ASSESSMENT

REGARDING POST REGISTRATION CHANGES

RASHTRIYA CHEMICALS & FERTILIZERS LTD.

N_2O ABATEMENT IN HP NITRIC ACID PLANTS AT RASHTRIYA CHEMICALS & FERTILIZERS LIMITED, INDIA

Report No: 8106754168 – 10/167

Date: 2012-09-04

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Assessment Report on post registration changes	***Report No.***	***Rev. No.***	***Date of 1st issue:***	***Date of this rev.***
	8106754168 – 10/167	0	2012-09-04	2012-09-04
Project:	***Title:***		***Registr. date:***	***UNFCCC-No.:***
	N_2O abatement in HP Nitric Acid plants at Rashtriya Chemicals & Fertilizers Limited, India		2009-11-20	2792
Project Participant(s):	***Name:***		***Party:***	
	India		Rashtriya Chemicals & Fertilizers Ltd.	
Applied methodology/ies:	***Title:***		***No.:***	***Scope:***
	Catalytic reduction of N2O inside the ammonia burner of nitric acid plants		AM0034, Version 3.2	05/5.1
Post Registration Changes:	***Type of requested changes***		***Number of changes***	***Prior Approval required***
	☐ Temporary deviations from the MP		-	☐
	☐ Temporary deviations from the MM		-	☐
	☒ Corrections that do not affect the project		01	☐
	☐ Change to the start date of the crediting p.		-	☐
	☒ Permanent changes from the MP		02	☒
	☐ Permanent changes from the MM		-	☐
	☐ Design changes to the project activity/PoA		-	☐
	☐ Changes specific to AR		-	☐
Short description of PRC:	***Description:***		***Registration date:***	***End date:***
	1. Corrections that do not affect the project regarding description of baseline parameter Operation Hour OH_{BC}		2009-11-20	-
	2. Permanent changes from registered Monitoring Plan regarding determination of monitoring parameter Operation Hour OH		2012-01-07	-
Revised PDD/Monitoring Plan:	***Title:***		***Attached in TC:***	***Attached clean:***
	N2O abatement in HP Nitric Acid plants at Rashtriya Chemicals & Fertilizers Limited, India *Version: 1.3; Date: 2012-07-13*		☒	☒
Assessment team / Technical Review and Final Approval	***Assessment Team:***		***Technical review:***	***Final approval:***
	Mr. Rainer Winter (TL/TE) Mr. Jimmy Sah (TM) Mr. Sandip Saha (OT)		Mr. Speyer Dirk	Mr. Eric Krupp
Assessment Opinion:	☒	The post registration changes require prior Approval by the Board		
	☐	The post registration changes do **not** require prior Approval by the Borad		

Document information:	*Filename:*	*No. of pages:*
	2012-09-06_S01-VA050-F04.doc	30

Abbreviations

AOR	**Ammonia Oxidation Reactor**
CA	**Corrective Action / Clarification Action**
CAR	**Corrective Action Request**
CDM	**Clean Development Mechanism**
CER	**Certified Emission Reduction**
CEM	**Continuous Emission Monitoring**
CO_2	**Carbon dioxide**
CO_{2eq}	**Carbon dioxide equivalent**
CL	**Clarification Request**
ER	**Emission Reduction**
FAR	**Forward Action Request**
GHG	**Greenhouse gas(es)**
MP	**Monitoring Plan**
NAP	**Nitric Acid Production**
NCSG	**N20 Concentration in Stack Gas**
NH_3	**Ammonia**
N_2O	**Nitrous Oxide**
OH	**Operating Hours**
OP	**Operating Pressure**
OT	**Operating Temperature**
PDD	**Project Design Document**
PP	**Project Participant**
RCF	**Rashtriya Chemicals and Fertilizers Limited**
TSG	**Temperature of Stack Gas**
QA/QC	**Quality Assurance / Quality Control**
UNFCCC	**United Nations Framework Convention on Climate Change**
VSG	**Volume flow rate of the Stack Gas**

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1 OBJECTIVE / SCOPE

Rashtriya Chemicals & Fertilizers Ltd. has commissioned the TÜV NORD JI/CDM Certification Program (CP) to assess post registration changes of the project

"N2O abatement in HP Nitric Acid plants at Rashtriya Chemicals & Fertilizers Limited, India"

This report serves for all kind of post registration changes as defined in the PS.

This report serves as an annex to the Post-registration changes request form (F-CDM-PRC).

2 GENERAL CHARACTERISTICS

2.1 Project Characteristics

Essential data of the project is presented in the following Table 2-1.

Table 2-1: Project Characteristics

Item	Data		
Project title	N_2O abatement in HP Nitric Acid plants at Rashtriya Chemicals & Fertilizers Limited, India		
Project type	☒ Standard	☐ PoA	
Project size	☒ Large Scale	☐ Small Scale	
Project Scope *(according to UNFCCC sectoral scope numbers for CDM)*	☐	1	Energy Industries (renewable- /non-renewable sources)
	☐	2	Energy distribution
	☐	3	Energy demand
	☐	4	Manufacturing industries
	☒	5	Chemical industry
	☐	6	Construction
	☐	7	Transport
	☐	8	Mining/Mineral production
	☐	9	Metal production
	☐	10	Fugitive emissions from fuels (solid, oil and gas)
	☐	11	Fugitive emissions from production and consumption of halocarbons and hexafluoride
	☐	12	Solvents use
	☐	13	Waste handling and disposal
	☐	14	Afforestation and Reforestation
	☐	15	Agriculture
	☐	16	Carbon capture and storage
Applied Methodology	Catalytic reduction of N2O inside the ammonia burner of nitric acid plants, AM0034, Version 3.2		
Technical Area(s)	5.1, Chemical Industries		
CDM registration No.	2792		
Crediting period	☒ Renewable Crediting Period (7 y) ☐ Fixed Crediting Period (10 y)		

For a detailed project description please refer to the registered PDD.

2.2 Overview of Post Registration Changes

Within this report post registration changes as listed in Table 2-2 are assessed.

Table 2-2: Overview Post Registration Changes

#	Applicable as of / from - to	Type of post registration change	Description
1	2009-11-20	CrPDD	Corrections to the registered PDD:

#	Applicable as of / from - to	Type of post registration change	Description
	onwards		The Operation Hour of Plant OH_{BC} during the baseline campaign was monitored based on the flow of ammonia and not calculated from operating temperature of reactor based measurement as specified in PDD.
2	2012-07-01 onwards	PCfrMP	Permanent changes from registered Monitoring Plan: Deviation for the method of measurement of monitoring parameter Operation Hour of Plant (OH) calculated from operating temperature of reactor based measurement to Ammonia flow to Reactor based measurement.

1) CrPDD : Corrections to the registered PDD
2) PCfrMP : Permanent changes from registered Monitoring Plan

2.3 Assessment team members and technical reviewers

On the basis of a competence analysis and individual availabilities a assessment team, consistent of one team leader and 1 additional team member, were appointed. Furthermore also the personnel for the technical review and the final approval were determined.

The list of involved personnel, the tasks assigned and the qualification status are summarized in the table 3-2 below.

Table 3-2: Involved Personnel

	Name	**Company**	**Function** [1]	**Qualification Status** [2]	**Scheme competence**	**Technical competence** [4]	**Host country Competence**	**Team Leading competence**
☒ Mr. ☐ Ms.	Rainer Winter	TUV Nord Cert GmbH	TL	SA	☒	5.1	☐	☒
☒ Mr. ☐ Ms.	Jimmy Sah	TUV India Private Limited	TM	LA	☒	-	☒	☒

	Name	Company	Function [1]	Qualification Status [2]	Scheme competence	Technical competence [4]	Host country Competence	Team Leading competence
☒ Mr. ☐ Ms.	Sandip Saha	TUV India Private Limited	OT	T	☐	-	☒	☐
☒ Mr. ☐ Ms.	Speyer Dirk	TUV Nord Cert GmbH	TR[3]	LA	☒	5.1	☐	☒
☒ Mr. ☐ Ms.	Eric Krupp	TUV Nord Cert GmbH	FA[3]	SA	☒	-	☐	☒

[1] TL: Team Leader; TM: Team Member, TR: Technical review; FA: Final approval

[2] GHG Auditor Status: A: Assessor; E: Expert; SA: Senior Assessor; T: Trainee; TE: Technical Expert

[3] No team member

[4] As per S01-MU03 or S01-VA070 A2 (such as A, B, C.....)

2.4 Assessment Steps

The *assessment of post registration changes* consisted of the following steps:

- Appointment of team members and technical reviewers
- A desk review of the registered and revised PDD/PDD/ submitted by the client and additional supporting documents
- On-Site assessment (if required)
- Background investigation and follow-up interviews with personnel of the project developer and its contractors,
- Resolution of corrective actions (CARs / CLs) (if any)
- Final reporting
- Technical review
- Final approval.

In this case all activities were carried out as part of the 1st, 2nd and 3rd verification of this project activity.

2.5 Review of Documents

The registered as well as the revised PDD and supporting background documents related to the project design and the post registration changes were reviewed.

As far as required the assessment team used additional documentation by third parties like host party legislation, technical reports referring to the project design or to the basic conditions and technical data.

2.6 Follow-up Interviews

The validation team has carried out interviews in order to assess the information included in the project documentation and to gain additional information regarding the compliance of the project with the relevant criteria applicable for CDM.

During validation the validation team has performed interviews to confirm selected information and to resolve issues identified in the document review. The main topics of the interviews are summarized in table 3-3.

Table 3-3: Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
Project proponent representatives of Rashtriya Chemicals & Fertilizers Limited, India	- Details of the project validation and earlier verifications - Project history - Technical details of plant - Intended / implemented changes from the previous project design - Impact of changes on the additionality justification - Impact on the monitoring of the project - Editorial issues of the revised PDD - Discussions on the accepted request for Deviation for the same issue

A comprehensive list of all interviewed persons is part of section 7 ‘References’.

2.7 Resolution of Clarification and Corrective Action Requests

2.7.1 Definition

A **Corrective Action Request (CAR)** will be established where:

- mistakes have been made in assumptions, application of the methodology or the project documentation which will have a direct influence the project results,

- the requirements deemed relevant for validation of the intended / implemented changes,

- there is a risk that the changes cannot be approved by the UNFCCC or that emission reductions would not be able to be verified and certified after the implementation of the changes.

A **Clarification Request (CL)** will be issued where information is insufficient, unclear or not transparent enough to establish whether a requirement is met.

2.7.2 Validation

After reviewing all relevant documents and taken all other relevant information into account, the validation team issues all findings (in the course of a draft report, if applicable) and hands over the findings to the project proponent in order to respond on the issues raised and to revise the documentation accordingly.

The final reporting step starts after resolution of the raised CARs and CLs. In case the findings from CARs and CLs cannot be resolved by the project proponent or the proposed action related to the FARs raised cannot be assessed as adequate, no positive assessment opinion can be issued by the validation team.

The CAR(s) / CL(s) / FAR(s) are documented in the context of the respective chapters. No findings were raised.

2.8 Technical review

Before submission of the final assessment report a technical review is carried out. The technical reviewer is a competent GHG auditor being appointed for the scope this project falls under. The technical reviewer is not considered to be part of the verification team and thus not involved in the decision making process up to the technical review.

As a result of the technical review process the assessment opinion as prepared by the validation team leader may be confirmed or revised. Furthermore reporting improvements might be achieved.

2.9 Final approval

After successful technical review of the final report an overall (esp. procedural) assessment of the requested post registration changes will be carried out by a senior assessor located in the accredited premises of TÜV NORD.

Only after this step the notification or the report can be forwarded to the UNFCCC (in case of a positive validation opinion).

3 CHANGES THAT DO NOT AFFECT THE PROJECT DESIGN

3.1 Assessment of Changes

Requested Deviations / Changes #1		
Type of change(s):	☐	*Temporary Deviation from Monitoring Plan*
	☐	*Temporary Deviation from Monitoring Methodology*
	☒	*Corrections that do not affect the project design*
	☐	***Permanent Change from Monitoring Plan***
	☐	*Permanent Change from Monitoring Methodology*
	☐	*Changes specific to afforestation or reforestation*

A. Description of post registration change

Start Date: Please provide the start date of the change	2009-11-20	**End Date:** Please provide the end date of the change, if applicable	-

Description:

Please give a detailed description of the changes

Parameter B.9, available at validation: The Operation Hour of Plant during baseline campaign OH_{BC} was determined based on the flow of ammonia and not calculated from operating temperature of reactor based measurement as specified in PDD.

Parameter (Operating Hour of the plant during the baseline campaign OH_{BC})	**description of measurement methods and procedures actually applied :**
Registered PDD	Recorded at CEM System based on temperature limits of the Reactor, the hours of daily operation of the plant during a campaign.
Revised Approach	Recorded at CEM System based on Ammonia flow to the Reactor, the hours of daily operation of the plant during a campaign.

Requested Deviations / Changes #1	
B. Assessment of post registration change – Permanent changes from MP or MM	
MM compliance: **Please check in case of changes to the registered MP, whether they are in compliance with the MM.**	The validation team checked the compliance of the revised monitoring plan with methodology applicable at time of project validation i.e. AM0034 version 3.2 and assessment of compliance is provided under the section "Accuracy" below.
Later version of MM: **Please check in cases where compliance with a later version of the MM is demonstrated that the conservativeness of the monitoring and verification is not affected.**	The validation team checked the compliance of the revised monitoring plan with methodology applicable at time of project validation i.e. AM0034 version 3.2 and also the latest version of methodology available on the UNFCCC website i.e. AM0034 version 5.1.1. The review of the same reveals that the requirement of monitoring with respect to monitoring of parameter Operating Hour (OH) has not undergone change. Please refer the section "Accuracy" below with respect to compliance of monitoring plan with AM0034 version 3.2 10 i.e. methodology applicable at time of project validation.
Accuracy: **Please give a detailed assessment whether the change is likely to lead to a reduction in the accuracy of the ER calculation.**	The description is consistent with real situation during baseline campaign.
Conservativeness: **Please give a detailed assessment whether conservative assumptions or discount factors have been have been applied to ensure that ER will not be overestimated.**	The description is consistent with real situation during baseline campaign.
Appendix 1 PS: **Check if the changes fall under one of the scenarios of appendix 1 of the PS.**	The revision in monitoring plan results in the change of the description of the parameter of Operating Hour during baseline (OH_{BC}). Thus, the changes do not fall under the scenarios as stated under appendix 1 of the PS.
C. Revised PDD	
Rev. of PDD: **Check whether the changes have been fully addressed in a revised PDD.**	☒ The changes have correctly been reflected in the revised PDD. ☐ A revision of the PDD is not required (in case of temp. changes). ☒ The revised PDD has been forwarded in (i) track-change and (ii) clean version.
D. Prior Approval	
Prior approval: **Assess whether the**	☐ *The post registration change requires prior approval*

Requested Deviations / Changes #1	
change requires prior approval of the board	☒ *The post registration change does not require prior approval*

Requested Deviations / Changes #2		
Type of change(s):	☐	*Temporary Deviation from Monitoring Plan*
	☐	*Temporary Deviation from Monitoring Methodology*
	☐	*Corrections that do not affect the project design*
	☒	***Permanent Change from Monitoring Plan***
	☐	*Permanent Change from Monitoring Methodology*
	☐	*Changes specific to afforestation or reforestation*

A. Description of post registration change			
Start Date: Please provide the start date of the change	2012-07-01	**End Date:** Please provide the end date of the change, if applicable	-

Description:

Please give a detailed description of the changes

Change in Monitoring approach for parameter Operating Hour of the Plant (OH)

Parameter (Operating Hour)	**Monitoring procedure**
Registered PDD	Recorded at CEM system based on temperature limits of Reactor hours of daily operation of the plant during the project campaign
Revised Approach	Recorded at CEM System based on Ammonia flow to the Reactor, the hours of daily operation of the plant during a campaign

As per the registered PDD, Operation Hour OH is required to be monitored as “Recorded at CEM system based on temperature limits of Reactor hours of daily operation of the plant during the project campaign”. However, during the verification activity at RCF HP unit it was observed that the Operating Hour in the CEM is recorded based on the flow of ammonia to the reactor during the baseline campaign and as well since the implementation of the DeN_2O Catalyst.

Requested Deviations / Changes #2	
	Thus the measurement was not in accordance to the approach as described in the PDD. A request for Deviation was sought and the monitoring of OH was shifted to be monitored during the time periode 2010-07-09 until 2012-01-07 as per the temperature limits of the Reactor unit in-line with the PDD. However, as per the communication from CDM EB for I-DEV03951 the monitoring of OH during the project campaign shall be recorded at CEM system on the same approach followed during the baseline scenario for estimation of baseline emission factor (the Operating Hour OH was determined by the introduction of ammonia flow to the reactor) The details of the Operating Hour (OH) monitoring practice followed by RCF during the monitoring periods is as follows; Date of registration of the project activity: 2009-11-20 • 2009-11-20 to 2010-07-09 – OH is being monitored based on the flow of ammonia to the reactor • 2010-07-09–2012-01-07 – OH is being monitored based on the measurement of reactor temperature, further deviation was sought for the change in approach. • 2012-01-07 onwards – OH is again being monitored based on the flow of ammonia to the reactor as per the communication from CDM EB.
B. Assessment of post registration change – Permanent changes from MP or MM	
MM compliance: **Please check in case of changes to the registered MP, whether they are in compliance with the MM.**	The validation team checked the compliance of the revised monitoring plan with methodology applicable at time of project validation i.e. AM0034 version 3.2 and assessment of compliance is provided under the section “Accuracy” below.
Later version of MM: **Please check in cases where compliance with a later version of the MM is demonstrated that the**	The validation team checked the compliance of the revised monitoring plan with methodology applicable at time of project validation i.e. AM0034 version 3.2 and also the latest version of methodology available on the UNFCCC website i.e. AM0034 version 5.1.1. The review of the same reveals that the requirement of monitoring with

[1] http://cdm.unfccc.int/Projects/deviations/38618

Requested Deviations / Changes #2	
conservativeness of the monitoring and verification is not affected.	respect to monitoring of parameter Operating Hour (OH) has not undergone change. Please refer the section "Accuracy" below with respect to compliance of monitoring plan with AM0034 version 3.2 10 i.e. methodology applicable at time of project validation.
Accuracy: **Please give a detailed assessment whether the change is likely to lead to a reduction in the accuracy of the ER calculation.**	A brief background about the conditions in the ammonia oxidation reactor during the nitric acid production process at RCF is described below: During any start up operations, an associate gas is fed to ignite the pilot burner and the temperature of 250ºC is maintained which preheats the catalyst. Once the temperature is stable, the ammonia flow is introduced, since this being an exothermic reaction, the temperature of the reactor shoots up instantaneously. Once the reactor temperature of 860 ºC is reached the plant is considered operational. However if within 10 min of ammonia introduction, the plant is not operational; the time safety lock would cause the plant to trip down leading to a total stoppage of plant operations. The safety lock is installed as a precaution as if the temperature is below 850ºC it may lead to production of ammonium nitrate, which is an explosive material. Thus the time safety lock ensures that there is no delay of more than 10 min for the temperature to reach 860 ºC once ammonia is fed in the reactor. Similarly when ammonia flow is cut off while taking plant off stream, temperature also drops instantaneously which is much quicker than 10 min as the air is still supplied to the reactor to cool down the system for further inspection. Thus , the parameter OH for the plant can in principle be monitored by using either of the two independent methods: 1. Based on the temperature limits of the reactor as described in the PDD. The plant is considered operational only when the temperature of the ammonia reactor is ≥860ºC. 2. Based on the introduction of ammonia flow to the reactor. The plant is considered operational during times the ammonia flow is introduced in the pre-heated reactor. The time gap comparison between the two methods demonstrates marginally difference. The time difference can maximum be for 10 min as per the time safety lock installed in RCF. Therefore both the methods are considered equally good to record operating hours of the

Requested Deviations / Changes #2	
	plant as the CEM system installed calculates the hourly average based on the data monitored at an interval of every 2 seconds. Further if the plant operation is less than 30 min during any particular hour, the value for that period would not be considered. The difference of the two approaches would have an impact on the operating hour determination only during start-ups or shut downs when the temperature crosses the value of ± 860ºC. To assess the impact of change, the Operating Hour OH for all the start-ups and shut down observed during period for deviation; the total number of start ups and shut downs were observed. Considering the maximum of 10 min delay (theoretical maximum) for each start-up of plant operation. If similarly for shut down once the ammonia flow is cut-off the time delay is neglected as a conservative approach, the theoretically maximum effect can be estimated to be 10 mins of start up and shutdown operation. The real effect is considered to be much less. Thus both approaches can be considered to be not materially different in the context of this PA. However, the baseline emission factor is calculated based on the introduction of ammonia flow, which is fixed *ex ante*. Thus in order to maintain the consistency for monitoring of operating hours under the project activity the monitoring is changed based on the introduction of ammonia flow to the reactor. Further the change is in-line with the communication received from CDM EB[2].
Conservative-ness: **Please give a detailed assessment whether conservative assumptions or discount factors have been have been applied to ensure that ER will not be overestimated.**	The requested change leads to main the consistency between the approach for monitoring the parameter OH followed in the baseline and the project scenario. Thus the change ensures that consistency has been followed for monitoring the parameter of OH.
Appendix 1 PS: **Check if the changes fall under one of the scenarios of appendix 1 of the PS.**	The revision in monitoring plan results in the change of the monitoring approach for the parameter of Operating Hour (OH). Thus, the changes do not fall under the scenarios as stated under appendix 1 of the PS.
C. Revised PDD	
Rev. of PDD: **Check whether the changes have been fully addressed in a revised PDD.**	☒ The changes have correctly been reflected in the revised PDD. ☐ A revision of the PDD is not required (in case of temp. changes).

[2] http://cdm.unfccc.int/Projects/deviations/38618

Requested Deviations / Changes #2	
	☒ The revised PDD has been forwarded in (i) track-change and (ii) clean version.
D. Prior Approval	
Prior approval: **Assess whether the change requires prior approval of the board**	☒ *The post registration change requires prior approval* ☐ *The post registration change does not require prior approval*

Requested Deviations / Changes #3		
Type of change(s):	☐	*Temporary Deviation from Monitoring Plan*
	☐	*Temporary Deviation from Monitoring Methodology*
	☐	*Corrections that do not affect the project design*
	☒	***Permanent Change from Monitoring Plan***
	☐	*Permanent Change from Monitoring Methodology*
	☐	*Changes specific to afforestation or reforestation*

A. Description of post registration change			
Start Date: Please provide the start date of the change	2012-07-01	**End Date:** Please provide the end date of the change, if applicable	-
Description: **Please give a detailed description of the changes**	Change in Emergency procedure for monitoring parameters.		
B. Assessment of post registration change – Permanent changes from MP or MM			
MM compliance: **Please check in case of changes to the registered MP, whether they are in compliance with the MM.**	The validation team checked the compliance of the revised monitoring plan with methodology applicable at time of project validation i.e. AM0034 version 3.2 and assessment of compliance is provided under the section “Accuracy” below. Further, the approach is consistent with the methodology thus is assessed to be appropriate.		
Later version of MM: **Please check in cases where compliance with a later version of the MM is demonstrated that the conservativeness of the monitoring and verification is not affected.**	The validation team checked the compliance of the revised monitoring plan with methodology applicable at time of project validation i.e. AM0034 version 3.2 and also the latest version of methodology available on the UNFCCC website i.e. AM0034 version 5.1.1. Please refer the section “Accuracy” below with respect to compliance of monitoring plan with AM0034 version 3.2 i.e. methodology applicable at time of project validation and the same is also applicable under the		

Requested Deviations / Changes #3

latest applicable version of the methodology.

Accuracy:

Please give a detailed assessment whether the change is likely to lead to a reduction in the accuracy of the ER calculation.

The emergency preparedness procedure in case of failure of monitoring equipments are as follows;

Parameter	**Emergency procedure in registered PDD**	**Emergency procedure as per the revised approach**	**Justification for the revised approach**
Failure of N2O Analyzer (NCSG)	In case N2O analyzer is not functioning, data for the period shall be ignored for calculating the campaign average	In case N2O analyzer is not functioning, in line with the methodology, the highest measured value of NCSG in the campaign will be applied for the downtime period for calculating the campaign average	The approach is consistent with the methodology thus is assessed to be appropriate. Further as it ensures that the highest measure value in the campaign is used, thereby ensuring conservativeness in estimation of emission reductions.
Failure of Stack gas Flow meter (VSG)	In case Stack gas flow meter is not functioning, hourly average of measured data for next hour shall be considered for the down period, for taking further processing.	In case Stack gas flow meter is not functioning, in line with the methodology, the highest measured value of VSG in the campaign will be applied for the downtime period for calculating the campaign average.	The approach is consistent with the methodology thus is assessed to be appropriate. Further as it ensures that the highest measure value in the campaign is used, thereby ensuring conservativeness in estimation of emission reductions.

Requested Deviations / Changes #3	
Conservative-ness: **Please give a detailed assessment whether conservative assumptions or discount factors have been have been applied to ensure that ER will not be overestimated.**	The approach is consistent with the methodology and ensures conservativeness as the highest value in the complete campaign has been considered for estimation of emission reductions.
Appendix 1 PS: **Check if the changes fall under one of the scenarios of appendix 1 of the PS.**	The revision in monitoring plan results in the change emergency procedures for monitoring in case of failure of meters. Thus, the changes do not fall under the scenarios as stated under appendix 1 of the PS.
C. Revised PDD	
Rev. of PDD: **Check whether the changes have been fully addressed in a revised PDD.**	☐ The changes have correctly been reflected in the revised PDD. ☐ A revision of the PDD is not required (in case of temp. changes). ☒ The revised PDD has been forwarded in (i) track-change and (ii) clean version.
D. Prior Approval	
Prior approval: **Assess whether the change requires prior approval of the board**	☒ *The post registration change requires prior approval* ☐ *The post registration change does not require prior approval*

3.2 Related Findings

No findings have been identified in this context.

4 CHANGE TO THE START DATE OF THE CREDITING PERIOD

Not Applicable

5 CHANGES TO THE PROJECT / PROGRAMME DESIGN

The post registration changes do not fall under this category.

6 SUMMARY OF ASSESSMENT OPINIONS

The below listed changes have occurred after the registration of the project.

Type of Change occured	*Total No. of changes*	*No. of changes which require prior approval*
☐ Temporary deviations from the MP		
☐ Temporary deviations from the MM		
☒ Corrections that do not affect the project	01	0
☐ Change to the start date of the crediting p.		
☒ Permanent changes from the MP	02	02
☐ Permanent changes from the MM		
☐ Design changes to the project activity / PoA		
☐ Changes specific to AR projects		

The above listed post registration changes require prior approval of the Board.

Essen, 2012-09-04

Rainer Winter
TÜV NORD JI/CDM CP
Assessment Team Leader

2012-09-04

Eric Krupp
TÜV NORD JI/CDM CP
Final Approval

7 REFERENCES

Table 7-1: Documents provided by the project participant

Reference	Document
/PDD/	Project Design Document for CDM project: "N_2O abatement in HP Nitric Acid plants at Rashtriya Chemicals & Fertilizers Limited, India" version 1.2, dated 2009-07-21
/VAL/	Validation Report for CDM project "N_2O abatement in HP Nitric Acid plants at Rashtriya Chemicals & Fertilizers Limited, India" version 1, dated 2009-07-24
/PDD2/	Revised PDD reflecting the intended / implemented changes

Table 7-2: Background investigation and assessment documents

Reference	Document
/AM0034/	AM0034, Version 3.2, "Catalytic reduction of N2O inside the ammonia burner of nitric acid plants"
/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)
/GCP/	UNFCCC: Guidelines for completing CDM-PDD and CDM-NM
/TA/	Tool for the demonstration and assessment of additionality (Ver. 6).
/VVS/	Validation and Verification Standard (Version 2.0, EB 65 annex 4)
/PS/	Clean Development Mechanism Project Standard, (Version 01.0), EB 65, Annex 5

Table 7-3: Websites used

Reference	Link	Organisation
/dna/	http://cdmindia.in/	National Clean Development Mechanism (CDM) Authority (DNA of India)
/unfccc/	http://cdm.unfccc.int	UNFCCC

Table 7-4: List of interviewed persons

Reference	MoI[1]		Name	Organisation / Function
/IM01/	V	☒ Mr. ☐ Ms	A.B. Khare	Dy.GM (Corporate), RCF,
/IM01/	V	☒ Mr. ☐ Ms.	R. Paradkar	C.E (Corporate Technical), RCF
/IM01/	V	☒ Mr. ☐ Ms.	C.M.T Britto	GM (Corporate), RCF,
/IM01/	V	☒ Mr. ☐ Ms.	D. V. Bhagat	C.E (Plant), RCF
/IM01/	V	☒ Mr. ☐ Ms.	P.V. Kharate	Dy. CE (Plant), RCF
/IM01/	V	☒ Mr. ☐ Ms.	Uddhav More	MT (Corporate Technical), RCF

[1)] Means of Interview: (**T**elephone, **E**-Mail, **V**isit)

ANNEX

A1: Assessment of Financial Parameters

A2: Assessment of Barrier analysis

A3: Competence statements of involved personnel

ANNEX 1: ASSESSMENT OF FINANCIAL PARAMETERS

Table A-1: Assessment of Financial Parameters (VVS, v. 2.0, §§ 120, 121 / in case financial parameters stem from FSR §122) – Not applicable

☒	No financial parameters are used for additionality justification
☐	Assessment of all financial parameters see below

Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT	
					Correctness of value applied	Comment
				/ /	☐	
				/ /	☐	
				/ /	☐	
				/ /	☐	
				/ /	☐	
				/ /	☐	
				/ /	☐	

ANNEX 2: ASSESSMENT OF BARRIER ANALYSIS

Table A-2: Assessment of Barrier Analysis (VVS, v. 2.0, §§ 124-127) – Not applicable.

☒	No barrier parameters are used for additionality justification
☐	Assessment of barriers see below

Kind of Barrier (invest, tech, other)	Description of Barrier	Evidence used	Assessment of validation team	
			Appropri-ateness of information source	Explanation of final result
			☒	
			☒	
			☒	
			☒	
			☒	
			☒	
			☒	

ANNEX 3: STATEMENTS OF COMPETENCE OF INVOLVED PERSONNEL

TÜV NORD Certification

Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Jimmy Sah

SCHEME	STATUS	VALID UNTIL
CDM	Lead Assessor	2014-02-03
VCS	Lead Assessor	2014-02-03

091 – Rev. 0, Date: 2011-03-17

091_S01-F003_2011-03-17_rev0 S01-F003 rev0 / 2010-04-19

TÜV NORD Certification

Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Sandip Saha

SCHEME	STATUS	VALID UNTIL
CDM	Trainee	09-01-2015
VCS	Trainee	09-01-2015

275 – Rev. 0, Date: 2012-01-10

275_S01-F003_2012-01-10_rev0.doc S01-F003 rev1 / 2011-08-02

TÜV NORD Certification

Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Rainer Winter

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2013-07-03
JI	Senior Assessor Technical Reviewer	2013-07-03
VCS	Senior Assessor Technical Reviewer	2013-07-03

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA	TR SUBCATEGORIES
1.1	Thermal Energy Generation	
1.2	Renewable Energies	1.2.1 Hydro 1.2.2 Wind 1.2.3 Geothermal 1.2.4 Solar 1.2.5 Tidal
4.1	Cement Sector	
4.3	Iron and Steel	
4.5	Waste Heat Recovery	
5.1	Chemical Process Industries	
9.1	Metal Production	
11.1	Chemical Process Industries	
11.2	GHG Capture and Destruction	
12.1	Chemical Process Industries	
13.1	Waste Handling and Disposal	13.1.1 Waste Management

003 – Rev. 5, Date: 2011-08-01

003_S01-F003_2011-08-01_rev5 S01-F003 rev0 / 2010-04-19

TÜV NORD Certification

Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Dirk Speyer

SCHEME	STATUS	VALID UNTIL
CDM	Lead Assessor (Validation, Verification) Technical Reviewer	2015-07-10
VCS / ISO 14064-2	Lead Assessor Technical Reviewer	2015-07-10

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
4.4	Refinery
5.1	Chemical Process Industries
11.1	Chemical Process Industries
11.2	GHG Capture and Destruction
12.1	Chemical Process Industries

244 – Rev. 4, Date: 2012-07-11

244_S01-F003_2012-07-11_rev4.doc S01-F003 rev2 / 2012-04-05

TÜV NORD Certification

Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Eric Krupp

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2013-07-05
JI	Senior Assessor Technical Reviewer	2013-07-05
VCS	Senior Assessor Technical Reviewer	2013-07-05

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.1	Thermal Energy Generation
7.1	Transport
9.1	Metal Production

017 – Rev. 2, Date: 2011-08-29

017_S01-F003_2011-08-29_rev2 S01-F003 rev0 / 2010-04-19