Atria
HYDEL POWER LIMITED

October 12, 2006

To,

The Manager
CDM Section
UNFCCC, Bonn
Germany

Dear Sir

Subject: Reference: Request for review for: "6.6 MW Sheshadri Iyer Mini Hydel Power Project of Atria Hydel Power Limited, Malavalli Taluk, Mandya District, , Karnataka " (0522)

Atria Hydel Power Limited (AHPL) would like to thank the CDM executive board and the secretariat for giving us the opportunity to clarify on the four requests made on our project design document of our 6.6 MW hydel power project. We would like to assure you that we have been transparent in providing all the relevant information with regard to the queries raised.

We clarify and give our responses to each of your requests:

Request for review no. 1 & 3:

1. ***According to the validation report , the decision to build this project was made in early 2000. Neither the PDD nor the validation report indicates anywhere that the project was envisioned for CDM originally. The barrier analyses do not seem to demonstrate project additionality.***

   AHPL Response: AHPL during the conceptualizing of the project was aware of the CDM and necessary documents evidencing the same were given to the DOE during the site visit. Extract of Minutes of the board resolution on 19/03/2000 highlighting the consideration of the CDM benefits is enclosed as **Annexure-1** for kind reference.

   As per the attachment A to Appendix B of the simplified M&P for small-scale CDM project activities of the UNFCCC CDM website, to prove that the project is an additional, explanation regarding the project activity would not have occurred anyway due to at least one of the following barriers is required:

   (a) Investment barrier
   (b) Barrier due to prevailing practice
   (c) Other barriers

   The project has faced many barriers. Few of the barriers that the project has faced are given hereunder.

   Institutional barrier: Initial PPA was signed for INR 2.87/kWh with 5% escalation with 1993-94 as base year. However, there has been a revision in the tariff in the year 2003-2004 by Karnataka Power Transmission Company Limited (KPTCL) by reducing the tariff to INR 2.90/kWH with an annual escalation of 2%. The revised tariff till date, has resulted in financial losses to the company in the tune of INR 44 Million. Necessary documents evidencing the same had been given to the DOE and the financial losses due to revision of tariff are enclosed as **Annexure-2**.

Corp. Office & Regd. Office : No. 1, Palace Road, Bangalore - 560 001. Phone : 91-80-22257022, 91-80-22261860, Fax : 91-80-22257023 / 91-80-22256850
Generating Station : Shivasamudram, Opp. K.E.B. Generating Station, Malavalli Taluk, Mandya Dist. Karnataka 571 437.

Prevailing Practice Barrier: As against the total generation in the Karnataka state for the year 2001-2002, i.e. the year in which the project construction started, power generation from the Mini Hydel constituted only about 154.54 Million kWh as against the total generation of 26882.5 Million kWh, which is about 0.5% of the total generation. The details of generation from IPP Mini Hydel power plants are enclosed in **Annexure-3.** This shows that the investing in small hydroelectric sector was not a common practice.

Hydrology Risks: Uncertainty with respect to the availability of water in the canal on which the project is constructed is a major concern. Two canals emanate from the reservoir; one canal having a capacity of 25.45 cumecs carries water required for Shimsha Power House and Bangalore Water Supply and the second power channel with a capacity of 50.97 cumecs and a length of 1.4 Km feeds Shivanasamudram Generating Station (SGS), which is the State owned electricity utility. The project activity utilizes the excess water flows in the forebay of SGS and the head available in the stream for power generation. Karnataka State Government controls the water flows to meet the requirement of SGS, Bangalore water supply and Shimsha Power house. The Government of Karnataka has passed an order that the priority of water discharge would be in the order of:

- Water for generation of power at SGS and Shimsha Power House;
- Requirement of water for Bangalore Water Board; and
- Remaining water for generation of power by the proposed power plant of AHPL.

A copy of the Government order highlighting the same is enclosed as **Annexure-4.**

During the project conceptualization, SGS was not operating at its full capacity and hence there was water that was discharged for AHPL. AHPL went ahead with the project, considering the water availability. However, post revamp, the SGS project is operating at its full capacity and the water discharge to SGS has increased, thereby reducing the water flow to AHPL, which has resulted in less power generation. Also, with the increasing demand of SGS and the Bangalore water supply board, the water to the project has considerably reduced.

Also, the prevailing practice barrier is not plausible. It states that in India and in state of Karnataka too, it is a common practice to invest in medium and large-scale fossil fuel fired electricity project. However, about half of the total electricity supplied to the Karnataka state gird in the fiscal year 2003-2004 is from hydro and nuclear.

AHPL Response: The total thermal generation in the Karnataka State in the year 2003-2004 constitutes about 57% as against 29% from Hydro. The hydro power generation in the Karnataka State is from the large scale hydro power plants operated by the State owned electricity utilities operated by KPTCL and the Nuclear power is the contribution from the power plants operated by the Central government. AHPL would also like to mention that the power generation from an Independent Mini Hydel Power Project in Karnataka State in the year 2003-2004 constituted only about 158.09 Million kWh as against the total generation of 25040 Million kWh, which is about 0.63[1]% of the total generation. This shows that the investing in small hydroelectric sector was not a common practice. Details of generation from Independent Mini Hydel Power Plants are given in **Annexure-3.**

[1] Karnataka Power Corporation Limited

The DOEs validation of baseline scenario is weak. The validation report (page 9) states that "The most economically attractive alternative among the alternatives mentioned above, i.e. power from grid connected power plants has been selected as the baseline scenario……". However, no investment analysis has been presented anywhere in the PDD. The DOE should explain how it concluded that the existing grid is the most economically attractive one if it did not conduct an investment analysis.

AHPL Response: The guidelines from Central Electricity Regulation Commission (CERC) clearly indicate that the return on investment for Independent Power Producers will be considered at 16% for arriving at power tariff as evidenced in **Annexure-5**. AHPL also considered this as the basis and went ahead with the project. In the Indian scenario, all the IPPs do not have an ideal situation of generation and every project has an individual risk profile. AHPL also had the hydrology risks associated with the project, however it went ahead with the project. Subsequently, the hydrology risks got aggravated due to the fact that, post revamp, the SGS project is operating at its full capacity and the water discharge to SGS has increased, thereby reducing the water flow to AHPL.

AHPL also had to encounter the risk of reduction in tariff, which has resulted in financial losses. These risks have resulted in reduction of IRR of the project. The details pertaining to the audited statement of cash flow had been provided to the DOE. The extract of the same has been enclosed as **Annexure-6 (a to f)** for your kind reference. It can be noted that the IRR for the project without CDM revenue is negative (-2%) and with CDM revenue will be around 2%. It is evident from the exhibit that if CDM revenues will not be available, the plant may not continue to operate because of uneconomical situations. The CDM revenues if made available, will result in the ensuring financial stability to the project and result in export to the grid and eventually result in emission reduction. (Many of the renewable energy IPPs in India, which have been registered and are receiving CDM revenues, have also considered the CERC IRR of 16% as the basis for their project. However, due to their individual risk profile, they have not been able to attain the prescribed IRR (16%) and subsequently the CDM revenues have made them financially stable.)

2. ***The project has used small-scale baseline methodology I.D- Grid connected renewable electricity generation. It uses the combined margin (i.e. an average of approximate operating margin and the build margin) approach to determine the baseline emission factor. The PDD, however, does not provide any data used to calculate the BM emission factor. Annex 3 of the PDD (baseline information) provides only the electricity generation data of the southern grid. It does not provide emission data, hence it is not clear how the operating margin emission factor of 0.997 kg CO_2/kWh, is determined. It is not clear how the DOE validated emission factors (i.e. OM emission and BM emission factor) as data provided in the PDD are not enough to validate these factors.***

   AHPL Response: The detailed emission factor calculations have been attached in the revised PDD, which is enclosed as **Annexure-7** for your kind reference.

3. ***The last paragraph in Page 6 of the PDD states that the capacity of the turbine is 3,300 KW. The table following the paragraph shows the rated capacity of the turbine as 3,475 kW. Please clarify.***

   AHPL Response:. The rated capacity of each generator is 3300 K.W. (3.3 M.W.). The generator has a continuous over load capacity of 10%. In Hydro-Electric Project, the Prime mover for the Generator is the Hydro-Turbine. The prime mover in the turbine has more capacity to give a rated output at the generator terminals, which means that the efficiency of the turbine will be taken into consideration, to give the rated K.W. output at generator terminals. Hence, the Turbine output (K.W.) will always be more than the Generator output. (Turbine 3475 KW, Generator 3300 KW)

4. ***The electricity sold (or to be sold) by the project to the grid is not available in the PDD, so its not possible to calculate the emission mitigation. Please provide electricity generation, own use (or auxiliary consumption) and electricity export for the first crediting period.***

   AHPL Response: The electricity generated and exported by AHPL to the grid is enclosed as **Annexure-8** for your kind reference.

Request for review no. 2 & 4:

1. ***The prevailing practice barrier is not plausible. It states that in India and in state of Karnataka too, it is a common practice to invest in medium and large-scale fossil fuel fired electricity project. However, about half of the total electricity supplied to the Karnataka state gird in the fiscal year 2003-2004 is from hydro and nuclear.***

   AHPL Response: The total thermal generation in the Karnataka State in the year 2003-2004 constitutes about 57% as against 29% from Hydro. The hydro power generation in the Karnataka State is from the large scale hydro power plants operated by the State owned electricity utilities operated by KPTCL and the Nuclear power is the contribution from the power plants operated by the Central government.

   AHPL would also like to mention that the power generation from an Independent Mini Hydel Power Project in Karnataka State in the year 2003-2004 constituted only about 158.09 Million kWh as against the total generation of 25040 Million kWh, which is about 0.63[2]% of the total generation. This shows that the investing in small hydroelectric sector was not a common practice. Details of generation from Independent Mini Hydel Power Plants are given in **Annexure-3.**

   The DOEs validation of baseline scenario is weak. The validation report (page 9) states that "The most economically attractive alternative among the alternatives mentioned above, i.e. power from grid connected power plants has been selected as the baseline scenario……". However, no investment analysis has been presented anywhere in the PDD. The DOE should explain how it concluded that the existing grid is the most economically attractive one if it did not conduct an investment analysis.

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[2] Karnataka Power Corporation Limited

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   AHPL Response: The electricity generated and exported by AHPL to the grid is enclosed as **Annexure-8** for your kind reference.

We hope the above clarifications are in line with your requirements and we sincerely look forward to the registration of our project activity. As desired, in case of any further clarifications, our contact person would be Mr. Navin Mathur (91 98670 15373)

Warm Regards

For Atria Hydel Power Limited

C.S.Sunder Raju
Director