



Mr. R. K. Sethi
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Re: Request for review of the request for registration for the CDM project activity "Avoidance of methane emissions from Municipal Solid Waste and Food Waste through Composting" (Ref. no.1904).

Dear Mr. Sethi,

SGS has been informed that the request for registration for the CDM project activity "Avoidance of methane emissions from Municipal Solid Waste and Food Waste through Composting" (Ref. no.1904) is under consideration for request for review because three requests for review have been received from members of the Board.

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

Request for clarification to the DOE/PP:

Request for Review Comments 1 – 3:

Questions:

- 1. The PP/DOE are requested to further clarify the various investment and operational barriers that were considered prior to the decision to go ahead and implement the project.*

SGS Reply: The sustainability of the project activity under consideration is directly dependent firstly on the creation of market acceptability and consecutive continuous sale of the organic manure in the chemical fertiliser dominated market, and secondly on the maintenance of stabilized production of organic manure to keep consistent supply chain of the compost manure to the regional market.

The fact regarding considerable low market penetration of compost (organic manure) and dominance of the highly subsidised chemical fertiliser in the current Indian fertilizer market due to greater market acceptance of chemical fertilizers in India along with the risk related to heavy rainfall and long lasting monsoon season in the coastal region of Orissa *i.e.* at the project activity location has been already discussed in the validation report submitted during request for registration.

Project proponent has envisaged the risk related to low market penetration of compost manure and limiting factor of subsequent selling of the compost manure in chemical fertiliser dominated market during conception phase of the

project activity. The requirement of aggressive sales promotion for the compost material along with the consistent production of compost manure to maintain the steady supply chain has been also foreseen by the project proponent. These facts are clearly substantiated in the extracts of the Board minutes of the meeting dated 02/06/2003 (*Appendix 5 of PDD submitted for request for registration*).

Thus it was accepted that, requirement of high investments for aggressive sales promotion and operational barriers regarding functional operation and consistent production of compost manure due the problem of high moisture content or wetting of waste during treatment in the long monsoons and frequent wet weather conditions has been taken into consideration by the project proponent prior to the decision to go ahead and implementation of the project activity.

The investment barrier related investment constraints for the project proponent regarding arrangement of the project finance through secured/ non-secured loan from any financial institution are transparent as Krishi Rasayan Pvt. Ltd. is the 'Lessee' under lease agreement dated 8th Aug 2003 for the concerned municipal solid waste composting project activity and the stipulation due to the Terms & Conditions applied by Orissa State Financial Corporation to Krishi Rasayan Pvt. Ltd. for a different project activity at Bhadrak, Orissa (please refer Annex 01 of this letter) and poor financial condition of Krishi Rasayan Pvt. has been found justified with the company's annual audited balance sheet, during year 2003-2004 (Please refer Annex 02 of this letter).

From the above mentioned information it is found that the project proponent is in loss making condition during the project conception phase. Thus it has been accepted that the financial status of the Krishi Rasayan Private Limited does not imply the project proponent to bear the entire project working financials through internal accruals and to sustain the project operations for sustained production of bio-compost and operational continuity the expectations of CDM revenue has been looked into.

2. The PP/DOE are requested to clarify how the various alternative baseline scenarios are selected and confirmed, in particular how the baseline of zero compost is confirmed, and how the most plausible baseline scenario is selected, with evidence and justifications.

SGS Reply: Project proponent has identified the following six baseline alternatives for the project activity under consideration -

- 1) Implementation of the project activity without CDM
- 2) Incineration of waste materials for energy generation
- 3) Conversion of waste materials to pellets by pelletisation
- 4) Disposal of the waste materials in landfill with provision for power generation from the landfill gas being captured
- 5) Disposal of the waste materials in landfill with provision for flaring of landfill gas being captured
- 6) Disposal of the waste materials in unscientific and ordinary landfill for anaerobic decay.

Identification of baseline alternatives for the project activity as mentioned above has been found realistic with reference to the prevailing options available for solid waste management practices available world wide, especially in the developing nations.

The choice of the baseline and its compatibility with the available data was cross checked with the possible disposal/ treatment options available which are in line with the Host Country legal requirements. The facts regarding plausible baseline alternatives towards description of baseline and its development for the project activity as described in PDD version 02 has been cross verified in as follows -

- With reference to the identified baseline alternative (1), implementation of the project activity without CDM revenue is not a viable alternative because it is subject to the Investment barriers related to high investments requirement for aggressive sales promotion for compost manure in the existing market and Operational barriers related to functional operation and consistent production of compost manure due the problem of high moisture content or wetting of waste during treatment in the long monsoons and frequent wet weather conditions.
- With reference to the identified baseline alternative (2), the non suitability of the Indian Municipal Solid Waste for power/energy generation owing to low calorific value and high moisture content has been cross verified with reference to the technical paper titled “Municipal Solid Waste Management in India: Present practices and future challenges” by Sunil Kumar 15 August 2005 (available at <http://www.adb.org/Documents/Events/2005/Sanitation-Wastewater-Management/paper-kumar.pdf>, last accessed on 29/05/2008), which was found satisfactory and acceptable. Thus exclusion of alternative (2) as the plausible baseline alternative for the concerned project activity has been accepted.
- With reference to the identified baseline alternative (3), the fact regarding high capital cost involvement towards pelletisation of Municipal Solid Waste in the Host Country has been cross checked with reference to the web article titled “Waste-to-energy or waste-to-pollution?” by Mr. Gopal Krishna, InfoChange News & Features, June 2006 (available at http://infochange.dreamhosters.com/index.php?option=com_content&task=view&id=5654&Itemid=68, last accessed on 29/05/2008), and the fact is found to be realistic and acceptable. Thus exclusion of alternative (3) as the plausible baseline alternative for the concerned project activity has been accepted.
- With reference to the identified baseline alternative (4) and (5), non presence of any legislative requirement in the Host Country which mandates LFG (methane) capture and flaring or utilization for power generation has been found established with reference to the World Bank Report - Project Information Document, Report No.: 33859, Paragraph 2, Contact Point Mr. Christophe Bösch, Senior Water & Sanitation Economist, The World Bank , Email: cebosch@worldbank.org, dated 14.10.2005 (available at http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2005/10/14/000012009_20051014104027/_/Rendered/PDF/Delhi0Landfills010PID0PCN0stage010final.pdf, last accessed on 29/05/2008). Therefore, exclusion of alternative (4) as the plausible baseline alternative for the concerned project activity has been accepted.
- With reference to the identified baseline alternative (6), the practice of disposal of the waste materials in landfills as the most common alternative being practiced by the majority of the waste disposal systems in India has been found established with reference to the paper titled “Technology options for municipal solid to waste energy project” by Mr. Sudhir Kumar, TERI Information Monitor on Environmental Science, Volume 5, Number 1: pp 1-11, June 2000 (available at <http://www.terienvs.nic.in/times5-1.pdf>, last accessed on 29/05/2008), which was found satisfactory and acceptable.

Thus consideration of the most plausible baseline alternative for the project activity under consideration has been found justified as the disposal of the waste materials in unscientific and ordinary landfill for anaerobic decay.

Further to the selected most plausible baseline alternative as alternative (6), especially with reference to the waste management project activity at Baliapanda, Puri, the zero compost production or zero capacity utilization has been found justified with reference to the letter from Executive Officer, Office of Puri Municipality, dated 15.08.2003 (*Appendix 3 of the PDD submitted for request for registration*) and Certification from Puri Municipality dated 26.09.2007 (*Appendix 7 of the PDD submitted for request for*

registration). The above mentioned Appendices 3 and 7 to the PDD, justify the non operational status of the solid waste management project activity at Baliapanda, Puri prior to taking up the operations of the project activity by Krishi Rasayan Pvt. Ltd. (project proponent) on and after 08/08/2003 and in absence of the project activity the solid waste would have been unscientifically landfilled or openly dumped in the adjacent ground to the project site without recovery of methane as there are no composting facilities in and around the region of the project location which may treat the waste by composting.

Therefore it has been confirmed that, in absence of the project activity the solid wastes would have been disposed through unscientific and ordinary landfill for anaerobic decay and methane gas generated from anaerobic decay of the waste material would have been emitted to the atmosphere along with the zero capacity utilization of the project activity prior to taking up by the project proponent.

3. The PP/DOE are requested to clarify that continuing and real actions were taken to secure CDM status for the project activity in parallel with its implementation (EB41, Annex 46, paragraph. 5(b) guidance).

SGS Reply: The consideration of CDM revenue for the project activity for meeting up the increased working capital requirement for strategic marketing initiatives to promote the bio-compost/ organic manure produced from the project activity in the chemical fertilisers dominated market and to mitigate the risk towards project installation, O&M costs and uncertainty in operation of the project has been cross checked with the following documented evidences –

1. Letter from Ecosave Systems Private Limited (ref. ESSPL/KR-04-03; dated 16/04/2003) (*Appendix 4 of the PDD submitted for request for registration*)
2. Extracts of the Minutes of the Meeting of the Board of Directors of Krishi Rasayan Private Limited dated 02/06/2003 (*Appendix 5 of the PDD submitted for request for registration*)
3. Annual Report of Krishi Rasayan Pvt. Ltd. for FY 2003-2004 duly audited by Chartered Accountant firm JAINSARAWGEE & Co. (Institute of Chartered Accountants of India membership no. 61505 and 10089). (*Appendix 6 of the PDD submitted for request for registration*)

Consideration of fiscal incentives under Kyoto Protocol/ CDM revenue for the project activity during project conception phase has been identified in the documents mentioned above.

The CDM project chronology and supporting documentary evidences have been reviewed and prior CDM knowledge and serious CDM consideration for the proposed project activity has been demonstrated in the following milestone activities –

Timeline	Project Milestone activities	Documentary evidences reviewed
02/06/2003	CDM revenue consideration for the project activity.	The extracts of the Minutes of the Meeting of the Board of Directors of Krishi Rasayan Private Limited dated 02/06/2003. (<i>Appendix 5 of the PDD submitted for request for registration</i>)
08/08/2003	CDM project activity start date: Signing of Lease Agreement for operating the solid waste management project at Puri town between Puri Municipality and Krishi Rasayan Pvt. Ltd. on 08/08/2003.	Lease agreement for operating the solid waste management project at Puri town with Puri Municipality signed on 8th Aug 2003. (<i>Appendix 2 of the PDD submitted for request for registration</i>)
18/02/2004	The communication from Krishi Rasayan Pvt. Ltd. to	Copy of the letter from Krishi

	the technical consultants Ecosave Systems Private Limited (ESPL) seeking advice and guidance regarding obtaining carbon credits.	Rasayan Pvt. Ltd. to Ecosave Systems Private Limited dated 18/02/2004. (Annex 03 to this letter)
14/06/2004	Communication from ESPL to the Project Proponent stating their inability to provide any guidance on CDM project development.	Letter from Ecosave Systems Private Limited (ref. ESSPL/KR-06-04; dated 14/06/2004). (Annex 04 to this letter)
09/07/2004	Project Proponent requested ESPL to refer them to relevant consultants who can assist them to obtain carbon credits	Copy of the letter from Krishi Rasayan Pvt. Ltd. to Ecosave Systems Private Limited dated 09/07/2004. (Annex 05 to this letter)
10/11/2004	ESPL referred the PP to number of leading consultants in India who were providing consultancy services under the Clean Development Mechanism to Indian projects	Letter from Ecosave Systems Private Limited (ref. ESSPL/KR-11-04; dated 10/11/2004). (Annex 06 to this letter)
February 2005 to March 2005	PP initiated discussions and fee negotiation with the consultant based on the requirement of development of new methodology applicable to composting activities.	Copies of email communications made between PP and the short listed CDM Consultant (Annex 07 to this letter)
06/10/2005	Initial carbon consulting contract signed with the CDM consultant, based on the available Approved Methodology AM0025, version 01 (publicly available on 30 th September 2005).	Copy of the initial CDM consultant engagement letter, dated 06/10/2005 (Annex 08 to this letter)
April 2005 & August 2005	A small scale methodology for composting activities was also proposed to the SSC WG in April 2005 and subsequently followed up in August 2005. However the methodology was not finalized nor approved for use.	F-CDM-SSCwg ver 01 SSC_015 and SSC_25 First proposal 24/04/2005 Second proposal 10/08/2005 Available at UNFCCC website: http://cdm.unfccc.int/methodologies/SSCmethodologies/Clarifications/index.html?p=12
03/03/2006	Publication of the applicable small scale CDM methodology AMS-III.F. at UNFCCC website at 03/03/2006,	Revision history of AMS-III.F. available at UNFCCC website: http://cdm.unfccc.int/methodologies/DB/83G6NA8NDD90GYOS9SO154JL8M2YVO/view.html
24/04/2006	Owing to fund crisis of the PP, the PP had repeatedly requested lowering the consultancy charges.	Copy of email communications made between PP and CDM Consultant. (Annex 07 to this letter)
27/04/2006	The CDM consultant agreed to lower the consultancy charges on availability of the small scale methodology.	Copy of email communications made between PP and CDM Consultant. (Annex 07 to this letter)
15/06/2006	Cancellation of initial contract (dated 06/10/2005)	Carbon consulting contract

	with the CDM consultant.	termination letter, dated 15/06/2006. (Annex 09 to this letter)
17/08/2006	Final engagement of carbon consultant for project development as per revised charges.	Copy of final CDM Consultant Engagement letter, dated 17/08/2006. (Annex 10 to this letter)
25/04/2007	Organization of local stakeholder consultation procedure as a significant requirement of CDM modalities.	Letter on behalf of Krishi Rasayan Pvt. Ltd. dated 25.04.2007 towards invitation of comments from the local stakeholders regarding the project activity and the feed back received from the concerned local stakeholders. (Annex 11 to this letter)
18/07/2007	Signing of CDM Validation agreement with SGS UK Limited	Signed CDM Validation service agreement, dated 18/07/2007.
06/08/2007	Host Country Approval issued by Indian DNA	LOA from Indian DNA (F.No. 4/8/2007-CCC dated: 6-August-2007) (Already submitted during request for registration)
29/08/2007	PDD uploaded for International Stakeholder Consultation procedure	UNFCCC website: http://cdm.unfccc.int/Projects/Validation/DB/N4ZC97BBR5PZRZPA1BOG/S806GF4T3N/view.html

With reference to the above mentioned chronology of the project milestone activities and the supporting documents, it has been found justified that CDM revenue was considered in the decision to implement the project activity and project participant has demonstrated continued and real actions were taken to secure CDM status for the project in parallel with its implementation as per guidelines set in EB41 Annex 46.

4. The PP/DOE are requested to confirm that the project start date (8 August 2003, signing the lease agreement) is based on the 'CDM glossary of terms' guideline.

SGS Reply: The starting date of the project activity has been considered on the basis of the date of the lease agreement for operating the solid waste management project, *i.e.* 8th August 2003 has been validated as the earliest date at which the project proponent (Krishi Rasayan Pvt. Ltd.) has got involved with the solid waste management project activity under consideration through signing of lease agreement with Puri Municipality for taking up the operations of the solid waste management project activity at Baliapanda, Puri. This has been found justified with reference to the lease agreement for operating the solid waste management project at Puri town signed between the Krishi Rasayan Pvt. Ltd (PP) and Puri Municipality, dated 8th August 2003.

Prior to taking up of the project activity by Krishi Rasayan Pvt. Limited, the solid waste management project activity at Baliapanda, Puri was not operational due to lack of promoters; this fact has also been cross checked from the letter from Executive Officer, Office of Puri Municipality, dated 15.08.2003 (*Appendix 3 of the PDD submitted for request for registration*), this has been also validated during site visit through

interviewing the Chair Person of Puri Municipality. Thus it has been accepted that the rejuvenation and actual functional implementation of the project activity has been initiated by the project proponent only on and after 8th August 2003.

Therefore the project start date as 08/08/2003 was found inline with the definition of “Starting date of a CDM project activity” CDM-Glos-03, and therefore accepted.

5. The PP/DOE are requested to further clarify how the project correctly applies the baseline methodology with respect to increased utilisation of composting facilities.

SGS Reply: The proposed CDM project activity is the implementation of aerobic treatment (windrows composting) facility of municipal solid waste and food waste for production of organic manure (bio-compost) and uses baseline methodology AMS-III.F. Version 05, dated 10 August 2007 as per small scale CDM project activities.

The current project activity *i.e.* implementation of composting of municipal solid waste and food waste by Krishi Rasayan Pvt. Ltd. involves increasing capacity utilization of the existing composting facility of Puri Municipality in Baliapanda, Puri. As discussed in the response to Issue 4 above, prior to taking up of the project activity by Krishi Rasayan Pvt. Limited, the solid waste management project activity at Baliapanda, Puri was not operational due to lack of promoters and in absence of the project activity the solid waste would have been disposed through unscientific and ordinary landfill for anaerobic decay as there are no composting facilities in and around the region of the project location which may treat the waste by composting.

The project activity under consideration proposes to increase the capacity utilisation of the existing waste treatment facility from the pre-project levels of zero to full capacity and then gradually to 120% to 140% in a phase-wise manner based on the increment in the availability of solid and food waste from the Puri town.

Further to that, in accordance to the paragraph 2 of AMS-III.F. Version 05, project proponent has demonstrated that special efforts are made to increase the capacity utilization of the existing composting facility of Puri Municipality with reference to investments in marketing and promotional activities to increase the acceptability of the composted organic manure to the farmers, end users in the chemical fertilizer dominated Indian market along with the investments to install a fibre glass shed or canopy for effective drying of the compost material and protection from wet weather, which in turn will help in effective production of compost material throughout the year to maintain the consistency in supply chain of the compost manure.

With reference to the requirement of paragraph 10 of AMS-III.F. version 05, the emission reduction achieved by the current project activity has been determined following the equation $ER_y = (BE_y - PE_y) \times (1-r)$, and ‘r’ has been considered as ‘zero’ because the registered annual amount of waste composted (tonnes) at the facility on a BAU basis ($WCOM_{BAU}$) is ‘nil’ in case of the project activity under consideration.

Thus the fact towards increase of capacity utilization of the existing composting facility of Puri Municipality at the project scenario from ‘zero’ production capacity was found to be satisfactory, therefore the methodological choice for emission reduction calculations on the basis of paragraph 10 of AMS-III.F. Version 05 has been established.

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.

Ajoy Gupta (+ 91 9903803700) 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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- Annex 01: Orissa State Financial Corporation documents
- Annex 02: Profit and Loss Account for 2003 & 2004
- Annex 03: KRPL to ESPL communication dated 18.02.2004
- Annex 04: ESPL to KRPL communication dated 14.06.2004
- Annex 05: KRPL to ESPL communication dated 09.07.2004
- Annex 06: ESPL to KRPL communication dated 10.11.2004
- Annex 07: Email communications between PP & Carbon Consultant
- Annex 08: Initial CDM consultant engagement letter
- Annex 09: Carbon consulting contract termination letter
- Annex 10: Final CDM consultant engagement letter
- Annex 11: Local Stakeholder consultation documents