JAPAN CONSULTING INSTITUTE

Sumitomo Fudosan Kudanshita Bldg 3F,
No. 5, Kanda-Jinbocho 3-chome,
Chiyoda-ku, Tokyo 101-0051, JAPAN

Telephone : +81-3-3222-8100
Facsimile : +81-3-3222-8101/2

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Ref. No. : JCI-CDM-C-09-007

CDM Executive Board
c/o Mr. Daniele Violetti
Officer-in-Charge CDM

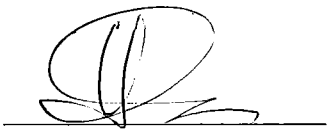
Subject : DOE Responses to the Request for Review for Registration Request
(Reference No.2039: Jiangxi Taojiang Hydropower Project)

Dear Sirs,

Please find the attached document which shows JCI's responses to the request for review for the above CDM project (Reference No.2039: Jiangxi Taojiang Hydropower Project).

If you have any further question or request, please let us know by phone call or E-mail.

Yours sincerely,



Hideyuki Sato

Manager of Assessment Group
JCI CDM Center
Tel: +81 3 3222 8100
Fax: +81 3 3222 8101/2
Email: sato-cdm@jci-plant.or.jp

Initial Responses of DOE to Review Requests

Project Title： Jiangxi Taojiang Hydropower Project

Reference No.: No.2039

Project Participants: (1) Ganzhou Youenjiangyuan Electric Power Investment Co., Ltd.

(2) Standard Bank Plc.

(CDM consultant: Coway International TechTrans Co., Ltd.)

DOE: Japan Consulting Institute, JCI

Issue 1: The DOE is requested to clarify how it has validated that the project start date complies with the CDM Glossary of terms, and to confirm the prior consideration of the CDM in line with the guidance under EB 41, Annex 46.

Further, the DOE is requested to provide evidence that continuing and real actions were taken to secure CDM status for the project activity in parallel with its implementation, in particular during the period April 2005 and May 2007.

(Response of the DOE (JCI))

The history of the Project has been summarized once again as follows and the timeline has also been described in a table form.

Though the construction of the Project without CDM was started t on September 16, 2003, the Project faced the financial difficulties in 2004 such as the bank's (ICBC's) suspension of the loan (Annex 1-1) and the material quantity increase (Annex 1-2). In addition to these factors, a possible capital withdrawal by the stockholders came into the concern. To avoid this additional difficulty, the Board held the meeting (Annex 1-3) and the worst situation was averted. The construction continued little by little, but didn't stop completely.

While persuading ICBC to unfreeze the loan and trying to find other ways to get financial support, the PP started to consider the application for CDM with preparing Report on developing CDM project (Annex 1-4) referring to Adjustment Report for the budget (Annex 1-5). After studying on these reports, **the Board made a decision to proceed with the Project under the support of CDM at the Board Meeting held on March 8, 2005** (Annex 1-6), which was followed by the agreement of China Commercial Bank of Ganzhou to provide a loan to the Project on April 3, 2005(Annex 1-7).

Then, the PP continued and took actions to secure CDM status for the Project in parallel with its implementation. Firstly, the PP selected Coway International TechTrans Co., Ltd. as CDM consultant and after getting Coway's LoI (Annex 1-8), concluded Consultancy Contract with Coway (Annex 1-9) on June 10, 2005. Then Coway conducted the site investigation (Annex 1-10) and prepared the PDD, which was submitted on September 7, 2007 to JCI for Validation. Secondly, the PP started to negotiate with the potential CER buyers, and after the PP having got the Letter of Intent on July 20, 2006, the CDM ERPA was signed between the PP and Standard Bank (Annex 1-11, Annex 1-12, Annex 1-13) on February 22, 2007. Thirdly, the Project was applied for CDM to NDRC on May 14, 2007 (Annex 1-14)

dd/mm/yyyy	Milestone	Evidence
16/09/2003	The construction of the Project started.	
16/08/2004	China Bank (ICBC) suspended the loan	Notification of ICBC regarding the loan freezing /15/ (Annex 1-1)
25/10/2004	Preparation of Report on Operation Difficulties	Report on Operation Difficulties (Annex 1-2)
10/11/2004	The possible capital withdrawal was averted.	Minutes of Board Meeting about capital withdrawal (Annex 1-3)
--/01/2005	Preparation of Adjustment Report for the budget	Adjustment Report for the budget (Annex 1-4)
03/02/2005	Report on developing CDM	Report on developing Taojiang Hydropower station as CDM project (Annex 1-5)
08/03/2005	The Board of directors decided to apply CDM support	Minutes of Board Meeting for CDM support /21/ (Annex 1-6)
--/04/2005	China Commercial Bank agreed to provide a loan	Notification of Commercial Bank of Ganzhou agreeing to provide a loan /22/ (Annex 1-7)
15/04/2005	Communication between Consultant and the PO	Intent fax from Coway to the PO /23/ (Annex 1-8)
10/06/2005	Consultancy Contract for developing CDM was signed	CDM Consultation Contract between Coway and the PO (Annex 1-9)
11/07/2005	Consultant of Coway went for the on-site investigation	Fax for site investigation from consultant (Annex 1-10)
--/09/2005	PIN was completed	
--/03/2006	Draft PDD was completed	
03--07/2006	Contacting, selecting and negotiating with possible CER Buyers	Indicative Letter from Standard Bank for CER Purchase (Annex 1-11)
20/07/2006	LoI to buy CER was issued by Standard Bank	Standard Bank's LoI (Annex 1-12)
22/02/2007	ERPA was signed	ERPA between the Project Owner and the Standard Bank Plc (Annex 1-13)

14/05/2007	The Project was applied for CDM to NDRC	Application Form to NDRC (Annex 1-14)
08/09/2007～ 07/10/2007	The PDD was made publicly available on UNFCCC Website.	

(1) Compliance of the project start date with the CDM Glossary of terms

(Response of the DOE (JCI))

The starting date of the CDM project activity was set as March 08, 2005, as is described in the PDD, when the Board Meeting was held to make a decision to proceed with the Project under the support of CDM.

Before this date, the Project was on the verge of stoppage due to financial difficulties, but the construction had not been stopped completely. Therefore, the Project is not the case of "restart" and evidences relating to the cessation of project implementation do not exist for the Project. However, the certificate of the Bank (ICBC) regarding the loan freezing can be considered as a kind of credible evidence demonstrating the Project is as good as cessation. Since the bank loan was frozen, the Project Participant seriously considered the CDM application by analyzing the operation difficulties and preparing CDM report toward the date of the Board Meeting (March 08, 2005, set as the starting date)), when the PP committed to continue the Project under the support of CDM, not to stop the Project.

Based on the course of events described above and the confirmation of the evidences related to each milestone, the DOE (JCI) considers this date (the date of the Board Meeting, March 08, 2005) is appropriate and can be understood to be in compliance with "EB 41 Para 67(Glossary of CDM terms): the start date of a CDM project activity" (The start date shall be considered to be the project participant has committed to expenditures related to the implementation or related to the construction of the project activity.)

(2) Confirmation of the prior consideration of the CDM in line with the guidance under EB 41, Annex 46.

(Response of the DOE (JCI))

As was described above and in the timeline table and since the bank loan was frozen, the Project Participant seriously considered the CDM application by analyzing the operation difficulties, estimating the increased budget and preparing CDM report toward the date of the Board Meeting

(March 08, 2005, set as the starting date)). Specifically, the following actions by the PP were taken as the prior consideration of the CDM.

The Project Participant prepared "Report on Operation Difficulties of Ganzhou Youenjiangyuan Electric Power Investment Co., Ltd. (October 25, 2004) (Annex 1-2)" for the shareholders, the Board Members and the Board Supervisors. In this report, the PP explained the worsened circumstances of the Project such as capital shortage due to loan freezing and expense increase due to increase of material quantity and proposed an emergency meeting to solve these problems. "Adjustment Report for the budget of Jiangxi Taojiang (Fengkengkou) Power Station" (Annex 1-4) was also prepared by the qualified Ganzhou Water Resources Design Institute. The Report evaluated the worsening situation of the Project and estimated the increased budget.
With reference to these reports, the PP prepared "Report on developing Taojiang Hydropower Station as CDM Project" (Annex 1-5), which led to the decision making of CDM application to the Project at the Board Meeting on March 08, 2005 (the staring date of the project activity).

The DOE (JCI) confirmed the contents of the above all evidences, and considers that the prior consideration of the CDM following the guidance under EB 41, Annex 46 was seriously taken by the PP.

(3) Providing evidences that continuing and real actions were taken to secure CDM status for the project activity in parallel with its implementation, in particular during the period April 2005 and May 2007.

(Response of the DOE (JCI))

The evidences related to actions taken to secure CDM status of the Project, the names of which are described in the above timeline table, have been provided as Annex to this response.

Issue 2: The DOE is requested to explain how it has validated the investment analysis, in particular:

a) the appropriateness of a benchmark of year 1995 when assessing the additionality with investment decision made in 2005;

b) that the IRR calculation is in line with EB 41, Annex 45, in particular para. 7;

c) the conservativeness of the average electricity tariff used as the ratio of electricity delivered to each sub-grid is not fix; and

d) the suitability of the load factor applied.

a) the appropriateness of a benchmark of year 1995 when assessing the additionality with investment decision made in 2005;

(Response of the DOE (JCI))

As has been reported in section B.5 of PDD, the IRR benchmark adopted in the investment analysis is 10%, which is consistent with the "Economic Evaluation Code for Small Hydropower Project (Document No. SL 16-95)".

The document (SL16-95) was approved and promulgated by the Ministry of Water Resources of the People.s Republic of China on June 2, 1995 and began to take effect on July1, 1995. In September 9, 2006, the Ministry of Water Resources of the People's Republic of China issued the "Bulletin of Valid Hydropower Technical Standard (No [2006]05)" (Annex 2-1). According to this announcement, the "Economic Evaluation Code for Small Hydropower Project (Document No. SL16-95)" is still in validity and enforceable. In addition, since 1995, the design institutes in hydropower industry in China generally apply the document (SL16-95) to compile the Feasibility Study Reports (FSRs), Preliminary Design Reports (PDRs) and other relevant reports.

The Evaluation Code defines that *the projects with a capacity lower or equal to 50,000KW in rural area apply to this Code,* and this Code also indicates *the benchmark of internal rate of return (IRR) of total investment for Chinese small-sized hydropower project is 10% (after tax)* (Annex 2-2). The installed capacity of the Project is 25,000KW, which is below 50,000KW, and therefore, the benchmark of this Code is applicable to the investment analysis of the Project.

Therefore, the DOE (JCI) considers that the benchmark from SL 16-95 adopted for additionality assessment is appropriate.

b) the IRR calculation is in line with EB 41, Annex 45, in particular para. 7;

(Response of the DOE (JCI))

As was stated in the response to Issue-1, the Project was on the verge of stoppage due to financial difficulties before the starting date, but the construction had not been stopped completely. That is, the Project is not the case of "restart", but the situation was considered to be almost the same as "restart".

Therefore the DOE (JCI) requested the PP to correct the IRR calculation to meet the requirements under the paragraph 7 of EB 41, Annex 45. The PP re-evaluated the costs incurred prior to the starting date (Annex 2-3) and recalculated the IRR with excluding the intangible assets prior to the starting date.

The revised IRR calculation spreadsheet (Annex 2-4) has been provided and the IRR value was corrected from 8.09% to 8.71%, which is still lower the benchmark.

The DOE (JCI) considers that the revised IRR calculation is based on the requirement under the paragraph 7 of EB 41, Annex 45 and is appropriate.

c) the conservativeness of the average electricity tariff used as the ratio of electricity delivered to each sub-grid is not fix

(Response of the DOE (JCI))

The power generated in the Project is to be delivered to two Grids, Xinfeng Power Grid and Ganzhou Power Grid, as described in the section B.7.2 of the PDD.
The tariff of Xinfeng Power Grid is 0.35 yuan/kWh including VAT (confirmed by the PPA with Xinfeng Grid (Annex 2-5) and the approval of Jiangxi DRC (Annex 2-6)), but on the other hand, the tariff of Ganzhou Power Grid is 0.31 yuan/kWh including VAT (confirmed by the PPA with Ganzhou Grid (Annex 2-7)).

As described in the Revised Preliminary Design Report (Annex 2-8, Annex 2-9), 22540MWh (28.9%) of the total power generated (77900MWh) is to be generated in a dry season, and the rest of 55360MWh (71.1%) is to be generated in a wet season. In a dry season, only one generator (12.5MW) will be at work, and in a wet season, two generators (12.5MW x 2Units) will be at work.

As a conservative assumption, all of the power generated in a dry season is assumed to be sent to Xinfeng Power Grid only, and in a wet season, a half of the power generated is assumed to be sent to Xinfeng Power Grid and the remaining half to Ganzhou Power Grid. That is, in the whole year, 50220MWh (= 22540+55360/2) (64.5%) of the total power generated is sent to Xinfeng Power Grid, and 27680MWh (= 55360/2) (35.5%) is sent to Ganzhou Power Grid. (In this calculation, the internal consumption and the line loss have not been considered for simplicity.)
For the re-calculation of IRR with reflecting this concept, it is assumed that 2/3 (66.7%) of the total power generated is sent to Xinfeng Power Grid and 1/3 (33.3%) of the total power generated is sent to Ganzhou Power Grid, which is a little more conservative. The final calculation reflecting the internal consumption and the line loss shows 49873MWh is sent to Xinfeng Power Grid and 25519MWh is sent to Ganzhou Power Grid, which has been used in the revised IRR calculation (Annex 2-4).

The DOE (JCI) confirmed the contents of the above evidences, and considers that two different tariffs have been used appropriately and reflected in the revised IRR Calculation.

d) the suitability of the load factor applied

(Response of the DOE (JCI))

(1) Annual power generation and annual operating hours adopted

Average annual power generation has been calculated as 77900 x 10^3kWh based on the hydrometric station data from 1957 to 1992 in the Preliminary Design Report by the qualified Design Institute (Annex 2-9), which can be considered to be credible.
Annual operating hours is calculated using the equation of "Annual operating hours = average annual power generation / designed installed capacity". The average annual power generation is 77900 x 10^3kWh, and designed installed capacity is 2 x 12500KW, so the annual operating hours is calculated as 77900 x 10^3 kWh/ (2 x 12500) kW = 3116 hrs, which is described in the Revised Preliminary Design Report. (Annex 2-8)

According to the Water Resources Yearbook (2006), there are three hydropower stations (37.5MW, 40MW, 40MW) in Jiangxi Province. The average actual operating hours during 1999-2005 of these stations is calculated as 1880 hours and the maximum operating hours was 2996 hours. Compared/cross-checked with these data, the DOE (JCI) considers the operating hours of the Project (3116 hours) is suitable and conservative.

(2) Annual power delivered to the Grid

The annual power delivered to the Grid is estimated by the following formula:

Annual power delivered to the Grid = (Annual power generation)

x (Electricity Coefficient) x (1-Self-consumption (%)) x (1-Line loss (%))

where the following factor was applied in the Project.

Electricity Coefficient (effective factor) = 1.0

--- justified by Table 3.4 of "the table of the rate of the effective electricity" of SL 16-95 of "Economic evaluation code for small hydropower projects" issued by Ministry of Water Resources (MWR) of China, and considered to be conservative

Self-Consumption = 1.2%

--- calculated in detail by the PP (Annex 2-10) and checked by the DOE (JCI)

Line Loss = 2.8% (To Xinfeng Grid) & 0.53% (To Ganzhou Grid)

--- calculated in detail by the PP (Annex 2-11) and checked by the DOE (JCI)

The above documents and the calculation method with justification were confirmed, and the DOE (JCI) considered the annual power delivered to the Grid is reasonable and appropriate.

Annex;

Annex 1-1 : Notification of ICBC
Annex 1-2 : Report on Operation Difficulties of GYEPI
Annex 1-3 : Minutes of Board Meeting (November10, 2004)
Annex 1-4 : Report on developing CDM
Annex 1-5 : Adjustment Report for the Budget
Annex 1-6 : Minutes of Board Meeting (March 08, 2005)
Annex 1-7: Notification of Commercial Bank of Ganzhou
Annex 1-8 : CDM Consultant's (Coway's) LoI
Annex 1-9 : CDM Consultation Contract
Annex 1-10 : Fax for site investigation from consultant
Annex 1-11 : Indicative Letter from Standard Bank
Annex 1-12 : Standard Bank's LoI
Annex 1-13 : ERPA between the PO and Standard Bank
Annex 1-14 : Application Form to NDRC

Annex 2-1 : Announcement of SL 16-95 Effectiveness (2006)
Annex 2-2 : Applicability and the benchmark of SL 16-95
Annex 2-3 : Investment Explanation on Engineering Construction
Annex 2-4 : The revised IRR Calculation
Annex 2-5 : Xinfeng Power Grid PPA
Annex 2-6 : Xinfeng Tariff Approval by the DRC
Annex 2-7 : Ganzhou Power Grid PPA
Annex 2-8 : PDR and Revised PDR
Annex 2-9 : Certificate of the Design Institute
Annex 2-10 : Calculation of Internal Consumption
Annex 2-11 : Calculation of Line Loss