Mr. Hans Jürgen Stehr
Chair, CDM Executive Board
UNFCCC Secretariat
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November 30th 2007

Re Request for review for the request for registration for the CDM project activity "Waste Heat Recovery project" at Saraikela, Kharsavan, Jharkhand by M/s Kohinoor Steel Private Limited (Ref. no. 1296).

Dear Mr. Stehr,

SGS has been informed that the request for registration of the CDM project activity "Waste Heat Recovery project" at Saraikela, Kharsavan, Jharkhand by M/s Kohinoor Steel Private Limited (Ref. no. 1296) is under consideration for review because four 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 issues raised:

Request for clarification to the DOE:

Comment 1: Further information is required to confirm whether or not the AFBC boiler which is supplying steam to the same turbine as the project activity would have been installed in the absence of this CDM project activity, and in addition why this AFBC boiler has not been included in the project boundary.

SGS Reply: The project activity, undertaken at the existing plant of Kohinoor Steel Private Limited, involves the installation of 4 x 10 TPH of waste heat recovery boilers whose steam is routed to a 17 MW steam turbine for generation of power. Along with the project boilers, another AFBC has been installed, whose steam is also utilised in the steam turbine for generation of power. The project activity is however, confined to the utilisation of the waste heat which in the absence of the project would have been vented to the atmosphere. The emissions reduction estimates for the project are likewise restricted to only that amount of electricity generation which is attributable to the steam generated from the waste heat recovery boilers. The mechanism for estimation of power from the steam generated from the WHRBs has been described under monitoring plan, section B.7.1, and Annex 4 of the PDD and found to be in line with the best approach to calculate the emission reduction.

As detailed in the final PDD, section B.4, in the absence of the project the most likely baseline scenario is the import of power from the regional grid as it does not require any upfront investment. The other viable baseline scenario for the project is installation of coal based on-site power generation system of which AFBC is a part there-of. The coal based on-site power generation system is the baseline option that was under serious consideration by the project developers as “char” (unburnt coal that exits the rotary kiln) can be utilised in coal fired boiler along with coal which is available in plenty in the eastern part of the country and cost wise the coal based generation plant, being cheaper in terms of up-front investment costs (estimates

from manufacturers identified coal based boilers as 50% cheaper than waste heat recovery boilers), was generally a preferred option.

The coal-based power plant was thus an option that could also be considered to be the baseline scenario. However the baseline scenario considered is grid replacement, which is appropriate considering the cost effectiveness with other alternatives. In line with the guidance for baseline scenario (and as stipulated in the methodology), as the carbon intensity of power generated from the regional grid is lower than the coal based power, for conservative estimation of baseline emissions, import of power from the regional grid has been selected as the baseline for the project.

Thus the installation of an AFBC is not related to the CDM project activity and a business as usual scenario for the plant, CO2 emissions associated with the AFBC is therefore not accounted for in the project plants emission reduction estimation.

Comment 2: Further explanation is required regarding how the method for calculating EGy described in section B.6.3 of the PDD is consistent with the requirements of the approved methodology and the monitoring plan proposed for this project activity.

SGS Reply: Net Electricity Generation (EGy) from Project Activity (MWh/year) – this will be calculated as the difference of gross waste heat power generated for a year minus the auxiliary power consumption during that year, which in turn in accordance with the methodology ACM0004 ver2. The base value for entire calculation is depending on the steam parameters and total electricity generated and auxiliary electricity consumption by the entire captive power generation facility which are in turn being directly monitored by meters and DCS system installed as per the monitoring methodology, which was verified during site visit and found satisfactory.
There is a minor customisation in the monitoring method of two parameters namely EG_{WHR} (Total electricity generation from the project activity per annum) and EG_a (Auxiliary electricity conumption by the project activity per annum). This customisation has been adopted in view of the specific configuration of the KSPL's captive power plant. The project activity involves generation of power by waste heat recovery in a 17 MW Steam Turbine generator which is fed by steam from a common steam header connected to two sources viz.
(i) 4 x10 TPH Waste Heat Recovery Boilers to be installed under the project activity and
(ii) Coal based AFBC Boiler which however, is not the project activity.

The total power generated by the Steam Turbine generator thus includes power generated from both the Waste Heat Recovery Steam source and the AFBC boiler steam source. Under these circumstances, the power generated by the Steam Turbine generator can not be solely attributed to the waste heat recovery source and therefore it is not possible to directly measure the power generated only from the Waste Heat Recovery steam by an energy meter installed at the Steam Turbine Generator terminals.

ACM0004 version 02 requires measuring the electricity produced with the recovered waste gas/heat, in order to determine baseline emissions. If this measurement is not possible, as the waste gas/heat is used together with fossil fuel, then the proportion of the electricity that was produced with the waste gas/heat could be estimated by considering the waste gas/heat. It is required in this case to measure the amount supplied and the net calorific value of the waste gases/heat and fossil fuel. Currently in Indian sponge iron industry sector, monitoring of Direct Reduction Iron (DRI) kiln waste gas is not an existing option and as the chemical characteristics of the DRI kiln waste gas entirely dependent on operation of DRI kiln and raw material used in the DRI kiln, thus it is required to monitor Net Calorific Value (NCV)of DRI kiln waste gas continuously but currently no technology or monitoring equipment is available for continuous monitoring of high temperature DRI kiln waste gas net calorific value, thus in absence of monitoring of the amount of waste gas, relative share of the total generation from waste gas as a part of total electricity produced from waste heat recovery based steam generation facility and coal fired AFBC boiler system, through the enthalpy (h1 & h2) and total energy content (H1 & H2) calculation of the steam generated from the project activity and steam generated from other fuel is the most justified procedure.

This is carried out in line with the clarification provided by the methodology panel in its 26th meeting in response to the request for revision AM_REV_0033 (EB 31) whereby the methodology panel approved the method used by the project proponent. The calculations procedures are attached with PP response.
http://cdm.unfccc.int/UserManagement/FileStorage/AM_REC_MVA0P355FK7ZLTJ39U9ENNIYPEFA6V

Comment 3: The PDD states that "the project will relieve the burden on the depleting resources of conventional fuel and hence increasing its availability to the other important processes". Further clarification is required in relation to the real contribution of the project to climate change mitigation as the aim seems to be saving fossil fuels for other alternative uses rather than real, long term and measurable emissions reductions.

SGS Reply: In India, a major share of the country's electricity is generated from fossil fuel sources such as coal, diesel, furnace oil etc. The proposed waste heat recovery CDM project will displace or replace the equivalent quantity of electricity generated in the grid. The host country has accorded its approval which was submitted along with request for registration. The intent was to show that the project will save the electricity generation from the grid which in turn will reduce the equivalent amount of emissions from power plants. The revised PDD is attached with the PP response.

Comment 4: The PDD shows typographical errors in section A.4.4.

SGS Reply: The choice of the crediting period for the project activity has been validated as renewable crediting and length of the first crediting period is 7y0m as mentioned under Section C.2 of the PDD which was uploaded with request for registration and the annual estimation of emission reductions in tonnes of CO2e values for first crediting period as represented under section A.4.4 of PDD, has been validated with the ex-ante emission reduction estimation. The representation error during representation of "Total number of crediting years" in the table under section A.4.4 of PDD has been rectified by the project proponent as extent of first crediting period i.e. 7 years and the PDD has been revised and attached with PP response.

Comment 5: Further evidence is required to substantiate the investment barrier analysis as the information provided does not suffice.
Comment 6: Further information is required to show how the investment barriers have been validated.

SGS Reply: Investment barrier analysis means investment barrier i.e. step 3 (barrier analysis) of Tool for demonstration and assessment of additionality version 2 and not step 2 (investment analysis). As mentioned in the Validation Report, in order to crosscheck the issue towards investment barrier for the project activity, the logical documentation of total project cost, investment details, loan sanction letter from banks and logical explanation towards establishing investment barrier had been asked from the project proponent. The documents towards communications with the banks, bank credit committee report and the loan sanction letters were obtained and verified. The total investment for the project activity was met through term loans obtained from the State Bank of India, Oriental Bank of Commerce and Corporation Bank and equity investment by the project proponent. According to the credit committee report of State Bank of India, the CDM revenue from the project activity has been considered significantly while deciding the loan sanction towards the project activity. The investment barrier for the project activity lied on the risk of additional lump-sum equity investment issue by the project developer, as the operation of captive power project is an absolutely new and diversified line in respect to the existing credentials of project proponent and the project activity is purely dependent upon the operation of sponge iron manufacturing facility, while sponge iron business running on its peak and there would be the risk of slide in the market. The evidence towards the fluctuation of sponge iron price in the Indian domestic market during early 2000 to January, 2006 was provided by the project proponent, which was verified by the Local Assessor.

The total milestone activities supporting documents for Kohinoor Steel Pvt. Ltd. towards configuration and acceptance of CDM project modalities and revenue for taking up the current waste heat recovery based captive power generation under financial burden and over the existing business as usual scenario in the sector has been provided by the project proponent. CDM modalities has been considered during early stages of the project planning, which is supported by the documents like, communication with carbon credit buyer, such as initial concept proposal, customized evaluation report on CDM revenue for the project activity, initial and final forward term sheets towards procurement offer for carbon credits; consecutive board meeting minutes, and with the financial organizations has obtained from the project proponent and validated. The consecutive board meeting minutes dated 27th August 2004, 10th September 2004, 8th October 2004, 19th November 2004, 10th December 2004, 5th January 2005 and 15th January 2005, towards inception of carbon credit concept for the project activity, risk analysis for project equity investment, acceptance of CDM revenue concept for balancing the risk of initial project equity investment and go ahead decision for WHR CPP project, negotiation over the term sheet provided by the carbon credit buyer and final acceptance towards investment of additional project equity were also provided for the project activity. Those were also cross verified by interviewing the Head – Power Division. The project proponent also provided the bank credit committee report, loan sanction letters from banks and further communication from the bank , which has provided the loan assistance, the documents were verified and finally, it was accepted that the CDM revenue to be generated out of the project activity has been considered significantly, while assessing the viability of the current project and the equity investment part of the project financing faced a significant barrier, which was crossed by the help of consideration of CDM revenue, with support of upfront purchase offer from the carbon credit buyer. The confidential bank credit committee report, loan sanction letters and board meeting minutes were verified. The documents are attached with PP response.

Comment 7: The DOE shall further clarify how they have assessed and validated the sensitivity analysis.

SGS Reply: Tool for demonstration and assessment of additionality version 02, 28th November 2005 (here in after Additional Tool) has been utilized to configure the project additionality and according to the Additionality Tool the project additionality has been described by following the Step 0, Step 1, Step 3, Step 4 and Step 5 properly and as per the option under Additional Tool after describing Step 1 project proponent may proceed to Step 2 (Investment analysis) or Step 3 (Barrier analysis), thus in case of this project activity the additionality has been assessed following Step 3 (Barrier analysis) and no discussion has been found on Step 2 (Investment analysis) and sensitivity analysis under Investment Analysis to validate. This was not required to be validated as per the tool for demonstration and assessment of additionality.

Comment 8: The technological barriers as per the PDD are related to the risks associated with power supply in steel manufacturing. If such is the case, the project would not be technically feasible and CDM revenues would not ameliorate the risks described. Further clarification is required.

SGS Reply: As the project activity involves recovery of waste from DRI kiln of gas through waste heat recovery boiler for generation of steam and generation of power from steam fed to the turbine set. Thus the power generation is entirely dependent on qualitative and quantitative nature of steam generated from waste heat recovery boiler and in turn the generation of steam is fully dependent on the qualitative and quantitative nature of waste gas generated from DRI kiln operation which is the part of steel making process. Thus any changes or fluctuation in the DRI kiln operation will directly impact the waste heat recovery (such as heat content of the waste gas, fluctuations in waste gas supply - flow rate & temperature) and power generation which is the prominent risk towards the project activity in terms of technological barrier. This has been described under PDD and found satisfactory during validation procedure. As the power generated from the project activity will be utilized for entire plant facility operation of Kohinoor Steel Pvt. Ltd. which involves steel making, thus risk associated with the power supply in steel manufacturing has been mentioned as the consequence due to the technological barrier towards the project activity. It was also intended towards the financial losses that will occur due to this as well as other technological barriers like heat content of the waste gas, non availability of waste gas, operational problems of the kiln etc. The CDM benefits will be

mitigating the risk involved with the project activity due to all these technological barriers which were validated.

Comment 9: The argument in page 17 of the PDD leads to the conclusion that emission reductions in this project activity might not be long term emission reductions, as the market conditions are volatile, the project activity is totally dependent on the upstream sponge iron plant and also to a large extent on the prices of scrap, and there is a risk that the plant might be shut down. Further clarification is required.

SGS Reply: The proposed project activity is totally dependent on the sponge iron plant, prices of scrap and the market conditions being volatile, there is the possibility of the project promoters having to discontinue the project activity and shift to alternative power sources to run the sponge iron plant and steel manufacturing when the PLF drops to less than 35%. This is the remote possibility and the emission reductions are likely to be long term emission reductions as validated. The revised PDD has been submitted along with PP response.

Comment 10: The common practice analysis should be conducted in accordance with step 4 of the additionality tool by detailing similar projects in the region and explaining the differences between this activity and those similar projects. In this context, further substantiation of the barriers should also be provided.

SGS Reply: As per the tool for demonstration and assessment of additionality version 2 the common practice has been detailed in the validation report. The evidences that were validated during the site visit are letter provided by the Deputy Director of Directorate of Industries, Govt of Jharkhand (State government), Joint plant Committee report a Govt. of India Institution titled Survey of Indian sponge iron industries. The revised PDD along with the evidences validated are submitted with PP response.

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,

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