Mr. Hans Jürgen Stehr
Chair, CDM Executive Board
UNFCCC Secretariat
CDMinfo@unfccc.int

10th November, 2007

Re Request for review for request for registration of "Rio Grande do Sul Cooperatives Small Hydro Power Plants" (UNFCCC Ref. no. 1235).

Dear Mr. Stehr,

SGS has been informed that the request for registration of the CDM project activity "Rio Grande do Sul Cooperatives Small Hydro Power Plants" (UNFCCC Ref. no. 1235) is under consideration for review because four requests for review have been received from members of the Board.

The requests for review are based on the reasons outlined below. SGS would like to provide an initial response to the issues raised by the request for review:

Request for review 1:
Version 3 of the Additionality Tool should be used to demonstrate additionality.

Response SGS:
The validation assessment was initiated in October 2006 and the request for registration was made in July 2007.
According to Annex 2 – EB30, the revision of an approved methodology or "Tool" referred to in a methodology shall not affect project activities that have been published for public comments for validation using the previously approved tool, so long as the project activity is submitted for registration within 8 months of the date when the revision became effective.
Version 3 of the Tool was available after EB29. In this case version 2 was still valid in July 2007. SGS considered version 2 of the Additionality Tool still applicable.

Request for review 2:
Further substantiation is required regarding how the barriers prevent the implementation of this specific project activity and do not impact the baseline. If the main argument to demonstrate the additionality of the project activity is the low IRR, this should be demonstrated in accordance with step 2 of the additionality tool.

Response SGS:
Low internal rate of return is not the main barrier but one of the barriers faced by the project activity, as verified during the validation assessment. The project therefore does not use step 2 of the tool but step 3, barrier analysis.
Other barriers were presented and discussed in the PDD and confirmed by the validation team, including the discussion about the common practice in the electricity sector of Brazil representing an additional barrier for small hydro plants.

The energy demand in Brazil is not attended only by small hydro plants. Actually small hydro plants represent about 1.7% of the total electricity generated in the country. The recent auction for energy shows an increase in thermal plants using oil, coal and natural gas as fuel (http://www.epe.gov.br/Lists/LeilaoA32007/DispForm.aspx?ID=44).

Request for review 3:
Further details regarding the common practice should be provided in accordance with the requirements of step 4 of the additionality tool, i.e. similar project activities should be described and the differences between each of these activities and the project should be clearly indicated.

Response SGS:

The PDD presents a discussion about other activities and the common practice under step 4, but considering the characteristics of this project activity (small hydro from agricultural cooperatives), there are no similar options occurring in the region.

The small hydro power units in Brazil only represent 1.6GW out of a total of 98,100MW. Small hydro plants represent 1.7% of the total energy generated in the country (According ANEEL, National Agency of Electricity Energy, BIG - Banco de Informações de Geração).

Another important aspect is related to the small participation of small hydro power plants in the Brazilian electricity portfolio, which is commented in sequence:
Small hydropower plants in operation correspond to less than 2% of the total electric power generated in the country.
The recent trend does not anticipate changes from what has been observed in the last decade. In an energy auction, which took place on December 16th, 2005, in Rio de Janeiro, 20 concessions for new power plants were granted, of which only two are for small hydropower plants (28 MW). From the total of 3,286 MW sold, 2,247 MW (68%) will come from thermal power plants, from which 1,391 MW will come from natural gas fired thermal power plants, i.e., 42% of the total sold.
These numbers show that common practice in Brazil is construction of large-scale hydroelectric plants and, more recently, of natural gas based thermal plants. Incentives for the construction of thermal power plants have been more effective than those for small hydropower plants.
As the project satisfied the common practice analysis it was considered additional.

Request for review 4:
The calculation of the emission reductions should clearly demonstrate how the net electricity generated by the project activity was determined.

Response SGS:
The calculation of the emission reduction is demonstrated in the “CER spreadsheet v5”:

	Caraguata	Linha Tres leste	Linha 3 Leste (MINI)	Cascata das Andorinha	TOTAL
Installed capacity (MW)	0,953	13,5	0,83	1,0	16,283
Capacity Factor(%)	71,1	63	95	78	
Reservoir(km2)	0,011	1,306		0	
Density(w/m2)	86,6	11,0			
MW x %	0,68	8,51	0,79	0,78	10,75

The calculation is based on the installed capacity * capacity factor = assured energy to be delivered to the grid. The assured energy is based in the official documents issued by ANEEL (Agência Nacional de Energia Elétrica).
Electricity exported to the grid is measured directly, continuously, using an electricity meter.

Request for review 5:
The monitoring plan should clearly outline how the net electricity generated by the project activity will be monitored, the number and location of meters and how losses will be accounted for.

Response SGS:
The electricity delivered to the grid is monitored by the Project as well as by the energy purchaser. The electricity delivered to the grid represents the net electricity. The energy purchaser will monitor and pay for the net electricity delivered.
The energy meters are specified by the energy distribution company and approved by ONS and are installed as follow:
- SHP Linha Três Leste: For both the main plant and the mini-generator, there are 2 (two) ELO meters (one back-up) with GPS synchronism and remote access;
- SHP Cascata das Andorinhas: there is two Nansen meter installed for each generator;
- SHP Caraguatá: At the moment of validation only one COMAP Inteligen *relé* was installed to meter the energy generation. Presently two (one back-up) new independent electronic electricity meters are installed in parallel with the COMAP.

Request for review 6:
The PDD states that the project activity may import power from the grid, however this is not included in the emission reduction calculations.

Response SGS:
This information is presented in the PDD to explain that the run-of-river small hydro plant is not operational during all the time. In these periods (not operational) the import of electricity is necessary.
According to the methodology ACM0002 used the electricity imported should not be considered in the emission reduction calculations because the project activity will receive the CERs only by the net electricity delivered to the grid.

Request for review 7:
The PDD states that “It is important to notice that the direct comparison between the SELIC rate and the IRR is not accurate and the idea is not to introduce a benchmark analysis, but to set a parameter as a reference”. However the SELIC reference rate is not appropriate as the projects have been partly financed with a long term loan at a lower rate than the short term market rate used as a reference.

Response SGS:
The project was developed with corporate guarantees posted by the sponsors and financed by BNDES. The BNDES financing rate available to project should not be used as a parameter to assess the project attractiveness. The relevant parameter for an investor seeking financial return is the project yield after interest and principal of long term debt is repaid.
The project participants had the alternative to invest in debt instruments of similar maturity to the hydro plants concession. Given the expected return on investment for each one of the three projects: Cascata das Andorinhas (IRR of negative 7.5% p.a.), Caraguatá (IRR of 6.2% p.a.) and Linha Três Leste (IRR of 14.6% p.a.), the project sponsors should rather have invested in Brazilian bonds instead of building the power plants. In the absence of CDM, this project would be a riskier and not attractive project.

Request for review 8:
The PDD states that "The region where the project is located is isolated and undeveloped. The regional electrical company did not construct distribution grid in rural area. And due to that, there is a lack of infrastructure, such as roads, reliable electricity supply, communication and transports". However, the cooperatives developing the projects were connected to the grid, as per technical description and the baseline applied. Further clarification is required regarding lack of infrastructure as a barrier.

Response SGS:
It was necessary to develop some facilities to implement the project activity. The transmission lines were built to connect the project to the grid. The small hydro plants are located in an area where the access is difficult. During construction the project faced problems with lack of infrastructure:


Figure – Cooperluz water tunnel


Figure – Creral waterfall pipeline

Besides the PDD states some information regarding infrastructure barrier, the validation report does not use this barrier as the main problem faced by the project activity.
The main barriers are the investment and common practice.

Request for review 9:
The institutional barrier described is of a generic nature. Further explanation and an update of circumstances is required as references are to the situation in the 90s.

Response SGS:
The institutional barrier was presented in the PDD and the conditions described are related to the real condition of the electricity market in the country. Besides that the validation team considers the lower internal rate of return (investment barrier) and the common practice barrier as the two main barriers that would inhibit the implementation of the project. The following information was made available by the project participant.

There is a rising demand for energy in Brazil, but it is not being attended by small hydro power plants. In the most recent energy auctions in Brazil, the results were the following: in an auction which took place on July 26, 2007, there was in an increase of 1.781,8 MW into National Electric System, all of them from oil thermo plants; in an auction which took place on October 16, 2007, there was in an increase of 4,353 MW into National Electric System, from which 69% originated from fossil fuel (oil, coal and natural gas) plants.

In the energy auction for alternative energy sources, that took place on June 18, 2007, 2,803 MW were qualified, but only 638.64 MW were negotiated, what shows the lack of interest by most of the participants, due to the price and conditions presented. From the estimated 1,165 MW available from sugarcane bagasse plants and small hydro power plants, only 97 MW from small hydro were sold. The result of the auction was considered "disappointing" by Nelson Hubner, the minister of Mines and Energy.

Request for review 10:
The project financial analysis should be further substantiated and additional information provided. In addition, no sensitivity analysis has been conducted.

Response SGS:
The project presents the financial analysis inside the investment barrier. The financial analysis was necessary to demonstrate that the internal rate of return is lower than the SELIC rate.
It is important to explain that the project does not use Step 2 of the "Tool" where the complete investment analysis is required, including the sensitivity analysis. The project used Step 3 of the "Tool" presenting the financial analysis inside the investment barrier.

Request for review 11:
The PP states that "All 3 SHPs is being financed part from own resource but the large part by the Brazilian Development Bank – BNDES (from Portuguese "Banco Nacional de Desenvolvimento Econômico e Social"). BNDES is a federal owned company subordinated to the Ministry of Development, Industry and Foreign Trade. Despite of being a state-owned bank, BNDES is one of the unique sources of long-term financing in the country and is the preferable debt sources for the private sector in Brazil". Subsequently the PDD states that there is "Lack of investment sources to finance the private sector in the country, and the high costs of the available alternatives, as indicated by the project debt structure, which is mostly dependent to the equity capital". Further explanation is required as which part is equity financed and which is financed by BNDES.

Response SGS:
PDD page 19 presents the information about the financial support that covers 68% of Creral investment, 57% of Cooperluz investment, 80% of Ceriluz investment of the project costs with a TJLP6 (BNDES Long Term Interest Rate) rate of 9% plus a 4.0% spread risk for a term of 10, 8.5, 12 years and grace period of 2 years for Creral, Cooperluz and Ceriluz respectively.
The cooperatives need to use their own capital to raise funds from BNDES, and Creral, Ceriluz and Cooperluz offered guarantees to BNDES.

Request for review 12:
Regulatory uncertainty is mentioned as a barrier, since there is a "completely new power sector regulation [is] under development since January 2002". Nevertheless, the projects were developed despite that purported barrier. In addition, the overview of the Brazilian electricity market is of a generic nature and does not contribute to substantiate barriers.

Response SGS:
It was verified that the electricity sector is under development in the country. Even with the uncertainties the project is actually subject to, the PP decided to implement the project activity considering the possibility of the CDM. The regulatory uncertainty represents a barrier, not a strong barrier as the investment barrier and common practice barrier but a barrier faced by the project.

Request for review 13:
The DOE shall further clarify the list of the persons interviewed while performing validation (&. List of persons interviewed, page 15 of 45 of the Validation Report) as in some cases they have only specified first name of those persons or the position is not sufficiently accounted for.

Response SGS:
The validation report presents the list of persons interviewed. Follow below the updated list:

Date	*Name*	*Position*	*Short description of subject discussed*
6 Nov 2006	Marlon R. Bonamigo	Administrative director - Ceriluz	TECHNICAL ISSUES, OPERATIONAL ISSUES, FINDINGS, MONITORING PLAN, BASELINE, LICENSES
6 NOV 2006	Benoni Hedlund	Manager assessor - COOPERLUZ	Quality procedures
6 NOV 2006	Emerson Sichinal	Forest Engineer - COOPERLUZ	Operational
6 NOV 2006	Vicento Izyza	Vice-president - COOPERLUZ	Technical issues
6 NOV 2006	Luiz Fernando Faller	Assessor - CRERAL	Quality procedures
6 NOV 2006	Renato Pumpmarch	Electricity technician - COOPERLUZ	Technical issues
6 Nov 2006	Jenny Sayaka Komatsu	Project developer - Ecoinvest	Validation process and findings

Request for review 14:
The Table of Contents of the Validation Report seems to be only a draft version. The Validation Report should be provided in its final, complete and appropriate format.

Response SGS:
The validation report sent is not a draft version. The problem in the Table of Contents occurred when creating the pdf file. Follow attached the correct validation report as Annex 1 to this response.

Request for review 15:
The DOE shall further clarify how they have validated the evidence provided that there was a consideration of the incentive of the CDM in the decision making process related to this project activity. In particular, the DOE shall further clarify how they have been able to "realize that the studies … started even before operation start", as the meetings where held afterwards, and their reference to culmination "of the company contract". The exact same wording is used in the PDD.

Response SGS:
Page 12 of the PDD (step 0) states that the three plants started operation in 2003 and 2004. Two plants started operation in 2003 and one in 2004. The Minutes of Meeting confirming the consideration of the CDM incentives is dated June 2003 and July 2004, before the operation of the three plants and these documents were verified during the on-site validation assessment. The documents were considered to be genuine and accepted as evidence to proof that CDM was seriously considered.

With the explanation provided above, we hope that all concerns of the EB have been addressed. We do however apologize if this was not sufficiently clear from the validation report.

Fabian Goncalves (+55 11 5504-8887) will be the contact person for the review process and is available to address questions from the Board during the consideration of the review in case the Executive Board wishes.

Yours sincerely,

Irma Lubrecht
Technical Reviewer
Irma.lubrecht@sgs.com
T: +31 (0)181 693287
M: +31(0)651851777

Fabian Goncalves
Lead Assessor
Fabian.Goncalves@sgs.com
T: +55 11 5504 8887

Annexes to the response:
Annex 1 Validation report – AR6