JI VERIFICATION REPORT

- 1ST PERIOD –

PEC RHIN S.A.

PEC RHIN N_2O ABATEMENT PROJECT

ITL PROJECT ID : FR1000212

Monitoring Period: 2010-09-01 TO 2011-02-15
(incl. both days)

Report No: 8000393152 11/82

Date: 2011-10-12

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Verification Report:	***Report No.***	***Rev. No.***	***Date of 1st issue:***	***Date of this rev.***
	8000393152 - 11/82	0	2011-10-12	2011-10-12
Project:	***Title:***		***Registration date:***	***UNFCCC-No.:***
	Pec Rhin N_2O abatement project		2010-12-30	FR1000212
Project Participant(s):	***Host party:***		***Other involved parties:***	
	France		Belgium	
Applied methodology/ies:	***Title:***		***No.:***	***Scope:***
	Project specific methodology: *'Catalytic reduction of N_2O at nitric acid plants'*		N/A	5
Monitoring:	***Monitoring period (MP):***		***No. of days:***	***MP No.***
	2010-09-01 to 2011-02-15 - both days included		168	1
Monitoring report:	***Title:***		***Draft version:***	***Final version:***
	Pec Rhin N_2O abatement project		2011-02-22	2011-09-13
Verification team / Technical Review and Final Approval	***Verification Team:***		***Technical review:***	***Final approval:***
	Alexandra Nebel Ulrich Walter	Sabine Meyer Dirk Speyer	Rainer Winter Susanne Pasch	Rainer Winter
Emission reductions: [t CO_{2e}]	***Verified amount***		***As per Draft MR:***	***As per PDD:***
	70,710		71,659	70,021

Summary of Verification Opinion:

Pec Rhin S.A. has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 1st periodic verification of the project: "Pec Rhin N_2O Abatement Project", with regard to the relevant requirements for JI (Track 1) project activities. The project reduces GHG emissions due to reduction of N_2O emissions. This verification covers the period from 2010-09-01 to 2011-02-15 (including both days).

In the course of the verification 5 Corrective Action Requests (CAR) and 1 Clarification Request (CL) were raised and successfully closed. Furthermore 1 FAR was raised regarding to the max. amount of claimable ERUs. The verification is based on the draft monitoring report, revised monitoring report, and the monitoring plan as set out in the registered PDD, the determination report, emission reduction calculation spreadsheet and supporting documents made available to the TÜV NORD JI/CDM CP by the project participant.

As a result of this verification, the verifier confirms that:

- all operations of the project are implemented and installed as planned and described in the project design document.
- the monitoring plan is in accordance with the applied country specific methodology: Méthode pour les Projets Domestiques: "Réduction catalytique du N_2O dans des usines d'acide nitrique".
- the installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately.
- the monitoring system is in place and functional. The project has generated GHG emission reductions.

As the result of the 1st periodic verification, the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner. TÜV NORD JI/CDM CP herewith confirms that the project has achieved emission reductions in the above mentioned reporting period as follows:

Emission reductions: **70,710** t CO_{2e}

Including a deduction to 90% according to the Arrêté du 2 mars 2007.

Document information:	*Filename:*	*No. of pages:*
	2011-10-12 FVR PecRhin	80

Abbreviations:

AIE	**Accredited Independent Entity**
AMS	**Automated Measuring System**
AST	**Annual Surveillance Test**
CA	**Corrective Action / Clarification Action**
CAR	**Corrective Action Request**
CDM	**Clean Development Mechanism**
CL	**Clarification Request**
CO_2	**Carbon dioxide**
CO_2eq	**Carbon dioxide equivalent**
DVM	**Determination and Verification Manual**
DCS	**Data Collection System**
ER	**Emission Reduction**
ERU	**Emission Reduction Units**
FAR	**Forward Action Request**
GHG	**Greenhouse gas(es)**
HNO_3	**Nitric Acid**
JI	**Joint Implementation**
MMD	**Measurement and Monitoring Devices**
MP	**Monitoring Plan**
MR	**Monitoring Report**
N_2O	**Nitrous Oxide**
PCS	**Process Control System**
PDD	**Project Design Document**
PP	**Project Participant**
QA/QC	**Quality Assurance / Quality Control**
UNFCCC	**United Nations Framework Convention on Climate Change**
XLS	**Emission Reduction Calculation Spread Sheet**

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1. INTRODUCTION

PEC RHIN S.A. has commissioned the TÜV NORD JI/CDM Certification Program (CP) to carry out the 1st periodic verification of the project

"Pec Rhin N_2O abatement project"

with regard to the relevant requirements for JI (Track 1) project activities. The verifiers have reviewed the implementation of the monitoring plan (MP) in the registered JI project number FR1000212[1].

GHG data for the monitoring period covering 2010-09-01 to 2011-02-15 was verified in detailed manner applying the set of requirements, audit practices and principles as required under the Determination and Verification Manual /DVM/ of the UNFCCC.

This report summarizes the findings and conclusions of this 1st periodic verification of the above mentioned UNFCCC registered project activity.

1.1. Objective

The objective of the verification is the review and ex-post determination by an independent entity of the GHG emission reductions. It includes the verification of the:

- implementation and operation of the project activity as given in the PDD,
- compliance with applied approved monitoring plan,
- data given in the monitoring report by checking the monitoring records, the emissions reduction calculation and supporting evidence,
- accuracy of the monitoring equipment,
- quality of evidence,
- significance of reporting risks and risks of material misstatements.

1.2. Scope

The verification of this registered project is based on the project design document /PDD/, the monitoring report /MR/, emission reduction calculation spreadsheet /XLS/, supporting documents made available to the verifier and information collected through performing interviews and during the on-site assessment. Furthermore publicly available information was considered as far as available and required.

The verification is carried out on the basis of the following requirements, applicable for this project activity:

- Article 6 of the Kyoto Protocol /KP/,

[1] http://ji.unfccc.int/JIITLProject/DB/PK2RRNV3FP1DC3D5UK4CYF3XOSIGJR/details

- guidelines for the implementation of Article 6 of the Kyoto Protocol as presented in the Marrakech Accords under decision 9/CMP.1 /MA/, and subsequent decisions made by the JISC and COP/MOP,
- other relevant rules, including the host country legislation,
- JI Validation and Verification Manual /DVM/,
- monitoring plan as given in the registered PDD /PDD/,
- Projet Domestique Methodology: “Catalytic reduction of N_2O at nitric acid plants “ Méthode pour les Projets Domestiques: “Réduction catalytique du N_2O dans des usines d'acide nitrique”

2. GHG PROJECT DESCRIPTION

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	Pec Rhin N_2O abatement project		
JI Track	☒ Track 1	☐ Track 2	☐ JPA
Project size	☒ Large Scale	☐ Small Scale	
JI Approach	☒ JI Specific Approach	☐ Approved CDM Methodology	
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	Land-use, land-use change and forestry
	☐	15	Agriculture
Methodology:	*Projet Domestique Methodology: "Catalytic reduction of N_2O at nitric acid plants"*		
Technical Area(s):	5.1/Q: N_2O		
ITL Project ID No.:	FR1000212		
Crediting period	☐ Renewable Crediting Period (7 y) ☒ Fixed Crediting Period (2 y, 4m)		

2.2. Project Verification History

Essential events since the registration of the project are presented in the following Table 2-2.

Table 2-2: Project verification history

#	Item	Time	Status
1	Date of registration	2010-12-30[2]	-
2	Start of crediting period	2010-09-01	-
3	1st Monitoring period	2010-09-01 to	This verification

2 Date of registration is the date of issuing date of the LoA by the DFP. This could be later than the start of the crediting period since the French rules allows retrocrediting (Start of the crediting period is at latest 2 months after submission of the registration documents to the French DFP which can be earlier than the issuing date of the LoA).

#	Item	Time	Status
		2011-02-15	

2.3. Involved Parties and Project Participants

The following parties to the Kyoto Protocol and project participants are involved in this project activity (Table 2-3).

Table 2-3: Project Parties and project participants

Characteristic	Party	Project Participant
Host party	France	Pec Rhin S.A. N.serve Environmental Services GmbH
Other Involved Party/ies	Belgium	Pec Rhin S.A.

2.4. Project Location

The details of the project location are given in table 2-4:

Table 2-4: Project Location

No.	Project Location
Host Country:	France
Region	North Eastern (Alsace), Département: Haut Rhin
Project location address	Usine de Pec Rhin S.A. Zone industrielle Mulhouse Rhin 68490 Ottmarsheim
Plant coordinates	Coordinates: Plant tail gas stack: Lat: 47°47'30.27"N Long: 7°31'20.90"E Ammonia burner: Lat: 47°47'30.49"N Long: 7°31'19.91"E

2.5. Technical Project Description

The project activity aims to reduce levels of N_2O emissions from the production of nitric acid with secondary N_2O abatement technology (secondary catalyst).

The key parameters for the project are given in table 2-5:

Table 2-5: Technical data of the plant

Parameter	Unit	Value
Number of burners (identical)		2
Manufacturer	-	OSCHATZ

Parameter	Unit	Value
Diameter	mm	3960
Start of commercial production	-	2005 (1970 first installation)
Operating conditions as per specifications (trip point values)		
- Temperature (min/max):	℃	740 - 920
- Pressure (max):	Bar abs	4.6
- Ammonia to Air ratio (max)	Vol.-%	>11.8
Ammonia Oxidation Catalyst		
Manufacturer	-	Johnson Matthey Plc
Type	-	Eco-Cat-Pack
Composition:	-	Pt/Rh/Pd
Absorber		
Design capacity per day (100 %)	t/d	1,100
Design capacity per day (legal)	t/d	1,100
Annual production (design)	t/year	393,800
Annual production (practice)	t/year	345,000
Secondary Catalyst		
Manufacturer	-	YARA, supplied by Johnson Matthey Plc
Type	-	YARA abatement catalyst
Composition:	-	Cobalt with CeO_2 as support material
Design efficiency N_2O reduction	%	85-95
N_2O Analyzer (stack)		
Manufacturer	-	Thermo Scientific
Type	-	Nicolet 6700
Measurement Principle	-	FT-IR
Stack volume flow rate measurement		
Manufacturer	-	Endress+Hauser
Type	-	Deltatop measuring probe with Deltabar difference pressure meter
Measurement Principle	-	Difference pressure (dynamic pressure)

3. METHODOLOGY AND VERIFICATION SEQUENCE

3.1. Verification Steps

The verification consisted of the following steps:

- Contract review
- Appointment of team members and technical reviewers
- Publication of the monitoring report
- A desk review of the Monitoring Report /MR/ submitted by the client and additional supporting documents with the use of customised verification protocol /CPM/ according to the Determination and Verification Manual /DVM/,
- Verification planning,
- On-Site assessment,
- Background investigation and follow-up interviews with personnel of the project developer and its contractors,
- Draft verification reporting
- Resolution of corrective actions (if any)
- Final verification reporting
- Technical review
- Final approval of the verification.

The sequence of the verification is given in the table 3.1 below:

Table 3.1: Verification sequence

Topic	Time
Assignment of verification	2011-02-21
On-site-visit	From 2011-03-08 till 2011-03-09
Draft reporting finalised	2011-03-09
Final reporting finalised	2011-08-16
Technical review finalised	2011-10-12

3.2. Contract review

To assure that

- the project falls within the scopes for which accreditation is held,
- the necessary competences to carry out the verification can be provided,
- Impartiality issues are clear and in line with the CDM accreditation requirements

a contract review was carried out before the contract was signed.

3.3. Appointment of team members and technical reviewers

On the basis of a competence analysis and individual availabilities a verification team, consistent of one team leader and 2 additional team members, was 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 3-1 below.

Table 3-3: Involved Personnel

	Name	Company	Function [1]	Qualification Status [2]	Scheme competence [3]	Technical competence [4]	Verification competence [5]	Host country Competence	Team Leading competence
☐ Mr. ☒ Ms.	Alexandra Nebel	TÜV Nord Cert GmbH	TL[A]	LA	☒	-	☒	☐	☒
☒ Mr. ☐ Ms.	Ulrich Walter	TÜV Nord Cert GmbH	TM[A]	A	☒	Q/5.1	☒	☐	☐
☐ Mr. ☒ Ms.	Sabine Meyer	TÜV NORD Cert GmbH	TM[A]	A	☒	-	☒	☒	☐
☒ Mr. ☐ Ms.	Dirk Speyer	TÜV NORD Cert GmbH	TM[A]	A	☒	5.1	☒	☐	☐
☒ Mr. ☐ Ms.	Rainer Winter	TÜV Nord Cert GmbH	TR, FA[B]	SA	☒	5.1	☒	☐	☒
☐ Mr. ☒ Ms.	Susanne Pasch	TÜV Nord Cert GmbH	TR[B]	A	☒	-	☒	☐	☐

1) TL: Team Leader; TM: Team Member, TR: Technical review; OT: Observer-Team, OR: Observer-TR; FA: Final approval

2) GHG Auditor Status: A: Assessor; LA: Lead Assessor; SA: Senior Assessor; T: Trainee; TE: Technical Expert

3) GHG auditor status (at least Assessor)

4) As per S01-MU03 and S01-VA070-A2 (such as 1.1, 1.2, …)

5) In case of verification projects

A) Team Member: GHG auditor (at least Assessor status), Technical Expert (incl. Host Country Expert or Verification Expert), not ETE

B) No team member

3.4. Publication of the Monitoring Report

In accordance with decision 9/CMP.1 (§ 36) the draft monitoring report, as received from the project participants, has been made publicly available on the TÜV NORD Website www.global-warming.de during a 30 days period from 2011-03-03 to 2011-04-03[3]. Comments received are taken into account in the course of the verification, if applicable.

3.5. Verification Planning

In order to ensure a complete, transparent and timely execution of the verification task the team leader has planned the complete sequence of events necessary to arrive at a substantiated final verification opinion.

Various tools have been established in order to ensure an effective verification planning.

Risk analysis and detailed audit testing planning

For the identification of potential reporting risks and the necessary detailed audit testing procedures for residual risk areas table A-1 is used. The structure and content of this table is given in table 3-2 below.

Table 3-5: Table A-1; Identification of verification risk areas

Table A-1: GHG calculation procedures and management control testing / Detailed audit testing of residual risk areas and random testing				
Identification of potential reporting risk	**Identification, assessment and testing of management controls**	**Areas of residual risks**	**Additional verification testing performed**	**Conclusions and Areas Requiring Improvement (including *Forward Action Requests*)**

[3] http://www.global-warming.de/e/1990/

Table A-1: GHG calculation procedures and management control testing / Detailed audit testing of residual risk areas and random testing				
Identification of potential reporting risk	**Identification, assessment and testing of management controls**	**Areas of residual risks**	**Additional verification testing performed**	**Conclusions and Areas Requiring Improvement (including *Forward Action Requests*)**
The following potential risks were identified and divided and structured according to the possible areas of occurrence.	*The potential risks of raw data generation have been identified in the course of the monitoring system implementation. The following measures were taken in order to minimize the corresponding risks.* *The following measures are implemented:*	*Despite the measures implemented in order to reduce the occurrence probability the following residual risks remain and have to be addressed in the course of every verification.*	*The additional verification testing performed is described. Testing may include:* *- Sample cross checking of manual transfers of data* *- Recalculation* *- Spreadsheet 'walk throughs' to check links and equations* *- Inspection of calibration and maintenance records for key equipment* *- Check sampling analysis results* *Discussions with process engineers who have detailed knowledge of process uncertainty/error bands.*	*Having investigated the residual risks, the conclusions should be noted here. Errors and uncertainties are highlighted.*

The completed table A-1 is enclosed in the annex 1 (table A-1) to this report.

Project specific periodic verification checklist

In order to ensure transparency and consideration of all relevant assessment criteria, a project specific verification protocol has been developed. The protocol shows, in a transparent manner, criteria and requirements, means and results of the verification. The verification protocol serves the following purposes:

- It organises, details and clarifies the requirements a JI project is expected to meet for verification
- It ensures a transparent verification process where the verifying AIE documents how a particular requirement has been proved and the result of the verification.

The basic structure of this project specific verification protocol for the periodic verification is described in table 3-3.

Table 3-5: Structure of the project specific periodic verification checklist

Table A-2: Periodic verification checklist						
No.	***DVM[4] paragraph / Checklist Item*** *(incl. guidance for the determination team)*	***Initial Finding*** *(Means and results of assessment)*	***Ref.***	***Action requested to project participant*** *(CAR, CL, FAR)*	***Review of PP´s action***	***Conclusion***
Number of the checklist item	*The section gives a reference to the relevant paragraph of the DVM. The checklist items are linked to the various requirements the project should meet. The checklist is organised in various sections. Each section is then further subdivided as per the requirements of the topic and the individual project activity.*	*The section is used to elaborate and discuss the checklist item in detail. It includes the initial assessment of the verification team and how the assessment was carried out.*	*Gives reference to the information source on which the assessment is based on.*	*Assessment based on evidence provided if the criterion is not fulfilled a CAR, CL or FAR (details of each finding are elaborated in chapter 4) is raised otherwise no action is requested. The assessment refers to the draft verification stage.*	*Assessment based on the project participant action in response to the raised CAR, CL or FAR (details of each finding are elaborated in chapter 4). The assessment refers to the final verification stage.*	*Final assessment at the final verification stage is given.*

The periodic verification checklist (verification protocol) is the backbone of the complete verification starting from the desk review until final assessment. Detailed assessments and findings are discussed within this checklist and not necessarily repeated in the main text of this report.

The completed verification protocol is enclosed in the annex (table A-2) to this report.

3.6. Desk review

During the desk review all documents initially provided by the client and publicly available documents relevant for the verification were reviewed. The main documents are listed below:

[4] JISC 19 Annex 4

- the last revision of the PDD including the monitoring plan/PDD/,
- the last revision of the determination report/DET/,
- the monitoring report, including the claimed emission reductions for the project/MR/,
- the emission reduction calculation spreadsheet/XLS/.

Other supporting documents, such as publicly available information on the UNFCCC / host country website and background information were also reviewed.

3.7. On-site assessment

As most essential part of the verification exercise it is indispensable to carry out an inspection on site in order to verify that the project is implemented in accordance with the applicable criteria. Furthermore the on-site assessment is necessary to check the monitoring data with respect to accuracy to ensure the calculation of emission reductions. The main tasks covered during the site visit include, but are not limited to:

- The on-site assessment included an investigation of whether all relevant equipment is installed and works as anticipated.
- The operating staff was interviewed and observed in order to check the risks of inappropriate operation and data collection procedures.
- Information processes for generating, aggregating and reporting the selected monitored parameters were reviewed.
- The duly calibration of all metering equipment was checked.
- The monitoring processes, routines and documentations were audited to check their proper application.
- The monitoring data were checked completely.
- The data aggregation trails were checked via spot sample down to the level of the meter recordings.

The complete verification team attended the site visit.

Before and during the on-site visit the verification team performed interviews with the project participants to confirm selected information and to resolve issues identified in the document review.

Representatives of the Pec Rhin Nitric Acid Plant and N.serve including the operational staff of the plant were interviewed. The main topics of the interviews are summarised in Table 3-4.

Table 3-4: Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
1. Projects & Operations Personnel, Pec Rhin Nitric Acid Plant	- General aspects of the project - Technical equipment and operation - Changes since validation

Interviewed Persons / Entities	Interview topics
2. Consultant, N.serve	- Calibration procedures - Quality management system - Involved personnel and responsibilities - Training and practice of the operational personnel - Implementation of the monitoring plan - Monitoring and measurement equipment - Maintenance - - Remaining issues from validation - Monitoring data management - Data uncertainty and residual risks - GHG emission reduction calculation - Procedural aspects of the verification - Environmental aspect

3.8. Draft verification reporting

On the basis of the desk review, the on-site visit, follow-up interviews and further background investigation the verification protocol is completed. This protocol together with a general project and procedural description of the verification and a detailed list of the verification findings form the draft verification report. This report is sent to the client for resolution of raised CARs, CLs and FARs.

3.9. Resolution of CARs, CLs and FARs

Non-conformities raised during the verification can either be seen as a non-fulfilment of criteria ensuring the proper implementation of a project or where a risk to deliver high quality emission reductions is identified.

Corrective Action Requests (CARs) are issued, if:

- Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
- Issues identified in a FAR during validation or previous verifications requiring actions by the project participants to be verified during verification have not been resolved.

The verification team uses the term Clarification Request (CL), which is be issued if:

- information is insufficient or not clear enough to determine whether the applicable JI requirements have been met.

Forward Action Requests (FAR) indicate essential risks for further periodic verifications. Forward Action Requests are issued, if:

- the monitoring and reporting require attention and / or adjustment for the next verification period.

For a detailed list of all CARs, CLs and FARs raised in the course of the verification pl. refer to chapter 4.

3.10. Final reporting

Upon successful closure of all raised CARs and CLs the final verification report including a positive verification opinion can be issued. In case not all essential issues could finally be resolved, a final report including a negative verification opinion is issued.

The final report summarizes the final assessments w.r.t. all applicable criteria.

3.11. Technical review

Before submission of the final verification report a technical review of the whole verification procedure 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 verification opinion and the topic specific assessments as prepared by the verification team leader may be confirmed or revised. Furthermore reporting improvements might be achieved.

3.12. Final approval

After successful technical review an overall (esp. procedural) assessment of the complete verification will be carried out by a senior assessor located in the accredited premises of TÜV NORD.

After this step the request for issuance can be started.

4. VERIFICATION FINDINGS

In the following paragraphs the findings from the desk review of the monitoring report/MR/, the calculation spreadsheet/XLS/, PDD/PDD/, the Determination Report/DET/ and other supporting documents, as well as from the on-site assessment and the interviews are summarised.

The summary of CAR, CL and FAR issued are shown in Table 4-1:

Table 4-1: Summary of CAR, CL and FAR

Verification topic	No. of CAR	No. of CL	No. of FAR
A – Project Approvals	0	1	1
B – Project Implementation	1	0	0
C – Monitoring Plan Compliance	2	0	0
D – Monitoring Plan Revision	0	0	0
E – Data Management	2	0	0
SUM	**5**	**1**	**1**

The following tables include all raised CARs, CLs and FARs and the assessments of the same by the verification team. For an in depth evaluation of all verification items it should be referred to the verification protocols (see Annex).

Finding:	**A1**		
Classification	☐ CAR	☐ CL	☒ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	It must be checked at each verification, that the total amount of verified emission reductions until 2012-12-31 does not exceed the limit of 351,440 tonnes (before 10 % reduction) according to the host country LoA.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*			
AIE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and AIE assessments (#2, #3, etc.) shall be added.*			

Finding:	A1
Conclusion *Tick the appropriate checkbox*	☒ To be checked during the next periodic verification ☐ Appropriate action was taken ☐ Project documentation was corrected correspondingly ☐ Additional action should be taken ☐ The project complies with the requirements

Finding:	A2		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The total amount of verified emission reductions until 2012-12-31 must not exceed the limit of 351,440 tonnes (before 10 % reduction) according to the host country LoA.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	*The total amount of emission reductions achieved by this project since start of the crediting period is 78,567 tonnes of CO_2e (before 10 % reduction) and therefore does not exceed the limit of 351,440 tonnes of CO_2e (before 10 % reduction) according to the LoA.*		
AIE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and AIE assessments (#2, #3, etc.) shall be added.*	The value given by the PP is the result of the ER-calculation of the first monitoring period. The result is correct and does not exceed the limit set by the host country LoA.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☐ Appropriate action was taken ☐ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

Finding:	B1		
Classification	☐ CAR	☒ CL	☐ FAR

Finding:	B1
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	FAR D5 of Determination Report The verifier has to check the appropriateness of • the AMS (with regard to e.g. location of the sampling point, • QAL1, QAL 2, uncertainty assessment) • the gas volume flow meter since these devices are not installed at the date of on site visit, • the implemented QA/QC procedures in accordance with ISO 9001 or a related standard measurements frequencies for the relevant parameters • ISO 9001 accreditation and scope of contract of the external contractor 'Cegelec'. The verifier should check the implemented QA/QC procedures in accordance with ISO 9001 or a related standard
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	*The PP provided info related to the different issues of the FAR in the project documentation.*
AIE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and AIE assessments (#2, #3, etc.) shall be added.*	OK. After closing of all findings which are partly related to the context of AMS installation and implementation of EN 14181, this CAR can be closed.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☒ Appropriate action was taken ☐ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

Finding:	C1		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Editorial issues in the Monitoring Report: 1. The date of the plant start up (mid of June) should be specified 2. Sampling points should be included in Illustration: Flow chart for the PEC RHIN nitric acid plant 3. Chapter 5.3.3: o The automatic density (concentration) measurement principle (conductivity) should be included o Mass balance as cross check tool should be included 4. Chapter 5.3.4 and others: o Only mean oxidation temperature of three thermocouples of boiler "east" is used for the		

Finding:	C1
	determination of operation hours (OH) and not UN1000 status signal. This should be revised in all relevant sections of the MR 5. Section 6: The Müller BBM reports 043/3 (Installation) and 043/1 (Suitability) should be mentioned. 6. The daily zero calibration of AMS is not implemented in quality management scheme of the plant as stated in the MR. This should be explained by reference to suppliers requirements and monitoring standard. 7. Annex 1: o P. 4 (OH): The section "data source" should be corrected o P. 6 (OT): The table should be corrected since not the UN1000 status signal but OT burner east is used o P. 9 (TSG): The thermocouple is not a part of the volume flow meter. The section should be corrected o P. 10 (PSG): The section should be corrected 8. Annex 2: o PSG: The section should be corrected
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. *The exact date of plant start-up has now been specified in section 3.* 2. *Sampling points have now been included in the plant flow chart in section 4.* 3. *Section 5.3.3 has now been amended to include more information on density measurement and the reporting of NAP values based on a mass balance calculation.* 4. *Section 5.3.4 and P.6 of Annex 1 have been amended to reflect the use of the oxidation temperature measurements of the east burner to determine OH.* 5. *The Müller BBM reports 043/3 (Installation) and 043/1 (Suitability) have now been included in Section 6.1* 6. *The section 'N_2O-Analyser Zero Calibration' in 6.4 has now been amended to reflect the fact that a daily zero calibration is not carried out at the plant, as was originally stated in the PDD, but is instead carried out once per month.* 7. *Annex 1:* o *The 'Source' of P.4 of Annex 1 (OH) has been corrected to reflect the actual situation at the plant.* o *The 'Source' of P.6 of Annex 1 (OT) has been corrected to reflect the actual situation at the plant.* o *The 'Source' of P.9 of Annex 1 (TSG) has been corrected to show that the probe is not a part of the volume flow meter.* o *Section P10 of Annex 1 has been corrected to describe the situation with static pressure measurement* 8. *Annex 2 section PSG has been corrected to describe the situation with static pressure measurement*

Finding:	C1
AIE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and AIE assessments (#2, #3, etc.) shall be added.*	1. OK, starting date is now mentioned as 2010-06-15 2. OK, sampling points are now included in the chart 3. OK, the MR now gives information about the measurement principle and cross check 4. OK. Section 5.3.4. now includes the relevant information 5. Not OK. The relevant reports were referenced in the MR but issuing data are not correct 6. OK. The monthly calibration interval is now reflected in the MR. Monthly calibration frequency is common practice and is accepted by the verification team. 7. Not OK. The data source for parameters OH, OT, TSG and PSG are not described as implemented in plant DCS. 8. Not OK. The pressure measurement is now described in annex 2, but the determination team can not follow the definition/explanation given.
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	5. The date of the updated report was corrected in the MR 7. The section "data source" in annex 1 for the parameter OH, OT, TSG and PSG was corrected in the MR to reflect the actual situation of implementation in the DCS 8. The PP explains in Annex 1 of the MR that: • PSG is calculated as measured difference between stack pressure and ambient pressure plus a default value of 1013 hPa • The measurement of pressure difference by: Endress + Hauser Cerabar S pressure sensor • The pressure sensor measures the difference between stack pressure and atmospheric ambient pressure.
IAE Assessment #2 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and IAE assessments (#2, #3, etc.) shall be added.*	5. OK, the dates were corrected as per report 7. and 8.: OK, the PP gives sufficient info of data source and regarding PSG measurement. The addition of the default value of 1013 hPa to the differential pressure is conservative since the max. registered atmospheric pressure is 981,4 hPa/PRESS/ and a higher pressure used for normalisation calculation will lead to higher mass flows of N_2O in the result. CAR is closed.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

Finding:	C2		
Classification	☒ CAR	☐ CL	☐ FAR

Finding:	C2
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Some sections of the QAL 2 report No: M87 043/2 2010-11-12 prepared by MÜLLER-BBM need to be revised or clarified: ○ Chapter 1.4: The reference to the German Federal Immission Control Act shall be corrected ○ Section 3.3.1 mentions a 12 hourly automatic zero point calculation whereas section 6.1.9 states that no regular zero checks are carried out. Clarification is requested. ○ Section 3, absolute pressure (page 40) : The pressure sensor is nor clearly referenced. Additional information (type, supplier, S/N) is necessary. ○ The normalisation of VSG data in the PCS (as checked by M-BMM and found to be correct) shall be described in the relevant section)
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	*Müller BBM provided an updated version of the QAL 2 report. This report reflects the comments above, describing the actual situation correctly:* • *Chapter 1.4: The reference to German regulations was removed* • *Section 3.3 the correct calibration frequency was described* • *Section 3 (static pressure – now page 38) the pressure sensor details are included* *The calculation of the QAL 2 correction factor for stack gas flow is now limited to normalized conditions. The formula for normalization as used in the data collection system is included in the report.*
IAE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and IAE assessments (#2, #3, etc.) shall be added.*	OK. The QAL 2 report was revised according to the findings and can be accepted by the verification team. CAR is closed.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

Finding:	E1		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	During onsite visit inconsistencies have been identified in the ER excel spreadsheet for the normalised VSG values provided by N.serve and original data provided by the project owner. 1. The normalised gas flow (VSG) is different between plant and N.serve 2. The determination of PSG is not traceable 3. The pressure sensor (p_{ATM}) is located in a cellar whereas the differential pressure sensor at the AMS (stack/atm) is mounted on the stack. The values are not directly comparable. Correction is required, if this procedure for determination is applicable.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. *In the ER excel spreadsheet the normalised VSG values were calculated based on the non normalized stack gas flow and a reported pressure value that turned out not to be the correct PSG. Therefore normalized VSG as calculated by N.serve was not correct. In the updated ER excel spreadsheet the normalized VSG as provided by the plant was used. The QAL 2 correction factor for normalized conditions from the Müller-BBM QAL 2 was used for the updated calculations.* 2. *PSG is not measured by the plant. Instead the static pressure in the stack is measured and the static pressure plus a constant value for the ambient pressure of 1013 hPa is used for normalization of the stack flow to standard conditions. This is conservative since the average ambient pressure is approximately 980 hPa. (see attached document of the federal office of meteorology and climatology MeteoSwiss, showing the long term average of ambient pressure at the nearby measuring station in Basel). Therefore using 1013 hPa as a default value leads to higher VSG values compared to the real values.* 3. *The results from the pressure sensor (pATM) will not be used for the calculation of ER during this monitoring period. The calculation was updated accordingly.*		
IAE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and IAE assessments (#2, #3, etc.) shall be added.*	Not OK. The provided ER-calculation bases on values marked as normalised, but tags and column names were not updated. Since it is not clear, which data are valid for normalisation and/or ER calculation, the PP shall give additional comments and skip invalid and redundant data. Furthermore the MR should give additional info of data generation and processing for normalisation of volume flow. The sheet calculation includes some cells with invalid values (#WERT!). This should be corrected.		

Finding:	E1
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	*The ER-calculation spreadsheet and the raw data sheet were revised to clarify what kind of data was used for the calculations. In some periods during shutdown of the plant the calculation resulted in an error reading (#WERT!) the calculation was revised to avoid this errors.*
IAE Assessment #2 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and IAE assessments (#2, #3, etc.) shall be added.*	Ok. The PP provided an updated and revised Excel-calculation sheet without errors and with correct links and explanations of raw data.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

Finding:	E 2		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	No daily automatic zero calibration of the N_2O-Analyser (Nicolet 6700) has been conducted. (Müller BBM described in their QAL2 Report an automatic zero point calibration every 12 hours.) It should be proved, that the monthly interval of the zero calibration is in conformance with the relevant monitoring standard and supplier requirements.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	*Please see the email from the supplier, Thermo Fisher, dated 09/03/2011, which explains that the only specific requirement for the analyser is an annual maintenance check by the supplier. The email states that otherwise the operator is free to choose their own maintenance schedule. The plant has therefore decided to conduct the zero check once per month, at the same time as the span check, and not once every 24 hours as originally stated in the PDD.*		
IAE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and IAE assessments (#2, #3, etc.) shall be added.*	Not ok. The PP shall also reflect the requirements of the standard EN 14181 (QAL3) in the relevant section of the MR.		
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	*By implementing a monthly calibration interval the requirements of EN 14181 for ongoing quality assurance and documentation (QAL3) are fulfilled. The respective section of the MR was amended accordingly.*		

Finding:	E 2
IAE Assessment #2 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and IAE assessments (#2, #3, etc.) shall be added.*	OK. The EN 14181 states that: *"The implementation and performance of the QAL3 procedures given in this standard are the responsibility of the plant owner (i.e. the owner of the AMS). It is also the responsibility of the plant owner to assure that the AMS is operating inside the valid calibration range (see 6.5)."* The verification team can confirm that a monthly calibration frequency is common practise and suitable to ensure correct measuring values.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the next periodic verification ☐ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

5. SUMMARY OF VERIFICATION ASSESSMENTS

The following paragraphs include the summary of the final verification assessments after all CARs and CRs are closed out. For details of the assessments pl. refer to the discussion of the verification findings in chapter 4 and the verification protocol (Annex 1).

5.1. Implementation of the project

During the verification a site visit was carried out. On the basis of this site visit and the reviewed project documentation it can be confirmed that w.r.t. the realized technology, the project equipments, as well as the monitoring and metering equipment, the project has been implemented and operated as described in the registered PDD.

5.2. Project history

Since the AMS was not installed at time of the on site visit in the course of the project determination, the AIE raised following FAR:

CAR B1 of this verification report (FAR D5 of the determination report/DET/):

The verifier has to check the appropriateness of

- the AMS (with regard to e.g. location of the sampling point,
- QAL1, QAL 2, uncertainty assessment)
- the gas volume flow meter

since these devices are not installed at the date of on site visit,

- the implemented QA/QC procedures in accordance with ISO 9001 or a related standard measurements frequencies for the relevant parameters
- ISO 9001 accreditation and scope of contract of the external contractor 'Cegelec'.
- The verifier should check the implemented QA/QC procedures in accordance with ISO 9001 or a related standard

.

5.3. Special events

Some events have been taken place, which influenced the N_2O-emissions from the plant and as an effect of this, catalyst performance and N_2O release to the atmosphere. The PP provided an overview of the events, which was spot-checked by the verifier

Date	Comments

2010-9	
-01	Plant trip
-02	Plant trip
01 – 08	Main N_2O analyser out of operation.
01 – 09	Stack gas flow meter not connected to PI system
10 – 22	Stack gas flow meter not connected to PI system
28	Analyser undergoing QAL2 audit
2010-12	
01 - 08	Plant shut down

Table 5.3.: Special events

5.4. Compliance with the monitoring plan

The monitoring system and all applied QA/QC procedures are completely in compliance to the registered monitoring plan.

Parameter	Measurement device	QA/QC-Measures	
		Last	Next
N_2O	Nicolet 6700 /CALAMS/	Calibration: 2011-02-14	2011-03-16
		QAL2-test: 2010-09-27/30	Consecutive year (AST)
Calibration gas: 500 ppm N_2O	Bottle No: 9268575001 /CALGAS/		Valid: 2011-05-11
Calibration gas: 1,000 ppm N_2O	Bottle No: 9267497001 /CALGAS/		Valid: 2013-05-27

5.5. Monitoring parameters

During the verification all relevant monitoring parameters (as listed in the PDD) have been verified with regard to the appropriateness of the applied measurement / determination method, the correctness of the values applied for ER calculation, the accuracy, and applied QA/QC measures. The results as well as the verification procedure are described parameter-wise in the project specific verification checklist.

After appropriate corrections were carried out by the project participant in the course of this verification, it can be confirmed that all monitoring parameters have been measured / determined without material misstatements and in line with all applicable standards and relevant requirements.

Parameter:	Unit:	Applied value:
$NCSG_n$	mg/Nm³	
	228.65	mean
	329.75	upper limit of 95 % confidence interval
	127.32	lower limit 95 % of confidence interval
VSG_n	[Nm³/h]	
	125,977	Mean
	111,130	upper limit of 95 % confidence interval
	140,870	lower limit of 95 % confidence interval

Table 5.5.1: Upper/Lower limit and mean value of NCSG and VSG according to statistical analysis applied for ER-calculation.

Parameter:	Unit:	Applied value:
NCSG	[mg N_2O/Nm³]	228.65
VSG	[Nm³/h]	125,977
OH_n	[h]	3,839
NAP_n	[$tHNO_3$]	145,609
OT	[°C]	Not applicable
AIFR	[%]	Not applicable
TSG	[°C]	Not applicable
PSG	[Pa]	Not applicable
EF_n	[$kgN_2O/tHNO_3$]	According to formula: EF_n = (PE_n/ NAP_n), the result is: 0.75942
EF_{BM}	[$kgN_2O/tHNO_3$]	2.50 (until end of 2011)
EF_{reg}	[$kgN_2O/tHNO_3$]	7.7 until 2010-12-31 and 3 from 2011-01-01 onwards (not in this monitoring period).

PE_n	[kgN_2O]	110,578.62

Table 5.5.2: Monitored plant parameter/input for ER calculation

5.6. Monitoring report

A draft monitoring report was submitted to the verification team by the project participants. The team has made this report publicly available prior to the start of the verification activities. No comments were received.

During the verification, mistakes and needs for clarification were identified. The PP has carried out the requested corrections so that it can be confirmed that the monitoring report is complete and transparent and in accordance with the registered PDD and other relevant requirements.

5.7. ER Calculation

During the verification mistakes in the ER calculation were identified. Corresponding CARs were raised. A revised ER calculation was prepared by the PP and presented to the verification team. All raised issues were addressed appropriately so that all corresponding CARs/CLs could be closed out. Thus it is confirmed that the ER calculation is overall correct.

Parameter	Value	Unit
Nitric Acid Production (100% concentrate)	145,609	$tHNO_3$
Project Emissions	110,578.62	tCO_2e
Emission Factor	0.75942	$kgN_2O/tHNO_3$
Governmental ERU deduction	10	%
Emission Reductions	70,710	tCO_2e

Table 5.7: Relevant data and outcome of ER-calculation

5.8. Quality Management

Quality Management procedures for measurements, collection and compilation of data, data storage and archiving, calibration, maintenance and training of personnel in the framework of this JI project activity have been defined. The procedures defined can be assessed as appropriate for the purpose.

5.9. Overall Aspects of the Verification

All necessary and requested documentation was provided by the project participants so that a complete verification of all relevant issues could be carried out.

Access was granted to all installations of the plant which are relevant for the project performance and the monitoring activities.

No issues have been identified indicating that the implementation of the project activity and the steps to claim emission reductions are not compliant with the UNFCCC / host country criteria and relevant guidance provided by the COP/CMP and the JISC (clarifications and/or guidance).

5.10. Hints for next periodic Verification

FAR A1:

It must be checked at each verification, that, total amount of verified emission reductions until 2012-12-31 does not exceed the limit of 351,440 tonnes (before 10 % reduction) according to the LoA.

6. VERIFICATION OPINION

Pec Rhin S.A. has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 1st periodic verification of the project: "Pec Rhin N_2O Abatement Project", with regard to the relevant requirements for JI (Track 1) project activities. The project reduces GHG emissions due to reduction of N_2O emissions. This verification covers the period from 2010-09-01 to 2011-02-15 (including both days).

In the course of the verification 5 Corrective Action Requests (CAR) and 1 Clarification Request (CL) were raised and successfully closed. Furthermore 1 FAR was raised regarding to the max. amount of claimable ERUs. The verification is based on the draft monitoring report, revised monitoring report, and the monitoring plan as set out in the registered PDD, the determination report, emission reduction calculation spreadsheet and supporting documents made available to the TÜV NORD JI/CDM CP by the project participant.

As a result of this verification, the verifier confirms that:

- all operations of the project are implemented and installed as planned and described in the project design document.
- the monitoring plan is in accordance with the applied country specific methodology: Méthode pour les Projets Domestiques: "Réduction catalytique du N_2O dans des usines d'acide nitrique".
- the installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately.
- the monitoring system is in place and functional. The project has generated GHG emission reductions.

As the result of the 1st periodic verification, the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner. TÜV NORD JI/CDM CP herewith confirms that the project has achieved emission reductions in the above mentioned reporting period as follows:

Emission reductions: **70,710** t CO2e

Including a deduction to 90% according to the Arrêté du 2 mars 2007.

Essen, 2011-10-12	Essen, 2011-10-12
A. Nebel	
Alexandra Nebel	Rainer Winter
TÜV NORD JI/CDM CP	TÜV NORD JI/CDM CP
Verification Team Leader	Final Approval

7. REFERENCES

Table 7-1: Documents provided by the project participant(s)

Reference	Document
/**AMS**/	Certificat de conformite, (Declaration of conformation) issued by Thermo electron cooperation regarding the Nicolet 6700 analyser, dated 2010-06-04
/**AN-MAINT**/	Contract with ThermoFisher Scientific for maintenance of the analyser Nicolet
/**AP**/	Arrete Prefectoral No.: 2008-226-14, issued by the Prefecture de Gironde on 2008-08-13 regarding max. Emission from Nitric Acid plant
/**AUD_RES**/	Responsible Care Audit Report, Safety and Environment Protection, dated 2004-10-22.
/**BP**/	Référentiel de bonnes pratiques: Protocole de quantificationdes émissions de protoxide d'azote dans la fabrication d'acide nitrique (Best practice document regarding the mass-balance calculation and emission calculation in nitric acid plants
/**CALAMS**/	A 1048 Analyse IRTF destruction catalytique mesure de N_2O AMS-calibration: XLS-sheet with calibration dates, events and results of calibration
/**CALGAS**/	Calibration gas certificates for the AMS, all in period of validity
/**CDMA**/	Contrat de maintenance (Maintenance-contract for the AMS-Analysator Nicolet 6700 between Thermo Fisher Scientific and PecRhin, dated 2011-02-17
/**DECLA**/	Déclaration annuelle des émissions polluantes -rejets 2009- (Emission declaration for the year 2009 to the Environmental Ministry, including HNO_3-output and N_2O-emissions), dated 2010-02-15
/**EFMA**/	Manuel d'audit pour la gestion responsable des produits dans les sociétés productrices de fertilisants, développé par European Fertilizer Manufacturers Association (EFMA) en collaboration avec Det Norske Veritas (DNV) Édition revise 14 Septembre 2004 (Audit scheme of EFMA (European fertilizer organisation)
/**FICHE**/	Fiche renseignement carte de contrôle NAP –Check of max. deviation between NAP-flowmeter and mass balance

Reference	Document
/**LOA**/	• Host country LoA issued by the French "Ministère de l'Écologie, de l'Énergie, du Développement Durable et de la Mer, en charge des Technologies vertes et des Négociations sur le climat" on 2010-12-30, Ref-No.: 1D10022284 • Investor country LoA issued by the Belgian « National Climate Commission » on 2011-04-04, Ref-No.: NKC/FP/7
/**MR**/	• First and published Monitoring report of GHGs emission reductions (Track1) (01.09.2010 – 15.02.2010) "PEC RHIN N_2O abatement project" dated 2011-02-22 issued by N.serve (version 1). • Final Monitoring report of GHGs emission reductions (Track1) (01.09.2010 – 15.02.2010) "PEC RHIN N_2O abatement project" dated 2011-09-13 issued by N.serve (version 5).
/**NAP1**/	Parameter set protocol for NAP flow meter FT 1021 for 69 % HNO_3
/**NAP2**/	Parameter set protocol for NAP flow meter FT 1022 for 60 % HNO_3
/**ORG**/	Organisation "protection de l´air" (also "projets domestiques"). Survey of personnel organisation of the JI-project, issued by the PEC RHIN plant on 2011-02-10.
/**P&I**/	Pipe and Installation sheet of Nitric Acid Plant.
/**PROC1**/	"Evenements 2010 projet domestique" Overview on events relevant for the monitoring.
/**PROC2**/	Procedure – Mode operatoire de verification d'une mesure de pression de niveau ou debit a pression differentielle, No.: 15.400-03-14, (Procedure - procedure of verification of measuring pressure level or flow differential pressure)
/**PROC3**/	Procedure – Manuel maintenance travaux neuvs, No.: 15.405.00, (Procedure Manual - new maintenance work)
/**PROC4**/	Procedure – Consignes d'exploration et projet domestique, (Procedure - Instructions for exploration and domestic project)
/**PROC5**/	Procedure - Manual Maintance Travaux Neufs: Procedures Techniques MTN, (Maintenance procedures for analyser, VSG, PSG, TSG, AFR, AIFR, OT,...)
/**PROC6**/	Procedure – Procedures techniques MTN (Technical procedures for monitoring of relevant parameter of the abatement project

Reference	Document
/**PROC7**/	Procedure - Organisation de la Cellule Analysateur pour le Suivi de analysateur securite (IPS) environment qualite (Organisation of maintenance of the AMS), TEIN/12/300
/**PROP**/	Project Proposal, proposed by Johnson Matthey PLC for PecRhin: Nitrous Oxide abatement project in the nitric acid plant(s) of PecRhin
/**QAL2CAL**/	• QAL2 Report on performance tests and calibration of the AMS, report No.: M87 043/2, issued by Müller BBM on 2010-11-12. • Revised version: Report on performance tests and calibration of the AMS, report No.: M87 043/2, issued by Müller BBM on 2011-05-07.
/**QAL2INST**/	QAL2 check of correct installation of the AMS, report No.: M87 043/2, issued by Müller-BBM on 2010-11-12.
/**QAL2PERF**/	Report on performance tests of the AMS for N_2O of acid plant for internal use, report No.: M87 043/1, issued by Müller BBM on 2010-05-19.
/**SPIECAT**/	Contrat de Catalyst supply agreement (contract between PEC RHIN and JM regarding catalyst supply, dated 2010).
/**TRAINAMS**/	Attestation de presence: Service training for measuring and maintains of the analyser Nicolet 6700: Jean BIGI and Benjamin CHAPUS, dated 2010-06-04.
/**XLS**/	• ERU Excel calculation spreadsheet, initial version:, “Monitoring Data 1st Ver _V2_ 20110222_MS.xls, dated 2011-02-22 • Final Excel calculation spreadsheet: “Monitoring Data 1st Ver _V5_ 20110815_MS.xls”, dated 2011-08-15

Table 7-2: Background investigation and assessment documents

Reference	Document
/**14181**/	European Standard DIN EN 14181: “Stationary source emissions – Quality assurance of automated measuring systems”
/**AM0034**/	Approved baseline and monitoring methodology AM0034: “Catalytic reduction of N_2O inside the ammonia burner of nitric acid plants”, version 3.4
/**AR**/	Arrêté du 2 mars 2007 of the ‘Ministère de l'écologie et du développement durable (Implementation of the JI-Guidelines in France)
/**BACK**/	Background paper: “N_2O EMISSIONS FROM ADIPIC ACID AND NITRIC

Reference	Document
	ACID PRODUCTION“, Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories issued by the NGGIP
/**BREF**/	Reference Document on Best Available Techniques for the Manufacture of Large Volume Inorganic Chemicals - Ammonia, Acids and Fertilisers
/**CPM**/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)
/**DET**/	Final JI Determination Report: “Pec Rhin S.A., Pec Rhin N_2O abatement project, Report No: 8000382322 – 10/147, dated: 2011-03-03, issued by TÜV Nord
/**DVM**/	JI Determination and Verification Manual
/**GUIDE**/	Guidance: Developing a CDM or JI project to reduce greenhouse gas emissions, issued by the: • French Ministry for Economy, Industry and Employment • French Ministry for Ecology, Energy, Sustainable Development and Town and Country Planning • French Global Environment Facility
/**IPCC**/	1. 1996 IPCC Guidelines for National Greenhouse Gas Inventories: work book 2. 2006 IPCC Guidelines for National Greenhouse Gas Inventories: work book
/**KP**/	Kyoto Protocol (1997)
/**MA**/	Decision 3/CMP. 1 (Marrakesh – Accords)
/**METH**/	Méthode pour les Projets Domestiques Réduction catalytique du N_2O dans des usines d'acide nitrique (Projet Domestique Methodology: Catalytic reduction of N_2O at nitric acid plants)
/**METHE**/	Projet Domestique Methodology Catalytic reduction of N_2O at nitric acid plants (Translation of /METH/)
/**NCSG**/	Diagram of parameter NCSG - Extract of ERU-calculation Excel-sheet
/**OT**/	Diagram of parameter OT - Extract of ERU-calculation Excel-sheet
/**PDD**/	“Project Design Document Version 02 dated 2010-05-04 “Pec Rhin N_2O abatement project” (registered version)

Reference	Document
/PRESS/	Standardnormwerte 1961-1990: Luftdruck auf Stationshöhe (Standardised atmospheric-pressure values from years 1961 and 1990), issued by the Swiss Confederation, Federal office of Meteorology and Climatology MeteoSwiss • Station Basel: Maximum registered atmospheric pressure is 981,4 hPa

Table 7-3: Websites used

Reference	Link	Organisation
/bref/	http://eippcb.jrc.ec.europa.eu/reference/	Website of the European Commission, Joint Research Centre, Institute for Prospective Technological Studies (Provision of BAT-Reference documents)
/dehst/	http://www.dehst.de	German Emissions Trading Authority (DEHSt) at the Federal Environment Agency
/dfp/	http://www.developpement-durable.gouv.fr/	Ministère de l'Écologie, de l'Énergie, du Développement Durable et de la Mer, en charge des Technologies vertes et des Négociations sur le climat
/efma/	http://www.efma.org/	European Fertilizer Manufacturers Association
/douane/	http://www.douane.gouv.fr/data/file/6146.pdf	Web-file regarding N_2O emission taxation.
/gw/	http://www.global-warming.de/	TÜV Nord platform hosting projects open for comments at the determination stage
/ipcc/	www.ipcc-nggip.iges.or.jp	IPCC publications
/lf/	http://www.legifrance.gouv.fr/	Site of Legifrance (La service public de la diffusion du droit)
/mist/	http://www.ecologie.gouv.fr/Methodologies-de-projets.html	Ministère de l'Écologie, de l'Énergie, du Développement durable et de la Mer (Ministry of ecology and sustainable development)
/nfg/	http://www.effet-de-serre.gouv.fr/accueil	Mission interministérielle sur l'effet de serre (French Inter-Ministry Mission on the Greenhouse Effect)

Reference	Link	Organisation
/**unfccc**/	http://ji.unfccc.int	JI homepage
/**proj**/	http://ji.unfccc.int/JIITLProject/DB/PK2RRNV3FP1DC3D5UK4CYF3XOSIGJR/details	Project listed in JI-database

Table 7-4: List of interviewed persons

Reference	MoI[1]		Name	Organisation / Function
/**IM01**/	V	☒ Mr. ☐ Ms	Jean Marc Bastian	PecRhin Nitric Acid Plant
/**IM01**/	V	☒ Mr. ☐ Ms	Tibergien Thibaud	PecRhin Nitric Acid Plant
/**IM01**/	V	☒ Mr. ☐ Ms	Klaus Müller-Dethard	PecRhin Nitric Acid Plant
/**IM01**/	V	☒ Mr. ☐ Ms	Jean Paul Vailin	PecRhin Nitric Acid Plant
/**IM01**/	V	☒ Mr. ☐ Ms	Jan Pierre Martin	PecRhin Nitric Acid Plant
/**IM01**/	V	☒ Mr. ☐ Ms	Cystelle Roussel	PecRhin Nitric Acid Plant
/**IM01**/	V	☒ Mr. ☐ Ms	Jean-Pierre Enond	PecRhin Nitric Acid Plant
/**IM01**/	V	☒ Mr. ☐ Ms	Vincent Simet	PecRhin Nitric Acid Plant
/**IM01**/	V	☒ Mr. ☐ Ms	Thierry Malet	PecRhin Nitric Acid Plant
/**IM01**/	V	☒ Mr. ☐ Ms	Bertrand Walle	PecRhin Nitric Acid Plant
/**IM02**/	V	☐ Mr. ☒ Ms.	Rebecca Cardani-Strange	N.serve
/**IM02**/	V	☒ Mr. ☐ Ms.	Volker Schmidt	N.serve

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

ANNEX

A1: Verification Protocol

ANNEX 1: VERIFICATION PROTOCOL

Table A-1: GHG calculation procedures and management control testing / detailed audit testing of residual risk areas and random testing

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including *Forward Action Requests*)
Raw data generation				
• Installation of measuring equipment • Dysfunction of installed equipment • Maloperation by operational personnel • Downtimes of equipment • Exchange of equipment • Change of measurement equipment characteristic • Insufficient accuracy • Change of	• Installation of modern and state of the art equipment • Process control automation • Internal data review • Regular visual inspect-ions of installed equip-ment • Only skilled and trained personnel operates the relevant equipment • Daily raw data checks • Immediate exchange of dysfunctional equipment	• Inadequate installation / operation of the monitoring equipment • Inadequate exchange of equipment • Change of personnel • Undetected measurement errors • Inappropriateness of Management system procedures w.r.t. monitoring plan requirements (e.g. substitute value strategies) • Non-application of management system procedures	• Site – visit (maintenance dept., gas supplier) • Check of equipment • Check of technical data sheets • Check of suppliers information / guarantees • Check of calibration records, if applicable • Check of maintenance records • Counter-check of raw data and commercial data • Check of JI manage-ment system	• **See Table A-2**

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including *Forward Action Requests*)
technology • Accuracy of values supplied by Third Parties	• Stand-by duty is organized • Training • Internal audit procedures • Internal check of QA/QC measures of involved Third Parties	• Insufficient accuracy • Inappropriate QA/QC measures of Third Parties	• Check of JI related procedures • Application of JI management system procedures • Check of trainings • Check of responsibilities • Check of QA/QC documentation / evidences of involved Third Parties	
Raw data collection and data aggregation				
• Wrong data transfer from raw data to daily and monthly aggregated reporting forms • IT Systems • Spread sheet programming • Manual data transmission	• Cross-check of data • Plausibility checks of various parameters. • Appropriate archiving system • Clear allocation of responsibilities • Application of JI Management system procedures	• Unintended usage of old data that has been revised • Incomplete documentation • Ex-post corrections of records • Ambiguous sources of information • Non-application of management system procedures	• Check of data aggregation steps • Counter-calculation • Data integrity checks by means of graphical data analysis and calculation of specific performance figures • Check of management system certification	• **See Table A-2**

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including *Forward Action Requests*)
• Data protection • Responsibilities	• Usage of standard software solutions (Spreadsheets) • Limited access to IT systems • Data protection procedures	• Manual data transfer mistakes • Unintended change of spread sheet programming or data base entries • Problems caused by updating/upgrading or change of applied software	• Check of data archiving system • Check of application of Management system procedures	
Other calculation parameters				
• Emission factors, oxidation factors, coefficients	• The values and data sources applied are defined in the PDD and monitoring plan	• Unintended or intended Modification of calculation parameters • Wrong application of values • Misinterpretations of the applied methodology and/ or the PDD • Missing update of applicable regulatory framework (e.g. IPCC values)	• Update-check of regulatory framework • Countercheck of the applied MP in the MR against the approved version	• **See Table A-2**
Calculation Methods				

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including *Forward Action Requests*)
• Applied formulae • Miscalculation • Mistakes in spread-sheet calculation	• Advanced calculation and reporting tools • A JI coordinator is in charge of the JI related calculations • Usage of tested / counterchecked Excel spreadsheets • Involvement of external consultants	• The danger of miscal-culation can only be minimized.	• Countercheck on the basis of own calculation. • Spread sheet walk-trough. • Plausibility checks • Check of plots	• **See Table A-2**
Monitoring reporting				
• Data transfer to the author of the monitoring report • Data transfer to the monitoring report • Unintended use of outdated versions	• An experienced JI consultant is responsible for monitoring reporting. • JI QMS procedures are defined	• The danger of data transfer mistakes can only be minimized • Inappropriate application of QMS procedures	• Counter check with evidences provided. • Audit of procedure application	• **See Table A-2**

Table A-2: (Project specific) Periodic Verification Checklist

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
A	***Project Approvals by Parties involved***					
A.1	*DVM § 90* Has the DFPs of at least one Party involved, other than the host Party, issued a written project approval when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest?	*Description:* The PP provided –except from the host country LoA- an LoA issued by the National Climate Commission of Belgium. The LoA is issued to Pec Rhin S.A. which is involved in the project as a PP. *Means of determination:* DFP-website, LoA, Unfccc-website, MR *Conclusion:* The project is in line with the regulations	/LOA/ /dfp/ /unfccc/ /proj/ /GUIDE/			OK
A.2	*DVM § 91* Are all the written project approvals by Parties involved unconditional?	*Description:* The French LoA has two conditions, which need to be taken into account: • Only 90 % of the verified emission reductions of one period shall be claimed by the PP. The ERU quantity stated in this report already takes into account the 10% deduction.	/LOA/ /dfp/ /unfccc/ /MR/	CL A2 FAR 1	~~CL A2~~ Pls. see Chapter 4	OK

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No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		• The total amount of verified emission reductions until 2012-12-31 is limited to 351,440 tonnes (before 10 % reduction) The Belgian LoA is unconditional *Means of determination:* LoA *Conclusion:* OK, • 10 % of the emission reductions are subtracted from the initial result. The ERU quantity stated in this report already takes into account the 10% deduction. • The sum of emission reduction does not exceed the maximum amount. FAR A1 was raised to compare the verified amount of ERUs with the limit defined in the LoA. CL A2 addresses the comparison of the verified amounts with the limits of the LoA to the verifier.				
B	***Project implementation***					
B.1	*DVM § 92* Has the project been implemented in accordance with the PDD regarding which the determination has been deemed	*Description:* The PP installed a secondary abatement catalyst and an AMS in conformance to the DIN EN 14181 before start of the project. QA/QC measures were implemented.	/PDD/ /DET/ /MR/	/CAR B1/ /CAR C2/ CAR E1/	~~/CAR B1/~~ ~~/CAR C2/~~	OK

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
	final and is so listed on the UNFCCC JI website?	*Means of determination:* PDD, certificates and 3rd party reports provided by the PP, inspections during on-site visit *Conclusion:* Since the AMS was not installed at time of the on site visit in the course of the project determination, the AIE raised a FAR regarding the proper project implementation, which needed to be closed in the first verification: <u>FAR D5 of Determination Report</u> The verifier has to check the appropriateness of • the AMS (with regard to e.g. location of the sampling point, • QAL1, QAL 2, uncertainty assessment) • the gas volume flow meter since these devices are not installed at the date of on site visit, • the implemented QA/QC procedures in accordance with ISO 9001 or a related standard measurements frequencies for the relevant parameters • ISO 9001 accreditation and scope of contract of the	/PROC1 - PROC7/ /QAL2CAL/ /QAL2INST/ /QAL2PERF/ /P&I/ /ORG/ /PROP/ /14181/		~~CAR E1/~~ Pls. see Chapter 4	

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		external contractor 'Cegelec'. The verifier should check the implemented QA/QC procedures in accordance with ISO 9001 or a related standard Result: The verification team checked the QAL2 reports and found some inconsistencies which were addressed in CAR C2. The discussions pls find in the relevant section of this chapter. The measurement devices were correctly installed but not sufficiently described in the MR and/or used for ERU calculation. CAR E1 was raised. For details see the relevant section of this report.				
B.2	*DVM § 93* What is the status of operation of the project during the monitoring period?	*Description:* The project is running according to the description provided in the PDD. Some unexpected situations appeared which are business as usual failures and correctly noted in the report. *Means of determination:* Calculation sheets annexed to the monitoring report, on-site visit and inspection of implementations, plant history, PDD *Conclusion:* The project history was discussed in detail during on site visit and found to be reasonable. The verification team found some inconsistencies and	/PDD/ /XLS/ /MR/ /PROC1/ /NCSG/ /OT/	CAR C1	~~CAR C1~~ Pls. see Chapter 4	OK

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		unclear points in the monitoring report and subsumed them under CAR C1: Editorial issues in the Monitoring Report: 1. The date of the plant start up (mid of June) should be specified 2. Sampling points should be included in Illustration: Flow chart for the PEC RHIN nitric acid plant 3. Chapter 5.3.3: o The automatic density (concentration) measurement principle (conductivity) should be included o Mass balance as cross check tool should be included 4. Chapter 5.3.4 and others: o Only mean oxidation temperature of three thermocouples of boiler “east” is used for the determination of operation hours (OH) and not UN1000 status signal. This should be revised in all relevant sections of the MR 5. Section 6: The Müller BBM reports 043/3 (Installation) and 043/1 (Suitability) should be mentioned. 6. The daily zero calibration of AMS is not implemented in quality management scheme of the plant as stated in the MR. This should be explained by reference to suppliers requirements and monitoring standard. 7. Annex 1:				

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		○ P. 4 (OH): The section "data source" should be corrected ○ P. 6 (OT): The table should be corrected since not the UN1000 status signal but OT burner east is used ○ P. 9 (TSG): The thermocouple is not a part of the volume flow meter. The section should be corrected ○ P. 10 (PSG): The section should be corrected 8. Annex 2: PSG: The section should be corrected				
C	***Compliance with monitoring plan***					
C.1	*DVM § 94* Did the monitoring occur in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	*Description:* Monitored parameters and parameters (according to the methodology and the registered PDD) used for calculation are: • $NCSG_n$ [mg N_2O/Nm^3] *Meaning:* Average N_2O concentration in the tail gas during project Verification Period n. *Source:* Continuous emissions N_2O analyser (AMS)	/PDD/ /MR/ /14181/ /XLS/ /EFMA/ /NAP1/ /NAP2/ /CALAMS/	CAR C1	~~CAR C1~~ Pls. see chapter 4	OK

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		Measurement frequency: Hourly value based on continuous monitoring (10 second frequency) • VSG_n [Nm^3/h] *Meaning:* Average Normal-Volume flow rate of the tail gas during project Verification Period n. Normalisation calculation takes place in the plant DCS and used Temperature and pressure values derived by the plant monitoring equipment (see below). *Source:* Gas volume flow meter (part of plant DCS) *Measurement frequency:* Hourly value based on continuous monitoring (10 second frequency) • PE_n [kgN_2O] *Meaning:* N_2O emissions during project Verification Period n. *Source:*	/CALGAS/ /14181/ /CDMA/ /NCSG/ /OT/			

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		Calculated from measured data *Measurement frequency:* Calculated after each Verification Period *Applied value:* Calculated according to the formula of the methodology: $PEn = VSG_n * NCSG_n * OH_n$ • OH_n [hours] *Meaning:* Total operating hours of Verification Period n. *Source:* Production Log – taking into account the relevant trip point parameter Temperature [OT]. Every production hour which falls in the range of the OT-range will be counted (UN 1000 status signal). *Measurement frequency:* Continuous • NAP_n [$tHNO_3$] *Meaning:*				

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		Metric tonnes of 100% concentrated nitric acid during any Verification Period n. *Source:* Nitric acid flow meters for 60 % and 69 % concentrated HNO_3 output flows. *Measurement frequency:* Continuously throughout the Verification Period n. • OT [°C] *Meaning:* Oxidation temperature in the ammonia oxidation reactor (AOR). *Source:* 3 thermocouples inside the east of both burners of the plant. *Measurement frequency:* Hourly average value based on continuous monitoring • AFR [$kgNH_3/h$] *Meaning:*				

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		Ammonia Flow rate to the ammonia oxidation reactor (AOR) *Source:* Continuous emissions N_2O analyser *Measurement frequency:* Hourly average value based on continuous monitoring • AIFR [%] *Meaning:* Ammonia to air ratio into the AOR *Source:* Ammonia & Air flow meters *Measurement frequency:* Hourly average value based on continuous monitoring • TSG [°C] *Meaning:* Temperature of tail gas (for normalising of VSG) *Source:* Thermocouple (part of the measuring and control system				

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		of the plant). *Measurement frequency:* Hourly average value based on continuous monitoring • PSG [Pa] *Meaning:* Pressure of tail gas (necessary for normalising of VSG) *Source:* Probe of the plant DCS, measurement of pressure gradient between stack and atmosphere adding a default value of 1013 hPa for generating an absolute value. *Measurement frequency:* Hourly average value based on continuous monitoring • EF_n [$kgN_2O/tHNO_3$] *Meaning:* Emissions factor calculated for project Verification Period n. *Source:* Calculated from measured data				

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		• EF_{reg} [$kgN_2O/tHNO_3$] *Meaning:* Emissions cap for N_2O from nitric acid production set by government/local regulation. *Source:* National or local N_2O emissions legislation *(PecRhin 'arrêté préféctoral')* If this regulatory limit is lower than the applicable benchmark emissions factor, then EF_{reg} shall replace EF_{BM} in the calculation of ERUs. • EF_{BM} [$kgN_2O/tHNO_3$] *Meaning:* Specific reference value (benchmark emissions factor) that will be applied to calculate the emissions reductions from a specific Verification Period. *Source:* Included in the French Methodology QA/QC: The PP refers to the project European standard 14181				

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		regarding implementation of monitoring equipment and maintenance procedures and to the IFMA-audit scheme for QA/QC. *Means of determination:* PDD, Monitoring report, ERU-calculation, DIN EN 14181, methodology, quality related procedures provided by the plant staff, on-site inspections and interviews with involved staff. *Conclusion* The verification team can confirm that the monitoring of the relevant parameter implemented in the project and the referenced standards are in accordance with the monitoring plan of the final PDD. Checked details are i.e.: • Measurement frequency • Data source • Measurement procedures • Quality procedures • Measuring points • Cross checks • Data handling, storage and processing Some findings were raised in the context of monitoring plan: CAR C1: • The automatic density (concentration) measurement principle (conductivity) should be included				

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		• Mass balance as cross check tool should be included • The daily zero calibration of AMS is not implemented in quality management scheme of the plant as stated in the MR. This should be explained by reference to suppliers requirements and monitoring standard.				
C.2	*DVM § 95a)* For calculating the emission reductions or enhancements of net removals, were key factors, e.g. those listed in 23 (b) (i)-(vii) above, influencing the baseline emissions or net removals and the activity level of the project and the emissions or removals as well as risks associated with the project taken into account, as appropriate?	*Description:* The project baseline is set by default values in the methodology EF_{BM} which was issued by the French DFP. Default values are expressed in benchmark values: Year: 2009 2010 2011 2012 Value EF_{BM}: 2.5 2.5 2.5 1.85 [kg N_2O/t HNO_3] These benchmark values are the key factors, which influence the baseline scenario and reduce the accountable emission reductions from realistic baseline emissions to the above mentioned values. The results of risk assessment are extensive measures to prevent a bypass of process gases in the catalyst bed since this will lead to a reduction of catalyst efficiency. Decreasing catalyst efficiency was identified as most important project risk *Means of determination:* French methodology, LoA, interviews Pec Rhin plant staff	/METH/ /LOA/ /AP/			OK

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		Conclusion: The benchmark values are correctly considered in the calculation of baseline emissions and take into account the sectoral reform policies and legislation (point 23 (b) (i) of DVM). The verification team can confirm, that the result of risk assessment (risks associated with the project) was taken into account.				
C.3	*DVM § 95b)* Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	*Description:* Parameter and related data sources are: • $NCSG_n$ [mg N_2O/Nm^3] Thermo Scientific Nicolet 6700, Tag No: AI1048-4 • VSG_n [Nm^3/h] VSG measurement by Endress + Hauser Deltabar flow meter, Tag No: FI1012 • PE_n [kgN_2O] Calculation from measured data • OH_n [h] Production Log – taking into account the trip point parameter OT (Temperature in the oxidation reactor east)	/PDD/ /MR/ /P&I/	~~CAR C1~~ ~~CAR C2~~	CAR C1 CAR C2 Pls see Chapter 4	OK

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		• NAP_n [$tHNO_3$] Magnetic inductive Nitric acid flow meter Krohne Altometer for 60 and 69 % HNO_3 output flow 60 % HNO_3: Tag-No. FI1022 69 % HNO_3: Tag-No. FI1021 • OT [°C] Endress + Hauser Thermal element PT100 • AFR [kg NH_3/h] Amonia flow meter Endress and Hauser Deltabar • AIFR [%] Ammonia and Air flow meters • TSG [°C] TSG measurement by Endress + Hauser Thermal element PT100 • PSG [Pa] Endress + Hauser Cerabar S pressure sensor measuring pressure gradient between stack and				

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		atmosphere • EF_n [$kgN_2O/tHNO_3$] For the verification period n the emission factor is: $EF_n = (PE_n / NAP_n)$ • EF_{reg} [$kgN_2O/tHNO_3$] The max. N_2O-emissions are set by the local government as: 7.7 kg $N_2O/tHNO_3$ until 2010-12-31 • EF_{BM} [$kgN_2O/tHNO_3$] 2.5 kg $N_2O/tHNO_3$ until end 2011 and 1.85 kg thereafter until end 2012 The ERU-calculation was carried out according to the formula described in the methodology: $ERU = ((EF_{BM} - EF_n)/1000 \times NAP \times GWP_{N2O}) * 0.9$ (tCO_2e) *Means of determination:* PDD, methodology, plant permits, monitoring report, on-site visit of plant, PCS and data server *Conclusion:* The data source for • PSG				

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		• TSG • OH • OT were not correctly described and need to be revised after inspection of MMD during on site visit. CAR C2: Some sections of the QAL 2 report No: M87 043/2 dated 2010-11-12 prepared by Müller-BBM needs to be revised or clarified: • Chapter 1.4: The reference to the German Federal Immission Control Act shall be corrected • Section 3.3.1 mentions a 12 hourly automatic zero point calculation whereas section 6.1.9 states that no regular zero checks are carried out. Clarification is requested. • Section 3, absolute pressure (page 40) : The pressure sensor is nor clearly referenced. Additional information (type, supplier, S/N) is necessary. • The normalisation of VSG data in the PCS (as checked by M-BMM and found to be correct) shall be described in the relevant section) CAR C1: • Only mean oxidation temperature of three thermocouples of boiler "east" is used for the				

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		determination of operation hours (OH) and not UN1000 status signal. This should be revised in all relevant sections of the MR • Annex 1: ○ P. 4 (OH): The section "data source" should be corrected ○ P. 6 (OT): The table should be corrected since not the UN1000 status signal but OT burner east is used ○ P. 9 (TSG): The thermocouple is not a part of the volume flow meter. The section should be corrected ○ P. 10 (PSG): The section should be corrected ○ Annex 2: ○ PSG: The section should be corrected				
C.4	*DVM § 95c)* Are emission factors, including default emission factors, if used for calculating the emission reductions or enhancements of net removals, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice?	*Description:* As described under C.2., the French DFP sets emission factors [kg N_2O/t HNO_3] as benchmark values. ERUs cannot be claimed if plant emissions are exceeding this value or if N_2O-emissions are below, ERUs shall be calculated against this value. *Means of determination:* Methodology, Monitoring report *Conclusion:* The benchmark value of 2.5 kg N_2O/t HNO_3 which is applicable for 2009, 2010 and 2011 as set by the French	/PDD/ /METH/ /MR/ /XLS/ /AP/ /meth/			OK

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		DFP was applied in the ERU correctly calculation. Remark: A Pec Rhin plant-specific 'arrêté préféctoral' issued by the DRIRE on 13th August limits N_2O emissions plant to 7.7 kg N_2O/tHNO_3 from 2008-08-13 onwards				
C.5	*DVM § 95d)* Is the calculation of emission reductions or enhancements of net removals calculated based on conservative assumptions and the most plausible scenarios in a transparent manner?	*Description:* The calculation includes: • A deduction in baseline emission scenario from 5.41 to 2.5/1.85 kg N_2O/t HNO_3 (benchmark values). • A 10% reduction of the verified emission reductions *Means of determination:* Methodology, PDD *Conclusion:* The implementation of the benchmark values and 10% reduction is a conservative approach.	/PDD/ /METH/ /MR/ /XLS/			OK
	Applicable to JI SSC projects only					
C.6	*DVM § 96* Is the relevant threshold to be classified as JI SSC project not exceeded during the monitoring period on an annual average basis? If the threshold is exceeded, is the maximum emission	*Description:* Estimation of total emissions reductions over the crediting period (after the 10% deduction) of 2 years and 4 month are: 316,296 (tonnes of CO_2e) according to the PDD. *Means of determination:* PDD *Conclusion:* The average ERUs per year obviously exceed the threshold value of 60,000 t CO_{2e} per year; the project is	/PDD/			OK

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
	reduction level estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined?	classified as large-scale project.				
	Applicable to bundled JI SSC projects only					
C.7	*DVM § 97a)* Has the composition of the bundle not changed from that is stated in F-JI-SSCBUNDLE?	*Description:* N/A *Means of determination:* N/A *Conclusion: N/A*				
C.8	*DVM § 97b)* If the determination was conducted on the basis of an overall monitoring plan, have the project participants submitted a common monitoring report?	*Description:* N/A *Means of determination:* N/A *Conclusion: N/A*				
C.9	*DVM § 98* If the monitoring is based on a monitoring plan that provides for overlapping monitoring periods, Are the monitoring periods per component of the project clearly	*Description:* N/A *Means of determination:* N/A *Conclusion: N/A*				

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
	specified in the monitoring report? Do the monitoring periods not overlap with those for which verifications were already deemed final in the past?					
D	***Revision of monitoring plan***					
	Applicable only if monitoring plan is revised by project participants					
D.1	*DVM § 99a)* Did the project participants provide an appropriate justification for the proposed revision?	*Description:* N/A *Means of determination:* N/A *Conclusion: N/A*				
D.2	*DVM § 99b)* Does the proposed revision improve the accuracy and/or applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of	*Description:* N/A *Means of determination:* N/A *Conclusion: N/A*				

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
	monitoring plans?					
E	***Data management***					

E.1	*DVM § 101a)*
	Is the implementation of data collection procedures in accordance with the monitoring plan, including the quality control and quality assurance procedures?
		Description: Data collection procedures, quality control and quality assurance are implemented as follows:
		• Measured values were generated by local measurement and monitoring devices, stored in plant's existing data collection and storage system.
		• Normalisation of stack gas volume flow VSG is carried out in the plant DCS
		• Default i.e. plant trip point-values were determinated before start of the project and included in the PDD.
		• During data processing, measured values were evaluated according to statistical methods
		  • Application of instrument correction factors:
		The PP chooses a monitoring standard that requires the establishment of a calibration curve (EN14181). The correction factors derived from this calibration curve during the QAL2 audit must be applied onto both VSG and NCSG calculations. Correction factors are:
		  o 0.98 for stack gas flow meter VSG
			/PDD/
			/METH/
			/MR/
			/QAL2INST/
				CL C2	~~CL C2~~
					Pls see Chapter 4
						OK

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		○ 1.04 for measurement of NCSG • Plausibility check: The meth requires a plausibility check of all recorded/monitored data before processing which was conducted by the PP. plausibility criteria is: Negative values shall be eliminated. • Downtimes of the AMS: Acc. to the methodology, downtimes of the AMS shall be handled as following: The hourly average will be calculated based on the remaining values for the rest of the hour in question. If these remaining values account for less than 50% of the hourly data for one or more parameters, then this hour must be eliminated from the calculation and a substitute value will be used instead. • Missing data/Substitute value In the case where it is impossible to obtain one hour of valid data for one or more elements of the emissions calculation due to downtime or malfunction of the AMS a substitute value for each hour of missing data shall be calculated as follows: $C^*subst = C + \sigma_C$				

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		where: C: arithmetic average of the concentration of the relevant parameter σ_C: best estimate standard deviation of the concentration of the relevant parameter. • Permitted overall uncertainty: The methodology requires that the permitted overall uncertainty of the average hourly annual emissions must be less than 7.5% if technically possible. The determinated (combined) uncertainty for N_2O mass flow measurement as per QAL2 report is 4.43% which is below the permitted overall uncertainty. *Means of determination:* Methodology, Monitoring report, on-.site visit of plant, control room with PCS, Equipment hoot for analyser and server room, QAL2 report *Conclusion:* All procedures related to fulfil the requirements of • quality management of the plant • quality assurance standard of the AMS				

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		• data processing as required per methodology were implemented. The determination team raised some findings in the context of data collection for normalisation of volume flow, since it was not clear, if PSG and TSG or TSG and a default value was used for calculation (both options are eligible acc. to the methodology). CL C2: Some sections of the QAL 2 report No: M87 043/2 dated 2010-11-12 prepared by Müller-BBM needs to be revised or clarified: • Section 3, absolute pressure (page 40) : The pressure sensor is not clearly referenced. Additional information (type, supplier, S/N) is necessary. • The normalisation of VSG data in the PCS (as checked by M-BMM and found to be correct) shall be described in the relevant section).				
E.2	*DVM § 101b)* Is the function of the monitoring equipment, including its calibration status, is in order?	*Description:* The AMS maintenance is included in the quality procedures which are established for proper operation of the plant. The plant operator conducted the AMS supplier Thermo Fisher Scientific for annual maintenance work on the AMS. The PP therefore provides sufficient information regarding contractual/responsibility issues and scope of	/QAL2 INST/ /QAL2 CAL/ /QALPE	CAR C2 CAR E2	~~CAR C2~~ ~~CAR E2~~ Pls. see Chapter 4	OK

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		work. Additional measures are related to the European Norm EN14181 (2004) "Stationary source emissions - Quality assurance of automated measuring systems". Müller BBM was conducted to carry out these measures. • **Three quality assurance levels of EN 14181**: • QAL 1: ongoing operation and maintenance Remark: Acc. to the methodology, the QAL1 test is not mandatory if the AMS passes QAL2. This was proved by the PP. • QAL 2: commissioning and validation of an AMS An accredited laboratory, in this case Müller BBM, (acc. ISO 17025) carries out specific testing procedures to verify that the AMS installation meets the accuracy requirements laid down by EN 14181. The performance of the complete installation was compared against a series of measurements made with approved Standard Reference Methods. QAL 2 was carried out in September 2010. • QAL 3: ongoing operation and maintenance The PP implemented a quality assurance system to	RF/ /CDMA/ /NAP1/ NAP2/ /PROC2 – PROC7/ /AUD_RES/ /FICHE/ /efma/			

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		prove the ongoing compliance of the AMS with the norm. The maintenance activities are monitored and controlled as part of an overall quality assurance programme. • AST: Annual Surveillance Test The PP verifies the continuing validity of the calibration function on yearly basis. The requirements and responsibilities for carrying out the AST tests are the same as for QAL 2. QAL2 was carried out in 2010, the AST for 2011 is scheduled at the end of the year. *Means of determination:* Methodology, EN14181, interview with monitoring manager of the plant, check of relevant documents and records. *Conclusion:* Some findings were raised in context of maintenance, functionality of monitoring equipment: CAR C2: Some sections of the QAL 2 report No: M87 043/2 prepared by MÜLLER-BBM needs to be revised or clarified • Chapter 1.4: The reference to the German Federal Immission Control Act shall be corrected • Section 3.3.1 mentions a 12 hourly automatic zero point calculation whereas section 6.1.9 states that no regular zero checks are carried out. Clarification is requested.				

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		• Section 3, absolute pressure (page 40) : The pressure sensor is nor clearly referenced. Additional information (type, supplier, S/N) is necessary. • The normalisation of VSG data in the PCS (as checked by M-BMM and found to be correct) shall be described in the relevant section). CAR E2: No daily automatic zero calibration of the N_2O-Analyser (Nicolet 6700) has been conducted. (Müller BBM described in their QAL2 Report an automatic zero point calibration every 12 hours.) It should be proved, that the monthly interval of the zero calibration is in conformance with the relevant monitoring standard and supplier requirements.				
E.3	*DVM § 101c)* Are the evidence and records used for the monitoring maintained in a traceable manner?	*Description:* All monitoring data are collected from the MMD as 4-20 mA signal and forwarded to the plant DCS. A data extract of hourly mean values of different measuring points used for regular plant monitoring and from the AMS is reported to the assessment team (at N.serve). *Means of determination:* Excel-datasheet for ER-calculation, data logger at plant with raw data collection provided by the plant operator during on-site visit (spot-check of single days) *Conclusion:* The verifier found that there are inconsistencies between PDD description of data logging and processing	/XLS/	CAR E1	~~CAR E1~~ Pls. see Chapter 4	OK

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		and plant installation and/or raw data sheet. CAR E1: During onsite visit inconsistencies have been identified in the ER excel spreadsheet for the normalised VSG values provided by N.serve and original data provided by the project owner. 1. The normalised gas flow (VSG) is different between plants and N.serve 2. The determination of PSG is not traceable 3. The pressure sensor (p_{ATM}) is located in a cellar whereas the differential pressure sensor at the AMS (stack/atm) is mounted on the stack. The values are not directly comparable. Correction is required, if this procedure for determination is applicable.				
E.4	*DVM § 101d)* Is the data collection and management system for the project in accordance with the monitoring plan?	*Description:* All process data relevant to the project activity are properly generated in the MMD, transferred by DCS to the PCS and stored on the plant server. Hourly mean values were automatically calculated. Operating hours of the plant and AMS where generated from status signal UN1000 stored (value 0/1) to give the plant status information for data assessment. *Means of determination:* Records of the PCS, compared with raw data sheet in the ERU calculation and compared monitoring plan of PDD.	/TAG/ /PDD/ /MR/ /XLS/	~~CAR C1~~	Pls. see Chapter 4	OK

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
		Conclusion: The PP implemented a state-of-the-art plant operation and data collection system. In the context of the project activity the verifier found some inconsistencies between description in the PDD and situation on site: CAR C1: • Only mean oxidation temperature of three thermocouples of boiler "east" is used for the determination of operation hours (OH) and not UN1000 status signal. This should be revised in all relevant sections of the MR				
F	***Verification regarding programmes of activities (additional elements for assessment)***					
F.1	*DVM § 102* Is any JPA that has not been added to the JI PoA not verified?	*Description:* N/A *Means of determination:* N/A *Conclusion: N/A*				
F.2	*DVM § 103* Is the verification based on the monitoring reports of all JPAs to be verified?	*Description:* N/A *Means of determination:* N/A *Conclusion: N/A*				
F.3	*DVM § 103*	*Description:* N/A				

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
	Does the verification ensure the accuracy and conservativeness of the emission reductions or enhancements of removals generated by each JPA?	*Means of determination:* N/A *Conclusion: N/A*				
F.4	*DVM § 104* Does the monitoring period not overlap with previous monitoring periods?	*Description:* N/A *Means of determination:* N/A *Conclusion: N/A*				
F.5	*DVM § 105* *If the AIE learns of an erroneously included JPA,* has the AIE informed the JISC of its findings in writing?	*Description:* N/A *Means of determination:* N/A *Conclusion: N/A*				
	Applicable to sample-based approach only					
F.6	*DVM § 106* *Does the sampling plan prepared by the AIE:* *(a) Describe its sample selection, taking into account that:*	*Description:* N/A *Means of determination:* N/A *Conclusion: N/A*				

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
	(i) For each verification that uses a sample-based approach, the sample selection shall be sufficiently representative of the JPAs in the JI PoA such extrapolation to all JPAs identified for that verification is reasonable, taking into account differences among the characteristics of JPAs, such as: *– The types of JPAs;* *– The complexity of the applicable technologies and/or measures used;* *– The geographical location of each JPA;* *– The amounts of expected emission reductions of the JPAs being verified;* *– The number of JPAs for which emission reductions are being verified;*					

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
	– The length of monitoring periods of the JPAs being verified; and *– The samples selected for prior verifications, if any?* *(ii) If, in its sample selection, the AIE does not identify and take into account such differences among JPAs, then (does the sampling plan) provide a reasonable explanation and justification for not doing so?* *(b) Provide a list of JPAs selected for site inspections, based on a statistically sound selection of sites for inspection in accordance with the criteria listed in (a) (i) above?*					
F.7	*DVM § 107* *Is the sampling plan ready for*	*Description:* N/A *Means of determination:* N/A				

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
	publication through the secretariat along with the verification report and supporting documentation?	*Conclusion: N/A*				
F.8	*DVM § 108* *Has the AIE made site inspections of at least the square root of the number of total JPAs, rounded to the upper whole number? If the AIE makes no site inspections or fewer site inspections than the square root of the number of total JPAs, rounded to the upper whole number, then does the AIE provide a reasonable explanation and justification?*	*Description:* N/A *Means of determination:* N/A *Conclusion: N/A*				
F.9	*DVM § 109* *Is the sampling plan available for submission to the secretariat for the JISC.s ex ante assessment? (Optional)*	*Description:* N/A *Means of determination:* N/A *Conclusion: N/A*				
	Applicable to both sample based and non-sample based approaches					

No.	DVM[5] paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP´s action	Con-clu-sion
F.10	*DVM § 110* If the AIE learns of a fraudulently included JPA, a fraudulently monitored JPA or an inflated number of emission reductions claimed in a JI PoA, has the AIE informed the JISC of the fraud in writing?	*Description:* N/A *Means of determination:* N/A *Conclusion: N/A*				