

### Nimoo Bazgo – EB Review Requests & Clarifications

Sl.#	Questions	MGM's Final Response												
1	The DOE should clarify how it has validated the input values in the investment analysis in line with EB 41, Annex 45, paragraph 6.	<p>EB41/Annex 45/para 6 states:</p> <p><b>"6. Guidance:</b> Input values used in all investment analysis should be valid and applicable at the time of the investment decision taken by the project participant. The DOE is therefore expected to validate the timing of the investment decision and the consistency and appropriateness of the input values with this timing. The DOE should also validate that the listed input values have been consistently applied in all calculations.</p> <p><b>Rationale:</b> The use of investment analysis to demonstrate additionality is intended to assess <b>whether or not a reasonable investor would or not decide to proceed with a particular project activity without the benefits of the CDM</b>. This decision will therefore be based on the relevant information available at the time of the investment decision and not information available at an earlier or later point. Any expenditures occurred prior to the decision to proceed with the investment in the project will not impact the final investment decision as such expenses sunk costs which remain unaffected by the decision to proceed or not with a project activity."</p> <p>Project developer has provided all the relevant information in responding to questions raised during the validation process;</p> <p>Construction Work awarded on: 23.09.2006</p> <p>Signing of Agreement: 30.10.2006</p> <p>Hence the critical dates for investment analysis are immediately prior to this. We have provided the following documentation:</p> <table border="1"> <thead> <tr> <th>Type of data or information</th><th>File name with data</th><th>Date of document</th></tr> </thead> <tbody> <tr> <td>Investment requirements</td><td>Cost abstract Nimoo Bazgo.pdf</td><td>Cost estimates as of December 2005</td></tr> <tr> <td>Investment requirements</td><td>Proof - Equity Nimoo Bazgo.pdf</td><td>24 August 2006</td></tr> <tr> <td>Power purchase agreement</td><td>PPA - Nimoo Bazgo.pdf</td><td>26 October 2005</td></tr> </tbody> </table> <p>The detailed calculations based on these assumptions were also presented as Excel books, specifically "Nimoo Bazgo IRR.xls"</p>	Type of data or information	File name with data	Date of document	Investment requirements	Cost abstract Nimoo Bazgo.pdf	Cost estimates as of December 2005	Investment requirements	Proof - Equity Nimoo Bazgo.pdf	24 August 2006	Power purchase agreement	PPA - Nimoo Bazgo.pdf	26 October 2005
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2	The DOE is requested to clarify how it has validated: a) That the electricity tariff applied in the investment analysis is in line with the PPA signed in October 2005	<p>The PPA signed in October 2005 under point no. 6.1 states "The tariff to be charged and its associated Terms and Conditions for the energy to be supplied by NHPC from the project shall be as per tariff Notifications/Orders/directions issued by CERC from time to time."</p> <p>Please see the "SR-nb" tab for Nimoo Bazgo Project in the attached Excel file "NB IRR for CDM.xls". Please also see the attached file "final regulations_terms &amp; condition.pdf" which include CERC guidelines for hydro power projects. All the figures in the Excel file are taken from the project cost figures or the CERC guidelines. We have added comments on each figure in the Excel file for ease of understanding. It can thus be clearly seen that the calculation of the tariff is in line with the PPA signed in October 2005.</p>												

		<p>Note that as per CERC guidelines (page 40, item 39), some energy is given free to the home state. The CERC guidelines indicate calculation of primary energy rate, which works out to Rs. 3.08, as shown in E13 of tab “SR-nb” of “NB IRR and electricity tariff.xls”. Secondary energy charge equals “Saleable Primary Energy x Primary Energy Rate”. Since not all energy is saleable, this is equivalent to selling all the energy at a lower price considering that some is given free. This leads to the value of Rs. 2.71 shown in G13 of the same tab/Excel. I trust the calculation is satisfactory.</p>
	<p>b) The benchmark of 10.25%, in line with the data provided in the spreadsheet, which mentions an 8% interest on loan rate.</p>	<p>Our economic IRR calculation was presented earlier in the simplified spreadsheet “Nimoo Bazgo IRR.xls”, where of course the IRR is determined. It is also part of the longer Excel workbook: “NB IRR and electricity tariff.xls”. Here the tab “SR-nb” includes a calculation done by NHPC using three different % values: 14% Return on Equity, 8% Interest on Loan, 10.25% Interest on Working Capital. The longer spreadsheet is used to explain very small differences in the investment level between our short spreadsheet and the cost data assumptions given in the two PDF files noted above (Cost abstract Nimoo Bazgo.pdf and Proof - Equity Nimoo Bazgo.pdf). The differences are because of assumptions on interest during construction (IDC). It is only for the IDC calculation that the three different % values are needed. The actual IRR is determined using procedure indicated in EB41/ Annex 45, using economic rate of return approach, as shown in the tab “err-nb” of “NB IRR and electricity tariff.xls”. The benchmark rate of 10.25% was used as explained in the PDD, and copied below.</p> <p>“Benchmark prime lending rate for public sector banks as of December 2005 (when IRR calculations were made and reported in Table 4 below): 10.25-11.25% (Source: Reserve Bank of India, Annual Report 2005-06, Table 1.58: Movements in Deposit and Lending Rates. <a href="http://rbidocs.rbi.org.in/rdocs/AnnualReport/PDFs/72286.pdf">http://rbidocs.rbi.org.in/rdocs/AnnualReport/PDFs/72286.pdf</a>).</p> <p>“Table 11.1: Cash Reserve Ratio and Interest Rates: 2005-06” of the same report indicates a PLR range of 10.25 – 10.75%, considering five major banks.</p> <p>Thus, a benchmark IRR of 10.25% has been chosen as conservative.”</p> <p>Please refer to the rationale indicated item number 1 above.</p> <p>The use of investment analysis to demonstrate additionality is intended to assess <b>“whether or not a reasonable investor would or not decide to proceed with a particular project activity without the benefits of the CDM”</b>. (See EB41/Annex 45/para 6, quoted above).</p> <p>The use of economic IRR is permitted for the determination of additionality. It is not necessary to undertake financial IRR calculations. The IRR is determined using the procedure indicated in EB 41/Annex 45, using economic rate of return approach as shown in “Nimoo Bazgo IRR.xls” sent earlier and is also included in the tab “err-nb” of above mentioned Excel file (NB IRR and electricity tariff.xls).</p> <p>The three interest rates mentioned are used for setting the tariffs. The percentage values used are on the following basis. Return on equity of 14% is mentioned in the CERC guidelines page. 38 of the file “final regulations_ terms &amp; condition.pdf”. Interest on working capital of 10.25% is again based on CERC guidelines (page 40 of the same document) which stipulate</p>

		<p>that the rate of interest shall be the short-term Prime Lending Rate of State Bank of India as on 1.4.2004 or on 1st April of the year in which the generating unit/station is declared under commercial operation, whichever is later. The tariff was calculated using 30% equity and 70% loan as shown in "Proof - Equity Nimoo Bazgo.pdf", "Cost abstract Nimoo Bazgo.pdf" and used in the tariff calculation (see tab "SR-nb" of "NB IRR and electricity tariff.xls").</p> <p>A "reasonable investor" (as indicated in EB41/Annex 45/para 6) would normally expect a rate of return above the prime lending rate assuming that his own borrowing is at the prime lending rate. Hence the benchmark IRR of 10.25% is considered to be appropriate and conservative.</p> <p>If we consider a 30% equity component at 10.25% and 70% loan at 8%, the weighted average interest rate would be 8.675%. Even if we consider this to be the benchmark rate, note that the project IRR of 7.6% is lower.</p>
3	The DOE is requested to clarify how similar activities were included in the common practice analysis.	<p>The CEA website data, was used to prove that power plants with capacity less than 50MW is not a common practice in the Jammu and Kashmir state and northern region of India.</p> <p>CEA database was used to carry out common practice analysis and the details of similar plants were obtained from the database, which is publicly made available by Central Electricity Authority, Government of India. Indeed a copy of the relevant data and the source are given in Annex 3 of the PDD.</p>
4	a) The change in the combined margin emission factor from the PDD made available for public consultation.	When the PDD was uploaded on UNFCCC website the Combined Margin emission factor was calculated based on the latest version of the methodology and power plant data available at the time. During the course of validation the earlier version became outdated and then the combined margin calculation was done using the latest available version and so there is a change in the emission factor.
	b) How the grid emission factor was validated in line with the requirements of the methodology.	Grid emission factor was determined in accordance of ACM0002 Version 6. The data used are publicly available on the website of Central Electricity Authority (CEA), Government of India ( <a href="http://www.cea.nic.in">www.cea.nic.in</a> ). The validation team checked the original data set and the calculations as reported in Annex 3 of the PDD.
5	The DOE should confirm that the surface area at full reservoir level is to be recorded at the start of the project as required by the methodology.	NHPC has stated in a letter dated 27 November 2008, that surface area monitoring at full reservoir level at the start of the project activity will be carried out. (See NHPC-Surface Area Letter.jpg, attached.) Moreover, this monitoring parameter has been added to the revised PDD, version 11.