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December 18, 2008

The Officer-In-charge CDM and
Secretary to the CDM Executive Board
UNFCCC,
Bonn, Germany

Dear Sir,

**Sub:** Request for review for: "24 MW Perla Mini Hydel Project, Karnataka, India" (2112)
**Ref : Communication from UNFCCC dt.09 Dec, 2008**

With reference to your communication referred above we are pleased to furnish our response item wise on the issues raised in the requests for review for the kind consideration of the board to implement the review process.

Thanking you,

Yours faithfully,
For **AMR Power Private Limited**

**(C.Purushotham)**
**Authorised Signatory**

**Encl:**
Annex – 1 : Revised financial analysis which includes sensitivity analysis for tariff and O & M costs
Annex – 2 : Extracts from DPR supporting hydrological barrier
Annex – 3 : Tariff regulations

**Response to Request for Review – 24 MW Perla Mini Hydel Project, Karnataka, India (2112)**

| | Review queries | Response |
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| 1 | The DOE should clarify how it has validated the investment analysis, in line with EB 41, Annex 45, including: | That the investment analysis has been validated as per the Guidance on the Assessment of Investment Analysis (Annex 45 of EB 41) would be evident from the following:<br><br>i) DPR is the basis for the input values considered in the investment analysis and were valid at the time of decision making, which took place on July 19th 2005; input value relating to tariff has been taken from PPA and terms of loan has been taken from sanction letter received from bank. Thus, the input values taken into account have been considered appropriate;<br>ii) input values in respect of capital expenditure were also cross checked with quotations and contracts entered into by the company and a certificate from the Chartered Accountant;<br>iii) though the project activity has opted for fixed crediting period, the investment analysis has not been restricted to 10 years, but has been carried out for 20 years;<br>iv) in computing IRR, depreciation (there are no other non cash expenditure) has been taken as cash inflow;<br>v) interest has been added back in computing the IRR;<br>vi) salvage value has been accounted for in the terminal year;<br>vii) spread sheet has been presented in transparent manner with algorithms<br><br>Thus, the validation has taken into account the guidance given vide Annex 45 of EB 41. |
| | (a) the benchmark, in particular the appropriateness of the country risk premium of 8.2% and a 2000 report as a reference for an investment decision taken in 2006; | a) Country risk premium of 8.2% was chosen because it was the most conservative of the risk premiums available at the time of decision making. In this context we had three published studies on risk premium for India viz.,<br>i) Prof J.R. Verma (2006), Professor of Finance at Indian Institute of Management, Ahmedabad and former Full time Member of Securities and |

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| | | Exchange Board of India study, which have arrived at a risk premium of 8.75%[1].<br>ii) Prof. Rajnish Mehra (2006), University of California, Santa Barbara and National Bureau of Economic Research, who has arrived at a risk premium of 9.7%[2].<br>iii) CRISIL (2000) study which has estimated the risk premium at 8.2%[3].<br><br>Since of the three published studies, 8.20% is the *lowest*, the risk premium of 8.2% was chosen. Subsequent study on risk premium (2008) published by Aswath Damodaran, places the risk premium at 8.54%[4]. Using Prof. Verma's risk premium, the benchmark would be 16.03% and based on Prof. Mehra's risk premium, the benchmark would be 16.98% - and hence the chosen bench mark of 15.48% is conservative. |
| | (b) the method applied to account for the salvage value in line with the operational lifetime; and | b) As mentioned above, the investment analysis has been done for 20 years. It is in line with the guidance given vide Annex 45 of EB 41, which states, "Both project IRR and equity IRR calculations shall as a preference reflect the period of expected operation of the underlying project activity (technical lifetime), or - if a shorter period is chosen - include the fair value of the project activity assets at the end of the assessment period. In general a minimum period of 10 years and a maximum 20 years will be appropriate". During the 20 year period, 95% of the investment has been depreciated; the residual value, i.e., balance 5% has been taken as the salvage value at the terminal year. |

[1] Prof. Jayant R. Verma and Samir K. Barua, *A First Cut Estimate of the Equity Risk Premium in India* Indian Institute of Management, Ahmedabad, can be accessed at http://www.iimahd.ernet.in/~jrvarma/papers/WP2006-06-04.pdf

[2] *The Equity Premium in India*, Prof. Rajnish Mehra, can be accessed at http://www.academicwebpages.com/preview/mehra/pdf/Equity%20Premium%20in%20India.pdf

[3] *Cost of Capital for Central Sector Utilities*, CRISIL Advisory Services can be accessed at http://cercind.gov.in/rep1304.pdf

[4] *Country Default Sprads and Risk Premiums*, Aswath Damodaran, can be accessed at http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html

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| | (c) the exclusion of tariff and O&M costs among the parameters for the sensitivity analysis. | c) Sensitivity analysis has been done with a 10% variation (on either side) of project cost and generation.<br><br>We submit that it makes no difference in IRR whether generation is varied or tariff is varied. IRR will vary to the same extent in both the cases, as in either case what is subjected to variation is income, which is nothing but a product of generation and tariff. Though it makes no difference, we did not use 'tariff' as variable and chose 'generation' instead because the tariff is governed by PPA and hence is not subject to variation. Though the tariff is valid only for 10 years, the same tariff has been assumed for 20 years though the probability of tariff getting reduced from the 11th year onwards is high. Any assumptions on the tariff applicable from 11th year onward is necessarily highly uncertain as of today and do not provide a reliable basis for investment decisions. However, it is clear that this tariff will be substantially lower for the following reasons:<br>• by that that time there will not be any element of interest for loans involved.<br>• in the absence of a liberalized electricity market, the PP will have a very weak negotiating position vis-à-vis the tariff authorities who themselves have a strong interest to minimize tariffs.<br>• generally, downward revision of tariff is the order of Indian regulators. For example, the tariff in Karnataka, which was Rs.2.90/kWh with 2% escalation every year has been brought down to Rs.2.80 without escalation for subsequent years.<br><br>PP has submitted a sensitivity analysis subjecting tariff to variation and it could be seen there from that the results do not vary from the sensitivity analysis carried out varying generation.<br><br>As regards O&M costs, sensitivity analysis was not carried out because it does not constitute 20% of the cost (as per Annex 45 of EB 41). Nevertheless, as desired, sensitivity analysis has been carried out. With a 10% reduction in O&M cost, IRR will go up to 13.58% and with a 10% |

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| | | increase, IRR will drop down to 13.18%.<br><br>The IRR analysis which includes the sensitivity analysis for tariff and O & M Costs is attached in **Annex - 1**. |
| 2 | Further clarification is required on how the DOE has validated the barrier analysis. | As it could be observed from the PDD that the PP has used Investment barrier, technological barrier and other barrier to demonstrate the additionality. DOE has validated each of the barriers.<br><br><u>Hydrological barrier</u><br><br>Though the PP has identified hydrological barriers, viz., (a) limitations arising out of the water flow in the river, (b) creating an operating head and discharging tail race water in to the rive bed (c) likely reduction in water non-availability in case of expansion of the capacity of MRPL, and (d) irrigation department's right over the discharge of water (relevant extracts from DPR are attached in **Annex – 2**), DNV has considered only the limitation arising out of the water flow in the river as a barrier. This barrier has been accepted, as the PP was able to substantiate this claim through a detailed hydrological study. Though DNV was able to understand the existence of other barriers when it undertook site visit, due to non-availability of published evidence, other barriers were not accepted.<br><br><u>Institutional barriers</u><br><br>PP has demonstrated through relevant regulations that the tariff has been reduced downwards by the State Utility over the last few years. DNV has also independently verified the veracity of the statements made and the documents submitted by the PP and found them to be correct.<br><br>It is true that originally KPTCL was offering the tariff recommended by Ministry of New and Renewable Energy (then, Ministry of Non-conventional Energy Sources), Govt. of India,(Rs.2.25 per kWh with an escalation of 5% every year and base year being 1994-95) which favored the development of renewable energy projects. Subsequently, the tariff was revised to Rs.2.90 per kWh with an increase of 2% every year for escalation. This policy underwent |

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| | | further change and the price is now fixed at Rs.2.80 per kWh without any escalation (relevant tariff regulations are attached in **Annex 3**). Though the company has signed a firm power purchase agreement (PPA) with a tariff rate of Rs.2.80 per kWh without any escalation, the project may face uncertainties in future if the tariff rate is reduced further. As stated in the Validation Report, such a policy is detrimental to the IPP as their viability is likely to get affected very adversely. |
| 3 | The DOE should clarify how it has validated the common practice analysis, in particular the<br>(a) selection of similar activities considering that the total capacity of the project activity is 24 MW; and<br><br>(b) the essential distinction between the project activity and the remaining similar project activities that are constructed after 2000 but not registered or being requested for registration as CDM. | Similar project activities are considered as those having a capacity of more than 15 MW as these alone are required to follow Additionality Tool as well as similar approved methodology ACM0002. An analysis of similar project activities constructed after the year 2000 is made.<br><br>Projects at serial number 1 to 17 in the published list made by the State nodal agency (KREDL) were commissioned before the year 2000 (Source: http://www.kredl.kar.nic.in/Commissioned%20list2.xls ).<br><br>The capacity of the project activity is 24 MW. As per the published data from state nodal agency (KREDL), there were only 6 projects, which were having a capacity of more than 15 MW. Hence, similar activities comparable to the candidate project are 6 in number, the details of which are furnished below:<br><br>a) Subash Kabini Corporation (P) Ltd. - 20 MW - Ref.No.0087<br>b) International Power Corporation Ltd. - 18 MW – Ref.No.0312<br>c) Sandur Power Company (P) Ltd. – 22 MW – Ref.No.0816<br>d) Bhoruka Power Corporation Ltd., - 24.75MW – Ref.No.0836<br>e) Pioneer Genco Ltd. – 24.75 MW – Ref. No.1273<br>f) Pioneer Power Corporation Ltd., - 24.75MW – Ref.No.1345 (formerly Chanakya Cements Limited)<br><br>All the above projects are already registered as CDM projects. Therefore all projects are similar size are availing CDM benefits which confirms that implementation of similar projects are made by availing CDM benefits. |