Project title: Shandong Zaozhuang 15MW waste heat recovery for electricity generation project (I)
Project, reference No.1599
Project participants: Zaozhuang Lianfeng Coke Electricity Co.Ltd, China
Tepia Corporation Japan, Co., Ltd., Japan
DOE: Japan Consulting Institute, JCI

JCI's response on the request for review

1. Request 1 for review
   The DOE should validate the evidence of the CDM consideration and confirm that the expected additional income from the CDM was essential for the decision to go ahead with the implementation of the project activity.

JCI's Response:
JCI confirmed and validated the following four (4) evidences of CDM consideration;

1) The decision and minutes of Board Meeting held on 19 September 2006 /Appendix 1/
   The application of CDM project for the project activity was seriously considered and decided at this meeting.
2) The approval of the Project activity implementation by Shandong Provincial Economic and Trade Committee on 27 March 2007/Appendix 2 /
   Based on the condition of application of CDM, the Project participant (PP) applied the project activity implementation to the above local government and was approved on 27 March 2007.
3) Application of loan (28 March 2007) /Appendix 3/
   The PP applied the loan to Zaozhuang City Central Rural Credit Union for implementation of the project activity as CDM project.
4) The approval of loan on 10 April 2007/Appendix 4/
   Zaozhuang City Central Rural Credit Union approved the loan, provided that the project activity would be ratified by CHINA DNA and registered as CDM project by UNFCCC CDM-EB.

As the result of the validation of the above evidences and the financial analysis described in the Section B.5 of the PDD, in which IRR 5.81% without CDM is shown lower than the benchmark (12%) and IRR 16.68% with CDM is shown higher than the benchmark, JCI confirmed that the expected additional income from the CDM was essential for the decision to go ahead with the implementation of the project activity.

The revised validation report on the above is attached.

2. Request 2 for review
Further clarification is required on how the DOE has validated the baseline determination, in particular that the continuation of grid electricity imports is a more economically attractive alternative than the project activity undertaken without CDM.

JCI's Response:

JCI has validated the baseline determination as follows;

According to ACM 0004 Version 2, the possible alternative baseline scenario in absence of the CDM project activity would be as follows;

(a) The proposed project activity not undertaken as a CDM project activity;

(b) Import the same amount of electricity from NCPG, and the waste heat emitted into atmosphere directly;

(c) New captive(on grid or off grid) power generation on-site, using other energy sources than waste gas, such as coal, diesel, natural gas, hydro, wind, etc;

(d) A mix of options (b) and (c), in which case the mix of grid and captive power should be specified;

(e) Other uses of the waste heat.

As described in the PDD, baseline determination has been carried out as follows;

At first,

Scenario (c), (d) and (e) were excluded from baseline scenario, the reason and evidences are summarized in the below Table 1 based on described in the PDD.

Table 1 Result of Consideration of Alternative Scenario (c), (d) and (e)

Scenario	Result of consideration	Evidence
(c) New captive power generation	According to the regulations[1)], construction of fossil (coal, oil, natural gas) power plants (including captive plant)with a unit capacity of less than 100 MW is restricted construction and a unit capacity of less than 25MW is forbidden. For renewable energy generation, due to the technology development status and the high cost for power generation, solar PV, geothermal wind farm and biomass are alternatives far from being attractive investment in the grid in China. For example, the biomass project (*Shandong Shanxian 1*25MW Biomass Power Plant Project*) and the wind farm project (*Laizhou Diaolongzui Wind Farm*) have already been registered as a CDM project due to the high cost[2)]. Furthermore there is no hydro power resource in this area to provide a comparable output or	1): Small thermal power plant construction management (Ministry of electricity, 1997) 2): http://cdm.unfccc.int/Projects/registered.html 3): http://www.checc.cn/shuigis/province/provincedetail.jsp?provinceID=12

	the same services as the proposed project. As for the water resources investigation[3]), only a few water resources can be developed in Shandong Province, the commercially exploitable installed capacity is 50.8MW, of which, 34.9MW has been developed. In a word, due to the limitation of renewable resource or high cost at the project site, the generation from the small hydro, biomass, wind and other renewable energy generation methods are excluded.	
(d) Mix of (b) and (c)	Not baseline scenario. Because, scenario (c) is not the alternative scenario.	
(e) Other uses of the waste heat	A small amount of waste heat (only about 80 million cubic meters of the total 1.43 billion cubic meters of waste gas) has recovered for heat supply; all the rest waste heat are emitted into atmosphere directly through chimney without any other use. According to the local government letter approval, due to the limited heat demand nearby, the expected maximal heat demand is only 150TJ, that is to say, even after the proposed project activity put into operation, the rest waste gas will still emit into the air directly. Therefore, the waste heat of smoke gas for electricity will continue to be emitted into the air directly in absence of the proposed project, no other uses exists.	

Secondary,

Alternative scenario (a) and (b) are consistent with China current laws and regulations.

According to ACM 0004, the scenario that does not face any prohibitive barrier and is the most economically attractive should be considered as baseline scenario.

The result of consideration is shown in the Table 2 as follows;

Table 2 Result of Consideration of Alternative Scenario (a) and (b)

Scenario	Cost of Electricity	Result of Consideration
(a) The project activity without CDM	Around 300 Yuan/MWh	Electricity generation cost is lower, but higher investment cost. In Step 2 of B.5 of the PDD that the financial internal return rate (FIRR) of alternative scenario (a) is verified only 5.81%, which is worse than that of the benchmark (12%).
(b) Import of	Actual Electricity cost	No investment cost required. Electricity purchase cost is high, but this is the common practice.

Electricity	purchased during 2005-2007 688 Yuan/MWh	The Letter of Approval to the "Project of 1,000,000 tones/year Clean Coke Production Plant" was issued on Dec.9, 2003 by the local government/Appendix 5/ and the project owner constructed and started the operation of the first phase of the Plant (300,000 tones/year Coke Production) on Jan.1, 2005. Nevertheless, no any implementation of waste heat recovery for electricity generation project had been realized since then and this made the project owner kept buying the electricity from the Grid for the coke production of the first phase Plant/Appendix 6/.

As the result of consideration of the Table 2, the buying the electricity from the Grid is a more economically attractive alternative than newly constructing and operating a waste heat recovery for electricity generation plant.

Therefore, JCI has validated that the alternative scenario (b) is the most likely baseline scenario, which is the currently continues and no barriers for implementation and is less investment cost intensive.

The above validation result is described in the revised validation report attached.

With JCI's responses to the request for review comments issued by CDM Executive Board Members, we wish that the issues have been fully and appropriately addressed. We sincerely hope that the CDM Executive Board would approve the proposed project activity for registration.

Appendix

Appendix 1: The decision and minutes of Board Meeting held on 19 September 2006
Appendix 2: The approval of the Project activity implementation by Shandong Provincial Economic and Trade Committee on 27 March 2007
Appendix 3: Application of loan (28 March 2007)
Appendix 4: The approval of loan on 10 April 2007
Appendix 5: The letter of approval to feasibility study report for the "Project of 1,000,000 tones/year Clean Coke Production Plant" of Zaozhuang Lianfeng Coke Electricity Co., Ltd.
Appendix 6: Receipt Leaf