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	Werner Betzenbichler	werner.betzenbichler@tuev-sued.de			

Response to Request for Review

Dear Sirs,

Please find below the response to the request for review formulated for the CDM project with the registration number 1495. In case you have any further inquiries please let us know as we kindly assist you.

Yours sincerely,

Werner Betzenbichler
Certification Body Climate and Energy

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Comment No.1:

Further evidence is required on how the DOE has validated the availability of natural gas during the crediting period for the project activity.

Response by project proponent:

The Natural Gas is supplied to the project activity by Government of India owned Public Sector Unit (PSU) Gas Authority Of India Limited (GAIL) which in turn receives it from the gas fields in the Cauvery basin operated by Oil & Natural Gas Corporation (ONGC). As per the gas sale contract (valid from Jan.2006 to Dec.2010) (refer **Annexure 2** Gas supply contract), total gas allotment to HRJ, Karaikal is 20000 scmd. Apart from that on day to day basis depending on operational flexibility gas company allows HRJK to draw 1000 – 3000 scmd over the contract quantity with a overdrawl penalty imposed on excess quantity gas consumed over the contract quantity.

Out of this total allotment of 20000 scmd plus the overdrawl quantity (1000-3000 scmd) of natural gas, on an average, 14000 – 15000 scmd is consumed in the tile manufacturing and rest 7000 – 8000 scmd is consumed in the frit manufacturing process.

Therefore it indicates that gas availability for the project would not be jeopardized in spite of uncertainty in gas availability during the tenure of this contract. Existing contract will be renewed again in the year 2011, meanwhile during this period GAIL is trying to sources gas of the new NELP blocks. They have also indicated that efforts are on for sourcing gas from different sources like import of LNG / transnational pipelines. Refer Letter no. 03 of **Annexure 1**. GAIL letter dated 28/06/2006 for communication from GAIL.

Therefore it can be concluded that gas availability for the project activity will not hampered during the crediting period.

Response by TÜV SÜD:

Natural gas sales contract (**Annexure 2**) has been signed between GAIL (natural gas supplier) and H&R Johnson (India) Limited (natural gas buyer) on 30 December 2005 which states that GAIL would supply 20,000 standard cubic meter per day (SCMD) of NG to HRJ for next 5 years i.e up to December 2010. This contract was basically an extension of already existing contract between the two parties. It is understood that this contract would further be extended beyond 2010 given long term relationship between the two parties.

Hence audit team feels confident that contracted demand of 20,000 SCMD will be available to HRJ Karaikal unit throughout the 10 year crediting period although any increase in this demand cannot be fulfilled by GAIL due to limited availability of NG in the region as is clearly evident from letters from GAIL provided in **Annexure 1**.

It has been clearly explained in the validation report, page 10 that energy consumption for 12 TPD batch smelter (pre-project scenario) is approximately same as that for 42 TPD continuous smelter (project activity). Hence 8000 SCMD NG out of total 20,000 SCMD (plus up to 3000 SCMD penalty based over drawl) would be used by the project activity and 14,000-15,000 SCMD would still remain for tile manufacturing. It must also be noted that although frit production has increased from 12 TPD to 42 TPD but tile production remains same as surplus frit is sent to other tile manufacturing units.

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Comment No.2:

Further clarification is required on determination of the technological life time of batch type smelters.

Response by project proponent:

In order to ensure and ascertain the lifetime of the batch smelters in the project activity, the project proponent engaged M/s Ranade & Associates for conducting an 'Equipment health audit' for the batch smelters on 30th June 2006; M/s Ranade & Associates is a Chartered Engineer firm approved by the Government of India as a Surveyor/Valuer.
As per the certificate issued by M/s Ranade & Associates, the batch smelters were in sound working condition and the service life of these batch smelters would last another 20 years subject to regular maintenance.
Refer **Annexure 3:** Certificate issued by M/s Ranade and Associates and **Annexure 4:** Authorization of Ranade Associates from 'The Institution of Engineers (India)'.

The above response (along with attachment) was provided to DOE to clarify *Clarification Request Number 10* of Validation Report.

Response by TÜV SÜD:

Clarification Request No. 10 to provide information on design life of the batch type smelters was raised in section B.5.15 of Annex 1 of the validation report (Page A-13). Letter from Government approved (approved by The Institution of Engineers, India as per **Annexure 4**) charted engineer's firm was provided, which stated that batch smelters (pre-project scenario) at project site are in good condition and service life of these smelters is expected to last another 20 years subject to regular maintenance. The same was documented in Annex 1 of the validation report (Page A-42). The same letter that was provided to the audit team during validation is now enclosed as **Annexure 3**. The reference to this letter was missed out in Annex 2 of validation report submitted for registration. The same has been added in revised validation report submitted now.
Further, audit team feels confident of the remaining technological life of the equipment because the batch smelters were relatively new and were only installed in November 2003 as already confirmed on page 12 of the validation report that was submitted while requesting registration.

Comment No.3:

As project construction started 2 years prior to the validation, further clarification is required on how the DOE has validated that the CDM was necessary to go ahead with the project activity.

Response by project proponent:

The purpose of the project activity was to change the existing batch smelting process for frit production in Karaikal to energy efficient continuous smelting process. With installation of state of art continuous smelter the energy efficiency has been achieved and associated GHG emission per unit of frit manufactured has been reduced. This advanced technology, which is first of its kind in tile manufacturing unit, in India, is provided by overseas (Chinese) suppliers. Thus, this project activity faced barriers to due prevailing practices in the tile industry. Moreover, there were various technical barriers and project specific barriers like restriction in batch size, which are duly explained in the PDD.
Thus, the project being unique in its nature faces various barriers and H. & R. Johnson (India) Limited had taken the decision to implement the project activity, considering the incentive from the CDM, since the inception of the project activity.

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Kindly refer to **Annexure 5**: Extract of the board discussion in which it was decided to set up the continuous smelters to replace the batch smelters at Karaikal with consideration of the CDM benefits. This board meeting was held on 19th May 2005.
Thus CDM was considered to be necessary to go ahead with the project activity and was the basis of approval of this project by the Board.

Reason for delay in submission of this project for validation:

First purchase order for the project was placed in October 2005 and the two continuous smelters were commissioned in May 2006 and August 2006 respectively. At the same time, HRJ had started the search for a competent CDM consultant at a very early stage, and after detailed discussions with various agencies, a consultant was appointed for the project activity in July 2006. There was a delay in appointment of consultant due to various rounds of negotiation.
Kindly refer to **Annexure 6, 6.1 & 6.2:** Copy of emails exchanged between the project proponent and various consultant, demonstrating the discussion with consultant. It is evident with the date of this e-mail communication is prior to the project start date/during project implementation, thus establishing the fact that CDM was seriously considered while deciding to implement continuous smelters.
After appointment of consultant the PDD was prepared as per '**PROJECT DESIGN DOCUMENT FORM (CDM-SSC-PDD) - Version 02',** but the version of PDD got revised in December 2006, which again caused delay in submission to the validator. Subsequently, PDD was prepared as per '**PROJECT DESIGN DOCUMENT FORM (CDM-SSC-PDD) - Version 03'.** Moreover, the approved methodology, AMS II.D., was also revised in December 2006 from version 7 to version 8, which again resulted in revision of the PDD.
All of this resulted in delay in appointment of validator, and subsequently the PDD was prepared according to revised methodology and PDD form and was submitted to validator in March 2007. Thus, there was a delay of 1 and a half years in validation from the project start date.
Hence, delay in the submission of project documents for validation was primarily on account on changes in version of PDD form and due to revision of methodology applicable for the project activity.
Thus, based on above chronology of events and various barriers associated with the project activity, it was concluded that CDM was necessary to go ahead with the project activity.

The above response (along with attachment) was provided to DOE to clarify *Clarification Request Number 01* of Draft Validation Report.

Response by TÜV SÜD:

Decision to implement the project activity by project participant was made by taking CDM into consideration in May 2005. The real action to implement the project activity was started in October 2005 with ordering of equipments. The process to avail CDM benefits was started in March 2006, with request for proposal from consultants for preparation of PDD (**Annexure 6.1 and 6.2**), which means the real action on starting the validation process**. Hence there was a delay of 5 months from start of project activity in October 2005 to appointment of PDD consultants in March 2006, a period that is not considered being unusual**. Audit team feels that the PDD was ready by December 2006, which is normal time for preparation of PDD (March 2006 to December 2006). However, due to change in version of small scale PDD template from 2 to 3 and revision of methodology AMS II.D from version 7 to 8 led to further delay in submission of PDD to DOE. The validation process was started in April 2007.

We would like to confirm that the evidence of prior consideration of the CDM in the decision by the project participant to undertake the project activity has been validated by us. The evidence

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is extract of the discussion of The Executive Committee headed by Managing Director (**Annexure 5**), held on 19 May 2005. This document in third last paragraph clearly states that **"revenue generated through sale of carbon credits may make project quite viable".** In last paragraph it states that **"the committee has agreed to take necessary steps for getting this project registered for carbon credits".** Audit team would also like to emphasis here responsibility of the person who has signed this document. Mr. Vijay Aggarwal, who is the Managing Director has signed the document and is head of the company.

Based on the presumption that the Managing Director is acting responsibly in accordance with his position, it can be confirmed with reasonable level of assurance (terminology used by INTERNATIONAL STANDARD ON ASSURANCE ENGAGEMENTS 3000) that CDM was seriously considered in the development of this project activity. It is clearly evident from letter submitted by Indian Council of Ceramic Tiles and Sanitaryware that project activity is 'first of its kind' in this sector in India; it faced prevailing practice barrier and technological barrier. Hence it can be confirmed with reasonable level of assurance that CDM was necessary to go ahead with the project activity. Therefore TÜV SÜD submitted the project for registration.

Comment No.4:

Further clarification is required on how the DOE has validated the baseline fuel for 30 tpd capacity.

Response by project proponent:

As already explained in answer to comment number 1, there was a huge uncertainty in Natural Gas availability in the Karaikal region.
So, when the project proponent was looking for capacity enhancement from 12 tpd to 42 tpd, various other fuel options were evaluated to operate the additional batch smelters of 30 tpd capacity.
Considering the nature of operations which requires only clean fuel, following fuel options were evaluated by H.&R. Johnson (India) Limited:

- LPG – Cost was prohibitively high for the use in frit production. Moreover, considering the huge demand of LPG for domestic use, the availability of LPG was also uncertain.
- LDO – Cost was prohibitively high for the use in frit production
- Coal Gas – Coal was available in abundance and was also cheapest option available. Hence coal gas was chosen as the credible baseline fuel.

After freezing the options the offers were invited for the installation of Coal Gasifier from a competent supplier.
According to the specifications given by the supplier, one kg of coal generates 3.25m^3 of coal gas with calorific value of 1450 kcal/m^3. Thus these figures were used to compute the baseline.
Also in other plants of HRJ, similar type of coal gassifiers are in use for furnace and drier applications, where conversion of coal to coal gas comes in the range of 2.75 to 3 m^3 of gas per kg of coal. Thus 3.25 is a very conservative figure considered for this project. Please refer **Annexure 7** in this regard.

The above response (along with attachment) was provided to DOE to clarify *Clarification Request Number 07 and 08* of Validation Report.

Response by TÜV SÜD:

Based on historic data (provided on page 38 of the PDD) for batch type smelter for frit production, it is clear that for nominal production of 360 ton (12 TPD x 30 days) of frit in one month,

the natural gas consumption was approximately 240,000 SCM (standard cubic meter). This translates to 8000 SCMD (240,000 / 30). The manufacturing facility of HRJ Karaikal has contracted supply of 20,000 SCMD (with penalty based 1000-3000 SCMD over drawl) from natural gas supplier, GAIL. Out of this approximately 14,000-15,000 SCMD is consumed for tile manufacturing and remaining 7000-8000 SCMD is left for frit manufacturing.

It has been clearly explained in the validation report, page 10 that energy consumption for 12 TPD batch smelter (pre-project scenario) is approximately same as that for 42 TPD continuous smelter (project activity). Hence 8000 SCMD NG out of total 20,000 SCMD (plus upto 3000 SCMD penalty based over drawl) would be used by the project activity and 14,000-15,000 SCMD would still remain for tile manufacturing. It must also be noted that although frit production has increased from 12 TPD to 42 TPD but tile production remains same as surplus frit is sent to other tile manufacturing units.

Evidence in form of letters from natural gas supplier (GAIL) to project proponent was submitted to audit team during validation, which clearly indicated that GAIL was not in position to supply any gas in excess of contracted demand of 20,000 SCM per day (**Annexure 1**). Audit team is convinced that natural gas is not abundantly available in the region and hence usage of coal in the baseline scenario for 30 ton per day additional frit production was most likely scenario. Cost of other fuels like LPG and LDO are prohibitively high and hence cannot be considered as likely scenario.

Clarification Request No. 7 to clarify the same issue was raised in section B.4.7 of Annex 1 of the validation report (Page A-9). The response as provided above was clearly documented in Annex 1 of the validation report (Page A-40).

Comment No.5:

Further clarification is required on how the DOE has undertaken an independent assessment to confirm that the input values used in the investment analysis adequately reflect the situation of the project activity.

Response by project proponent:

As we understand this comment is from the perspective of project additionality with investment analysis.
According to the Attachment A (information on additionality) to the Appendix B of the simplified modalities and procedures for small-scale CDM project activities:
Project participants shall provide an explanation to show that the project activity would not have occurred anyway due to at least one of the following barriers:

- Investment barrier
- Technological barrier
- Barrier due to prevailing practice
- Other barriers

As per section B.5 of the PDD submitted for registration, H. & R. Johnson (India) Limited has adopted 'Technological barrier' and 'Barrier due to prevailing practice' route to establish the additionality, thus, proving two out of the four barriers listed in additionality guidance against the minimum requirement of proving one barrier.
In the PDD, it is stated just as a matter of fact that the installation of continuous smelter has attracted higher investments than what would have been incurred in case of installation of

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batch smelter. H. & R. Johnson (India) Limited did not intend to prove the additionality by adopting the financial barrier route.

Higher investment in case of continuous smelter can be again verified from the offer from the batch smelter supplier. Please refer **Annexure 8.** Investment required for continuous smelter can be verified from the offer submitted by the supplier of continuous smelters. Please refer **Annexure 9** & **Annexure 9.1** .

Response by TÜV SÜD:

The initial version of the PDD made publicly available for 30 days to invite comments from global stakeholders did contain information on IRR of the project. To verify the mentioned IRR, Clarification Request No. 9 was raised in section B.5.15 of Annex 1 of the validation report (Page A-12). In response to this request the project proponent finally decided to remove the information on IRR from the PDD and demonstrate additionality using technological and prevailing practice barrier only. The same has been clearly documented in Annex 1 of the validation report (Page A-42). The final PDD submitted for registration does not include any investment analysis.