FINAL JI VERIFICATION REPORT

- 2ND PERIOD –

GPN S.A.

GPN GRAND QUEVILLY N7 N_2O ABATEMENT PROJECT

ITL PROJECT ID : FR1000146

Monitoring Period: 2010-11-01 TO 2011-07-15
(incl. both days)

Report No: 8000399521 – 11/541

Date: 2011-12-14

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Verification Report:	***Report No.***	***Rev. No.***	***Date of 1st issue:***	***Date of this rev.***
	8000399521 – 11/541	0	2011-12-14	
Project:	***Title:***		***Registration date:***	***UNFCCC-No.:***
	GPN Grand Quevilly N7 N_2O abatement project		2010-04-16	FR1000146
Project Participant(s):	***Host party:***		***Other involved parties:***	
	France		Belgium	
Applied methodology/ies:	***Title:***		***No.:***	***Scope:***
	Project specific methodology: *'Catalytic reduction of N2O at nitric acid plants'*		N/A	5
Monitoring:	***Monitoring period (MP):***		***No. of days:***	***MP No.***
	2010-11-01 to 2011-07-15 - both days included		257	2
Monitoring report:	***Title:***		***Draft version:***	***Final version:***
	GPN Grand Quevilly N7 N_2O abatement project		2011-08-25	2011-12-12
Verification team / Technical Review and Final Approval	***Verification Team:***		***Technical review:***	***Final approval:***
	Alexandra Nebel Sabine Meyer Ulrich Walter		Rainer Winter Susanne Pasch	Rainer Winter
Emission reductions: [t CO_{2e}]	***Verified amount***		***As per Draft MR:***	***As per PDD[PDD]:***
	106,217		107,694	82,266

Summary of Verification Opinion:

GPN N7 Nitric Acid Plant has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 2nd periodic verification of the project: "GPN Grand Quevilly N7 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 2010-11-01 to 2011-07-15 (including both days).

In the course of the verification 7 Corrective Action Requests (CAR) and 0 Clarification Requests (CL) were raised and successfully closed. Furthermore 3 FARs are raised to improve the monitoring system in the future. 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 2nd 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: **106,217** t CO_{2e}

including a deduction of 10% according to the Arrêté du 2 mars 2007.

Document information:	*Filename:*	*No. of pages:*
	2011-12-14 FVR Ver 2 GPN N7 final.doc	83

Abbreviations:

AIE	**Accredited Independent Entity**
AMS	**Automated Measuring System**
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

GPN S.A. has commissioned the TÜV NORD JI/CDM Certification Program (CP) to carry out the 2nd periodic verification of the project

"GPN Grand Quevilly N7 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 FR1000146[1].

GHG data for the monitoring period covering 2010-11-01 to 2011-07-15 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 2nd 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/,
- guidelines for the implementation of Article 6 of the Kyoto Protocol as presented in the Marrakesh Accords under decision 9/CMP.1 /MA/, and subsequent decisions made by the JISC and COP/MOP,

[1] http://ji.unfccc.int/JIITLProject/DB/DR8LCU7BKHNJZUQ6PSARZ36E6L6L4H/details

- 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 N2O 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	GPN Grand Quevilly N7 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: Chemical Process Industries		
ITL Project ID No.:	FR1000146		
Crediting period	☐ Renewable Crediting Period (7 y) ☒ Fixed Crediting Period (3 y, 1 m), assumed that N_2O is included in ETS after 2012		

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	2010-04-16[1)]	-
2	Start of crediting period	2009-12-08	-
3	1st Monitoring period	2009-12-08 to 2010-10-31	Verified
4	2nd Monitoring period	2010-11-01 to 2011-07-15	Subject of this verification

1) Date of registration is the date of issuing of the LoA by the DFP

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	GPN S.A.
	France	N.serve Environmental Services GmbH
	France	Total Petrochemicals
Other Involved Party/ies (investor)	Belgium	GPN 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 West (Haute Normandie), Département: Seine-Maritime, Commune : Le Grand Quevilly (near Rouen)
Project location address	30, rue de l'Industrie - BP 204 76121 Grand Quevilly Cedex
Plant coordinates	Stack : Latitude: 49°24'58.67"N Longitude : 1° 1'28.92"E Ammoniac Boiler: Latitude: 49°24'59.60"N Longitude: 1° 1'29.84"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 N7

Parameter	Unit	Value
Ammonia Oxidation Reactor		
Manufacturer	-	OSCHATZ.
Diameter	mm	4920
Start of commercial production	-	January 1989
Operating conditions as per		

Parameter	Unit	Value
specifications (trip point values)		
- Temperature (min/max):	°C	820/880
- Temp. (minmin/maxmax):	°C	780/920 (Trip points)
- Pressure (min/max):	MPa	4,95 (safety max.)
- Ammonia to Air ratio (max)	Vol.-%	13,4
Ammonia Oxidation Catalyst		
Manufacturer	-	Johnson Matthew
Composition:	-	Pt gauge
Absorber		
Design capacity per day (100%)	t/d	1050
Design capacity per day (legal)	t/d	1200
Annual operation (design)	days	350
Secondary Catalyst		
Start of operation	-	June 2008
Manufacturer	-	YARA
Type	-	58 Y 1
Design efficiency N_2O reduction	%	83
N_2O Analyzer (stack)		
Manufacturer	-	FT Fine Tech
Type	-	PCM 1000/TSO-20
Measurement Principle	-	FTIR spectrometry
Stack volume flow rate measurement		
Manufacturer	-	ROSEMOUNT
Type	-	3031CD
Measurement Principle	-	Back pressure (dp)

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	2011-09-01
On-site-visit	From 2011-09-06 till 2011-09-07
Draft reporting finalised	2011-09-16
Final reporting finalised	2011-12-14
Technical review finalised	2011-12-14

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 3-1: Involved Personnel

	Name	Company	Function [1)]	Qualification Status [2)]	Scheme competence [3)]	Technical competence [4)]	Verification competence [5)]	Host country Competence	On-site visit
☐ Mr. ☒ Ms.	Alexandra Nebel	TN CERT GmbH	TL	SA	☒	-	☒	☐	☒
☒ Mr. ☐ Ms.	Ulrich Walter	TN CERT GmbH	TM[A)]	LA	☒	5.1	☒	☐	☒
☐ Mr. ☒ Ms.	Sabine Meyer	TN CERT GmbH	TM[A)]	LA	☒	-	☒	☒	☐
☐ Mr. ☐ Ms.			TR[B)]		☐		☐	☐	-
☐ Mr. ☒ Ms.	Susanne Pasch	TN CERT GmbH	TR[B)]	A	☒	-	☒	☐	-
☒ Mr. ☐ Ms.	Rainer Winter	TN CERT GmbH	TR, FA[B)]	SA	☒	5.1	☒	☐	-

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 or 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 2011-10-08 to 2011-11-08. Comments received are taken into account in the course of the verification, if applicable[2].

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 3-2: 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*)**
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*	*Having investigated the residual risks, the conclusions should be noted here. Errors and uncertainties are highlighted.*

[2] http://www.global-warming.de/e/2001/

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*)**
			equipment - *Check sampling analysis results* *Discussions with process engineers who have detailed knowledge of process uncertainty/error bands.*	

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

Table A-2: Periodic verification checklist						
No.	***DVM[3] 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:

- the last revision of the PDD including the monitoring plan/PDD/,

[3] JISC 19 Annex 4

- 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 auditor Ulrich Walter 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 GPN N7 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, GPN N7 Nitric Acid Plant	- General aspects of the project - Technical equipment and operation - Changes since validation - Calibration procedures - Quality management system - Involved personnel and responsibilities

Interviewed Persons / Entities	Interview topics
2. Consultant, N.serve	- Training and practice of the operational personnel - Implementation of the monitoring plan - Monitoring and measurement equipment - Maintenance - - Remaining issues - 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 from 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 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	1	0	1
B – Project Implementation	2	0	1
C – Monitoring Plan Compliance	0	0	0
D – Monitoring Plan Revision	0	0	0
E – Data Management	4	0	1
SUM	**7**	**0**	**3**

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)*	The verifier of subsequent verification shall check that the sum of registered ERUs from former verifications and the ERUs of the actual period do not exceed the cap defined in the French 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-2. In case of non-closure, additional corrective action and AIE assessments (#2, #3, etc.) shall be added.*			
Conclusion *Tick the appropriate checkbox*	☒ To be checked during the next periodic verification		

Finding:	A1
	☐ 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 PP shall state the involved parties as per provided LoAs.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	*The relevant section of the MR has been updated*		
AIE Assessment #1 *The assessment shall encompass all open issues in annex A-2. In case of non-closure, additional corrective action and AIE assessments (#2, #3, etc.) shall be added.*	The involved parties / PP are: France (host) GPN S.A. (Courbevoie) France N.serve Environmental Services GmbH France Total Petrochemicals (Antwerp) Belgium (investor) GPN S.A. (Courbevoie)		
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
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Issues of the MR: Chapter 2: 1. The regulatory limits of the Plant N7 shall be mentioned as per arrêté prefectoral (also Chapter. 5.1) 2. The percentage of the abatement efficiency for N7 needs to be explained and updated 3. The emission characteristic of the new DeNOx catalyst of N 7 shall be mentioned Chapter 4: 4. The oxidation temperatures shall be revised for plant N7 5. N/A (Finding sub-number not applicable to plant N7) Chapter 5.1 6. The period in which the regulatory limit of 2,47 kg $N_2O/tHNO_3$ is applicable shall be mentioned correctly for Plant N7. Chapter 5.3.5: 7. The QAL2 test in which the uncertainty of the AMS has been determined shall be referenced		

Finding:	B1
	Chapter 6.4: 8. The table should include the date of the tests and of the completion of the reports for plant N7 9. The zero calibration interval of 24 hours shall be confirmed for plant N7 Chapter 7.2.: 10. The significant higher number of ERUs of N7 needs explanation Annex 1: 11. Parameter OH_n Determination of operation hours shall be explained and trip points needs to be included for N7. 12. Tag numbers of relevant monitoring devices shall be included at N7 13. N/A (Finding sub-number not applicable to plant N7) Annex 2: 14. The calibration procedure and date for the flow meter (NAP) shall be included for plant 7 15. Description of incidences, plant stops and special events shall be included.
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Issues of the MR: Chapter 2: 1. The regulatory limits of the plant N7 are now well specified in chapter 2 and chapter 5.1. 2. The percentage of the factual abatement efficiency for N7 for this verification period has been specified under section 7.2. The expected efficiency factor under section 2 has been deleted to prevent any confusion. The factor is not relevant for the project and has already been stated in the PDD for a general understanding of the technology. 3. The emission characteristic of the new DeNOx catalyst of N 7 is mentioned under section 7.2 Chapter 4: 4. The oxidation temperatures are revised for plant N7 as per the official safety spreadsheet of the plant. The safety spread sheets are provided to the auditor. Chapter 5.1 6. The period in which the regulatory limit of 2,47 kg $N_2O/tHNO_3$ is applicable is now correctly specified for Plant N7. Chapter 5.3.5: 7. The QAL2 test in which the uncertainty of the AMS has been determined is now referenced under chapter 5.3.5. The specifications are listed under Annex 2. Chapter 6.4: 8. The table now includes the date of the tests and of the completion of the reports for plant N7. 9. The zero calibration is manually conducted at least once per month (current practise once per week). The description of the zero calibration is revised accordingly in the monitoring report.

Finding:	B1
	Chapter 7.2.: 10. The significant higher number of ERUs of N7 is now well explained. Annex 1: 11. The three parameter Oth_1, Oth_2, Oth_3 that are used to determine whether the plant is in operation or not are now well explained for N7, as well as the procedure of how they are applied. The trip points and pre-trip points (alarms) are included for each OH parameter under Annex 1. 12. The tag numbers for the Oth_1, Oth_2, Oth_3 devices are included and consistent with the tag numbers referred to in the data sheet for O_{th} at N7. Annex 2: 14. The calibration procedure and date for the flow meter (NAP) is now included for plant 7 (now Annex 4) *15.* Description of incidences, plant stops and special events are not included in the MR because they are confidential but have been made available to the auditor in the calculation sheet..
AIE Assessment #1 *The assessment shall encompass all open issues in annex A-2. In case of non-closure, additional corrective action and AIE assessments (#2, #3, etc.) shall be added.*	Chapter 2: 1. The regulatory limits were mentioned as per arrêté prefectoral. 2. The actual abatement efficiency for N7 was mentioned in the relevant section and deviation from estimation was explained 3. The PP included in the MR the fact that the new installed DeNOx catalyst has significant less additional specific N_2O emissions characteristic. Chapter 4: 4. The low/high oxidation temperature of 780/920°C was evidenced/TRIP/ and mentioned in the MR/TRIP/. 5. N/A Chapter 5.1 6. The regulatory limit of 2,47 kg $N_2O/tHNO_3$ is applicable from 2011-07-16 until 2011-12-31 and was stated correctly for Plant N7. Chapter 5.3.5: 7. The QAL2 test in which the uncertainty of the AMS has been determined is Müller BBM M83 984/1 dated 2009-12-23 Chapter 6.4: 8. The table now includes the date of the tests and of the completion of the reports for plant N7 9. The PP revised the MR according to monitoring procedure and mentions a monthly calibration interval for plant N7. This is in line with supplier specification and EN 14181. Chapter 7.2.: 10. The PP explains that the significant higher number of ERUs are the result of an optimized installation of the N_2O abatement catalyst and the replacement of the DeNOx catalyst. The verification team accepts this explanation.

Finding:	B1
	Annex 1: 11. There are three thermocouple installed in the oxidation reactor giving the parameter parameters Oth_1, Oth_2, Oth_3. If at least one of the temperature values is within the trip values, the plant is considered to be in operation. This logic chain could be verified during on site visit. 12. The tag numbers of relevant monitoring devices were included. N/A Annex 2: 14. The calibration procedure and date for the flow meter (NAP) was included. Last calibration was 2010-09-30, next will be 2011-09-11. 15. A description of incidences, plant stops and special events has been provided to the verification team.
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:	B2		
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, for the time after 16th July 2011, no ERUs will be issued for emission levels which do go beyond the business as usual scenario, defined by the Arrete prefectoral 2009-07-16 (2,47 kg N_2O/t HNO_3 over a period of 12 months for N7).		
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-2. In case of non-closure, additional corrective action and AIE assessments (#2, #3, etc.) shall be added.*			
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:	B3		
Classification	☒ CAR	☐ CL	☐ FAR

Finding:	B3
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The PP has to implement a QA/QC procedure to cross-check the Nitric Acid Production registered in the DCS.
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The PP have a quality procedure to cross-check the nitric acid production. The procedure had been provided to the auditor during the onsite visit. However, it was assessed that a more detailed explanation is needed of how this procedure is executed. The procedure has been extended. The new version has been sent to the auditor.
AIE Assessment #1 *The assessment shall encompass all open issues in annex A-2. In case of non-closure, additional corrective action and AIE assessments (#2, #3, etc.) shall be added.*	The PP provides a procedure (document of quality management system)/BILAN/ which gives sufficient description about the cross-check of Nitric Acid production.
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)*	Excel-Sheet: 1. Start and end date stated in the raw data sheet are not correct for plant N7 2. Application of moisture content correction for NCSG is not correct for plant N7 3. Operation hours of raw data sheet and determinated in the calculation sheet is not consistent for each plant N7 4. Operational temperatures (trip point values) in the raw data sheet are not as per plant operation system for N7 5. Plant was in operation (plant status signal) in hours I which the temperature was below the trip values for N7. 6. Plant status signal was “1” in times the plant was not in full operation for plant N7. The raw data sheet shall include the formulas and not only values without source/relation reference for plant N7 7. QAL2 correction factors are applied for raw data at plant and in N.serve calculation. Double calculation shall be removed for plant N7		

Finding:	E1
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. Start and end date as mentioned in the raw date sheet were updated to be in line with the monitoring period of this verification (N7) 2. The equation for moisture correction was corrected in the raw data table. (N7) 3. In the raw data sheet three temperature values are used to define whether or not the plant is in operation. Each temperature parameter is compared with the trip values. If at least one of the temperature values is within the trip values, the plant is considered to be in operation. Three temperature probes are used to monitor the temperature, in case one temperature probe is broken. In order to be conservative, the hour just after start up and before shut down is not considered for calculating the operating hours of the verification period in the calculation sheet. (N7) 4. The trip values used in the calculation sheet are updated according to the values in the plant operation system. 5. The definition of the plant status in the calculation sheet was updated to the actual situation in the plant operation system. The hour after start-up and before shutdown was excluded. 6. See explanation 3 and 5 7. An Example of the raw data sheet with formulas will be provided *8.* QAL2 correction was removed from the EXCEL calculation sheet (N7).
AIE Assessment #1 *The assessment shall encompass all open issues in annex A-2. In case of non-closure, additional corrective action and AIE assessments (#2, #3, etc.) shall be added.*	Excel-Sheet: 1. Start and end date stated in the raw data sheet are now 2010-11-01 00:00 and 2011-07-15 and comply with the period of this verification. 2. Moisture content is now taken into account according to following equitation: "Wet gas N_2O-concentration* (100+Moisture in %)/100" which is correct. 3. The PP now uses the PSC logic (direct processing of OT data taken from three thermocouples as described at parameter P.4 in Annex 1) to determine if the plant N7 was in operation or not. The results are now consistent 4. The trip values are now as per plant specification/TRIP/ 5. The PP now uses the OT to determine the plant status (see above). Additionally, the hour before and after plant stop was eliminated to avoid counting of not fully operational hours. This is acceptable since the verification team checked the PCS-logic which forced the plant to shut down after detecting of a temperature trip insight the oxidation reactor. 6. See explanation 3 and 5. 7. The PP provided a template of the raw data sheet with all formulas used for internal calculation. 8. The PP removed the QAL2 factors from ER calculation and now avoids double counting.

Finding:	E1
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:	E2		
Classification	☐ CAR	☐ CL	☒ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The correspondence with raw data provided by the plant to N.serve for data processing shall be forwarded to the verification team before verification for plant N7.		
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-2. In case of non-closure, additional corrective action and AIE assessments (#2, #3, etc.) shall be added.*			
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:	E3		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	An internal quality check of project-data registration and processing at the plant should be implemented and documented N7. Confirmation of data shall be explained and implemented.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	*An internal quality check of* project-data registration and processing at the plant has been implemented: ENV-2_0006_R1 and ENV-2_0006_A3_R0. Both documents have been provided to the auditor. The procedure explains how the data is checked.		
AIE Assessment #1 *The assessment shall encompass all open issues in annex A-2. In case of non-closure, additional corrective action and AIE assessments (#2, #3, etc.) shall be added.*	The PP provided a quality document /QAL11/ which documents the implementation and responsibilities for project-data registration and processing. The documents includes the scope of parameters directly checked, a graphical analysis of recorded data to detect outliners and if necessary corrective actions. Also an organisational structure of the project responsibilities and a list of related document were created. The verification team found this measures to be sufficient to ensure a proper quality in the project activity.		

Finding:	E3
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:	E4		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The verifier should check if the time displayed on the monitor of the AMS-device and at the plant (process interface PI) are the same at N7.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The system time of the analyzer and the PI system were compared. A minor deviation of approximately 2 minutes has been detected. This deviation was found to be acceptable by the project participants. The time will be regulatory checked in order to prevent any major differences.		
AIE Assessment #1 *The assessment shall encompass all open issues in annex A-2. In case of non-closure, additional corrective action and AIE assessments (#2, #3, etc.) shall be added.*	The verification team can also accept a deviation of 2 minutes between PCS and AMS time since the deviation of values in this period of time in insignificant and has no influence on correct data processing.		
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:	E5		
Classification	☒ CAR	☐ CL	☐ FAR

Finding:	E5
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	**Finding from technical review:** **Excel sheet:** 1. The tab "Raw data" includes figures until 2011-07-31, however the monitoring period ends 2011-07-15. Please explain or revise. 2. Please explain the different values of NCSG and VSG at the transition between the first and the second Monitoring Period (please compare figures of 2010-10-31 and before and 2010-11-01 and after). Has the calculation approach / the evaluation of data during plant shut down changed? If yes, where is this described and why is it applicable? **PDD/MR:** 3. Please explain in how far the interval for the (automatic) zero calibration is in line with the registered Monitoring Plan. 4. Section 7.2 is missing or wrongly numbered (see CAR B1.2 etc.). 5. Table in section 7.3.: Please add header for the third column. What do the numbers (e.g. average daily PDD HNO3 production) in the third column refer to? 6. Annex 1, OHn: Why is this approach using three thermocouples applicable? What AIEs it mean if one is within the range and two are outside? Did this case happen during the Monitoring Period? 7. Annex 1, NAPn: Please ensure the consistency of the value with the Excel Sheet.

Finding:	E5
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. *The table raw data contained data of the full month of June in order to show transparency. However, the calculation sheet clearly shows that only data until the 15.07.2011 have been included in the ERU calculation.* 2. *During the shutdown between the two verification periods, the plant changed the data control system (DCS). The previous HARTMAN & BRAUN system had been in operation for many years and was not state of the art technology. The new EMERSON control system has been in operation since the plant was started again on the 07.11.2010. The data shown during the period of shutdown AIEs not correspond with real measurements due to the exchange of the data control system. Please note that the installation of the new system and the correct connection of the monitoring signals were checked in detail before the plant began to operate with the new system.* ***PDD/MR*** 3. *The zero calibrations are in line with the registered Monitoring Plan. According to the Plan, the calibration frequency can be adjusted if necessary. The frequency of once every 24 hours, as initially stated in the PDD, has been changed to the frequency of at least once a month due to practical reasons.* 4. *Section 7.2 is now correctly numbered* 5. *An additional header is inserted. The average daily PDD HNO_3 production is the annual production calculated for the verification period. Please see the calculation in the xls sheet.* 6. *Annex 1, OHn: Three thermocouples are used in order to measure the trip values. If at least one of the temperature values is within the trip values, the plant is considered to be in operation. Three temperature probes are used to monitor the temperature, in case one or two temperature probes are broken. Since this is the approach for measuring whether the plant is shut down or not, the same approach is used in order to define the operating hours. Through the verification period, at least two thermocouples were measuring either within our outside the trip values at the same time.* 7. *NAP is now correctly stated.*

Finding:	E5
AIE Assessment #1 *The assessment shall encompass all open issues in annex A-2. In case of non-closure, additional corrective action and AIE assessments (#2, #3, etc.) shall be added.*	1. OK. The verification team accepts the inclusion of the data of the full month in the raw data section 2. OK. The verification team accepts the explanation of the PP since this matter was deeply discussed during on site visit. 3. OK. Zero calibration are in line with the supplier specifications and the PP has the right to adapt the frequency if necessary 4. OK. Section 7.2 is now correctly numbered 5. OK. For clarification the PP included a correct link to the registered PDD 6. The determination of oxidation temperature insight the ammonia burner is not defined in the methodology and can be conduct according to plant operators requirements. The plant uses a 1 out of three approach which means that one thermocouple must show a temperature level which is in the trip point range to classify the operation status as “ok”. This logic has been implemented in the raw data sheet to set the plant status: “=WENN(ODER(UND(E12>B5;E12<920);UND(G12>B5;G12<920);UND(I12>B5;I12<920));"Plant in operation ";"Plant Stop")” Nevertheless this was not the case in the monitoring period 7. OK. The NAP value is now correctly mentioned in the Annex 1.
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 CLs 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.

The PP revised the monitoring plan according to monitoring procedure and implemented a monthly calibration interval for plant N7. This is in line with supplier specification and EN 14181. The verification team can confirm that there is no negative influence on quality of monitored data.

5.2. Project history

During the first verification the AIE raised issues that could not be closed or resolved during the validation stage. For this purpose following issues have been raised:

FAR B 3 (CAR B3 of this report):

The PP has to implement a QA/QC procedure to cross-check the Nitric Acid Production registered in the DCS.

FAR C2 (FAR B2 of this report):

It must be checked at each verification, that, for the time after 16th July 2011, no ERUs will be issued for emission levels which do go beyond the business as usual scenario, defined by the Arrete prefectoral 2009-07-16 (2,47 kg N_2O/t HNO_3) over a period of 12 months.

FAR E3 (CAR E3 of this report):

An internal quality check of project-data registration and processing at the plant should be implemented and documented.

FAR E6 (CAR E4 of this report):

The verifier should check if the time displayed on the monitor of the AMS-device and at the plant (process interface PI) are the same.

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		
Start	**End**	**Event**
2011-11-01; 0:00	2010-11-07; 14:00	Start up after major shut down
2010-12-02; 14:00	2010-12-03; 13:00	Shut down due to low pressure instrument air
2010-12-28; 22:00	2010-12-31; 16:00	Shut down due to low pressure instrument air
2011-01-05; 15:00	2011-01-06; 01:00	Shut down due to an unexpected trip on the GHH machine
2011-01-09; 22:00	2011-01-21; 15:00	Shut down due to high level nitric acid storage
2011-01-21; 10:00	2011-01-21; 17:00	Shut down due to compressor problems
2011-05-03; 02:00	2011-05-03; 17:00	Shut down due to instrument problems (temperature control of evaporator)
2011-05-06: 17:00	2011-05-25; 16:00	Shut down due to high level nitric acid storage, change of DeNOx catalyst
2011-06-07; 11:00	2011-06-18; 02:00	Shut down due to boiler problems and full nitric acid storage
2011-06-19; 2:00	2011-06-19; 20:00	Shut down due to compressor problems
2011-07-09; 16:00	2011-07-11; 03:00	Shut down in order to correct a leakage on the feed water - economiser; Intervention to place a fret on E7308
2011-07-15		End of this monitoring period

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	-FTIR Fine Tech** -Rosemount/ASTN7/	Calibration: 2010-11-23 (AST)	Calibration: Subsequent year (AST)*
NAP [t HNO_3]	Krohne Optiflux 4000F	Calibration: 2010-09-30	Subsequent year
Calibration gas:	Bottle No:	Opened:	Valid:

100 ppm N_2O	BX12744F/BOTTLE/	2010-10-10	2012-04-12

Table 5.4.: QA/QC-Measures for MMD

*not carried out at date of on site visit

**The PP revised the monitoring plan according to monitoring procedure and implemented a monthly calibration interval for plant N7. This is in line with supplier specification and EN 14181. The verification team can confirm that there is no negative influence on quality of monitored data.

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:
$NCSG_n$	mgN_2O/Nm^3	
	179.01	mean
	43.88	lower limit of confidence interval
	342.44	upper limit of confidence interval
VSG_n	[Nm³/h]	
	122,142.24	mean
	111,057.00	lower limit of confidence interval
	132,978.00	upper limit of 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:
OH_n	[h]	5,020
NAP_n	[$tHNO_3$]	196,186
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: 0.55947
EF_{BM}	[$kgN_2O/tHNO_3$]	2.50 kg $N_2O/tHNO_3$
EF_{reg}	[$kgN_2O/tHNO_3$]	2.47 kg $N_2O/tHNO_3$ from 2011-07-16 onwards (Not in this verification period).
PE_n	[kgN_2O]	109,759.79

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)	196,186.36	$tHNO_3$
Project Emissions	109,759.79	tCO_2e
Emission Factor	0.55947	$kgN_2O/tHNO_3$
Governmental ERU deduction	10	%
Emission Reductions this period	106,217	tCO_2e
Emission Reduction (1st period)	23,947	tCO_2e
Sum of emission reduction generated	130,164	tCO_2e
LoA-cap/LOA/	265,460	tCO_2e
Max. emission reduction below cap	Yes	

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 B2:

It must be checked at each verification, that, for the time after 16th July 2011, no ERUs will be issued for emission levels which do not go beyond the business as usual scenario, defined by the Arrete prefectoral 2009-07-16 (2,47 kg N_2O/t HNO_3) over a period of 12 months.

FAR A1:

The verifier of subsequent verification shall check that the sum of registered ERUs from former verifications and the ERUs of the actual period AIEs not exceed the cap defined in the French LoA.

Far E2:

The correspondence with raw data provided by the plant to N.serve for data processing shall be forwarded to the verification team before verification for plant N7.

6. VERIFICATION OPINION

GPN N7 Nitric Acid Plant has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 2nd periodic verification of the project: "*GPN Grand Quevilly N7 N_2O abatement project*", with regard to the relevant requirements for JI project activities. The project reduces GHG emissions due to the reduction of N_2O emissions from the production of nitric acid with secondary N_2O abatement technology (secondary catalyst). This verification covers the period from 2011-11-01 to 2011-07-15 (including both days).

In the course of the verification 7 Corrective Action Requests (CAR) and 0 Clarification Requests (CL) were raised and successfully closed. Furthermore 3 FARs are raised to improve the monitoring system in the future. The verification is based on the draft monitoring report, revised monitoring report, 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 2nd 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: **106,217** t CO_{2e}

Essen, 2011-12-14	Essen, 2011-12-14
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
/AP/	Arrete Prefectoral issued by the Prefecture de Gironde on 2009-07-16 regarding max. emission from Nitric Acid plant
/ASTN7/	"Factory Grand Quevilly, AST-Report of the automatic measuring system for N_2O of acid plant, Line N 7 dated 2011-03-18, measurement carried out on 2010-11-23
/BILAN/	Procedure. BILAN HNO_3: Mass balance of the site to carry out a daily assessment of HNO_3 production, ref.-No.: DTU/2/0001 Dated 2011-09-20 Rev. 3
/BILANXLS/	BILAN HNO3 BALANCE-1_20110706.xls sheet for calculation of mass balance
/BOOK/	Quality document: Procedure d'Exploitation Environnement, Chapitre 07 N°02 Rejets N_2O, Consignes d'exploitation et projet domestique Rev.: 0, dated: 2010-11-25. This procedure outlines the main constraints and rules imposed on the project by legislation in relation to emissions of N_2O from the production plant of nitric acid.
/BOTTLEN7/	Calibration gas certificate for N7 plant, all in period of validity
/CAT/	Fiche de données de sécurité (safety sheet according to GHS standard) of the abatement catalyst, issued by Yara on 2008-01-16
/CAL7/	Parameterisation protocol printout for N7 AMS
/CERT/	ISO 9001, 14001 Certificates, issued by AFNOR, valid until 2012-10-11
/DECLA/	Declaration of emissions to local government (Effluents Gazeux-N_2O), Atelier Nitrique 7, Emission source U7307 • 2010 • 2011
/EIPSN7/	Liste de elements critiques QSE.xls (List of safety related parameter of the N7 plant – including N_2O-analyser)
/FICHE/	Fiche renseignement carte de controle –Analyseurs Nitrique, control cards for AMS

Reference	Document
/FICHE7/	Fiche de vie – analysateur Nitrique 7 (Control card for N_2O-analyser of plant N7 with completely documented weekly maintenance works
/LOA/	• 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 2010-04-16, Ref-No.: D10007029 to approve N.serve as project participant. • 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 2010-04-16, Ref-No.: D10007029 to approve GPN S.A. as project participant. • 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 2011-08-24, Ref-No.: 11-0852 5^E DNbis declaring Total Petrochemicals as project participant. • LoA issued by the National Climate Commission of Belgium on 2010-12-03, Ref-No.: NKC/DFP/2 to approve GPN S.A. as project participant.
/LOG/	Daily log book (hand written by plant operation staff)
/LET/	Lettre de demande d'autorisation à participer à un projet réalisé au titre de l'article 6 du protocole de Kyoto (Letter asking for authorization of participication in a project as established by article 6 of the Kyoto protocol) by Total Petrochemicals Antwerp dated 2011-06-20
/MANUAL/	Procedure: Manuel Maintenance Travaux Neufs: Procedures Techniques Projet Domestique, Version No.2, 15.402.00 (Description of the organization, instructions and department procedures implemented in the framework of domestic projects), dated 2011-11
/MR/	1. JI Monitoring report No. 2 2010-11-01 – 2011-05-17 "GPN Grand Quevilly N7 N_2O abatement project" dated 2011-08-25, version 1, issued by N.serve. 2. JI Monitoring report No. 2 2010-11-01 – 2011-05-17 "GPN Grand Quevilly N7 N_2O abatement project" dated 2011-11-07, version 2, issued by N.serve. 3. Final version: JI Monitoring report No. 2 2010-11-01 – 2011-05-17 "GPN Grand Quevilly N7 N_2O abatement project" dated 2011-12-12, version 3, issued by N.serve.
/ORGPD/	Organisation projets domestiques (Survey of personnel organisation of the JI-project), issued by the GPN plant on 2010-11-18.
/PART/	Attestation de participation (participation certificate of plant staff on maintenance work at the AMS, dated 2011-06-30

Reference	Document
/P&IN7/	Pipe and Installation sheet of N7 plant.
/PROC1/	Quality procedure: Organisation de la Cellule Analysateur pour le Suivi de analysateur securite (IPS) environment Qualité (Organisation of maintenance of the AMS), TEIN/12/300
/PROC2/	Plan de controle suivi de analysateurs à lèmission des Nitriques N7, 8 (Plan (Procedure) of Mainenance of AMS), MEI_2_1200
/PROC3/	Verification des Analyseurs FTIR (Calibration procedure of the AMS (N_2O-Analysator), MEI_3_1221, Rev 4 dated 2009-11-24
/PROC4/	Procedure – Gestion des documents maitrises des enregistrements, (document management system), AQ/2/0001
/PROC5/	Programme individual de formation au poste de travail (Individual program for training on workplace)
/PROC6/	Elaboration, execution et suivi du plan de formation (Development, Implementation and monitoring plan for training of plan staff), RH_2_0303
/PROC7/	Mode operatoire – Debitmetres Etalonnage verification (Procedures for calibration of HNO_3 flow meters), ELMR/3/017
/PROC8/	Mode operatoire – Bilan N_2O (Quality document regarding N_2O emissions from the GPN nitric acids plants), ENV/3/1121, dated 2010-12-20, version 7
/PROC9/	Mode-operatoire – Verification des analysateurs FTIR (Quality document related to the calibration of the N_2O-analyser at N7 plant
/PROC10/	Procedure of organisation, ENV/2/0006 domestic project, dated 2011-09-12, rev 0 (Description of the organisation which was implemented for the domestic project between the operators, the maintenance and the environment department, extract from Environment Quality handbook SYS/1/0001
/PROC11/	Quality document ENV_2_0006_A3 dated 2011-09-12, rev. 0, Check od project data (plausibility check)
/PROC12/	Quality document describing the mass balance procedure DTU/2/0001, dated 2011-02-11, rev. 0
/QAL2CAL7/	Report on performance tests and calibration of the AMS, report No.: M83 984/1, updated by Müller BBM on 2010-10-20 (initial version 2010-08-09)

Reference	Document
/TAB/	Tableau des Securites, Nitrique 7 (Trip points of Nitrique 7 plant, dated 2011-05-17
/TRIP/	Tableau des Securites: Nitrique 7 (XLS-sheet with safety relevant parameter, instrumentation)
/XLS/	• CALC_N02_V01_GPN_N7_ 20110819_MS, initial ERU Excel calculation spreadsheet • CALC_N02_V02_GPN_N7_ 20111024_MS1, revised ERU Excel calculation spreadsheet • CALC_N02_V03_GPN_N7_ 20111212_SD, revised ERU Excel calculation spreadsheet

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 ACID PRODUCTION“, Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories issued by the NGGIP
/BELGIUM/	Rules established by the National Climate Commission for the submission of an application for approval for a project activity…
/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/	Determination Report: GPN Grand Quevilly N7 N_2O abatement project, Report No.: 8000373115 – 09/264; dated 2010-04-28, issued by TÜV NORD
/DVM/	JI Determination and Verification Manual
/GUIDE/	Guidance: Developing a CDM or JI project to reduce greenhouse gas

Reference	Document
	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/)
/PDD/	Project Design Document Version 03 dated 2009-08-06 "GPN Grand Quevilly N7 N_2O abatement project"
/OTN7/	Diagram of parameter OT during verification period- Extract of ERU-calculation Excel-sheet
/NCSGN7/	Diagram of parameter NCSG during verification period - Extract of ERU-calculation Excel-sheet

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

Reference	Link	Organisation
/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
/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 the 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)
/unfccc/	http://ji.unfccc.int	JI-SC

Table 7-4: List of interviewed persons

Reference	MoI[1]		Name	Organisation / Function
/IM01/	V	☒ Mr. ☐ Ms	Bertrand Walle	GPN N7 Nitric Acid Plant (Coordinator JI-Projects)
/IM01/	V	☐ Mr. ☒ Ms.	Isabelle Martinieau	GPN N7 Nitric Acid Plant (Quality/Environmental manager)
/IM01/	V	☒ Mr. ☐ Ms.	Pascal Fauquet	GPN N7 Nitric Acid Plant (Instrumentation Engineeer)
/IM01/	V	☒ Mr. ☐ Ms.	Simon Deglaire	GPN Grandpuits Nitric Acid Plant (Production Engineer)
/IM01/	V	☒ Mr. ☐ Ms.	Nelson Rodrigues	GPN N7 Nitric Acid Plant (Energy Purchasing Engineer)
/IM01/	V	☒ Mr.	Pierre Henri Chretien	GPN N7 Nitric Acid Plant

Reference	MoI[1]		Name	Organisation / Function
		☐ Ms.		(Staff)
/IM01/	V	☐ Mr. ☒ Ms.	Sarah Debor	N.serve (Project manager)
/IM01/	V	☒ Mr. ☐ Ms.	Martin Stilkenbäumer	N.serve (Monitoring Expert)

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[4] 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 report will be submitted directly to the DFP by the PP because it is a track 1 project. The PP provided following LoA: • Host country France (PP is GPN S.A., N.serve and Total Petrochemicals) • Investor country Belgium (PP is GPN S.A.) *Means of determination:* DFP-website, LoA, Unfccc-website, MR *Conclusion:* Not all parties stated in section 2.1. of the MR are mentioned in the provided LoAs provided by the PP. CAR A2: The PP shall state the involved parties as per provided LoA.	/LOA/ /LET/ /dfp/ /unfccc/ /MR/	CAR A2	~~CAR A2~~ Pls. see chapter 4.	OK
A.2	*DVM § 91*	*Description:* The French LoA has two conditions, which	/LOA/	FAR A1		

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No.	DVM[4] 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
	Are all the written project approvals by Parties involved unconditional?	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. • The total amount of verified emission reductions until 2012-12-31 is limited to 294,955 tonnes (before 10 % reduction and 265,460 tonnes after deduction) as per the LoA from the French DFP The Belgium 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 AIEs not exceed the maximum amount as stated in the LoA. FAR A1: The verifier of subsequent verification shall check that the sum of registered ERUs from former verifications and the ERUs of the actual period AIEs not exceed the cap defined in the French LoA.	/dfp/ /unfccc/			

No.	DVM[4] 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
B	***Project implementation***					
B.1	*DVM § 92* Has the project been imple-mented in accordance with the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	*Description:* The PP installed a secondary abatement catalyst and an AMS conforming to the DIN EN 14181 before start of the project. QA/QC measures were implemented. *Means of determination:* PDD, certificates provided by the PP, on-site visit *Conclusion:* The project installations (Abatement catalyst, AMS) and procedures were checked by the verification team and compared with the description given in the registered PDD. The installation of the abatement catalyst and monitoring system is in line with the PDD. The PP removed the DeNOx-catalyst which emitted some N_2O and installed a catalyst with insignificant N_2O emission characteristic what will cause a lower emission level of N_2O in future. The verification team found some inconsistencies in the monitoring report, which are summarised in CAR B1. Issues of monitoring report: Chapter 2: 1. The regulatory limits shall be mentioned as per arrêté prefectoral (also Chapter. 5.1) 2. The percentage of the abatement efficiency needs to be explained and updated	/PDD/ /QAL2 CAL7/ /ASTN7/ /MR/ /14181/ /CAT/ /PROC 1/ - /PROC 12/ /MANUAL/	CAR B1	~~CAR B1~~ Pls. refer to section 4.	OK

No.	DVM[4] 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
		3. The emission characteristic of the new DeNOx catalyst of N 7 shall be mentioned Chapter 4: 4. The oxidation temperatures shall be revised Chapter 5.1 6. The period in which the regulatory limit of 2,47 kg $N_2O/tHNO_3$ is applicable shall be mentioned correctly Chapter 5.3.5: 7. The QAL2 test in which the uncertainty of the AMS has been determined shall be referenced Chapter 6.4: 8. The table should include the date of the tests and of the completion of the reports for plant N7 9. The zero calibration interval of 24 hours shall be confirmed Annex 1: 11. Parameter OH_n Determination of operation hours shall be explained and trip points needs to be included 12. Tag numbers of relevant monitoring devices shall be included Annex 2: 14. The calibration procedure and date for the flow meter (NAP) shall be included 15. Description of incidences, plant stops and special events shall be included.				

No.	DVM[4] 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
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. The abatement efficiency is after starting with high project emissions due to leakages at the catalyst basket in the recent monitoring period now higher than expected and estimated in the PDD-calculation. The reason for this is a higher efficiency of the abatement catalyst. *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 plausible. Nevertheless, the PP is requested to give a more detailed explanation of the increased efficiency CAR B1: Issues of monitoring report: Chapter 7.2.: 10. Last bullet point. The significant higher number of ERUs needs further explanation	/PDD/ /XLS/ /MR/ /LOG/ /CAT/ /OTN7/ /NCSHN 7/	CAR B1	~~CAR B1~~ Pls. refer to section 4.	OK
C	***Compliance with monitoring plan***					
C.1	*DVM § 94*	*Description:* Monitored parameter and parameter (according	/PDD/	FAR E2	FAR E2	OK

No.	DVM[4] 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
	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?	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 (part of AMS) *Measurement frequency:* Hourly value based on continuous monitoring (10 second frequency) • VSG_n [Nm^3/h] *Meaning:* Average Volume flow rate of the tail gas during project Verification Period n. *Source:* Gas volume flow meter (part of AMS) *Measurement frequency:* Hourly value based on continuous monitoring (10	/MR/ /14181/ /XLS/ /TRIP/ /EIPSN7/	CAR E3 CAR E4	~~CAR E3~~ ~~CAR E4~~ Pls. refer to section 4.	

No.	DVM[4] 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
		second frequency) • PE_n [kgN_2O] *Meaning:* N_2O emissions during project Verification Period n. *Source:* Calculated from measured data *Measurement frequency:* Calculated after each Verification Period *Applied value:* Calculated according to the methodology: $PEn = VSG_n * NCSG_n * OH_n * 10^{-6}$ • OH_n [h] *Meaning:* Total operating hours of Verification Period n. *Source:* Derived from OT (oxidation temperature in the ammonia burner). In the case the OT will leave the range of trip points, a plant stop will be forced by the PCS.				

No.	DVM[4] 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: Continuous • NAP_n [$tHNO_3$] *Meaning:* Metric tonnes of 100% concentrated nitric acid during any Verification Period n. *Source:* Nitric acid flow meter *Measurement frequency:* Continuously throughout the Verification Period n. • OT [°C] *Meaning:* Oxidation temperature in the ammonia oxidation reactor (AOR). *Source:* 3 thermocouples inside the AOR. If at least one of the temperature values is within the trip values, the plant is considered to be in operation.				

No.	DVM[4] 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 average value based on continuous monitoring • AFR [$kgNH_3/h$] *Meaning:* Ammonia Flow rate to the ammonia oxidation reactor (AOR) *Source:* Ammonia Flow meter *Measurement frequency:* Hourly average value based on continuous monitoring • AIFR [%] *Meaning:* Ammonia to air ratio feeding the AOR *Source:* Ammonia & Air flow meters *Measurement frequency:* Hourly average value based on continuous monitoring				

No.	DVM[4] 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 [°C] *Meaning:* Temperature of tail gas *Source:* Probe (part of the gas volume flow meter). *Measurement frequency:* Hourly average value based on continuous monitoring • PSG [Pa] *Meaning:* Pressure of tail gas *Source:* Probe (part of the gas volume flow meter). *Measurement frequency:* Hourly average value based on continuous monitoring • EF_n [$kgN_2O/tHNO_3$] *Meaning:* Emissions factor calculated for project Verification				

No.	DVM[4] 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
		Period n. *Source:* Calculated from measured data • 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 *(GPN N7 'arrêté préféctoral' issued by the DRIRE)* If this regulatory limit is lower than the applicable benchmark emissions factor, then EF_{reg} shall replace EF_{BM} in the calculation of ERUs. Note: This rule is applicable in the next verification period until 2011-12-31. QA/QC: The PP refers to the project European standard 14181 regarding implementation of monitoring equipment and maintenance procedures. *Means of determination:* PDD, Monitoring report, ERU-				

No.	DVM[4] 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
		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. Checks 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 data monitoring: FAR E2: The correspondence with raw data provided by the plant to N.serve for data processing shall be forwarded to the verification team before verification for plant. CAR E3: An internal quality check of project-data registration and processing at the plant should be implemented and				

No.	DVM[4] 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
		documented. Confirmation of data shall be explained and implemented. CAR E4: The verifier should check if the time displayed on the monitor of the AMS-device and at the plant (process interface PI) are the same.				
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: 2.5 2.5 2.5 1.85 EF_{BM} [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. In addition to that, the local government raised a maximum value of 2,47 kg N_2O/t HNO_3 to limit the specific N_2O emission, which will be in force from 2011-07-16 on. 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	/METH/ /LoA/ /DVM/ /AP/	FAR B2	FAR B2	OK

No.	DVM[4] 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
		risk *Means of determination:* French methodology, LoA, interviews plant staff on GPN plant. *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 the risk assessment (risks associated with the project) was taken into account. FAR B2: It must be checked at each verification, that, for the time after 16th July 2011, no ERUs will be issued for emission levels which do go beyond the business as usual scenario, defined by the Arrete prefectoral 2009-07-16 (2,47 kg N_2O/t HNO_3 over a period of 12 months for N7).				
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/m^3] Finetech FTIR 'PCM 1000' Continuous Emissions N_2O Analyser (part of AMS) • VSG_n [Nm^3/h]	/PDD/ /MR/ /METH/ /METHE/			OK

No.	DVM[4] 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
		Rosemount gas velocity meter (differential pressure transmitter, part of AMS) • PE_n [kgN_2O] Calculation from measured data • OH_n [h] Derived from 3 thermocouples for OT determination and processed in PCS plant security system • NAP_n [$tHNO_3$] Krohne Optiflux 4000 F • OT [°C) 3 Thermocouples (1 out of 3) • AFR [kg NH_3/h] Ammonia flow meter • AIFR [%] Ammonia and Air flow meters • TSG [°C] Pyro PT100 Probe (Part of AMS)	/XLS/			

No.	DVM[4] 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
		• PSG [Pa] Pressure sensor, see VSG (Part of the AMS) • 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: 2.47 kg from 2011-07-16 on 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 PP could clearly demonstrate that data sources are clearly identified, reliable and transparent and calculated according to the methodology.				
C.4	*DVM § 95c)* Are emission factors, including	*Description:* As described under C.2., the French DFP sets emission factors [kg N_2O/t HNO_3] as benchmark values,	/PDD/ /METH/	FAR B2	~~FAR B2~~ Pls.	OK

No.	DVM[4] 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
	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?	which are listed in the project methodology. ERUs cannot be claimed if the plant emissions are exceeding this value. 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 and 2010 as set by the French DFP was applied in the ERU correctly calculation. Remark: On 16th July 2009, the local DRIRE (Directions Régionales de l'Industrie de la Recherche et de l'Environnement) introduced a plant-specific 'arrêté préféctoral', which will limit N_2O emissions at the GPN N7 plant to 2.47kg N_2O/tHNO_3 from 16th July 2011 onwards (Two years after issuing the arrêté by the local government). FAR B2: It must be checked at each verification, that, for the time after 16th July 2011, no ERUs will be issued for emission levels which do go beyond the business as usual scenario, defined by the Arrete prefectoral 2009-07-16 (2,47 kg N_2O/t HNO_3 over a period of 12 months for N7).	/MR/ /XLS/		refer to section 4	
C.5	*DVM § 95d)*	*Description:* The calculation includes:	/PDD/			OK

No.	DVM[4] 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
	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?	• A deduction in baseline emission scenario from around 7 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 *Conclusion:* The implementation of the benchmark values and 10% reduction is a conservative approach.	/METH/ /MR/ /XLS/ /OTN7/ /NCSG N7/			
	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 reduction level estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined?	*Description:* *N/A*. *Means of determination: N/A* *Conclusion: N/A*				
	Applicable to bundled JI SSC projects only					

No.	DVM[4] 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
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 specified in the monitoring report? Do the monitoring periods not overlap with those for which verifications were already deemed final in the past?	*Description:* N/A *Means of determination:* N/A *Conclusion: N/A*				

No.	DVM[4] 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
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)* AIEs 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 monitoring plans?	*Description:* N/A *Means of determination:* N/A *Conclusion: N/A*				
E	***Data management***					
E.1	*DVM § 101a)* Is the implementation of data collection procedures in	*Description:* Data collection procedures, quality control and quality assurance are implemented as follows: • Measured values were generated by local measurement	/PDD/ /METH/	CAR E1 CAR E3	~~CAR E1~~ ~~CAR E3~~	OK

No.	DVM[4] 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
	accordance with the monitoring plan, including the quality control and quality assurance procedures?	and monitoring devices, stored in plant DCS and provided for calculation via OSI PI (process information system) data acquisition system. • 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: ○ 0.98 for stack gas flow meter ○ 0.99 for measurement of N_2O conc. ○ 1.0 for pressure of tail gas ○ 1.0 for temperature of tail gas Note: These values are set as default values in the parameterisation of the AMS and applied on the raw data. • Plausibility check:	/MR/ /PROC 1/ - /PROC 12/ /QAL2CAL7/ /ASTN7/ /XLS/		Pls. refer to section 4.	

No.	DVM[4] 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 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: $C^*subst = C + \sigma_C$ where: C: arithmetic average of the concentration of the relevant parameter				

No.	DVM[4] 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
		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 technical possible. The determinated (combined) uncertainty for N_2O mass flow measurement as per QAL2 report is 2.58% which is below the permitted overall uncertainty. *Means of determination:* Methodology, Monitoring report, on-.site visit of plant, control room with PCS, server room with Exaquantum data server, QAL2 report *Conclusion:* All procedures related to fulfil the requirements of • quality management of the plant • quality assurance standard of the AMS • data processing as required per methodology were implemented. Nevertheless the data collection procedures and QA/QC-procedure needs corrections/improvements:				

No.	DVM[4] 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
		CAR E3: An internal quality check of project-data registration and processing at the plant should be implemented and documented. Confirmation of data shall be explained and implemented. CAR E1: 4. Operational temperatures (trip point values) in the raw data sheet are not as per plant operation system 5. Plant was in operation (plant status signal) in hours I which the temperature was below the trip values 6. Plant status signal was "1" in times the plant was not in full operation 7. The raw data sheet shall include the formulas and not only values without source/relation reference 8. QAL2 correction factors are applied for raw data at plant and in N.serve calculation. Double calculation shall be removed for plant				
E.2	*DVM § 101b)* Is the function of the monitoring equipment, including its calibration status, in order?	*Description:* The AMS is included in the ISO 9001 and ISO 14000 quality procedures which are established for proper operation of the plant. The plant operator conducted a certified company (SPIE) for maintenance of all Measuring	/ASTN7/ /QAL2 CAL7/	CAR E4	~~CAR E4~~ Pls. refer to section	OK

No.	DVM[4] 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 Monitoring Devices (MMD) of the plant. The PP therefore provides sufficient information regarding contractual/responsibility issues and scope of work. Additional measures are related to the European Norm EN14181 (2004) "Stationary source emissions - Quality assurance of automated measuring systems". Müller BBM was contracted to carry out these measures. • **Three quality assurance levels of EN 14181**: • QAL 1: performance approval The suitability of the analyser for the project was proved through the QAL2 audit, which was performed by an independent laboratory with EN ISO/IEC 17025 accreditation • QAL 2: commissioning and validation of an AMS An accredited laboratory (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 3: ongoing operation and maintenance	/ASTN7/ /FICHE/ /FICHE7/ /PART/ /ORGPD/ /CERT/ /PROC1/ - /PROC12/		4.	

No.	DVM[4] 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 PP implemented a quality assurance system to 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 2009, the 1. AST was in 2010 and the 2. AST is scheduled at end of the 2011. *Means of determination:* Methodology, EN14181, interview with monitoring manager of the plant, check of relevant documents and records *Conclusion:* The function of the monitoring equipment is guaranteed by regular inspections and calibration. The procedures are embedded in the internal and external QA/QC procedures. One finding was raised: CAR E4: The verifier should check if the time displayed on the monitor of the AMS-device and at the plant (process				

No.	DVM[4] 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
		interface PI) are the same				
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 via DCS on a digital modbus on two second basis and stored in a PI-system. A data extract of hourly mean values is reported to the assessment team (at N.serve), *Means of determination:* Excel-datasheet for ER-calculation, data collections on second-basis provided by the plant operator during on-site visit (spot-check of single days) *Conclusion:* The verifier can confirm, that all data from MMD and PCS are traceable and correctly collected, converted and stored to ER-calculation sheet. To ease future verifications, the verification team request the whole set of raw data provided from the plant to the data manager at N.serve: FAR E2: The correspondence with raw data provided by the plant to N.serve for data processing shall be forwarded to the verification team before verification CAR E4: The verifier should check if the time displayed on the monitor of the AMS-device and at the plant (process	/XLS/ /XLS/	FAR E2 CAR E4	FAR E2 ~~CARE4~~ Pls. see chapter 4.	OK

No.	DVM[4] 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
		interface PI) are the same				
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 to the DCS and stored in the PI. Hourly mean values were automatically calculated. Operating hours of the plant and AMS where generated and stored (value 0/1) to give the status information for data assessment. *Means of determination:* Records of the DCS, compared with methodology and monitoring plan of PDD. *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 inconsistencies between monitoring plan and implementation of project data collection and management: CAR B3: The PP has to implement a QA/QC procedure to cross-check the Nitric Acid Production registered in the DCS. CAR E3: An internal quality check of project-data registration and processing at the plant should be implemented and documented.	/TAG/ /PDD/ /MR/ /XLS/ /XLS/ /METH/	CAR B3 CARE1 CAR E3	~~CAR B3~~ ~~CARE1~~ ~~CAR E3~~ Pls refer to section 4	OK

No.	DVM[4] 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
		CAR E1: 1. Start and end date stated in the raw data sheet are not correct 2. Application of moisture content correction for NCSG is not correct 3. Operation hours of raw data sheet and determinated in the calculation sheet is not consistent 4. Operational temperatures (trip point values) in the raw data sheet are not as per plant operation system				
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* AIEs the verification ensure the accuracy and conservativeness of the emission reductions or	*Description:* N/A *Means of determination:* N/A *Conclusion: N/A*				

No.	DVM[4] 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
	enhancements of removals generated by each JPA?					
F.4	*DVM § 104* AIEs 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* *AIEs the sampling plan prepared by the AIE:* *(a) Describe its sample selection, taking into account that:* *(i) For each verification that uses a sample-based approach, the sample selection shall be*	*Description:* N/A *Means of determination:* N/A *Conclusion: N/A*				

No.	DVM[4] 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
	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;* − *The length of monitoring periods of the JPAs being verified; and*					

No.	DVM[4] 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 samples selected for prior verifications, if any?* *(ii) If, in its sample selection, the AIE AIEs not identify and take into account such differences among JPAs, then (AIEs 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 publication through the secretariat along with the verification report and supporting documentation?*	*Description:* N/A *Means of determination:* N/A *Conclusion: N/A*				

No.	DVM[4] 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.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 AIEs 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					
F.10	*DVM § 110* If the AIE learns of a fraudulently included JPA, a fraudulently	*Description:* N/A *Means of determination:* N/A				

No.	DVM[4] 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
	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?	*Conclusion: N/A*				