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Determination Report

Determination of
the
“Sunflower and rape seeds - bio diesel fuel production and use for transportation in Bulgaria”,

Report No. 893345

2007, May 17

TÜV SÜD Industrie Service GmbH,
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D R A F T

Industrie Service

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Subject:	Determination of a JI Project
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Client:	Astra Bio Plant Ltd. 100 Tutrakan Blvd 7000 RUSE BULGARIEN
Contract approved by:	Werner Betzenbichler
Report Title:	Determination of the JI-Project: "Sunflower and rape seeds - bio diesel fuel production and use for transportation in Bulgaria"
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Summary:

The Certification Body "Climate and Energy" of TÜV SÜD Industrie Service GmbH has been ordered by the Astra Bio Plant Ltd. in Ruse, Bulgaria, to determine the above mentioned JI project.

The determination of this project has been performed by document reviews, an audit at the location of the project and interviews at the offices of the project owner and its technical advisor.

The need for corrective action request (CAR) and clarification requests (CR) is described in the report and the attached determination protocol.

As result of this procedure, it can be confirmed that the submitted project documentation is in line with all requirements set by the Marrakech Accords and the Kyoto Protocol.

Additionally the assessment team reviewed the estimation of the projected emission reductions.

We can confirm that the indicated amount of 677.216 tons CO_2 (ERUs) during the Kyoto crediting period from January 1st, 2008 – December 31st, 2012 represents an estimation which is according to the capacity of biodiesel plant and using the assumptions given by the project documents. In the event that the Government of Bulgaria agrees to transfer of Assigned Amount Units, it is foreseen to generate early credits in the amount of 66.877 tons CO_2 for the year 2007 which are also estimated in the same way.

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Abbreviations

ABP	Astra Bio Plant Ltd.
CAR	Corrective action request
CR	Clarification request
DFP	Designated Focal Point
DP	Determination Protocol
EIA	Environmental Impact Assessment
ER	Emission reduction
ERU	Emission Reduction Unit
GHG	Greenhouse gas(es)
JI	Joint Implementation
JISC	JI Supervisory Committee
KP	Kyoto Protocol
LoA	Letter of Approval
MoEW	Ministry of the Environment and Water
MP	Monitoring Plan
MS	Management System
NAP	National Allocation Plan due the EU Emissions Trading Scheme
PDD	Project Design Document
TÜV SÜD	TÜV SÜD Industrie Service GmbH
UNFCCC	United Nations Framework Convention on Climate Change

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1 INTRODUCTION

1.1 Objective

Astra Bio Plant Ltd. in Ruse, Bulgaria, has commissioned TÜV SÜD Industrie Service (in short: TÜV SÜD) to make a determination of the "**Sunflower and rape seeds - bio diesel fuel production and use for transportation in Bulgaria**" (in short: Astra Bio-diesel) with regard to the relevant requirements for JI project activities. The determination serves as a design verification and is a requirement for all JI projects submitted to the JISC. The purpose of a determination is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Determination is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emission reduction units (ERUs).

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

1.2 Scope

The determination scope is defined as an independent and objective review of the project design document (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 employed a risk-based approach in the determination, focusing on the identification of significant risks for project implementation and the generation of ERUs.

The determination is not meant to provide any consulting towards project owner Astra Bio Plant Ltd or KWI Consultants GmbH who prepared the PDD. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3 GHG Project Description

The purpose of the project activity is to produce bio-diesel derived from sunflower and rape crops for substituting petroleum diesel. The project foresees the erection of bio-diesel plant which is located in the Rousse Region in the municipality of SLIVO POLE. The bio diesel plant consists of three main parts which are crude oil production, bio-diesel production and a small blending station. The bio diesel plant has a capacity of 60,000 tons of bio-diesel per year and is expected to be commissioned in July 2007. The constructon of a modular type of bio diesel plant was purchased from Bioenergomashproject. The produced bio-diesel will be distributed only in Bulgaria. Buyers of the bio-diesel are transport fleets, Bulmarket which delivers to undefined consumers with B100 or B2 up to B5, other blending stations and refineries.

The generated ERUs are supplied by Astra Bio Plant Ltd. which is owned by Astra Finance Ltd. a private company whose main business is the trade of agricultural products, fertilizers and fuels. Both Companies are located in Rousse, Bulgaria. The project documentation has been developed by the project proponent, KWI Consultants GmbH, located in Vienna, Austria, with additional support by Municipal Energy Agency – Rousse.

2 METHODOLOGY

In order to ensure transparency, a determination protocol was customised for the project. 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 for this project consists of three tables. The different columns in these tables are described in Figure 1.

The completed determination protocol is enclosed in Appendix A 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 subdivided. 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".*

Figure 1 Determination protocol tables

2.1 Review of Documents

A first PDD (version 1, September 2006) was submitted to TÜV SÜD by Municipal Energy Agency – Rousse on October 19, 2006. As a result of the pre-check the PDD was revised and provided to TÜV SÜD on November 13, 2006 for publishing on the TÜV SÜD website www.netinform.net and on JISC-website. The publishing on JISC-website was confirmed by UNFCCC on November 17, 2006.

After the onsite-assessment the PDD was renewed due to the mentioned requests in our determination protocol and sent (version 2, January 29, 2007 as pdf) and sent to TÜV SÜD on February 7. After given comments from TÜV SÜD a renewed PDD-version (version 3, March 27. 2007, PDD Biodiesel_070327.doc) which served as the basis of this determination report. Review of additional documents led to more changes in the PDD, resulting in PDD version 4 (issued May 21, 2007). Finally the quality assurance of the certification body requires further minor adjustments, resulting in PDD version 5 (May 24, 2007).

2.2 Follow-up Interviews

On November 23, 2006 TÜV SÜD performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of the project proponents Astra Bio Plant Ltd. Astra Finance and Bulmarket, of the project developer KWI Consultants and Regional Energy Consultancy Center Rousse and also of the Municipality of Slivo Pole 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 B to this report.

Table 1: Interview topics

Interviewed organisation	Interview topics
Astra Bio Plant Ltd. Astra Finance and Bulmarket	Project design, distribution of bio-diesel business plan, monitoring plan, stakeholder comments, monitoring procedures, measurement equipment, documentation, archiving of data
Municipality Slivo Pole	Approval of the project, stakeholder comments, national and sectoral policy; approval procedure
KWI Consultants and Regional Energy Consultancy Center Rousse	Project design, baseline, monitoring plan and procedures, environmental impacts, stakeholder comments, additionality, business plan

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 for TÜV SÜD's positive conclusion on the project design.

The findings and comments during the follow-on interviews were recorded in the determination protocol with numerous CARs which were widely resolved and the result included into PDD version 2 (January 2007.

A revised determination protocol was sent to Regional Energy Consultancy Center Rousse with 13 unresolved CARs. The most of the CARs were now resolved by changes in the PDD version 3 (March 2007) others and the CAR#15, CAR#25 and CAR#33 were resolved by additional information and adjustments regarding production figures finally in the PDD version 4 (May 2007).

To guarantee the transparency of the determination process, the concerns raised and the responses given are summarised in chapter 3 below. The whole process is documented in more detail in the determination protocol in Appendix A.

3 DETERMINATION FINDINGS

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

1) The findings from the review of the PDD (version 2) 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 Appendix A.

2) Where TÜV SÜD had 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, Corrective Action Requests and Additional Information Requests are stated, where applicable, in the following sections and are further documented in the Determination Protocol in Appendix A.

3) Where Clarification Requests and Additional Information Requests have been issued, the exchanges with Ekostrategija to resolve these Clarification and Additional Information Requests will be summarized in the determination report.

4) The conclusions of the determination are presented consecutively.

3.1 Project Design

3.1.1 Findings

The foreseen process to produce bio-diesel is typical which can be seen in many other European countries. In Bulgaria those bio-diesel plants was hitherto not in operation. Only few and very small sized productions exists. Otherwise you can see that in other European countries some production sites are much bigger than here. Hence the implementation of such project can be regarded as a first step in Bulgaria into the direction of local and renewable production of bio-fuels in order to substitute fossil resources. It is, moreover, not likely that the project technology will be substituted by a more efficient technology.

The bio-diesel plant was already under construction (civil works) when the onsite-visit took place. The envisioned and currently updated schedule foresees the commissioning in July 2007.

The bio-diesel plant will be operated by Astra Bio Plant Ltd. The hired staff will be trained by the project developer Bioenergomashproject Ltd. according to the specifications in the respective contracts.

The distribution in Bulgaria will be guaranteed by defined distribution channels and by the contracted primary (Bulmarket) and secondary buyers (blending stations and refineries) of the bio-diesel which will be obliged to monitor and record the sales to Bulgarian consumers.

The project starting date is defined as start of construction works for the bio-diesel plant November 2006. The crediting period is defined as being from January 1, 2008 to December 31, 2012 (additional period for early crediting from June 1, 2007 to December 31, 2007). Also the operational lifetime of the project is mentioned with 20 years and in accordance with international practice.

Bulgaria has appointed a national focal point to UNFCCC and has ratified the Kyoto Protocol. Also a DFP is officially nominated and Bulgarian JI-Guidelines are published on the JISC-

website. The project is preliminary approved by the Bulgarian government, represented by the Ministry of the Environment and Water (MoEW).

Up to now the participation of the investor country is not yet specified yet. Hence it can not be justified whether the eligibility criteria of the investor country are fulfilled. These issues can be clarified according to the sixth JISC-Meeting at least when submitting the first verification report for publication.

3.1.2 Issued CARs / CRs

Regarding Project Design 14 Corrective Action Requests (see CAR#2b – CAR#15) are raised.

3.1.3 Conclusion

The presented project is the first JI project in the context of bio-fuels and therefore unique and sufficiently identifiable. The different versions of PDD are sufficiently indicated.

All the requested corrective actions are considered to be resolved.

The distribution of the produced bio-diesel is extensively described. It is sufficiently explained how it can be guaranteed that the produced bio-diesel will be sold to Bulgarian consumers.

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

A risk for a delay of the beginning of the operation cannot be excluded actually because the complex building permit (IPPC) and the approved EIA are not available yet.

Leakages of purchasing and using crude oil instead of rape and sunflowers seeds are considered and estimated conservatively.

The way how the anthropogenic emissions of greenhouse gases are to be reduced by the proposed JI project is reasonable explained and the methodology to determine the emission reductions regards now sufficiently the impact of future supporting instruments in Bulgaria to enhance the use of bio-fuels baseline.

The project itself fulfils the prescribed requirements. The foreseen technology does reflect current good practice for generation of bio-diesel. The technical data are consistent and plausible. The crediting period is clearly defined.

The project uses technology that goes beyond the state of the art in the host country. It is moreover very unlikely that the foreseseen project technology will be substituted during the crediting period by a still more efficient technology .

Due to the not designated investor country it can not be concluded yet whether the eligibility criteria especially regarding DFP or National Guidelines are already fulfilled. However as already mentioned above, these issues can be clarified according to the sixth JISC-Meeting at least when submitting the first verification report for publication.

3.2 Baseline

3.2.1 Findings

The baseline of the Bulgarian JI-project Astra Bio-diesel is established in a project specific manner.

The baseline is based on the facts that the existing situation in Bulgaria is the consumption of petroleum diesel in the transport sector. The produced bio-diesel pure or mixed with petroleum diesel is foreseen to be used as an alternative to petroleum diesel.

The operation of bio-diesel plant itself, the transportation of crops and fuels and the input materials(e.g. methanol, hexane) cause project emissions which were identified and accordingly regarded.

There are further several leakages (e.g. methanol production, emission in the context of production of crops, purchase of crude oil) which were also identified and sufficiently regarded.

To demonstrate additionality the CDM additionality tool was applied. The incentive of JI has been considered since the beginning of the project planning when the project owner tried to receive a Letter of Support from the Bulgarian government. Alternatives to the project activity were determined. The alternatives are not in contradiction to the applicable laws and regulations.

The barrier analysis was used to demonstrate the existing restrictions to the project activity. It is obviously that severe implementation risks and investment risks faces the project even once a supporting system will be agreed and enter into force. Hence the common practice regarding bio-diesel production is more or less marginal and not comparable with the mentioned project here.

The main impact of JI registration is to make the project viable regardless legal uncertainties. Hence the investment risk will be appreciable reduced. It enables to lower the sale price for bio-diesel.

The bio-diesel of Astra Bio-diesel can not result in double counting in the context of EU Emissions Trading Scheme because the transport sector is not covered by the scheme.

3.2.2 Issued CARs / CRs

Regarding Baseline and Additionality 18 Corrective Action Requests (see CAR#16 – CAR#33) and 1 Clarification Request (CR1) are raised.

3.2.3 Conclusion

The additional explanations and the extended description regarding baseline methodology are sufficiently. The baseline is established in a project specific manner and refers to the characteristics of the Bulgarian transport sector. The baseline does take into account the major national and/or sectoral policies, macro-economic trends and political developments. The developed baseline considers also future supporting systems of bio-diesel in Bulgaria.

Relevant key factors are described and their impact on the baseline and the project risk is evaluated. The baseline determination is compatible with available data and can be considered as conservative.

The project boundaries and the distribution channels of bio-diesel are clearly described and reflect now also the involvement of the refineries, further blending stations and their distribution of bio-diesel.

All the relevant sources and gases included in the project boundary are now taken into account. A new subset of monitoring parameters were included in order to determine and monitor the amount of bio-diesel which is sold to consumer.

Taking to account the revision of step 3 and step 5 of additionality tool the implementation of the Astra Bio-diesel project can be considered as additional.

All the requested corrective actions and clarifications are considered to be resolved. The project fulfils all prescribed requirements completely.

3.3 Monitoring Plan

3.3.1 Findings

The monitoring methodology of the Bulgarian JI-project Astra Bio-diesel is established in a project specific manner.

The presented 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 and consistent with the baseline approach.

The list of parameters presented regarding project emissions, baseline emissions and leakage emissions are considered to be complete with regard to the project specific approach.

In annex 3 a separate monitoring plan exists with detailed description of monitoring activities (responsibilities, data collection etc.). Especially the use of the Workbook is explained, which is already prepared in order to ease the recording of the monitoring parameter and the calculation of the emissions and emission reductions.

3.3.2 Issued CARs / CRs

Regarding Monitoring Plan 3 Corrective Action Requests (see CAR#36 – CAR#38)[*] are raised.

3.3.3 Conclusion

The description of operational and management structure is sufficiently described. All aspects regarding future responsibilities for registration, monitoring, measurement are already fixed in advance.

The monitoring plan in Annex 3 is comparable with a monitoring manual for the monitoring personnel. A printout of a pre-prepared excel-spread-sheet to ease recording and reporting is included. After revision of version 3 required corrections were done in version 4.

All the requested corrective actions and clarifications are considered to be resolved. The project fulfils all the prescribed requirements completely.

[*] CAR#35 does not exist due to ordering error

3.4 Calculation of GHG Emissions

3.4.1 Findings

The calculation is according to the presented methodology approach. Uncertainties in the GHG emissions estimates are addressed.

The project's spatial boundaries are clearly described. Regarding emission sources all aspects are covered. Hence the aspects of project emissions and leakage emissions have been accordingly calculated.

The project will definitely result in fewer GHG emissions than the baseline scenario. The used forecast of bio-diesel production is based on the capacity of bio-diesel plant and the expected delivery of crops.

The calculation of emission reductions itself is correctly computed.

3.4.2 Issued CARs / CRs

Regarding Calculation of GHG Emissions 5 Corrective Action Requests (see CAR#39 – CAR#43) and one Clarification Request (CR2) are raised.

3.4.3 Conclusion

All the requested corrective actions and clarifications are considered to be resolved.

The final check of the calculation shows that the mentioned figures in section E are now correctly computed.

3.5 Environmental Impacts

3.5.1 Findings

The description of environmental impacts in the published version of PDD mentioned some relevant environmental impacts and described it roughly.

The Letter of Support from MOEW states that an EIA is necessary. The Rousse (local) branch of MOEW further issued "Standpoint", where is pointed out need of EIA for the Plant, which will be included in the "Complex Permission". However for the production of crude oil only an EIA is not required.

3.5.2 Issued CARs / CRs

Regarding environmental impacts 2 Corrective Action Requests (see CAR#44 and CAR#45) are raised.

3.5.3 Conclusion

The revised version of PDD describes now sufficiently the most relevant environmental impacts. All the requested corrective actions and clarifications are considered to be resolved. There will be few adverse environmental effects like increase of transportation and use of synthetic fertilizer and the need for intensive cultivation.

These issues are also matters of the needed EIA.

Also possible transboundary environmental impacts by the project are discussed in the PDD. There will be no relevant transboundary effects expected.

An EIA for Astra bio-diesel project is needed and will be included in the Complex Building Permission, which is expected in June 2007. As aforementioned in section 3.1.3 there remains a risk for a delay of the beginning of the operation or even further restrictions and requirements.

Hence it is also a matter of initial verification of the project whether requirements of the final Building Permission in the context of environmental impacts are fulfilled and whether there is a need for additional monitoring measures.

Assuming that relevant environmental impacts were addressed accordingly to the future Complex Building Permit the project fulfils all prescribed requirements.

3.6 Local stakeholder process

3.6.1 Findings

With publishing an announcement in the local newspaper „ Utro" on April 1, 2006 the public was invited to give comments on the project. No objections had been made by the public after 30 days of public information. Thus, there was not arranged a regular public meeting.

In parallel the project was introduced to the local authorities. There have been no comments, which would have required any further action.

In addition to the legal process Astra Bio Plant Ltd. organizes monthly meetings in cities which are located in the same region where the project is situated. Those meetings informs about cultivation of sunflower and rape due to producing alternative fuels.

3.6.2 Issued CARs/CRs

One clarification request CR#3 was issued regarding the aforementioned monthly meetings.

3.6.3 Conclusion

The clarification request was responded. Provided information deems that the consultation process was carried out according the national regulations. The conducted stakeholder process is sufficiently described. The project fulfils all the prescribed requirements.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

TÜV SÜD started to publish the PDD and the baseline study on its homepage and on the UNFCCC JI project site on **November 17** and was open for comments until **December 16, 2006**.

Within this period no comments have been received.

5. DETERMINATION OPINION

TÜV SÜD has performed a determination of the "**Sunflower and rape seeds - bio diesel fuel production and use for transportation in Bulgaria**".

The determination was performed on the basis of UNFCCC criteria as well as criteria given to provide for consistent project operations, monitoring and reporting.

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. In our opinion, the project itself meets all relevant UNFCCC requirements for JI.

By building a bio-diesel plant and substituting petroleum diesel the project results in reductions of CO_2 emissions that are real, measurable and give long-term benefits to the mitigation of climate change.

However the needed EIA for the project is not approved yet. Hence we can not state hitherto, that the project addresses sufficiently the possible environmental impacts. The approval of EIA will be expected in June 2007. It is required to submit the EIA for applying of the Letter of Approval.

The determination is based on the experience of our own onsite visit and on the information made available to us and the engagement conditions detailed in this report. TÜV SÜD can not guarantee the accuracy or correctness of this information. Hence, TÜV SÜD can not be held liable by any party for decisions made or not made based on the determination opinion."

Munich, 2007-05-25

Javier Castro

Deputy head of certification body "climate and energy"

Munich, 2007-05-25

Klaus Nürnberger

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