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Determination Report

DETERMINATION OF THE JI TRACK-1 PROJECT: "REDUCTION OF GREENHOUSE GASES BY GASIFICATION IN THE ZAPAD REGION OF BULGARIA"

REPORT NO. 600501095

8th November 2012

TÜV SÜD Industrie Service GmbH
Carbon Management Service
Westendstr. 199 - 80686 Munich – GERMANY

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Subject: Determination of a JI track-1 project

Accredited TÜV SÜD Unit:	**TÜV SÜD Contract Partner:**
TÜV SÜD Industrie Service GmbH Certification Body "climate and energy" Westendstr. 199 80686 Munich Germany	TÜV SÜD Industrie Service GmbH Certification Body "climate and energy" Westendstr. 199 80686 Munich Germany
Project Participants: Rila Gas EAD (contract partner) Alabin 36 1000 Sofia Bulgaria SIL Societa Italia Lining Srl Corso Stati Uniti 5/A 35127 Padova Italia	Project Site(s): Municipalities of Pernik, Vratza, Ihtiman, Radomir, Dupnitsa, Blagoevgrad, Sandanski, Roman, Simitli, Kostenets, Dolna Banya, Sapareva Banya, Etropole, Boychinovtsi, Strumiani, Boboshevo, Nevestino, Kocherinovo, Krivodol, Gorna Malina, Bobovdol, Kresna in Zapad Region, Bulgaria

Project title: Reduction of Greenhouse Gases by Gasification in the Zapad Region of Bulgaria

Applied methodology / Version:	JI specific approach	**Scope(s):** 1, 4 **TA(s):** 1.1, 4.10

First PDD Version:		**Final PDD version:**	
Date of issuance:	17/07/2012	Date of issuance:	22/10/2012
Version No.:	01	Version No.:	02
Publishing date:	19/07/2012		

Estimated Annual Emission Reduction: 40,948 tCO_2e

Assessment Team Leader:	**Technical Reviewer(s):**
Olena Maslova	Thomas Kleiser
Further Assessment Team Members:	**Responsible Certification Body Members:**
Determiner:	Thomas Kleiser
Nevena Pingarova	
Luciano Grugni	

Summary of the Determination Opinion:

☒ The review of the project design documentation and the subsequent follow-up interviews have provided TÜV SÜD with sufficient evidence to determine the fulfilment of all stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the JI as well as all the requirements set by host country (Bulgaria) for approving projects under JI track 1. Hence, TÜV SÜD will recommend the project for further approval and registration by the DFP of Bulgaria.

☐ The review of the project design documentation and the subsequent follow-up interviews have not provided TÜV SÜD with sufficient evidence to determine the fulfilment of all stated criteria. Hence, TÜV SÜD will not recommend the project for registration by the DFP of the host country as a JI track-1 project and will inform the project participants and the DFP of Bulgaria on this decision.

Abbreviations

AIE	Accredited Independent Entity
CAR	Corrective Action Request
CL	Clarification Request
CHP	Combined heat and power
DFP	Designated Focal Point
DVM	Determination and Verification Manual
EF	Emission Factor
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission Reduction
ERUs	Emission Reduction Unit(s)
FAR	Forward Action Request
GHG	Greenhouse gas(s)
GWP	Global Warming Potential
GT	Gas Turbine
IRL	Information Reference List
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
KP	Kyoto Protocol
LLC	Limited Liability Company
MP	Monitoring Plan
NGO	Non Governmental Organization
PDD	Project Design Document
PP	Project Participant
SG	Steam Generator
ST	Steam Turbine
TÜV SÜD	TÜV SÜD Industries Service GmbH
UPS	Unified Power System
UNFCCC	United Nations Framework Convention on Climate Change

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1 INTRODUCTION

1.1 Objective

The determination objective is an independent assessment by a Third Party (Accredited Independent Entity, AIE) of a proposed project activity against all defined criteria set for the registration under the Joint Implementation scheme (JI).

The assessment involves the evaluation of the project basis and design identified in the Project Design Document (PDD) using the defined criteria outlined by the registration under the Joint Implementation scheme (JI). Determination is part of the JI project cycle and results in a conclusion by the executing AIE on whether or not a project activity is valid to be submitted for approval to the Designated Focal Point DFP of the host country. The ultimate decision on the registration of a proposed project activity rests with the Parties involved.

The project activity discussed by this determination report has been submitted under the project title: *Reduction of Greenhouse Gases by Gasification in the Zapad Region of Bulgaria.*

1.2 Scope

The scope of any assessment is defined by the underlying legislation, regulation and guidance given by relevant entities or authorities. In the case of JI project activities the scope is set by:

- The Kyoto Protocol, in particular § 6
- Decision 2/CMP1 and Decision 3/CMP.1 (Marrakech Accords)
- Further COP/MOP decisions with reference to the JI (e.g. decisions 9/CMP.1)
- Decisions by the JISC published under http://ji.unfccc.int
- Specific guidance by the JISC published under http://ji.unfccc.int
- Guidelines for Completing the Project Design Document (JI-PDD)
- The applied approved CDM methodology(s)
- The technical environment of the project (technical scope)
- Internal and national standards on monitoring and QA/QC
- Technical guideline and information on best practice

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

Once TÜV SÜD receives an initial PDD version, it is made publicly available on TÜV SÜD's website, which initiates a 30 day global stakeholder consultation process. In case of any request a PDD might be revised and the final PDD will form the basis for the final evaluation as presented in this report. Information on the initial and on the final PDD version is presented on page 1.

The purpose of a determination is to demonstrate compliance or non-compliance of the project with all stated and valid JI requirements. Additionally, the purpose of a determination is to enable the registration of JI projects, which is only a part of the JI project cycle. Therefore, TÜV SÜD cannot be held liable by any party for decisions made, or not made, based on the determination opinion that go beyond this purpose.

2 METHODOLOGY

The project assessment applies standard auditing techniques to assess the correctness of the information provided by the PPs. The assessment is based on the latest version of Joint Implementation Determination and Verification Manual. The work starts with appointment of team covering the technical scope(s), sectoral scope(s) and relevant host country experience for evaluating the JI project activity. Once the project is made public available, members of the team carry out the desk review, follow-up actions, resolution of issues identified and finally preparation of the determination report. The prepared determination report and other supporting documents then undergo an internal quality control by the CB "climate and energy" before submission to the DFP of the host country.

In order to ensure transparency, assumptions must be clear and stated explicitly and background material must also be referenced. TÜV SÜD has developed a methodology-specific protocol customized for the project. The protocol demonstrates, in a transparent manner, the project criteria (requirements), discussion on each criterion by the assessment team, and the results from determining the identified criteria.

The determination protocol serves the following purposes:

- To organize the details and provision of clarifications on the requirements of which a JI project is expected to meet
- To elucidate how a particular requirement has been determined as well as to document the results of the determination and any adjustments made to the project design document.

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

Determination Protocol Table 1: Conformity of Project activity and PDD				
Checklist Topic / Question	**Reference**	**Comments**	**Initial PDD (published version)**	**Final PDD**
The checklist is organised in sections following the arrangement of the applied PDD version. Each section is then further sub-divided. The lowest level constitutes a checklist question / criterion.	*Gives reference to documents where the answer to the checklist question or item is found in case the comment refers to documents other than the PDD.*	*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. In some cases sub-checklist are applied indicating yes/no decisions on the compliance with the stated criterion. Any* ***Request*** *has to be substantiated within this column.*	*Conclusions are presented based on the assessment of the first PDD version. This is either acceptable based on evidence provided (☑),* ***or a Corrective Action Request (CAR)*** *due to non-compliance with the checklist question (see below).* ***Clarification Request (CL)*** *is used when the determination team has identified a need for further clarification.* ***Forward action request (FAR)*** *to highlight issues related to project implementation that requires review during the first verification.*	*Conclusions are presented in the same manner based on the assessment of the final PDD version and further documents including assumptions presented in the documentation.*

Determination Protocol Table 2: Compilation and Resolutions of CARs, CRs and FARs			
	Comments and Results	Ref	Conclusion and IRL
Issue	*Corrective Action, Clarification or Forward Action Requests.*	*Reference to the checklist question number in Table 1*	*Final conclusions and relevant references.*
Response	*The responses given by the client or other project participants during communication with the determination team.*		
Assessment	*Summary of the discussion and revision of project documentation together with the determination team's responses*		

In case of a denial of the project activity more detailed information on this decision will be presented in Table 3.

Determination Protocol Table 3: Unresolved Corrective Action and Clarification Requests		
Clarifications and corrective action requests	**Id. of CAR/CL 1**	**Explanation of the Conclusion for Denial**
If the final conclusions from table 2 results in a denial the referenced request should be listed in this section.	*Identifier of the Request.*	*This section should present a detail explanation, why the project is finally considered not to be in compliance with a criterion with a clear reference to the requirement which is not complied with.*

2.1 Appointment of the Assessment Team

According to the technical scopes and experiences in the sectoral or national business environment TÜV SÜD has composed a project team in accordance with the appointment rules of the TÜV SÜD certification body "climate and energy". The composition of an assessment team has to be approved by the Certification Body (CB) ensuring that the required skills are covered by the team. The CB TÜV SÜD operates four qualification levels for team members that are assigned by formal appointment rules:

- Assessment Team Leader (ATL)
- Greenhouse Gas Determiner / Verifier (GHG-DET / GHG-V)
- Greenhouse Gas Determiner, Trainee (T)
- Technical Experts (E)

It is required that the sectoral scope(s) and technical area(s) linked to the methodology as well as host country expertise are covered by the assessment team.

The Determination team was consisting of the following experts (the responsible Assessment Team Leader in written in bold letters):

Name	Qualification	Coverage of technical scope	Coverage of technical area	Host country experience	Audit on site
Olena Maslova	**ATL**	☐	☐	☐	☐
Nevena Pingarova	GHG-DET	☐	☐	☑	☑
Luciano Grugni	GHG-DET	☑	☑	☐	☑

Ms. Olena Maslova is assessment team leader and GHG auditor (Determiner/Validator/Verifier) in the "Carbon Management Service" department of TÜV SÜD Industrie Service GmbH in Munich, Germany. She is chemical engineer and focal point for projects in Eastern Europe. Due to her further master degree at the university of applied science in the Federal Republic of Germany she is also familiar with Germany's current environmental legislation. Olena Maslova is specializing in the assessment of CDM / JI projects in the sector of chemical industries and waste handling and disposal.

Ms. Nevena Pingarova is appointed as CDM/JI Validator/Verifier and as a Financial Expert for greenhouse gas emissions projects at Carbon Management Service Department in TÜV SÜD Industrie Service GmbH. She has a Masters degree in Forecasting and Planning of Economic Systems from the University of World and National Economy, Sofia. Prior to joining TÜV SÜD Nevena Pingarova has 5 years experience as a JI project developer.

Mr. Luciano Grugni is an auditor for environmental management systems and JI/CDM at the department "Climate, Energy and Environment" of the Italian branch of TÜV SÜD Group. He has been involved in the topic of environmental auditing, monitoring and verification due to the requirements of the Kyoto Protocol. His main focus lies on emissions trading audits and renewable energies.

Technical Reviewer: Mr. Thomas Kleiser.

2.2 Review of Documents

The first version of the PDD was submitted to the AIE in July 2012. The PDD and additional background documents related to the project design and baseline, as well as emission reduction calculation, were reviewed to verify the correctness, credibility and interpretation of the presented information, furthermore a cross-check between information provided and information from other sources have been done as initial step of the determination process. A complete list of all documents and proofs reviewed is attached as Annex 2 to this report.

2.3 Follow-up Interviews

On September 10-13, 2012 TÜV SÜD performed interviews and physical site inspection with project stakeholders to confirm relevant information and to resolve issues identified in the first document review. The table below provides a list of all persons interviewed in this context:

Name	Organisation
Mr. Ricardo Silvoni	ACEGAS-APS S.p.A. - Strategy development
Mr. Carlo Barbieri	Dappolonia S.p.A. - Engineering Specialist (JI project developer)
Mr. Ettore Padovan	RilaGas EAD - Operation director
Mr. Kiril Filatov	RilaGas EAD - Technical assistant
Mrs. Vanya Vezenkova	RilaGas EAD - Assistant Marketing and Trade for Blagoevgrad

Mr. Kiril Bankov	Ministry of environment and water (Bulgarian DFP) - Expert Climate Policy Directorate change
Mrs. Kristiana Georgie-va Bakalova	RilaGas EAD - Assistant Marketing and Trade for Pernik

2.4 Cross-check

During the determination process, the team has made reference to the available information related to similar projects or technologies as the proposed JI track-1 project activity. Project documentation has also been reviewed against the proposed JI specific approach applied for baseline setting and monitoring to confirm the appropriateness of formulae and correctness of calculations.

2.5 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the determination is to resolve the requests for corrective actions, clarifications, and any other outstanding issues which need to be clarified for TÜV SÜD`s conclusion on the project design. The CARs and CLs raised by TÜV SÜD are resolved during communication between the client and TÜV SÜD. To guarantee the transparency of the determination process, the concerns raised and responses that have been given are documented in more detail in the determination protocol in Annex 1.

The final PDD version 02 dated 22/10/2012 serves as the basis for the final assessment presented.

2.6 Internal Quality Control

Internal quality control is the final step of the determination process and is conducted by the CB “climate and energy”. The CB checks the final documentation, which includes the determination report and annexes. The completion of the quality control indicates that each report submitted has been approved either by the head of the CB or the deputy (a veto person is used if necessary). In projects where either the Head of the CB or his/her deputy is part of the assessment team, the approval is given by the one not serving on the project team.

After confirmation by the PP, the determination opinion and relevant documents are to be submitted to the DFP of host country by the client for approval according to the JI track 1 procedure.

3 SUMMARY

The assessment work and the main results are described below in accordance with the DVM reporting requirements. The reference documents indicated in this section and Annex 1 are stated in Annex 2.

3.1 Approval

The project participants are Rila Gas EAD of Bulgaria and SIL Srl of Italy. The host Party Bulgaria meets the requirements to participate in the JI.

The DFP of Bulgaria issued a Letter of Support (LoS) (IRL 11) in February 2012 authorizing Rilagas EAD as a project participant. TÜV SÜD received the letter from the project participants directly and considers the provided letters as authentic.

The Bulgarian LoS has been checked via interview on site with the responsible person of the Bulgarian DFP Mr. Kiril Bankov and against the JI project webpage sponsored by the Ministry of Environment and Water (http://www2.moew.government.bg/recent_doc/climate/JI_projects.rar), which confirms the publication of this JI project for comments.

In accordance with Bulgarian legislation, the issuance of the Letter of Approval of the project is only possible after a positive expert opinion is issued by AIE chosen by the applicant. This document can only be issued after positive determination of the project.

The PPs are going to apply for LoA from the Sponsor party Italy on the basis of the TÜV SÜD's determination opinion in accordance with the Sponsor party procedures for approving of JI projects (refer to FAR1).

3.2 Participation

The dedicated project participant from Bulgaria is Rila Gas EAD. The participation of Rila Gas in the Project was confirmed by the audit team during on-site inspection (see the list of persons interviewed – chapter 2.3 of the present report).

The project participant from the Sponsor party SIL Srl has also been confirmed during the on site audit.

The means of determination used are similar to the ones described in Section 3.1, specifically in regard to the approval process of the project activity.

3.3 Project design document

The PDD is compliant with relevant form and guidance as provided by the UNFCCC JISC.

TÜV SÜD concludes that the guidelines for the completion of the PDD in their most recent version have been followed. Relevant information has been provided by the PP in the applying PDD sections. Completeness was assessed through the checklist included to Annex 1.

3.4 Project description

The following situation as per PDD was verified during the on-site mission of the assessment team. The project scenario consists in the reduction of greenhouse gases (GHG) in Zapad region of Bulgaria by fuel switch from liquid and solid fuels and electricity, used by industrial, public and administrative consumers and households to natural gas and by enhancement of the energy efficiency of their combustion installations.

The project covers the construction of gas distribution network in Zapad region, reconstruction of the combustion installations of the end users in the industrial, public and administrative and residential sectors, and the delivery of emission reduction units.

The municipalities involved in the gasification project are twenty-two: Pernik, Vratza, Ihtiman, Radomir, Dupnitsa, Blagoevgrad, Sandanski, Roman, Simitli, Kostenets, Dolna Banya, Sapareva Banya, Etropole, Boychinovtsi, Strumiani, Boboshevo, Nevestino, Kocherinovo, Krivodol, Gorna Malina, Bobovdol and Kresna.

The information presented in the PDD on the technical design is consistent with the actual planning and implementation of the project activity as confirmed by:

- Review of data and information (see annex 2) using sectoral knowledge and expertise of the assessment team, cross check the same with other sources available in the respective technical literature, official publications, etc.
- The on-site visit has been performed and relevant stakeholders and personnel with knowledge of the project were interviewed, in case of doubt further cross checks through additional interviews have been done.
- Finally information related to similar technologies and projects registered as the JI project activity have been used to confirm the accuracy and completeness of the project description.

Taking into account the above mentioned, TÜV SÜD confirms that the project description as presented in the PDD is sufficiently accurate and complete in order to comply with the requirements of the JI Track-1.

3.5 Baseline and monitoring methodology

3.5.1 Applicability of the selected methodology and baseline identification

The PPs have defined a project specific methodological approach (JI specific approach) in accordance with Appendix B of the JI guidelines.
With reference to the “Guidance on Criteria for Baseline Setting and Monitoring”, Version 03 (IRL3), the project proponent selected the approach for baseline setting and monitoring already taken in a comparable JI project. As comparable JI project, the “Reduction of greenhouse gases by gasification of Burgas Municipality” project design document (Project ID: BG1000209 – IRL9), version 08, November 2007 has been considered, in short “Burgas project”.
Such project could be considered comparable because the following four conditions apply and were verified and confirmed by the AIE through a crosscheck with the Burgas project PDD (IRL 9) and the relevant regulatory framework, through interview with local authorities and country expertise of the determination team:

1. GHG mitigation measure: the project boundary of the proposed project and Burgas project include similar sources of GHG emissions and the emission reduction are achieved by switch from liquid and solid fossil fuels to natural gas in the industrial, public and residential sectors;
2. Geography and time: the proposed project and Burgas project are hosted by the same Party Bulgaria and the period of time between the starting dates of the two projects is not more than 5 years;
3. Scale: the proposed project and Burgas project are similar in size comparing the emissions reduction achieved in the period 2008 ÷ 2012 (about 316,000 tCO_2 for Burgas project and about 205,000 tCO_2 for the proposed project);
4. Regulatory framework: in the period between the starting dates of the proposed project and Burgas project the regulatory framework has not changed in a way that would affect the baseline of the project.

The AIE could confirm that the conditions (required by the "Guidance on Criteria for Baseline Setting and Monitoring", Version 03, §12) are satisfied.
The baseline is determined by listing and describing plausible scenarios on the basis of conservative assumptions and selecting the most plausible one. The key factors, such as economic situation and availability of funds (including investment barrier), local availability of technologies and equipment, local availability of fuel and its prices were considered for identification of the baseline scenario.
The list of plausible alternative scenarios to the project activity is complete and no reasonable alternative scenarios have been excluded.
As a result of the baseline identification procedure provided in the final PDD, the baseline scenario has been defined as the situation when the continuation of the current practice of using coal or petroleum fuel will take place. The on-site project emissions without project implementation (baseline) include the emissions of the combustion installations of the end users on the territory of Zapad region. The baseline emissions are related to the level of the end energy consumption, the structure of the fuels used and the type and status of the combustion installations.
Emissions reductions arising from the shift from electricity to natural gas will, however, not produce ERUs, since they are already included within the National Allocation Plan of the EU-ETS scheme.
The information presented in the PDD has been determined by a first document review of all the data, further confirmation based on the on-site visit and a final step by cross checking the information with similar relevant projects and/or technologies. The sources referenced in the PDD have been quoted correctly. Transparent and documented evidences were provided to assessment team within on-site visit and further assessment activity. Based on conservative interpretation of collected audit evidences, TÜV SÜD considers that the identified and described above baseline scenario is reasonable.
TÜV SÜD confirms that all relevant JI requirements, including relevant national and sectoral policies and circumstances, have been identified correctly and taken into account in the definition of the baseline scenario.
A verifiable description of the baseline scenario has been included to the PDD.
The methodology-specific protocol, included in the Annex 1, documents the assessment process. The results of the compliance check as well as relevant evidence are detailed in the protocol and the information reference list.
TÜV SÜD can confirm that the chosen baseline and monitoring project specific approach is applicable to the project activity.

In conclusion TÜV SÜD confirms that:
1. All the assumptions and data used by the project participants are listed in the PDD, including their references and sources;
2. All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD;
3. Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable;
4. Relevant national and sectoral policies and circumstances are considered and listed in the PDD;
5. The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed JI project activity.

3.5.2 Project boundary

The project boundary was assessed considering information gathered from the physical site inspection, interviews, and secondary evidence received on the design of the project.

Project boundaries are set in the PDD in accordance with JI specific approach developed for the present project.
The physical boundaries of the project include 22 municipalities in the Zapad region (Pernik, Vratza, Ihtiman, Radomir, Dupnitsa, Blagoevgrad, Sandanski, Roman, Simitli, Kostenets, Dolna Banya, Sapareva Banya, Etropole, Boychinovtsi, Strumiani, Boboshevo, Nevestino, Kocherinovo, Krivodol, Gorna Malina, Bobovdol, Kresna). The project excludes the municipalities of Bojuriste, Botevgrad, Kyustendil, Mezdra, Montana, Petric and Samokov for which a license for the distribution of natural gas has already been issued to another entity.
The description of emission sources including justification of gases included/excluded in/from the project boundaries is provided in complete manner in schematic form (Figure B.3a and B3b: Block scheme of fuel delivery before gasification and after gasification) and in the Table B7 of the PDD, and can be considered as complete and correct.
The same have been validated during the determination process using standard audit techniques. Emission sources, not addressed by the applied JI specific approach and expected to contribute more than one percent of the overall expected average annual emission reductions, have not been identified.
For further details on TÜV SÜD's observations on-site refer to the Annexes 1 and 2.
Hence, TÜV SÜD confirms that the identified boundary and the selected sources and gases as documented in the PDD are justified for the project activity.

3.5.3 Algorithm and/or formulae used to determine emission reductions

TÜV SÜD has assessed the calculations of project emissions, baseline emissions and emission reductions. There are no leakage emissions. Corresponding calculations were carried out based on calculation spreadsheets as presented in the ERUs calculation model (IRL 6, 28).

The parameters and equations presented in the PDD and further documentation have been compared with the information and requirements presented in the methodology based on the developed JI specific approach. The equation comparison has been made explicitly following all the formulae presented in the calculation files.

The estimation of ERUs presented in the PDD is considered reasonable based on the documentation and references reviewed, as well as, the result of the interviews. Detailed information on the verification of the parameters used in the equations can be found in Annex 1. The algorithms for the determination of the baseline, project, and leakage are discussed in the following sections.

3.5.3.1 Baseline Emissions

The baseline emissions include the emissions of carbon dioxide (CO_2) released from the burning of solid and liquid fuels in the combustion installation in the industrial, public and administrative, and residential sectors, and the emissions from electricity that could be replaced with natural gas.

The emissions due to switch from electricity to natural gas are excluded from the emission reduction counting since they are already included in the EU-ETS scheme.

The calculation of the baseline emissions and, in particular, the calculation of the quantity of coal or petroleum fuel that would be combusted in the absence of the project activity is based on the quantity of natural gas combusted. Since the baseline emissions are calculated by sectors as a sum of the emissions of each fuel burned, the baseline emissions are calculated for each fuel burned considering the quantities of natural gas that will replace coal or petroleum fuel.

These quantities are calculated based on a share of energy sources for each sector; this share provides the percentage of each fuel used in each sector. The yearly quantity of gas that will replace each energy source ,is calculated multiplying the percentage of each fuel by the yearly volume of gas.

The baseline emissions were estimated ex-ante in accordance with the formulae set defined in the section D 1.1.4 of the PDD using the foreseen values of fuel use per type and consumer for 2008-2020 (same formulae will be used for baseline emissions monitoring).

The estimated baseline emissions can be confirmed, as the same have been replicated by the audit team using the raw data obtained within the site visit. The assessment team considered that the approach is correct, reasonable and applicable to the specific project.

Detailed information on the verification of the project specific methodology can be found in the Annex 1 to this report.

3.5.3.2 Project emissions

The project emissions were estimated ex-ante in accordance with the formulae set defined in the section E.1. of the PDD. This estimation is based on the foreseen values of natural gas consumption, net calorific value of fuel equivalent and emission factor for natural gas combustion.
The estimated project emissions can be confirmed, as the same have been replicated by the audit team using the raw data obtained within the site visit. Detailed information on the verification of the parameters used in the equations can be found in the Annex 1.

3.5.3.3 Leakage

Leakage may result from fuel extraction, processing, liquefaction, transportation, re-gasification and distribution of fossil fuels outside of the project boundary. This includes mainly fugitive CH_4 emissions and CO_2 emissions from associated fuel combustion and flaring. The proposed project activity does not include fossil fuel combustion/electricity consumption associated with the liquefaction, transportation, re-gasification and compression of LNG into a natural gas transmission or distribution system. Leakage emissions due to fugitive upstream CH_4 emissions are also considered negligible since gas distribution networks built by PP do not have dismountable joints, they are fully leak tight and then the leakages from the transmission and distribution of natural gas are negligible.

3.5.3.4 Emission Reductions

TÜV SÜD has assessed the calculations of project emissions, baseline emissions, leakage and emission reductions. Corresponding calculations were carried out based on calculation spreadsheets as presented in the Excel calculation model with calculations of Baseline emission, Project emission and Emission Reductions (IRL 6).

The calculation of the baseline emissions, project emissions, and the emission reductions, respectively, can be considered as correct. The baseline and project emissions are calculated in the PDD in transparent manner and using conservative assumptions.

Therefore based on the calculations in the project documentation it is expected that the project will lead to a reduction of GHG emissions of 204,739 tCO_2e in the period from January 1, 2008 until December 31, 2012. The project will also lead to a reduction of 513,820 tCO_2e in the period from January 1, 2013 until December 31, 2020, the issuance of ERUs in this commitment period will depend from the final approval of the host country Bulgaria and upcoming regulations for future JI (2013 onwards) where PP that also want to claim emission reductions for the period 2013 to 2020 should already have indicated the values in the PDD.

3.6 Additionality

In accordance with "Guidance on criteria for baseline setting and monitoring" version 03, PPs demonstrated additionality by "provision of traceable and transparent information showing that the baseline was identified on the basis of conservative assumptions, that the project scenario is not part of the identified baseline scenario and that the project will lead to reductions of anthropogenic emissions by sources of GHGs".

For this propose the investment analysis and common practice analysis was performed. The approach used in the PDD has been assessed based on a document review and interviews on-site with plants representatives. The additionality was discussed principally with Mr Ricardo Silvoni (Head of strategy development of ACEGAS-APS Spa), Mr Ettore Padovan (operation Director of Rila Gas EAD), in order to further confirm the presented documents and figures. A complete set of documents that have been presented to further substantiate the additionality of the proposed project activity which have been thoroughly reviewed by TÜV SÜD is referred to in the Annex 2 of the present report.

The common practice analysis is performed. The project is addressed as "a first of its kind" in terms of delivery pressures of gas to final costumers. The main pipelines will operate at intermediate pressure (16 or 5 bar), whereas the distribution at final customers will be done in low pressure (0.5 bar). These features make the project the first in Bulgaria, since it will be the first gas distribution system in Bulgaria operating at low pressure, with a much higher safety level while others suppliers deliver gas at 4 bar. This is not in contrast with the condition set by the "Guidance on Criteria for Baseline Setting and Monitoring", Version 03, §12d regarding the selected for baseline setting and monitoring, using a comparable JI project, because the "first of its kind" topic addressed in the PDD is only related to safety and specific technical design and not to the regulatory framework of the country.

Investment analysis

The PP use the JI specific approach based on the similar JI project "Reduction of greenhouse gases by gasification of Burgas Municipality" (Project ID: BG1000209).

The PP applies benchmark (10%), calculated based on Risk free rate as per Bulgarian Government Bond annual interest rate BG 20 404 03219, fourth opening, issue maturity year 2018 (6%) and country risk, based on historical country risk classification rates published since 1999 by the Organization for Economic Cooperation and Development (OECD) at the time of investment decision 06/12/2005 (4%). The selected benchmark is suitable benchmark to be compared with the project IRR.

The input values used for the investment analysis are determined as valid and applicable at the time of the investment decision. In particular, investment cost, equity, debt, O&M cost, interest rate, tax rate, depreciation rate, fair value, unit costs, cost of natural gas purchased and prices of natural gas sales to industrial, public and residential sectors. The project IRR is 9.17% and is lower than the selected benchmark.

Sensitivity analysis is done for all parameters for overall natural gas consumptions including the three sectors and Investment cost. It is not realistic that the IRR will cross the benchmark, because the real Investments are higher than the planned and the real sales are lower than the forecasted in the IRR at the time of the investment decision. It has been confirmed during the on-site visit and cross checked with the Blanace sheet (IRL 19).

The data, rationales, assumptions, justifications, and documentation provided have been verified using local knowledge as well as sectoral and financial expertise. This information was also confirmed through the following documentation:

- Industrial and Financial plan for 2007 – 2026 for the territory of Zapad region, Bulgaria (IRL 17)
- Equipment purchase and construction contracts (available onsite)
- JI consideration (IRL 16)

- Preliminary assessment of the investment project (IRL 24)

Based on the aforementioned approach, TÜV SÜD confirms that the documentation provided is appropriate for this project. For further details regarding timeline and JI consideration as well as additionality demonstration, please refer to the Annex 1 of this report.

3.7 Monitoring plan

The assessment team has checked all the parameters presented in the monitoring plan (MP) proposed JI specific approach for monitoring. The monitoring plan MP presented in the latest version of the PDD complies with the requirements of the Guidance on criteria for baseline setting and monitoring version 03.

The quality assurance procedures have been audited by the assessment team through document review and interviews with the relevant personnel; this information together with a physical inspection allows the assessment team to confirm that the MP is feasible within the project design. The major parameters to be monitored have been discussed with the PPs especially regarding the location of the meters, the data management, and in general the quality assurance and quality control procedures to be implemented in the context of the project.

All the audit evidences proving the appropriateness of monitoring provisions undertaken by the PPs were provided to the assessment team and have been considered as sufficient. For details please refer to Annex 2 of this report.

Hence, it is expected that the PPs will be able to implement the monitoring plan and the emission reductions achieved can be reported ex-post and verified.

3.8 Local stakeholder consultation

The statement has been provided in the final PDD, chapter G. The DFP (host) and the local authority confirmed a simplified approval procedure for this project due to its obviously positive environmental effects. The relevant local stakeholders have been invited via invitation letter and newspaper. The evidence of these invitations is given by IRL 26. Team local expertise has confirmed that the communication method used to invite the stakeholders is appropriate.

This fact has also been verified with information obtained during interviews. Hence, the local stakeholder consultation has been performed adequately according to the JI requirements.

3.9 Environmental impacts

Since the license to operate the project was granted by the Government and given the limited project-related environmental and social impacts, PP was not required to conduct an Environmental Impact Assessment (EIA). According to the local regulations, PP has the duty to verify whether the project can affect any protected areas (e.g. Natura 2000 sites). Should this be the case, the local law requires that a specific EIA has to be carried out (by an Independent Consultant) and submitted to relevant Authority for obtaining construction permit.

TÜV SÜD host country experts and the further assessment team members are familiar with local laws and regulations, can confirm that the project complies with environmental legislation in Bulgaria.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOs

TÜV SÜD published the project documents on TÜV SÜD's own website and invited comments by the Parties, stakeholders and non-governmental organizations during a period of 30 days.

The following table presents all key information on this process:

<table>
<tr><td colspan="2">Webpage:
http://www.netinform.de/KE/Wegweiser/Guide22.aspx?ID=8357&Ebene1_ID=50&Ebene2_ID=3244&mode=5</td></tr>
<tr><td colspan="2">Starting date of the stakeholder consultation process:
2012-07-19</td></tr>
<tr><td>Comment submitted by:
(no comments received)</td><td>Issues raised:
-</td></tr>
<tr><td colspan="2">Response by TÜV SÜD:
-</td></tr>
</table>

5 DETERMINATION OPINION

TÜV SÜD has performed a determination of the following proposed JI project activity:

"Reduction of Greenhouse Gases by Gasification in the Zapad Region of Bulgaria"

Standard auditing techniques have been used for the determination of the project. Methodology-specific checklists and protocol customised for the project have been prepared to carry out the audit and present the outcome in a transparent and comprehensive manner.

The review of the project design documentation, and further audit evidences and references, as well as subsequent follow-up interviews have provided TÜV SÜD with sufficient evidence to determine the fulfilment of stated criteria in the protocol. In our opinion, the project meets all relevant UNFCCC requirements for the JI as well as all the requirements set by host country (Bulgaria) for approving projects under JI Track 1. Hence, TÜV SÜD will recommend the project for further approval and registration by the DFP of the host country.

An analysis, as provided by the JI specific approach, demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are additional to any that would occur in the absence of the project activity. Considering that the project will be implemented as designed, the project is likely to achieve the estimated amount of emission reductions of 204,739 tCO_2e in the period from January 1, 2008 until December 31, 2012 and 513,820 tCO_2e in the period from January 1, 2013 until December 31, 2020 as specified within the final PDD version.

The determination is based on the information made available to TÜV SÜD, as well as the engagement conditions detailed in this report. The determination has been performed following the JI requirements. The only purpose of this report is its use during the registration process as part of the JI Track 1 project cycle. TÜV SÜD cannot be held liable by any party for decisions made, or not made, based on the determination opinion beyond this purpose.

Munich, 08/11/2012

Thomas Kleiser
Certification Body "climate and energy"
TÜV SÜD Industrie Service GmbH

Munich, 08/11/2012

Olena Maslova
Assessment Team Leader

Annex 1: Determination Protocol

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
A. General description of project activity				
A.1. Title of the project activity				
A.1.1. Does the used project title clearly enable identification of the unique JI activity?	1, 2, 5, 27	The title "Reduction of Greenhouse Gases by Gasification in the Zapad Region of Bulgaria" is indicated in the PDD. The project's title permits to identify correctly the JI activity. The project is titled with its location and the energy source.	☑	☑
A.1.2. Are the sectoral scope(s) to which the project pertains clearly identified? Is this information consistent with further chapters of the PDD?	1, 2, 5, 27	The sectoral scope is indicated in the section A.1 of the PDD: 1 – Energy industries (renewable/non-renewable sources) 4 – Manufacturing industries This information is consistent with further chapters of the PDD.	☑	☑
A.1.3. Is there any indication concerning the revision number and the date of the revision?	1, 2, 5, 27	The revision number is indicated on the page 2 of the PDD. The PDD that was uploaded for GSP starts with version 01 and is dated July 2012. **Corrective Action Request No.1.** The date of the document and Revision history of the PDD must be indicated in the section A.1. of the PDD *as per* GUIDELINES FOR USERS OF THE JOINT IMPLEMENTATION PROJECT DESIGN DOCUMENT FORM, version 04. In the PDD version 01 only month and year of completion is stated.	CAR	☑
A.1.4. Is this consistent with the time line of the project's history?	1, 2, 5, 12, 13, 16, 27, 31	Yes, the GSP was started with the first version of the PDD on 19/07/2012. The project's history is missing in the PDD version 01. **Corrective Action Request No.2.** PDD format: the project's history, including decision and starting date shall be added.	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
A.2. Description of the project activity				
A.2.1. Is the description delivering a transparent overview of the project activities?	1, 2, 5, 12, 13, 14, 25, 27	Yes. The project is located in the Zapad Region of Bulgaria and the towns involved (project boundary) as indicated in the PDD are seven: Pernik, Vratza, Ihtiman, Radomir, Dupnitza, Blagoevgrad and Sandanski in the west of Bulgaria. The project activity consists in the switch from solid and liquid fossil fuels used by industrial, public consumers and households to natural gas in the Zapad region. The scope of the project consists of the construction and subsequent concessionary operation of the natural gas transport and distribution network in the region. The project's system boundaries are not clearly defined. The tender for the project activity in 2005 included 22 municipalities, the overall project envisages the construction of main gas branch and gas distribution network having total length of 937 km. The reconstruction of the combustion equipments in the end users in the industrial, public and administrative and residential sectors will be realized by the costumers themselves with support from the PP Rilagas. Furthermore, the project activity will contribute to the sustainable development by increasing employment opportunities to local residents and reducing the environmental impacts on atmospheric conditions. **Corrective Action Request No.3.** • The boundary and dates of the project shall be clearly identified as inconsistencies have been found with official tender, license and project documents. • The time schedule of the project presented in the PDD includes activities that are not specific for the project activity. The time schedule shall be detailed on the project boundary.	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
		• Municipality of Pernik is included in another JI project: Pernik District Heating project. It should be clarified how „double counting“ can be avoided as both projects might focus on the same target groups.		
A.2.2. What proofs are available demonstrating that the project description is in compliance with the actual situation or planning?	1, 2, 12, 13, 14, 17, 18, 19, 5, 27, 29	For demonstrating that the project description is in compliance with the actual situation and planning the following proofs are to be reviewed during the on-site mission, with focus only on project related measures: - Rilagas EAD 35-year licenses (IRL 12, IRL13) - GDN Project in the Region of Zapad (IRL 14) - Time schedule of the GDN project (IRL 18) - Detailed marketing surveys (IRL 18); - Construction permit Industrial and financial plan for 2007 – 2026 for territory of Zapad region Bulgaria, Acegas Aps, December 2005 (IRL 17) ; - Detailed structural plan of the routes of gas distribution pipelines located outside the urban territory of the city; - Design documentation for the gas distribution network planned to be constructed during the first year (IRL 14); - Rilagas EAD Financial plan "Extract from Business plan of the project Reduction of greenhouse gases by gasification of Zapad Region" (IRL 17) - Rilagas EAD Cash flow forecast.xls - Rilagas EAD Financial plan.xls. - Rilagas EAD balance sheet and financial report for 2011 (IRL 19) - Tender documentation for Gasification of the Zapad region	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
		(IRL 18)		
A.2.3. Is the information provided by these proofs consistent with the information provided by the PDD?	1, 2, 5, 12, 13, 14, 25, 27	The information is consistent, excluding the definition of the project's system boundaries which are not clearly defined. The tender for the project activity in 2005 included 22 municipalities, the overall project. Please refer to A.1.4. above and see Corrective Action Request No.3	CAR	☑
A.2.4. Is all information presented consistent with details provided by further chapters of the PDD?	1, 2, 5, 27	Yes, all information presented is consistent with details provided by further chapters of the PDD.	☑	☑
A.3. Project participants and project approvals by Parties involved				
A.3.1. Is the form required for the indication of project participants correctly applied?	1, 2, 5, 27	Yes, the form required for the indication of project participants is correctly applied.	☑	☑
A.3.2. Is the participation of the listed entities or Parties confirmed by each one of them?	1, 2, 5, 27	Yes, it was checked and confirmed during the on-site visit.	☑	☑
A.3.3. Is all information on participants / Parties provided in consistency with details provided by further chapters of the PDD (in particular annex 1)?	1, 2, 5, 27	Yes, the information on PPs is consistent throughout the PDD and Annex 1.	☑	☑
A.3.4. Is each of the legal entities listed as project participants in the PDD authorized by a Party involved, which is also listed in the PDD, through: - A written project approval by a Party involved, explicitly indicating the name of the legal entity? Or	1, 2, 5, 11, 27, 32, 33	The project received the Letter of Support from the Bulgarian DFP in February 2012 (IRL 11). The letter clearly specify the name of the legal entity Rilagas EAD which is a PP. The end users invest in reconstruction of the equipment and thus their consent to include the ERUs to the total of the project should be guaranteed. General terms for the contracts for sale of natural	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
- Any other form of project participant authorization in writing, explicitly indicating the name of the legal entity?		gas by RilaGas EAD, approved by Republic of Bulgaria State Energy and Regulatory Commission (IRL 15) doesn't include such condition. **Corrective Action Request No.4.** PDD and the contracts for sale of natural gas by RilaGas EAD to the clients shall be adjusted accordingly.		
A.3.5. Have the DFPs of all parties listed as involved in the PDD provided written project approvals?	1, 2, 5, 11, 27	**Forward Action Request No. 1** According to §36 letter f) point vii of DVM ver. 1 it should be assessed whether the designated focal points (DFPs) of all Parties listed as "Parties involved" in the PDD have provided written project approvals. In this context, the AIE should firstly assess, when submitting the determination report to the secretariat for publication in accordance with paragraph 34 of the JI guidelines, whether at least the host Party is identified as a Party involved in the PDD and the respective written project approval has been issued by the DFP of the host Party. Bulgarian DFP provided the Letter of Support (LoS) and will issue the Letter of Approval at the registration stage, while the LoA from Italy is still pending. It shall be verified during the first verification that the LoA of Italy has been issued and it is unconditional.	FAR	FAR
A.3.6. Does the PDD identify at least the host Party as a "Party involved"?	1, 2, 5, 27	Bulgaria is indicated in the PDD as the Host Party	☑	☑
A.3.7. Has the DFP of the host Party issued a written project approval?	1, 2, 5, 11, 27	The project received a Letter of Support from the Bulgarian DFP and it is listed as Annex 5 of the PDD.	☑	☑
A.3.8. Are all the written project approvals by Parties involved unconditional?	1, 2, 5,	See above, item A.3.5.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
	11, 27			
A.4. Technical description of the project activity				
A.4.1. **Location of the project activity**				
A.4.1.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)?	1, 2, 5, 14, 27	Yes. The information provides the coordinates of the project activity together with the information of the nearest town. **Corrective Action Request No.5.** Inconsistency: it was identified an inconsistency regarding the exact location of the project; the coordinates of each municipality shall be included. PP shall address this inconsistency.	CAR	☑
A.4.1.2. How is it ensured and/or demonstrated, that the project proponents can implement the project at this site (ownership, licenses, contracts etc.)?	1, 2, 5, 12, 13, 14, 27	The licenses has been be reviewed during site-visit and some inconsistencies have been found. See Corrective Action Request No.3	CAR	☑
A.4.2. **Technology(ies) to be employed, or measures, operations or actions to be implemented by the project activity**				
A.4.2.1. Does the technical design of the project activity reflect current good practices?	1, 2, 5, 27	The project involves the construction of the gas distribution network, the new network will consist of a main feeder linked to the existing high pressure line and in a medium and low pressure network. The main feature of the networks within the project is the distribution of gas at low pressure (500 mbar). After the main feeder from the high pressure network, gas will be supplemented with an odor substance to allow detection of possible leaks, and pressure will be reduced. The main pipelines will operate at intermediate pressure (16/5 bar), whereas the distribution at final customers will be done in low pressure (0.5 bar). It will be the first gas distribution system in Bulgaria operating at low pressure, with a	CL	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
		higher safety level. Piping, fittings, measurement and pressure reduction stations will all be done following standards exceeding minimum Bulgarian standards. Network at high pressure will be realized in steel, whereas medium pressure pipes will be made of steel and HDPE. As per the Bulgarian legislation, the gas installations can be put in operation only, after acceptance by an independent, technical supervision company. **Clarification Request No. 1.** Additional information on the project's technological aspects and design should be provided to the AIE specifying if any utilization of technology from foreign technology suppliers will take place.		
A.4.2.2. Does the description of the technology to be applied provide sufficient and transparent input/ information to evaluate its impact on the greenhouse gas balance?	1, 2, 5, 27	**Corrective Action Request No.6.** Information on how GHG emission reductions will be achieved due to the implementation of the project technology are not clearly stated in the PDD. PP should address this issue.	CAR	☑
A.4.2.3. Does the implementation of the project activity require any technology transfer from annex-I-countries to the host country(s)?	1, 2, 5, 27	Manufacturer's information on the equipment installed in the framework of the project has been checked. Contracts are in place with top providers in the fields of gas metering and distribution.	☑	☑
A.4.2.4. Is the technology implemented by the project activity environmentally safe?	1, 2, 5, 27	The implemented technology is recognized as environmentally friendly not only in Bulgaria but also in Europe. Fuel switch from fossil fuels to natural gas is considered the most environmentally friendly technology which minimizes pollutants emission into the atmosphere. Gas will be supplemented with an odor substance to allow detection of possible leaks with a high safety level.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Published PDD	Final PDD
A.4.2.5. Is the information provided in compliance with actual situation or planning?	1, 2, 5, 27	It was verified on site that top class equipment is used and will be installed in future.	☑	☑
A.4.2.6. Does the project use state of the art technology and / or does the technology result in a significantly better performance than any commonly used technologies in the host country?	1, 2, 5, 27	The technology used in the project will result in better performance than the commonly used technology as the fuel switch is from fossil fuel to natural gas and the project will reduce the consumption of electricity from the national grid which is mainly generated from thermal sources. The technologies that will be used in the project have been used in the construction of gas distribution networks of many towns in Bulgaria.	☑	☑
A.4.2.7. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1, 2, 5, 27	The project is not likely to be substituted by other efficient technologies within the project period.	☑	☑
A.4.2.8. Does the project require extensive initial training and maintenance efforts in order to be carried out as scheduled during the project period?	1, 2, 5, 27	Since the project involves the supply of natural gas to industrial and public facilities as well as households, initial training and maintenance is required for ensuring the safety operation of the installations and for assuring an adequate monitoring.	☑	☑
A.4.2.9. Is information available on the demand and requirements for training and maintenance?	1, 2, 5, 27	Confirmation on planned and already conducted trainings in the context of project implementation and unexpected events has been provided to the AIE during site visit. Interviews with personnel could confirm the realization of such trainings	☑	☑
A.4.2.10. Is a schedule available for the implementation of the project and are there any risks for delays?	1, 2, 5, 27	Delays in the implementation of the project has been justified with interviews during site visit. Mostly are due to political decisions and delays in authorization on the construction works and connections. A detailed schedule for the whole project is not available, each municipality to be connected is treated as a single project in relation to schedule.	☑	☑
A.4.3. **Brief Explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed JI project, including why the emission reduction would not occur in the absence of the proposed project, taking into account national**				

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Published PDD	Final PDD
and/or sectoral policies and circumstances				
A.4.3.1. Is there a brief explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed JI project, including why the emission reduction would not occur in the absence of the proposed project, taking into account national and/or sectoral policies and circumstances?	1, 2, 5, 27	Yes, brief and clear explanation on how the anthropogenic emissions of greenhouse gases are to be reduced by the proposed JI project is presented in the section A.4.3 of the PDD.	☑	☑
A.4.3.2. Is the explanation transparent, feasible and – if based on calculations – mathematical correct calculated?	1, 2, 5, 27	The explanations are transparent, clear and feasible.	☑	☑
A.4.4. **Estimated amount of emission reductions over the chosen crediting period**				
A.4.4.1. Is the form required for the indication of projected emission reductions correctly applied?	1, 2, 5, 27	Yes, the PDD uses the correct form in the chapter A.4.3.1.	☑	☑
A.4.4.2. Are the figures provided consistent with other data presented in the PDD?	1, 2, 5, 27	The figures provided are consistent with other data presented in the chapter E and supporting file - Excel spreadsheet.	☑	☑
A.4.4.3. Is the annual average of estimated emission reductions calculated by dividing the total estimated emission reductions over the crediting period by the total months of the crediting period and multiplying by twelve?	1, 2, 5, 27	Yes, the annual average of estimated emission reductions presented in the PDD is calculated by dividing the total estimated emission reductions over the crediting period by the total months of the crediting period and multiplying by twelve.	☑	☑
B. Baseline				
B.1. Description and justification of the baseline chosen				
B.1.1. Does the PDD explicitly indicate which of the following approaches is used for indentifying the baseline?	1, 2, 5, 9,	JI specific approach is used for identification of the baseline. This is clearly stated in the PDD.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
- JI specific approach - Approved CDM methodology approach	27	With reference to the "Guidance on Criteria for Baseline Setting and Monitoring", Version 03, the project proponent can select an approach for baseline setting and monitoring already taken in a comparable JI project. As comparable JI project, the "Reduction of greenhouse gases by gasification of Burgas Municipality"3 project design document (Project ID: BG1000209), version 08, November 2007 has been considered.		
B.1.2. Only if JI specific approach is used, does the PDD provide a detailed theoretical description and justification of the baseline chosen in a complete and transparent manner taking into account §23 of DVM v.1?	1, 2, 4, 5, 27, 35	The PDD provides detailed theoretical description and justification of the baseline chosen. The approach of the applicable CDM methodology ACM0009 version 3.2 (updated to version 4.0.0) has been used as guidance for building the baseline scenario. This is done by listing and describing plausible future scenarios on the basis of conservative assumptions and selecting the most plausible one and taking into account national and sectoral policies and circumstances, and the economic situation in the project sector.	☑	☑
B.1.3. Only if selected elements or combinations of approved CDM methodologies or methodological tools for baseline setting are used, are the selected elements supplementary developed by the project proponents in line with §23 of DVM v.1?	1, 2, 5, 27	Not applicable	☑	☑
B.1.4. If a multi-project emission factor is used, does the PDD provide appropriate justification?	1, 2, 5, 27	Not applicable	☑	☑
B.1.5. Does the PDD provide a justification of the applicability of the methodological approach chosen with a clear and transparent description?	1, 2, 5, 27	Yes. The PDD provides clear justification of the applicability of the methodological approach chosen.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Published PDD	Final PDD
Date of completion of the application of the baseline study and monitoring methodology and the name of the responsible person(s)/entity(ies)				
B.1.6. Is there any indication of a date when the baseline was determined?	1, 2, 5, 27	See section B.4. of the PDD. Date of baseline setting: July 2012 **Corrective Action Request No.7.** The date of the document must be indicated in the section B.4. of the PDD *as per* GUIDELINES FOR USERS OF THE JOINT IMPLEMENTATION PROJECT DESIGN DOCUMENT FORM, version 04. In the PDD version 01 only month and year of completion is stated.	CAR	☑
B.1.7. Is this consistent with the time line of the PDD history?	1, 2, 5, 27	Yes, it was confirmed that the date is in line with PDD history.	☑	☑
B.1.8. Is the information on the person(s) / entity (ies) responsible for the application of the baseline and monitoring methodology provided consistent with the actual situation?	1, 2, 5, 27	The information on the persons / entity responsible for the application of the baseline and monitoring methodology is consistent with the actual situation.	☑	☑
B.1.9. Is information provided whether this person / entity is also considered a project participant?	1, 2, 5, 27, 31	No. As per GUIDELINES FOR USERS OF THE JOINT IMPLEMENTATION PROJECT DESIGN DOCUMENT FORM, version 04 the PDD in this section has to include contact information of the persons(s)/entity(ies) responsible for the application of the baseline and monitoring methodology to the project activity and indicate if the person/entity is also a project participant listed in Annex 1. This information is not available in the GSP-PDD. **Corrective Action Request No.8.** Baseline: information in chapter B.4 of the PDD are not fully consistent with specified requirements. PP shall clarify the inconsistency.	CAR	☑
Approved CDM methodology only: justification of the choice of the methodology and why it is applicable to the project activity				

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>Pub-lished PDD</th><th>Final PDD</th></tr>
<tr><td>B.1.10. Are reference number, version number, and title of the baseline and monitoring meth-odology clearly indicated?</td><td>1, 2, 5, 27</td><td>Not applicable</td><td>☑</td><td>☑</td></tr>
<tr><td>B.1.11. Is the applied version the most recent one and / or is this version still applicable (within the 2 months after the meth revision) when the PDD is submitted for publication?</td><td>1, 2, 5, 27</td><td>Not applicable</td><td>☑</td><td>☑</td></tr>
<tr><td>B.1.12. Does the PDD provide a description of why the approved CDM methodology is appli-cable to the project?</td><td>1, 2, 5, 27</td><td>Not applicable</td><td>☑</td><td>☑</td></tr>
<tr><td colspan="5">Integrate the required amount of sub-checklists on the applicability criteria as given by the applied methodology (project specific methodology, selected elements or combinations of the CDM methodologies and tools, approved CDM methodology) and comment on at least every line answered with “No”;</td></tr>
<tr><td>B.1.1. Criterion 1: GHG mitigation measure</td><td>1, 2, 5, 9, 27</td><td><table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.1.2. Geography and time</td><td>1, 2, 5, 9, 27</td><td><table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table></td><td>☑</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
B.1.3. Scale	1, 2, 5, 9, 27	Applicability checklist: Yes / No Criterion discussed in the PDD? Yes Compliance provable? Yes Compliance verified? Yes	☑	☑
B.1.4. Regulatory framework	1, 2, 5, 9, 27	Applicability checklist: Yes / No Criterion discussed in the PDD? Yes Compliance provable? Yes Compliance verified? Yes	☑	☑
B.2. Identification of the baseline scenario				
B.2.1. Only if approved CDM methodology is used: Are all explanations, descriptions and analyses pertaining to the baseline in the PDD made in accordance with the referenced approved CDM methodology?	1, 2, 5, 27	Not applicable	☑	☑
B.2.2. Have all technically feasible baseline scenario alternatives to the project activity been identified and discussed by the PDD? Why can this list be considered as being complete?	1, 2, 5, 27	There were four alternative scenarios indentified in the PDD: alternative scenario 1. the project activity is implemented without selling the carbon credits under the JI mechanism; 2. switching from coal or petroleum fuel to a different fuel than natural gas (such as biomass); 3. continuation of the current practice of using coal or petroleum fuel; 4. switching from coal or petroleum fuel to natural gas at a future point in time during the crediting period. The list of these scenarios can be considered as being complete as no other options could be identified.	☑	☑
B.2.3. Does the project identify correctly and exclude those options not in line with regula-	1, 2,	All four alternatives comply with applicable laws and regulations. Alternative 1, 2 and 4 face prohibitive barriers.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
tory or legal requirements?	5, 27	The current situation in the municipalities of the project activities is the use of fossil fuels like heavy fuel oil, coal, wood, and electricity. Since there is no availability of natural gas in the municipalities for the other users (industrial, public and administration and households), the baseline scenario is that, in the absence of the project activity, the present mix of fuels would continue to be used in the municipality.		
B.2.4. Have applicable regulatory or legal requirements been identified?	1, 2, 5, 27	Yes, they were identified.	☑	☑
B.2.5. Is the baseline identified appropriately as a result?	1, 2, 5, 27	Yes, the most likely baseline scenario in the absence of the project activity is the continuation of the current situation.	☑	☑
B.2.6. Does the baseline methodology specify data sources and assumptions?	1, 2, 5, 27	The baseline methodology specifies the data sources and the assumptions made. The fuels and electricity demand for the baseline year 2005 were based on the attachments to the tender for gasification of the Zapad region and an internal analysis by the PP. For the calculation of baseline emissions data from the Bulgaria's national communication to UNFCCC and IPCC default values are used.	☑	☑
B.2.7. Does the baseline methodology sufficiently describe the underlying rationale for the algorithm/formulae used to determine baseline emissions (e.g. marginal vs. average, etc.)	1, 2, 5, 10, 27	Yes, the baseline methodology sufficiently describes the underlying rationale for the formulae used. The baseline emissions have been calculated as the sum of the emission from the three different sectors: industrial, public and residential. The baseline also considers the electricity which could be replaced with natural gas. The emission release from the fuels has been calculated from the quantity of fuel, the lower heating value and the emission factor for the fuel. The emissions from the electricity used have been calculated using the “Baseline Carbon	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
		Emission Factor of Bulgarian Electricity and Heat Power System" (Annex 7) shown in the Ministry of Environment and water (MOEW) website. The fuel demand for the year 2008 and following has been derived from the attachment to the tender for gasification of Zapad Region The leakages due to storage and transportation of the fuels being minimal have not been included in the calculation of the emissions.		
B.2.8. Does the baseline methodology specify types of variables used (e.g. fuels used, fuel consumption rates, etc)?	1, 2, 5, 27	Yes, the baseline methodology specifies the fuels used in the baseline year and also the forecasted fuels consumption in the absence of the project activity.	☑	☑
B.2.9. Does the baseline methodology specify the spatial level of data (local, regional, national)?	1, 2, 5, 27	Yes, most of the data used for the baseline emissions is local and national level data. IPCC default values have also been considered.	☑	☑
B.3. Description of how the anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the JI project (assessment and demonstration of additionality):				
B.3.1. Does the PDD indicate which of the following approaches for demonstrating additionality is used? a) Provision of traceable and transparent information showing the baseline was identified on the basis of conservative assumptions, that the project scenario is not part of the identified baseline scenario and that the project will lead to ERs; b) Provision of traceable and transparent information that an AIE has already positively deter-	1, 2, 5, 27, 35	It is stated in the PDD that the approach is the application of the most recent version of the methodology ACM0009 and the Tool for the demonstration and assessment of additionality (version 6). Anyhow see Corrective Action Request No.9 and Corrective Action Request No.10.	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
mined that a comparable project (to be) implemented under comparable circumstances has additionality; c) Application of the most recent version of the Tool for the demonstration and assessment of additionality or any other method for proving additionality approved by the CDM Executive Board.				
B.3.2. Does the PDD provide a justification of the applicability of the approach with a clear and transparent description?	1, 2, 5, 27, 35	**Corrective Action Request No.9.** The PP has not addressed properly in the PDD the reasons of the applicability of the chosen approach for the demonstration of the additionality.	CAR	☑
B.3.3. If the approach c) was chosen (additionality tool), are all explanations, descriptions and analyses made in accordance with the selected tool/method?	1, 2, 5, 27, 35	**Corrective Action Request No.10.** The Tool for the demonstration and assessment of additionality (version 6) has not been correctly applied in the PDD. PP shall address this inconsistency.	CAR	☑
B.3.4. In case of applying step 2 / investment analysis of the additionality tool: Is the analysis method identified appropriately (step 2a)?	1, 2, 5, 27	The Investment analysis and benchmark approach is suitable and correctly chosen for the project type.	☑	☑
B.3.5. In case of Option I (simple cost analysis): Is it demonstrated that the activity produces no economic benefits other than JI income?	1, 2, 5, 27	Not applicable.	☑	☑
B.3.6. In case of Option II (investment comparison analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?	1, 2, 5, 27	Not applicable.	☑	☑
B.3.7. In case of Option III (benchmark analysis): Is the most suitable financial indicator	1, 2, 5, 7,	The PP applies benchmark (10%), calculated based on Risk free rate and country risk (10%). It is suitable benchmark to be com-	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?	8, 27, 29, 30	pared with the project IRR. The baseline is outside the direct control of the project developer and the project developer is not interested in investing in projects which do not foresee the use of natural gas, Option III - benchmark analysis has been chosen correctly. Is it suitable to be compared with Project IRR.		
B.3.8. In case of Option II or Option III: Is the calculation of financial figures for this indicator correctly done for all alternatives and the project activity?	1, 2, 5, 7, 8, 27, 29, 30	The other alternatives are excluded.	☑	☑
B.3.9. In case of Option II or Option III: Is the analysis presented in a transparent manner including publicly available proofs for the utilized data?	1, 2, 5, 7, 8, 16, 17, 27, 29, 30	**Corrective Action Request No.11.** 1. As per Guidelines on the Assessment of Investment Analysis version 05, paragraph 6, PP shall evidence all input values used for the investment analysis to be valid and applicable at the time of the investment decision, in particular Investment cost calculation, O&M cost, price, investment cost, income tax, depreciation rate etc. 2. Decision date is not clearly presented in PDD 3. IRR sheet includes some investment costs and Industial production from other cities than the 7 who is in the JI project boundaries. This inconsistency should be addressed. 4. In the IRR sheet there is a discount rate and a WACC calculation, which are different to the chosen benchmark in the PDD. The inconsistency should be addressed 5. In B2. Additionality, Step 1 is written that the end users also make investments. The end users generate the GHG reductions, but it is not clearly addressed in the Project 6. Sensitivity analysis made only for annual natural gas consumptions by sectors. The sensitivity of Investment costs and	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
		total consumptions to be presented as their impact as more than 20%.		
B.3.10. In case of applying step 3 (barrier analysis) of the additionality tool: Is a complete list of barriers developed that prevent the different alternatives to occur?	1, 2, 5, 27	Not applicable.	☑	☑
B.3.11. In case of applying step 3 (barrier analysis): Is transparent and documented evidence provided on the existence and significance of these barriers?	1, 2, 5, 27	Not applicable.	☑	☑
B.3.12. In case of applying step 3 (barrier analysis): Is it transparently shown that the execution of at least one of the alternatives is not prevented by the identified barriers?	1, 2, 5, 27	Not applicable.	☑	☑
B.3.13. Have other activities in the host country / region similar to the project activity been identified and are these activities appropriately analyzed by the PDD?	1, 2, 5, 9, 27	The common practice analysis is performed. The project is addressed as “a first of its kind” in terms of delivery pressures of gas to final costumers. The main pipelines will operate at intermediate pressure (16 or 5 bar), whereas the distribution at final customers will be done in low pressure (0.5 bar). These features make the project the first in Bulgaria, since it will be the first gas distribution system in Bulgaria operating at low pressure, with a much higher safety level while others suppliers deliver gas at 4 bar.	☑	☑
B.3.14. If similar activities are occurring: Is it demonstrated that in spite of these similarities the project activity would not be implemented without the CDM component (step 4b)?	1, 2, 5, 9, 27	See B.3.13	☑	☑
B.3.15. Only if approved CDM methodology is used: Are all explanations, descriptions and	1, 2, 5, 27	Not applicable	☑	☑

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>Pub-lished PDD</th><th>Final PDD</th></tr>
<tr><td>analysis with regard to additionality made in accordance with selected methodology?</td><td></td><td></td><td></td><td></td></tr>
<tr><td>B.3.16. Are sufficient additionality proofs provided?</td><td>1, 2, 5, 27</td><td>Not applicable</td><td>☑</td><td>☑</td></tr>
<tr><td>B.3.17. Is the additionality demonstrated appropriately as a result?</td><td>1, 2, 5, 27</td><td>Not applicable</td><td>☑</td><td>☑</td></tr>
<tr><td colspan="5">B.4. Description of how the definition of the project boundary is applied to the project</td></tr>
<tr><td>B.4.1. If the JI specific approach is used: Does the project boundary defined in the PDD encompass all anthropogenic emissions by sources of GHGs that are:

a) Under the control of the project participants?
b) Reasonably attributable to the project?
c) Significant?</td><td>1, 2, 5, 9, 27</td><td><table><tr><th>Boundary checklist</th><th>Yes / No</th></tr><tr><td>Source and gas(es) discussed in the PDD?</td><td>Yes</td></tr><tr><td>Is a definition of the boundary based on case-by-case assessment acc. to §32 (a) of DVM?</td><td>Yes</td></tr><tr><td>Is the delineation of the boundary described by using a figure/flow chart?</td><td>Yes</td></tr><tr><td>Inclusion / exclusion justified?</td><td>Yes</td></tr><tr><td>Explanation / Justification sufficient?</td><td>Yes</td></tr><tr><td>Consistency with monitoring plan?</td><td>Yes</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.4.2. Only if the approved CDM methodology is used: Is the project boundary defined in accordance with the approved CDM methodology?</td><td>1, 2, 5, 27</td><td>Not applicable</td><td>☑</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
Integrate the required amount of sub-checklists for sources and gases as given by the methodology applied and comment on at least every line answered with "No"				
B.4.3. Source: Description of Source: burning of solid and liquid fuels Gas(es): CO2, CH4, N2O Type: Baseline Emissions	1, 2, 5, 27	Boundary checklist / Yes / No Source and gas(es) discussed in the PDD? Yes Inclusion / exclusion justified? Yes Explanation / Justification sufficient? Yes Consistency with monitoring plan? Yes	☑	☑
B.4.4. Source Description of Source: burning of natural gas Gas(es): CO2, CH4, N2O Type: Project activity	1, 2, 5, 27	Boundary checklist / Yes / No Source and gas(es) discussed in the PDD? Yes Inclusion / exclusion justified? Yes Explanation / Justification sufficient? Yes Consistency with monitoring plan? Yes	☑	☑
B.4.5. Source Description of Source: generation transportation and distribution of electricity that will be replaced Gas(es): CO2 Type: Project Emissions	1, 2, 5, 27	Boundary checklist / Yes / No Source and gas(es) discussed in the PDD? Yes Inclusion / exclusion justified? Yes Explanation / Justification sufficient? Yes Consistency with monitoring plan? Yes	☑	☑
B.4.6. Do the spatial and technological boundaries as verified on-site comply with the discussion provided by / indication included to the PDD (plant specific flow diagram)?	1, 2, 5, 12, 13, 14, 27	See Corrective Action Request No.3	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Published PDD	Final PDD
B.5. Further baseline information, including the date of baseline setting and the name(s) of the person(s)/entity(ies) setting the baseline:				
B.5.1. Are the name(s) of the person(s)/entity(ies) whom setting the baseline available?	1, 2, 5, 27	The information on the persons / entity responsible for the application of the baseline and monitoring methodology is consistent with the actual situation.	☑	☑
B.5.2. Is the date of baseline setting available?	1, 2, 5, 27	See Corrective Action Request No.7	CAR	☑
C. Duration of the project activity / crediting period				
C.1. Starting date of the project:				
C.1.1. Is the project's starting date clearly defined in the PDD and reasonable?	1, 2, 5, 12, 13, 14, 27	The project starting date is mentioned as year 2007 that is the year when the first works for the gas network where started.	☑	☑
C.1.2. Is the starting date of the project after the beginning of 2000?	1, 2, 5, 12, 13, 14, 27	Yes, the project started after the beginning of 2000.	☑	☑
C.2. Expected operational lifetime of the project:				
C.2.1. Is the expected operational lifetime of the project clearly defined in the PDD in years and months and reasonable?	1, 2, 5, 9, 12, 13,	The lifetime of the project is specified as 20 years which could be reasonable and conservative, however **Clarification Request No. 2.**	CL	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
	17, 27, 35	The chosen approach to define an operational lifetime of 20 years has to be explained and justified as based on our sectoral experience normally another approach based on an operational lifetime of 35 years is used.		
C.3. Length of the crediting period:				
C.3.1. Is the assumed crediting period clearly defined in the PDD in years and months and reasonable?	1, 2, 5, 27	The assumed crediting period is from 01/01/2008 to 31/12/2012. **Corrective Action Request No.12.** The crediting period must be indicated in the section C.3. of the PDD as per GUIDELINES FOR USERS OF THE JOINT IMPLEMENTATION PROJECT DESIGN DOCUMENT FORM, version 04.	CAR	☑
C.3.2. Is the starting date of the crediting period on or after the date of the first emission reductions generated by the project?	1, 2, 5, 27	It is confirmed that the starting date of the crediting period is after the date of the first emission reductions,	☑	☑
C.3.3. Does the PDD state that the crediting period for issuance of ERUs starts only after the beginning of 2008 and doesn't extend beyond the operational lifetime of the project?	1, 2, 5, 27	Yes. The PDD states that the crediting period for issuance of ERUs starts on 01.01.2008.	☑	☑
C.3.4. If the crediting period extends beyond 2012, does the PDD state that the extension is subject to the host Party approval? Are the estimates of ERs presented separately for those until 2012 and those after 2012?	1, 2, 5, 27	Yes it will extend beyond 2012 only if it will be available an appropriate positive decision of UNFCCC and Host Party approval. Estimates are presented separately.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
D. Monitoring plan				
D.1. Description of monitoring plan chosen:				
D.1.1. Does the PDD explicitly indicate which of the following approaches is used? - JI specific approach - Approved CDM methodology approach	1, 2, 5, 27	**Corrective Action Request No.13.** It is not clearly indicated in the PDD which approach is used for the monitoring plan as required by §35 of DVM	CAR	☑
D.1.2. If the monitoring plan indicates overlapping monitoring periods during the crediting period, is the underlying project composed of clearly identifiable components for which emission reductions can be calculated independently?	1, 2, 5, 27	No emission reductions are envisaged to be calculated independently for separate components of the project.	☑	☑
D.1.3. If the monitoring plan indicates overlapping monitoring period during the crediting period, can monitoring be performed independently for each of these components (i.e. the data/parameters monitored for one component are not dependent on/effect data/parameters to be monitored for another component)?	1, 2, 5, 27	No emission reductions are envisaged to be calculated independently for separate components of the project.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Published PDD	Final PDD
D.1.4. If the monitoring plan indicates overlapping monitoring periods during the crediting period, does the monitoring plan ensure that monitoring is performed for all components and that in these cases all the requirements of the JI guidelines and further guidance by the JISC regarding monitoring are met?	1, 2, 5, 27	No emission reductions are envisaged to be calculated independently for separate components of the project.	☑	☑
D.1.5. If the monitoring plan indicates overlapping monitoring period during the crediting period, does the monitoring plan explicitly provide for overlapping monitoring periods of clearly defined project components, justify its need and state how the conditions mentioned above are met?	1, 2, 5, 27	No emission reductions are envisaged to be calculated independently for separate components of the project.	☑	☑
D.1.6. Is the uncertainty of key parameters described and, where possible, is in uncertainty range at 95% confidence level for key parameters for the calculation of ERs provided?	1, 2, 5, 27	**Corrective Action Request No.14.** According to §36 letter f) point vii of DVM ver. 1 uncertainty of key parameters shall be provided in the PDD together with information on national or international monitoring standards to be applied to monitor such parameters.	CAR	☑
D.1.7. Does the monitoring plan identify a national or international monitoring standard incl. a reference to its detailed description, if such applied to the project?	1, 2, 5, 27	See Corrective Action Request No.14	CAR	☑
D.1.8. Are the statistical techniques used in a conservative manner?	1, 2, 5, 27	Not applicable	☑	☑
D.1.9. Does the monitoring plan present the QA/QC procedures for the monitoring proc-	1, 2, 5,	QA/QC procedures are indicated in Table D.2 of the PDD while information on calibration are provided in Annex 3.	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Published PDD	Final PDD
ess?	21, 27, 34	**Corrective Action Request No.15.** The quality assurance and control procedures for the monitoring process should include, as appropriate, information on calibration and on how records on data and/or method validity and accuracy are kept and made available upon request according to §36 letter i) of the DVM ver.1. PP should address this issue in the PDD.		
D.1.10. Does the monitoring plan clearly identify the responsibilities and the authority regarding the monitoring activities?	1, 2, 5, 27	Responsibilities and management structure for monitoring activities are clearly identified in the PDD in chapter D.3	☑	☑
D.1.11. Does the monitoring plan, on the whole, reflect good monitoring practices appropriate to the project type?	1, 2, 5, 27	Yes, monitoring plan reflects good monitoring practices in the relevant technology sector.	☑	☑
D.1.12. Does the monitoring plan provide, in tabular form, a complete compilation of the data to be collected for its application incl. data that are measured / sampled and data collected from other sources, but not including data that are calculated with equations?	1, 2, 5, 27	The project activity monitors the following parameters: - Natural gas used in the industrial sector. - Natural gas consumed in the public and administrative sector - Natural gas consumed in the residential sector - Total amount of natural gas bought from Bulgargas AD - Net Calorific Value of natural gas - CO2 emission factor of natural gas	☑	☑
D.1.13. Does the monitoring plan indicate that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project?	1, 2, 5, 27	Yes, such statement is included in the monitoring plan.	☑	☑
JI specific approach only *(project specific methodology or selected elements or combinations of approved CDM methodologies or methodological tools)*				
D.1.14. Does the monitoring plan describe all relevant factors/ key characteristics to be	1, 2, 5, 27	**Corrective Action Request No.16.** Emission factor for CO2 emission factor of the coal or petroleum	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Published PDD	Final PDD
monitored, all decisive factors for the control and reporting of project performance and the period in which they will be monitored?		fuel type that would be combusted in the absence of the project activity in the element process *i*, $EF_{FF,CO2,i}$; Global Warming Potential of methane, GWP_{CH4}; Average net calorific value of the coal or petroleum fuel that would be combusted in the absence of the project activity in the element process *i* during the year *y,* $NCV_{FF,i,}$; Energy efficiency of the element process I if fired with natural gas $\varepsilon_{project,I,y}$, Energy efficiency of the element process i if fired with coal or petroleum fuel $\varepsilon_{baseline,i,y}$, are not included in the monitoring of baseline/project emissions and leakage. Moreover the values and the data sources of all parameters in the monitoring plan must be provided in the section D and clearly referenced as required by DVM ver.1 §36. PP shall address this inconsistency.		
D.1.15. If default values are used: - Are accuracy and reasonableness carefully balanced in their selection? - Do the default values originate from recognized sources? - Are the default values supported by statistical analyses providing reasonable confidence levels? - Are the default values presented in a transparent manner?	1, 2, 5, 27	See Corrective Action Request No.16	CAR	☑
D.1.16. For those values that are to be provided by the project participants, does the monitoring plan clearly indicate how the values are to be selected and justified?	1, 2, 5, 27	See Corrective Action Request No.16	CAR	☑
D.1.17. For other values: - Does the monitoring plan clearly indicate the	1, 2, 5, 27	See Corrective Action Request No.16	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
precise references from which these values are taken? - Is the conservativeness of the values provided justified?				
D.1.18. For all data sources, does the monitoring plan specify the procedures to be followed if expected data are unavailable?	1, 2, 5, 20, 27	**Clarification Request No. 3.** Procedures to be followed if expected monitored data are unavailable should be clarified and further specified to the AIE.	CL	☑
D.1.19. Is the use of parameter, coefficients, variables, etc. consistent between the baseline and monitoring plan?	1, 2, 5, 27	Yes. The use of parameter, coefficients, variables is consistent between the baseline and monitoring plan.	☑	☑
D.1.20. Does the monitoring plan draw on the list of standard variables contained in appendix B of "Guidance on criteria for baseline setting and monitoring"?	1, 2, 3, 5, 27, 35	Some standard variables contained in appendix B of "Guidance on criteria for baseline setting and monitoring" are used in the monitoring plan. **Corrective Action Request No.17.** Variables presented in the PDD are not consistent with those specified in Appendix B of "Guidance on criteria for baseline setting and monitoring". PP shall address this inconsistency.	CAR	☑
D.1.21. Does the monitoring plan explicitly and clearly distinguish: a) Data and parameters that are not monitored throughout the crediting period, but are determined only once and thus remain fixed throughout the crediting period, and that are available already at the stage of determination? b) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already	1, 2, 5, 27	**Corrective Action Request No.18.** The monitoring plan does not explicitly and clearly distinguishes - Data and parameters that are not monitored throughout the crediting period, but are determined only once and thus remain fixed throughout the crediting period, and that are available already at the stage of determination - Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination - Data and parameters that are monitored throughout the crediting period as required by DVM ver.1 §36 letter d).	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Published PDD	Final PDD
available at the stage of determination? c) Data and parameters that are monitored throughout the crediting period?		See also Corrective Action Request No.16		
D.1.22. Does the monitoring plan describe the methods employed for data monitoring (incl. its frequency) and recording?	1, 2, 5, 27	Yes, the monitoring plan and Annex 3 describes the methods employed for data monitoring and recording, including its frequency.	☑	☑
D.1.23. Does the monitoring plan elaborate all algorithm and formulae used for the estimation/calculation of baseline emission and project emission or direct monitoring of emission reductions from the project, leakage, as appropriate?	1, 2, 5, 27	Yes all algorithm and formulae used for the estimation/calculation of baseline emission, project emission and leakage are presented in the PDD and deemed as appropriate.	☑	☑
Approved CDM methodology approach only				
D.1.24. Are all explanations, descriptions and analyses pertaining to monitoring in the PDD made in accordance with referenced approved CDM methodology?	1, 2, 5, 27	Not applicable	☑	☑
D.1.25. Is it explained how the procedures provided in the methodology are applied by the proposed project activity?	1, 2, 5, 27	Not applicable	☑	☑
D.1.26. Is every selection of options offered by the methodology correctly justified and is this justification in line with the situation verified on-site?	1, 2, 5, 27	Not applicable	☑	☑
D.1.27. Is the operational and management structure clearly described and in compliance with the envisioned situation?	1, 2, 5, 27	Not applicable	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
D.1.28. Are responsibilities and institutional arrangements for data collection and archiving clearly provided?	1, 2, 5, 27	Not applicable	☑	☑
D.1.29. Are the specific performance characteristics of the monitoring system chosen by the project listed in the PDD?	1, 2, 5, 27	Not applicable	☑	☑
D.1.30. Is information on the margins of errors and the cumulative error for the complete measurement system provided in the PDD?	1, 2, 5, 27	Not applicable	☑	☑
D.1.31. Is the inclusion of external accredited services providers for calibration and function tests foreseen in the planning of the project?	1, 2, 5, 27	Not applicable	☑	☑
D.1.32. Is the monitoring plan established appropriately as a result?	1, 2, 5, 27	Not applicable	☑	☑
D.2. Data and parameters not monitored				
D.2.1. Parameter Title: $EF_{FF,CO2,i}$ Emission factor for CO2 emission factor of the coal or petroleum fuel type that would be combusted in the absence of the project activity in the element process *i*	1, 2, 5, 21, 27, 34	Monitoring Checklist / Yes / No Title in line with methodology? No Data unit correctly expressed? No Appropriate description of parameter? No Source clearly referenced? No Correct value provided for estimation? No Has this value been verified? No Measurement method correctly described? No Correct reference to standards? No Indication of accuracy provided? No QA/QC procedures described? No	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Published PDD	Final PDD
		QA/QC procedures appropriate? — No See Corrective Action Request No.15 and Corrective Action Request No.16.		
D.2.2. Parameter Title: GWP_{CH4} Global Warming Potential of methane,	1, 2, 5, 21, 27, 34	Monitoring Checklist — Yes / No Title in line with methodology? — No Data unit correctly expressed? — No Appropriate description of parameter? — No Source clearly referenced? — No Correct value provided for estimation? — No Has this value been verified? — No Measurement method correctly described? — No Correct reference to standards? — No Indication of accuracy provided? — No QA/QC procedures described? — No QA/QC procedures appropriate? — No See Corrective Action Request No.15 and Corrective Action Request No.16	CAR	☑
D.2.3. Parameter Title: $NCV_{FF,i,}$ Average net calorific value of the coal or petroleum fuel that would be combusted in the absence of the project activity in the element process *i* during the year *y*	1, 2, 5, 21, 27, 34	Monitoring Checklist — Yes / No Title in line with methodology? — No Data unit correctly expressed? — No Appropriate description of parameter? — No Source clearly referenced? — No Correct value provided for estimation? — No Has this value been verified? — No Measurement method correctly described? — No	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
		Correct reference to standards? — No Indication of accuracy provided? — No QA/QC procedures described? — No QA/QC procedures appropriate? — No See Corrective Action Request No.15 and Corrective Action Request No.16.		
D.2.4. Parameter Title: $\varepsilon_{project,I,y}$ Energy efficiency of the element process I if fired with natural gas	1, 2, 5, 21, 27, 34	Monitoring Checklist — Yes / No Title in line with methodology? — No Data unit correctly expressed? — No Appropriate description of parameter? — No Source clearly referenced? — No Correct value provided for estimation? — No Has this value been verified? — No Measurement method correctly described? — No Correct reference to standards? — No Indication of accuracy provided? — No QA/QC procedures described? — No QA/QC procedures appropriate? — No See Corrective Action Request No.15 and Corrective Action Request No.16.	CAR	☑

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>Pub-lished PDD</th><th>Final PDD</th></tr>
<tr><td>D.2.5. Parameter Title: $\varepsilon_{baseline,i,y}$
Energy efficiency of the element process i if fired with coal or petroleum fuel</td><td>1, 2, 5, 21, 27, 34</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>No</td></tr><tr><td>Appropriate description of parameter?</td><td>No</td></tr><tr><td>Source clearly referenced?</td><td>No</td></tr><tr><td>Correct value provided for estimation?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>No</td></tr><tr><td>Correct reference to standards?</td><td>No</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/QC procedures described?</td><td>No</td></tr><tr><td>QA/QC procedures appropriate?</td><td>No</td></tr></table>
See Corrective Action Request No.15 and Corrective Action Request No.16.</td><td>CAR</td><td>☑</td></tr>
<tr><td colspan="5">D.3. Monitoring of the emissions in the <u>project</u> scenario and the <u>baseline</u> scenario:</td></tr>
<tr><td colspan="5">D.3.1. Data to be collected in order to monitor emissions from the <u>project</u> and how these data will be archived:</td></tr>
<tr><td>D.3.1.1. Is the list of parameters collected in order to monitor emissions from the project in chapter D.1.1. considered to be complete with regard to the requirements of the applied methodology?</td><td>1, 2, 5, 27</td><td>Yes, the list of parameters collected in order to monitor emissions from the project in chapter D.1.1. is complete with regard to the requirements of the applied methodology</td><td>☑</td><td>☑</td></tr>
<tr><td>D.3.1.2. Is the data provided in this section in consistency with data as presented in other chapters of the PDD?</td><td>1, 2, 5, 27</td><td>Yes, the data is consistent throughout the PDD.</td><td>☑</td><td>☑</td></tr>
<tr><td>D.3.1.3. Parameter Title: $EF_{CO2,NG,y}$
CO2 emission factor of the natural gas com-</td><td>1, 2, 5,</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr></table></td><td>CAR</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
busted in all element processes in the year *y*	21, 27, 34, 35	Title in line with methodology? No Data unit correctly expressed? Yes Appropriate description of parameter? No Source clearly referenced? Yes Correct value provided for estimation? No Has this value been verified? Yes Measurement method correctly described? Yes Correct reference to standards? Yes Indication of accuracy provided? No QA/QC procedures described? Yes QA/QC procedures appropriate? No See Corrective Action Request No.15, Corrective Action Request No.16 and Corrective Action Request No.17.		
D.3.1.4. Parameter Title: $NCV_{NG,y}$ Average net calorific value of the natural gas combusted during the year *y*	1, 2, 5, 21, 27, 34	Monitoring Checklist — Yes / No Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? No Source clearly referenced? Yes Correct value provided for estimation? No Has this value been verified? Yes Measurement method correctly described? Yes Correct reference to standards? Yes Indication of accuracy provided? No QA/QC procedures described? Yes QA/QC procedures appropriate? No See Corrective Action Request No.15 and Corrective Action Request No.16.	CAR	☑

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>Pub-lished PDD</th><th>Final PDD</th></tr>
<tr><td>D.3.1.5. Parameter Title: $FF_{project,NG1,y}$
Sales of natural gas in the industrial sector</td><td>1, 2, 5, 21, 27, 34</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>No</td></tr></table>See Corrective Action Request No.15</td><td>CAR</td><td>☑</td></tr>
<tr><td>D.3.1.6. Parameter Title: $FF_{project,NG2,y}$
Sales of natural gas in public and adminis-trative sector</td><td>1, 2, 5, 21, 27, 34</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>No</td></tr></table></td><td>CAR</td><td>☑</td></tr>
</table>

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>Published PDD</th><th>Final PDD</th></tr>
<tr><td></td><td></td><td>See Corrective Action Request No.15</td><td></td><td></td></tr>
<tr><td>D.3.1.7. Parameter Title: $FF_{project,NG3,y}$
Sales of natural gas in the residential sector</td><td>1, 2, 5, 21, 27, 34</td><td>
<table>
<tr><th>Monitoring Checklist</th><th>Yes / No</th></tr>
<tr><td>Title in line with methodology?</td><td>Yes</td></tr>
<tr><td>Data unit correctly expressed?</td><td>Yes</td></tr>
<tr><td>Appropriate description of parameter?</td><td>Yes</td></tr>
<tr><td>Source clearly referenced?</td><td>Yes</td></tr>
<tr><td>Correct value provided for estimation?</td><td>Yes</td></tr>
<tr><td>Has this value been verified?</td><td>Yes</td></tr>
<tr><td>Measurement method correctly described?</td><td>Yes</td></tr>
<tr><td>Correct reference to standards?</td><td>Yes</td></tr>
<tr><td>Indication of accuracy provided?</td><td>No</td></tr>
<tr><td>QA/QC procedures described?</td><td>Yes</td></tr>
<tr><td>QA/QC procedures appropriate?</td><td>No</td></tr>
</table>
See Corrective Action Request No.15</td><td>CAR</td><td>☑</td></tr>
<tr><td colspan="5">D.3.2. Description of formulae used to estimate <u>project</u> emissions (for each gas, source etc.; emissions in units of CO_2 equivalent</td></tr>
<tr><td colspan="5">JI specific approach only</td></tr>
<tr><td>D.3.2.1. Does the monitoring plan elaborate all algorithms and formulae used for the estimation/calculation of project emissions?</td><td>1, 2, 5, 27</td><td>Yes all algorithm and formulae used for the estimation/calculation of project emissions are presented in the PDD and deemed as appropriate.</td><td>☑</td><td>☑</td></tr>
<tr><td>D.3.2.2. Is the underlying rationale for the algorithms/formulae explained?</td><td>1, 2, 5, 27</td><td>Yes, the rationale is explained as based on the quantity of natural gas combusted in all element process i and respective net calorific values and CO_2 emission factors for natural gas ($EF_{NG,CO2}$).</td><td>☑</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
D.3.2.3. For the equations presented: - Are consistent variables, equation formats, subscripts etc. used? - Are all equations numbered? - Are all variables, with units indicated defined?	1, 2, 5, 27, 35	Variables, equation formats and units are consistent. **Corrective Action Request No.19.** Equations are not numbered as required by §36 letter f) point iii of DVM ver.1. PP shall address the inconsistency.	CAR	☑
D.3.2.4. Is the conservativeness of the algorithms/procedures justified?	1, 2, 5, 27	**Clarification Request No. 4.** Conservativeness is mentioned in PDD but not justified, PP should provide additional information on this topic.	CL	☑
D.3.2.5. To the extent possible, are methods to quantitatively account for uncertainty in key parameters included?	1, 2, 5, 27	See Corrective Action Request No.14	CAR	☑
D.3.2.6. Is it justified that the procedure is consistent with standard technical procedures in the sector?	1, 2, 5, 27	Yes, the procedure is consistent with standard technical procedures	☑	☑
D.3.2.7. Are implicit and explicit key assumptions explained in a transparent manner?	1, 2, 5, 27	Key assumptions are correctly explained in the PDD.	☑	☑
D.3.2.8. Is it clearly stated which assumptions and procedures have significant uncertainty associated with them, and how such uncertainty is to be addressed?	1, 2, 5, 27	See Corrective Action Request No.14 and Clarification Request No. 4	CAR CL	☑
Approved CDM methodology approach only				
D.3.2.9. Are the formulae required for the determination of project emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1, 2, 5, 27	Not applicable	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
D.3.2.10. Are the formulae required for the derivation of a moving average emission factor correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1, 2, 5, 27	Not applicable	☑	☑
D.3.2.11. Are the formulae required for the determination of leakage emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1, 2, 5, 27	Not applicable	☑	☑
D.3.3. **Relevant data necessary for determining the <u>baseline</u> of anthropogenic emissions of greenhouse gases by sources within the project boundary, and how such data will be collected and achieved:**				
D.3.3.1. Is the list of parameters monitored in chapter D.1.3. considered to be complete with regard to the requirements of the applied methodology?	1, 2, 5, 27	Yes, the list of parameters collected in order to monitor emissions from the project in chapter D.1.1.3. is complete with regard to the requirements of the applied methodology	☑	☑
D.3.3.2. Is the data provided in this section in consistency with data as presented in other chapters of the PDD?	1, 2, 5, 27, 35	**<u>Corrective Action Request No.20.</u>** Title of the parameters for determining the baseline are not consistent throughout the chapters of the PDD. PP shall address this inconsistency.	CAR	☑
D.3.3.3. Parameter Title: $FF_{project,HFOHFO\_ind,y}$ Final energy consumption of heavy fuel oil in the industry	1, 2, 5, 21, 27, 34, 35	<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>No</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table>	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
		Correct reference to standards? Yes Indication of accuracy provided? No QA/QC procedures described? No QA/QC procedures appropriate? No See Corrective Action Request No.15 and Corrective Action Request No.20		
D.3.3.4. Parameter Title: $FF_{project,gasoil\_ind,y}$ Final energy consumption of gas oil in the industry	1, 2, 5, 21, 27, 34, 35	Monitoring Checklist / Yes / No Title in line with methodology? No Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? Yes Correct value provided for estimation? Yes Has this value been verified? Yes Measurement method correctly described? Yes Correct reference to standards? Yes Indication of accuracy provided? No QA/QC procedures described? No QA/QC procedures appropriate? No See Corrective Action Request No.15 and Corrective Action Request No.20	CAR	☑
D.3.3.5. Parameter Title: $FF_{project,coal\_ind,y}$ Final energy consumption of coal in the industry	1, 2, 5, 21, 27, 34,	Monitoring Checklist / Yes / No Title in line with methodology? No Data unit correctly expressed? Yes	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
	35	Appropriate description of parameter? Yes Source clearly referenced? Yes Correct value provided for estimation? Yes Has this value been verified? Yes Measurement method correctly described? Yes Correct reference to standards? Yes Indication of accuracy provided? No QA/QC procedures described? No QA/QC procedures appropriate? No See Corrective Action Request No.15 and Corrective Action Request No.20		
D.3.3.6. Parameter Title: $FF_{project,LPG\_ind,y}$ Final energy consumption of LPG in the industry	1, 2, 5, 21, 27, 34, 35	Monitoring Checklist / Yes / No Title in line with methodology? No Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? Yes Correct value provided for estimation? Yes Has this value been verified? Yes Measurement method correctly described? Yes Correct reference to standards? Yes Indication of accuracy provided? No QA/QC procedures described? No QA/QC procedures appropriate? No See Corrective Action Request No.15 and Corrective Action Request No.20	CAR	☑

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>Pub-lished PDD</th><th>Final PDD</th></tr>
<tr><td>D.3.3.7. Parameter Title: $FF_{project,electricity\_ind,y}$
Final energy consumption of electricity in the industry</td><td>1, 2, 5, 21, 27, 34, 35</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/QC procedures described?</td><td>No</td></tr><tr><td>QA/QC procedures appropriate?</td><td>No</td></tr></table>
See Corrective Action Request No.15 and Corrective Action Request No.20</td><td>CAR</td><td>☑</td></tr>
<tr><td>D.3.3.8. Parameter Title: $FF_{project,HFO\_public,y}$
Final energy consumption of heavy fuel oil in the public and administrative sector</td><td>1, 2, 5, 21, 27, 34, 35</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>No</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/QC procedures described?</td><td>No</td></tr></table></td><td>CAR</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
		QA/QC procedures appropriate? — No See Corrective Action Request No.15 and Corrective Action Request No.20		
D.3.3.9. Parameter Title: $FF_{project,gasoil\_public,y}$ Final energy consumption of gasoil in the public and administrative sector	1, 2, 5, 21, 27, 34, 35	Monitoring Checklist — Yes / No Title in line with methodology? — No Data unit correctly expressed? — Yes Appropriate description of parameter? — Yes Source clearly referenced? — Yes Correct value provided for estimation? — Yes Has this value been verified? — Yes Measurement method correctly described? — Yes Correct reference to standards? — Yes Indication of accuracy provided? — No QA/QC procedures described? — No QA/QC procedures appropriate? — No See Corrective Action Request No.15 and Corrective Action Request No.20	CAR	☑
D.3.3.10. Parameter Title: $FF_{project,coal\_public,y}$ Final energy consumption of coal in the public and administrative sector	1, 2, 5, 21, 27, 34, 35	Monitoring Checklist — Yes / No Title in line with methodology? — No Data unit correctly expressed? — Yes Appropriate description of parameter? — Yes Source clearly referenced? — Yes Correct value provided for estimation? — Yes	CAR	☑

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>Pub-lished PDD</th><th>Final PDD</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td>Has this value been verified?</td><td>Yes</td></tr>
<tr><td>Measurement method correctly described?</td><td>Yes</td></tr>
<tr><td>Correct reference to standards?</td><td>Yes</td></tr>
<tr><td>Indication of accuracy provided?</td><td>No</td></tr>
<tr><td>QA/QC procedures described?</td><td>No</td></tr>
<tr><td>QA/QC procedures appropriate?</td><td>No</td></tr>
</table>

See Corrective Action Request No.15 and Corrective Action Request No.20</td><td></td><td></td></tr>
<tr><td>D.3.3.11. Parameter Title: $FF_{project,biomass\_public,y}$
Final energy consumption of biomass in the public and administrative sector</td><td>1, 2, 5, 21, 27, 34, 35</td><td>
<table>
<tr><th>Monitoring Checklist</th><th>Yes / No</th></tr>
<tr><td>Title in line with methodology?</td><td>No</td></tr>
<tr><td>Data unit correctly expressed?</td><td>Yes</td></tr>
<tr><td>Appropriate description of parameter?</td><td>Yes</td></tr>
<tr><td>Source clearly referenced?</td><td>Yes</td></tr>
<tr><td>Correct value provided for estimation?</td><td>Yes</td></tr>
<tr><td>Has this value been verified?</td><td>Yes</td></tr>
<tr><td>Measurement method correctly described?</td><td>Yes</td></tr>
<tr><td>Correct reference to standards?</td><td>Yes</td></tr>
<tr><td>Indication of accuracy provided?</td><td>No</td></tr>
<tr><td>QA/QC procedures described?</td><td>No</td></tr>
<tr><td>QA/QC procedures appropriate?</td><td>No</td></tr>
</table>

See Corrective Action Request No.15 and Corrective Action Request No.20</td><td>CAR</td><td>☑</td></tr>
</table>

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>Pub-lished PDD</th><th>Final PDD</th></tr>
<tr><td>D.3.3.12. Parameter Title: $FF_{project,LPG\_public,y}$
Final energy consumption of LPG in the public and administrative sector</td><td>1, 2, 5, 21, 27, 34, 35</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/QC procedures described?</td><td>No</td></tr><tr><td>QA/QC procedures appropriate?</td><td>No</td></tr></table>
See Corrective Action Request No.15 and Corrective Action Request No.20</td><td>CAR</td><td>☑</td></tr>
<tr><td>D.3.3.13. Parameter Title: $FF_{project,electricity\_public,y}$
Final energy consumption of electricity in the public and administrative sector</td><td>1, 2, 5, 21, 27, 34, 35</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/QC procedures described?</td><td>No</td></tr></table></td><td>CAR</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
		QA/QC procedures appropriate? — No See Corrective Action Request No.15 and Corrective Action Request No.20		
D.3.3.14. Parameter Title: $FF_{project,HFO\_res,y}$ Final energy consumption of heavy fuel oil in the residential sector	1, 2, 5, 21, 27, 34, 35	Monitoring Checklist — Yes / No Title in line with methodology? — No Data unit correctly expressed? — Yes Appropriate description of parameter? — No Source clearly referenced? — Yes Correct value provided for estimation? — Yes Has this value been verified? — Yes Measurement method correctly described? — Yes Correct reference to standards? — Yes Indication of accuracy provided? — No QA/QC procedures described? — No QA/QC procedures appropriate? — No See Corrective Action Request No.15 and Corrective Action Request No.20	CAR	☑
D.3.3.15. Parameter Title: $FF_{project,gasoil\_res,y}$ Final energy consumption of gasoil in the residential sector	1, 2, 5, 21, 27, 34, 35	Monitoring Checklist — Yes / No Title in line with methodology? — No Data unit correctly expressed? — Yes Appropriate description of parameter? — Yes Source clearly referenced? — Yes Correct value provided for estimation? — Yes	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
		Has this value been verified? Yes Measurement method correctly described? Yes Correct reference to standards? Yes Indication of accuracy provided? No QA/QC procedures described? No QA/QC procedures appropriate? No See Corrective Action Request No.15 and Corrective Action Request No.20		
D.3.3.16. Parameter Title: $FF_{project,coal\_res,y}$ Final energy consumption of coal in the residential sector	1, 2, 5, 21, 27, 34, 35	Monitoring Checklist / Yes / No Title in line with methodology? No Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? Yes Correct value provided for estimation? Yes Has this value been verified? Yes Measurement method correctly described? Yes Correct reference to standards? Yes Indication of accuracy provided? No QA/QC procedures described? No QA/QC procedures appropriate? No See Corrective Action Request No.15 and Corrective Action Request No.20	CAR	☑

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>Pub-lished PDD</th><th>Final PDD</th></tr>
<tr><td>D.3.3.17. Parameter Title: $FF_{project,biomass\_res,y}$
Final energy consumption of biomass in the residential sector</td><td>1, 2, 5, 21, 27, 34, 35</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/QC procedures described?</td><td>No</td></tr><tr><td>QA/QC procedures appropriate?</td><td>No</td></tr></table>See Corrective Action Request No.15 and Corrective Action Request No.20</td><td>CAR</td><td>☑</td></tr>
<tr><td>D.3.3.18. Parameter Title: $FF_{project,LPG\_res,y}$
Final energy consumption of LPG in the residential sector</td><td>1, 2, 5, 21, 27, 34, 35</td><td><table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/QC procedures described?</td><td>No</td></tr></table></td><td>CAR</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
		QA/QC procedures appropriate? — No See Corrective Action Request No.15 and Corrective Action Request No.20		
D.3.3.19. Parameter Title: $FF_{project,electricity\_res,y}$ Final energy consumption of electricity in the residential sector	1, 2, 5, 21, 27, 34, 35	Monitoring Checklist — Yes / No Title in line with methodology? — No Data unit correctly expressed? — Yes Appropriate description of parameter? — Yes Source clearly referenced? — Yes Correct value provided for estimation? — Yes Has this value been verified? — Yes Measurement method correctly described? — Yes Correct reference to standards? — Yes Indication of accuracy provided? — No QA/QC procedures described? — No QA/QC procedures appropriate? — No See Corrective Action Request No.15 and Corrective Action Request No.20	CAR	☑
D.3.4. **Description of formulae used to estimate <u>baseline</u> emissions (for each gas, source etc.; emissions in units of CO_2 equivalent)**				
JI specific approach only				
D.3.4.1. Does the monitoring plan elaborate all algorithms and formulae used for the estimation/calculation of baseline emissions?	1, 2, 5, 27	Yes all algorithm and formulae used for the estimation/calculation of project emissions are presented in the PDD and deemed as appropriate.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Published PDD	Final PDD
D.3.4.2. Is the underlying rationale for the algorithms/formulae explained?	1, 2, 5, 27	Yes, the rationale is explained as the burning of solid and liquid fuels in the combustion installation in the industrial, public and administrative, and residential sectors, and the emissions from electricity that could be replaced by natural gas.	☑	☑
D.3.4.3. For the equations presented: - Are consistent variables, equation formats, subscripts etc. used? - Are all equations numbered? - Are all variables, with units indicated defined?	1, 2, 5, 27, 35	Variables, equation formats and units are consistent. See Corrective Action Request No.19	CAR	☑
D.3.4.4. Is the conservativeness of the algorithms/procedures justified?	1, 2, 5, 27	Conservativeness is mentioned in PDD but not justified. See Clarification Request No. 4	CL	☑
D.3.4.5. To the extent possible, are methods to quantitatively account for uncertainty in key parameters included?	1, 2, 5, 27	See Corrective Action Request No.14	CAR	☑
D.3.4.6. Is it justified that the procedure is consistent with standard technical procedures in the sector?	1, 2, 5, 27	Yes, the procedure is consistent with standard technical procedures	☑	☑
D.3.4.7. Are implicit and explicit key assumptions explained in a transparent manner?	1, 2, 5, 27	Key assumptions are correctly explained in the PDD.	☑	☑
D.3.4.8. Is it clearly stated which assumptions and procedures have significant uncertainty associated with them, and how such uncertainty is to be addressed?	1, 2, 5, 27	See Corrective Action Request No.14 and Clarification Request No. 4	CAR CL	☑
D.3.4.9. Is consistency between the elaboration of the baseline scenario and the procedure for calculating the emissions of the baseline en-	1, 2, 5, 27	The procedure is consistent with the respective explanations in the section B.1.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
sured?				
Approved CDM methodology approach only				
D.3.4.10. Is consistency between the elaboration of the baseline scenario and the procedure for calculating the emissions of the baseline ensured?	1, 2, 5, 27	Not applicable	☑	☑
D.3.4.11. Are the formulae required for the determination of baseline emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1, 2, 5, 27	Not applicable	☑	☑
D.3.5. **Estimated Leakage**				
D.3.5.1. Does the PDD appropriately describe an assessment of the potential leakage of the project and appropriately explain which sources of leakage are to be calculated and which can be neglected?	1, 2, 5, 20, 27, 35	In PDD the following potential leakeage emissions have been identified, according also to ACM0009 ver. 3.2 methodology (updated to version 4.0.0): - Fugitive CH_4 emissions associated with fuel extraction, processing, liquefaction, transportation, re-gasification and distribution of natural gas used in the project plant and fossil fuels used in the grid in the absence of the project activity; - In the case LNG is used in the project plant: CO_2 emissions from fuel combustion/electricity consumption associated with the liquefaction, transportation, regasification and compression into a natural gas transmission or distribution system. LNG is not used in the project activity, hence those emissions are not considered. Fugitive CH_4 emissions are considered negligible due to the use of pipelines without dismountable joints. Parameters monitored for leakage are: Quantity of purchased natural gas; Quantity of sold natural gas; Natural gas leakages resulting from gas distribution network failures.	CL	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
		Clarification Request No. 5. If leakage emissions are considered negligible it should be clarified how the monitored parameters are considered in terms of emissions calculations.		
D.3.5.2. Does the PDD provide a procedure for an ex ante estimate of leakage?	1, 2, 5, 27	As leakage is considered negligible, no ex ante estimate is considered in the PDD.	☑	☑
D.3.5.3. Are the formulae required for the determination of leakage emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1, 2, 5, 20, 27, 35	As leakage is considered negligible, no formula is considered in the PDD. See Clarification Request No. 5	CL	☑
D.3.5.4. Only if approved CDM methodology is used: Are the leakage and the procedure for its estimation defined in accordance with the approved CDM methodology?	1, 2, 5, 27	Not applicable.	☑	☑
E. **Estimation of greenhouse gas emission reductions**				
E.1. Estimation of emission reductions based on assessment of the baseline and project emission / direct assessment of emission reductions				
E.1.1. Does the PDD indicate which of the following approaches it chooses? a) Assessment of emissions in the baseline scenario and in the project scenario? b) Direct assessment of emission reductions	1, 2, 5, 27	**Corrective Action Request No.21.** According to §42 of DVM ver.1 an explanation of the approach is to be provided. PP has to address this issue in the PDD.	CAR	☑
E.1.2. Does the PDD provide ex ante estimates of - Project and baseline emissions (for a) /	1, 2, 5, 27	The ex ante estimation of project and baseline emissions is included in the section E of the PDD. Leakage is excluded as negligible.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
emission reductions (in case of direct assessment b)? - Leakage, as applicable? - Emission reductions adjusted by leakage (for a)?				
E.1.3. Are the estimates given - On a periodic basis? - At least from the beginning until the end of the crediting period? - On a source-by-source basis? - In tones of CO2 equivalent using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol?	1, 2, 5, 27	The estimates are given - on annual basis - for the crediting period 2008-2012, for the crediting period 2013-2020 and total - for each sector - In tones of CO_2 equivalent using global warming potentials defined by decision 2/CP.3	☑	☑
E.1.4. Are key factors influencing the baseline emissions and the activity level of the project and the emissions (e.g. those listed in § 23 (b) (i)-(vii) of the DVM) as well as risks associated with the project taken into account, as appropriate?	1, 2, 5, 27	Yes, key factors influencing the baseline emissions and the activity level of the project and the emissions as well as risks associated with the project taken into account, can be considered as appropriate	☑	☑
E.1.5. Are data sources used for calculating the estimates clearly identified, reliable and transparent?	1, 2, 5, 27	Data sources of the estimates were the official documents published for the international tender for the gasification of the Zapad region.	☑	☑
E.1.6. Are emissions factors (incl. default emission factors) used for calculating the estimates selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice?	1, 2, 5, 27	See Corrective Action Request No.16	CAR	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
E.1.7. Is the estimation based on conservative assumptions and the most plausible scenarios in a transparent manner?	1, 2, 5, 27	Conservativeness is mentioned in PDD but not justified. See Clarification Request No. 4	CL	☑
E.1.8. Are the estimates of project emissions, baseline emissions and leakage consistent throughout the PDD?	1, 2, 5, 27	Yes, the values are consistent in the PDD and calculation files.	☑	☑
E.1.9. Are the estimates of project emissions, baseline emissions and leakage transparent, feasible and mathematically correct calculated?	1, 2, 5, 27	Yes, calculation have been preformed correctly in the excel calculation files.	☑	☑
E.1.10. If the calculation of the baseline emission is to be performed ex post, does the PDD include an illustrative ex ante emissions calculation?	1, 2, 5, 27	PDD includes an illustrative ex ante emissions calculation.	☑	☑
E.1.11. Is the projection of estimated project emissions, baseline emissions and leakage based on the same procedures as used for future monitoring?	1, 2, 5, 27	See Corrective Action Request No.21	CAR	☑
E.1.12. Does the PDD appropriately describe an assessment of the potential leakage of the project and appropriately explain which sources of leakage are to be calculated and which can be neglected?	1, 2, 5, 20, 27, 35	PDD describes an assessment of the potential leakage. See Clarification Request No. 5	CL	☑
E.1.13. Only if approved CDM methodology approach is used, is the estimation of ERs made in accordance with the approved CDM methodology?	1, 2, 5, 27	Not applicable	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Published PDD	Final PDD
E.1.14. Are the formulae required for the determination of emission reductions correctly presented?	1, 2, 5, 27, 35	**Corrective Action Request No.22.** According §42 letter b) of the DVM ver.1 the formulae required for baseline/project emissions, leakage and emission reductions estimation are to be included and explained.	CAR	☑
E.1.15. Will the project result in fewer GHG emissions than the baseline scenario?	1, 2, 5, 27	Yes, project results in fewer emissions that the baseline scenario.	☑	☑
E.1.16. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	1, 2, 5, 27	The projection is in line with the indicated crediting period.	☑	☑
E.1.17. Is the form/table required for the indication of projected emission reductions correctly applied?	1, 2, 5, 27	The indication of projected emission reductions presented in the correct tabular format.	☑	☑
F. Environmental impacts				
F.1. Documentation on the analysis of the environmental impacts, including transboundary impacts				
F.1.1. Does the PDD list and attach documentation on the analysis of the environmental impacts (e.g. EIA) of the project, including transboundary impacts, in accordance with procedure as determined by the host Party?	1, 2, 5, 23, 27	Since the license for the project activity was granted by the Government and given the limited project related environmental and social impacts, PP was not required to conduct an Environmental Impact Assessment (EIA). Annex 6 of the PDD includes an Environmental and Emissions Study in Zapad Region which summarize the environmental impacts of the project activity. **Corrective Action Request No.23.** The documentation is on Rilagas paper but it is mentioned as prepared by independent experts. This inconsistency shall be addressed.	CAR	☑
F.1.2. Are the respective host Party requirements for an Environmental Impact Assessment (EIA)	1, 2, 5,	No, EIA is required for the project. Applications to the Regional Inspectorate of Environment and	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
clearly referenced in the PDD?	23, 27	Water (RIEW), for decision on the necessity of environmental impact assessment (EIA) of the investment proposals covering the territories with which the project construction starts should be presented only in cases where project insist on Natura 2000 territories. No similar case has happened and are not expected in the future.		
F.1.3. Has the EIA conducted been approved by the host Party?	1, 2, 5, 23, 27	No, EIA is required for the project activity.	☑	☑
F.1.4. If the EIA indicates that the environmental impacts are considered significant by the project participants or/and the host party, does the PDD provide conclusion and all references to supporting documentation of an EIA undertaken in accordance with the procedures as required by the host Party?	1, 2, 5, 23, 27	No, EIA is required for the project activity.	☑	☑
G. Stakeholders' comments				
G.1. Brief description how comments by <u>local</u> stakeholders have been invited and compiled				
G.1.1. Have relevant stakeholders been consulted?	1, 2, 5, 26, 27	Although stakeholder consultation is not mandatory for the current project according to Bulgarian law, the PPs voluntary conducted consultation. The following documents were reviewed on site: - invitation letters to the stakeholder meetings and relevant evidences of the media involvement to consult the stakeholders. - minutes of the meetings	☑	☑
G.1.2. Have appropriate media been used to invite comments by local stakeholders?	1, 2, 5,	Yes, newspapers (local and national), web and TV were the media used.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
	26, 27			
G.1.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	1, 2, 5, 26, 27	A consultation process is not required by national regulation/laws for the specific project.	☑	☑
G.2. Summary of the comments received				
G.2.1. If stakeholder consultation was undertaken in accordance with procedure as required by the host Party, does the PDD provide: (a) A list of stakeholders from whom comments on the projects have been received, if any? (b) The nature of the comments? (c) A description on whether and how the comments have been addressed?	1, 2, 5, 26, 27	See the issue in G 1.1. above.	☑	☑
G.3. Report on how due account was taken of any comments received				
G.3.1. Has due account been taken of any stakeholder comments received?	1, 2, 5, 26, 27	No comments were received. This was confirmed during onsite mission.	☑	☑
G.3.2. If the AIE received comments on the PDD and any supporting information from Parties, stakeholders and UNFCCC accredited observers within the 30-day period, did the AIE promptly acknowledge the receipts of the	1, 2, 5, 27	No comments were received during GSP.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
comments?				
H. Annexes 1 – 3				
H.1. Annex 1: Contact Information				
H.1.1. Is the information provided consistent with the one given under section A.3?	1, 2, 5, 27	Yes, the information provided is consistent with the one given under section A.3.	☑	☑
H.1.2. Is the information on all private participants and directly involved Parties presented?	1, 2, 5, 27	Yes, the information on all private participants and directly involved Parties is presented.	☑	☑
H.2. Annex 2: Baseline information				
H.2.1. Does Annex 2 of the PDD provide key elements of the baseline and any supporting documentation/information?	1, 2, 5, 27	Annex 2 of the PDD contains key elements of the baseline both in text and in tabular form.	☑	☑
H.2.2. If additional background information on baseline data is provided: Is this information consistent with data presented by other sections of the PDD?	1, 2, 5, 27	After making necessary corrections in the section B.2., the Annex 2 will be adjusted accordingly.	☑	☑
H.2.3. Is the data provided verifiable? Has sufficient evidence been provided to the validation team?	1, 2, 5, 27	After making necessary corrections in the section B.2., the Annex 2 will be adjusted accordingly	☑	☑
H.3. Annex 3: Monitoring information				
H.3.1. If applicable: Does Annex 3 provide useful information enabling a better understanding of the envisioned monitoring provisions?	1, 2, 5, 27	A description of metering system, reduction stations and gas odorization system is provided in Annex 3. Moreover, fuel switch emission reduction factor (FSERF) values by sectors are shown in a table.	☑	☑
H.3.2. If additional background information on monitoring is provided: Is this information con-	1, 2, 5, 27	Yes, the information provided is consistent with the other sections of the PDD.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	Pub-lished PDD	Final PDD
sistent with data presented in other sections of the PDD?				
H.3.3. Is the information provided verifiable? Has sufficient evidence been provided to the validation team?	1, 2, 5, 27	Fuel switch emission reduction factor calculation has been pre-sented and discussed on site.	☑	☑
H.3.4. Do the additional information and / or documented procedures substantiate / support statements given in other sections of the PDD?	1, 2, 5, 27	Yes, they provide additional useful information on the monitoring system in place.	☑	☑

Table 2 Resolution of Corrective Action and Clarification Requests

Corrective Action Requests by audit team			
	Comments and Results	Ref	Conclusion and IRL
Issue	**Corrective Action Request No.1.** The date of the document and Revision history of the PDD must be indicated in the section A.1. of the PDD as per GUIDELINES FOR USERS OF THE JOINT IMPLEMENTATION PROJECT DESIGN DOCUMENT FORM, version 04. In the PDD version 01 only month and year of completion is stated.	A.1.3	Closed IRL 27
Response	The date of the document 22/10/2012 (Version 02) and the revision history of the PDD have been included in section A.1 of the PDD.		
Assessment	The date and version of the PDD and the revision history of the same has been added in the PDD and the document is now compliant with the guidelines and can be accepted by the audit team		
Issue	**Corrective Action Request No.2.** PDD format: the project's history, including decision and starting date shall be added.	A.1.4	Closed IRL 27, 16, 12, 13
Response	The project's history, including the date of investment decision (06/12/2005) and the starting date of the project (03/10/2006) has been added in section A.2 of the PDD. The first corresponds with the decision to participate the Tender (creation of a Joint Venture between Acegas-Aps S.p.A and Costruzione Dondi S.p.A). The starting date of the project is the date when licenses for gas distribution and gas supply were awarded by the State Regulatory Energy and Water Commission.		
Assessment	The PDD clearly states the project's history. Date of investment decision and Starting date of the project have been added. Such dates have been evidenced with relevant documents and crosschecked during the on site visit via interviews with interested parties.		
Issue	**Corrective Action Request No.3.** • The boundary and dates of the project shall be clearly identified as inconsistencies have been found with official tender, license and project documents.	A.2.1 A.2.3	Closed IRL 27, 12,

	• The time schedule of the project presented in the PDD includes activities that are not specific for the project activity. The time schedule shall be detailed on the project boundary. • Municipality of Pernik is included in another JI project: Pernik District Heating project. It should be clarified how „double counting“ can be avoided as both projects might focus on the same target groups.	A.4.1.2 B.4.6	13, 14, 25
Response	• The boundary of the proposed project activity includes the following 22 Municipalities according to the Tender for the project activity (year 2005): Pernik, Vratza, Ihtiman, Radomir, Dupnitsa, Blagoevgrad, Sandanski, Roman, , Simitli, Kostenets, Dolna Banya, Sapareva Banya, Etropole, Boychinovtsi, Strumiani, Boboshevo, Nevestino, Kocherinovo, Krivodol, Gorna Malina, Bobov dol, Kresna. The date for the natural gas supply to the end-users of the three sectors has been updated to year 2006. • The time schedule of the project has been detailed on the project boundary. The time schedule is divided in four phases which cover all the 22 Municipalities. • As the Rilagas' clients in Pernik are not connected to the District Heating system, the "double counting" is not envisaged.		
Assessment	The revision of the PDD includes all 22 municipalities involved in the tender and the following concessions to Rilagas EAD. The inconsistencies addressed have been solved and the time schedule of the project has been updated specifying the delays in the project. All information provided have been clarified during the on site visit and relevant evidences have been provided to AIE. The risk of double counting in Pernik due to the Distric Heating project is not envisaged and it was verified on site that the potential clients of the gas distribution system are not connected to the District Heating.		
Issue	**Corrective Action Request No.4.** PDD and the contracts for sale of natural gas by RilaGas EAD to the clients shall be adjusted accordingly.	A.4.3.4	Closed IRL 27, 32, 33
Response	In Section A.3 of the PDD it is shown the paragraph 5 included in the article 8 of the General Terms for the contracts for sale of natural gas by RilaGas EAD, where it is stated that "User hereby agrees and accepts to waive any rights on the reduced greenhouse gas emissions (CO_2 for example) generated by the user due to the utilization of the methane supplied by the Seller / RilaGas. The said reduced emissions generated by the User are part of the total		

	volume of generated emissions of greenhouse gases generated during the entire process of gasification as the Distributor / RilaGas is the investor and has practically implemented a project for reduction of the greenhouse gas emissions on the entire territory of West Region according to mechanism of the Kyoto Protocol and in compliance with the license granted for the sale and distribution of methane". The General Terms for the contracts for sale of natural gas by RilaGas EAD including paragraph 5 (art. 8) has been approved by the Board of Directors of RilaGas on 08/10/2012.		
Assessment	General Terms for Contracts have been modified by PP and are now compliant with the actual situation. The document has been approved by the Board of Directors of Rilagas and the evidence has been reviewed by the AIE and found consistent.		
Issue	**Corrective Action Request No.5.** Inconsistency: it was identified an inconsistency regarding the exact location of the project; the coordinates of each municipality shall be included. PP shall address this inconsistency.	A.4.1.1	Closed IRL 27, 14
Response	The coordinates of each municipality involved in the project have been included in Section A.4.1 of the PDD.		
Assessment	Exact location of each municipality has been included in the PDD in Table A.3. The coordinates has been crosschecked by the auditor using Google maps and the same were found consistent.		
Issue	**Corrective Action Request No.6.** Information on how GHG emission reductions will be achieved due to the implementation of the project technology are not clearly stated in the PDD. PP should address this issue.	A.4.2.2	Closed IRL 27
Response	It has been added in Section A.4.2 that "the implementation of the project technology will imply a strong impact on GHG emission reductions, thanks to the low emission factor of natural gas and to the efficiency of the gas fired equipment, in the substitution of other fossil fuels and of electricity".		
Assessment	The information on on how GHG emission reductions will be achieved has been included and the corrective action has been positively addressed by the PP and accepted by the AIE.		
Issue	**Corrective Action Request No.7.** The date of the document must be indicated in the section B.4. of the PDD as per GUIDELINES FOR USERS OF THE JOINT IMPLEMENTATION PROJECT DESIGN DOCUMENT FORM, version 04. In the PDD version 01 only month and year of completion is stated.	B.1.6 B.5.2	Closed IRL 27

Response	In Section B.4 the date of baseline setting has been updated according to GUIDELINES FOR USERS OF THE JOINT IMPLEMENTATION PROJECT DESIGN DOCUMENT FORM, version 04. The date is 02/07/2012		
Assessment	The date has been corrected and now it is consistent with the guidelines and with the time-line of the PDD. The issue has been correctly addressed by the PP.		
Issue	As per GUIDELINES FOR USERS OF THE JOINT IMPLEMENTATION PROJECT DESIGN DOCUMENT FORM, version 04 the PDD in this section has to include contact information of the persons(s)/entity(ies) responsible for the application of the baseline and monitoring methodology to the project activity and indicate if the person/entity is also a project participant listed in Annex 1. This information is not available in the GSP-PDD. **Corrective Action Request No.8.** Baseline: information in chapter B.4 of the PDD are not fully consistent with specified requirements. PP shall clarify the inconsistency.	B.1.9	Closed IRL 27, 31
Response	According to GUIDELINES FOR USERS OF THE JOINT IMPLEMENTATION PROJECT DESIGN DOCUMENT FORM, version 04, contact information of the persons(s)/entity(ies) responsible for the application of the baseline and monitoring methodology to the project activity has been added (RilaGas EAD) and it has been specified that RilaGas EAD is also a project participant listed in Annex 1.		
Assessment	Information included in the PDD are consistent with the guidelines and with the evidences retrieved during the on site visit. The issue has been correctly addressed by the PP.		
Issue	**Corrective Action Request No.9.** The PP has not addressed properly in the PDD the reasons of the applicability of the chosen approach for the demonstration of the additionality.	B.3.2 B.3.1	Closed IRL 27, 9
Response	With reference to the “Guidance on Criteria for Baseline Setting and Monitoring”, Version 03, Annex 1- A. Additionality, point 44, the project proponent, having identified a baseline, for the demonstration of additionality selected the approach (b): “provision of traceable and transparent information showing that the same approach for additionality demonstration has already been taken in cases for which determination is deemed final and which can be regarded as comparable, using the criteria outlined for baseline determination in paragraph 12”. In fact, the same approach was already used in a comparable JI project for which determination is deemed final. As comparable JI project, the “Reduction of greenhouse gases by		

	gasification of Burgas Municipality" project design document (Project ID: BG1000209), version 08, November 2007 has been considered. The two projects can be considered comparable as demonstrated in Section B.1 (point B.1.3) of the PDD.		
Assessment	The PP clarified the approach chosen for the demonstration of the additionality. They are using the JI specific approach and they are using the approach already applied in the Bulgarian JI project the "Reduction of greenhouse gases by gasification of Burgas Municipality" (Project ID: BG1000209). It was assessed by the AIE that the chosen approach is suitable for this project and the project chosen respects the criteria for comparability of the JI projects as set in the "Guidance on Criteria for Baseline Setting and Monitoring", Version 03		
Issue	**Corrective Action Request No.10.** The Tool for the demonstration and assessment of additionality (version 6) has not been correctly applied in the PDD. PP shall address this inconsistency.	B.3.3 B.3.1	Closed IRL 27, 9
Response	Since the approach (b) for the demonstration of additionality has been chosen, the Tool for the demonstration and assessment of additionality (version 6) has not been used in the PDD.		
Assessment	The PP clarified that they are using the JI specific approach based on the similar JI project "Reduction of greenhouse gases by gasification of Burgas Municipality" (Project ID: BG1000209), hence it is correct and can be accepted by the AIE not to apply the Tool for the demonstration and assessment of additionality (version 6)		
Issue	**Corrective Action Request No.11.** 1. As per Guidelines on the Assessment of Investment Analysis version 05, paragraph 6, PP shall evidence all input values used for the investment analysis to be valid and applicable at the time of the investment decision, in particular Investment cost calculation, O&M cost, price, investment cost, income tax, depreciation rate etc. 2. Decision date is not clearly presented in PDD 3. IRR sheet includes some investment costs and Industial production from other cities than the 7 who is in the JI project boundaries. This inconsistency should be addressed. 4. In the IRR sheet there is a discount rate and a WACC calculation, which are different to the chosen benchmark in the PDD. The inconsistency should be addressed 5. In B2. Additionality, Step 1 is written that the end users also make investments. The end users generate the GHG reductions, but it is not clearly addressed in the Project	B.3.9	Closed IRL 27, 29, 16, 17, 19

	6. Sensitivity analysis made only for annual natural gas consumptions by sectors. The sensitivity of Investment costs and total consumptions to be presented as their impact as more than 20%.		
Response	1. The input values used for the investment analysis to be valid and applicable at the time of the investment decision, have been included in Table B.4, (Assumptions for financial analysis), Section B.2 of the PDD. In particular, investment cost, equity, debt, O&M cost, interest rate, tax rate, depreciation rate, fair value, unit costs, cost of natural gas purchased and prices of natural gas sales to industrial, public and residential sectors have been included; 2. The date of investment decision has been presented (06/12/2005); 3. IRR sheet includes the investment cost and the industrial production of the 22 Municipalities which are included in the project boundary; 4. Since a benchmark analysis has been chosen and this analysis has been carried out considering the internal rate of return (IRR) as financial indicator, the discount rate and the WACC calculation are not considered and they have been deleted from the IRR sheet; 5. In Section A.3 of the PDD has been pointed out that the end-users involved in the project generate the greenhouse gases (GHG) emission reductions through the new gas fired equipment. It has been also pointed out that they waive any rights on GHG emission reductions as shown in the General Terms for the contracts for sale of natural gas by Rilagas EAD; 6. Sensitivity analysis has been done on the Investment costs and on the total natural gas consumptions (industrial, public and residential sectors) as shown in Section B.2. As shown in Table B.6 and in Figure B.2, for each of these parameters, the probability for the IRR of overtaking the 10% IRR benchmark value could occur in the following scenarios: • the overall natural gas consumptions should increase by 5% (and 10%); • the investment cost should decrease by 10%. It can be easily shown that these scenarios are not realistic. In fact, the overall natural gas consumptions cannot increase by 5% (and 10%) since currently the gas consumptions are by far lower if compared to the consumptions expected at the time of the investment deci-		

	sion. In fact, as regards year 2012, the current forecasts for gas consumptions are about 10 MSm^3, whereas the expected forecasts at the time of the investment decision were about 123 MSm^3. The investment cost cannot decrease by 10% since, currently, this cost has increased by more than 70% due to external contingencies (i.e.: the cost of raw materials) if compared to the cost at the time of the investment decision. Therefore, the sensitivity analysis shows that the project activity is not feasible without JI revenues and then the support of ERUs is fundamental for the project.		
Assessment	1. The PP clarified that they are using the JI specific approach based on the similar JI project "Reduction of greenhouse gases by gasification of Burgas Municipality" (Project ID: BG1000209). The benchmark used in the project is more conservative than the referenced JI project. All the input values are valid and applicable at the time of the investment decision (06/12/2005). In the Business plan as of 01/12/2005 all input values are sourced and can be confirmed as plausible based on our country expertise and cross check with the referenced project. 2. The decision date is as per Board decision to create a Joint Venture between Acegas and Costruzioni Dondi SpA to participate in a tender for gasification of Zapad region (IRL 16) 3. The boundaries of the project has been changed and 22 Municipalities which are included in the project boundary, hence the Investment costs in IRR calculation are in line in regard to the cities included. 4. The inconsistency related to the discount rate is corrected. 5. The PDD refer to the General Terms for the contracts for sale of natural gas by Rilagas EAD and the involvement of the end users. 6. Sensitivity analysis is done for all parameters as requested. It is not realistic that the IRR will cross the benchmark, because the real Investments are higher than the planned and the real sales are lower than the forecasted in the IRR at the time of the investment decision (IRL 19; IRL 29).		
Issue	**Corrective Action Request No.12.** The crediting period must be indicated in the section C.3. of the PDD as per GUIDELINES FOR USERS OF THE JOINT IMPLEMENTATION PROJECT DESIGN DOCUMENT FORM,	C.3.1	Closed IRL 27

	version 04.		
Response	According to the GUIDELINES FOR USERS OF THE JOINT IMPLEMENTATION PROJECT DESIGN DOCUMENT FORM, version 04, the length of the crediting period and the starting date have been presented as follows in Section C.3: • five years and 0 months; • the starting date of the crediting period is 01/01/2008.		
Assessment	PDD has been updated with indication of the crediting period according to the Guidelines. The issue has been addressed properly by the PP.		
Issue	**Corrective Action Request No.13.** It is not clearly indicated in the PDD which approach is used for the monitoring plan as required by §35 of DVM	D.1.1	Closed IRL 27
Response	In Section D.1 the project proponent clarified that the JI specific approach has been chosen for the monitoring plan, according to the "Guidance on Criteria for Baseline Setting and Monitoring", Version 03.		
Assessment	According to DVM §35 the PP specified in the PDD that the JI specific approach has been used and it was assessed by the AIE that the approach has been correctly implemented.		
Issue	**Corrective Action Request No.14.** According to §36 letter f) point vii of DVM ver. 1 uncertainty of key parameters shall be provided in the PDD together with information on national or international monitoring standards to be applied to monitor such parameters.	D.1.6 D.1.7 D.3.2.5 D.3.2.8 D.3.4.8	Closed IRL 27
Response	The uncertainty levels in the measurement of natural gas sales to the three sectors and of natural gas purchased by Bulgargas have been added in section D.2. In particular, the uncertainty levels of the three types of gas meters used by RilaGas, i.e.: membrane gas meters, rotating piston gas meters and turbine gas meters have been shown. For each of the three gas meters, the uncertainty values are referred both to new gas meters and gas meters already in operation. The gas meters are periodically calibrated according to the Order n° A-441 of 13 October 2011 on calibration (art. 15) published on the State Gazzette 85/2011.		
Assessment	The additional information included in the PDD are compliant with current good practice in the relevant sector. The topic has been treated correctly in the PDD and the AIE could ac-		

	cept the integrations reported in the PDD.		
Issue	**Corrective Action Request No.15.** The quality assurance and control procedures for the monitoring process should include, as appropriate, information on calibration and on how records on data and/or method validity and accuracy are kept and made available upon request according to §36 letter i) of the DVM ver.1. PP should address this issue in the PDD.	D.1.9 D.2.1-5 D.3.1.3-7 D.3.3.3-19	Closed IRL 27, 21, 34
Response	*Calibration* Information on calibration has been added in Section D.2 where it has been pointed out that the calibration of the gas meters and the electronic volume conversion devices used for the measurement of natural gas delivered to the end-users and the calibration of the gas meter used for control-check of natural gas purchased by Bulgargas, are carried out according to the Order n° A-441 of 13 October 2011 on calibration (art. 15) published on the State Gazzette 85/2011. The validity period of calibration of a new gas meter or a new electronic volume conversion device depends on when the equipment is installed, i.e. if it is installed in the same year when it is purchased or if it is installed one year after it was purchased. For example, in case a gas meter is purchased and installed in the same year, the validity of calibration is two years starting from the year of the installation. Close to the expiry date of the validity of calibration, the gas meter is carried to an authorized laboratory where it is calibrated and the calibration will last for 4 years. Before carrying the gas meter to the laboratory for calibration, another gas meter is installed on the line to ensure the measure of gas flow. In case a gas meter is installed one year after it was purchased, the calibration will be done in the year of installation and will last four years starting from the year of the installation. Close to the expiry date of the validity of calibration, the gas meter is carried to an authorized laboratory where it is calibrated and the calibration will last for 4 years. The calibration certificates are stored by RilaGas in order to keep under control the calibration expiration dates of all measurement devices. *Information on how records on data are kept and made available upon request* When RilaGas operators read the sold quantities of natural gas using the readings of the		

	commercial gas flow meters, they write the reading on a paper which is then delivered to the Rilagas office of the municipality where the measurement is carried out. Before the end of the day, the operators of Rilagas office, after checking data, enter the reading in a software called "Easy4" where data are stored and kept for a period ranging between 5 – 10 years and these data are available upon request. For a further check the operators also insert these data in an excel file in order to make a cross-check between data in the excel file and data filed in the "Easy4" software. The cross-check is useful, for example, when operators prepare the bill for the end-users and this check also ensures the accuracy and reliability of data. The Easy4 software can transform the measured quantities of natural gas into standard conditions by multiplying the volume read on the consumption meter counter by a fixed coefficient determined depending on the meteorological characteristics of the respective region. Besides data on the sales of natural gas in the industrial, public and administrative sectors, also data on gas purchased by Bulgargas and data on net calorific value are kept and stored following the same procedure.		
Assessment	AIE verified the information provided on site and checked calibration certificates and the procedures applied by the PP and found them consistent. The additional information included in the PDD are also compliant with actual regulation in Bulgaria and reflect current good practice in the relevant sector. The PP address this isse properly and the AIE could accept the corrections reported in the PDD.		
Issue	**Corrective Action Request No.16.** Emission factor for CO2 emission factor of the coal or petroleum fuel type that would be combusted in the absence of the project activity in the element process *i*, $EF_{FF,CO2,i}$; Global Warming Potential of methane, GWP_{CH4}; Average net calorific value of the coal or petroleum fuel that would be combusted in the absence of the project activity in the element process *i* during the year *y,* $NCV_{FF,i,}$; Energy efficiency of the element process I if fired with natural gas $\varepsilon_{project,I,y}$, Energy efficiency of the element process i if fired with coal or petroleum fuel $\varepsilon_{baseline,i,y}$, are not included in the monitoring of baseline/project emissions and leakage. Moreover the values and the data sources of all parameters in the monitoring plan must be provided in the section D and clearly referenced as required by DVM ver.1 §36. PP shall address this inconsistency.	D.1.14-15 D.1.17 D.2.1-5 D.3.1.3-4 E.1.6	Closed IRL 27
Response	The above parameters (CO_2 emission factors, Global Warming Potential of methane, Aver-		

	age net calorific values, energy efficiencies) have been included in the monitoring of baseline/project emissions and leakage. Values and data sources have been included and referenced in section D.1.1.1 in Tables D.1 (CO_2 emission factor), D.2 (Net calorific value), D.3 (energy efficiencies) and D.4 (Global Warming Potential of methane). Moreover, notes concerning conservativeness of parameters have been added.		
Assessment	The issue has been addressed by the PP. Relevant changes and integrations have been included in the PDD. The missing parameters have been added as required by DVM §36 including all values, data sources and references.		
Issue	**Corrective Action Request No.17.** Variables presented in the PDD are not consistent with those specified in Appendix B of "Guidance on criteria for baseline setting and monitoring". PP shall address this inconsistency.	D.1.20 D.3.1.3	Closed IRL 27, 35
Response	Variables presented in the PDD are consistent with those specified in the consolidated baseline and monitoring methodology ACM0009, "Consolidated baseline and monitoring methodology for fuel switching from coal or petroleum fuel to natural gas", Version 04.0.0, dated 20/07/2012.		
Assessment	The PDD has been updated and parameters have been corrected according to the methodology ACM0009 ver 4.0.0; the variables are now consistent throughout the PDD.		
Issue	**Corrective Action Request No.18.** The monitoring plan does not explicitly and clearly distinguishes - Data and parameters that are not monitored throughout the crediting period, but are determined only once and thus remain fixed throughout the crediting period, and that are available already at the stage of determination - Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination - Data and parameters that are monitored throughout the crediting period as required by DVM ver.1 §36 letter d).	D.1.2.1	Closed IRL 27
Response	In Tables D.1 (CO_2 emission factor), D.2 (Net calorific value), D.3 (energy efficiencies) and D.4 (Global Warming Potential of methane) of section D.1.1.1 has been clarified which data and parameters are not monitored throughout the crediting period and are (or are not) available already at the stage of determination, and which data and parameters are monitored		

	throughout the crediting period. Data to be monitored during the crediting period are: the sales of natural gas to the three sectors and natural gas purchased.		
Assessment	The PDD has been updated clearly specifying the subdivision of the data and parameters as required by DVM §36 letter d. The PP correctly addressed this issue.		
Issue	**Corrective Action Request No.19.** Equations are not numbered as required by §36 letter f) point iii of DVM ver.1. PP shall address the inconsistency.	D.3.2.3 D.3.4.3	Closed IRL 27, 35, 1
Response	Equations concerning formulae used in the Emission Reductions calculation (and then in the Baseline and Project emissions calculation) have been numbered according to the number shown in the consolidated baseline and monitoring methodology ACM0009, "Consolidated baseline and monitoring methodology for fuel switching from coal or petroleum fuel to natural gas", Version 04.0.0,		
Assessment	All equations have been numbered in the PDD applying the numbering system of the ACM0009 ver. 4.0.0 methodology. The PDD is now consistent with the requirements of the DVM.		
Issue	**Corrective Action Request No.20.** Title of the parameters for determining the baseline are not consistent throughout the chapters of the PDD. PP shall address this inconsistency.	D.3.3.2 D.3.3.3-19	Closed IRL 27, 35, 1
Response	Title of the parameters for baseline are consistent and are in accordance with the title of parameters shown on the consolidated baseline and monitoring methodology ACM0009, "Consolidated baseline and monitoring methodology for fuel switching from coal or petroleum fuel to natural gas", Version 04.0.0.		
Assessment	The PDD has been updated and the titles of the parameters have been corrected according to the methodology ACM0009 ver 4.0.0; the variables are now consistent throughout the PDD.		
Issue	**Corrective Action Request No.21.** According to §42 of DVM ver.1 an explanation of the approach is to be provided. PP has to address this issue in the PDD.	E.1.1	Closed IRL 27, 1
Response	According to the JI specific approach, for the estimation of emission reductions generated by the project the approach (a) was chosen: "Assessment of emissions in the baseline scenario and in the project scenario".		

Assessment	The PP applied the JI specific approach for the estimation of the emission reductions, the PDD has been updated and the issue has been addressed properly.		
Issue	**Corrective Action Request No.22.** According §42 letter b) of the DVM ver.1 the formulae required for baseline/project emissions, leakage and emission reductions estimation are to be included and explained.	E.1.14	Closed IRL 27, 35
Response	In Section E.1 and E.3 formulae (1) and (2) of ACM0009 Methodology, version 04.0.0, for project emissions calculation have been included and explained. In Section E.2 formulae (5) of ACM0009 Methodology, version 04.0.0, for leakage emissions calculation has been included and explained. In Section E.4 formulae (3) and (4) of ACM0009 Methodology, version 04.0.0, for baseline emissions calculation have been included and explained. Also formulae for calculation of the emissions due to the replacement of electricity with natural gas have been included and explained. In Section E.5 formula (10) of ACM0009 Methodology, version 04.0.0, for emission reductions calculation has been included and explained.		
Assessment	All formulas for baseline/project emissions, leakage and emission reductions estimation have been be included and explained in the PDD. The PP addressed this issue properly.		
Issue	**Corrective Action Request No.23.** The documentation is on Rilagas paper but it is mentioned as prepared by independent experts. This inconsistency shall be addressed.	F.1.1	Closed IRL 27
Response	The PDD has been updated substituting “independent experts” with “RilaGas”.		
Assessment	The PP corrected the wrong information on the PDD and the document is now consistent with the evidence provided. It is not mandatory by law that the study should be conducted by an independent party, so it is correct and the issue has been properly addressed.		

Clarification Requests by audit team			
	Comments and Results	Ref	Conclusion and IRL
Issue	**Clarification Request No. 1.** Additional information on the project's technological aspects and design should be provided to the AIE specifying if any utilization of technology from foreign technology suppliers will take place.	A.4.2.1	Closed IRL 27
Response	In Section A.4.2 of the PDD it has been added that the technology used in the realization of the natural gas network is a high quality European technology, in particular Italian and French equipment and know-how. Moreover, a list of the main suppliers has been included.		
Assessment	The information on technology and know-how transfer has been included and the clarification request has been positively addressed by the PP and accepted by the AIE. It was verified on site that the information on technology provided in the PDD are being implemented.		
Issue	**Clarification Request No. 2.** The chosen approach to define an operational lifetime of 20 years has to be explained and justified as based on our sectoral experience normally another approach based on an operational lifetime of 35 years is used.	C.2.1	Closed IRL 27, 17, 12, 13, 9
Response	The approach used in the PDD has been updated and an operational lifetime of 35 years has been used. This period corresponds with the period of gas distribution license and gas supply license.		
Assessment	The approach is now consistent with the business plan of the project, with the concession and with the relevant experience by the AIE with similar approach. The same operational lifetime has been applied by the already registered JI project "Reduction of greenhouse gases by gasification of Burgas Municipality" (Project ID: BG1000209) which has been chosen in the JI specific approach as comparable project.		
Issue	**Clarification Request No. 3.** Procedures to be followed if expected monitored data are unavailable should be clarified and further specified to the AIE.	D.1.18	Closed IRL 27, 20
Response	The situations where expected monitored data (i.e.: the sales of natural gas) are not available can be mainly due to the following reasons:		

	• in case of a malfunction of the electronic volume conversion devices: a fixed coefficient k resulting from the tables of the national metrological office is applied in order to transform the measured quantities of natural gas into standard conditions; • in case of a malfunction of the commercial gas flow meters: if the commercial metering devices appear to be out of order (i.e. monitored data are not available or are lower/higher than expected), RilaGas will substitute them with new gas flow meters. The readings of gas consumptions will be made on both the old gas meter and on the new gas meter and a written bilateral statement will be executed between RilaGas and the end-user.		
Assessment	The procedures defined by the PP could be considered appropriate by the AIE. It was assessed on site via interview with the relevant personnel that the procedures are already in place and applied.		
Issue	**Clarification Request No. 4.** Conservativeness is mentioned in PDD but not justified, PP should provide additional information on this topic.	D.3.2.4 D.3.2.8 D.3.4.4 D.3.4.8 E.1.7	Closed IRL 27
Response	The conservativeness has been justified in Section D.1.1.1 in Table D.1 (CO_2 emission factor), Table D.2 (Net calorific value) and Table D.3 (energy efficiencies).		
Assessment	The issue has been correctly addressed by the PP. A stepwise approach has been applied in order to choose the most conservative value of the different parameters. It was verified by the DOE that the approach has been properly applied and the PDD has been amended.		
Issue	**Clarification Request No. 5.** If leakage emissions are considered negligible it should be clarified how the monitored parameters are considered in terms of emissions calculations.	D.3.5.1 E.1.12	Closed IRL 27, 20
Response	Since leakage emissions due to fugitive upstream CH_4 emissions from the transmission and distribution network of natural gas are negligible, the monitoring of the natural gas leakages is done by reporting the volume of natural gas emitted due to unexpected accidents, for example the failure leakages after breaking of a pipeline and the scavenging prior to repairs and connecting. In all the cases of failure, an emergency act is prepared. The operators go in the place where the accident occurred and make a first estimate of the leakages, based on the diameter of the pipeline, the gas flowrate in the pipeline and the diameter of the hole. Moreover, once a month, the operators verify if possible leakages can be gathered from the		

	readings of purchased gas and sold gas. Data on leakages due to unexpected accidents will be registered and reported in the gas distribution network leakages protocol; moreover, being unpredictable and occasional leakages, that might never happen, they are not considered in the emission reductions calculation.		
Assessment	PP addressed the issue of the leakages correctly. According to technical expertise of the determination team the provided explanation can be accepted and leakages can be considered negligible. The emergency procedures are already in place and were verified on site on paper documents and via interviews with technical personnel.		
Forward Action Requests by audit team			
	Comments and Results	Ref	Conclusion and IRL
Issue	**Forward Action Request No. 1** According to §36 letter f) point vii of DVM ver. 1 it should be assessed whether the designated focal points (DFPs) of all Parties listed as "Parties involved" in the PDD have provided written project approvals. In this context, the AIE should firstly assess, when submitting the determination report to the secretariat for publication in accordance with paragraph 34 of the JI guidelines, whether at least the host Party is identified as a Party involved in the PDD and the respective written project approval has been issued by the DFP of the host Party. Bulgarian DFP provided the Letter of Support (LoS) and will issue the Letter of Approval at the registration stage, while the LoA from Italy is still pending. It shall be verified during the first verification that the LoA of Italy has been issued and it is unconditional.	A.3.5	It will be verified during first verification
Response	After completion of the validation of the Project Design Document, the PDD and the final validation report will be submitted to the Ministry of Environment and Water (MOEW) of Bulgaria with a request for issuing a Letter of Approval (LoA). As soon as the project proponent received the Bulgarian LoA, the PDD, the determination report and the Bulgarian LoA will be submitted to the Italian Ministry for the Environment, Land and Sea (IMELS) to obtain the Italian LoA before the first verification.		
Assessment	The procedure has been verified with the relevant involved parties Bulgarian DFP and Italian DFP and it is compliant with JI track 1 procedures		

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

Project title: Reduction of Greenhouse Gases by Gasification in the Zapad Region of Bulgaria
Document revision number: 01

Interviewed Persons during onsite audit (10-13 September 2012):

Name	Function	Company
Mr. Ricardo Silvoni	Strategy development	ACEGAS-APS S.p.A.
Mr. Carlo Barbieri	Engineering Specialist (JI project developer)	Dappolonia S.p.A.
Mr. Ettore Padovan	Operation director	RilaGas EAD
Mr. Kiril Filatov	Technical assistant	RilaGas EAD
Mrs. Vanya Vezenkova	Assitent Marketing and Trade for Blagoevgrad	RilaGas EAD
Mr. Kiril Bankov	Expert Climate change Policy Directorate	Ministry of environment and water (Bulgarian DFP)
Mrs. Kristiana Georgieva Bakalova	Assitent Marketing and Trade for Pernik	RilaGas EAD

Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date (dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
0.	TÜV SÜD Webpage	"Reduction of Greenhouse Gases by Gasification in the Zapad Region of Bulgaria" http://www.netinform.de/KE/Wegweiser/Guide22.aspx?ID=8357&Ebene1_ID=50&Ebene2_ID=3244&mode=5	19/07/2012	*Link to public available PDD*
1.	UNFCCC	Joint Implementation Determination and Verification Manual - Version 01	4/12/2009	*DVM*
2.	UNFCCC	Guidelines for Users of the Joint Implementation Project Design Document Form - Version 04	23/10/2009	*JI Guidelines*
3.	UNFCCC	Guidance on Criteria for Baseline Setting and Monitoring - Version 03	14/09/2011	*JI Guidelines*
4.	UNFCCC	ACM0009 ver. 3.2 "Consolidated baseline and monitoring methodology for fuel switching from coal or petroleum fuel to natural gas"	28/05/2009	*CDM methodology*
5.	Rilagas EAD	PDD "Reduction of Greenhouse Gases by Gasification in the Zapad Region of Bulgaria" version 1	07/2012	*PDD for GSP*
6.	Rilagas EAD	Excel file "Emissions reduction calculation_17July12"	17/07/2012	*ERUs calculation*
7.	Rilagas EAD	Excel file "IRR calculation_with and without ERUs_17july12"	17/07/2012	*Additionality – benchmark analysis*
8.	Rilagas EAD	Excel file "Share of energy sources_17July2012"	17/07/2012	*Baseline data*
9.	Overgas Inc. AD	PDD "Reduction of greenhouse gases by gasification of Burgas Municipality" version 8 (Project ID BG1000209)	11/2007	*JI specific approach - comparable JI project*
10.	Ministry of Environment and Water (MOEW) - Bulgaria	"Baseline Carbon Emission Factor of Bulgarian Electricity and Heat Power System"	20/04/2005	*CEF Bulgaria*

Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date (dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
11.	Ministry of Environment and Water (MOEW) - Bulgaria	Letter of Support to Rilagas EAD "Reduction of Greenhouse Gases by Gasification in the Zapad Region of Bulgaria"	02/2012	*Letter of Support*
12.	Republic of Bulgaria State Energy and Regulatory Commission	CONFIDENTIAL - License for activity supply of natural gas from end supplier	03/10/2006	*Project starting date*
13.	Republic of Bulgaria State Energy and Regulatory Commission	CONFIDENTIAL - License for distribution of the natural gas on specified territory Zapad	03/10/2006	*Project starting date*
14.	Republic of Bulgaria State Energy and Regulatory Commission	CONFIDENTIAL - Annex 2 to License for distribution with list of the towns within Zapad region and maps of the network	03/10/2006	*Project starting date*
15.	RilaGas EAD	General terms for the contracts for sale of natural gas by RilaGas EAD, approved by Republic of Bulgaria State Energy and Regulatory Commission	19/07/2010	
16.	Acegas Aps	CONFIDENTIAL - Board decision to create a Joint Venture between Acegas and Costruzioni Dondi SpA to participate in a tender for gasification of Zapad region	6/12/2005	*Decision date*

Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date (dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
17.	Acegas Aps	CONFIDENTIAL - Industrial and financial plan for 2007 – 2026 for territory of Zapad region Bulgaria (excel file “Business Plan West_Final_dec 05”)	01/12/2005	*Feasibility Study*
18.	Republic of Bulgaria State Energy and Regulatory Commission	CONFIDENTIAL - Deliberation on Tender for Gasification of the Zapad region	13/04/2006	
19.	Rilegas EAD	CONFIDENTIAL - Rilagas EAD balance sheet and financial report for 2011	22/05/2012	
20.	Rilegas EAD	CONFIDENTIAL - Emergency Plan – Municipality of Blagoevgrad	2011	
21.	Rilegas EAD	Calibration certificate of one sample meter in Blagoevgrad	14/7/2011	*Monitoring Plan*
22.	Rilegas EAD	CONFIDENTIAL - Questionnaire for Technical and Commercial Due Diligence on RilaGas	July 2011	
23.	D’appolonia Spa	CONFIDENTIAL - Rila Gas Project, Bulgaria - Environmental and Social Due Diligence	March 2012	
24.	Costruzioni Dondi and Acegas Aps	CONFIDENTIAL - Legal Due Diligence to participate to the Tender for Gasification of the Zapad region	December 2005	
25.	Republic of Bulgaria State Energy and Regulatory Commission	Tender documents and annexes for Gasification of the Zapad region	02/06/2005	
26.	Rilagas EAD	Evidences of local stakeholder consultations (newspapers, websites, television)	April 2011, March	*Stakeholder*

Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date (dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
			2012	*consultation*
27.	Rilagas EAD	PDD “Reduction of Greenhouse Gases by Gasification in the Zapad Region of Bulgaria” version 2	22/10/2012	*Final PDD*
28.	Rilagas EAD	Excel file “Emissions reduction calculation_22October12”	22/10/2012	*ERUs calculation*
29.	Rilagas EAD	Excel file “IRR calculation_with and without ERUs_22October12”	22/10/2012	*Additionality – benchmark analysis*
30.	Rilagas EAD	Excel file “Share of energy sources_22October12”	22/10/2012	*Baseline data*
31.	Acegas Aps and Costruzioni Dondi Spa	Constitution of Rilegas EAD company	05/05/2006	*Timeline*
32.	Rilagas EAD	General terms for the contracts for sale of natural gas by RilaGas EAD (Italian and Bulgarian)	October 2012	
33.	Rilagas EAD	Minutes of Board of Directors - Approval of General Terms for contracts for sale of natural gas	08/10/2012	
34.	Republic of Bulgaria State Energy and Regulatory Commission	Order n° A-441 of 13 October 2011 on calibration (art. 15) published on the State Gazzette 85/2011	13/10/2011	*Calibration*
35.	UNFCCC	ACM0009 ver. 4.0.0 “Consolidated baseline and monitoring methodology for fuel switching from coal or petroleum fuel to natural gas”	20/07/2012	*CDM methodology*