



Industrie Service

Determination Report

Determination of the
"New cogeneration power station for
combined production of heat and electricity
in District Heating Bourgas, Bulgaria"

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



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Executing Operational Unit:		TÜV Industrie Service GmbH TÜV SÜD Group Carbon Management Service Westendstr. 199 - 80686 Munich - GERMANY		
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<p>Summary:</p> <p>The Certification Body "Climate and Energy" of TÜV Industrie Service GmbH TÜV SÜD Group, has been ordered by the GlobalCarbon BV in The Hague, The Netherlands to determine the above mentioned project.</p> <p>The determination of this project has been performed by document reviews, interviews by e-mail and on-site inspections, audits at the locations of the project and interviews at the offices of the project owner.</p> <p>As the result of this procedure, it can not be confirmed that the submitted project documentation is in line with all requirements set by the Marrakech Accords and the Kyoto Protocol and relevant guidelines of Bulgarian Designated National Authority. This opinion is caused by the sole remaining outstanding issues regarding the Letter of Approvals of the involved Annex-I-Parties and the Licence of Electricity Generation.</p> <p>Additionally the assessment team reviewed the estimation of the projected emission reductions. We can confirm that the indicated amount of emission reductions of 169 580 tons CO_{2e} (AAUs) in the years 2006 and 2007 and 349 000 tons CO_{2e} (to be issued as ERUs) in the intended crediting period from 2008 – 2012 represents a reasonable estimation using the assumptions given by the project documents.</p>				
Work carried out by:	Klaus Nürnberger (Project manager) Kiril Bacharev (GHG auditor, local expert)		Internal Quality Control by: Werner Betzenbichler	

Abbreviations

BOD	Biological Oxygen Demand
CAR	Corrective action request
CR	Clarification request
DOE	Designated Operational Entity
DP	Determination Protocol
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission reduction
ERU	Emission Reduction Unit
GHG	Greenhouse gas(es)
IRR	Internal Rate of Return
JI	Joint Implementation
KP	Kyoto Protocol
MoEW	Bulgaria Ministry of Environment and Water
MP	Monitoring Plan
MS	Management System
NGO	Non Governmental Organisation
NPV	Net Present Value
PDD	Project Design Document
New Project	Cogen New cogeneration power station for combined production of heat and electricity in District Heating Bourgas, Bulgaria
VVM	Validation and Verification Manual



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1 INTRODUCTION

1.1 Objective

The EBRD, London in United Kingdom has commissioned TÜV SÜD Industrie Service GmbH to conduct a determination of the "Energy Efficiency Investment Programme at Svilocell Pulp Mill" (EnEff-Programme) with regard to the relevant requirements for JI project activities. The determination serves as a conformity test of the project design and is a requirement for all JI projects. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Determination is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emission reductions (in particular ERUs - in the first commitment period under the Kyoto Protocol).

UNFCCC criteria refer to the Kyoto Protocol Article 6 criteria and the Guidelines for the implementation of Article 6 of the Kyoto Protocol as agreed in the Marrakech Accords.

1.2 Scope

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

This report is based on the PDD which has been issued February 09, 2006. The draft version from December 23, 2005 was published on the website of www.netinform.de. Potential stakeholders have been invited for commenting by using the Climate-L announcement list service. According to CARs and CRs indicated in the audit process the client decided to revise the PDD. The final version submitted in March 2006 serves as the basis for the final conclusions presented herewith.

1.3 GHG Project Description

The project foresees the implementation of a series of energy efficiency measures to reduce the energy consumptions of steam, heat and electricity of Svilocell, a wood processing company, whose main final product is sulphate bleached pulp.

The objective of the project is to minimise consumption of steam, heat and electricity and further on to use high energetic steam for generating electricity by a steam turbine. Besides own generated steam Svilocell is supplied with electricity from the public grid and with steam from adjacent CHP Plant and Biomass Plant, which are not owned by Svilocell. The overall objective of the JI project is to generate emission reductions (ERUs and AAUs).



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The project is located at the site of District Heating Bourgas, which is located in west from city of Bourgas. The area covered by DH Bourgas spreads over a territory of 127,000 m². The distance from the DH to the centre of the city is 7 km. The DH station is separated from the city with a ring area of agricultural land. The distance from the DH station to the closest located suburb “Lozovo” is 700 meters.

The baseline scenario is reflected mainly by the indirect off-site emissions of delivered electricity from the grid.

The project activity – construction of building - has started end of 2005. All measures will be implemented until end of September 2006. The commissioning date of the first cogeneration units is foreseen on the beginning of April 2006.

The Project Participant of the Host Country is Toplofikatsia Bourgas, District Heating Company in Bourgas, Bulgaria, totally privatised in 2004, as owner of permits and licenses. Toplofikatsia Bourgas will supply the Emission Reduction Units ERUs. The project documentation has mainly been developed by Global Carbon BV, The Hague in The Netherlands.

2 METHODOLOGY

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

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

The determination protocol consists for this project of three tables. The different columns in these tables are described in Figure 1.

The completed determination protocol is enclosed in Annex 1 to this report.



Determination Protocol Table 1: Mandatory Requirements			
Requirement	Reference	Conclusion	Cross reference
The requirements the project must meet.	Gives reference to the legislation or agreement where the requirement is found.	This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) of risk or non-compliance with stated requirements. The corrective action requests are numbered and presented to the client in the determination report. O is used in case of an outstanding, currently not solvable issue, AI means Additional Information is required.	Used to refer to the relevant checklist questions in Table 2 to show how the specific requirement is validated. This is to ensure a transparent determination process.

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

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



2.1 Review of Documents

The project participants submitted a PDD and additional background documents related to the project design and baseline. A review for all these documents has been performed in order to identify all issues for discussion during the follow-up interviews on-site and by phone or email.

2.2 Follow-up Interviews

On December 7 and 8, 2005 TÜV SÜD performed on-site and email interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of the Bulgarian company "Toplofikatsia Bourgas" (project owner) have been interviewed.

The main topics of the interviews are summarised in Table 1. The complete and detailed list of all persons interviewed is enclosed in Appendix 2 to this report.

Table 1: Interview topics

Interviewed organisation	Interview topics
Toplofikatsia Bourgas	Project design, baseline, monitoring plan, environmental impacts, permits and licenses, stakeholder comments, additionality, monitoring procedures, calibration of the measurement equipment, documentation, archiving of data, Energy Sector, Approval of the project, JI-Guidelines



2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the determination is to resolve the requests for corrective actions and clarification and any other outstanding issues which need to be clarified in order to achieve a positive conclusion during the assessment process. Clarification Requests raised by TÜV SÜD have been resolved in most parts by the "Response Paper" submitted January 26, 2006 prepared by Global Carbon. Furthermore additional documents have been submitted separately in order to provide the required evidences. To guarantee the transparency of the determination process, the concerns raised are and the response given are summarised in chapter 3 below. The whole process is documented in more detail in the final determination protocol in Annex 1.

3 DETERMINATION FINDINGS

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

- 1) The findings from the desk review of the project design document and the findings from interviews during the follow up visit are summarised. A more detailed record of these findings can be found in the Determination Protocol in Annex 1.
- 2) Where TÜV SÜD has identified issues that needed clarification or that represented a risk to the fulfilment of the project objectives, a Clarification or Corrective Action Request, respectively, has been issued. The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Determination Protocol in Annex 1.
- 3) Where Clarification and Corrective Action Requests have been issued, the response by the project participants to resolve these requests is summarized in the final determination report.
- 4) The final conclusions of the determination are presented consecutively.

3.1 Project Design

3.1.1 General Findings

Until beginning of February 2006 there was no official form to be used in the context of the PDD development of JI projects besides the guidance given under the CDM. The submitted PDD as well as its revision are considered to cover all aspects necessary to describe the project and to assess its conformity with the underlying regulations.

Nevertheless a preliminary official form for description of JI-Project is now available and its use would certain the approval of JI Project by the JI Supervisory Committee.

The foreseen technology does reflect current good practice for combined generating electricity and heat in this scale. The project uses technology that goes beyond the state of the art in the



host country. Moreover it is unlikely that the foreseen project technology will be substituted during the crediting period by a still more efficient technology.

Bulgaria has ratified the Kyoto Protocol on August 15th 2002. The Ministry for Environment and Water MoEW was appointed as national focal point of Bulgaria and has issued National JI-Guidelines "How to develop a climate change project and leverage the carbon benefits" (http://www.moew.government.bg/recent_doc/international/climate/Brochure_JI_eng.pdf).

There will be two phases of implementation of the cogeneration units. The project starting date is clearly defined as well as the crediting period which will cover the years 2008-2012 in accordance with the first commitment period (generation of ERUs).

Under regular conditions the operational lifetime of the project will exceed this indicated time frame.

The Bulgarian National Focal Point has issued a Letter of Endorsement which shows in principle the support of the project.

It is discussed to sell the emission reductions to the Dutch ERUPT program.

3.1.2 Issued CARs/CRs

Corrective Action Request (CAR1):

It is envisaged that the project has to be approved by both countries (Netherlands and Bulgaria) at the end of the validation process. Written letters of approval were not available at the time of this determination.

Response:

The Approvals will be provided at the end of the validation.

Corrective Action Request (CAR2):

The PDD should show two phases of the project in a consistent way. Hence the crediting period will probably be changed, too.

Response:

The revised PDD describes the two stages of the project. The crediting period is adjusted too.

Clarification Request (CR1):

The suppliers are and will be obliged to organize training for responsible maintenance staff.

The operator should deliver documents of already conducted trainings and the plan for the foreseen trainings.

Response:

The Training Programme has been added as a new Annex No 15 to the revised PDD.

Corrective Action Request (CAR3):

The PDD does not describe the foreseen training and maintenance needs during the operation of cogeneration unit. The aspects regarding future responsibilities are not mentioned.



The PDD should give a short overview about the aspects training and maintenance needs of the project.

Response:

This information is given in new Annex No. 15” Training Program Project Toplofikatsia Bourgas” for the training. (See also CR1)

The preventive maintenance guidelines from the supplier are shown in Annex No. 13 ”Plan of Co-Generations Maintenances” to the PDD.”

The technical staff which will participates in the installation, commissioning and which will be responsible for the operation and monitoring of the new co-generations installations shall be trained in the phase of commissioning and operation.

3.1.3 Conclusion

The project status is in a comparative early stage; therefore the project does not yet fulfil formally all belonging criteria set for the approval of JI-projects. The Letter of Approvals by both parties, investor and host country, shall be submitted to TÜV SÜD at time of its availability. In case the issuance of ERUs will be done under the “First Track JI”- regime, there is no requirement to provide the validator such a LoA in order to forward it to the Supervisory Committee. Under that circumstance the issue can be considered to be resolved otherwise it will be considered as an outstanding issue requiring a final revision of this validation report.

The foreseen technology does reflect current good practice for generation of electricity and heat using natural gas. The project uses technology that goes beyond the state of the art in the host country. It is moreover very unlikely that the foreseen project technology will be substituted during the crediting period by a still more efficient technology .

The PDD contains information how training, operating, controlling, maintenance will be organized and managed. The aspects regarding future responsibilities and quality assurance are fixed.

It is recommended to fill out the official form for the description of JI-Project (PDD) as far as it is approved. Currently a preliminary version of JI-PDD form is available on the JI websites of UNFCCC. Its use will be necessary for an approval of this JI-Project as a “Second Track JI” by the JI Supervisory Committee.

3.2 Baseline

3.2.1 Findings

The baseline of the Bulgarian “Toplofikatsia Bourgas JI Project” is established in a project-specific manner. The emission reductions result from the combined generation of heat and electricity using natural gas, the replacement of electricity generation by the Bulgarian grid and the replacement of heat generation by oil-fired boilers. Regarding the replacement of electricity generation by the Bulgarian Grid the approved CDM Methodology ASM-I.D. “Renewable Electricity Generation for a grid” was chosen.

The baseline does take into account the Bulgarian JI-Guidelines, NEK-Baseline Study, the IPCC Good Practice Guidance in National Greenhouse Gas Inventories and the major national



and/or sectoral policies, macro-economic trends and political developments. Relevant key factors are described and their impact on the baseline and the project risk is evaluated.

The used baseline approach for the cogeneration units is transparent, reproducible and conservative. It delivers emission factors for this baseline, which are considered to be appropriate.

The additionality of the project is proven by using the "Additionality Test" which is common used for CDM projects. The additionality of the project is mainly proven by Financial Additionality and Common Practice Analysis which are quite appropriate. It is reliable shown that the BAU-Alternative is more financial attractive (shorter pay back period) than with implementing the project. If the income of carbon credits are included the project becomes economically viable. Similar cogeneration projects are also developed as JI-projects.

The PDD shows in particular that there is a lack of local expertise in terms of operating and maintaining cogeneration units.

The on-site assessment has given a special focus on the environmental additionality and on the price risks, which strongly depends on the foreseen national quota system which does not guarantee certain prices for a longer term.

3.2.2 Issued CARs/CRs

Corrective Action Request (CAR4):

For determining the baseline emission it is not shown in which way the Specific consumption S_c is determined or calculated. In the PDD it should be specified how this value S_c is calculated.

Response:

The purpose of using of S_c is to compare the performance of different District Heating Stations and Thermo Power Stations in Eastern Europe. The main idea of this Specific Consumption is to compare installations that are using different types of fuels such as Coals, natural gas, Heavy Fuel Oil in their general performance.

The specific consumption S_c is the ratio of the quantity B_y [kg] of so called equivalent fuel per produced heat Q_h [GJ] from the boilers. The detailed information and the calculation are added in section No. 6 in the revised PDD.

Corrective action request (CAR5):

The NEK Baseline study does not regard build margin power plants by calculating the operating margin. Further by calculating the build margin the recent build Hydro Power Plants and Nuclear Power Plant units are neglected. This study fixes the emission factors for the future ex-ante and does not foresee ex-post determination. Hence the determination of the grid-factor is not strictly according the CDM-Methodology of ACM002 and SSC-Methodology.

It should be clarified, if this determination of grid-factor is supported by the national focal point. If the project should be validated as "Track 2 –project", it would be necessary to use exactly the CDM-methodologies.

The calculation of grid-factor by using Operating Margin emission factor and Build Margin Emission Factor is not shown in the PDD.



Regarding emission factor in the electricity sector it should be described in the PDD why only the operation margin is used, neglecting the build margin, for determining and calculating the emissions.

Response:

The baseline emission factor (BEF) is calculated as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) factors. Calculations for this combined margin are based on 3 steps.

Determine of OM implementing dispatch model based on following methods:

- Considering only units operating at the margin with highest operational costs in EPC.
- Considering all units in EPC which probably could operate at the margin (Adjusted).
- Considering the average of all power Units in EPC exclude the units which are in Build margin.

Determine of BM emission factor considering BM units.

OM and BM emission factors are determined considering above points with and without Hydropower Units in the 4 big hydro cascades in the system.

Combined margin emission factor so-called Baseline Emission Factor (BEF) is combination of operating margin (OM) and build margin (BM) emission factors, each of them weighed 50%.

Three 3 different BEFs are computed because of 3 different OM EF which is used for determine combined margin.

The most conservative BEF (the lowest numbers) is used for calculation of emission reduction. This is the BEF computed in maximum scenarios (scenarios prosperity with maximum demand) with Dispatch Data Adjusted OM_EF and hydropower plants included.

The Nuclear Power Units (NPUs) are excluded in calculations of emission factors because they are operating as base load power units and have the lowest operational costs in EPS. By no means NPUs are not influence of JI project operation. JI project displace only power units operating on the margin. The NPUs indirectly influence over the distribution of power supply in system, thus reducing the load factors of units operating on the margin.

Ex-post determination of BEF Methodology is now included in the revised PDD. see chapter 9.1.1 "Baseline Monitoring Methodology".

Corrective action request (CAR6):

The detailed description of the Electricity Sector in Bulgaria contents a lot of tables, diagrams and figures, which are mainly not referenced. Used literature and sources should be clearly referenced.

Response:

The information for the description of the Electricity Sector in Bulgaria is taken by the National Electrical Company (NEK). All of the information published in this PDD is available in NEK and could be provided and verified at further request.

Clarification Request (CR2):

Why are only the emissions from HFO combustion in boilers regarded as on-site emissions and why are only the emissions from NG-combustion regarded as off-site-emissions?



Response:

There are no emissions from HFO combustion in boilers on-site. That is a mistake. Both, on-site and off-site emissions are caused by NG combustion.

The emissions of HFO in back-up-boilers should be regarded as project emissions in table 3.1 and in the monitoring plan/excel calculation chart "project emissions". In table 3.1-point 3.2 from PDD row "CO2 emissions from HFO combustion in back-up boilers, if for some reasons NG will stop" are added. In Annex 4 –Monitoring PDD Bourgas rev Jan.06.xls "part "Project emissions" is added column "HFO combustion of "back up" boilers"

Clarification Request (CR3):

The additionality of the project is mainly proven by Financial Additionality and Common Practice Analysis which are quite appropriate. The payback time seems to be limited to 5 years. Statement from Bulbank which confirms this short payback period should be provided to the audit team.

Response:

"Statement from BULBANK about pay back periods of CHP in Bulgaria" was provided. Annex № 1.

Clarification Request (CR4):

There are few CHP investment projects in Bulgaria, which deemed to be all JI-Projects. Proofs, which confirm the CHP plants of Varna and Vratsa as JI Projects should be provided to the audit team.

Response:

The CHP plants of Varna and Vratsa are not JI projects. They are the first CHP project in Bulgaria and are very small

CHP Varna = 2 gas engines x 2 MWe,

CHP Vratsa = 2 gas engines x 3 MWe.

All of the next CHP projects, which have higher installed capacity are JI projects due to the higher investment cost and due to the necessity of additional income secured by the selling of Emissions Reductions.

CHP Biovet = 18 MWe, Price: 9 Million Euro

CHP Plovdiv = 46 MWe, Price: 30 Mil. Euro

CHP AKB = 29 MWe, Price 21 Million Euro

Also it should be taken into account that the payback period for this projects has been calculated on price of the Natural Gas equal to the present price of 142 Euro / 1000 Nm³, or even lower. For the financial calculations for CHP Bourgas is used the price for Natural gas of 142 Euro /1000Nm³. Considering the last steps undertaken by the Russian Government for significant increasing of the price of the Natural Gas towards several countries, among others is Bulgaria, it is unavoidable that the price of the natural gas in Bulgaria will increase in the next coming years starting most probably in 2006. This fact will influence very negatively over the payback of the CHP project for DHC Bourgas and will strengthen the necessity of additional financial income from sale of Emissions Reduction.



3.2.3 Conclusion

The used approach for baseline methodology regarding replacement of electricity from Bulgarian grid is in principle applicable for the emissions of electricity sector. The NEK – Baseline Study is approved by Bulgarian National Focal Point. This study determines combined margin Emission Factor (BEF). The application of NEK – Baseline Study is according to Small Scale CDM-Methodology.

Nevertheless the NEK – Baseline Study, does not correspond exactly to CDM-Methodology because

- "Operating Margin EF" is calculated without consideration of the power plants, which are covered by the build margin.
- "Build Margin EF" is calculated without consideration of the "build" nuclear power plant units.

In case the issuance of ERUs will be done under the First Track JI"- regime, there is no requirement to comply to CDM-Methodology. Under that circumstance the issue can be considered to be resolved otherwise it should be noticed that this issue will probably require a further revision of the baseline determination.

The argumentation regarding additionality is confirmed by respective proofs. In principle the NEK is obliged to buy the entire electricity generated by renewable. It remains furthermore the risk of postponing the implementation of the grid connection.

The revised PDD demonstrates in detail in which way the Specific consumption S_c is determined and calculated. To determine the BEF ex-post is taken into account. Further the emissions of heavy fuel oil HFO in back-up-boilers are regarded as project emissions and are taken into account in the monitoring plan.

With revised PDD used literature and sources are clearly referenced.

All given responses to the indicated CARs and CRs are resolving the belonging issues. The project fulfils the criteria on baselines as set for the approval of JI-projects.

3.3 Duration of the Project

The project starting date is exactly defined as construction starting. The crediting period in terms of Kyoto Protocol could be defined as being from 2008 – 2012 as maximum in accordance with the first commitment period defined in the Kyoto Protocol. The operational lifetime of foreseen technology will be longer than the crediting period.

3.3.1 Findings

Corrective Action request: (CAR7):

Several dates of starting date are mentioned. However the dates do not correspond exactly to each other. Further the project starting date is not exactly indicated. The PDD does define the start of operation but it does neglect the start of operation of the 1. Phase although the calculated emission reduction in 2006 shows that the crediting period starts in the mid of 2006. The operational lifetime of the project is not announced yet.



The PDD should exactly define the dates of project start and commissioning of the cogeneration unit. The operational lifetime of the project should be mentioned.

Response:

The information in Table 1.2.4 is adjusted according to the implementation time frame of the project. In table 5 in 1.5.2 the two phases are separated according to the time frame of the realization of the project.

In Point 1.5.2.1 the information concerning the start of the project, the operational life time and crediting period is described.

Adjusting of the information related to the two different phases is also done in Point 1.5.3 as well as in the tables presenting the emissions reduction calculations in Chapter 8.

Corrective Action request: (CAR8):

According to the information during the audit the crediting period can be assumed to start in the mid of 2006 and ends with the year 2012. The crediting period is clearly indicated in the PDD (see PDD 8.) but does not correspond to the received information.

The project's crediting time should be corrected.

Response:

The project's crediting period is clearly described in Point 1.5.2.1. The crediting period will start on April 1, 2006 with the start of operation of the first cogeneration units.

Clarification Request (CR5):

Contract or Lol regarding connections to the grid are not signed yet. Hence the negotiations with the grid operator could jeopardize the date feeding in electricity to the grid. Contracts or minutes of negotiations regarding transformer and the connection to the grid for feeding in electricity to the grid should be prepared as far as possible.

Response:

DHC Bourgas is in process of issuing of a license for production and sale of electricity. For this reason DHC Bourgas has applied in the State Energy and Water Regulatory Commission on 07.12.2005. The normal period for issuing of such a permit is three (3) months; hence the license should be issued in March 2006. Only after this permit is been issued DHC Bourgas and the National Electrical Company (NEK) can sign a contract or Lol for connection to the grid. See Annex № 3 "Application from DHC BOURGAS for Electricity Generation.

3.3.2 Conclusions

The start of project activity and start of crediting period of the project are exactly defined; both start on April 1, 2006. It is distinguished between the Kyoto period 2008-2012 in accordance with the first commitment period defined in the Kyoto Protocol., when ERUs can be generated and the period before 2008, when only AAUs can be created.

The operational lifetime of the project is now mentioned and reasonable.

The real start of commissioning is depending on the issue of the licence for production and sale of electricity and the contract for connection to the grid. At this stage of the project the



presented "Application For Electricity Generation" is sufficient evidence. It is expected that together with the LoA of the host country the above licence and contract can be provided to the audit team.

Apart of that licence the project is in compliance with the requirements.

3.4 Monitoring Plan

3.4.1 Findings

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

Indicators for project emissions and baseline emissions have been defined and will be monitored.

Leakage emissions are not monitored according to the monitoring plan as there are no emissions to be expected.

The registration, monitoring, measurement and reporting will be integrated in the existing monitoring system for the District Heating Bourgas. Six persons are working on this topic already.

The personnel of Toplofikatsia Bourgas have already experiences with the necessary measurement devices and will be trained by the suppliers of new measurement devices.

3.4.2 Issued CARs/CRs

Corrective Action Request (CAR9):

In few cases the monitoring provisions are not consistent with the project boundaries. Hence it is necessary either to adjust the monitored data/parameters or the methodology and the boundaries must be adjusted.

Response:

The correction is made in accordance with the project boundaries. In connection with the technical possibilities in the future, the steam consumption and the hot water for auxiliary needs consumption are additionally taken in consideration. The changes are done in point No 9, point No. 9.1.1, point No. 9.1.2 table 38 and table 39. Annex No. 7 "Monitoring Models", Annex No. 8 "Monitoring Scheme", Annex No.9; "Monitoring Equipment Specification" are changed also. Further correction is made in accordance with the project boundaries in point 3.1 - Fig. 3.1 from PDD.

Corrective Action Request (CAR10):

Besides the import of electricity from the grid and heat from the existing heating system the relevant data are foreseen in the monitoring plan.

Imported amount of electricity from the grid and heat from the existing heating system should be added to the monitoring methodology. Depending on the manner of connections of the cogeneration units to the grid transformer losses must be extra considered.

Response:



The auxiliary needs of Toplofikatsia Bourgas also in this moment are measured on the side of 110 kV. The replaced electrical energy from the national network also will be measured on side 110 kV. For electricity, the project boundary is on 110 kV. see Table 38, Line 7 in PDD, where this request is taken into account.

Corrective action request (CAR11):

The PDD does not mention yet the foreseen authority and responsibility for registration, monitoring, measurement and reporting.

The aspects regarding future authorities and responsibilities for registration, monitoring, calculating, reporting and internal audits within Toplofikatsia Bourgas should be clearly described in the PDD.

Response:

The responsibilities and the authorisations are principally described in new Annex No 14 "Organization Structure and Responsibilities – Project Toplofikatsia Bourgas JSC" to the PDD.

In the revised PDD point 9.1 additional explanation are made:

Manager for monitoring, collection, registration, visualization, archiving, reporting of the monitored dates and periodical checking of the measurement is Mr Minko Dimitrov. All measurement devices are equipped with fiscal memory and can be recorded in every time.

The communication ports of the devices permit the dates to be collected automatically in the Central monitoring system of DHC. The existing measurement devices which are not equipped with communication ports will be reading and their results will be recorded in the tables of the Central monitoring system 1 time of day from the measurement team people.

The manager of the team is authorized for preparing of the annuals report for the verification company with the results from the measurement and evidence of authenticity.

The manager of the team is authorized to organize periodical checking of the measurement devices from the authorized laboratory. The plan and the report data for the periodical checking are record and automatically generated in the Central monitoring system.

Corrective action request (CAR12)

The procedures regarding training of the monitoring and reporting personnel should be described in the PDD.

Response:

The training of the monitoring personnel is now shown in new Annex No. 15 "Training Program Project Toplofikatsia Bourgas".

Corrective action request (CAR13)

There are procedures identified for emergency preparedness. It is foreseen to use statistical data in case of measurement failures. Further it is intended to install control meters for the important electricity meters. In other cases they store spare parts for the usual transmitters, so



they can replace in short terms failed devices. The procedures regarding emergency preparedness should be described in the PDD.

Response:

In the revised PDD point 9.2 is added:

In accordance with the procedures for checking the recorded monitoring dates, emergency preparedness and replacing missing data shall be marked:

- All measurement devices are registered in the State Register like trade devices;
- All suppliers of the measurement devices have services in the country and are obligated to respond in 48 hours;
- DHC keep in its storage spare parts in accordance with the recommendations of the suppliers, which the monitoring team is ready to change ;
- All measurement devices are with fiscal memory;

The Central monitoring system archives all measurement data for very long period inside. The missing data for the period of damage will be replaced with enough precision with archived dates for similar period.

Clarification Request (CR6):

Some of the foreseen engines will not be new but overhauled engines. Hence it must be shown that there is not any leakage because of the removal of these engines from the original site.

Response:

The co-generation modules are second hand, but prophylaxis and refurbishment on the modules is foreseen at the plant of Wartsila Sweden AB in Gothenburg.

The removal emissions are very small / less than 0.1 %/ because:

- The co-generation modules are on common base plates;
- The main transport is on ships / to Gothenburg and to Bourgas;
- The transports of the new are the same. The removal is very simple.

Thus the emissions related to the transport of the co-generation modus is considered to be insignificant and less than 0,1 %, which amount would not influence the total project emissions.

The overhauled engines have been used for burning of methane from a stranded gas mine in England. The reason that the owner company has sold the gas engines is that the methane from the mine has been completely utilized. This means that there is no any methane release after the decommissioning of the gas engines.

Clarification Request (CR7):

Due reduced electricity demand from the grid it should be regarded, that the electricity sector would indirectly have less need for allowances within the EU Emissions Trading System. Further the cogeneration units itself will be covered by the EU ETS, and will maybe get allowances for their project emissions. Hence by preparing the national allocation plan the Bulgarian JI projects must be taken into consideration. It should also be considered that the issued EU-Allowances should correspond only to the project emissions for the electricity generation in this JI-project, because this project does not reduce emissions regarding heat generation.

Response:

In the ongoing process of developing of the National Allocation Plan for Bulgaria all of the existing JI projects and those that are under evaluation are taken into account. For this reason Ministry of Environment and Waters (MoEW), which is responsible for the evaluation of NAP is requesting information for the amount of the Emission Reductions from JI Projects.

3.4.3 Conclusion

With the revised PDD the missing monitoring parameters are added in the revised monitoring plan.

The spatial project boundary for electricity is on 110 kV level, hence transformer losses will be regarded.

Future authorities and responsibilities for registration, monitoring, calculating, reporting and internal audits within Toplofikatsia Bourgas are clearly fixed and described in the revised PDD. The procedures regarding training of the monitoring and reporting personnel are reasonable and sufficiently described, too. Further the procedures regarding emergency preparedness are identified and described in the revised PDD.

The aspects regarding future authorities and responsibilities within Sofia Water are reasonable and mentioned in the revised PDD. Further the PDD revised is stating the needs and procedures for training of monitoring and training personnel. The needs of checking the recorded monitoring data, corrections and for replacing missing data are mentioned too.

Director John Sulley from Warwick Energy confirmed that the Wartsila engines were used to burn natural gas from a small onshore stranded natural gas field and that the reason for selling the engines was the depleting of the gas field.

Some transport emissions and emissions during construction have been assessed. These emissions are considered to be insignificant and therefore these emissions will not be monitored. Hence no significant leakages will occur.

The MoEW is aware about the issue of double-issuing of ERUs and Allowances. Bulgaria is planning to set aside a reserve for electricity producing JI projects (deducted from the allowances of the electricity sector) in order to avoid indirect double counting. This reserve will include the ERUs in the PDDs of the approved projects, the endorsed projects, and some new projects.

All the discussed issues are considered to be resolved.

3.5 Calculation of GHG Emissions

3.5.1 Findings

The project's spatial boundaries are clearly described. All necessary parameters to monitor project emissions have been defined. The applied baseline emission factor of electricity grid is according to NEK-Baseline Study and the published "Carbon Emission Factor of the Baseline on Joint Implementation projects in the Bulgarian Energy Sector". The most relevant and likely operational characteristics and indicators to calculate project emissions and baseline emissions have been chosen.

Uncertainties in the GHG emissions estimates are addressed in the documentation. Leakage calculations are not requested. No further aspects of leakage have been identified. Thus, the project will result in fewer GHG emissions than the baseline scenario.

3.5.2 Issued CARs/CRs

Clarification request (CR8):

With the given parameters (capacity and capacity factor) in the PDD 1.5.3; the indicated figures of thermal energy from co-generators are lower than could be expected.

Response:

These values are taken for conservative calculations. The coefficients provided for electrical power utilization is 0.891 and for the thermal power is 0.8257. Those coefficients are used in order the operational output of the CHP to be more realistic.

3.5.3 Conclusion

According to the revised PDD missing monitoring parameters were added and these parameters are foreseen within the calculation which is based on a spreadsheet, see table B in section 8.

The GHG calculations documented in a complete and transparent manner. Conservative assumptions have been used when calculating baseline emissions. Further the possible uncertainties in the GHG emission estimates are properly addressed in the documentation.

The project does fulfil all the prescribed requirements completely.

3.6 Environmental Impacts

3.6.1 Findings

The analysis of the environmental impacts is sufficient. The project will create only low and very local adverse environmental effects, regarding local increase of exhaust gases. In a regional view there is not any adverse environmental effect. Transboundary impacts do not exist.

Requirements for an EIA regarding this type of project do not exist in the host country. The Ministry of Environment stated that an EIA for this project is not necessary. Construction permit were issued already, which take environmental impacts into account.

3.6.2 Issued CARs/CRs

No such requests have been issued.

3.6.3 Conclusion

The project fulfils all prescribed requirements completely.

3.7 Local stakeholder process

3.7.1 Findings

Authorities and stakeholders have been consulted during the process of approval of the project. The project participants applied for an approval of the local mayor, who announced the project in the local newspapers. Toplofikatsia Bourgas received individual letters from local stakeholders which in general support the project and do not ask for additional actions. Construction permit was issued already, which take comments of local stakeholders into account.

Besides the announcement in the local newspapers, Toplofikatsia Bourgas presented the project in form of a discussion by a local telecast. Twice a year Toplofikatsia Bourgas offers such a discussion in the local TV.

3.7.2 Issued CARs/CRs

No such requests have been issued.

3.7.3 Conclusion

The project fulfils all the prescribed requirements completely.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

TÜV SÜD published the project design document on its website for 30 days from November 22nd, 2005 to December 21st and a second time from March 1st, 2006 to March 29th. In parallel to TÜV SÜD publishing the project was also available on the website of Bulgarian Government.

No comments have been received in this period.



5 DETERMINATION OPINION

TÜV SÜD has performed a determination of the "Toplofikatsia Bourgas JI Project" in Bulgaria. The determination was performed on the basis of relevant JI criteria.

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 stated criteria.

There are the sole remaining issues concerning the required Letters of Approval and the Licence of Electricity Generation. Under the condition that these issue will be rectified sufficiently it is our opinion, that the project meets all relevant UNFCCC requirements for JI.

Additionally the assessment team reviewed the estimation of the projected emission reductions. We can confirm that the indicated amounts of emission reductions of 169580 tons CO_{2e} (AAUs) in the years 2006 and 2007 and 349000 tons CO_{2e} (to be issued as ERUs) in the intended crediting period from 2008 – 2012 (to be issued as ERUs) represent a realistic estimation using the assumptions given by the project documents. As these figures will depend on the future performance of the project, this confirmation gives no guarantee on the realisation.

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

Munich, 2006-05-03

A handwritten signature in blue ink, consisting of several overlapping loops and a long horizontal stroke extending to the right.

Werner Betzenbichler

Head of Certification Body "Climate and Energy"

Munich, 2006-05-03

A handwritten signature in red ink, featuring a large, sweeping initial 'K' followed by several loops and a long horizontal stroke extending to the right.

Klaus Nürnberger

Responsible Project Manager

Determination Report: *“New cogeneration power station for combined production of heat and electricity in District Heating Bourgas, Bulgaria”*

Annex 1 of 2



Industrie Service

Determination Protocol

Table 1 Mandatory Requirements for Joint Implementation (JI) Project Activities

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
1. The project shall have the approval of the Parties involved	Kyoto Protocol Article 6.1 (a)	<p>CAR 1</p> <p><u>Corrective Action Request:</u></p> <p>The Approvals should be provided at the end of the validation.</p>	<p>It is envisaged that the project will be approved by both countries (Bulgaria and Netherlands) at the end of the validation process. The Bulgarian National Focal Point has issued a Letter of Endorsement which shows in principle the support of the project.</p> <p>Toplofikatsia Bourgas envisaged submitting the Letters of Endorsement and Approval to the validator.</p>
2. Emission reductions, or an enhancement of removal by sinks, shall be additional to any that would otherwise occur	Kyoto Protocol Article 6.1 (b)	☑	Table 2, Section B.2
3. The sponsor Party shall not acquire emission reduction units if it is not in compliance with its obligations under Articles 5 & 7	Kyoto Protocol Article 6.1 (c)	☑	The Netherlands fulfil the obligations as requested.
4. The acquisition of emission reduction units shall be supplemental to domestic actions for the purpose of meeting commitments under Article 3	Kyoto Protocol Article 6.1 (d)	☑	The project is additional to domestic actions.
5. Parties participating in JI shall designate national focal points for approving JI projects and have in place national guidelines and procedures for the approval of JI projects	Marrakech Accords, JI Modalities, §20	☑	Both Parties have designated national focal points. The Bulgarian designated national focal point is the Ministry of



REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
			Environment and Water. National guidelines and procedures (G&P) are currently available for the Dutch tender and also regarding Bulgaria. The Bulgarian JI guidelines can be found on: http://www.moew.government.bg/recent_doc/international/climate/Brochure_JI_eng.pdf
6. The host Party shall be a Party to the Kyoto Protocol	Marrakech Accords, JI Modalities, §21(a)/24	☑	Verified at UNFCCC website
7. The host Party's assigned amount shall have been calculated and recorded in accordance with the modalities for the accounting of assigned amounts	Marrakech Accords, JI Modalities, §21(b)/24	☑	Third National Communication is available
8. The host Party shall have in place a national registry in accordance with Article 7, paragraph 4	Marrakech Accords, JI Modalities, §21(d)/24	☑	This issue can not be answered by now as such as the JI system is not installed yet.
9. Project participants shall submit to the independent entity a project design document that contains all information needed for the determination	Marrakech Accords, JI Modalities, §31	☑	A PDD has been submitted in December 2005, which contains the most relevant information.
10. The project design document shall be made publicly available and Parties, stakeholders and UNFCCC accredited observers	Marrakech Accords,	☑	The project design document was made publicly available



REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
shall be invited to, within 30 days, provide comments	JI Modalities, §32		from December 13 th , 2005 to January 11 th 2006 and once more from March 1 st to March 29 th , 2006. No Comments received yet
11. Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, in accordance with procedures as determined by the host Party shall be submitted, and, if those impacts are considered significant by the project participants or the Host Party, an environmental impact assessment in accordance with procedures as required by the Host Party shall be carried out	Marrakech Accords, JI Modalities, §33(d)	☑	Table 2, Section F
12. The baseline for a JI project shall be the scenario that reasonably represents the GHG emissions or removal by sources that would occur in absence of the proposed project	Marrakech Accords, JI Modalities, Appendix B	☑	Table 2, Section B.2
13. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances	Marrakech Accords, JI Modalities, Appendix B	☑	Table 2, Section B.2
14. The baseline methodology shall exclude to earn ERUs for decreases in activity levels outside the project activity or due to force majeure	Marrakech Accords, JI Modalities, Appendix B	☑	Table 2, Section B.2
15. The project shall have an appropriate monitoring plan	Marrakech Accords, JI Modalities, §33(c)	☑	Table 2, Section D

Table 2 Requirements Checklist

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
A. General Description of Project Activity					
A.1. Project Boundaries					
A.1.1. Are the project's spatial (geographical) boundaries clearly defined?	1, 2, 3	DR, I	The project's spatial boundaries are clearly described for the project installation and respective emissions reduction through electricity and heat generation by gas-fired boilers and cogeneration units.		<input checked="" type="checkbox"/>
A.1.2. Are the project's system (components and facilities used to mitigate GHGs) boundaries clearly defined?	1, 2, 3	DR, I	Yes, the Technical Description (1.5 Detailed project description) presented in the PDD, shows a complete description of the project's system. The size of the cogeneration units is already specified. The given figures of heat and electricity production are plausible and conservative. <u>Corrective action request:</u> The PDD should show the two phases of the project in a consistent way. Hence the crediting period will probably be changed, too.	CAR2	<input checked="" type="checkbox"/>
A.2. Technology to be employed					
A.2.1. Does the project design engineering reflect current good practices?	1, 2,	DR,	Yes, the employed and provisioned technology does reflect current good practice	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

* MoV = Means of Verification, DR= Document Review, I= Interview



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
	3, 8	I	concerning the installation and operation of cogeneration units.		
A.2.2. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	1, 2, 3, 8	DR, I	The employed and foreseen technology does reflect current good practice for combined producing of heat and electricity. The project uses technology that goes beyond the state of the art in the host country.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.3. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1, 2, 3, 8	DR, I	It is not likely that the project technology will be substituted by a more efficient technology.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.4. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	1, 2, 3, 8	DR, I	The suppliers are and will be obliged to organize trainings for responsible operating and maintenance staff. <u>Clarification Request:</u> The operator should deliver schedules/plans for the foreseen trainings.	CR1	<input checked="" type="checkbox"/>
A.2.5. Does the project make provisions for meeting training and maintenance needs?	1, 2, 3, 8	DR, I	The PDD does not describe the foreseen training and maintenance needs during the operation of cogeneration unit. These aspects regarding future responsibilities are not mentioned. <u>Corrective action request:</u> The PDD should give a short overview about the aspects training and maintenance needs of the project.	CAR3	<input checked="" type="checkbox"/>

* MoV = Means of Verification, DR= Document Review, I= Interview



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B. Project Baseline					
B.1. Baseline Methodology					
B.1.1. Is the discussion and selection of the baseline methodology transparent?	1, 2, 3, 4	DR, I	The discussion and selection in the Baseline Study is transparent.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.1.2. Does the baseline methodology specify data sources and assumptions?	1, 2, 3, 4	DR, I	<p>Yes, mainly all data used are specified and documented.</p> <p><u>Clarification Request:</u></p> <p>Why are only the emissions from HFO combustion in boilers on-site emissions and why are only the emissions from NG-combustion off-site-emissions? (see PDD table 3.1)</p> <p><u>Corrective Action Request</u></p> <p>It is not shown in which way the Specific consumption Sc is determined or calculated. In the PDD it should be specified how this value Sc is calculated.</p>	<p>CR2</p> <p>CAR4</p>	<input checked="" type="checkbox"/>
B.1.3. 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, 3, 4	DR, I	Regarding the CO2 emissions due heat production and electricity net generation the PDD describes the underlying rationale for the formula used to determine baseline emissions for the project.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.1.4. Does the baseline methodology specify types of variables used (e.g. fuels used, fuel consump-	1, 2, 3, 4,	DR,	Yes, all types of variables are clearly and	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

* MoV = Means of Verification, DR= Document Review, I= Interview



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
tion rates, etc)?	9, 10, 11	I	completely specified.		
B.1.5. Does the baseline methodology specify the spatial level of data (local, regional, national)?	1, 2, 3, 4, 9, 10, 11	DR, I	All spatial levels are considered to be appropriate.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.2. Baseline Determination					
B.2.1. Is the application of the methodology and the discussion and determination of the chosen baseline transparent?	1, 2, 3, 4	DR, I	The discussion and determination of the chosen baseline is transparent and reflect the situation as required due to altered legislation and the resulting need for changes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.2.2. Has the baseline been determined using conservative assumptions where possible?	1, 2, 3, 4, 9, 10, 11	DR, I	<p>The baseline emissions for heat production takes into account the best efficiency the District Heating systems ever had. The baseline for CO2-emissions of electricity sector is according the current study of National Electricity Company for determining the baseline emission factor.</p> <p>This study does not regard build margin power plants by calculating the operating margin. Further by calculating the build margin the recent build Hydro Power Plants and Nuclear Power Plant units are neglected. This study fixes the emission fac-</p>		<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			<p>tors for the future ex-ante and does not foresee ex-post determination. Hence the determination of the grid-factor is not strictly according the CDM-Methodology of ACM002 and SSC-Methodology.</p> <p>The calculation of grid-factor by using Operating Margin emission factor and Build Margin Emission Factor is not shown in the PDD.</p> <p><u>Corrective Action Request:</u></p> <p>Regarding emission factor in the electricity sector it should be described in the PDD why only the operation margin is used, neglecting the build margin, for determining and calculating the emissions. References have to be added.</p>	CAR5	
B.2.3. Has the baseline been established on a project-specific basis?	1, 2, 3, 4, 9, 10, 11	DR, I	Yes the baseline is established in a project specific manner. The use of a generic approach concerning the grid factor is deemed to be suitable.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.2.4. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	1, 2, 3, 4, 9, 10, 11	DR, I	Yes, the baseline does take into account the major national and/or sectoral policies, macro-economic trends and political developments. Relevant key factors are described and their impact on the baseline and the project risk is evaluated.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

* MoV = Means of Verification, DR= Document Review, I= Interview



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B.2.5. Is the baseline determination compatible with the available data?	1, 2, 3, 4, 9, 10, 11, 13	DR, I	Yes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.2.6. Does the selected baseline represent a likely scenario in the absence of the project?	1, 2, 3, 4, 9, 10, 11, 13, 12, 17, 18	DR, I	Yes, the baseline does represent a likely scenario in the non project case as it conforms to all legal requirements and the prevailing practice in the Bulgarian energy sector.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.2.7. Is it demonstrated that the project activity itself is not a likely baseline scenario?	1, 2, 3, 4, 17, 18	DR, I	<p>The additionality of the project is mainly proven by Financial Additionality and Common Practice Analysis which are quite appropriate.</p> <p><u>Clarification request:</u></p> <p>The payback time seems to be limited to 5 years.</p> <p>Statement from Bulbank which confirms this short payback period is provided to the audit team.</p> <p><u>Clarification request:</u></p>	<p>CR3</p> <p>CR4</p>	<input checked="" type="checkbox"/>

* MoV = Means of Verification, DR= Document Review, I= Interview



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			<p>There are few CHP investment projects in Bulgaria, which are all JI-Projects.</p> <p>Proofs, which confirm the CHP plants of Varna and Vratza as JI Projects are provided to the audit team.</p>		
B.2.8. Have the major risks to the baseline been identified?	1, 2, 3, 4	DR, I	<p>Yes, the main risks of the project are the prices for gas and electricity. A sensitivity analysis have been prepared and is mentioned in the PDD (chapter 5.2) The emission factor for electricity production is given by Bulgarian National Electricity Company which was currently issued. Therefore it is not very probably that the baseline in principle will change significantly.</p> <p>Contract or Lol regarding connections to the grid are not signed yet. Hence the negotiations with the grid operator could jeopardize the date feeding in electricity to the grid.</p> <p><u>Clarification request:</u></p> <p>Contract or minutes of negotiations regarding transformer and the connection to the grid for feeding in electricity to the grid should be prepared as far as possible.</p>	CR5	<input checked="" type="checkbox"/>
B.2.9. Is all literature and sources clearly referenced?	1, 2, 3	DR, I	The detailed description of the Electricity Sector in Bulgaria contents a lot of tables, diagrams and figures, which are mainly not		<input checked="" type="checkbox"/>

* MoV = Means of Verification, DR= Document Review, I= Interview



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			referenced. <u>Corrective action request:</u> Used literature and sources should be clearly referenced.	CAR6	
C. Duration of the Project/ Crediting Period					
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	1, 2, 3	DR, I	Several dates are mentioned (see PDD 1.2.4 and 1.5.2). However the dates do not correspond exactly to each other. Further the project starting date is not exactly indicated; maybe it could be defined as start of construction. The PDD does define the start of operation but it does neglect the start of operation of the 1. Phase. As the calculated emission reduction in 2006 shows the crediting period starts in the mid of 2006. The operational lifetime of the project is not announced. However it is sure that the operational lifetime of foreseen technology will be longer than the crediting period. <u>Corrective Action request:</u> The PDD should exactly define the dates of project start and commissioning of the co-generation unit. The operational lifetime of he project should be mentioned.	CAR7	<input checked="" type="checkbox"/>
C.1.2. Is the project's crediting time clearly defined?	1, 2,	DR,	According to the information during the au-		<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
	3	I	dit the crediting period can be assumed to start in the mid of 2006 and ends with the year 2012. The crediting period is clearly indicated in the PDD (see PDD 8.) but does not correspond to the received information. The crediting period in terms of Kyoto Protocol could be defined as being from 2008 – 2012 as maximum in accordance with the first commitment period defined in the Kyoto Protocol. <u>Corrective Action request:</u> The project's crediting time should be corrected.	CAR8	
D. Monitoring Plan					
D.1. Monitoring Methodology					
D.1.1. Does the monitoring methodology reflect good monitoring and reporting practices?	1, 2, 3, 4	DR, I	Yes, the monitoring methodology does reflect current good practice.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.2. Is the selected monitoring methodology supported by the monitored and recorded data?	1, 2, 3, 4	DR, I	Yes, the project foresees that all necessary parameters will be measured and recorded.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.3. Are the monitoring provisions in the monitoring methodology consistent with the project boundaries in the baseline study?	1, 2, 3, 4	DR, I	In few cases the monitoring provisions are not consistent with the project boundaries. <u>Corrective Action Request:</u> Hence it is necessary either to adjust the monitored data/parameters or the methodology and the boundaries must be adjusted. (i.E.: to add Electricity from grid, heated feed	CAR9	<input checked="" type="checkbox"/>

* MoV = Means of Verification, DR= Document Review, I= Interview



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			water from heat exchanger, to let out: quantity of consumed fuel for back up boilers, efficiency coefficient of existing boilers)		
D.1.4. Have any needs for monitoring outside the project boundaries been evaluated and if so, included as applicable?	1, 2, 3, 4	DR, I	It has been evaluated, that with the chosen methodology there is no need to monitor outside the boundaries.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.5. Does the monitoring methodology allow for conservative, transparent, accurate and complete calculation of the ex post GHG emissions?	1, 2, 3, 4	DR, I	Yes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.6. Is the monitoring methodology clear and user friendly?	1, 2, 3, 4	DR, I	Yes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.7. Does the methodology mitigate possible monitoring errors or uncertainties addressed?	1, 2, 3, 4	DR, I	Yes. The methodology itself mitigates possible monitoring errors and the uncertainties are addressed. See PDD Table 9.2.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.2. Monitoring of Project Emissions					
D.2.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions within the project boundary during the crediting period?	1, 2, 3, 4	DR, I	Yes, indicators have been defined and the project emissions are monitored according to the monitoring plan.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.2.2. Are the choices of project GHG indicators reasonable?	1, 2, 3, 4	DR, I	The relevant indicators for determining the project emissions (heat for CHP Auxiliaries, electricity for CHP auxiliaries and fuel demand for CHP) are foreseen in the monitoring plan.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.2.3. Will it be possible to monitor / measure the specified project GHG indicators?	1, 2,	DR,	See above	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
	3, 4	I			
D.2.4. Will the indicators enable comparison of project data and performance over time?	1, 2, 3, 4	DR, I	This is more relevant for the baseline indicators (gas demand and electricity generation), which will offer a proof of the project's performance.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.3. Monitoring of Leakage					
D.3.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	1, 2, 3, 4	DR, I	<p>Leakages during its delivery through the gas pipeline are considered by the emission factor. No further indicators have been defined and no leakage emissions are monitored according to the monitoring plan.</p> <p><u>Clarification Request:</u></p> <p>Some of the foreseen engines will be not new but overhauled engines. Hence it must be shown that there is not any leakage because of the removal of these engines from the original site.</p> <p><u>Clarification Request:</u></p> <p>Nevertheless it should be regarded, that due reduced electricity demand from the grid the electricity sector would indirectly have less need for allowances within the EU Emissions Trading System. Hence by preparing the national allocation plan the Bulgarian JI projects must be taken into consideration.</p>	<p>CR6</p> <p>CR7</p>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			Another issue is, that the cogeneration units itself will be covered by the EU ETS, and will maybe get allowances for their project emissions. Hence the issued allowances should correspond in a conservative way only to the project emissions for the electricity generation in this JI-project, because this project does not reduce emissions regarding heat generation.		
D.3.2. Have relevant indicators for GHG leakage been included?	1, 2, 3	DR, I	See comment above.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.3.3. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	1, 2, 3	DR, I	See comment above.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.3.4. Will it be possible to monitor the specified GHG leakage indicators?	1, 2, 3	DR, I	See comment above.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.4. Monitoring of Baseline Emissions					
D.4.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining the baseline emissions during the crediting period?	1, 2, 3, 4	DR, I	Besides the import of electricity from the grid and heat from the existing heating system the relevant data are foreseen in the monitoring plan. <u>Corrective Action Request:</u> Imported amount of electricity from the grid and heat from the existing heating system should be added to the monitoring methodology. Depending on the manner of connec-	CAR10	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			tions of the cogeneration units to the grid transformer losses must be extra considered.		
D.4.2. Is the choice of baseline indicators, in particular for baseline emissions, reasonable?	1, 2, 3, 4	DR, I	The choice is reasonable.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.4.3. Will it be possible to monitor the specified baseline indicators?	1, 2, 3, 4	DR, I	Yes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.5. Monitoring of Social and Environmental Impacts					
D.5.1. Does the monitoring plan provide for the collection and archiving of relevant data on social and environmental impacts?	1, 2, 3	DR, I	No, it is shown that there are only low environmental impacts. The construction permission which takes into consideration environmental aspects does foresee to monitor exhaust gases like NOx and CO according National legislation.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.5.2. Will it be possible to monitor the specified impact indicators?	1, 2, 3,	DR, I	See comment above	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.6. Project Management Planning					
D.6.1. Is the authority and responsibility of project management clearly described?	1, 2, 3, 8	DR, I	The aspects regarding future authorities and responsibilities within Toplofikatsia are fixed yet.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.6.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	1, 2, 3, 8	DR, I	The registration, monitoring, measurement and reporting will be integrated in the existing monitoring system for the District Heating. 6 persons are working on this topic al-		

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			<p>ready. The PDD does not mention yet the foreseen authority and responsibility.</p> <p><u>Corrective action request:</u></p> <p>The aspects regarding future authorities and responsibilities for registration, monitoring, calculating, reporting and internal audits within Toplofikatsia Bourgas should be clearly described in the PDD.</p>	CAR11	
D.6.3. Are procedures identified for training of monitoring personnel?	1, 2, 3, 8	DR, I	<p>Yes, procedures are identified yet for training of monitoring and reporting personnel. The personnel of Toplofikatsia Bourgas have already experiences with similar measurement devices and will be trained by the suppliers of new measurement devices.</p> <p><u>Corrective action request:</u></p> <p>The procedures regarding training of the monitoring and reporting personnel should be described in the PDD.</p>	CAR12	<input checked="" type="checkbox"/>
D.6.4. Are procedures identified for emergency preparedness where emergencies can result in unintended emissions?	1, 2, 3, 8	DR, I	<p>There are procedures identified for emergency preparedness. It is foreseen to use statistical data in case of measurement failures. Further it is intended to install control meters for the important electricity meters. In other cases they store spare parts for the usual transmitters, so they can replace in short terms failed devices.</p>		<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			<u>Corrective action request:</u> The procedures regarding emergency preparedness should be described in the PDD.	CAR13	
D.6.5. Are procedures identified for calibration of monitoring equipment?	1, 2, 3, 8	DR, I	Yes, maintenance and calibration are foreseen for each monitoring equipment.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.6.6. Are procedures identified for maintenance of monitoring equipment and installations?		DR, I	See comment above	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.6.7. Are procedures identified for monitoring, measurements and reporting?	1, 2, 3	DR, I	Yes, the procedures regarding monitoring, measurements and reporting are already fixed in advance.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.6.8. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)?	1, 2, 3	DR, I	Yes, the data should be recorded electronically.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.6.9. Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?		DR, I	See CAR 12 and 13 above	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.6.10. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?		DR, I	See clarification request CR5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.6.11. Are procedures identified for project performance reviews?	1, 2, 3	DR, I	With the monitored data there are enough indicators to check the performance of the project. These indicators are strong connected to generated emission reduction. Therefore no further procedures for project performance are necessary.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
D.6.12. Are procedures identified for corrective actions?		DR, I	See clarification request CAR13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E. Calculation of GHG Emissions by Source					
E.1. Predicted Project GHG Emissions					
E.1.1. Are all aspects related to direct and indirect GHG emissions captured in the project design?	1, 2, 3	DR, I	Yes, all necessary parameters have been defined.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.2. Are the GHG calculations documented in a complete and transparent manner?	1, 2, 3	DR, I	Yes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.3. Have conservative assumptions been used to calculate project GHG emissions?	1, 2, 3	DR, I	Yes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.4. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	1, 2, 3	DR, I	Yes, the possible uncertainties are addressed. See PDD Table 9.2.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.5. Have all relevant greenhouse gases and source categories listed in Kyoto Protocol Annex A been evaluated?	1, 2, 3	DR, I	Yes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.2. Leakage Effect Emissions					
E.2.1. Are potential leakage effects beyond the chosen project boundaries properly identified?	1, 2, 3	DR, I	Leakage calculations are not requested	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.2.2. Have these leakage effects been properly accounted for in calculations?		DR, I	See comment above	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.2.3. Does the methodology for calculating leakage comply with existing good practice?		DR, I	See comment above	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.2.4. Are the calculations documented in a complete		DR,	See comment above	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
and transparent manner?		I			
E.2.5. Have conservative assumptions been used when calculating leakage?		DR, I	See comment above	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.2.6. Are uncertainties in the leakage estimates properly addressed?		DR, I	See comment above	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.3. Baseline Emissions					
E.3.1. Have the most relevant and likely operational characteristics and baseline indicators been chosen as reference for baseline emissions?	1, 2, 3, 4, 9, 10, 11	DR, I	Yes, all data are based on historic values, IPCC data and the baseline emission factor of electricity grid is according the published "Carbon Emission Factor of the Baseline on Joint Implementation projects in the Bulgarian Energy Sector".	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.3.2. Are the baseline boundaries clearly defined and do they sufficiently cover sources and sinks for baseline emissions?	1, 2, 3, 4	DR, I	Yes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.3.3. Are the GHG calculations documented in a complete and transparent manner?	1, 2, 3	DR, I	Yes. <u>Clarification request:</u> With the given parameters (capacity and capacity factor) in the PDD 1.5.3; the indicated figures of thermal energy from co-generators are lower than could be expected.	CR8	<input checked="" type="checkbox"/>
E.3.4. Have conservative assumptions been used when calculating baseline emissions?	1, 2, 3, 4, 9, 10,	DR, I	Yes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
	11				
E.3.5. Are uncertainties in the GHG emission estimates properly addressed in the documentation?	1, 2, 3	DR, I	The indicated emission factors are derived from historical data of Toplofikatsia Bourgas and from the study of Bulgarian National Electricity Company. Tthe possible uncertainties are addressed. See PDD Table 9.2.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.3.6. Have the project baseline(s) and the project emissions been determined using the same appropriate methodology and conservative assumptions?	1, 2, 3, 4	DR, I	Yes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.4. Emission Reductions					
E.4.1. Will the project result in fewer GHG emissions than the baseline scenario?	1, 2, 3	DR, I	Yes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F. Environmental Impacts					
F.1.1. Has an analysis of the environmental impacts of the project activity been sufficiently described?	1, 2, 3	DR, I	Yes, the description of the environmental impacts is sufficient.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	1, 2, 3	DR, I	Requirements for an EIA exist in the host country. The Ministry of Environment stated that an EIA for this project is not necessary. Construction permit were issued already, which take environmental impacts into account.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.1.3. Will the project create any adverse environmental effects?	1, 2, 3	DR, I	No, the project will create only low and very local adverse environmental effects, regarding local increase of exhaust gases. In a	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			regional view there is not any adverse environmental effect.		
F.1.4. Are transboundary environmental impacts considered in the analysis?	1, 2, 3	DR, I	Transboundary impacts does not exist.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.1.5. Have identified environmental impacts been addressed in the project design?		DR, I	See comment F1.3.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.1.6. Does the project comply with environmental legislation in the host country?	1, 2, 3, 5, 6, 7, 12, 14, 15, 16	DR, I	Yes, the project complies with the environmental legislation in Bulgarien and the EU.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G. Stakeholder Comments					
G.1.1. Have relevant stakeholders been consulted?	1, 2, 3, 16	DR	Yes, the project participants applied for an approval of the local mayor, who announced the project in the local newspapers. Toplofikatsia Bourgas received individual letters from local stakeholders which in general support the project and do not ask for additional actions. Construction permit was issued already, which take comments of local stakeholders into account.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.1.2. Have appropriate media been used to invite comments by local stakeholders?	1, 2, 3,	DR	Yes, besides the announcement in the local newspapers, Toplofikatsia Bourgas pre-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
	16		sented the project in form of a discussion by a local telecast. Twice a year Toplofikatsia Bourgas offers such a discussion in the local TV.		
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?		DR	See comment above.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.1.4. Is a summary of the stakeholder comments received provided?		DR	See comment above.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.1.5. Has due account been taken of any stakeholder comments received?	1, 2, 3, 16	DR	No comments have been received, which would have required any further action.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

1 Table 3 Resolution of Corrective Action

Draft report corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Determination conclusion
<p>CAR 1</p> <p>It is envisaged that the project will be approved by both countries (Bulgaria and Netherlands) at the end of the validation process. The Bulgarian National Focal Point has issued a Letter of Endorsement which shows in principle the support of the project.</p> <p><u>Corrective Action Request:</u> The Approvals should be provided at the end of the validation.</p>	<p>Table 1, 1.</p>	<p>This CAR will be solved when MOEW issues the Letter of Approval</p>	<p>This issue remains at this stage an outstanding issue.</p>
<p>CAR2</p> <p>The size of the cogeneration units is already specified. The given figures of heat and electricity production are plausible and conservative.</p> <p><u>Corrective action request:</u></p>	<p>A.1.2</p>	<p>The two phases are clearly described in Point 1.2.4.</p> <p>The specification of the gas engines that will be implemented in the two phases are presented in Point 1.5.1</p> <p>Detailed technical description for the operation modes of the gas engines in the two phases is</p>	<p>The two phases of project are clearly described in the revised PDD. It is also distinguished between Kyoto-period and the time before Kyoto-period.</p> <p>This issue is considered to be resolved.</p>



Draft report corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Determination conclusion
<p>The PDD should show the two phases of the project. Hence the crediting period should be adjusted significantly.</p>		<p>presented in Point 1.5.1 after Table 4.</p> <p>In table 5 in 1.5.2 the two phases are separated according to the time frame of the realization of the project.</p> <p>In Point 1.5.2.1 the crediting period is described.</p> <p>Adjusting of the information related to the two different phases is also done in Point 1.5.3 as well as in the tables presenting the emissions reduction calculations in Chapter 8.</p>	
<p>CAR3</p> <p>The PDD does not describe the foreseen training and maintenance needs during the operation of cogeneration unit. These aspects regarding future responsibilities are not mentioned.</p> <p><u>Corrective action request:</u> The PDD should give a short overview about the aspects training and maintenance needs of the project.</p>	<p>A.2.5</p>	<p>This information is given in new Annex No. 15” Training Program Project Toplofikatsia Bourgas” for the training. (See also CR2)</p> <p>The maintenance required during the operation is shown in new Annex No. 13.”Plan of Co-Generations Maintenances”</p> <p>In PDD at the end of point. 1.5.1 is added “The technical staff which will participates in the installation, commissioning and which will be responsible for the operation and monitoring of the new co-generations installations shall be trained in the phase of commissioning and operation. Look in Annex No. 15. ” Training Program Project Toplofikatsia Bourgas” for more details.”</p>	<p>The revised PDD gives a short overview about the aspects of training and maintenance needs of the project. Training program and Plan of Maintenance were delivered to the validation team. Both are prepared in detail.</p> <p>This issue is considered to be resolved.</p>



Draft report corrective action requests	Ref. to check-list question in table 2	Summary of project owner response	Determination conclusion
		<p>In PDD point. 1.5.3 is added:</p> <p>“The other important factor influences of the expected capacity of the co-generation modules are the maintenances during the operation life. The preventive maintenance guidelines from the supplier are shown in Annex No. 13”Plan of Co-Generations Maintenances” to the PDD.”</p>	
<p>CAR4</p> <p><u>Corrective Action Request</u></p> <p>It is not shown in which way the Specific consumption Sc is determined or calculated. In the PDD it should be specified how this value Sc is calculated.</p>	<p>B1.2</p>	<p>CAR4:</p> <p>The purpose of using of Sc is to compare the performance of different District Heating Stations and Thermo Power Stations in Eastern Europe. The main idea of this Specific Consumption is to compare installations that are using different types of fuels such as Coals, natural gas, Heavy Fuel Oil in their general performance.</p> <p>The specific consumption Sc is the ratio of the quantity By [kg] of so called equivalent fuel per produced heat Qh [GJ] from the boilers. It is estimated as follow:</p> $By * 29,33 = B_{NG} * Q_{i,NG}^r = Q_f;$ $By = B_{NG} * Q_{i,NG}^r / 29,33;$ $Sc = By / Q_h.$ <p>Where: B_{NG} [th.nm³] – quantity of NG combus-</p>	<p>The revised PDD demonstrates in detail in which way the Specific consumption Sc is determined and calculated.</p> <p>This issue is considered to be resolved.</p>



Draft report corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Determination conclusion
		<p>tion for production of heat in boilers Q_h; $Q_{i,NG}$ is the low calorific value of NG; 29,33 [GJ/kg] is the low calorific value of so called equivalent fuel; Q_f is a heat introduced with NG for combustion.</p> <p>There is a strong relationship between boiler efficiency η and Sc on the base of:</p> <p>$Q_f = Q_h/\eta = Sc \cdot 29,33 \cdot Q_h/1000$, or:</p> <p>$1/\eta = Sc \cdot 29,33/1000$; and finally:</p> <p>$\eta = 34,1/Sc$ and $Sc = 34,1/\eta$;</p> <p>where Sc is in [kg/GJ]</p> <p>This information is added in Point No 6 in PDD, page 49.</p>	
<p>The NEK Baseline study does not regard build margin power plants by calculating the operating margin. Further by calculating the build margin the recent build Hydro Power Plants and Nuclear Power Plant units are neglected. This study fixes the emission factors for the future ex-ante and does not foresee ex-post determination. Hence the determination of the grid-factor is not strictly according</p>	<p>B2.2</p>	<p>1. The calculations of Baseline Emission Factors are shown in file: < Baseline Study DHS Bourgas 24.11.2005 rev 1.xls> , which file is independently from the PDD.</p> <p>2. According to the dispatch model findings the power Units in EPS in File 1 are allocated in 5 categories:</p> <p>2.1 Units operating at the margin;</p> <p>2.2 Build Margin Units;</p> <p>2.3 Future Build Margin Units;</p> <p>2.4 Least cost Units;</p>	<p>The added baseline methodology is in principle applicable for the emissions of electricity sector.</p> <p>The NEK – Baseline Study is approved by Bulgarian National Focal Point.</p> <p>This study determines combined margin EF (BEF). The application of that study is according to CDM-Methodology; the "simple adjusted combined margin emission factor CEF" is used.</p> <p>It is foreseen to determine the CEF ex-post.</p> <p>Nevertheless the NEK – Baseline Study, does not correspond exactly to CDM-Methodology because</p>



Draft report corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Determination conclusion
<p>the CDM-Methodology of ACM002 and SSC-Methodology.</p> <p>It should be clarified, if this determination of grid-factor is supported by the national focal point. If the project should be validated as "Track 2 – project", it would be necessary to use exactly the CDM-methodologies.</p> <p>The calculation of grid-factor by using Operating Margin emission factor and Build Margin Emission Factor is not shown in the PDD.</p> <p>CAR5</p> <p><u>Corrective Action Request:</u></p> <p>Regarding emission factor in the electricity sector it should be described in the PDD why only the operation margin is used, neglecting the build margin, for determining and calculating the emissions. References have to be added.</p>		<p>2.5 Must Run Units.</p> <p>3. The allocation of power units is made also, considering their merit order in the power system according to operational costs of any particular unit.</p> <p>4. The baseline emission factor (BEF) is calculated as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) factors. Calculations for this combined margin are based on 3 steps.</p> <p>4.1 Determine of OM implementing dispatch model based on following methods:</p> <ol style="list-style-type: none"> 1) Considering only units operating at the margin with highest operational costs in EPC. Please see cells <i>U13=U72</i> on worksheets <Min. Demand> and <Max. Demand> of File1 2) Considering all units in EPC which probably could operate at the margin (Adjusted). Please see cell <i>E76</i> on worksheets <Min. Demand> and <Max. Demand> of File1 3) Considering the average of all power Units in EPC exclude the units which are in Build margin. Please see cell <i>U70</i> on worksheets <Min. Demand> and <Max. Demand> of File1 	<p>- "Operating Margin EF" is calculated without consideration of the power plants, which are covered by the build margin.</p> <p>- "Build Margin EF" is calculated without consideration of the "build" nuclear power plant units and the pumped storage HPP</p> <p>This issue is considered to be resolved.</p>



Draft report corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Determination conclusion
		<p>4.2 Determine of BM emission factor considering BM units. Please see cell <i>U79</i> on worksheets <Min. Demand> and <Max. Demand> of File1</p> <p>4.3 OM and BM emission factors are determine considering points 4.1 and 4.2 with and without Hydropower Units in the 4 big hydro cascades in the system</p> <p>4.4 Combined margin emission factor so-called Baseline Emission Factor (BEF) is combination of operating margin (OM) and build margin (BM) emission factors, each of them weighed 50%. Please see cells <i>D83</i>, <i>D84</i> and <i>D85</i> only for power units burning fossil fuels and <i>E83</i>, <i>E84</i> and <i>E85</i> for all power units including hydropower units. Please see worksheets <Min. Demand> and <Max. Demand> of File1.</p> <p>4.5 Three 3 different BEFs are computed because of 3 different OM EF which is used for determine combined margin.</p> <p>4.6 Most conservative BEF (the lowest numbers) is used for calculation of emission reduction. This is the BEF computed in maximum scenarios (scenarios prosperity with maximum demand) with Dispatch Data Adjusted OM_EF and hydropower plants included. Please check worksheet <Summary> of File 1. Green highlighted values of BEFs are use for further cal-</p>	



Draft report corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Determination conclusion
		<p>culations of emission reductions.</p> <p>5. The Nuclear Power Units (NPUs) are excluded in calculations of emission factors because they are operating as base load power units and have the lowest operational costs in EPS. By no means NPUs are not influence of JI project operation. JI project displace only power units operating on the margin.</p> <p>The NPUs indirectly influence over the distribution of power supply in system, thus reducing the load factors of units operating on the margin.</p> <p>6. Ex-post determination of BEF Methodology is now included in PDD. Please see chapter 9.1.1 “Baseline Monitoring Methodology”, pages of 72 up to 76 in PDD, highlighted with track changes in red colour.</p>	
<p>The detailed description of the Electricity Sector in Bulgaria contents a lot of tables, diagrams and figures, which are mainly not referenced.</p> <p>CAR6</p> <p><u>Corrective action request:</u></p> <p>Used literature and sources</p>	<p>B2.9</p>	<p>The information for the description of the Electricity Sector in Bulgaria is taken by the National Electrical Company (NEK). All of the information published in this PDD is available in NEK and could be provided and verified at further request.</p> <p>Please also look www.nek.bg</p>	<p>With revised PDD used literature and sources are clearly referenced.</p> <p>This issue is considered to be resolved.</p>



Draft report corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Determination conclusion
should be clearly referenced.			
<p>Several dates of starting date are mentioned (see PDD 1.2.4 and 1.5.2). However the dates do not correspond exactly to each other. Further the project starting date is not exactly indicated. The PDD does define the start of operation but it does neglect the start of operation of the 1. Phase. As the calculated emission reduction in 2006 shows the crediting period starts in the mid of 2006. The operational lifetime of the project is not announced.</p> <p>CAR7</p> <p><u>Corrective Action request:</u></p> <p>The PDD should exactly define the dates of project start and commissioning of the cogeneration unit. The operational lifetime of the project should be mentioned.</p>	C1.1	<p>The information in Table 1.2.4 is adjusted according to the implementation time frame of the project.</p> <p>In table 5 in 1.5.2 the two phases are separated according to the time frame of the realization of the project.</p> <p>In Point 1.5.2.1 the information concerning the start of the project, the operational life time and crediting period is described.</p> <p>Adjusting of the information related to the two different phases is also done in Point 1.5.3 as well as in the tables presenting the emissions reduction calculations in Chapter 8.</p>	<p>The revised PDD defines the date of project start as start of operation of the first cogeneration units. The operational lifetime of the project is now mentioned and reasonable.</p> <p>Only one date for start of project activity is now defined.</p> <p>This issue is considered to be resolved.</p>
According to the information during the audit the crediting	C1.2	The project's crediting period is clearly described in Point 1.5.2.1.	The crediting period will start with April 1, 2006 with the start of operation of the first cogeneration



Draft report corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Determination conclusion
<p>period can be assumed to start in the mid of 2006 and ends with the year 2012. The crediting period is clearly indicated in the PDD (see PDD 8.) but does not correspond to the received information.</p> <p>CAR8</p> <p><u>Corrective Action request:</u></p> <p>The project's crediting time should be corrected.</p>			<p>tion units.</p> <p>This issue is considered to be resolved.</p>
<p>In few cases the monitoring provisions are not consistent with the project boundaries.</p> <p>CAR9</p> <p><u>Corrective Action Request:</u></p> <p>Hence it is necessary either to adjust the monitored data/parameters or the methodology and the boundaries must be adjusted.</p>	<p>D.1.3.</p>	<p>Yes, the correction is made in accordance with the project boundaries. In connection with the technical possibilities in the future, additionally are taken in consideration the steam consumption and the hot water for auxiliary needs consumption in DHC. The changes are done in point No 9, point No. 9.1.1, point No. 9.1.2 table 38 and table 39.</p> <p>Annex No. 7 "Monitoring Models", Annex No. 8 "Monitoring Scheme", Annex No.9 "Monitoring Equipment Specification" are changed also.</p> <p>Further correction is made in accordance with the project boundaries in point 3.1 - Fig. 3.1 from PDD.</p>	<p>The revised PDD has added necessary monitoring parameters according to the project boundaries.</p>



Draft report corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Determination conclusion
<p>Besides the import of electricity from the grid and heat from the existing heating system the relevant data are foreseen in the monitoring plan.</p> <p>CAR10</p> <p><u>Corrective Action Request:</u></p> <p>Imported amount of electricity from the grid and heat from the existing heating system should be added to the monitoring methodology. Depending on the manner of connections of the cogeneration units to the grid transformer losses must be extra considered.</p>	<p>D.4.1</p>	<p>Yes it is taken into consideration, look in CAR 9 information.</p> <p>For the transformer losses we can say that, the auxiliary needs of DHC also in this moment are measured on side 110 kV. The replaced electrical energy from the national network also will be measured on side 110 kV. For electricity, the project boundary is on 110 kV.</p> <p>Also look in Table 38, Line 7 in PDD, where this request is taken into account.</p>	<p>The project boundary for electricity is on 110 kV level, hence transformer losses will be regarded.</p> <p>This issue is considered to be resolved.</p>
<p>The registration, monitoring, measurement and reporting will be integrated in the existing monitoring system for the District Heating Bourgas. 6 persons are working on this topic already. The PDD does not mention yet the foreseen authority and responsibility.</p>	<p>D.6.2</p>	<p>The responsibilities and the authorisations are principally described in new Annex No 14 “Organization Structure and Responsibilities – Project Toplofikatsia Bourgas JSC” to the PDD.</p> <p>In PDD point 9.1 is added the next text: “For monitoring, collection, registration, visualization, archiving, reporting of the monitored dates and periodical checking of the measurement devices are responsible the measurement</p>	<p>Future authorities and responsibilities for registration, monitoring, calculating, reporting and internal audits within Toplofikatsia Bourgas are clearly fixed and described in the revised PDD.</p> <p>This issue is considered to be resolved.</p>



Draft report corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Determination conclusion
<p>CAR11</p> <p><u>Corrective action request:</u></p> <p>The aspects regarding future authorities and responsibilities for registration, monitoring, calculating, reporting and internal audits within Toplofikatsia Bourgas should be clearly described in the PDD.</p>		<p>team from 5 people and its manager Mr Minko Dimitrov. The authorises are not divided separately between the people. Every one from the team is authorized and responsible for all actions connected with the servicing of the monitoring system.</p> <p>The monitoring system is built with modern measurement devices, equipped with specialized computers for collecting of probes information and calculation of the measurement results. The communication ports of the devices permit the dates to be collected automatically in the Central monitoring system of DHC.</p> <p>All measurement devices are equipped with fiscal memory and can be recorded in every time.</p> <p>The existing measurement devices which are not equipped with communication ports will be reading and their results will be recorded in the tables of the Central monitoring system 1 time of day from the measurement team people.</p> <p>The measurement team will record the measurement dates from all measurement devices and will compare with the dates recorded in the Central monitoring system 1 time monthly like internal audit of the monitoring system.</p> <p>The measurement team carry out all maintenances of the measurement devices from the Monitoring system / cleaning the probes etc./</p>	



Draft report corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Determination conclusion
		<p>described in maintenance documentation of the suppliers.</p> <p>The manager of the team is authorized for preparing of the annuals report for the verification company with the results from the measurement and evidence of authenticity.</p> <p>The manager of the team is authorized to organize periodical checking of the measurement devices from the authorized laboratory. The plan and the report data for the periodical checking are record and automatically generated in the Central monitoring system</p> <p>The dates for the recording periods, archive type and archive data storage time are shown in the table No. 38 in point 9.1.2.”</p>	
<p>The personnel of Toplofikatsia Bourgas have already experiences with similar measurement devices and will be trained by the suppliers of new measurement devices.</p> <p>CAR12</p> <p><u>Corrective action request:</u></p> <p>The procedures regarding training of the monitoring and</p>	<p>D.6.3</p>	<p>The training of the monitoring personnel is shown in new Annex No. 15 “Training Program Project Toplofikatsia Bourgas”.</p> <p>In the PDD point 9.2 is added:</p> <p>In Annex No. 15 “Training Program Project Toplofikatsia Bourgas” is presented the plan for training of the monitoring personnel in commissioning period and the period of operation”.</p>	<p>The procedures regarding training of the monitoring and reporting personnel are described in the revised PDD.</p> <p>This issue is considered to be resolved.</p>



Draft report corrective action requests	Ref. to check-list question in table 2	Summary of project owner response	Determination conclusion
reporting personnel should be described in the PDD.			
<p>There are procedures identified for emergency preparedness. It is foreseen to use statistical data in case of measurement failures. Further it is intended to install control meters for the important electricity meters. In other cases they store spare parts for the usual transmitters, so they can replace in short terms failed devices.</p> <p>CAR13</p> <p><u>Corrective action request:</u></p> <p>The procedures regarding emergency preparedness should be described in the PDD.</p>	D.6.4	<p>In the PDD point 9.2 is added: In accordance with the procedures for checking the recorded monitoring dates, emergency preparedness and replacing missing data shall be marked:</p> <ul style="list-style-type: none"> - All measurement devices are registered in the State Register like trade devices; - All suppliers of the measurement devices have services in the country and are obligated to respond in 48 hours; - DHC keep in its storage spare parts in accordance with the recommendations of the suppliers, which the monitoring team is ready to change ; - All measurement devices are with fiscal memory; - The Central monitoring system archives all measurement data for very long period inside. The missing data for the period of damage will be replaced with enough precision with archived dates for similar period. 	<p>The procedures regarding emergency preparedness are identified and is described in the revised PDD.</p> <p>This issue is considered to be resolved.</p>



Draft report corrective action requests	Ref. to check-list question in table 2	Summary of project owner response	Determination conclusion
<p>CR1</p> <p>The suppliers are and will be obliged to organize trainings for responsible operating and maintenance staff.</p> <p><u>Clarification Request:</u></p> <p>The operator should deliver schedules/plans for the foreseen trainings</p>	<p>A.2.5</p>	<p>This plan has been added as a new Annex No 15 to the PDD.</p>	<p>Plan for training was provided.</p> <p>This issue is considered to be resolved.</p>
<p>Baseline methodology:</p> <p>CR2</p> <p><u>Clarification Request:</u></p> <p>Why are only the emissions from HFO combustion in boilers on-site emissions and why are only the emissions from NG-combustion off-site-emissions? (see PDD table 3.1)</p>	<p>B1.2</p>	<p>There are no emissions from HFO combustion in boilers on-site. That is a mistake. Both, on-site and off-site emissions are caused by NG combustion.</p> <p>In table 3.1-point 3.2 from PDD row "CO₂ emissions from HFO combustion in back -up boilers are added, if for some reasons NG will stop". In Annex 4 – Monitoring PDD Burgas rev Jan.06.xls " part "Project emissions" is added column " HFO combustion of "back up" boilers</p>	<p>This issue is considered to be resolved.</p>
<p>The additionality of the project is mainly proven by Financial Additionality and Common Practice Analysis</p>	<p>B2.7</p>		<p>Proof of short payback period is given.</p> <p>This issue is considered to be resolved.</p>



Draft report corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Determination conclusion
<p>which are quite appropriate.</p> <p>CR3</p> <p><u>Clarification request:</u></p> <p>The payback time seems to be limited to 5 years.</p> <p>Statement from Bulbank which confirms this short payback period should be provided to the audit team.</p> <p>CR4</p> <p><u>Clarification request:</u></p> <p>There are few CHP investment projects in Bulgaria, which are all JI-Projects.</p> <p>Proofs, which confirm the CHP plants of Varna and Vratza as JI Projects should be provided to the audit team.</p>		<p><u>CR3</u></p> <p>See CR Annex № 1 “Statement from BUL-BANK about pay back periods of CHP in Bulgaria”.</p> <p><u>CR4</u></p> <p>The See Annex № 2 “CHP in Bulgaria, which are JI-Projects”.</p> <p>The CHP plants of Varna and Vratza are not JI projects. This was mistakenly told during the validation visit, they are the first CHP project in Bulgaria and are very small</p> <p>CHP Varna = 2 gas engines x 2 MWe, CHP Vratza = 2 gas engines x 3 MWe.</p> <p>All of the next CHP projects, which have higher installed capacity are JI projects due to the higher investment cost and due to the necessity of additional income secured by the selling of Emissions Reductions.</p>	



Draft report corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Determination conclusion
		<p>CHP Biovet = 18 MWe, Price: 9 Million Euro CHP Plovdiv = 46 MWe, Price: 30 Mil. Euro CHP AKB = 29 MWe, Price 21 Million Euro</p> <p>Also it should be taken into account that the payback period for this projects has been calculated on price of the Natural Gas equal to the present price of 142 Euro / 1000 Nm³, or even lower. For the financial calculations for CHP Bourgas is used the price for Natural gas of 142 Euro /1000Nm³. Considering the last steps undertaken by the Russian Government for significant increasing of the price of the Natural Gas towards several countries, among others is Bulgaria, it is unavoidable that the price of the natural gas in Bulgaria will increase in the next coming years starting most probably in 2006. This fact will influence very negatively over the payback of the CHP project for DHC Bourgas and will strengthen the necessity of additional financial income from sale of Emissions Reduction.</p>	
Contract or Lol regarding connections to the grid are not signed yet. Hence the negotiations with the grid op-	B2.8		



Draft report corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Determination conclusion
<p>erator could jeopardize the date feeding in electricity to the grid.</p> <p>CR5</p> <p><u>Clarification request:</u></p> <p>Contract or minutes of negotiations regarding transformer and the connection to the grid for feeding in electricity to the grid should be prepared as far as possible.</p>		<p><u>CR5</u></p> <p>DHC Bourgas is in process of issuing of a license for production and sale of electricity. For this reason DHC Bourgas has applied in the State Energy and Water Regulatory Commission on 07.12.2005. The normal period for issuing of such a permit is three (3) months; hence the license should be issued in March 2006. Only after this permit is been issued DHC Bourgas and the National Electrical Company (NEK) can sign a contract or Lol for connection to the grid. See Annex № 3 “Application from DHC BURGAS for Electricity Generation</p>	<p>An important prerequisite to feed electricity into the grid is therefore the license for electricity production and sales.</p> <p>At this stage the presented “APPLICATION FOR ELECTRICITY GENERATION” is sufficient evidence.</p> <p>It is expected that together with the LoA of the host country the above licence and contract can be provided to the audit team.</p>
<p>CR6</p> <p><u>Clarification Request:</u></p> <p>Some of the foreseen engines will be not new but overhauled engines. Hence it must be shown that there is not any leakage because of the removal of these engines from the original site.</p>	D.3.1	<p><u>CR6</u></p> <p>The co-generation modules are second hand, but prophylaxis and refurbishment on the modules is foreseen at the plant of Wartsila Sweden AB in Gothenburg.</p> <p>The removal emissions are very small / less than 0.1 %/ because:</p> <ul style="list-style-type: none"> - The co-generation modules are on common base plates; 	<p>Director John Sulley from Warwick Energy confirmed that the Wartsila engines were used to burn natural gas from a small onshore stranded natural gas field and that the reason for selling the engines was the depleting of the gas field.</p> <p>The MoEW is aware about the issue of double-issuing of ERUs and Allowances. Bulgaria is planning to set aside a reserve for electricity producing JI projects (deducted from the allowances of the electricity sector) in order to avoid</p>



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<p>CR7 <u>Clarification Request:</u> Nevertheless it should be regarded, that due reduced electricity demand from the grid the electricity sector would indirectly have less need for allowances within the EU Emissions Trading System. Hence by preparing the national allocation plan the Bulgarian JI projects must be taken into consideration. Another issue is, that the co-generation units itself will be covered by the EU ETS, and will maybe get allowances for their project emissions. Hence the issued allowances should correspond in a conservative way only to the project emissions for the electricity generation in this JI-project, because this project does not reduce emissions regarding heat generation.</p>		<ul style="list-style-type: none"> - The main transport is on ships / to Gothenburg and to Bourgas; - The transports of the new are the same. The removal is very simple. <p>Thus the emissions related to the transport of the co-generation modus is considered to be insignificant and less than 0,1 %, which amount would not influence the total project emissions.</p> <p>The overhauled engines have been used for burning of methane from a stranded gas mine in England. The reason that the owner company "Warwick Energy" has sold the gas engines is that the methane from the gas mine has been completely utilized. This means that there is no any methane release after the decommissioning of the gas engines.</p> <p><u>CR7</u> In the ongoing process of developing of the National Allocation Plan for Bulgaria all of the existing JI projects and those that are under evaluation are taken into account. For this reason Ministry of Environment and Waters (MoEW), which is responsible for the evaluation of NAP is requesting information for the amount of the Emission Reductions from JI Projects.</p>	<p>indirect double counting. This reserve will include the ERUs in the PDDs of the approved projects, the endorsed projects, and some new projects.</p> <p>The above issues can be considered to be resolved.</p>




Draft report corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Determination conclusion
<p>GHG calculations</p> <p>CR8</p> <p><u>Clarification request:</u></p> <p>With the given parameters (capacity and capacity factor) in the PDD 1.5.3; the indicated figures of thermal energy from co-generators are lower than could be expected.</p>	<p>E.1.2.</p>	<p><u>CR8</u></p> <p>Yes these values are taken for conservative calculations. The coefficients provided for electrical power utilization is 0.891 and for the thermal power is 0.8257. Those coefficients are used in order the operational output of the CHP to be more realistic.</p>	<p>GHG calculations are conservative determined.</p> <p>This issue is considered to be resolved.</p>




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Determination Reference List

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Reference No.	Document or Type of Information
1.	On-site interview with the project owner / developer and the project consultant at the offices of Toplofikatcia Bourgas , in Bourgas, Bulgaria on December 7 and December 8, 2005 by auditor of TÜV Industrie Service GmbH Validation auditor on-site: Klaus Nürnberger TÜV Industrie Service GmbH, TÜV SÜD Group, Munich, Germany Kiril Baharev TÜV SÜD Office Bulgaria, Stara Zagora, Bulgaria Interviewed persons: Valyo Ducheve Toplofikatcia Bourgas, Deputy Executive Manager Atanas Kumanov Toplofikatcia Bourgas, Deputy Executive Manager “Production and Realization” Valentin Terziysky Kamibo Ltd., Managing Director of Kamibo, Project Manager Maria Ducheve Municipality of Bourgas Boris Metodiev Global Carbon, Consultant Milen Milev Global Carbon, Project Coordinator Stefan Manev Cogen Engineering, Executive Director of Cogen, Consultant
2.	Project Design Document, published version, December 6, 2005
3.	Project Design Document, final version, March 27, 2006
4.	Bulgarian JI guidelines and Baseline Study: http://www.moew.government.bg/recent_doc/international/climate/Brochure_JI_eng.pdf
5.	License for Heat Production, National Commission for Energy Regulation, Nr.:023-02/15.11.2000, valid for 20 years
6.	License for Heat Transportation, National Commission for Energy Regulation, Nr.:024-05/15.11.2000, valid for 20 years
7.	Operation Permit Steam Vessel, National Committee for Standards, April 3, 1978
8.	Minutes of Meeting Toplofikatcia Bourgas with Wärtsila, December 2, 2005; regarding start of operation, maintenance inspections
9.	Invoices of BourgarGas regarding gas demand in 2004 of Toplofikatcia Bourgas
10.	Spreadsheet of Electricity Demand in 2004 of Toplofikatcia Bourgas and Invoice of NEK for electricity demand of November 2004
11.	Protocols of Heat Production and Delivery in 2004 of Toplofikatcia Bourgas

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Reference No.	Document or Type of Information
12.	Granting of Ministry of Finance due to transfer of District Heating Bourgas to Toplofikatcia Bourgas EAD, September 15, 2005
13.	Flowsheet of energy input, output and losses for the year 2005
14.	Inquiry to the National Electric Company NEK for the connection of cogeneration unit to the grid, August 16, 2005
15.	Inquiry to National Commission for Energy Regulation for gaining licence for electricity generation, September 21, 2005
16.	Construction Permit for installation of cogeneration units, Municipality of Bourgas, October 28, 2005
17.	Statement from bulbank about pay back period for a new chp in bulgaria, January 2006
18.	JI Projects in Bulgaria from the website of the Bulgarian Ministry of Environment: http://www.moew.government.bg/recent_doc/international/climate/proekti_eng.doc , January 2006