Mr. Rajesh Kumar Sethi
Chair, CDM Executive Board
UNFCCC Secretariat
CDMinfo@unfccc.int
8 October 2008

Re：Request for review of the request for issuance for the CDM project activity “BOG and COG Utilization for Combined Cycle Power CDM Project in Jinan Iron & Steel Works" (Ref. no. 0812)

Dear Mr. Sethi and members of the Board,

Jinan Iron and Steel Works Group Co., the project owner, has been informed that the request for issuance for the CDM project activity “BOG and COG Utilization for Combined Cycle Power CDM Project in Jinan Iron & Steel Works " (Ref. no. 0812) is under consideration for review.

Through this letter we would like to comment on the reasons for review and provide additional information.

We hope that the clarifications and attached information addresses the concerns of the Board. On behalf of the project owner, Michael Rumberg (+49-(0)160-7150991) from Noble Carbon Credits and Zhang Yuzhong (+86 13801216732) from CAMCO international, will be the main contact for the review process and is available to address questions, if needed by the Board.

Yours sincerely

Jinan Iron and Steel Works Group Co.
October 8th, 2008

Contact information
Michael Rumberg
Noble Carbon Credits
wangzheng@noblecarbon.com
T: +49-(0)160-7150991

Zhang Yuzhong
CAMCO
zhang.yuzhong@camcoglobal.com.cn
T : +86 13801216732

1) The DOE is requested to provide further information on how it verified that PP has deducted consumption of electricity by the auxiliary equipments of the project activity while calculating the net electricity supplied by the project activity

Response by PPs

Statement by project participants:

The PPs confirm that the consumption of electricity by all auxiliary equipments of the project activity has been deducted while calculating the net electricity supplied by the project activity.
During the current monitoring period, the project activity monitored the net electricity supplied by the project activity (EG_Y) for CDM and the total electricity generated (EG_{GEN}) for management purpose and the results are:

EG_{GEN} = 755,376,000 kWh
EG_Y = 493,439,760 kWh.

According to ACM0004,

$$EG_Y = EG_{GEN} - EG_{AUX}.$$

Therefore, the consumption of electricity by auxiliary equipments (EG_{AUX}) during the current monitoring period is obtained as follows:

$$EG_{AUX} = EG_{GEN} – EG_Y = 261,936,240 \text{ kWh}$$

In conclusion, the consumption of electricity by auxiliary equipments during the current monitoring period is 261,936,240 kWh (this is more than 34% of the total electricity generated), and has been deducted while calculating the net electricity supplied by the project activity.

The PPs would like to give detailed information on how this is done as follows.

Electricity monitoring system

The project activity consists of two independent phases and each phase is interconnected with the power grid via one interconnection line (refer to attachment 1). The net electricity by the project activity can only be supplied to the power grid via the interconnection lines.

The electricity flows in two directions via the interconnection line:

a) E_{Export} , electricity generated by the project activity can be sent out to the power grid and

b) E_{Import}, the project activity can import electricity from grid for maintenance.

Therefore, the net electricity supplied by the project activity equals to the difference between electricity generation sent to the grid and electricity consumption imported from grid, i.e.,

$$EG_Y = E_{Export} - E_{\mathrm{Im}\,port} \quad (1)$$

To get the net production of electricity from the project activity, the project activity adopts the electricity monitoring system describe in the approved PDD and required by the latest waste gas methodology ACM0012 (the replacement of ACM0004). This monitoring method is also required by ACM0002. The result is the same as from the monitoring methodology described in ACM0004.

As described in the PDD and verification report, two bi-directional power meters (refer to attachment 1 and 2) installed on the interconnection lines are used to directly monitor the net electricity supplied by the project activity. By bi-directional, it is meant that the meters can monitor both the electricity generation sent to (E_{Export}) and electricity consumption imported from grid (E_{Import}).

With this monitoring system, the consumption of electricity by the auxiliary equipments is deducted in the following ways while calculating the net electricity supplied by the project activity:

- When the power plant is in normal operation, the generated electricity (EG_{GEN}) meets the consumption of electricity by the auxiliary equipments ($EG_{AUX,Normal}$) first, and only the surplus electricity (exclusive of electricity consumption by auxiliary equipments) is sent to the grid. Therefore, the metered electricity generation sent to the grid does not include the consumption of electricity by the auxiliary equipments. In other words, the consumption of electricity by the auxiliary equipments is deducted automatically in this case. If this is entered into formula, then

  $$E_{Export} = EG_{GEN} - EG_{AUX,Normal} \quad (2)$$

- When the whole power plant is under maintenance, no electricity is generated ($EG_{GEN} = 0$) and the consumption of electricity by the auxiliary equipments and/or maintenance ($EG_{AUX,\,Maintenance}$) is implored from the grid. Therefore,

  $$E_{\mathrm{Im}\,port} = EG_{AUX,Ma\,\mathrm{int}\,enance} \quad (3)$$

  This imported electricity (E_{Import}) is deducted manually while calculating the net electricity supplied by the project activity.

There are no other operation modes in addition to the above two scenarios.

The net electricity supplied by the project can be obtained with the following formula:

$$EG_Y = EG_{GEN} - EG_{AUX} \quad (4)$$

It is obvious that the total consumption of electricity by the auxiliary equipments equals to the sum of the two operation cases, i.e. :

$$EG_{AUX} = EG_{AUX,Normal} + EG_{AUX,Maintenance} \quad (5)$$

Therefore, we have:

$$EG_Y = EG_{GEN} - EG_{AUX} = EG_{GEN} - (EG_{AUX,Normal} + EG_{AUX,Maintenance})$$

$$= (EG_{GEN} - EG_{AUX,Normal}) - EG_{AUX,Maintenance} = E_{Export} - E_{Import} \quad (6)$$

In conclusion, the electricity monitoring system adopted by the project activity is in line with what is required by ACM0004.

2) The number of credits claimed is lower than indicated in the PDD. PP is requested to clarify why the PLF is lower than assumed in the PDD, thereby also explaining whether higher PLFs than the PDD could have been applicable as well.

PPs' Response

There are two reasons which make:

- The capacity of the interconnection line for phase II restrict the operation of the generation units
- Technical barriers as described in PDD affect the performance of the project activity.

Interconnection with power grid for phase II

There are two interconnection lines designed to connect phase II with the power grid, but only one line was built. As the capacity of this interconnection line is not enough for transmitting all the electricity generated by phase II, some of the generation units could not be put into operation.
The project owner is building the second interconnection line, and it is expected to be put into operation in a few months.

Technical barriers

The project activity is not a traditional natural gas fired CCPP (combined cycle power plant). As the project is one of the first applications of using waste BOG and COG to generate power in combined cycle configuration, there are quite a few technical barriers to it (please refer to PDD for detail). As a matter of fact, the project activity did experience all the technical barriers described in the PDD. As a result of this and also due to limitation of waste gas, the Power Load Factors (PLFs) are lower than assumed in the PDD and thus result in the number of credits claimed lower than indicated in the PDD

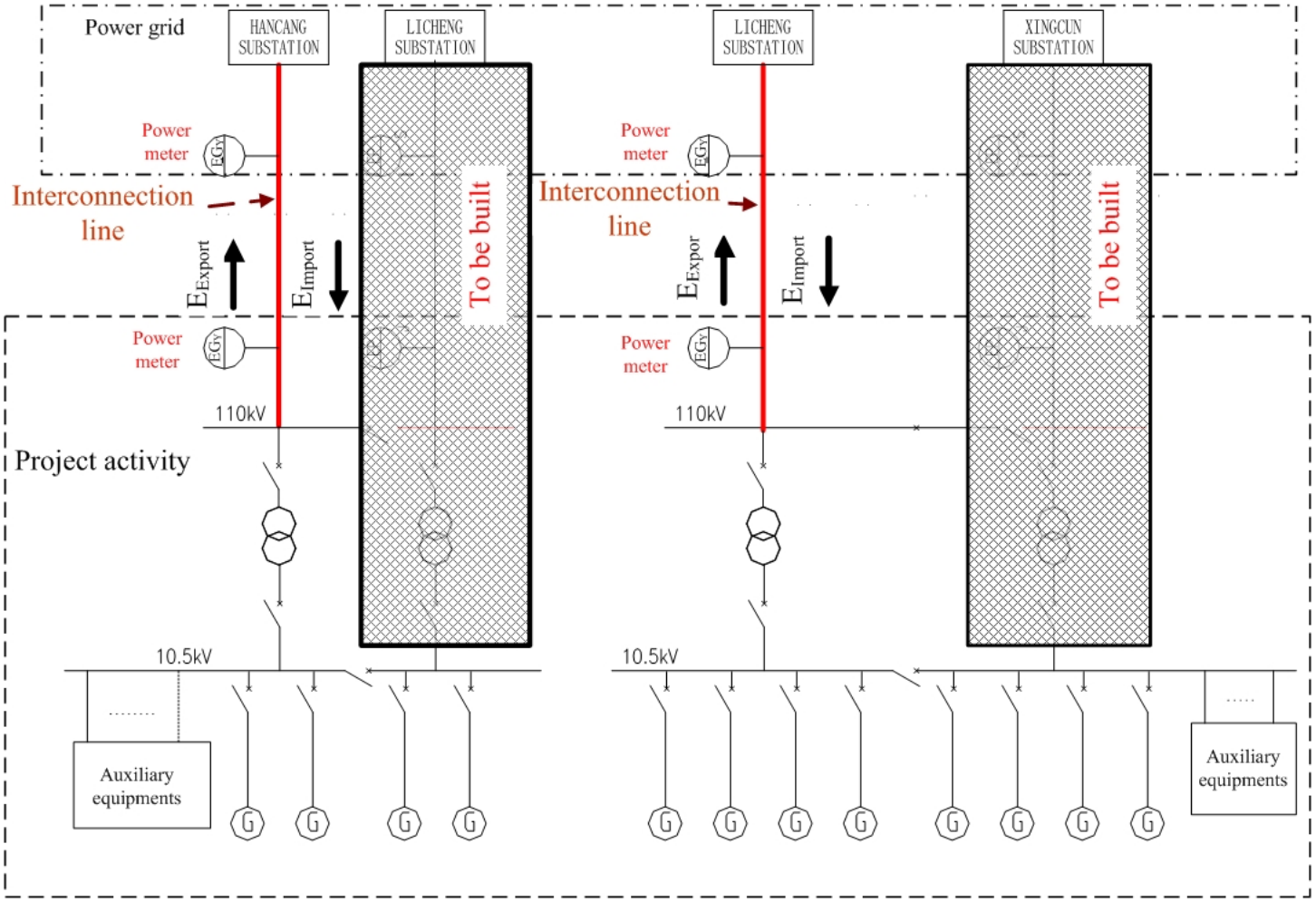
- Lower operation hours than PDD for generation units in operations. As described in barriers analysis of the PDD (Page 19), the design institute lacks "engineering experience in the design of advanced CCGT technology for burning low energy fuels, such as waste steel gasses, and particularly on the scale as proposed by the project activity." In the feasibility study report prepared by local design institute, the operation hours are 7500 hours. For a traditional natural gas fired CCPP, this might be applicable, but not for the project activity. Even in the PDD, the PP anticipated that the optimistic operation hours would be 6000 hours (refer to page 19 of PDD). However, the PP has to use 7500 hours in the PDD in order to be conservative when demonstrating the additionality of the project activity and estimated emission reductions. The reason for the lower operation hours are due to the following factors (technical barriers described in page 20 of the PDD):
  - The mixture gas of BOG and COG is a waste gas from industrial processes and contains a lot of harmful gas or particulates. Although a pretreatment system is installed, the quality of the cleaned gas is still not good enough and thus causes some problem with the gas turbines.

- As no reference project available during the initial operation period, the operators lack of experience, and the generator units did not operate as well as expected.
- Unstable gas quality (mixture ration of BOG and COG) also increases the operation difficulty

- Low net colorific value of waste gas results in derating of the gas turbines.
- Lower efficiency of the generator units due to the poor quality of fuel and lack of operation experience also reduced the electricity generation with the same amount of available gasses.
- Higher electricity consumption by auxiliary equipments than expected as the waste gas pretreatment, gas compressors and other auxiliary equipment have also used more of the electricity produce than originally expected which result in less net electricity production. The consumption of electricity by the auxiliary equipments is 25% in the PDD, while the operation data show that it is between 30% and 35%.

The project owner has been trying its best to improve the factors within its control, like good operation practice of the project activity to improve the performance of the project activity. In combination with the second interconnection line, the PPs expect that the PLF will improve. But it is unlikely that a higher PLF than in the estimations in the PDD will be reached.

Attachment 1 Project activity boundary and electricity monitoring system



Attachment 2 Electricity monitoring system