

Sao Paulo, 02 June 2009

Clarifications on issues associated with registration request for review
Salto Small Hydro Power Plant Project – A Brascan Energética S/A Project Activity (2380)

Although 2, 3 and 4 clarifications requests are addressed to the DOE, Project Participants (PPs) believe that the below provided information is helpful to adequately address the raised issue.

In the following text, the reasons for request are *italicized* and PPs comments are in blue.

1. Further clarification is requested on the validation of the method/procedure followed to determine the benchmark and the suitability of the benchmark as compared to other similar CDM projects in Brazil.

The method used for the investment analysis of Salto project was the Benchmark Analysis – Option III of the Tool for the Demonstration and Assessment of Additionality.

Option I – Simple Cost Analysis was not used considering that the CDM project activity and the alternatives identified in Step 1 generate financial and economic benefits other than CDM related income.

Option II – Apply Investment Comparison Analysis was not used considering that investment in small hydropower plants construction is Brascan's business model and, then, a thermoelectric power plant construction, i.e., is not an alternative.

According to the PDD (page 11), the benchmark used by Brascan Energética S/A¹ at the time of Salto project conception was the Return on Assets – RoA adjusted to the risk profile of the investment – 20 % for Salto project. RoA measures the company's earnings in relation to all of the resources it had at its disposal. Considering the current practice of Brascan Energética S/A, the company's Weighted Average Cost of Capital – WACC was also calculated based on values at the time of the project conception – 21.6 %. As presented in the PDD (page 11), parameters observed in global financial markets are used for WACC calculation following the Tool for the Demonstration and Assessment of Additionality. Both RoA and WACC were compared to the project IRR (18.3%).

Brascan Energética S/A always used RoA as the most appropriated benchmark to analyze its projects feasibility and, currently, Brascan adopted WACC calculation. Considering Brascan CDM projects already registered², although these projects demonstrated additionality through barrier analysis, all of them considered Brascan's internal benchmark of 20% also. At that time, the Brazilian Prime Rate (SELIC) was an official source, which presented a rate approximated to the company's internal benchmark (financial indicator for barriers mentioned in the registered PDDs - 19.75%), and was used as the most appropriate parameter to make a comparison with the project's IRR, demonstrating the projects additionality.

All evidences related to the choice of benchmarks and its calculations were presented to and validated by the DOE at the time of validation.

In order to make a benchmark comparison, recent similar CDM projects in Brazil were analyzed. Among eight small hydropower plant projects submitted and with Letter of Approval issued by the

¹ Brascan Energética S/A is the major shareholder of Salto Jauru Energética S/A. Salto Jauru Energética S/A is a Special Purpose Company created to control Salto small hydropower plant operations.

² Brascan led the CDM registration of 4 CDM Projects, which includes 10 small hydropower plants: Palestina (0477), Nova Sinceridade (0543), Passo do Meio, Salto Natal, Pedrinho I, Granada, Ponte and Salto Corgão (0519), Cachoeira Encoberta and Triunfo (0520).

Brazilian DNA in 2008 and 2009, six used WACC as benchmark³. This demonstrates that besides Brascan Energética S/A other companies believe that WACC is the most suitable benchmark in the decision making context.

2. The DOE is requested to clarify further how it has validated that all the input values to the investment analysis are appropriate for the underlying project activity, in particular the investment cost and the electricity tariff. In doing so, DOE shall validate and cross check, based on reliable and credible evidence, the appropriateness of the input values and the application of sensitivity analysis on the plant load factor and the electricity generations from the project.

Variations in the project's internal rate of return (IRR) only can be done increasing project's revenues (sale of electricity) and reducing operation and maintenance costs. Therefore, possible reasonable alterations for the project are related to the increase of the energy price and reduction of costs (management, operations and transmission lines), as presented in the PDD (page 12). Expenses as ANEEL fee and concession were not analyzed considering that they are fixed parameters according to the Brazilian legislation and they will no change in a long term period.

Financial analyses were performed altering each of these parameters by 10%, as requested by DOE, and assessing what the impact on the project IRR would be. It is important to mention that the average Brazilian inflation in 2006 was equal to 3.14%⁴. The use of 10% of variation, around three times the 2006 inflation rate, demonstrates that this was a very conservative analysis.

The energy price considered for this project are based on price established in the projects' PPA (Power Purchase Agreements) for the period of 20 years, and then they will not change in the coming years. Then, an increase of 10% in the energy price was conducted considering the subsequent period after 20 years. Also, it was made a reduction in 10% of the costs as mentioned above. It is important to mention that project owner has an O&M service agreement, which determines the O&M service price. This service agreement was one of the guarantees presented to BNDES (Banco Nacional Desenvolvimento Economico e Social), that has financed the construction of the project. It is important to highlight that the all information presented to BNDES went through a due diligence where all costs and revenues were double checked. Therefore, values are very realistic and a reduction of 10% is very conservative.

Variations in Salto project made in the PDD are the most credible and realistic assumptions considering the project specificities. Then, the sensitivity analysis follows the Tool for the Demonstration and Assessment of Additionality (version 5.2), which mentions that the sensitivity analysis shall include a reasonable and realistic variation in the critical range of assumptions, providing a valid argument in favour of additionality.

Variations in the project's revenues through an increasing in the energy generation or load factor are not reasonable alterations considering that electricity generation estimative is based on the assured energy established by Mines and Energy Ministry⁵ (Ministério de Minas e Energia – MME). This number is established based on hydrological data of the river, considering at least 30 years. Also, project sponsor signed turnkey EPC contracts for Salto project, in which costs are fixed in the contract and they will not change.

³ Brazilian DNA website. Comissão Interministerial de Mudança Global do Clima (CIMGC). Projetos aprovados. Available at: <<http://www.mct.gov.br/index.php/content/view/57967.html>>. Accessed on May 25th, 2009.

⁴ The IPCA is used as a parameter for the inflation targeting system. In 2006 IPCA's accumulated growth was equal to 3.14%. This index is published by several institutions in the country. One of these institutions is the Central Bank of Brazil in its annual bulletins available at <http://www.bcb.gov.br/?BOLETIM2006>.

⁵ MME Resolution # 103, dated March 3rd, 2005. The methodology to determine the assured energy is based on 30 years historical data at least i.e. river flow data, downstream and upstream levels, and others.

All financial documents and evidences used in the sensibility analysis were presented to DOE at the time of validation.

3. Further clarification is requested from the DOE on how they have validated that the 11 projects in the state of Mato Grosso have applied CDM incentives and therefore the project is not the common practice. In doing so, the credible evidence and sources of such information shall be provided.

As stated in the PDD (page 16), small hydropower plants (SHPPs) that started operations from 2005 to 2007 were analyzed through ANEEL publicly available data: Camargo Côrrea, Faxinal II, Ombreiras, Salto Corgão, Aquarius, Canoa Quebrada, Garganta da Jararaca, Sacre 2, Senador Jonas Pinheiro, Braço Norte IV, José Gelásio da Rocha, Rondonópolis. These 12 SHPPs totalizes 13 generating units, in which 11 SHPPs received some kind of incentives (CDM and/or PROINFA⁶). The only SHPP that did not publicly receive incentives was Camargo Côrrea (which has 2 generating units). Essential distinctions between the project activity and Camargo Côrrea SHPP are explained in the PDD (sub-step 4b, page 16).

Information of projects that received CDM incentives were taken from the UNFCCC website (table 2). Although the Tool for the Demonstration and Assessment of Additionality (version 5.2) states that: “other CDM project activities (registered project activities and project activities which have been published on the UNFCCC website for global stakeholder consultation as part of the validation process) are not to be included in this analysis”, PPs assessed the SHPPs that started operations in the last three years data available to support Salto project additionality.

Table 1 – Small hydropower plants that are claiming CDM incentives and started operations from 2005 to 2007

Nr.	SHPP	CDM PROJECT	UNFCCC LINK
1	Faxinal II	Faxinal II Small Hydroelectric Power Plant	http://cdm.unfccc.int/Projects/Validation/DB/UX5FMWDY006B4TBW16JM4ESXHKWU6Y/view.html
2	Ombreiras	ARAPUtanga Centrais ELétricas S. A. - ARAPUCEL - Small Hydroelectric Power Plants Project	http://cdm.unfccc.int/Projects/Validation/DB/XZSCGC87CDM04G1KB5I8XKBEMJ47V6/view.html
3	Salto Corgão	Passo do Meio, Salto Natal, Pedrinho I, Granada, Ponte and Salto Corgão Small Hydroelectric Power Plants (the Brascan Project Activity)	http://cdm.unfccc.int/Projects/Validation/DB/C49QWBU67W8IONTYZ8GPJQHU1UWRZI/view.html
4	Aquarius	Aquarius Hydroelectric Project	http://cdm.unfccc.int/Projects/Validation/DB/HL3H6D6O18HNXYOD9XKZDVX7P1P14Z/view.html
5	Canoa Quebrada	Atiaia Energia S/A - Buriti and Canoa Quebrada Small Hydropower Plants	http://cdm.unfccc.int/Projects/Validation/DB/NKSQOI77SRXGU79UYBN6K7NH8ZJ9ST/view.html
6	Garganta da Jararaca	Garganta da Jararaca, Paranatinga II e Porto das Pedras Small Hydroelectric Power Plants (SHPP)	http://cdm.unfccc.int/Projects/Validation/DB/1NYKHK2HDI4U32NOR1QEA918QEOCHP/view.html

⁶ Law # 10,438 dated April 26th, 2002, created PROINFA (from the Portuguese “Programa de Incentivo às Fontes Alternativas de Energia Elétrica”, in a free translation, Alternative Electricity Sources Incentive Program). Among others, one of the initiative’s goals is to increase the renewable energy sources share in the Brazilian electricity market, thus contributing to a greater environmental sustainability.

		– Atiaia Energia S.A. Project Activity	
7	Sacre 2	Brasil Central Energia S.A. – Sacre II Small Hydro Power Plant Project	http://cdm.unfccc.int/Projects/Validation/DB/8EWE2TKTCNZT2SQ7PR5UJGZ70FE70H/view.html
8	Braço Norte IV	Braço Norte IV Small Hydro Plant	http://cdm.unfccc.int/Projects/Validation/DB/OTZ9K9NN8O95AUF67JY92DGCSLT5PE/view.html

Information of projects that received PROINFA incentives were taken from ANEEL website (table 2).

Table 2 – Small hydropower plants that are claiming PROINFA incentives and started operations from 2005 to 2007

Nr.	SHPP	ANEEL LINK
1	Senador Jonas Pinheiro	http://www.aneel.gov.br/cedoc/bren2004065.pdf
2	José Gelásio da Rocha	http://www.aneel.gov.br/cedoc/bren2004065.pdf
3	Rondonópolis	http://www.aneel.gov.br/cedoc/bren2004065.pdf

Considering tables above, all information used for this common practice analysis is traceable and was presented to DOE.

Considering the common practice analysis for the state of Mato Grosso, where Salto project is located, among 12 SHPPs that started operations from 2005 to 2007, 11 received some kind of incentives (which represents 98.3 % of the total 229.1 MW).

One can therefore see that common practice for SHPPs is the implementation of the activity through the incentives. Also, through the numbers above, it can be proved that a strong incentive is required to promote the construction of renewable energy projects in Brazil, where it includes small hydropower plants projects.

It is important to mention that more than 75 % of the Brazil's installed capacity is composed by large hydro and 21 % by thermal power stations (PDD, Figure 4, page 14). Only 1.7 % of Brazil's installed capacity comes from small hydro power sources (1.6 GW out of a total of 98.1 GW).

Moreover, in the most recent energy auctions, which took place between 2005 and 2007 from the total of 9,594 MW sold, 5,888 MW (61.3%) will come from fossil fuel fired thermal power plants, from which 2,152 MW come from natural gas and 2,514 MW fuel oil fired thermal power plants, i.e., 22.4% and 26.2% of the total sold respectively⁷.

4. DOE is requested to clarify how they have validated the data vintage applied, in calculating the emission factor of the grid, is the latest data available at the time of submission of PDD for validation.

⁷ ESPARTA, A. R. J. (2008). Redução de emissões de gases de efeito estufa no setor elétrico brasileiro: a experiência do Mecanismo de Desenvolvimento Limpo do Protocolo de Quioto e uma visão futura. Approved PhD Thesis, Universidade de São Paulo (available at <http://www.teses.usp.br/teses/disponiveis/86/86131/tde-29042008-160752/>).

The emission factor used by Salto project is 0.2611 tCO₂/MWh for the South-Southeast-Midwest system considering the most available data at the time of validation ⁸ (from 2003 to 2005). The delineation used in the PDD was the division in two subsystems of the Brazilian Interconnected System (South-Southeast-Midwest and North-Northeast). This delineation and the emission factor calculation were validated by DOEs and used in over than 50 registered CDM projects up to then.

According to the Tool to Calculate the Emission Factor for an Electricity System as referred in the ACM0002 (version 7) used by Salto project: *"If the DNA of the host country has published a delineation of the project electricity system and connected electricity systems, these delineations should be used. If such delineations are not available, project participants should define the project electricity system and any connected electricity system and justify and document their assumptions in the CDM-PDD"*.

Considering the Tool mentioned above, Brazilian DNA release Resolution nr. 8 ⁹ dated May 26th, 2008 and took into effect on July 19th, 2008, containing the following decisions:

Art. 1 - Adopt the single system comprised of the union of National Interconnected System (NIS) subsystems as a definition of the "Project Electric System" for any Clean Development Mechanism (CDM) project activity connected to the NIS, supplying or using electricity from the grid, and applying the ACM0002 and AMS-I.D. methodologies and/or the "Tool to calculate the emission factor for an electricity system" approved by the CDM Executive Board.

Sole paragraph - This definition, when applicable, shall be extended to any other methodologies dealing with project activities connected to the grid that come to be approved by the CDM Executive Board, unless expressed otherwise in a deliberation by this Commission.

Art. 2 - Regularly publish emission factors in t CO₂/MWh, calculated for the single system and made available by month, day and hour on the Interministerial Commission on Global Climate Change's web site.

Art. 3 - This resolution takes effect on the date of its publication.

Although Brazilian DNA had published the delineation of the project electricity system and connected electricity systems, projects submitted before the Resolution publication (May 26th, 2008) were given the choice to use previously accepted electricity system delineation or the Brazilian DNA delineation. Considering that Salto project was submitted for the first time on June 5th, 2007, Brazilian DNA agreed to issue the Letter for Approval with the justified and validated electricity system delineation.

Confident that the above initial comments help to adequately address the raised issue we remain available at any time for additional clarifications.

Best regards,

For the Project Participants

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⁸ It is important to mention that Salto project was made publicly available twice for Global Stakeholder Process at the UNFCCC website: 02/03/2007 – 31/03/2007 and 18/09/2008 – 17/10/2008. This last GSP was made considering the revision of the methodology.

⁹ Brazilian DNA website. Available at: <<http://www.mct.gov.br/index.php/content/view/72993.html>>. Accessed on May 25th, 2009.