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Determination Report

S.C. HIDROELECTRICA S.A.,
BUCURESTI, ROMANIA

RE-DETERMINATION OF
MODERNIZATION OF 4 HYDROUNITS

OF PORTILE DE FIER II HPP

TRACK 1

Report No. 1068445b, Revision 2

November 14, 2008

TÜV SÜD Industrie Service GmbH

Carbon Management Service
Westendstr. 199 - 80686 Munich - GERMANY

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Subject:		Determination of a JI Project		
Executing Operational Unit:		TÜV SÜD Industrie Service GmbH Carbon Management Service Westendstr. 199 - 80686 Munich Federal Republic of Germany		
Client:		S.C. Hidroelectrica S.A., cu sediul in Str. Constantin Nacu, Nr. 3, sector 2, Ro 020995 Bucuresti, Romania		
Contract approved by:		Werner Betzenbichler		
Report Title:		Modernization of 4 hydrounits of Portile de Fier II HPP		
Number of pages		20 (excluding cover page and annexes)		

Summary:

The Certification Body "Climate and Energy" has been ordered by S.C. Hidroelectrica S.A. to perform a re-determination of the above mentioned project. The pre-determination has been done by DNV in 2002 and is documented in the DNV determination report 28197 from August 22, 2003. For registration purpose TÜV SÜD re-assessed the emission reduction calculation and the monitoring concept/methodology of the mentioned project under current regulations. The final result here with is the conclusion of the previous and current determination.

Using a risk based approach, the re-determination of this project has been performed by visit on the spot, document reviews and interviews with the client in Romania and Germany.

As the result of this procedure, it can be confirmed that the submitted project documentation consisting mainly of the monitoring plan is in line with all requirements set by the Marrakech Accords and the Kyoto Protocol and relevant guidelines of Romanian Designated National Focal point. TÜV SÜD recommends this project for acceptance as JI Track 1 project according to the Romanian rules (Procedure from July 2008). If necessary further criteria set by track 1 rules of the investor country will have to be assessed in a second step.

Additionally the assessment team reviewed the estimation of the projected emission reductions. We can confirm that the indicated amount of emission reductions of 267,000 tonnes CO_{2e} within the whole Kyoto crediting period from 2008 to 2012 (to be issued as ERUs) since the starting date of the project January 1, 2008 until end of 2012 represent a reproducible estimation using the assumptions given by the project documents.

Work carried out by:	• Thomas Kleiser (Project manager, GHG Lead Auditor) • Robert Mitterwallner (GHG Auditor)	Internal Quality Control by: Javier Castro

Abbreviations

CAR	Corrective action request
CDM	Clean Development Mechanism
CR	Clarification request
DOE	Designated Operational Entity
DFP	Designated Focal Point
DP	Determination Protocol
ER	Emission reduction
ERU	Emission Reduction Unit
GHG	Greenhouse gas(es)
IRR	Internal Rate of Return
JI	Joint Implementation
JISC	JI Supervisory Committee
KP	Kyoto Protocol
LoA	Letter of Approval
MP	Monitoring Plan
MS	Management System
NGO	Non Governmental Organisation
PDD	Project Design Document

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1 INTRODUCTION

1.1 Objective

S.C. Hidroelectrica S.A., Romania has commissioned TÜV SÜD Industrie Service GmbH to conduct a re-determination of the project “Modernization of 4 hydrounits of Portile de Fier II HPP” with regard to the relevant requirements for JI project activities. The determination serves as a conformity test of the project design and is a requirement for all JI projects. In particular, the emission reduction calculation and the monitoring concept/methodology 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 reductions (in particular ERUs - in the first commitment period under the Kyoto Protocol).

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 re-determination scope is defined as an independent and objective review of the monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

TÜV SÜD has, based on the recommendations in the Determination and Verification Manual (see http://ieta.org/ieta/www/pages/index.php?IdSitePage=392), and employed a risk-based approach in the re-determination, focusing on the identification of significant risks for project implementation and the generation of emission reductions.

This report is based on the MP which has been issued in September 11, 2007. According to CARs and CRs indicated in the audit process the client decided to revise the MP. The final version submitted on July 11, 2008 serves as the basis for the final conclusions presented herewith.

The re-determination is not meant to provide any consulting towards the Romanian company S.C. Hidroelectrica S.A. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the MP.

Studying the existing project documentation, it was obvious that the competence and capability of the validation team has to cover at least the following aspects:

- Knowledge of Kyoto Protocol and the Marrakech Accords
- Skills in environmental auditing (ISO 14001)
- Quality Assurance
- Technologies, processes and operation of large hydro power plants
- Baseline concepts

- Monitoring concepts
- Political, economical and technical random conditions in host country

According to these requirements TÜV SÜD has assembled a project team in accordance with the appointment rules of the TÜV certification body “Climate and Energy”:

Thomas Kleiser is a lead auditor for CDM and JI projects at TÜV SÜD Industrie Service GmbH and head of CDM/JI division within TÜV SÜD. In this position he is responsible for the implementation of validation and certification processes for GHG mitigation projects. He has participated in more than 90 CDM and JI project assessments.

Robert Mitterwallner is a GHG-Auditor with a background as auditor for environmental management systems (according to ISO 14001), as expert in environmental permit procedures for industrial plants and as expert for environmental impact studies assessment. He is located at TUV SÜD Industrie Service in Munich since 1990. He has received training in the JI determination as well as CDM validation process and applied successfully as GHG Auditor for the scopes energy industries, manufacturing industries, chemical industries, transport, mining/mineral production, metal production, solvent use and waste handling / disposal.

The audit team covers following requirements:

- Knowledge of Kyoto Protocol and the Marrakech Accords (All)
- Skills in environmental auditing (ISO 14001) – (All)
- Quality Assurance (All)
- Technologies, processes and operation of large hydro power plants (All)
- Baseline concepts (All)
- Monitoring concepts (All)
- Political, economical and technical random conditions in host country (Kleiser)

In order to have an internal quality control of the project, a team of the following persons has been composed by the certification body “climate and energy”:

Javier Castro –Head of the Certification Body “Climate and Energy”

1.3 GHG Project Description

The project foresees the refurbishment of the first four units of the 8 existing units of the hydro power plant Portile De Fier PDF 2 (Iron Gates 2) mainly by new turbine blades. The purpose of the project is to increase the installed power and the efficiency of the first four units.

The project located at the Danube near Dobreta Turnu Severin is managed by S.C. Hidroelectrica S.A., a state owned company. S.C. Hidroelectrica S.A. feeds the generated power in the Romanian power grid. The higher installed power and the higher efficiency is going to replace power produced in fossil fired power plants in Romania.

The total installed power is 270 MW, each of the 10 unit has 27 MW (8 units directly located at Iron Gates 2 and 2 units located in Gogosu which is close to Iron Gates. The installed flow is 8500 m^3/s. The project enhances the installed power by 4,4 MW per unit.

The Project Participant of the Host Country is S.C. Hidroelectrica S.A.

2 METHODOLOGY

In order to ensure transparency, a determination protocol was customised for the project, according to the Determination and Verification Manual (VVM). 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 TÜV SÜD has documented how a particular requirement has been validated and the result of the determination.

The determination protocol consists for this project 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. It is used in case of an outstanding, currently not solvable issue, AI means Additional Information is required.	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 or Additional Information is used when the independent entity has identified a need for further clarification or more information.

Determination Protocol Table 3: Resolution of Corrective Action and Clarification Requests			
Draft report clarifications and corrective action and additional Information 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 Clarification or Additional Information Request, these should be listed in this section.	*Reference to the checklist question number in Table 2 where the Corrective Action Request or Clarification or Additional Information Request is explained.*	*The responses given by the Client or other project participants during the communications with the independent entity should be summarised in this section.*	*This section should summarise the independent entity's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".*

2.1 Review of Documents

The project participants submitted a MP and additional background documents related to the MP. A review of all these documents has been performed in order to identify all issues for discussion in direct interviews, by phone or email from September 2007 to March 2008.

2.2 Follow-up Interviews

Follow-up interviews were not applicable here for re-determination.

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the re-determination is to resolve the requests for corrective actions and clarification and any other outstanding issues which need to be clarified in order to achieve a positive conclusion during the assessment process. Clarification and Corrective Action Requests raised by TÜV SÜD have been resolved by the revised MP submitted July 11, 2008. Furthermore additional documents have been submitted separately in order to provide the required evidences. To guarantee the transparency of the determination process, the concerns raised are and the response given are summarised in chapter 3 below. The whole process is documented in more detail in the final determination protocol in Annex 1.

3 DETERMINATION FINDINGS

In the following sections the findings of the final re-determination are stated. The determination findings for each re-determination subject are presented as follows:

1. The findings from the desk review of the MP and the findings from interviews during or after the spot visit are summarised. A more detailed record of these findings can be found in the Re-Determination Protocol in Annex 1.

2. Where TÜV SÜD has identified issues that needed clarification or that represented a risk to the fulfilment of the project objectives, a Clarification or Corrective Action Request, respectively, has been issued. The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Re-Determination Protocol in Annex 1.

3. Where Clarification and Corrective Action Requests have been issued, the response by the project participants to resolve these requests is summarized in the final re-determination report.

The final conclusions of the re-determination are presented consecutively.

3.1 Monitoring Plan

3.1.1 Discussion

The monitoring methodology for the hydropower project is rather straightforward and does reflect current good practice and is supported by the monitored and recorded data. The monitoring provisions are in line with the project boundaries.

No leakage emissions are monitored according to the monitoring plan as there are no emissions to be expected. The monitoring methodology for the large hydro power project does reflect current good practice.

Anyway, since a project specific methodology has been applied here the formula for the emission reduction calculation in the monitoring plan takes account of this fact, but needed to be presented more transparently (see CARs below). The approach for the calculation of the increased power and increased efficiency seems not to be conservative (see CARs below).

3.1.2 Findings

Corrective Action Request 1:

The title of the Measurement Plan is not appropriate. Furthermore, there is a need for an issuance date and a signature of the MP by the responsible person.

> Response: The title was corrected; the issuance date and the signatures are present on the Monitoring Plan rev. 2 March 2008, issued July 11, 2008.
>
> AIE: The revised monitoring plan "Modernization of 4 hydrounits of Portile de Fier II HPP" issued 1th of October 2007 is available.

Corrective Action Request 2:

The third component E2 of the applied methodology for PDF 2 is as following:

- Optimization of the water level between PDF 1 and PDF 2

These components is indirectly due to the refurbishment of all 6 units of PDF 1, but only 3 of them are project relevant (see also validation protocol of PDF1). Thus, there is a need to amend the formula for divide the calculated value of E2 finally by 2. Furthermore, this component should be explained and the procedure described in more detail.

Response: That was implemented in the revised Monitoring Plan (rev. 2 March 2008).

AIE: As explained finally in the MP the increase of the installed capacity of Portile de Fier I system leads to an increase of the turbines discharge variation, which implies a change of the daily operation manner of the cascade. This change leads to a decrease of the head used for the operation of the hydrounits in Portile de Fier I system. The new hydrounits in Portile de Fier II system reach the optimum operational point at heads higher than the old hydrounits. Considering all the above and in order to achieve an additional quantity of energy on the cascade, the Romanian and the Serbian parties have agreed to a solution for operation with higher level in Portile de Fier II reservoir. The need to divide the term (dE2+dE1) by the factor 4 instead of 2 in order to take into account 50% the Serbian side as well as the 50% share of the refurbished project units on the Romanian side has been finally amended in the MP.

Corrective Action Request 3:

There is a need to present the parameters ID 111.1 to ID 111.6 in the MP.

Response: That was implemented in the revised Monitoring Plan (rev. 2 March 2008, issued July 11, 2008).

AIE: Closed

Corrective Action Request 4:

The indicated emission factor in the MP is not reflecting the Romanian grid characteristics. A conservative emission factor taking account of the actual and future Romanian grid characteristics has to be applied for the calculation of baseline emissions. The emission factor shall be verified by Romania and shall comply with the emission factor used for the Romanian Emission Trading.

The quoted scenario S6 is not known, please clarify.

Response: The indicated emission factors were established in the baseline, which was already validated. The quoted scenario has been explained in the MP.

AIE: The MP now takes into account the quoted scenario S6. Meanwhile, it was not the task of the re-determination to re-assess the emission factor that has been already validated by DNV (see pre-determination report).

Corrective Action Request 5:

The MP refers to data/information extracted from hillsharts of the non refurbished and the refurbished units. These hillsharts should be added to the MP, e.g. as Annexes.

Response: The running charts of the old and refurbished hydro unit are presented as Annexes 2 and 3 of the revised Monitoring Plan.

AIE: Closed

Corrective Action Request 6:

A correct formula for the calculation of emission reductions shall be provided (see comment to B.4.1).

Response: The formula was included in the Monitoring Plan at chapter IV. Assessment of AAU's and ERU's.

AIE: Closed

Clarificatio Request 1:

The calculated head is allocating to the hillshart of the not refurbished equipment in order to determine the parameter P27. Please comment in more detail how this parameter P27 has been determined and whether the determination method is a conservative approach.

Response: The efficiency values for the old and refurbished hydro units were measured by a neutral lab (EPFL- LMH Lausanne, as mentioned also in the MP). The determination method is a conservative approach due to the fact that the values for the old units (P27) are valid for optimum theoretical conditions (e.g. clean trash racks).

AIE: The revised Monitoring Plan now gives more detailed information about the parameter P27 explained under A.1 above. With CR1 the following related issues have been discussed: The calculation of the second term Eb of the equation for EA finally take into account overflow/spilling. Even if there is only one hour a day with overflow/spilling the whole day will be deducted from the emission reduction calculation of this second term. The aim of the procedure with the bi-annual process verbale between Serbia and Romania and the allowance to compensate deviating production (see term Eb) is now explained in more detail, regarding the calculation and the conservativeness of this term. Furthermore it has been mentioned finally in the MP that the formula is valid and has to be applied for each refurbished project unit.

Clarification Request 2:

The decision No. 370 of Hidroelectrica, dated 4th of July 2007 does not give detailed information about the operational and management structure and responsibilities (measuring, calibrating, recording, archiving, reporting, supervising, etc.).

does not give detailed information about the operational and management structure and responsibilities (measuring, calibrating, recording, archiving, reporting, supervising, etc.).

Information about the certified Quality Management System QMS was not available in the office of Hidroelectrica in Turnu Severin or on-site, but it was available in headquarter in Bucharest. An analysis of the corresponding manual showed that the QMS actually does not cover project relevant information about the operational and management structure and responsibilities (measuring, calibrating, recording, archiving, reporting, supervising, etc.). Alternatively the MP should be amended accordingly.

Hence, there is a need to document information about the operational and management structure and responsibilities, e.g. by means of an operational scheme focusing on the project. Furthermore, the QA/QC procedures for monitored parameters including measuring, calibrating, recording, archiving, reporting, supervising, etc. should be described and documented. All mentioned quality relevant information can be documented in the MP or alternatively in an Annex to the MP, links to the (amended) QMS should be indicated, if applicable.

> Response: The Operational and Management Structure with the responsibilities is now established and put to your disposal. Quality Assurance and Quality Control Procedure as well as the Valid Quality procedures and Regulations are presented in the MP as Annex 5 and Attachment.
>
> AIE: Information about "Quality Assurance and Quality Control Procedure for the process included in the Monitoring Plan" is now included in Annex 5 of the MP.

Clarification Request 3:

The responsibilities are not clear enough defined in the decision No. 370 of Hidroelectrica, dated 4th of July 2007. Please give documented evidence that Mr. Dragos Novac is responsible for the monitoring methodology as well as the monitoring plan (see also CAR 1 and CR 3).

> Response: See Operational and Management Structure
>
> AIE: In separate document the OPERATIONAL AND MANAGEMENT STRUCTURE is now explained in detail.

Clarification Request 4:

Please clarify the different outputs indicated in the table of the MP for the years 2005 to 2012.

> Response: See chapter IV. Assessment of AAU's and ERU's of revised MP
>
> AIE: The outputs of energy are no more stated in the MP.

Additional Clarification Request 1:

As an outcome of the meeting on March 4, 2008 a written confirmation from Senter Novem has to be submitted that the interdependence effect of PDF1 and PDF2 claimed for the emission reduction calculation (see EB in MP of PDF2) already has been covered in the PDD of PDF2, respectively attached documentation, and that this effect was already part of the pre-determination.

Response: The ERU Calculation and Monitoring Methodology applied at PDF I and PdF II precisely accounts for the emission reductions either taking place in one or the other hydropower plant. The two ERPAs between SenterNovem buyer) and Hidroelectrica S.A. (seller) stipulate the origin on the ERUs as either coming from PdF I or from PdF II in the respective contracts. The amount of purchased ERUs and AAUs for the pre-2008 period from PdF I and PdF JI projects are calculated on the basis of the new Calculation and Monitoring methodology guaranteeing that no double counting could occur. Moreover, the EU ETS JI set-aside values that were based on the expected numerical outcome of the new Calculation and Monitoring Methodology are fixed and cannot be changed and they are publicly available both at the European Commission and at the Romanian Government.

The Contracting Parties have the intention to amend their initial ERPA contracts for the PdF I and PdF II projects in order to align them with the estimated and verified amounts in the Monitoring Plans. As this amendment will be based on the validated Monitoring Plans and their respective numerical estimations for each hydropower plants it is guaranteed that no double counting will take place.

SenterNovem contracted two Joint Implementation projects with Romania's state owned hydropower company, Hidroelectrica since 2002. The first JI Project was the Refurbishment of 3 turbines at Portile de Fier I power plant. This project was developed as the 3rd JI project of the world, the first of Romania and the 2nd of the ERUPT Programme. Consequently, a mistake in the calculation of emission reductions did go unnoticed by all parties, including KPMG as consultant, SGS as validator, that resulted in a serious overestimation of emission reductions. As soon as the suspicion arose that the calculation (monitoring) methodology was incorrect the Project Participants started to develop a methodology correcting these initial faults.

In the course of this calculation/monitoring improvement efforts Hidroelectrica put forward a second JI project proposal for the refurbishment of 4 turbines at Portile de Fier II . With this new project both Hidroelectrica and SenterNovem pursued a very conservative and cautious route and agreed to include only the capacity increase and energy efficiency improvement related emission reductions in this second project.

Given this background of PdF I with its overestimated and PdF II with its conservative emission reductions SenterNovem is willing to accept and purchase all emission reductions that are quantifiable and verifiable on the basis of the new calculation/monitoring methodology. In fact, SenterNovem experts worked together with Hidroelectrica experts to establish the correct calculation methodolo-

gy and the corresponding Monitoring Plan that is being Determined/Validated by TUV-SUED.

The Project Participants intend to use the Track 1 JI procedures of Romania for the determination and verification of project emissions. The Romanian Government has already incorporated the most likely new emission reduction volumes (ERUs) of PdF I and PdF II based on the re-determined methodology to its EU ETS National Allocation Plan. The Track 1 treatment of the project also means that TUV-SUED's re-determination opinion will not be delivered to the JISC.

AIE**:** It has been demonstrated by SenterNovem that the interdependency effect of PDF I and PDF II was already known during the pre-determination of the project. For more information to the technical background of this interdependency effect see AIE answer to CAR2 above.

3.1.3 Conclusion

The calculation of the second term Eb of the equation for EA finally take into account overflow/spilling. Even if there is only one hour a day with overflow/spilling the whole day will be deducted from the emission reduction calculation of this second term.

The aim of the procedure with the bi-annual process verbale between Serbia and Romania and the allowance to compensate deviating production (see term Eb) is now explained in more detail, regarding the calculation and the conservativeness of this term.

Furthermore it has been mentioned finally in the MP that the formula is valid and has to be applied for each refurbished project unit.

Annex 6 has been revised adopting the most conservative method for calculation of standard deviation for Ea.

The need to divide the term (dE2+dE1) by the factor 4 instead of 2 in order to take into account 50% the Serbian side as well as the 50% share of the refurbished project units on the Romanian side has been finally amended in the MP.

Finally, the MP has been revised regarding transparency and conservativeness of the approach for the emission reduction calculation.

The discussed issues are considered to be resolved. The project does fulfil all the prescribed requirements completely.

3.2 Calculation of GHG Emissions and Others

3.2.1 Discussion

The project's spatial boundaries are clearly described. Uncertainties in the GHG emissions estimates are addressed in the documentation.

No further aspects of leakage have been identified.

The project will definitely result in fewer GHG emissions than the baseline scenario. The calculation of emission reductions is correctly computed. Baseline emissions have been calculated in a conservative manner.

3.2.2 Findings

Additional Clarification Request 2:

A copy of the available draft of Ministerial Agreement for track 1 has to be submitted to the AIE.

Response:

Romanian track 1 procedure for approval of JI projects has been submitted to the AIE.

AIE: closed

Additional Clarification Request 3:

Another outstanding issue are the ERUs in the table in chapter IV of the MP, the ERUs still have to be calculated.

Response:

The MP has been changed.

AIE: closed

3.2.3 Conclusion

The project does fulfil all the prescribed requirements completely.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

Since it is re-determination TÜV SÜD has not published any project document on its website.

5 DETERMINATION OPINION

The Certification Body ”Climate and Energy” has been ordered by S.C. Hidroelectrica S.A., Romania to perform a re-determination of the above mentioned project. The first assessment took place in 2002 and is documented in the determination report No. 28197of DNV, issued August 22, 2003. For registration purpose TÜV SÜD re-assessed the mentioned project under current regulations and JI track 1. The final result here with is the conclusion of the previous and current determination.

Using a risk based approach; the re-determination of this project has been performed by on spot visit, document reviews and interviews with the client.

As the result of this procedure, it can be confirmed that the submitted project documentation consisting mainly of the monitoring plan is in line with all requirements set by the Marrakech Accords and the Kyoto Protocol and relevant guidelines of Romanian Designated National Focal point. TÜV SÜD recommends this project for acceptance as JI Track 1 project according to the Romanian rules (Procedure from July 2008). If necessary further criteria set by track 1 rules of the Netherlands will have to be assessed in a second step.

Additionally the assessment team reviewed the estimation of the projected emission reductions. We can confirm that the indicated amount of emission reductions of 267,000 t $CO_{2equivalent}$ within the whole Kyoto crediting period from 2008 to 2012 (to be issued as ERUs) since the starting date of the project January 1, 2008 until end of 2012 represent a reproducible estimation using the assumptions given by the project documents. As these figures will depend on the future performance of the project, this confirmation gives no guarantee on the realisation.

The re-determination is based on the information made available to us and the engagement conditions detailed in this report. The re-determination has been performed using a risk-based approach as described above. The only purpose of the report is its use during the registration process as JI project under track 1. Hence, TÜV SÜD can not be held liable by any party for decisions made or not made based on the determination opinion, which will go beyond that purpose.

Munich, 2008-11-14

Thomas Kleiser
Assessment Team Leader

Munich, 2008-11-14

Javier Castro
Certification Body
Climate and Energy

Industrie Service

Annex 1

Determination Checklist

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
A. Monitoring plan				
A.1. Description of monitoring plan chosen:				
Is the title of the Monitoring Plan MP appropriate and indicates the MP an issuance date and signature?	1	**Corrective Action Request No. 1:** The title of the Measurement Plan is not appropriate. Furthermore, there is a need for an issuance date and a signature of the MP by the responsible person.	☑	☑
Is the applied methodology considered being the most appropriate one?	1, 2, 6, 10, 21	The project PDF 2 consists of the refurbishment of No. 3, No. 4, No. 5 and No. 6 of the 10 units of the hydro power plant Portile De Fier PDF 2. All refurbished units are located in Baraj. The Danube is used as well by the Serbian Side by Hydro Power Plants and, independent of the JI project, all monitored data is exchanged and validated by both the Romanian and the Serbian Side of the Danube (transboundary contract of power generation). Evidence was given by a common Report (here: “Proces Verbale”, No. 75) which is issued every half year and which is containing the monitored data of Romania and Serbia approved by the corresponding Ministries. This data exchange is indicated in the MP. The supplementary energy, or so-called additional hourly output, generated by the project consists of the following two components:	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		E_A = *Additional electric energy generated due to the increase of the installed capacity and efficiency* E_B = *Additional electric energy for the entire Portile de Fier hydroelectric system* The following formula is applicable to calculate the first component according to the methodology in the monitoring plan MP of PDF 2: • Increased power of refurbished equipment (P-P27) and • Higher efficiency of refurbished equipment (Δη * P) $E_A = (P-P27) + \Delta\eta * P$ P hourly measured total power of each unit P27 hourly medium power (depending on the head) of the non refurbished units Δη difference between the efficiency of the refurbished and the non refurbished (old) hydro units **Clarification Request No. 1:** The calculated head is allocating to the hillshart of the not refurbished equipment in order to determine the parameter P27. Please comment in more detail how this parameter P27 has been determined and whether the determination method is a conservative approach.		

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		Corrective Action Request No. 2: The third component E_B of the applied methodology for PDF 2 is as following: • Optimization of the water level between PDF 1 and PDF 2 This component is indirectly due to the refurbishment of all 6 units of PDF 1, but only 3 of them are project relevant (see also validation protocol of PDF1). Thus, there is a need to amend the formula for divide the calculated value of E2 finally by 2. Furthermore, this component should be explained and the procedure described in more detail.		
A.1.1. *Monitoring of the emissions in the project scenario and the baseline scenario:*				
In the following "data checklists" are shown for all data which are fixed at determination time, and "monitoring checklists" for all data which have to be monitored during the life-time of the project.				
A.1.1.1 Data to be collected in order to monitor emissions from the project and how these data will be archived				
Is the list of parameters presented by chapter D.1.1.1 considered to be complete with regard to the requirements of the applied methodology?	1, 2, 6, 12, 21	No **Corrective Action Request No. 3:** There is a need to present the parameters ID 111.1 to ID 111.6 in the MP.	☑	☑

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
ID 111.1: **Fall** = difference between the measured level upstream of PDF 2 and the measured level downstream of PDF 2 (altitudes relative to a reference ground level)	1	Data Checklist / Yes / No Data unit correctly expressed? No Appropriate description? No Source clearly referenced? No Correct value provided? No Has this value been verified? Yes Choice of data correctly justified? No Measurement method correctly described? No QA/QC procedures described? No QA/QC procedures appropriate? No See comments in A.1 (transboundary project)	☑	☑
ID 111.2: **Power** = hourly measured total power of each unit	1	Data Checklist / Yes / No Data unit correctly expressed? No Appropriate description? No Source clearly referenced? No Correct value provided? No Has this value been verified? Yes Choice of data correctly justified? No Measurement method correctly described? Yes QA/QC procedures described? No QA/QC procedures appropriate? No See comments in A.1 (transboundary project) The measurement method of the ABB meter for power is not described, whereas the accuracy is clearly indicated. Metering redundancy is given, as information was gathered during on-site	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		visit, but there is no information in the MP about Back-up meters. Thus, QA/QC procedures for measurement are not sufficiently described in the MP.		
ID 111.3: **Increased Power** = Increased power of refurbished equipment (compared with non refurbished equipment)	1	Data Checklist / Yes / No Data unit correctly expressed? No Appropriate description? No Source clearly referenced? No Correct value provided? No Has this value been verified? Yes Choice of data correctly justified? No Measurement method correctly described? No QA/QC procedures described? No QA/QC procedures appropriate? No QA/QC: See comments in A.1 (transboundary project)	☑	☑
ID 111.4: **Increased Efficiency** = difference between the efficiency of the refurbished and the non refurbished (old) hydro units	1	Data Checklist / Yes / No Data unit correctly expressed? No Appropriate description? No Source clearly referenced? No Correct value provided? No Has this value been verified? Yes Choice of data correctly justified? No Measurement method correctly described? No QA/QC procedures described? No QA/QC procedures appropriate? No	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		QA/QC: See comments in A.1 (transboundary project)		
ID 111.5: **Increased Energy** E 1 = additional hourly output (caused by refurbished units)	1	Data Checklist / Yes / No Data unit correctly expressed? No Appropriate description? No Source clearly referenced? No Correct value provided? No Has this value been verified? Yes Choice of data correctly justified? No Measurement method correctly described? No QA/QC procedures described? No QA/QC procedures appropriate? No QA/QC: See comments in A.1 (transboundary project)	☑	☑
ID 111.6: **Additional electric energy for the entire PDF hydroelectric system E 2 (PDF 1 and PDF 2),** see CAR 2	1, 21	Data Checklist / Yes / No Data unit correctly expressed? No Appropriate description? No Source clearly referenced? No Correct value provided? No Has this value been verified? Yes Choice of data correctly justified? No Measurement method correctly described? No QA/QC procedures described? No QA/QC procedures appropriate? No	☑	☑

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PDD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td></td><td>QA/QC: See comments in A.1 (transboundary project)</td><td></td><td></td></tr>
<tr><td colspan="5">A.1.1.2 Description of formula used to estimate emissions from the project</td></tr>
<tr><td>Are formulae required for the estimation of project emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?</td><td>1, 2, 6</td><td>No, see CR 1, CAR 2 and CAR 3</td><td>☑</td><td>☑</td></tr>
<tr><td colspan="5">A.1.1.3 Data to be collected in order to determine the baseline emissions within the project boundary how these data will archived</td></tr>
<tr><td colspan="5">Fill in the required amount of sub checklists for fixed data parameter and comment any line answered with “No”</td></tr>
<tr><td>113.1
Emission factor of the Romanian electricity grid CEF</td><td>1, 2, 6</td><td>
<table>
<tr><th>Data Checklist</th><th>Yes / No / NA</th></tr>
<tr><td>Data unit correctly expressed?</td><td>No</td></tr>
<tr><td>Appropriate description?</td><td>No</td></tr>
<tr><td>Source clearly referenced?</td><td>No</td></tr>
<tr><td>Correct value provided?</td><td>No</td></tr>
<tr><td>Has this value been verified?</td><td>Yes</td></tr>
<tr><td>Choice of data correctly justified?</td><td>No</td></tr>
<tr><td>Measurement method correctly described?</td><td>No</td></tr>
<tr><td>QA/QC procedures described?</td><td>NA</td></tr>
<tr><td>QA/QC procedures appropriate?</td><td>NA</td></tr>
</table>
Corrective Action Request No. 4:
The indicated emission factor in the MP is not reflecting the Romanian grid characteristics. A conservative emission factor taking account of the actual and future Romanian grid characteristics has to be applied for the calculation of baseline emissions. The emission factor shall be verified by Romania and shall comply</td><td>☑</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		with the emission factor used for the Romanian Emission Trading. The quoted scenario S6 is not known, please clarify.		
Is the list of parameters presented by chapter A.1.1.3 considered to be complete with regard to the requirements of the applied methodology?	6, 21	Yes	☑	☑
A.1.1.4 Description of formula used to estimate baseline emissions				
Are formulae required for the estimation of baseline emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?		NA	☑	☑
D.1.3 *Treatment of leakage in the monitoring plan:*				
Is it explained how the procedures provided by the methodology are applied by the proposed project activity?		NA	☑	☑
A.2. Quality control (QC) and quality assurance (QA) procedures undertaken for data monitored:				
This aspect is covered for the relevant data in section D.1.1.1, D.1.1.3 and D.1.3.1				
A.3. Please describe the operational and management structure that the project operator will apply in implementing the monitoring plan:				
A.3.1. Is the operational and management structure clearly described and in compliance with the envisioned situation? Explanation of management structure and responsibilities.	1, 2, 3, 6	The MP is referring to the ISO 9001 certification of the overall Hidroelectrica Quality Management System among others. Decision No. 370 of Hidroelectrica, dated 4th of July 2007, is indicating names and responsibilities for the project itself. **Clarification Request No. 2:**	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		The decision No. 370 of Hidroelectrica, dated 4th of July 2007 does not give detailed information about the operational and management structure and responsibilities (measuring, calibrating, recording, archiving, reporting, supervising, etc.). Information about the certified Quality Management System QMS was not available in the office of Hidroelectrica in Turnu Severin or on-site, but it was available in headquarter in Bucharest. An analysis of the corresponding manual showed that the QMS actually does not cover project relevant information about the operational and management structure and responsibilities (measuring, calibrating, recording, archiving, reporting, supervising, etc.). Alternatively the MP should be amended accordingly. Hence, there is a need to document information about the operational and management structure and responsibilities, e.g. by means of an operational scheme focusing on the project. Furthermore, the QA/QC procedures for monitored parameters including measuring, calibrating, recording, archiving, reporting, supervising, etc. should be described and documented. All mentioned quality relevant information can be documented in the MP or alternatively in an Annex to the MP, links to the (amended) QMS should be indicated, if applicable.		
A.3.2. Are responsibilities and institutional arrangements for data collection and archiving clearly provided?	1, 2, 3, 6	See CR 3	☑	☑
A.3.3. Does the monitoring plan provide current good monitoring practice?	1, 2, 3, 6,	See CAR 1, CAR 2 and CR 1	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
	21			
A.3.4. Does annex 3 provide useful information enabling a better understanding of the envisioned monitoring provisions?	1, 2, 3, 6	Annex 3 is not applicable here (track 1 JI without PDD). **Corrective Action Request No. 5:** The MP refers to data/information extracted from hillsharts of the non refurbished and the refurbished units. These hillsharts should be added to the MP, e.g. as Annexes.	☑	☑
A.4. Name of person(s)/entity(ies) establishing the monitoring plan:				
A.4.1. Is information of the person(s) / entity(ies) responsible for the monitoring methodology provided in consistency with the actual situation?	1, 2, 3	The person who defined the monitoring methodology and created the MP (Mr. Dragos Novac) is fully aware of the necessary monitoring parameters and emission reduction calculations. The decision No. 370 of Hidroelectrica, dated 4th of July 2007, referring to the contracts ERU01/01 and ERU03/17 (projects PDF1 and PDF2) is indicated Mr. Dragos Novac as coordinating technical part of the projects. **Clarification Request No. 3:** The responsibilities are not clear enough defined in the decision No. 370 of Hidroelectrica, dated 4th of July 2007. Please give documented evidence that Mr. Dragos Novac is responsible for the monitoring methodology as well as the monitoring plan (see also CAR 1 and CR 3)).	☑	☑
A.4.2. Is information provided whether this person / entity is also a project participant?	1	As Technical Director of Hidroelectrica-S.A., subsidiary Portile De Fier, Mr. Dragos Novac is also project participant.	☑	☑

CHECKLIST TOPIC / QUESTION	**Ref.**	**COMMENTS**	**PDD in GSP**	**Final PDD**
B. Estimation of greenhouse gas emission reductions				
B.1. Estimated project emissions and formulae used in the estimation				
B.1.1. Are formulae required for the estimation of project emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?		NA, see pre-determination	☑	☑
B.2. Estimated leakage and formulae used in the estimation, if applicable:				
B.2.1. Are formulae required for the estimation of leakage emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?		NA, see pre-determination	☑	☑
B.2.2. Why are the leakage emissions not constant over the years?		NA	☑	☑
B.3. The sum of B.1. and B.2.:				
B.3.1. Is the data provided under this section in consistency with data as presented by other chapters of the PDD?		NA	☑	☑
B.4. Estimated baseline emissions and formulae used in the estimation:				
Ex-ante calculation of emission reductions				
B.4.1. Is the projection based on the same procedures as used for later monitoring?	1, 2, 6	It is recommended to separate the part calculation of emission reductions from the MP, e.g. by a revised PDD with the amended	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PDD in GSP	Final PDD
		values (see CAR 4) and a MP as Annex to this.		
B.4.2. Is the data provided under this section in consistency with data as presented by other chapters of the PDD?		See Pre-Determination	☑	☑
B.4.3. Are formulae required for the estimation of baseline emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?		See Pre-Determination	☑	☑
B.5. Difference between B.4. and B.3 representing the emission reductions of the project:				
B.5.1. Are formulae required for the determination of emission reductions correctly presented?	1,2, 6, 21	No **Corrective Action Request No. 6:** A correct formula for the calculation of emission reductions shall be provided (see comment to B.4.1).	☑	☑

CHECKLIST TOPIC / QUESTION	**Ref.**	**COMMENTS**	**PDD in GSP**	**Final PDD**
B.6. Table providing values obtained when applying formulae above:				
B.6.1. Will the project result in fewer GHG emissions than the baseline scenario?	1, 6	Yes	☑	☑
B.6.2. Is the form/table required for the indication of projected emission reductions correctly applied?		NA for JI track 1	☑	☑
B.6.3. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	1	Yes **Clarification Request No. 4:** Please clarify the different outputs indicated in the table of the MP for the years 2005 to 2012.	☑	☑
B.6.4. Is the data provided under this section in consistency with data as presented by other chapters of the PDD?		NA	☑	☑

Table 2 Resolution of Corrective Action and Clarification Requests

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
Corrective Action Request:			
CAR 1 The title of the Measurement Plan is not appropriate. Furthermore, there is a need for an issuance date and a signature of the MP by the responsible person.	A.1	The title was corrected; the issuance date and the signatures are present on the Monitoring Plan rev. 2 March 2008.	The revised monitoring plan "Modernization of 4 hydrounits of Portile de Fier II HPP" issued 1th of October 2007 is available.

CAR 2 The third component E2 of the applied methodology for PDF 2 is as following: • Optimization of the water level between PDF 1 and PDF 2 This component is indirectly due to the refurbishment of all 6 units of PDF 1, but only 3 of them are project relevant (see also validation protocol of PDF1). Thus, there is a need to amend the formula for divide the calculated value of E2 finally by 2. Furthermore, this component should be explained and the procedure described in more detail.	A.1	That was implemented in the revised Monitoring Plan (rev. 2 March 2008).	As explained finally in the MP the increase of the installed capacity of Portile de Fier I system leads to an increase of the turbines discharge variation, which implies a change of the daily operation manner of the cascade. This change leads to a decrease of the head used for the operation of the hydrounits in Portile de Fier I system. The new hydrounits in Portile de Fier II system reach the optimum operational point at heads higher than the old hydrounits. Considering all the above and in order to achieve an additional quantity of energy on the cascade, the Romanian and the Serbian parties have agreed to a solution for operation with higher level in Portile de Fier II reservoir. The need to divide the term (dE2+dE1) by the factor 4 instead of 2 in order to take into account 50% the Serbian side as well as the 50% share of the refurbished project units on the Romanian side has been finally amended in the MP.

CAR 3 There is a need to present the parameters ID 111.1 to ID 111.6 in the MP.	A.1.1.1	That was implemented in the revised Monitoring Plan (rev. 2 March 2008).	Closed
CAR 4 The indicated emission factor in the MP is not reflecting the Romanian grid characteristics. A conservative emission factor taking account of the actual and future Romanian grid characteristics has to be applied for the calculation of baseline emissions. The emission factor shall be verified by Romania and shall comply with the emission factor used for the Romanian Emission Trading. The quoted scenario S6 is not known, please clarify.	A.1.1.3	The indicated emission factors were established in the baseline, which was already validated.	Closed, the MP now takes into account the quoted scenario S6. Meanwhile, it was not the task of the re-determination to re-assess the emission factor that has been already validated by DNV (see pre-determination report).
CAR 5 The MP refers to data/information extracted from hillsharts of the non refurbished and the refurbished units. These hillsharts should be added to the MP, e.g. as Annexes.	A.3.4	The running charts of the old and refurbished hydro unit are presented as Annexes 2 and 3 of the revised Monitoring Plan.	closed
CAR 6 A correct formula for the calculation of emission reductions shall be provided (see comment to B.4.1).	B.5.1	The formula was included in the Monitoring Plan at chapter IV. Assessment of AAU's and ERU's.	Closed
Clarification Requests:			

CR 1 The calculated head is allocating to the hill-shart of the not refurbished equipment in order to determine the parameter P27. Please comment in more detail how this parameter P27 has been determined and whether the determination method is a conservative approach.	A.1	The efficiency values for the old and refurbished hydro units were measured by a neutral lab (EPFL- LMH Lausanne, as mentioned also in the MP). The determination method is a conservative approach due to the fact that the values for the old units (P27) are valid for optimum theoretical conditions (e.g. clean trash racks).	The revised Monitoring Plan now gives more detailed information about the parameter P27 explained under A.1 above. With CR1 the following related issues have been discussed: The calculation of the second term Eb of the equation for EA finally take into account overflow/spilling. Even if there is only one hour a day with overflow/spilling the whole day will be deducted from the emission reduction calculation of this second term. The aim of the procedure with the bi-annual process verbale between Serbia and Romania and the allowance to compensate deviating production (see term Eb) is now explained in more detail, regarding the calculation and the conservativeness of this term. Furthermore it has been mentioned finally in the MP that the formula is valid and has to be applied for each refurbished project unit. Annex 6 has been revised adopting the most conservative method for calculation of

CR 2 The above mentioned decision does not give detailed information about the operational and management structure and responsibilities (measuring, calibrating, recording, archiving, reporting, supervising, etc.). Information about the certified Quality Management System QMS was not available in the office of Hidroelectrica in Turnu Severin or on-site, but it was available in headquarter in Bucharest. An analysis of the corresponding manual showed that the QMS actually does not cover project relevant information about the operational and management structure and responsibilities (measuring, calibrating, recording, archiving, reporting, supervising, etc.). Alternatively the MP should be amended accordingly. Hence, there is a need to document information about the operational and management structure and responsibilities, e.g. by means of an operational scheme focusing on the project. Furthermore, the QA/QC procedures for monitored parameters including measuring, calibrating, recording, archiving, reporting, supervising, etc. should be described and documented. All mentioned quality relevant information can be documented in the MP or alternatively in an Annex to the MP, links to the (amended) QMS should be indicated, if applicable.	A.3.1	The Operational and Management Structure with the responsibilities is now established and put to your disposal. Quality Assurance and Quality Control Procedure as well as the Valid Quality procedures and Regulations are presented in the MP as Annex 5 and Attachment.	Closed Information about “Quality Assurance and Quality Control Procedure for the process included in the Monitoring Plan” is now included in Annex 5 of the MP.

CR 3 The responsibilities are not clear enough defined in the above mentioned decision. Please give documented evidence that Mr. Dragos Novac is responsible for the monitoring methodology as well as the monitoring plan (see also CAR 1 and CR 3).	A.4.1	See Operational and Management Structure	Closed In separate document the OPERATIONAL AND MANAGEMENT STRUCTURE is now explained in detail.
CR 4 Please clarify the different outputs indicated in the table of the MP for the years 2005 to 2012.	B.6.3	See chapter IV. Assessment of AAU's and ERU's of revised MP	Closed The outputs of energy are no more stated in the MP.

Additional Clarification Request 1: As an outcome of the meeting on March 4, 2008 a written confirmation from Senter Novem has to be submitted that the interdependence effect of PDF1 and PDF2 claimed for the emission reduction calculation (see EB in MP of PDF2) already has been covered in the PDD of PDF2, respectively attached	**ACR 1**	SenterNovem: The ERU Calculation and Monitoring Methodology applied at PDF I and PdF II precisely accounts for the emission reductions either taking place in one or the other hydropower plant. The two ERPAs between SenterNovem buyer) and Hidroelectrica S.A. (seller) stipulate the origin on the ERUs as either coming from PdF I or from PdF II in the respective contracts. The amount of purchased ERUs and AAUs for the pre-2008 period from PdF I and PdF JI projects are calculated on the basis of the new Calculation and Monitoring methodology guaranteeing that no double counting could occur. Moreover, the EU ETS JI set-aside values that were based on the expected numerical outcome of the new Calculation and Monitoring Methodology are fixed and cannot be changed and they are publicly available both at the European Commission and at the Romanian Government. The Contracting Parties have the intention to amend their initial ERPA contracts for the PdF I and PdF II projects in order to align them with the estimated and verified amounts in the Monitoring Plans. As this amendment will be based on the validated Monitoring Plans and their respective numerical estimations for each hydropower plants it is guaranteed that no double counting will take place. SenterNovem contracted two Joint Implementation projects with Romania's state owned hydropower company, Hidroelectrica since 2002. The first JI Project was the Refurbishment of 3 turbines at Portile de Fier I power plant. This project was developed as the 3rd JI project of the world, the first of Romania and the 2nd of the ERUPT Programme. Consequently, a mistake in the calculation of emission reductions did go unnoticed by all parties, including KPMG as consultant, SGS as validator, that resulted in a serious overestimation of emission reductions. As soon as the suspicion arose that the calculation (monitoring) me-	Closed It has been demonstrated by SenterNovem that the interdependency effect of PDF I and PDF II was already known during the pre-determination of the project. For more information to the technical background of this interdependency effect see AIE answer to CAR2 above.

Additional Clarification Request 2: A copy of the available draft of Ministerial Agreement for track 1 has to be submitted to the AIE.	**ACR2**	Romanian track 1 procedure for approval of JI projects has been submitted to the AIE.	Closed
Additional Clarification Request 3: Another outstanding issue are the ERUs in the table in chapter IV of the MP, the ERUs still have to be calculated.	**ACR3**	The MP has been changed.	Closed

Table 3 Unresolved Corrective Action and Clarification Requests (in case of denials)

Clarifications and / or corrective action requests by validation team	Id. of CAR/CR	Explanation of Conclusion for Denial

Annex 2

Information Reference List

Reference No.	Document or Type of Information
1.	Interview at the office of **Hidroelectrica**, in Turnu Severin, Romania on September 18 and September 19, 2007 by auditor of TÜV SÜD Industrie Service GmbH Determination auditor on-site: Robert Mitterwallner — TÜV SÜD Industrie Service GmbH, Munich, Germany Interviewed persons: Dragos Novac — Hidroelectrica Turnu Severin, Technical Director Cristian Bocse — Hidroelectrica Turnu Severin, Head of Operational Office Alexandra Spanu — Hidroelectrica Bucharest, Environmental Engineer Ion Spinu — Hidroelectrica Turnu Severin, Responsible Meteorologist Marian Ieiza — Hidroelectrica Turnu Severin, Engineer Ion Surdea — Hidroelectrica Turnu Severin, Inspector Zsolt Lengyel — Senter Novem, Netherlands, Programme Advisor, carboncredits.nl
2.	On-site interview at Hydro Power Plant PDF 2 of **Hidroelectrica** on September 18, 2007 by auditor of TÜV SÜD Industrie Service GmbH Determination auditor on-site: Robert Mitterwallner — TÜV Industrie Service GmbH, TÜV SÜD Group, Munich, Germany Interviewed persons: Dragos Novac — Hidroelectrica Turnu Severin, Technical Director Alexandra Spanu — Hidroelectrica Bucharest, Environmental Engineer Ion Surdea — Hidroelectrica Turnu Severin, Inspector
3.	Interview at the office of **Hidroelectrica**, in Bucharest, Romania on September 21, 2007 by auditor of TÜV SÜD Industrie Service GmbH Determination auditor: Robert Mitterwallner — TÜV SÜD Industrie Service GmbH, Munich, Germany

Reference No.	Document or Type of Information
	Interviewed persons: Elena Popescu — Hidroelectrica Bucharest, Head of Refurbishment Department Alexandra Spanu — Hidroelectrica Bucharest, Environmental Engineer Gabriela Dobre — Hidroelectrica Bucharest, Interpreter Zsolt Lengyel — Senter Novem, Netherlands, Programme Advisor, carboncredits.nl
4.	KPMG: "**Fehler! Unbekannter Name für Dokument-Eigenschaft.**I", Baseline Study, final version, Hidroelectrica SA, July 2003
5.	Letter of Approval of PDF 2 Refurbishment Project, Ministry of Waters and Environmental Protection, Romania, 221th of August 2003
6.	Monitoring Plan "Modernization of 4 hydrounits of Portile de Fier II HPP" of SC Hidroelectrica SA Bucharest, issued July 11, 2008
7.	Broschure of the Hydropower plants Branch Iron Gates I and II of Hidroelectrica SA (no date), including hydrological characteristics, power data, spillway dam, advantages of refurbishing the hydro units in Iron Gates I and II, power plant, brief history, among others
8.	Report "Bulb turbines comparative model tests PDF 2, LMH (Laboratory in Switzerland), July 2003
9.	Report "Verification of performance guarantees" of PDF 2, VA Tech (equipment supplier), Rev 2, 28th of April 2004
10.	"Proces Verbal", minutes of the 75th meeting of Romania and Serbia from 21th to 23th of Mai 2007 (measuring data exchange, validation and approval)
11.	"Schema Normala de Functionare" of generators and meters of PDF 2, date 30th of September 2007
12.	Data tables for 2003, 2004, 2005 and 2006 for PDF 2
13.	Report "Biroul Roman de Metrologia legala", Certificat for Alpha Power meter of ABB in compliance with standard NML-5-02-97, no. 312/10.09.2003

Reference No.	Document or Type of Information
14.	Technical Manual for Counter Alpha Power+, ABB, 01/2000, incl. maintenance need and calibration need
15.	"Certificat de Absolvire", Nicolae Spanu, Verification of Measurements Alpha Plus, Elster Rometrics S.R.L.
16.	Calibration Report of ABB Rometrics, NML-5-02-97 for Alpha typ A1R-AL, 14th of August 2002
17.	"Topogeodetic works for Level Reference, 11/2006 by Hidroelectrica
18.	Contract No. 2i/50765 between Hidroelectrica and VA Tech for PDF 2, 9th November 2001
19.	Decision No. 370 of Hidroelectrica for JI projects responsibilities, dated 4th of July 2007
20.	Integrated Management System Manual of Hidroelectrica covering ISO 9001, ISO 14001 and OHSAS, Edition 4, dated 20th of March 2006
21.	Meeting at the office of **TÜV SÜD Industrie Service GmbH**, in Munich, Germany on March 4, 2008 Determination auditors: Thomas Kleiser — Project Manager of TÜV SÜD Industrie Service GmbH, Munich, Germany Robert Mitterwallner — GHG Auditor of TÜV SÜD Industrie Service GmbH, Munich, Germany Dr. Thyge Weller — Expert of TÜV SÜD Industrie Service GmbH, Munich, Germany Javier Castro — Certification Body of TÜV SÜD Industrie Service GmbH, Munich, Germany Interviewed persons: Dragos Novac — Hidroelectrica Turnu Severin, Technical Director Cristian Bocse — Hidroelectrica Turnu Severin, Head of Operational Office Dana Horhoianu — Hidroelectrica Bucharest, Project Responsible
22.	E-mail from Senter Novem with Project Participant's statement related to the re-determination of Monitoring Plan and subsequent changes of the sources of emission reductions; March 5, 2008
23.	Romanian Guideline for track I procedures, PDF file dated July 2008