GOWTHAMI
HYDRO ELECTRIC
COMPANY (P) LTD
Regd. Office No.13, IVth Floor,
Maitri Arcade, 2-3-42/52, M.G. Road,
Secunderabad - 500 003.
Ph: +91-40-66481144, Fax: +91-40-66486644
E-mail: gowthamihyd@gowthami.com

December 11, 2007

The Secretariat
CDM Executive Board
UNFCCC,
Bonn, Germany

Dear Sir,

Sub: Request for review for: "5 MW renewable energy project for a grid system" at Rohru Tehsil, Shimla District in Himachal, India" (1363) – submission of response to the comments raised by the review team – Reg.

Please refer to your communication dt.28th November'07 notifying us that the proposed CDM project activity "5 MW renewable energy project for a grid system" at Rohru Tehsil, Shimla District in Himachal, India" (Ref. no. 1363), submitted by us for registration, is under consideration for review. In this connection, 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 **Gowthami Hydro Electric Company (P) Ltd.,**

(M.Ravi Kanth)
Managing Director

Encl: as above

Sl. No.	Comments	Replies
1.	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 development of small hydro power projects.

The PDD had demonstrated clearly that small hydro power is not a common practice in Northern Region, in general, and Himachal Pradesh, in particular, 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 been tapped to a small degree only (about 15%), despite Government's continuous 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.
- These projects were generally constructed with public funding, by Himachal State Electricity Board (HPSEB).

Analysis of existing plants in the state

The small hydro projects of Himachal Pradesh State Electricity Board (HPSEB) in operation are provided in Table 1. The analysis shows that the majority of these projects were commissioned well before the year 2000. Given the public ownership and mandate of HPSEB, these projects cannot be directly compared with the proposed project activity. Today the focus of HPSEB is clearly on large-scale hydro projects of several hundred MW, as evidenced by the decreasing trend in new capacity additions of small hydro plants (see Figure 2 below for illustration). Hence implementation of small-scale project, such as the proposed project cannot be considered a common practice of HPSEB:

Table 1. Details of small hydro projects in operation in Himachal Pradesh

S.No	Name of the Project	River/Khad	Owner	Commiss. Date	Capacity (MW)
	Yamuna Basin				
1	Andhra	Andhra	HPSEB	1987	16.95
2	Gumma SHP	Gumma Khad	HPSEB	2000	3.00
	Total:-				**19.95**
	Satluj Basin				

3	Rongtong	Rongtong	HPSEB	1986	2.00
4	Rukti	Rukti	HPSEB	1979 & 1980	1.50
5	Nogli Stage-I	Nogli	HPSEB	1963, 1969-70, 1974	2.50
6	Chaba	Nauti	HPSEB	1912 & 1919	1.75
7	Ganvi	Ganvi khad	HPSEB	2000	22.50
	Total:-				**30.25**
	Beas Basin				
8	Binwa	Binwa	HPSEB	1984	6.00
9	Baner	Baner	HPSEB	1996	12.00
10	Gaj	Gaj	HPSEB	1996	10.50
	Total:-				**28.50**
	Ravi Basin				
11	Gharola	Gharola	HPSEB	1975	0.05
12	Bhuri Singh P/House		HPSEB	in operation	0.45
13	Sal-II	Ravi	HPSEB	2000	2.00
14	Holi	Ravi	HPSEB	2004	3.00
	Total:-				**5.50**
	Chenab Basin				
15	Sissu	Sissu	HPSEB	in operation	0.10
16	Billing	Billing	HPSEB	in operation	0.20
17	Shansha	Shansha	HPSEB	in operation	0.20
18	Thirot	Thirot	HPSEB	1995-96	4.50
19	Killar	Mahal	HPSEB	1995-96	0.30
	Total:-				**5.30**
	G. Total				**89.50**

(Source: Himachal State Electricity Board, www.hpseb.com)

Apart from the above projects owned by HPSEB, the state also tried to facilitate implementation of small hydro projects with private participation through its HIMURJA program. The list of projects in the HIMURJA pipeline is furnished in Table 2 below. As could be seen from the list, the projects which are comparable with the proposed project activity in terms of capacity are already registered for CDM. The few other existing projects are not necessarily comparable with projects in the range of 5-25 MW, since they involve much lower level of financial and construction barriers.

Therefore, it is justified to say that small hydro projects of the proposed type are not a common practice in the region, which presents a significant barrier.

Table 2. List of hydropower projects under HIMURJA[1]

S. No	Name of the Project	Capacity
1	Raskat	0.8 MW
2	Titang	0.9 MW
3	Dehar* [2]	5 MW
4	Maujhi* [3]	4.5 MW
5	Ching	1 MW
6	Manal	3 MW
7	Aleo* [4]	3 MW
8	Manjhal	1 MW
9	Baragran	3 MW
10	Salag	0.15 MW
	Total	**22.35 MW**

(Note: * Project activities which are registered with CDM Executive Board)

A decreasing trend can be observed in the addition of new small hydro capacity (see figures below drawn from table 1 and 2 above). 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 HPSEB has in the recent years had an even clearer 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. At the current rate of expansion, it would take many decades until the small hydro power potential in the state

[1] www.himachal.nic.in/himurja/ongprojects.html
[2] Reference No: 0035, 18th July 2005, http://cdm.unfccc.int/Projects/registered.html
[3] Reference No: 0098, 6th November 2005, http://cdm.unfccc.int/Projects/registered.html

[4] Reference No: 0244, 14th April 2006, http://cdm.unfccc.int/Projects/registered.html

is fully harnessed.

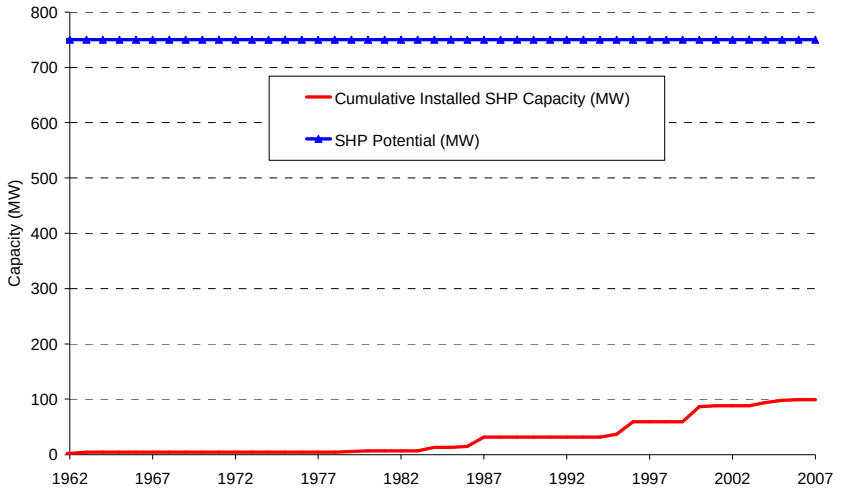

Figure 1: Cumulative small hydro power capacity in the State of Himachal Pradesh (excluding CDM projects).

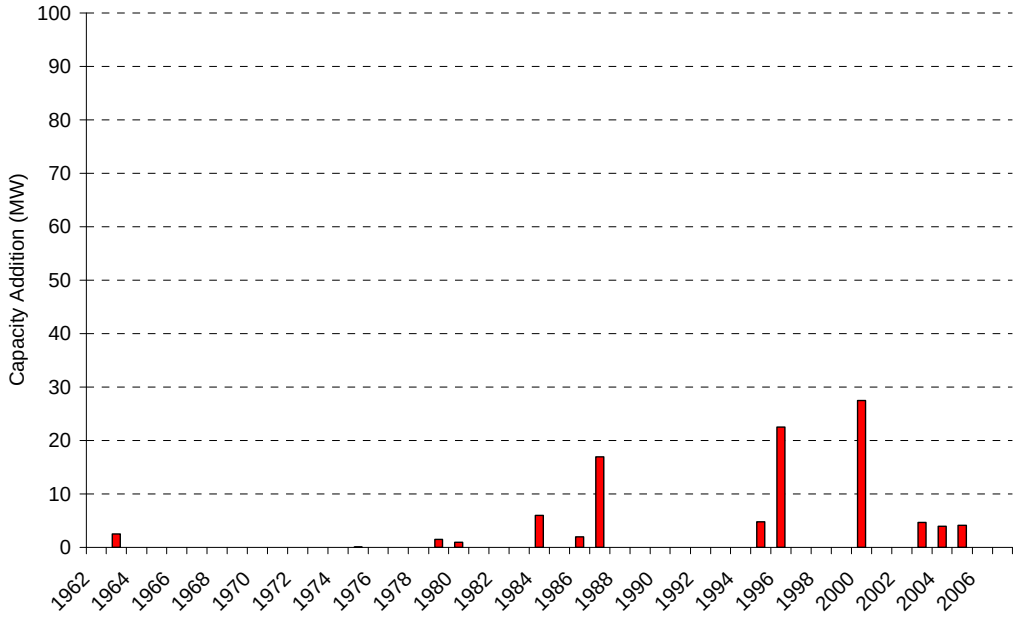

Figure 2: Capacity additions of small hydro power in Himachal Pradesh over time (excluding CDM projects).

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.

3.	Further clarification is required on how the DOE has validated that the salvage value in the IRR calculation accurately reflects the costs and benefits that would accrue after the 10th year of the project	It is a common practice among the financial institutions in India to take 5 to 10% of the cost of fixed assets as salvage value. This practice also finds support in a few articles published on the subject. *D. Gregg Dight*, in his article on *Appraising Equipment for Structured Finance Transactions Creating Residual Value Curves to Reflect Physical Depreciation, Obsolescence and Useful Life*, for example, states, "Salvage Value is a relatively basic concept defined as the recoverable value of an asset at the end of its useful life. There are rules of thumb that appraisers have developed over time based on experience and trends within many equipment markets. Most assets commonly seen in structured finance transactions will have *a scrap value assumption of 5-10% of original cost.* This estimate creates an "endpoint" to which a residual value curve can be constructed"[5] (emphasis added). Considering the unique features of the project, the PP's assumption of a salvage value of 5%, was found reasonable and logical. In the present project activity case, the assets have been built based on the site specific activity. The project civil works and plant and machinery have been designed based on the site hydrology and geology. Moreover, the plant and machinery in this project activity is subject to much higher wear and tear caused by various geographical barriers (as explained in the PDD) faced by the project activity. Therefore the salvage value can never be the residual value. It would be much less. The salvage value adopted by the PP has to be viewed against the above background. Salvage value of an asset can also be construed to mean the residual value, i.e., the value remaining after depreciation. However, adoption of residual value concept is workable only in the case of run-of –the –mill projects, where the building and plant and machinery are standard and could be put to multiple uses. While estimating the salvage value the PP has taken the value of current assets at 100% of their value as they are "current" in nature and therefore are realizable at 100% of their value. As regard fixed assets they are historical in nature and none can determine accurately its scrap value, as it depends on the condition of the asset, the price prevailing at that time, the demand, the technology developments and economic conditions prevailing at that point of time. Even if we assume the residual value of the assets in the case of the project activity, only the plant and machinery would have some value. Estimating that the land cost at 100% of the value, and plant and machinery at 50% of the residual value after accounting for depreciation, the IRR works out to 9.13% and is still below the bench mark. IRR statement depicting the above calculation is

[5] http://www.marshall-stevens.com/pdf/pub_ValueCurves.pdf

		attached. Hence the salvage value considered by the PP is reasonable and realistic.