Response to the request for review on the CDM project activity
"Waste Gas based Captive Power Plant in Liangang Group"
with the registration number 1228

Attention: Mr. Hans Jurgen Stehr, Chairman
CDM Executive Board to Kyoto Protocol

November 10, 2007

Dear Mr. Stehr,

We were informed that our project "Waste Gas based Captive Power Plant in Liangang Group (Ref. no. 1228)" was requested for review by CDM Executive Board on 30/10/2007. As required by the Board, we would like to answer the questions, clarify the issues and provide additional information, as follows.

Issue 1:

Further clarification is requested as to the exact description of the project activity, the baseline, and the project boundary. A diagram should also be provided.

Our clarifications:

We understand that this issue focuses on four aspects: the project activity, the baseline, the project boundary and the diagram of the spatial extent of the Project. We would like to provide clarification one by one.

(1) The Project Activity:

The Project is a waste gas based captive power plant. The objective of the Project is to make use of part of the surplus blast furnace gas (BFG), which will be otherwise directly flared in the absence of the Project, of Liangang Group to generate electricity, displacing part of the electricity purchased by Liangang Group from the Central China Grid. Since electricity generation of the Central China Grid is dominated by fossil fuel fired power plants, to use electricity generated by the Project to displace electricity generated in the Central China Grid will achieve CO_2 emission reductions.

(2) The Baseline:

The baseline of the Project is identified as "blast furnace gas was flared and electricity was supplied from the grid". To identify the baseline, five alternatives were discussed in Section B.4 of the PDD.

Of the five alternatives,

• Alternative a (The Project was not undertaken as a CDM project activity) is excluded for it faces prohibitive barriers.

• Alternative c (Power generation by existing or new captive power plants on-site, using other energy sources than waste gas and/or heat and/or pressure, such as coal, diesel, natural gas, hydro,

wind, etc) is not feasible for the existing captive power plant is impossible to generate more electricity, and the construction of a new captive power plant is forbidden by law (for fossil fuel fired captive power plants) or limited by resource availability (for renewable energy based captive power plants).

• Alternative d. (A mix of options (b) and (c), in which case the ratio of power generation by the grid and the captive power plant should be specified) is excluded for Alternative c is excluded.

• Alternative e. (Other uses of the waste gas) is excluded for heating demand of the project owner has been satisfied and there leaves no possibility for Liangang Group to utilize surplus BFG.

Of the five alternatives, only Alternative b (The current situation of surplus BFG being flared would continue and electricity would be provided by the grid) is feasible. Therefore, it is identified as the baseline scenario of the project activity.

(3) The Project Boundary:

The baseline of the Project is identified as “blast furnace gas was flared and electricity was supplied from the grid”. To determine the spatial extent of “the power plants connected physically to the electricity grid that the proposed project activity will affect”, definition in the consolidated baseline methodology ACM0002 is applied as per the consolidated methodology ACM0004, and the spatial extent of power system is determined to be the Central China Grid.

Therefore, the spatial extent of the Project comprises the captive power generation equipment of the Project (i.e. the CCPP captive power plant) and the power plants connected physically to the electricity grid that the proposed project activity will affect (i.e. the power plants connected physically to the Central China Grid).

(4) The diagram of the spatial extent of the Project

To make a clear understanding, a diagram below provides the electricity sources of Liangang Group. The spatial extent of the Project is defined with dashed line.

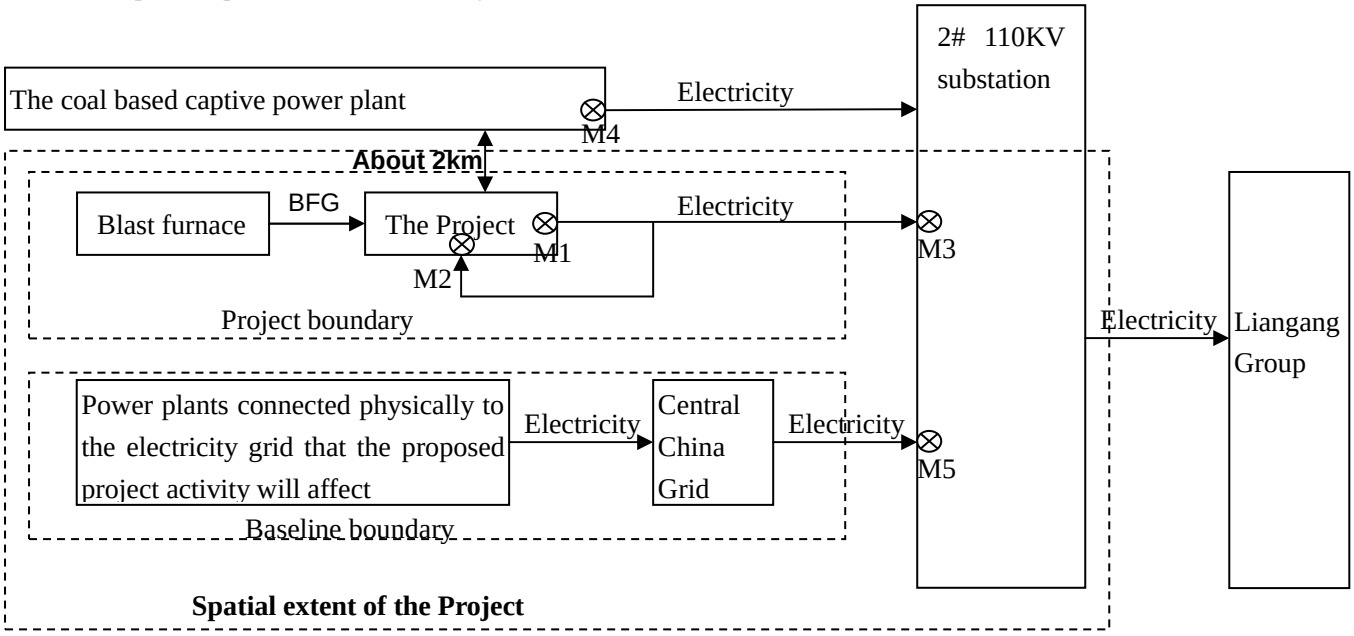

Figure 1. Spatial extent of the Waste Gas based Captive Power Plant in Liangang Group

Issue 2:

Further clarification is requested as to why the CO_2 emissions from the coal based captive power plant are not included in the baseline, as the methodology requires that the CO_2 emissions from fossil fired captive power plants supplying the project site facility be included.

Our clarifications:

The reasons that the CO_2 emissions from the coal fired captive power plant are not included in the baseline are as follows:

(1) The objective of the CFBB is to ensure the safety of the hot blast supply to the blast furnaces, which would not be influenced by the operation of the Project.

As described in the Preliminary Design Report and the EIA Report, the main objective of the two sets of coal fired Circulating Fluidized Bed Boilers (CFBB) with the capacity of 35 t/h is to ensure the safety of the hot blast supply to the blast furnaces.

The iron making process can be summarized as a continuous process that raw materials such as iron ore, coke and flux are input into the blast furnace from the roof of the blast furnace, air with high temperature and high pressure is blown into the blast furnace from the entrance below the blast furnace. Oxygen in the iron ore is captured by carbon in the coke, or captured by CO which is generated due to the incomplete combustion of the coke in the hot blast, and then the iron is deoxidized[1]. Hot blast to blast furnace is one of key elements for the iron making process and the temperature and pressure of hot blast and the stability of continuous hot blast supply are preconditions for the iron production with high production capacity and high production quality[2], and also preconditions for avoiding the blast furnace accidents resulted from the BFG backwards flow[3].

The hot blast supply to blast furnaces in Liangang Group is generated by the steam partly from gas combustion, partly from the two sets of coal fired CFBB. The monthly hot blast demand in Liangang Group is more than 150 million m^3, corresponding to 40,000 t steam[4]. The monthly steam generation for the two sets of CFBB is about 36,000 t[5]. So, the actual steam generation capacity of the two sets of coal fired CFBB is only for ensuring the hot blast supply safety during gas production fluctuation and gas combustion equipment maintenance. The main objective of the two sets of coal fired CFBB will not be impacted by the Project and the power generation from the steam produced by the two sets of coal fired CFBB will not be impacted by the Project. So, the CO_2 emissions from the coal fired captive power plant are not included in the baseline

(2) The electricity generation of the Project will not displace the electricity generation from the steam of the two sets of coal fired CFBB.

1 http://knology.chinaccm.com/phrase-2006031016425100126.html.
2 http://www.gongkong.com/exhibit/lunwen/paper_detail.asp?id=7498.
3 http://www.kepu.gov.cn/zlg/gangtie/wz3.htm.
4 The regular statistic table of Dec., 2006, provided by the coal fired captive power plant.
5 Calculated based on the yearly statistic table of 2006, provided by the coal fired captive power plant.

Based on the statistic table of Liangang Group of December 2006, the total electricity consumption of Liangang Group is 173.01 GWh, and 70% of electricity consumption of Liangang Group is satisfied with electricity purchased from the Central China Grid. As described in the PDD, the annual net electricity supply of the Project is 351.5 GWh. Calculated based on this data, the monthly electricity supply of the Project is 29.3 GWh, accounts about 17% of electricity consumption of Liangang Group. Therefore, the electricity generation of the Project will not displace the electricity generation from the steam of the two sets of coal fired CFBB.

(3) It is conservative to exclude the coal fired captive power plant from the baseline.

The coal consumption per MWh for the coal fired captive power plant is up to 0.50959 t/MWh[6], which means the emission factor of the coal fired captive power plant is up to 1.0557 tCO_2/MWh, 11.88% higher than the emission factor of 0.9436 tCO_2/MWh of the Central China Grid. It is conservative that the CO_2 emissions from the coal fired captive power plant are not included in the baseline.

Issue 3:

Further clarification is required to confirm whether the DOE validated that the blast furnace gas was flared and electricity was supplied from the grid in the baseline.

Our clarifications:

We understand that this issue should be answered by DOE. We would like to provide additional information for CDM EB's reference.

(1) For the fact that blast furnace gas was flared

The fact that "blast furnace gas was flared and electricity was supplied from the grid" is described in the EIA Report of the Project compiled by the Hunan Research Institute of Environment Protection. That institute possesses the qualification certificate of level I for environmental impact assessment and the EIA Report was approved by the Hunan Environmental Protection Agency in Dec., 2005 (Document No. Xianghuanping[2005]139). Therefore, description in the EIA Report is highly reliable. Scanned pages and their translation of the cover page, the qualification certificate of Hunan Research Institute of Environment Protection and the description regarding the fact are provided this time along with the response.

Furthermore, the situation described in the EIA Report has been confirmed during site visit by two validators from DNV.

(2) For the fact that electricity was imported from the Central China Grid

Detailed data of electricity imported from the Central China Grid has been recorded in the monthly statistic tables of Liangang Group for several years. The electricity purchase invoice has been checked during site visit by two validators from DNV.

Issue 4:

6 Calculated based on the yearly statistic table for 2006, provide by the coal fired captive power plant.

Further clarification is required to demonstrate that the monitoring plan, e.g. the metering of the electricity from the coal based captive power plant and the waste gas/heat heat will ensure that only emission reductions from the waste gas/heat will be claimed.

Our clarifications:

Table 1 summarizes different meters installed at different locations for the measurement of different data.

Table 1. Function of meters shown in Figure 1

No. of meter	Installed location	Data to be measured by the meter
M1 (main / back up)	The outlet of the gas generator and the steam generator	Electricity generated by the Project
M2 (main / back up)	The transformers for auxiliary electricity in the plant of the Project	Auxiliary electricity consumed by the Project
M3 (main / back up)	The inlet of the 2# 110KV substation	Net electricity supplied by the Project
M4 (main / back up)	The outlet of the generators in the coal fired captive power plant	Electricity generated by the coal fired captive power plant
M5 (main / back up)	The inlet of the 2# 110KV substation	Electricity imported from the Central China Grid

Figure 2 demonstrate the distance between the coal fired captive power plant and the Project. It is drawn based on the layout chart provided by Liangang Group[7].

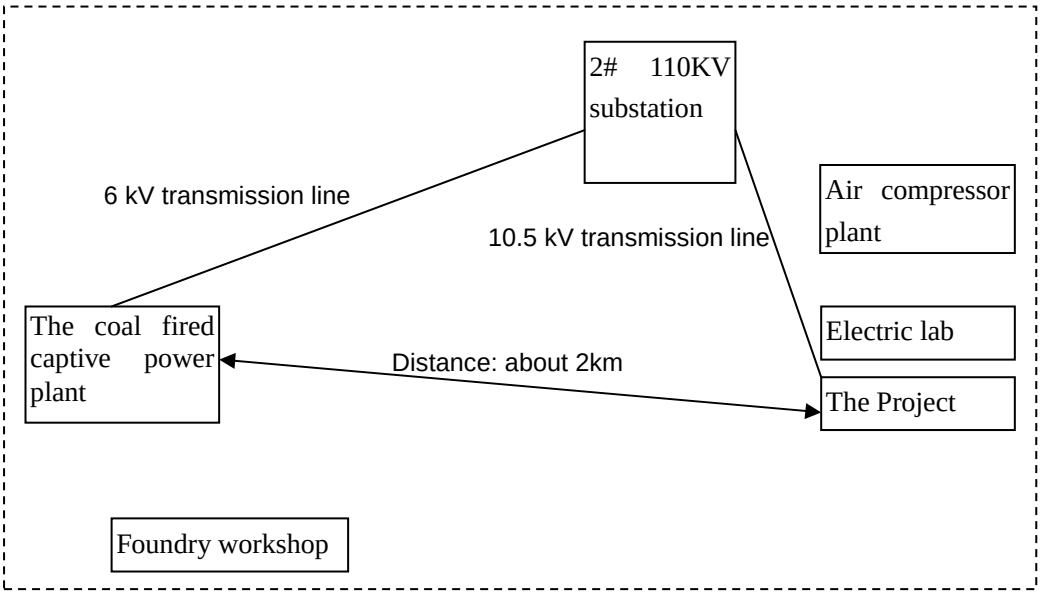

Figure 2. Layout of the Project and the coal fired captive power plant

The distance between the Project and the coal fired captive power plant is about 2 km. Moreover, there is not any physical electric line between the Project and the coal fired captive power plant.

Since electricity generation of the existing captive power plant will not be affected by the Project, metering the electricity from the coal fired captive power plant is not necessary. As shown in the

7 Layout of the Project and the CFBB, provided by the Lianyuan Iron and Steel Group Co., Ltd..

diagram, metering of the electricity generation and supply of the Waste Gas Based Captive Power Plant in Liangang Group is implemented separately from the coal fired captive power plant. Therefore, only emission reductions from the waste gas will be claimed for the Project.

With the above clarification, explanation and additional information, we hope that the CDM Executive Board would be satisfactory and will approve the registration of our project activity in a sooner manner.

Yours sincerely

Lianyuan Iron and Steel Group Co., Ltd.