular project activity if it yields a return commensurate with the risk involved. In other words, the project activity should meet the profit *expectation* of the entrepreneur. Flocking of entrepreneurs to a particular project activity renders the project activity a *common practice*. Therefore, *common practice* signifies the inherent profitability (for the like-minded entrepreneurs) of the project activity. A corollary to the theorem is that entrepreneurs would not be attracted to a project activity if it fails to meet their profit *expectation* and hence such projects would not be *common practice*. Therefore, if a project activity is *not* a *common practice*, it signifies the risks associated with the project activity and its inability to yield a risk-adjusted rate of return without *additional supports*. This is one aspect. A second and equally important aspect is that when a project activity is a *common practice*, which implies a large number of firms in that particular industry, by virtue of operation of economic principles, it gives rise to the development of necessary infrastructure, supply of required skills, availability of necessary spare parts in time and in proximity, among others, to facilitate successful operation of the project. A project activity, which is not a *common practice* would be deprived of these imperative supports. Deprivation of basic supports, therefore, becomes a barrier for new projects.

		A corollary to the foregoing is that if a project activity is not a common practice, entrepreneurs would desist from venturing into that project. This invariably sets in motion demonstration effect in that entrepreneurs are dissuaded from entering into this project line. As if to support the veracity of the claim, unfortunately, today, in Himahcal Pradesh, there are no convincing success stories to prove that small hydro power projects are attractive business proposition for investors in the absence of CDM benefits. The dissuasion, coupled with absence of success stories, act as a deterrent and barrier. It requires additional financial incentive to motivate the entrepreneur to venture into such project area. Thus, common practice, viewed against the foregoing, is a barrier, albeit as a proxy for various risks. Taking these facts for granted, the PDD had listed various factors and furnished necessary statistics to drive home the point that small hydro power projects are not common practice - not only in the country as a whole, but also in Himachal Pradesh in particular, which offers immense potential for small hydro power projects. → The PDD shows clearly that small hydro power is not a common practice in Himachal Pradesh and the Northern Region of India for the following reasons:: - The total contribution of small hydro to the overall power supply is very small, and - The available potential for small hydro has only been tapped to a small degree (about 15%), despite year-long efforts to promote small hydro. In addition, the PDD establishes that the few small-scale hydro plants existing in the project region (Himachal Pradesh) are different from the proposed project in material respects. In particular: - The vast majority of the small hydro power projects existing in the state are quite old, i.e. they were constructed well before the Year 2000 (some as early as 1912). - These projects were generally constructed with public funding, by Himachal State Electricity Board (HPSEB). - It is established in the PDD that out of 64 projects for a total capacity of 186.35 MW only 10 projects with a total capacity of 22.35MW have been commissioned. Out of these projects four projects of total 15.5 MW capacity have been registered for CDM and another one project of 3 MW capacity is reported to be pursuing for CDM and other projects are not of comparable size. It is further demonstrated that contribution of small hydro projects in the Northern region where Himachal Pradesh is one of the

constituents states, the share of small hydro in the total power generation is estimated at 1.55% indicating that establishing small hydro projects is not a common practice in Himachal Pradesh.

Recently, a decreasing trend can be observed in the addition of new small hydro capacity (see figures below). Since the year 2000, not many small hydro projects are installed in the state, while at the same time in a nationwide perspective large-scale thermal has grown at an unprecedented rate. This can be explained by the fact that the state utility HSEB has in the past years had a clear focus on medium (>25 MW) and especially large (> 100 MW) hydro. Conversely, the State Program HIMURJA has had very limited effectiveness in promoting third party investments in small hydropower, as shown above. As a result, small hydro power is still far from being used to its full potential in the state.

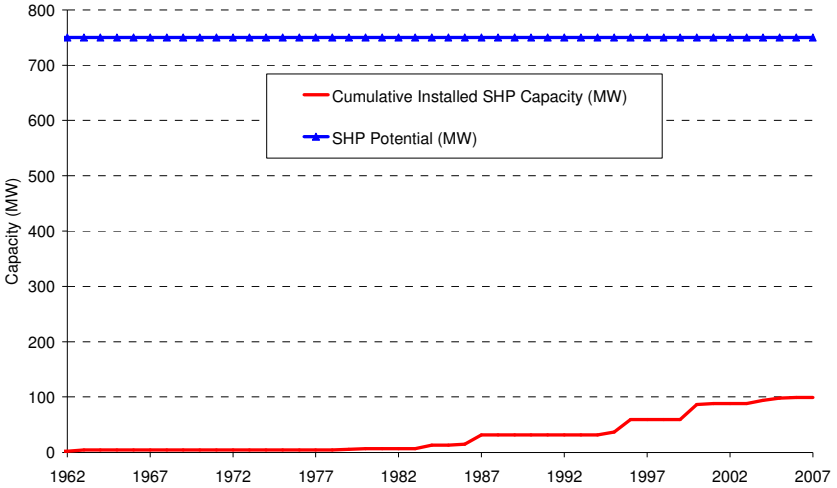

Figure 1: Cumulative small hydro power capacity in the State of Himachal Pradesh (excluding CDM projects). Source: PDD Tables C.1 and C.2

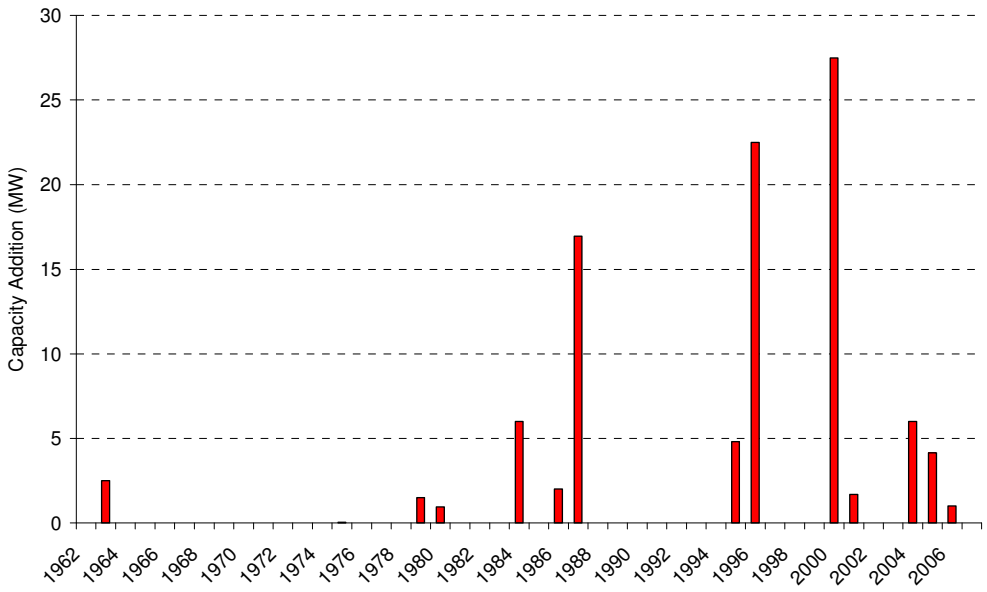

Figure 2: Capacity additions of small hydro power in Himachal Pradesh over time (excluding CDM projects). Source: PDD Tables C.1 and C.2

The prevalence of barriers has been brought out in various research publications. Links for some of the research material are given below:

1) Floods and flash floods in Himachal Pradesh: A geographical Analysis www.nidm.net/idmc/Proceedings/Flood/B2-%206.pdf

2) Natural disaster management- planning commission report on HPhttp://planningcommission.nic.in/plans/stateplan/sdr_hp/sdr_hpch3.pdf

3) Damage scenario of a hypothetical 8.0 magnitude earthquake in Kangra region of Himachal Pradesh – http://www.bmtpc.org/pubs/techno/chapter-5.pdf

In conclusion, the fact that small hydro is not a common practice in the project area is a real barrier for the proposed Project Activity. Essentially, there are today no convincing success

		stories which prove that small hydropower investments are an attractive proposition for investors in the absence of CDM. This absence of success stories acts as a deterrent and barrier. Instead, the prevailing practice for private investors is to invest in thermal generation capacity, or investments outside the power sector altogether. For the state utility HPSEB, the prevailing practice is investments in large hydropower, to the extent that such projects are financially viable. In addition to the above, the financial analysis stated in the PDD shows that the project is not financially viable in the absence of CDM revenues.
3.	The DOE should further validate the input values used in the investment analysis, in particular the assumptions regarding interest payments	Evidence in respect of input values has been furnished to the validator in support of investment analysis including assumptions regarding interest payment. In respect of interest payment, the letter from the term lending bank, which *inter alia* includes the rate of interest applicable to the project activity has been taken into consideration for financial analysis. State Electricity Regulatory Commissions (ERCs), like APERC, KERC, TNERC and MERC have recommended the minimum ROE of 16%. As the PP is from Andhra Pradesh, ROE prescribed by APERC has been taken into consideration in working out the benchmark. The Dividend Distribution Tax is based on the Income Tax Act, 1961 and the Transfer to Reserves is based on Companies (Transfer of Profits to Reserves) Rules, 1975. The copies of documents from term lending bank evidencing interest rate applicable, extracts of Income Tax Act, pertaining to Dividend Distribution Tax (DDT) and Companies (Transfer of Profits to Reserves) Rules, 1975 are furnished to DOE for verification.
4.	Further clarifications is required on how the DOE has validated the suitability of the benchmark	PP has chosen project IRR to demonstrate the Additionality of the project. Project IRR, being the return earned by the project during the reference period, has to be compared with a benchmark or cut-off rate to determine the adequacy of the return. PP has chosen Weighted Average Cost of Capital (WACC) as the benchmark. Since the project is financed by *both* equity and loan, the appropriate cut-off rate is the WACC, because WACC *alone* represents the weighted average of the costs of various sources of financing the project. WACC, therefore, represents the minimum rate of return or the benchmark return which the project should earn to merit consideration. Failure to earn the minimum rate of return is indicative of the erosion in the value of shareholders' investment.

		The appropriateness of WACC as the benchmark is upheld by various publications on corporate finance. The most respected publication in financial management by James Van Horne while discussing the 'Acceptance criterion' (read as Additionality criterion) underlines the need to compare the IRR with a cut-off or hurdle rate. The book states. "*Acceptance criterion generally employed with the Internal-Rate-of- Return method is to compare the Internal Rate of Return with a required rate of return, known also as the cut-off or hurdle rate. If the internal rate of return exceeds the required rate, the project is accepted; if not it is rejected*' (Van Horne James C., Financial Management and Policy (sixth edition) Page 111) This assertion is also supported by the Investopedia, one of the respected reference web sites on finance, where it states, "*Investors use WACC as a tool to decide whether or not to invest. The WACC represents the minimum rate of return at which a company produces value for its investors. Let's say a company produces a return of 20% and has a WACC of 11%. That means that for every dollar the company invests into capital, the company is creating nine cents of value. By contrast, if the company's return is less than WACC, the company is shedding value, which indicates that investors should put their money elsewhere*." (http://www. investopedia.com/articles/ fundamental/ 03/ 061103.asp) Therefore, where project IRR is used to demonstrate the additionality of project activity, no other benchmark would by more appropriate than the WACC. It is based on the above extensive research that the suitability of the benchmark has been established by the PP. Since WACC is based on quantum and interest / *expected* return on term loan, working capital and equity capital, PP has furnished the document from term lending bank evidencing rate of interest applicable, ERC order in justification of expected return on equity, extracts of Income Tax Act, 1961 pertaining to DDT and Companies (Transfer of Profits to Reserves) Rules, 1975 to the DOE for verification and validation of WACC.
5.	Project activity 1252 follows AMS-I.D Vs.10 while setting its monitoring plan. All relevant variables are chosen in the PDD and monitoring procedures are presented, including issues of quality control and assurance. Specifically, four parameters i.e., gross, net and auxiliary power	Necessary corrections have been incorporated in the PDD with respect to first three parameters in Sec.B.7.1. Corrections are also incorporated under Sec.B.7.1 indicating how and where the parameters would be metered / monitored.

	supplied to the grid, plus internal power consumption from the grid, are measured via meters that are to be installed, calibrated and operated by PP. However, it is noted that the description of the first three parameters provided in Table B.7.1 is the same i.e., "Electricity supplied to the grid by the project", causing some confusion to the reader as to what exactly the differences involved are. The monitoring plan should specify how and where within the plant boundaries will these parameters be metered / monitored.	