Mr. R K Sethi
Chair, CDM Executive Board
UNFCCC Secretariat
CDMinfo@unfccc.int

5th November 2008

Dear Mr. Sethi,

Re: Request for review of the request for registration for the CDM project activity "Electrotherm 30 MW combined waste heat recovery and coal based captive power plant at Kutch." (Ref. no. 1903)

SGS has been informed that the request for registration for the CDM project activity "Electrotherm 30 MW combined waste heat recovery and coal based captive power plant at Kutch." (Ref. no. 1903) is under consideration for review because three requests for review have been received from members of the Board.

The requests for review are based on the same reasons outlined below. SGS would like to provide a response to the issue raised by the request for review:

Request for Review 1-3, Issue 1:

The DOE is requested to further explain how it has validated the barrier analysis and how the CDM would help to overcome the barriers.

SGS' Response to Issue 1:

The barrier analysis was validated on the basis of publicly available and third party documents. The project activity is a future activity and when the site visit was carried out was in the construction phase. The project activity was facing technological barriers which actually would have prevented the implementation of the project activity as mentioned on page 11 of the validation report (Annex 2). The web-link mentioned on page 11 (http://www.rimbach.com/scripts/Article/PEN/Number.idc?Number=12) of the validation report (Annex 2) was checked and it was found that the problems mentioned here would have been phased by the PP during operation as envisaged by PP while taking the decision to go ahead with the project activity with CDM. Management was interviewed during the site visit. The project was under construction as checked during the site visit.

More technological barriers and other barriers envisaged by PP are mentioned below.

(a) Impact of waste heat availability on the power generation potential of the project activity
(b) Impact of specific waste quality on the project equipment
(c) Impact from lack of qualified local labour to operate the project plant
(d) Impact of raw material (Coal and Iron ore) on the project activity

All these barriers were validated against documentation (Annex 1.1 - 1.6). The on page 11 of the validation report (Annex 2) the barriers are also mentioned as the following:

i) Steelworld.com – Steel Research Papers: Coal : The most critical raw material for sponge iron making, http://www.steelworld.com/coalcri.htm 30.08.2007. (Annex 1.1)
ii) Ministry of Coal, Government of India: The Expert Committee on Road Map for Coal Sector Reforms, New Delhi, December 2005, page 58 (Annex 1.2)
iii) P.R.K. Raju: Sponge Iron Industry – An overview of problems and solutions; published in: Steelworld, July 2005;p. 20 ; http://www.steelworld.com/technology7.pdf, 30.08.2007 (Annex 1.3)

iv) Patel M.R., Navin Nath - Improve Steam Turbine Efficiency, http://www.iffco.nic.in/applications/Brihaspat.nsf/d111b7bb8d3d76bbe525656f00324885/fddd5567e90ccfbde52569160021d1c8/$FILE/turbine.pdf , 30.08.2007, page 3-6 (Annex 1.5)

v) Ban on ore prices gain momentum; published in Steel world, January 2006, page 8 http://www.steelworld.com/analysis0106.pdf (Annex 1.4).

Staff recruited (Annex 1.6) was checked for the impact of lack of qualified local labour to operate the project plant. It was observed that PP has employed 50% of its personnel from outside the region.

These problems mentioned were envisaged by PP while going ahead with the project activity taking CDM funds into account. This was checked that without CDM they would not have implemented the project as mentioned on page 11 of validation report (Annex 2). The ERPA was also signed by PP before starting the project construction as PP envisaged the problems they might be facing in implementation of project activity. This also showed that CDM played a important part in taking the decision to go ahead and overcome the barriers faced by the project activity. All these documents showed that the barriers envisaged by PP would have prevented the implementation of project activity.

The common practice for the region of Gujarat was validated on the basis of documentary (Annex 1.7-1.9) evidences mentioned on page 11 of validation report (Annex 2).

The letter from Kutch Iron and Steel Association (Annex 1.8) mentions that the project is one of the first of its kind in the region. The power supply practices in all those industries within the region was also reviewed by the validator. The validator has reviewed a survey provided by the 'Kutch Iron and Steel Association' that provides an overview of the power supply of all existing and planned sponge iron plants in the 'reference region'. This survey from October 2007 indicates that there are 15 existing sponge iron units (in 11 existing plants) in the 'reference region' and 6 more units under construction at that time (out of which 3 are in new plants and 3 are an expansion of existing plants). Existing sponge iron plants tend to use various sources of electricity: grid, captive thermal power plants or a mix of both sources (Annex 1.10). With regards to the sponge iron sector in India, the report of the Joint Plant Committee was reviewed. It was found that the report does not mention any existing captive power plants in sponge iron industries in the state of Gujarat. This was checked from page 38 of the report (Annex 1.11). It was hence concluded that WHRB is not a common practice in the region.

Based on technological barriers, other barriers, and common practice in the region the additionality was validated.

Response to Request for Review 1-3, Issue 2:

The DOE is requested to further explain how it has validated the baseline scenario for the different components of the project activity, including how the alternative scenarios were eliminated.

SGS' Response to Issue 2:

During validation, all credible and realistic alternatives to the project activity were reviewed that would provide the same output. The alternatives reviewed for the baseline scenarios were:

a) release of waste heat into the atmosphere without any productive use;
b) import of electricity from the grid to meet the internal energy demands and
c) steam/heat generation are not applicable within the project context since the project activity does not co-generate steam.

It was found that the most likely scenarios would be (a) release of waste heat into the atmosphere without any productive use and (b) import of electricity from the grid to meet the internal energy demands.

a) Release of Waste Heat into the Atmosphere Without any Productive use

With regards to (a), the options to direct release of the waste heat to the atmosphere (W1), to release waste heat after incineration (W2), export of waste heat as energy source to a third party (W3) or the use of waste

heat for meeting internal thermal energy demands (W4). It was found that waste heat cannot be incinerated due to a lack of hydrogen and methane and because there are no legal requirements to incinerate waste heat. An energy export of process steam seems also not economical since there is no suitable consumer located close to the project site. Lack of infrastructure would impose barriers to the economic use of waste heat as energy source. Regarding the use of waste heat for internal thermal applications, there is currently no demand within the sponge iron or the steel plant other than to feed the boilers and generate electricity, which corresponds to the project activity and is not viable in absence of CDM as demonstrated in the barriers analysis. From all realistic and credible baseline alternatives for the use of waste heat, the only reasonable option is the direct release of waste heat into the atmosphere without incineration or any productive use.

b) Import of Electricity from the Grid to Meet the Internal Energy Demands

Regarding options for (b) the supply of electricity in the absence of CDM funds, the DOE has undertaken a very careful review of the current business practice of supplying power to a sponge iron plant (common practice analysis) in the region in which the project activity is located. As evidenced under 1) barrier analysis, the common practice of supplying electricity is a mix of thermal captive power and grid electricity. In section B.4. of the PDD (version 3, dated 20th May 2008), the DOE investigated several options for electricity supply to a sponge iron plant. Among those, the likelihood of the implementation of the project activity without having access to CDM funds was estimated (P1), the generation of electricity in an existing or newly build fossil fuel fired captive power plant (P4), the generation of electricity in an existing or newly build renewable energy captive power plant (P5), the generation of electricity in the grid (P6) and the generation of electricity in a captive waste heat recovery power plant of lower efficiency than the proposed project activity (P7). Alternatives P2, P3 and P8 relate to cogeneration of heat and electricity and are therefore not applicable to the project activity.

P1: Regarding the alternative of installing the project activity without CDM funds, this has been validated through common practice and barrier test as discussed under 1) barrier analysis and it was found that the project activity faces prohibitive barriers due to the business as usual scenario in the sponge iron industry in the region, where no waste heat recovery power plants exist and considerable barriers due to technological characteristics of such a type of project activity that increase the risk involved in waste heat recovery and discourage investment. Hence this was eliminated as potential baseline scenario alternative.

P4: In order to evaluate the probability of generating electricity from an existing or new captive thermal power plant as baseline alternative, this was checked during the common practice analysis, in which it has found that most of the existing sponge iron plants in the region in which the project activity is located supply electricity through import of electricity from the grid (Annex 1.10). It was further checked that the current power supply arrangements for the project proponent since 2005 in existing sponge iron plant (250tpd) operated by PP. It was found that the existing sponge iron and steel plant are drawing power from the grid. The plant is able to reliably supply almost the entire electricity need of the sponge iron and steel plant. The actual electricity supply situation since 2005 for the existing plant was validated during the site visit. . Copies of electricity bills were checked during validation. This option was eliminated on the basis of initial investment cost, common practice in the region and on the basis of conservativeness of emission factor.

P5: Another baseline alternative is the generation of electricity from renewable sources. This was eliminated on the basis of economic unattractiveness of the renewable electricity generation.

P6: In order to evaluate the probability of generating electricity in grid connected power plants and importing it to the sponge iron and steel plant as baseline alternative. This was accepted as baseline alternative on the basis of common practice in the region as checked during the site visit. This was also validated on the basis of existing practice by the project proponent for the old plant i.e. import of electricity from the grid and meeting all its demands for sponge iron and steel manufacturing. This was checked from the existing electricity bills as well. This was accepted on the basis of conservativeness of emission factor. Hence this was accepted as baseline alternative.

P7: An alternative of lower efficiency. This option was eliminated on the same grounds as it eliminated the proposed project activity from the list of potential baseline alternatives without CDM funds i.e. economic unattractiveness.

The discussion above demonstrates that the only remaining credible and realistic baseline alternatives (potential baseline alternatives) are (a) the continuation of release of waste heat into the atmosphere without

incineration and (b) the import of power from the grid. This is also mentioned in the revised validation report (Annex 2).

Request for Review 1-3, Issue 3:

Further clarification is required on how the DOE has validated the emission factor calculation. A spreadsheet needs to be provided for all calculations related to the baseline analysis.

SGS' Response to Issue 3:

The grid emission factor was validated from the data published by the Central Electricity Authority (CEA) (http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm)(Annex 3). The emission factor is calculated according to ACM0002, version 7 and is widely used in CDM project activities in the host country. The emission factor for electricity generated in the western regional electricity grid in 2006/07 is 0.79 tCO2/MWh and fixed ex-ante. This is mentioned on page 13 of the validation report (Annex 2). Please note that in order to validate expected emission reductions from the proposed project activity as stated in the PDD (version 3, dated 20th May 2008), the emission reduction spreadsheet was reviewed and provided with request for registration (Annex 4).

We apologize if the initial validation report has been unclear and hope that this letter and the attached information address the concerns of the members of the Board.

Pankaj Mohan (0091 9871794671) will be the contact person for the review process and is available to address questions from the Board during the consideration of the review in case the Executive Board wishes.

Yours sincerely,

Irma Lubrecht

Technical Reviewer,
Irma.lubrecht@ir-on.nl

M: +31 651 851777

Pankaj Mohan

Lead Auditor
Pankaj.Mohan@sgs.com
T: + 91 124 2399990 - 98
M: + 91 9871794671

Encl:

Annex 1.1 - Steelworld - coal quality
Annex 1.2 - Ministry of coal - expert committee report
Annex 1.3 - Steelworld - problems and solutions
Annex 1.4 - Steelworld - ban on ore
Annex 1.5 - Turbine efficiency
Annex 1.6 - Staff recruited
Annex 1.7 - Stanford university energy study
Annex 1.8 - Kutch Iron and Steel Association letter
Annex 1.9 - Industries Commissionerate, Government of Gujarat
Annex 1.10 - Power supply by sponge iron plants in Kutch
Annex 1.11 - Survey of Indian sponge iron industry
Annex 2 - Revised Validation report
Annex 3 - CEA emission factor sheet
Annex 4 - Emission reduction spreadsheet