DETERMINATION REPORT

VERTIS FINANCE / NITROGÉNMŰVEK RT.

DETERMINATION OF THE N_2O EMISSIONS REDUCTION PROJECT AT THE NEW ACID PLANT AT NITROGÉNMŰVEK RT.

REPORT NO. JI.VAL0028
REVISION NO. 01

DETERMINATION REPORT

Date of first issue: 06-02-05	Project No.: JI.VAL0028
Approved by:	Organisational unit:
Client: NITROGÉNMŰVEK RT. / VERTIS FINANCE	Client ref.:

Summary:

Qualified Validation Opinion

This report presents the findings of the determination of the N_2O emissions reduction project at the new acid plant at Nitrogénművek Rt. against Decisions 16 and 17 CP7 of the Marrakech Accords and Article 6 of the Kyoto protocol.

The report is based on the findings of document reviews, the stakeholder consultation process and responses from Nitrogénművek Rt/Vertis Finance to the findings raised in this report.

The report and the annexed validation describes a total of 18 findings which include:
- 6 MAJOR Corrective Action Requests;
- 2 MINOR Corrective Action Requests; and
- 1 Observation and 3 Clarifications.

Steps have been taken to close out 10 of those findings. One MAJOR CAR and one Observation remain outstanding. On the basis of these findings, this report provides the justification for the recommendation of a Qualified Validation Opinion. As soon as the remaining MAJOR CAR (no Letter of Approval of the Parties involved) is resolved, SGS United Kingdom Ltd. will issue an Unqualified Validation Report and Opinion.

The Validation Opinion is based on the current and emerging rules surrounding Article 6 of the Kyoto Protocol. Attention is drawn to the fact the JI Supervisory Committee may yet issue guidance on the choice of baseline methodology and such guidance may have a bearing upon this validation opinion.

Report No.: JI.VAL0028	Subject Group:
Report title: Determination of the N20 emissions reduction project at the new acid plan at Nitrogénművek Rt.	
Work carried out by: Irma Lubrecht, Ronald Verberne, Zoltan Belteki	
Work verified by: Gareth Phillips	

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Indexing terms

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Abbreviations

Explain any abbreviations that have been used in the report here.

CAR	Corrective Action Request
CL	Clarification
COP	Conference of the Parties (to the Convention)
EIA	Environmental Impact Assessment
ERUs	Emissions Reductions Units
JI	Joint Implementation
KP	Kyoto Protocol
MP	Monitoring Plan
PDD	Project Design Document
SGS	Société Générale de Surveillance
UNFCCC	United Nations Framework Convention on Climate Change

Table of Contents ***Page***

1 INTRODUCTION

1.1 Objective

Vertis Finance / Nitrogénművek Rt. have commissioned SGS to make a determination of the "N_2O emissions reduction project at the new acid plant at Nitrogénművek Rt." with regard to the relevant requirements for JI project activities. The purpose of a determination is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Determination is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emission reduction units (ERUs). UNFCCC criteria refer to the Kyoto Protocol Article 6 criteria and the Guidelines for the implementation of Article 6 of the Kyoto Protocol as agreed in the Marrakech Accords.

1.2 Scope

The determination scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. SGS has, based on the recommendations in the Validation and Verification Manual employed a risk-based approach in the determination, focusing on the identification of significant risks for project implementation and the generation of ERUs.

The determination is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

Documents reviewed as Part of Scope

- SGS Technical and Financial Proposal;
- Project Design Documents, version October 2004 and January 2005;
- Monitoring Plan; and
- Draft report clarifications and corrective action requests by the validation team.

1.3 GHG Project Description

Nitrogen Works Chemical Industry Corporation (Nitrogénművek) plans to install a catalyst to reduce N_2O emissions in its new dilute nitric acid plant. An Environmental Impact Assessment has not been undertaken since there is no obligation for one. No negative environmental impacts are expected.

2 METHODOLOGY

The determination consisted of the following five phases:

I a desk review of the project design documentation
II follow-up interviews with project stakeholders
III verification of key data and assumptions
IV site visit
V resolution of outstanding issues and the issuance of the final determination report and opinion

SGS has also posted the PDD (version October 2004) for stakeholder comments from 24th November 2004 to 23rd December 2004.

The PDD was validated by document review, and a site visit was undertaken at Nitrogénművek Rt. and the office of Vertis Finance from 12th January 2005 to 13th January 2005. The site visit was carried out by the expert and the local assessor.
The results of the determination are recorded against the JI Validation Protocol (Annex 1), a local project specific checklist (Annex 2) and "Issues raised by the N_2O expert".

Findings established during the determination can either be seen as a non-fulfilment of determination protocol criteria or where a risk to the fulfilment of project objectives is identified. Corrective Action Requests (CAR) are issued, where:

i) mistakes have been made with a direct influence on project results;
ii) determination protocol requirements have not been met; or
iii) there is a risk that the project would not be accepted as a JI project or that emission reductions will not be verified.

The term Clarification may be used where:

iv) additional information is needed to fully clarify an issue.

In order to ensure transparency, a determination protocol was customised for the project, according to the Validation and Verification Manual. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from validating the identified criteria The determination protocol serves the following purposes:

- It organises, details and clarifies the requirements a JI project is expected to meet;
- It ensures a transparent determination process where the independent entity will document how a particular requirement has been validated and the result of the determination.

The determination protocol consists of three tables. The different columns in these tables are described in Figure 1. The completed determination protocol is enclosed in Annex 1 to this report.

Determination Protocol Table 1: Mandatory Requirements			
Requirement	***Reference***	***Conclusion***	***Cross reference***
The requirements the project must meet.	*Gives reference to the legislation or agreement where the requirement is found.*	*This is either acceptable based on evidence provided (**OK**), or a **Corrective Action Request (CAR)** of risk or non-compliance with stated requirements. The corrective action requests are numbered and presented to the client in the determination report.*	*Used to refer to the relevant checklist questions in Table 2 to show how the specific requirement is validated. This is to ensure a transparent determination process.*

Determination Protocol Table 2: Requirement checklist				
Checklist Question	***Reference***	***Means of verification (MoV)***	***Comment***	***Draft and/or Final Conclusion***
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organised in six different sections. Each section is then further sub-divided. The lowest level constitutes a checklist question.	*Gives reference to documents where the answer to the checklist question or item is found.*	*Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.*	*The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.*	*This is either acceptable based on evidence provided (**OK**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question (See below). **Clarification** is used when the independent entity has identified a need for further clarification.*

Determination Protocol Table 3: Resolution of Corrective Action and Clarification Requests			
Draft report clarifications and corrective action requests	***Ref. to checklist question in table 2***	***Summary of project owner response***	***Determination conclusion***
If the conclusions from the draft determination are either a Corrective Action Request or a	*Reference to the checklist question number in Table 2 where the Corrective Action*	*The responses given by the Client or other project participants during the communications with*	*This section should summarise the independent entity's responses and final conclusions. The*

Determination Protocol Table 3: Resolution of Corrective Action and Clarification Requests			
Draft report clarifications and corrective action requests	***Ref. to checklist question in table 2***	***Summary of project owner response***	***Determination conclusion***
Clarification Request, these should be listed in this section.	*Request or Clarification Request is explained.*	*the independent entity should be summarised in this section.*	*conclusions should also be included in Table 2, under "Final Conclusion".*

Figure 1 Determination protocol tables

2.1 Review of Documents

The team started the Determination process in the third week of December.
The Project Design Document (version October 2004) submitted to the client was reviewed by the team. The lead assessor created a local checklist for the local assessor and instructed the (external) expert to start the determination exercise. The first draft validation protocol was sent to the client end of December 2004.

Following consultation with the client it was decided that the expert would undertake a site visit to gather more information and to interview project people.

2.2 Follow-up Interviews

A site visit was undertaken at Nitrogénművek Rt. and Vertis Finance from 12th January 2005 to 13th January 2005.

People present during the site visit:

- Istvan Blazsek (Nitrogénművek)
- Pal Szeliky
- Sandor Balint
- Aniko Folup
- Zoltan Belteki (SGS)
- Imola Kovacs (Vertis Finance).

In consultation with Vertis Finance and Nitrogénművek it was decided not to visit the plant on 13th January but to further discuss matters at the office of Vertis Finance.

Table 1 Interview topics

Interviewed organisation	Interview topics
Vertis Finance	➢ All areas of the PDD, topics listed in Annex 1
Nitrogénművek Rt. – project developer	➢ All topics listed in Annex 2 and 3 – local checklist and "Issues raised by the N_2O expert"

2.3 Resolution of Clarification and Corrective Action Requests

Findings were raised by the assessment team in the first draft of the determination protocol. The client has responded to the team's findings with a document called "Draft report clarifications and corrective action requests by the validation team" and an updated version of the PDD (both documents received 27th January 2005). Some findings remain unresolved and need to be addressed. More detail in the determination protocol in Annex 1 and in the section below.

3 DETERMINATION FINDINGS

At the time of the first draft 6 Major and 2 Minor CARs, 3 Clarifications and 1 Observation were raised. At this moment 1 Major CAR and 1 Observation are outstanding.

To guarantee the transparency of the determination process, the concerns raised and responses provided are summarised in chapter 3 below and documented in more detail in the determination protocol in Annex 1.

Since some modifications to the Project design were necessary to resolve SGS's concerns, Vertis Finance decided to revise the documentation slightly and resubmitted the project design documentation on 27th January 2005.

3.1 Project design

The project involves the installation of a catalyst to reduce N_2O emissions in the new nitric acid and fertilizer plant.

No project length has been specified. A clarification request has been raised (CL1)
Response project developer:
Project's lifetime is the lifetime of the new equipment (includes new acid plant and the catalyst: 25 years).
CL 1 has been closed out.

Crediting period is 2008-2012. It is not expected that the project technology will be substituted during the crediting period.

No Letter of Approval has been provided to the validator as per 06-02-2005.
Response project developer:
In Hungary, the Letter of Approval application can only be submitted after validation, with the validation report. While there is no formal deadline for the issuance of the LoA, it is expected to be received no later than 30 days after the submission of a validation report.

3.2 Baseline

Four baseline alternatives have been discussed. The following baseline has been selected: Construction of a nitric acid plant without the N2O emissions reduction technology. Several references were studied and used to estimate the amount of N_2O in the tail gas. Baseline emissions are considered to be 1000ppm N_2O.

Both the lead assessor and the expert were of the impression that the baseline was the old acid plant and that historic emissions (derived from three months data, see fragment from PDD on page 7 formed the basis of the figures provided for the baseline:

> *… the company will instead decommission the plant in 2006 and establish, as a greenfield investment, a new acid production facility fully complying …*

After consultation with Vertis Finance it was clear that this is not correct. SGS had issued MAJOR CAR 3 to indicate that it was inappropriate to base the estimations of a baseline on these data.

However, from interviews undertaken during the site visit the impression arose that the figures used in the baseline, especially the 1000 ppm N_2O in the tailgas were too high. Our expert has been informed that the new plant's DeNOx installation will also remove a large part of the N_2O.

This appeared to be a misunderstanding between the lead assessor and the expert. No reduction of N2O will occur from the installation of a DeNOx installation WITHOUT an additional DeN2O installation (Ref contract Chemoproject). MAJOR CAR 3 has been closed out.

No risks to the baseline had been addressed. Consequently a CAR (MAJOR CAR 4) was raised. The project developer has provided the validation team with new information about risks to the baseline. Full response of the project developer can be found in the annexed Determination Protocol.

Assuming competent installation and operation of the new equipment the project should result in fewer GHG emissions than the baseline scenario.

3.3 Monitoring Plan

There are no monitoring methodologies for JI project yet.
The monitoring of the N_2O emission reduction will be based on the data collected at the new acid plant. The accurate specification of emissions and emissions reduction are based on four fundamental values: nitric acid, volume of tail gas, N_2O concentration and the volume of ammonia used. Flow meters will be installed before and after the combined reactor to measure NO_x, N_2O and NH_3; the ammonium content will be measured and another meter will be installed before the chimney.

No procedures for monitoring are in place yet. An Observation (1) has been raised to highlight this issue. Nitrogénművek Rt. Is ISO 9001 and ISO 14001 certified and it is anticipated that procedures for training of monitoring personnel will become part of the above mentioned quality systems.

Response project developer:
The relevant measurement and calculation process, as well as the method of monitoring will be integrated in the ISO 9001 and ISO 14001 systems of Nitrogénművek. The implementation is under procedure and will be finalized before 2007.

3.4 Calculation of GHG Emissions

The monitoring of the N2O emission reductions will be based on data collected in the new acid plant. Flow meters will be installed before and after the combined reactor to measure NO_x, N_2O and NH_3; the ammonium content will be measured and another meter will be installed before the chimney.

Baseline emissions will be monitored by measuring N_2O before the DeN_2O catalyst. The N_2O content of the tail gas equals the volume if N_2O generated by burning ammonia during acid production. Measurement will be undertaken continuously and data will be stored on a central server. The monitoring provisions are consistent with the boundaries.

SGS would like to receive more info about this $DeNO_x$ installation and its possible side effects on the reduction of N_2O.

No uncertainties have been addressed in the monitoring methodology. MAJOR CAR 7 was raised. SGS received a detailed reply to this CAR specified to volume of nitric acid, concentration, effectiveness of the catalyst, amount of additional ammonia.

A sensitivity analysis of pre-catalyst N2O emissions and the effectiveness of the catalyst has been provided and was found to be sound and thorough.
No procedures are identified in the monitoring plan for training of monitoring personnel. However, a training programme will be elaborated for the application and uploading of the data

shelter and the calculation of the project emissions.

3.5 Environmental Impacts

No Environmental Impact Assessment is required because the capacity of the plant will not change significantly (old plant 1400t/day, new plant 1500t/day) (Source: 20/2001 Gov. decree (EIA); 30183-57/2004 decree of Environmental Inspectorate).

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

SGS published the project documents on its website on 23rd November 2004 and invited comments within 30 days by Parties, stakeholders and accredited observers. No comments were received.

5 DETERMINATION OPINION

The validation engagement has been carried out by means of document review (a detailed assessment of the final version of the PDD against the JI requirements, verification of key assumptions by the expert and the local assessor through a site visit. A number of findings have been raised which have been presented to the Nitrogéűnművek / Vertis Finance.

At this stage, SGS United Kingdom Ltd issues a Qualified Validation Opinion.

REFERENCES

Category 1 Documents:

List documents provided by the Client that relate directly to the GHG components of the project, (i.e. the Project Design Document and written approval of voluntary participation from the national focal point). These should have been used as direct sources of evidence for the determination conclusions, and are usually further checked through interviews with key personnel.

/1/ PDD Version October 2004 as posted on the SGS website for 30 days starting 23rd November 2004

/2/ PDD Version January 2005

/3/ Draft report clarifications and corrective action requests by the validation team

Category 2 Documents:

List background documents related to the design and/or methodologies employed in the design or other reference documents. Where applicable, Category 2 documents should have been used to check project assumptions and confirm the validity of information given in the Category 1 documents and in follow-up interviews.

/4/ Process flow diagrams of nitric acid plants with and without N_2O catalyst

/5/ Proposal from Chemoproject to Nitrogénművek about N_2O abatement installation

/6/ IPPC documents used by expert (March 2004)

Persons interviewed:

List persons interviewed during the determination, or persons contributed with other information that are not included in the documents listed above.

/7/ Istvan Blazsek (Nitrogénművek)

/8/ Pal Szeliky (Nitrogénművek)

/9/ Sandor Balint (Nitrogénművek)

/10/ Aniko Folup (Nitrogénművek)

/11/ Zoltan Belteki (SGS)

/12/ Imola Kovacs (Vertis)

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