Project Participants (PP) Comments on request for review of Project 1279 : Fundão-Santa Clara Energetic Complex Project (FSCECP) - Registration Request

Att: CDM Executive Board

Dear Members of the CDM Executive Board,

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The Project Participants (PP) refer to the questions raised by the Board members in the review process regarding the request for registration for the project activity entitled "Project 1279: Fundão-Santa Clara Energetic Complex Project (FSCECP)", and the PP would like to provide the following response to the issues raised by the review process.

Request for review from 11/11/2007:

Questions:

1. Further information is required to show how the benchmark and investment analysis have been validated.

Please refer to the Designated Operational Entity (DOE) comments.

2. The common practice analysis should be conducted in accordance with step 4 of the additionality tool by detailing similar projects in the region and explaining the differences between this activity and those similar projects. In this context, further substantiation of the barriers should also be provided.

Most part of the hydro power plants installed in Brazil has an installed capacity lower than 50 MW and are owned by public and private sector.

Hydro power plants with an installed capacity higher than 200 MW and that dispatch electricity to the grid are essentially owned by state companies.

Hydroelectric projects containing an installed capacity of more than 200 MW and dispatching all the available electricity to the grid by a private company, such as Elejor, is definitely not a common practice in the Brazilian energy sector.

In cases that huge hydro power plants are owned by private companies today, this was only possible due to the opportunity of acquisition of the existing and operating huge hydro power plants by private companies in the past through the privatization process. Therefore, once the private companies were able to purchase these existing and operating huge hydro power plants, which were owned by the public sector before, several risks were indeed avoided by the private companies.

For the construction of a huge hydroelectric power plant, a very high initial capital for investment is needed and the risks associated to the development of this kind of project are also considerably superior when compared to the construction of new thermoelectric power plants.

The construction of new thermoelectric power plants is significant less risky, complex and costly when compared to the construction of new hydro power plants. For example, the construction of hydroelectric units involves the acquisition of

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new equipments (turbo generators, among several other equipments associated) and high costs of engineering activities (such as the construction of dams / reservoirs, for example) while thermoelectric costs are mainly related to the acquisition of new equipments. In addition, at least in Brazil, the environmental requirements in order to obtain the Installation and Operation Licenses are much more complex and complicated for hydroelectric projects than to thermoelectric projects. Also, the larger the hydroelectric projects is, the most difficult the environmental requirements will be. For instance, the construction of new thermoelectric power plants would not face the social barriers that new hydroelectric power plants face, due to the removal of local population that live close to the areas that will be flooded.

Thus, the Elejor's initiative, as company composed by the public and the private sector, for the construction of a huge hydroelectric power plant containing an installed capacity of more than 200 MW, cannot be seen as a sector's common practice.

Hence, as similar activities cannot be observed, the condition (i) of Sub-steps 4a and 4b from the "Tool for the demonstration and assessment of additionality (Version 03)" is satisfied and, therefore, the proposed project activity is expected by the project participants to be considered additional by the Executive Board members.

3. The starting date of the project activity should be reported as 'the earliest date at which either the implementation or construction or real action of a project activity begins'. If this date is before validation evidence should be provided to demonstrate prior consideration of the CDM, as required by the guidelines for completing section B5 of the PDD.

The starting date of the project activity was previously presented in the PDD as 31/07/2005, referring to the date of the authorization of ANEEL for the start of operation of UHE Santa Clara (60 MW). However, as required by the current request for review, the new starting date of the project activity is 18/06/2004, which is the date of issuance of the Installation Licences for both UHE Fundão (119 MW) and UHE Santa Clara (119 MW). The referred licences were issued by the "Instituto Ambiental do Paraná – IAP" (*Environmental Institute of Parana State*) before the beginning of the construction of the project activity. Copies of the referred Installation Licences were delivered to the Designated Operational Entity (DOE), together with this letter.

In order to satisfy the requirements of the guidelines for completing section B5 of the PDD, the following evidence is presented with the purpose of demonstrate that the CDM was seriously considered before the beginning of FSCECP:

On October 2^{nd} , 2000, COPEL - Companhia Paranaense de Energia (Energy Company of Parana State), issued an internal memorandum (Circular – 056/2000), which clearly states the intention of the company for collecting information about the Kyoto Protocol and the Clean Development Mechanism – CDM, through the creation of a working group, in order to prospect opportunities inside the entire company for developing CDM projects. As Elejor was officially incorporated to COPEL on July 9th, 2001¹, the CDM initiative was mutually considered and applied by Elejor and COPEL.

Copies of the referred documents (Circular – 056/2000 and General Shareholders Meeting about the Constitution of a Corporation) were delivered to the Designated Operational Entity (DOE), together with this letter.

4. The monitoring plan should clearly outline the monitoring of the net electricity generated by each of the six hydro plants, the number and location of meters, the reservoir area and the electricity losses.

As required by the current request for review, the additional information regarding the monitoring plan is provided below.

¹ Please, refer to the document entitled: "Ata de Assembléia Geral de Constituição de Sociedade Anônima" (General Shareholders Meeting about the Constitution of a Corporation), issued on July 9th, 2001.

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a) Monitoring of the net electricity generated by each of the six turbines inside of the four hydro power plants and the number and location of meters:

The figure below presents the electricity connections and the power meters for FSCECP.



The figure above demonstrates the quantities of power meters presented in Fundão-Santa Clara Energetic Complex Project (FSCECP). There are 12 power meters in total distributed as the following: 2 power meters for measuring the total energy generated, one for each turbine, located between the generators and the equipments responsible for the voltage elevation (4 meters in total) and 4 meters (2 main meters and 2 backup meters) for net electricity, 2 for each turbine, located between the voltage elevation and the substations (8 meters in total).

The energy generated is remotely monitored. Data are transmitted through internet using optic cables up to the "Centro de Operações de Geração – COG" (Generation Operational Centre), of COPEL, where the data is assessed and verified.

The data backup is automatically archived and the frequency of these records is defined, through specific software, by the operational program from FSCECP.

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In case of small hydro power plants (PCH) the measurement is done through 4 meters (2 main meters and 2 backup meters) and all of them measure the net electricity. In addition, the energy generated is also remotely monitored and controlled by COPEL.

b) Monitoring of the reservoir area:

The monitoring of the reservoir area is done through rainfall and river-flow measuring devices installed at the upstream and at the downstream of each reservoir. The measurements are electronically made using mobile phone transmissions (GSM technology) and periodically transmitted to "Sistema Metereológico do Paraná – SIMEPAR" (Meteorological System of Parana State), which is responsible for the data consistence. These data, once verified, are transmitted through Internet to COPEL, which is responsible for checking and monitoring the data presented.

The surface area measurement is done taking into consideration the reservoir level.

c) Monitoring of the electricity losses:

The Resolution n° 395/2002 (Art 1°, § 2°) from ANEEL – Agência Nacional de Energia Elétrica (National Electric Energy Agency) states that the electricity losses shall be considered only for power plants that are connected to the Basic Transmission Grid, in other words, where the voltage is equal or higher than 230 kV. In case of Elejor, the voltage in Fundão and Santa Clara substations is 138 kV. Therefore, there is no electricity losses to be considered for FSCECP. A copy of the referred document was delivered to the Designated Operational Entity (DOE), together with this letter.

Request for review from 15/11/2007:

Questions:

1. The PDD states that "The Cash flow for FSCECP was presented to the Designated Operational Entity with detailed financial calculations. It resulted in an IRR (36 years) of 11,237%" and "According to the Elejor's investment IRR threshold of 12%, this would not be an acceptable project. Based on this criteria, the project cannot be considered as financially attractive". Further information and substantiation is required regarding the referred threshold and the IRR calculation.

According to CATAPAN², "In the specific case of companies from the Brazilian electricity sector, the report RE-SEB (COOPERS & LYBRAND, 1997, p. 247³) suggests that the internal rate return on a real basis, after taxes over the invested capital in the sector, shall be the following: 12-15% for power generation; 10-12% for energy transmission; and 11-13% for energy distribution". This means, in general terms, an average value of 12%, which was the investment IRR threshold value adopted by Elejor. The FSCECP cash flow, containing all the detailed financial calculations, is confidential and it was provided to the Designated Operational Entity – DOE during the validation process. Please refer to the DOE comments.

2. Further information is required to show how the benchmark and investment analysis have been validated.

² CATAPAN, Edílson; HEDEMANN, Francisco. "Variáveis essenciais a uma metodologia de cálculo do custo de capital" (*Essential variables for a capital cost calculation methodology*). PUC-PR. March, 2002.

³ COOPERS&LYBRAND. Relatório consolidado etapa VII: projeto de reestruturação do setor elétrico brasileiro – RE-SEB (relatório principal). *Consolidated report phase VII: restructuring project of the Brazilian electric sector – RE-SEB* (*main report*). Brasilia, v. II, December, 1997.

Please refer to the DOE comments.

3. The DOE shall further clarify how they have assessed and validated the sensitivity analysis.

Please refer to the DOE comments.

4. The common practice analysis should be conducted in accordance with step 4 of the additionality tool by detailing similar projects in the region and explaining the differences between this activity and those similar projects. In this context, further substantiation of the barriers should also be provided.

Please refer to the answer given for question #2 of the request for review from 11/11/2007.

5. The starting date of the project activity should be reported as 'the earliest date at which either the implementation or construction or real action of a project activity begins'. If this date is before validation evidence should be provided to demonstrate prior consideration of the CDM, as required by the guidelines for completing section B5 of the PDD.

Please refer to the answer given for question #3 of the request for review from 11/11/2007.

6. The monitoring plan should clearly outline the monitoring of the net electricity generated by each of the six hydro plants, the number and location of meters, the reservoir area and the electricity losses.

Please refer to the answer given for question #4 of the request for review from 11/11/2007.

Request for review from 16/11/2007:

Questions:

1. Further information is required to show how the benchmark and investment analysis have been validated.

Please refer to the DOE comments.

2. The common practice analysis should be conducted in accordance with step 4 of the additionality tool by detailing similar projects in the region and explaining the differences between this activity and those similar projects. In this context, further substantiation of the barriers should also be provided.

Please refer to the answer given for question #2 of the request for review from 11/11/2007.

3. The starting date of the project activity should be reported as 'the earliest date at which either the implementation or construction or real action of a project activity begins'. If this date is before validation evidence should be provided to demonstrate prior consideration of the CDM, as required by the guidelines for completing section B5 of the PDD.

Please refer to the answer given for question #3 of the request for review from 11/11/2007.

4. The monitoring plan should clearly outline the monitoring of the net electricity generated by each of the six hydro plants, the number and location of meters, the reservoir area and the electricity losses.

Please refer to the answer given for question #4 of the request for review from 11/11/2007.

We sincerely hope that the Board accepts our above explanations.

Yours faithfully,

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David Freire da Costa Project Manager Econergy Brasil Ltda.