Response to the request for review for the CDM project activity "Guangzhou Xingfeng Landfill Gas Recovery and Electricity Generation CDM Project" with the registration number 1075

Attention: Mr. Kai-Uwe Barani Schmit, Manager CDM Section
CDM Executive Board to Kyoto Protocol

July 31, 2007

Dear Sirs,

We were informed that our project Guangzhou Xingfeng Landfill Gas Recovery and Electricity Generation (Reference 1075) was requested for review by CDM Executive Board. As required by the Board, we would like to answer the questions, clarify the issues and provide additional information, as required by the Board, as follows.

1 The Board required that *Full details of the sensitivity analysis conducted by the project participants should be included in the PDD. The DOE should confirm that it has validated this sensitivity analysis.*

Our clarifications:

For the proposed project, three financial parameters are considered as critical factors for sensitivity analysis:

- Total investment;
- Electricity tariff;
- O&M cost.

Assuming the above factors vary in the range of -10% ~ +10%, the IRR of the proposed project (without income from selling CERs) varies to different extent, as shown in the following table. The calculation sheets in the case of -10% total investment and -10% O&M cost and +10% electricity tariff are attached in Annex 1 of this document and also will be added in the Annex 3 of the revised PDD of the proposed project.

Table Sensitivity analysis results

Change rate	-10%	-5%	0% (Base case)	5%	10%
Total investment	-1.47%	-2.45%	-3.37%	-4.24%	-5.06%
Electricity tariff	N/A[1]	N/A[1]	-3.37%	0.19%	3.03%
O&M cost	1.97%	-0.41%	-3.37%	N/A[1]	N/A[1]

In the case that the total investment decreases by 10%, the IRR of the proposed project will be negative and will not exceed the benchmark 8%. Therefore, the proposed project is always lack of financial attractiveness within the reasonable range of total investment.

When the electricity tariff increases by 10%, the IRR of the proposed project will not exceed the

[1] Negative, the calculation results showed multi-solutions.

benchmark 8%. Therefore, the proposed project is always lack of financial attractiveness within the reasonable range of electricity tariff.

In the case that the annual O&M cost decreases by 10%, the IRR will not exceed the benchmark 8%. Therefore, the proposed project is always lack of financial attractiveness within the reasonable range of annual O&M cost.

In conclusion, without CDM CERs income, the financial analysis of the proposed project will be lack of financial attraction and couldn't become the baseline scenario.

2 **The Board required that** ***The statement regarding the benchmark of the Hangzhou project in the common practice analysis is unclear (p.13 of the PDD), "After five years, …, in the case that electricity price is 0.8 yuan/kWh, the internal return rate of Hangzhou project is 8.37%, lower than the 8%, benchmark of internal return rate set in that analysis." Further clarification is required.***

Our clarifications:

(1) Here "8.37%, lower than the 8%" is the editorial error. At beginning, 12% is adopted as the benchmark because Guangdong province is one of the richest regions in China and it will require the high return on investment. After the indication by the clarification on the eligibility of benchmark from DOE JCI, 12% is higher than 8% that other project has adopted (such like 0887-Shenzhen Xiaping project, registration date: 04 May 2007[2]). Then 8% is assumed as our proposed project benchmark. But substitution operation made such error.

(2) In the PDD of proposed project, the analysis of joint expert group from China Ministry of Agriculture and US Department of Energy has been quoted. With the assumption of electricity tariff as 0.8 yuan/kWh, the internal return rate of Hangzhou Tianziling project in that analysis is 8.37%, which is lower than 12%, benchmark of internal return rate adopted in that analysis[3]. Therefore, Hangzhou Tianziling project is lack of commercial attractiveness in the project financial analysis.

According to the latest notification of National Development and Reform Commission of East China Power Grid[4], the latest on-grid tariff of coal fired is 0.4045 yuan/kWh, adding 0.015 yuan/kWh for desulphurization unit, the highest on-grid tariff will be 0.4195 yuan/kWh. Compared with 0.80 yuan/kWh which has been expected in Hangzhou Tianziling project, the tariff is much lower than the assumption (while 0856-Wuxi Taohuashan project[5]: registration date: 09 Apr 2007 which is located in the same East China Power Grid, has adopted tariff of 0.5 yuan/kWh). As a result the tariff of Hangzhou Tianziling project made high tariff assumption and leaded to high IRR result.

Moreover, though required financial data of Hangzhou Tianziling project are not available, qualitative analysis obviously shows that the IRR of Hangzhou Tianziling project will be

[2] http://cdm.unfccc.int/Projects/DB/SGS-UKL1169636952.02/view.html

[3] MOA/DOE Project Expert Team, Biomass Energy Conversion Technologies in China: Development and Evaluation, China Environmental Science Press, 1998, Beijng. The data is also available in the website: http://www.cnjlc.com/Article/200603/7105.html

[4] http://jgs.ndrc.gov.cn/zcfg/t20060630_75066.htm

[5] http://cdm.unfccc.int/Projects/DB/DNV-CUK1168515319.23/view.html

lower than 8% if the tariff of 0.63 yuan/kWh of our proposed project would be adopted in project financial analysis of Hangzhou Tianziling project (0.8 yuan/kWh is 27% higher than the tariff of 0.63 yuan/kWh of our proposed project). So the existence of Hangzhou Tianziling project does not contradict the claim of unattractiveness of proposed project.

(3) Furthermore, there are two existing similar projects in Guangdong province: Shenzhen Xiaping project[6] and Meizhou project[7], the tariffs are adopted as 0.63 yuan/kWh and 0.55 yuan/kWh respectively. Both projects have already been registered as CDM project for the reasons of financial barriers.

In conclusion, the existence of above projects does not contradict the claim that the proposed project activity is financially unattractive.

This part of PDD will be revised accordingly.

3 **The Board required that** ***PP used the Simple Adjusted OM to calculate the emission factor of the Southern Grid for the project activity, on the grounds that low-cost/must-run resources in Southern China constitute less than 50% of the grid resource mix. However, this assumption is not substantiated. According to footnote 5 in page 6 of ACM0002 v6: "Low operating cost and must run resources typically include hydro, geothermal, wind, low cost biomass, nuclear and solar generation. If coal is obviously used as must-run, it should also be included in this list…". If coal is a low-cost/must-run in this case, then calculation of OM must be re- evaluated and calculated using the Average OM, and the baseline might need to undergo modifications.***

Our clarifications:

" In Methodology ACM0002 (Consolidated methodology for grid-connected electricity generation from renewable sources --- Version 6), Low cost/must run resources is defined as "Low operating cost and must run resources typically include hydro, geothermal, wind, low-cost biomass, nuclear and solar generation. If coal is obviously used as must-run, it should also be included in this list, i.e. excluded from the set of plants." As for South China Power Grid that is dominated by coal-fired electricity, obviously, coal-fired electricity does not belong to the one of "low operational cost" since the coal cost, the main part of the operational cost of coal-fired electricity, is much higher than hydro, geothermal and wind that have no such cost. And also as such, when the Grid would reduce the operation of parts of power plants, during the lower load demand period, some of the coal-fired power plants will be asked to undertake such function firstly so as to maximize the utilization of hydro, geothermal and wind power plants that will consume renewable resources for electricity generation with no cost. Therefore, obviously, coal-fired electricity in South China Power Grid does not belong to the one of "must run". Hence, coal-fired electricity of South China Power Grid should not be looked as "Low cost/must run".

It is the common understanding by CDM experts in China that coal-fired electricity shall not belong to low cost/must run resources. Chinese DNA organized to study the calculation method of grid GHG emission factor, and issued the grid GHG emission factors for all grids of China, and the calculation method does not consider coal-fired electricity as low cost/must run resources. (The low-cost/must run resources (Hydro, Nuclear and other) data of total electricity generation

[6] http://cdm.unfccc.int/Projects/DB/SGS-UKL1169636952.02/view.html
[7] http://cdm.unfccc.int/Projects/DB/DNV-CUK1135170125.82/view.html

in South China Power Grid in the recent 5 years (2000-2004) are available in the Annex 2, these tables will be also shown in the Annex 3 of revised PDD)

Many projects from South China that have been registered as CDM projects by CDM Executive Board, also do not consider coal-fired electricity as low cost/must run resources, when calculating GHG emission factors of South Grid. It is our understanding that CDM Executive Board has accepted this calculation method.

With the above clarification, explanation and additional information, we wish that the concerns raised by CDM Executive have been fully and adequately addressed, and we sincerely hope that the CDM Executive Board would approve this project for registration.

Yours sincerely,

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