DETERMINATION REPORT

ENVIRONMENTAL (GREEN) INVESTMENTS FUND LTD.

DETERMINATION OF THE UTILIZATION OF SUPLUS COKE OVEN GAS WITH THE ELECTRICITY GENERATION AT JSC YASYNIVSKYI COKE PLANT PROJECT

PROJECT NO. JI.VAL0243
DATE: 26/01/2010

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Approved by: Siddharth Yadav	Organisational unit: SGS UK Ltd.
Client: Environmental (Green) Investments Fund ltd.	Client ref.: 03680, Osvity str. 4, Solomyans'ky district, Kyiv; Ukraine

Summary:
SGS United Kingdom Limited has made a determination of the JI project activity 'Utilization of surplus coke oven gas with the electricity generation at JSC 'Yasynivskyi Coke Plant'. The proposed JI project activity is envisaged by the project proponents and rendered with possible assistance from National Environmental Investment Agency of Ukraine (DFP) to follow Track-1 procedure.
The scope of determination is the independent and objective review of the project design document, baseline study and monitoring plan and other relevant documents of the project. The information in this document is reviewed against the requirements of Decisions 16 and 17 CP7 of the Marrakech Accords and Article 6 of the Kyoto protocol and subsequent guidance from JI supervisory committee.
The overall validation process, from Contract Review to Determination Report & Opinion, was conducted using internal procedures.
The first output of the determination process is a list of Corrective Actions Requests and Clarification Requests (CAR and CL), presented in Annex 3 to this document. Taking into account this output, the project proponent revised its project design document. The report is based on the findings of document reviews, the stakeholder consultation process and responses from the project participants to the findings raised in this report. This report should not be read without reference to the annexed Determination protocol, Findings overview and Local assessment checklist.
Two CARs remain outstanding. CAR 1 and CAR 8 are based on the finding that no documented approval is available from the Parties involved.
Three observations were stated in view of EIA, its approval by authorities and other relevant permits for Stage II which is not developed yet and recommendation for training procedures discussion in the PDD. Also it should be checked during the first verification the means of NCV determination and corresponding certificate of the laboratory that will be used for emission reduction estimation.
On the basis of these findings (as they stand at the time of issuance of this report), this report provides the justification for SGS Determination Opinion.
In summary, it is SGS's opinion that the proposed JI project activity correctly applies the CDM methodology AM0012 v.03.1 dd. 28.11.2008 for the selection of a baseline scenario and for calculating and monitoring emission reductions. The proposed project activity meets the relevant UNFCCC requirements for the JI with the exception of country approvals (CAR 1 and CAR 8). The discussion on additionality is based on the National Environmental Investment Agency's declaration on the project that it is considered as first of its kind and additional given that was a negative investment environment in the country at the start of the project. The letter (reference ID 77) from the Ukranian National Environmental Investment Agency states, "during the last 20 years a very negative investment climate for the implementation of complex energy efficiency projects has been dominating the Ukraine. It is mostly caused by gaps in legislation, high inflation rate, unstable market trends, incompleteness of industry privatization, absence of positive experience in implementation of innovative decisions, low energy supply price (especially before year 2003 when the decision of project implementation was taken) and others.
The phase one of the potential JI project "Utilization of surplus coke oven gas with the electricity generation at JSC "Yasinivskyi Coke Plant" was considered first of its kind project activity in Ukraine under the given economic conditions."

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Abbreviations

AAU	Assigned Amount Unit
AIE	Accredited Independent Entities
CAR	Corrective Action Request
CHP	Combined heat power
EF	Emission Factor
EIA	Environmental Impact Assessment
ERU	Emission Reduction Unit
FAR	Forward Action Request
GHG	Greenhouse Gas
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
JSC	Joint Stock Company
KP	Kyoto Protocol
LoA	Letter of Approval
MP	Monitoring Plan
NEIA	National Environmental Investment Agency
NGO	Non-governmental organization
CL	Clarification Request
PDD	Project Design Document
PP	Project Proponent
UAH	Ukrainian Currency
UNFCCC	United Nations Framework Convention on Climate Change
YCP	Yasynivskyi Coke Plant

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1 INTRODUCTION

1.1 Objective

Environmental (Green) Investments Fund Ltd. has commissioned SGS to make a determination of the project: 'Utilization of surplus coke oven gas oven gas with the electricity generation at JSC 'Yasynivskyi Coke Plant' with regards to the relevant requirements for JI project activities. The purpose of a determination is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria (available at http://ji.unfccc.int/JI_Parties/PartiesList.html#Ukraine) are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Determination is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emission reduction units (ERUs). UNFCCC criteria refer to the Kyoto Protocol Article 6 criteria and the Guidelines for the implementation of Article 6 of the Kyoto Protocol as agreed in the Marrakech Accords.

1.2 Scope

The determination scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against the Kyoto Protocol requirements, UNFCCC and Host Party rules and associated interpretations. SGS 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 the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

Documents reviewed as Part of Scope

- Terms of Reference
- Project Design Documents
- Baseline study
- Monitoring Plan and
- Monitoring protocol adopted by the project proponent
- Summary of comments from Local stakeholders

1.3 GHG Project Description

The project reduces GHG emissions by the utilization of surplus coke oven gas for electricity generation that would be flared without the project. Hence the project will result in more full utilization of energy resources of the enterprise and obtaining self-produced electricity.

JSC YCP enterprise has full coke-chemical production cycle with three acting coke oven batteries (nos. 1, 5 and 6), reconstructed chemical workshops and wide material base.

While enhancement of coke oven batteries no.1 and no.4 the plants produces surplus coke oven gas, which under conditions of project's absence (utilization and waste electricity), will be flared. Under the project conditions, the surplus coke oven gas will be burnt in the boilers and obtained steam will generate electricity.

The project includes two implementation stages. Within the first stage, which was already implemented in 2006 after reconstruction of coke oven battery no.1, the PT-12 condensing turbine of 12 MW capacity was installed at the combined heat power (CHP) plant for additional energy generation from surplus coke oven gas.

The plant has chosen to install condensing type turbine as there are substantial fluctuations of heat energy consumption in warm and cold seasons. Heating pressure decline is possible in warm seasons while the project turbine would work in condensation mode, generating waste energy. Thus, it allows appropriate and flexible use of different modes of the installed equipment.

The second stage envisages reconstruction of coke oven battery no. 4. This will produce additional coke oven gas, which is planned to be combusted in boilers to generate the steam with further generation of electricity. Energy will be exported to other consumers aside of the enterprise.

Additional volumes of coke oven gas that were collected after reconstruction of the second coke oven battery no.1 exceeded expectations and in the year 2006 JSC YCP started selling waste energy to other enterprises. Finances, which were saved on purchasing energy at the cost of its own production, and obtained from energy sales, were decided to invest into project development, i.e. into installation of the second turbogenerator of 12 MW.

With reference of uncertainty in JSC YCP production development the decision to construct the second turbogenerator of 12 MW was postponed. At present, the decision on coke oven battery no. 4 reconstruction is taken (exploitation is to be started in the year 2012) and top-management of the plant considers the possibility to order an execution plan for turbogenerator. The exploitation of the second turbogenerator is to be started in coincidence with the start of coke oven battery no. 4, after its reconstruction.

2 METHODOLOGY

The determination consists of the following three phases:

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

Document review and Interviews are the most important means of verification used in the process by SGS.

In general, a site visit might be required to verify assumptions in the baseline. Sometimes additional information is required to complete the determination, which may be obtained through telephone and face-to-face interviews with key stakeholders (including the project developers and Government and NGO representatives in the host country).

The determination protocol is used as checklist during the assessment. There are cross references between the complete determination protocol in Annex 2 and other documents used by SGS like Annex 1 local checklist and Annex 3 findings overview.

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

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

The term Clarification may be used where:

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

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

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

The determination protocol consists of three tables. The different columns in these tables are described in Figure 1.
The completed determination protocol is enclosed in Annex 2 to this report.

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

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

Determination Protocol Table 3: Resolution of Corrective Action and Clarification Requests			
Draft report clarifications and corrective action requests	***Ref. to checklist question in table 2***	***Summary of project owner response***	***Determination conclusion***
If the conclusions from the draft determination are either a Corrective Action Request or a Clarification Request, these should be listed in this section.	*Reference to the checklist question number in Table 2 where the Corrective Action Request or Clarification 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

The determination is performed primarily as a document review of project documents which are either publicly available or submitted by the client and additional background documents related to the project design and baseline. The assessment is performed by the lead assessor, the experts and the local assessor using the determination protocol and the local checklist.

2.2 Follow-up Interviews

In case of this project, a site visit and interviews have been conducted from 17/09/09 to 18/09/09 and the results are summarized in Annex 1 to this report.

SGS performed interviews locally with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of JSC Yasinivskyi Coke Plant and Environmental (Green) Investments Fund were interviewed. The main topics of the interviews are summarised in table 1.

Table 1 Interview Topics

Interviewed organisation	Interview topics
JSC Yasynivskyi Coke Plant Nikolay Kabyka, Chief Engineer of CHPP	Metering equipment, existing units of CHPP
JSC Yasynivskyi Coke Plant Alexander Sevostyanov, Deputy of Chief Power Engineer, JSC YCP	Alternative scenarios, assumptions and statements for estimation of emission reductions, early credits, grid emissions factor, monitoring plan, additionality, timeline of the project
Environmental (Green) Investments Fund S. Skybyk, G, Panchenko, Project Developers	Application of methodology, discussion of options and choices, financial analysis

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the determination was to resolve the requests for corrective actions and clarification and any other outstanding issues which needed to be clarified for the positive conclusion on the project design. Most of the Corrective Action Requests and Clarification Requests raised by SGS were resolved during communications between the Client and SGS. To guarantee the transparency of the determination process, the concerns raised and responses given are summarised in chapter 3 below and documented in more detail in the determination protocol in Appendix 2.

Since modifications to the Project design were necessary to respond to SGS's concerns, the Client decided to revise the documentation and resubmitted the project design documentation on 11/12/2009 (PDD version fourth). After reviewing the revised and resubmitted project documentation, SGS issued this determination report and opinion.

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 desk review of the original project design documents 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 2.

2) Where SGS had identified issues that needed clarification or that represented a risk to the fulfilment of the project objectives, a New Information, 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 Annex 3. The determination of the project resulted in ten Corrective Action Requests, and 13 Clarification Requests.

3) Where Clarification or Corrective Action Requests have been issued, the exchanges between the Client and SGS to resolve these Requests are summarised.

4) The conclusions of the determination are presented.

Two CLs were closed out during site visit and local assessment.

The final determination findings relate to the project design as documented and described in the revised and resubmitted project design documentation version fourth dated 11/12/2009.

3.1 Project design

The purpose of the proposed JI project is to use of surplus coke oven gas for waste energy generation at the existing CHP plant of JSC YCP. Without the project activity surplus coke oven gas would be flared without energy generation.

During production process for the basic product (coke) at JSC YCP there is a by-product – coke oven gas. This product contains steams of water and carbon chemical products (tar, ammonia, benzol carbohydrates, hydrogen sulphide) with the temperature of 650-700 ℃. The coke oven gas having been purified is supplied to heating coke oven batteries, boilers of the CHP plant, pipe furnaces of the chemical workshops, coal defrost garage.
As of 2003, nearly 59% of the obtained coke oven gas was used for coke oven batteries heating, approximately 31% was used at CHP plant boiler shop, around 1% was flared, and around 5% was used by other enterprises. Other consumers of JSC «YCP» used the rest (4%) of the produces coke oven gas.
The source of JSC YCP heat supply is the CHP plant, located inside the industrial area of the facility.

The turbine section is equipped with two 6 MW backpressure turbine AP-6 units; three 100 t/h atmospheric deaerators; two 80 t/h reducing coolers at 3,9/0,5 MPa, Basic and auxiliary equipment warehouse of the current CHP plant

The proposed JI project is divided into two stages that are referred to coke batteries reconstruction nos.1 and 4. First stage has been already implemented and included installation of PT-12 of 12 MW combined turbine for surplus coke oven gas utilization for waste energy generation at own JSC YCP CHP plant.

The second project stage requires surplus coke oven gas utilization and stipulates additional steam boiler installation, with steam production of 50 t/h and another PT-12 turbo generator that are planned to start working is completed in the years 2011-2012 and other auxiliary equipment. The electricity, produced by new generator, will be sold to other consumers.

The project boundary (physical components) is defined correctly according to ACM0012 v. 03.1. The project boundaries include the coke ovens, where the surplus coke oven gas is generated, the turbines, where it is used and converted to electricity and the national grid, where the generated electricity displaces grid electricity.

The crediting period of the JI project starts on 01/01/2008 and ends on 31/12/2012.

Under the Ukrainian legislation early credits (before 2008) are also approved according to Order no.32 of the National Environmental Investment of Ukraine dd. 25.06.2008. The project activity applies for the early credits lasting from 2006 till 2007. For this purpose the Project Developer has obtained the letter of endorsement from the National Environmental Investment Agency of Ukraine (Ref.17).

Late crediting has been mentioned in the PDD starting in 2013 and ending in 2036. Crediting of the project with ERUs after 2012 is dependent on approval by the host party, Ukraine.

The PDD v. 2 dd. 03.08.09 mentions that Switzerland is a Project Participant. It was unclear whether this was intended. Therefore **CL 2** was raised. Data on project participants in Table A.3 and Annex 1 of PDD v.3 dd 27.10.2009 were revised accordingly and it is pointed that Switzerland would not like to be a member of the project. Hence, CL 2 was closed.

CL 6 was raised to clarify the technology of PT-12 turbine to be employed during the project activity and whether it represents state-of-the-art. It was commented by the Project developer that the type of installed turbine PT-12 allows to operate with steam output or to operate in condensing mode. Quality of PT-12 turbines is substantiated with certification of the manufacture. Therefore CL 2 was closed out.

CAR 1 was raised to ensure approvals from the Parties involved. As per decision of the JISC "at least one written project approval by a Party involved other than the host Party(ies) has to be provided to the accredited independent entity (AIE), additionally to that (those) of the host Party(ies), and made available to the secretariat by the AIE when submitting the determination report regarding the PDD for publication". A letter of endorsement of the Ukrainian DFP has been already obtained, which provisionally approves the project.

Ukraine is the host country for the present JI project activity. The other Party-participant is Switzerland. The PP states that the positive expert statement from SGS is required to submit project documentation to NEIA to apply for LoA from the Ukrainian authorities. The letter of approval from Switzerland can be obtained after AIE determination report issuing as well. **CAR 1 remains open.**

There is also still an **open CAR 8** connected with obtaining LoA and closure of CAR 1. CAR 8 was raised on late crediting (2013-2036, after 2012) that is discussed in PDD. This issue is dependent on approval by the host party, Ukraine. Deposit of AAUs for late credits should be envisaged in the LoA which has not been obtained yet (CAR 1 on LoA is open as well).

Host Party Ukraine has ratified the KP on 12.04.2004. National focal point is the National Environmental Investment Agency of Ukraine, Mr. Igor Lupaltsov, Head. There is registration in the ITL in place for JI Projects in Ukraine (http://ji.unfccc.int/JI_Projects/ProjectInfo.html).

CAR 5 was raised to correct minor errors and typos in the PDD. Having amended the PDD according to the 5 bullet points of the CAR, it has been closed out.

Starting date and operational lifetime of the project needs to be clarified as starting date should be distinguished between Stage I and Stage II (PDD v. 2). Thus **CL 7** was discussed:
Beginning of the project investment stage – year 2004 is confirmed with the Note on actual costs for PT-12 turbine (Stage I) /Ref.53/,
Exploitation stage 1 – year 2006 is confirmed with Operation permit for PT-12 turbine issued by Donetsk Regional Supervision Agency for Power Generation from Makiyivka, dated 15.05.2006 /Ref.16/ and
Exploitation stage 2 – year 2012 is confirmed with the Board decisions concerning the JI project, dated 18.04.2003 and 20.03.2009 /Ref.25/.

The project developer provided explanation on the operation commencement of Stage I and II, operational lifetime duration and relevant amendments were performed in the PDD v.3. Lifetime duration of 25 years for each turbine can be considered conservative. Hence, CL 7 was closed out.

3.2 Baseline

According to the JISC document; 'Guidance on Criteria for Baseline Setting and Monitoring' version 01, paragraph 20 (b), the project participants may establish a baseline that is in accordance with appendix B of the JI guidelines. In doing so, the approved CDM baseline and monitoring methodology ACM0012 *"Consolidated baseline methodology for GHG emission reductions from waste energy recovery projects"* was applied.

The PDD did not discuss all options as per methodology and it was not transparent if the selected ACM0012 methodology was followed correctly. This was a subject of **CAR 9, CL 21, CAR 22 and CAR 23** discussion. The key issues of **CAR 9** were as follows:

- Description of project either as a Type 1 or Type 2
- Applicability criteria
- Quantifying of the waste gas captured and utilized prior to project implementation
- Discussion of options mentioned in the methodology for setting the baseline
- Additionality discussion in Section B.2 of the PDD

The PDD v.4 dd. 11.12.2009 was amended with the relevant discussions and clarification with the exception of additionality discussion in Section B.2. The project was described as a Type 1 as per the methodology. Discussion of applicability criteria was revised in Section B.2 of the PDD v. 3. The surplus coke oven gas comes as a result of coke batteries no.1 and no. 4 commissioning after reconstruction works. Before the batteries commissioning there was no gas of this kind. The enterprise has already had waste energy recovery gas flows. For demonstration of waste energy use in the absence of JI project activity direct measurements of the energy content and amount of the coke oven gas produced for three years prior to the start of the project activity is applied. There is no decrease of waste energy generation prior to the implementation of the JI project activity. PDD ver. 4 dd. 11.12.09 was amended with proper discussion of chosen baseline options according to ACM0012 and section B.2 was amended with reference to Annex 5 where additionality is discussed. **CAR 9** was closed out.

CL 21 was open to discuss applicability condition that states that no auxiliary fossil fuel is used in the waste gas boiler for the generation of captive electricity in the absence of the project. This

CL was closed in view that the project was described as a type 1 and thus this condition is not applicable to the project.

The project participant was asked to use of the appropriate equation for the case as per ACM0012 with regard to the f_{wcm} fraction, the methodology states: "If the steam used for generation of the electricity is produced in dedicated boilers but supplied through common header, this factor is estimated using equation (1d/1e). For this issue **CAR 22** was raised and discussed. This request was taken into account in Section B.2 of the PDD and correct formula was applied:

$$f_{WCM} = \frac{\sum_{h=1}^{8760} Q_{WCM,h} \cdot (Cp_{wcm} \cdot (t_{wcm,h} - t_{ref}) + NCV_{WCM,y})}{\frac{H_r}{EG_{tot,y}}}$$

Where:
$Q_{WCM,h}$ - Quantity of coke oven gas recovered in hour h, (m^3/h);
$NCV_{WCM,y}$ - Net Calorific Value of coke oven gas in year *y*, (TJ/m^3);
$EG_{tot,y}$ - Total annual electric energy produced at the CHP, (TJ/year).
Cp_{wcm} - Specific Heat of coke oven gas (TJ/ m^3-deg C);
$t_{wcm,h}$ = The temperature of WECM in hour h (deg C);
t_{ref} = Reference temperature (0 deg C or any other suitable reference temperature with proper justification).
H_r = Average heat rate of the power plant where electricity is produced (1/efficiency) as calculated in equation below;

The average heat rate of the power plant is given as:

$$H_r = \frac{\sum_{h=1}^{8760} \sum_{i=1}^{I} Q_{i,h} \cdot (Cp_i \cdot (t_{i,h} - t_{ref}) + NCV_{i,y})}{EG_{tot,y}},$$

Where:
$Q_{i,h}$ - Amount of individual fuel (coke oven gas and coal) i consumed at the energy generation unit during hour h, (kg or m^3);
Cp_i - Specific Heat of individual fuel i (TJ/kg -deg C or TJ/ m^3-deg C);
NCV_i - Net Calorific Value annual average for each individual consumed fuel and the WECM (TJ/kg);
$t_{i,h}$ - The temperature of individual fuel (coke oven gas and coal) i consumed at the CHP boilers during hour h (deg C).

The project proponents made available transparent calculations of factor f_{wcm} which were cross-checked and found appropriate. CAR 22 was therefore closed out.

There was another issue regarding f_{cap} calculation. The methodology states: "The ratio is 1 if the waste energy generated in project year y is same or less than that generated in base year". Based on what can be observed in the project boundary, the waste energy that is going to be available in the project year y is going to be greater than the energy generated in base year since the boiler house is going to be receiving gas from coke oven batteries 5&6 and new ovens 1&4. To this extent, **CAR 23** has been raised in order to ask project participants to calculate f_{cap} using equation 1f-2 or Method 3, Case 1. The PDD v.4 dd. 11.12.2009 was amended with proper discussion on implementation of case chosen for calculation of the fraction according to ACM0012 methodology:

$f_{cap} = \frac{Q_{OE,BL}}{Q_{OE,y}}$,

where

$Q_{OE,BL}$ - output/intermediate energy that can be theoretically produced (in appropriate unit).

$Q_{OE,y}$ - quantity of actual output/intermediate energy during year y (in appropriate unit).

It was clarified that if the f_{cap} will equal more than 1 it will be set to 1 as per the definition of f_{cap} in ACM0012 (the ratio is 1 if the waste energy generated in project year *y* is same or less than that generated in base year). Hence, CAR 23 was closed out.

The PDD mentions late crediting after 2012 that for the purpose of emission reduction calculations uses grid emission factor for Ukraine which needs to be re-evaluated after 2012. This was discussed under CAR 8. The PDD v. 4 was clarified with the following explanation that the assumption of grid emission factor remains unchanged after 2012. This should be taken into account for further validation/verification process if appropriate in case late credits will be approved by the Host Party. **CAR 8 remains open** in view of necessary approval from the National Environmental Investment Agency of Ukraine.

CAR 19 was raised because the PDD version 2 did not discuss the most recent version of 'Tool for the demonstration and assessment of additionality', Version 05.2, dated 26.08.2008. The project developer was requested to amend the discussion on additionality in the PDD and strictly follow the requirements of the new version of the tool. Having implemented the necessary changes in the PDD v.3 by the project developer the formal changes were checked and considered appropriate. Hence CAR 19 was closed out.

Additionality

The project additionality discussion was performed in line with steps of "Tool for the demonstration and assessment of additionality' and included in Annex 5 of the PDD v.4.

CAR 19 was raised in order to ensure that the latest version of the Tool v. 05.2 dd. 26.08.2008 was used. The relevant changes were implemented in the PDD v. 3 dd. 27.10.2009 and relevant headlines were corrected appropriately. Hence CAR 19 was closed out.

The project proponents has chosen to use both barrier and investment analysis for justification of additionality.

The investment and sensitivity analysis for the JI project presented in Annex 5 of the PDD version 4 was verified along with Excel calculation spreadsheets, with evidence for assumptions and evidence for relevant factors.

The first step of tool envisages identification of alternatives. Within the framework of the project activity five scenarios were defined. It was properly discussed in the feasibility of scenarios and shown that scenario 1, which envisages surplus coke oven gas flaring and purchase of electricity from the grid without the plant export, is only realistic basic one. Taking into account of legal aspects it was confirmed that the scenario 1 and the proposed JI project are in compliance with regional and national regulations in the host country.

As Stage II of the project is going to be implemented during site visit it was possible to verify the legal compliance of Stage I only with relevant approval of EIA by Ministry of Environment and

Natural Resources /Ref.12/ and permits for construction and operation /Ref. 14 and 16/. For Stage II the observation was raised.

The economical figures of the project were assessed under Step 2 of the Tool for demonstration and assessment of additionality using benchmark analysis. The basic assumptions were made for the time of decision making on both of the project stages (two TP-12 turbines) on 18.04.2003.

The IRR was determined based on the methodology of Odessa State Polytechnic University /Ref. 30/. Application of this methodology was discussed under CAR 20 and briefly listed below.

CAR 20 was raised to ask the project proponents to differentiate Stage I and Stage II of the project as it seemed that Stage I was economically viable without ERUs revenue and thus not additional. Also it was not clear why Stage I and II were summarized in one project. There were a number of other financial related issues:

- Including of depreciation and its effects on taxes
- Residual value of the equipment
- Taking into account of inflation while IRR and other prices and cost calculations
- Evidence for the assumptions made for financial analysis (electricity price, stage I cost, maintenance cost, tax-rates, ERU price, exchange rate).

The project proponents provided relevant explanation on IRR established as 12.4%, inflation rate was excluded from IRR determination. All assumptions used for the investment analysis were amended effective for the date of decision making that was cross-checked with evidence /Ref. 51-59, 62, 63/. Project IRR sensitivity analysis taking into account the JI mechanism and ERU prices shows that the crossing point for IRR achieved at the price of ERUs 4,60 euro per tonne CO2-equivalent. Depreciations were included in the investment analysis dd. 10.12.2009 /Ref.68, 69/. Residue value for the core equipment of the project – turbines TP-12 – was reconsidered as 25% of the initial cost. That is not transparent as the AR-6 turbine has been in operation for about 50 years and TP-12 has 25 lifetime period. The project proponents were requested to provide clear explanation of the residue value with proper reference to Methodological tool “Tool for determining the remaining lifetime of equipment” if necessary.

The second part of **CAR 20** and **CAR 18** refer to the additionality issues and barrier analysis.

The project proponents have separated demonstration of additionality for Stage I and Stage II.

Barrier analysis was used for Stage I and financial for Stage II.

Provided investment barrier analysis for Stage I contains sufficient substantiations /Ref. 50, 71-73/ for the external financing. Meanwhile the project has been implemented attracting their own enterprise funds and thus the external investment barriers cannot be considered in this case.

Taking into account the following:

1. Stage II is not viable even with ERU selling (IRR is less than benchmark about **3 times**) /Ref.69/.
2. Identical reasons for construction of both of TP-12 turbines are the coke production increase and surplus coke oven gas utilization and decision for both of the stages was taken on 18.04.2003.
3. Preliminary financial assessments by JSC YCP were performed in 2003 for both turbines/stages.

It can be concluded that Stage II would not be implemented without Stage I consideration and JI incentives for Stage I as well. Internal assessment in Excel spreadsheet /Ref.68/ shows that the IRR of the Project activity does not cross IRR in case ERU selling from Stage II and only net

profit from Stage I (without ERU selling). Thus it can be pointed out that if there is no ERU revenue Stage II cannot be implemented which is 'investment barrier'. Only in case of joint consideration of two stages the project reaches the benchmark and becomes viable.
In view of above it is necessary to justify if the YCP provided upfront financing as a pre-payment for expected ERU sells as there were a number of investment barriers for obtaining of external financing.
The project developer was requested to right wording regarding 'first-of-its-kind' explanation for the project in the PDD (Annex 5, technological barriers) as the envisaged technology has been already used at YCP (there are AR-6 2 turbines/generators to use the coke oven gas to produce steam and electricity). The Article /Ref.76/ provides the current situation regarding coke gas utilization and states '… lack of the required number of condensing turbines…

CAR 18 and CAR 20 remained unanswered as per the information provided in the project design document, however the Ukrainian DFP have written to SGS with the following;

Reference ID 77: *During the last 20 years a very negative investment climate for the implementation of complex energy efficiency projects has been dominating the Ukraine. It is mostly caused by gaps in legislation, high inflation rate, unstable market trends, incompleteness of industry privatization, absence of positive experience in implementation of innovative decisions, low energy supply price (especially before year 2003 when the decision of project implementation was taken) and others.*

Mentioned above was the reason why phase one of the potential JI project "Utilization of surplus coke oven gas with the electricity generation at JSC "Yasinivskyi Coke Plant" was considered first of its kind project activity in Ukraine under the given economic conditions. The analysis of the second phase of the Project shows economic unattractiveness of its implementation.

Thus we believe that project "Utilization of surplus coke oven gas with the electricity generation at JSC "Yasinivskyi Coke Plant" shall be considered as "additional".

CAR 17 was raised to discuss sensitivity analysis for the project as there was no reduction in cost and prices. The project proponents were requested to amend the sensitivity analysis appropriately. Having corrected some errors in the investment analysis the update of the analysis was performed and showed that the IRR does not cross the benchmark in the range of +/-10% variable parameters. Therefore, CAR 17 was closed out.

3.3 Monitoring Plan

In section D and Annex 3 of the PDD the monitoring plan is presented.

The applicability criteria were checked in detail. For further information refer to the determination protocol in Annex 2.

There was no information on project management in Section D.3 of the PDD that should be clearly described. Thus **CL 10** was raised. The project proponent provided description on project management in Section D.3 and organisational flow chart. JSC YCP is an owner of the project and responsible for the project implementation and operations. EGIF is responsible for emission reduction monitoring report development. Management on operations was also discussed regarding:

- Accounting of energy production
- Accounting of coal consumption
- Accounting of the coke oven gas consumption in the CHP boilers

- Employees responsible for the carrying out of the monitoring plan

This description of the project management can be considered as sufficient. Thus **CL 10** was closed out.

Authority and responsibility for registration, monitoring, measurement and reporting was described sufficiently in the PDD v.2. Nevertheless an organisational chart was missing so **CL 11** was raised for better understanding. The Project developer included the requested organisational chart in Section D.3 of the PDD v.3 which was found to be sufficient. Hence the CL was closed out.

There was no information/data on training of monitoring personnel and the plant operators and **CL 12 and 16** were raised correspondently to validate such procedures. Evidence for training of appropriate staff including public sources (web-site of the JSC YCP) was made available for assessment and considered reliable. These CLs (12&16) were therefore closed out. It should be pointed out as an observation that the Project developer could include brief description of training procedures and contents in the PDD or refer to other separate documents developed under QMS.

It was stated in the PDD v.2 that electricity meters were calibrated according to national standards and there was no description of the procedure for calibration in detail. Thus **CL 13** was raised. Appropriate calibration protocols for the existing meters (Ref. 10, 11, 46, 47, 48) were provided for SGS validation. The project developer amended the PDD v.3 with requested description of the procedure for maintenance and calibration of the meters that was considered sufficient. Hence CL 13 was closed out.

Although the general description of the monitoring methodology in section D of the PDD is transparent, the Monitoring Plan missed out the following procedures:

1. review of reported result/data
2. internal audits
3. project performance reviews before data is submitted for verification
4. corrective actions in order to provide for more accurate future monitoring and reporting

The enterprise has already implemented quality management system according to ISO 9001:2001 confirmed with the certificate issued TÜV CERT GmbH. However this does not necessarily envisage specific procedures to deal with data gaps and uncertainty and **CL 14** was discussed to ask the project proponent to provide procedures for dealing with data gaps.

Requested information was included in Section D.3 of the PDD v.4 dd. 11.12.2009 which inter alia discusses data inconsistency and inappropriateness management. This description also states: 'If any inappropriateness of monitored data is revealed, corrective measures will be conducted either on the monitoring system for the item specified above. In such case, monitored data will be corrected in a conservative manner.'. The brief description of the procedure is acceptable and therefore CL 14 was closed out.

To ensure that the Project developer introduces relevant procedures **CL 15** was raised. It was confirmed with the relevant certificate (Ref.24) that JSC YCP implemented quality management system according to ISO 9001. Brief description of quality assurance of collected data was included in the PDD v.3 (Section D.3) by the Project developer. Besides, the QMS envisages data review, internal audits, performance review and corrective actions and CHP included into scope of QMS that can be considered sufficient. Therefore, CL 15 was closed out.

3.4 Calculation of GHG Emissions

The calculation of GHG emissions follows the approved methodology ACM0012 v.3.1. The emission reduction is as a result of use of surplus coke oven gas for waste energy generation at the existing CHP plant of JSC YCP (project activity) while it would be flared without energy generation as a baseline approach.

Baseline emissions

The project proponents have implemented the formula from approved methodology ACM0012 for baseline emissions. However there were two findings regarding coefficients application for the formula – CAR 22 and CAR 23.

CAR 22 and **CAR 23** were raised to make sure that the appropriate equation for f_{wcm} (CAR 22) and f_{cap} (CAR 23) is used for baseline emission calculation. The project proponents described project as a type 1 project and properely applied the formula and f_{wcm} and f_{cap} determination. These CARs were closed out. Please also see section 3.2 of the present report for these two findings discussion. The project proponents provided transparent calculation for f_{wcm} fraction in Excel format with justification of input data that is considered as appropriate.

The baseline emissions were estimated for early crediting, 2008-2012 and late crediting periods using the grid emission factor for the Ukrainian United Energy System from the Global Carbon B.V. research. Grid emission factor for Ukraine needs to be re-evaluated after 2012. This was discussed under CAR 8. The PDD v. 4 was clarified with the following explanation that the assumption of grid emission factor remains unchanged after 2012. This should be taken into account for further validation/verification process if appropriate in case late credits will be approved by the Host Party. **CAR 8 remains open** in view of necessary approval from the National Environmental Investment Agency of Ukraine and further emission factor determination.

Project emissions

The project emissions calculations were performed according to ACM0012. The assumptions were checked during site visit and relevant evidence was collected /Ref. 13/. It was confirmed that no additional purification for the coke oven gas is required as the gas that is flared is purified as well. Thus there is no extra electricity consumption from purification to be considered. Capacity of purification plant is also enough as it has been developed for 6 coke ovens (full capacity).

Leakage

No leakage was estimated what is in line with the methodology.

3.5 Environmental Impacts

In accordance with paragraph 33 (d) of the Guidelines for the implementation of Article 6 of the Kyoto Protocol, an EIA should be performed in accordance with the requirements of the host country.

To obtain more details on the EIA regarding its approval and other relevant permits in the project documentation **CL 4** was raised. During site visit the necessary approval of the EIA by the relevant government authority, the construction permit by the City Council and the operation permit by the Donetsk Regional Supervision Agency were submitted (Ref. 12a/b,14, 16). Thus, CL 4 was closed out.

Brief discussion of environmental and social impacts and correspondent mitigation measures are provided in the PDD. Assessment of the environmental impacts has been conducted for air, soils. Impacts of waste and run-off waters, waste management and physical factors were assessed.

It should be noted that the proposed project is to be placed at the existing industrial area of the coke plant within the existing CHP. Therefore it can not lead to significant additional adverse environmental impact.

The general conclusion of EIA is that all possible impacts assumed to be negligible.

The project complies with environmental legislation and standards in Ukraine and was confirmed by relevant approvals and permits.

The observation should be pointed out regarding Stage II of the project and its EIA. As Stage II is not in operation yet, the EIA, the approval of the EIA, the construction permit, the operation permit and the calibration protocols are not existing yet. Verification of compliance with these necessary procedures for Stage II in Ukraine should be conducted during the initial verification.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

It was unclear from the initial version of the PDD, whether the PDD had been made publicly available according to UNFCCC rules. Information on stakeholder consultation was not sufficient and intransparent. Evidence for the described activities are missing. National requirements are unclear. Only phase I seems to be covered. Therefore **CL 3** was raised.
During the site visit the approval of the EIA by the relevant government authority (Ref. 12a/b), the construction permit by the City Council (Ref. 14) and the operation permit by the Donetsk Regional Supervision Agency (Ref. 16) was provided by the PP. These permits/approvals are taken as an evidence, that local/national regulation on stakeholder consultation have been followed.

The PDD was published from 21.08.2009 to 19.09.2009 under http://ji.unfccc.int/JI_Projects/DB/ZX22548P1E3XCOWDYNJ0LWP9LUBWOY/PublicPDD/RDB793WUBLW5YNMSOOX6ISFFSU9LFE/view.html . According to Ref. 27 no comments were received.

Comments were invited through same web link, Lyn Willis; Email: ukclimatechange@sgs.com a contact person of AIE for JI projects.

CL 3 was therefore closed out.

5 DETERMINATION OPINION

SGS United Kingdom Ltd. has performed a determination of the JI project activity "'Utilization of surplus coke oven gas oven gas with the electricity generation at JSC 'Yasynivskyi Coke Plant". The determination was performed on the basis of UNFCCC criteria and host country 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 SGS with sufficient evidence to determine the fulfilment of stated criteria. In our opinion, the project meets most of the relevant UNFCCC requirements for JI and all relevant

host country criteria with the exception of approval from host Party Ukraine. (CAR 1 and CAR 8 remains open until LoA from host Party is available including late crediting approval).

By the utilization of surplus of coke oven gas with electricity generation the project results in reductions of CO_2 emissions that are real, measurable and give long-term benefits to the mitigation of climate change. The **NEIA of Ukraine** (the Ukrainian DFP) provided SGS with their opinion on the project that it is considered as **first of its kind** and **additional** and confirmed that there was a negative investment environment /Ref. 77/ . Being a JI Track I project, the Parties assessment of additionality may over rules CARs 18&20, as discussed in this report on additionality.

The proposed JI project activity is envisaged by the project proponents and rendered with possible assistance from NEIA to follow Track-1 procedure /Ref.50/.

Should the CARs being still open are satisfactory replied by the project proponents and having implemented the project as described in the PDD the following amount of the emission reduction will be determined:

- Early credits (2 years) – 99098 tons of CO_2e total,
- Kyoto protocol (2008-2012) – 354014 tons of CO_2e total,
- Late credits (2013-2036) – 2372370 tons of CO_2e total (if grid EF is not re-estimated).

Three observations were stated in view of EIA, its approval by authorities and other relevant permits for Stage II which is not developed yet and recommendation for training procedures discussion in the PDD. Also it should be checked during the first verification the means of NCV determination and correspondent certificate of the laboratory that will be used for emission reduction estimation.

On the basis of these requests, this report provides the justification that the project is likely to result in emission reductions. In our opinion, the project correctly applies and meets the relevant UNFCCC requirements for the JI and the relevant host country criteria.

The determination is based on the information made available to SGS and the engagement conditions detailed in the report. The determination has been performed using a risk based approach as described above.

SGS UK Ltd. can not guarantee the accuracy or correctness of this information. Hence, SGS UK Ltd. can not be held liable by any party for decisions made or not made based on the determination opinion.

6 REFERENCES

Category 1&2 Documents:

Reference ID*	Title / Description	Comments
1	PDD V2, dated 03.08.2009	File "Ref. 1_JI_PDD_Yasyn_eng 10082009.pdf"
2	ACM0012, V 03.1, dated 28.121.2008	File "Ref. 2_ACM0012_V03.1.pdf"
3	Tool "Tool for the demonstration and assessment of additionality", Version 05.2, dated 26.08.2008	File "Ref. 3_am-tool-01-v5.2.pdf"
4	Tool "Tool to calculate the emission factor for an electricity system", Version 01.1, dated 29.07.2008	File "Ref. 4_am-tool-07-v1.1.pdf"
5	PDD of "Utilization of Coal Mine Methane at the Coal Mine named after A.F. Zasyadko", Version 4.4, dated 24.03.2008, pp. 64	File "Ref. 5_PDD_UNFCCC project 0035.pdf"
6	Financial and emission reduction calculation in Excel, with checking remarks by APE, undated	File "Ref. 6_ERC_IRR_YCP_fin_eng_APE-checked.xls"
7	Request of an additional gas consumer (Ukzpzomobespechenie), dated 24.02.2009	File "Ref. 7_Gas request by Ukzpzomobespechenie.pdf"
8	Coke of gas balance for the years 2003 – 2009, undated	File "Ref. 8_Coke oven gas balance 2003-2009.pdf"
9	Pictures and explanations from the plant, dated 17.09.2009	File "Ref. 9_Pictures and explanation.zip"
10	Calibration protocol for PT-12 meter, dated IV/2005	File "Ref. 10_Calibration protocol PT-12.pdf"
11	Calibration evidence for AR-6 meters, dated 15.01.2009	File "Ref. 11_Calibration protocol AR-6.pdf"
12a/b	Approval of EIA by Ministry of Environment and Natural Resources, dated 15.11.2005 and 20.03.2006	Files "Ref. 12a/b_approval of EIA.pdf"
13	Electricity planning document 2003-2036, dated 14.09.2009	File "Ref. 13_Electricity planning.pdf"
14	Construction permit for PT-12 by City Council from Makiyivka, dated 06.04.2005	File "Ref. 14_Construction permit.pdf"

* Numbers in brackets refer to reference number of PP according to Ref. 41. In the file names the first number is the reference number according to this reference list, the second number is that from Ref. 41 from the PP.

Reference ID*	Title / Description	Comments
15	Steam production in CHP and steam use in PT-12, undated	File “Ref. 15_Steam production and use.pdf”
16	Operation permit for PT-12 by Donetsk Regional Supervision Agency for Power Generation from Makiyivka, dated 15.05.2006	File “Ref. 16_Operation Permit.pdf”
17	Letter of Endorsement from National Environmental Investment Agency for Ukraine (Focal Point), dated 11.09.2009	File “Ref. 17_Letter of Endorsement.zip”
18	Contracts for sale of electricity to the grid, dated 01.10.2006, 30.11.2007 and 01.09.2008	File “Ref. 18_Electricity sales.pdf”
19	Calculation of specific electricity consumption by PT-12, undated	File “Ref. 19_Specific consumption.xls”
20	Evidence for stage I costs	File “Ref. 20_Evidence for stage I costs.pdf”
21	Evidence for stage II costs from feasibility study, dated 29.07.2009	File “Ref. 21_Pre-feasibility.pdf”
22	Electricity Balance for YCP for 2002 - 2008, undated	File “Ref. 22_Electricity Balance.xls”
23	Average electricity purchase prices based on monthly invoices, undated	File “Ref. 23_Average Electricity Purchase Prices.pdf””
24	ISO 9000 Certificate, dated 24.07.2009	File “Ref. 24_ISO 9000 Certificate”
25	Board decision concerning the JI project, dated 18.04.2003 and 20.03.2009	File “Ref. 25_Board Decision.pdf”
26a/b	Translation of Ref. 25ab by Sergiy Skybik	Files “Ref. 26a/b_Translation Board Decision.doc.
27	Notification by UNFCCC on end of publication period, dated 21.09.2009	File “Ref. 27_End of the comment period PDD for 0191 (JI.VAL0243).msg”
28	Input by the financial expert, David Diaz, on financial analysis, dated 22.09.2009	File “Ref. 28_AW Financial analysis JI.VAL0243.msg”
29	Evidence for electricity prices in 2009, Mail from Yulia Marskowa, dated 24.09.2009	File “Ref. 29_AW Electricity prices 2009.msg”
30	Explanation on IRR benchmark from PP, undated	File “Ref. 30_Methodology for choosing discount rate.doc”
31	Check of evidence presented in Ref. 30, Mail from Yulia Marskowa, dated 29.09.2009	File “Ref. 31_RE JI.VAL0243 Discount rate.msg”

Reference ID*	Title / Description	Comments
32	Input by the financial expert, David Diaz, on IRR Benchmark, dated 29.09.2009	File “Ref. 32_JI.VAL0243 Discount rate.msg”
33	Input of Scope Expert, Edgar Salinas, dated 14.10.2009	File “Ref. 33_RE Question concerning JI.VAL0243.msg”
34	Finding by Scope Expert, Edgar Salinas, dated 14.10.2009	File “Ref. 34_UK FO.JI.Val.0243.doc”
35	Revised PDD, V3, dated 27.10.09	File “Ref. 35_JI_PDD_Yasyn_eng_09_11_2009.pdf”
36 (13)	Revised financial analysis, undated	File “Ref. 36_ref_13_Financial analisys rec.xls”
37 (13)	Revised financial analysis with comments by APE, undated	File “Ref. 37_ref_13_Financial analisys rec_APE.xls”
38	E-Mail exchange on fcap, dated 30.10.2009	File “Ref. 38_E-Mails on fcap.msg”
39	F-CDM-AM-Clar_Resp_ver 01.1 - AM_CLA_0167, Clarification on the use fcap, dated 23.10.2009	File “Ref. 39_ACM0012_CLAR_fcap.pdf”
40	Letter by PP on CAR 9 und CL 21, dated 02.11.2009	File “Ref. 40_Letter2Eng_JSC YCP.doc”
41	List of References by PP, undated	File “Ref. 41_Additional references list.doc”
42 (17)	Accreditation of JCP electric and technical laboratory, dated 02.11.2006	File “Ref. 42_ref_17_Et_lab certificate.JPG”
43 (15)	Technical specification for coal, undated	File “Ref. 43_ref_15_coal technical specifications.JPG”
44 (16)	Accreditation of central plant laboratory, dated 07.10.2009	File “Ref. 44_ref_16_Central plant lab certificate.jp2”
45 (5)	Protocol of examination on safety issues, dated 22.04.2009	File “Ref. 45_ref_5_Protocol of examination on safety issues.zip”
46 (1)	Calibration list for electricity meters, undated	File “Ref. 46_ref_1_calibration electricity meters.jpg”
47 (2)	Calibration certificate railway scales, dated 22.09.2009	File “Ref. 47_ref_2_calibration railway scales.rar”
48 (3)	Calibration of gas meter, dated 11.06.2009	File “Ref. 48_ref_3_calibration gas meter.rar”
49 (4)	Reports from internal audits, undated	File “Ref. 49_ref_4_reports from internal audits.rar”
50 (11)	NEIA (Ukrainian DNA) Letter, dated 30.10.2009	File “Ref. 50_ref_11_NEIA letter.zip”
51 (6)	Internal Note on cost of stage 1, dated 20.01.2003	File “Ref. 51_ref_6_Int note on PT-12-1 project cost.jp2”

Reference ID*	Title / Description	Comments
52 (9)	Commercial proposal for stage 1, dated 04.07.2003	File “Ref. 52_ref_9_Tender for stage 1.zip”
53 (10)	Actual costs for stage 1 ex post, undated	File “Ref. 53_ref_10_PT-12-1 actual cost.jp2”
54 (18)	PT-12-2 project cost 2003, dated 11.02.2003	File “Ref. 54_ref_18_PT-12-2 project cost 2003.jp2”
55 (19)	Estimation of electricity generation for PT12-1, undated	File “Ref. 55_ref_19_PT-12-1 cost calculation.jp2”
56 (20)	Estimation of electricity generation for PT12-2, undated	File “Ref. 56_ref_20_PT-12-2 cost calculation.jp2”
57 (21)	Office memorandum on electricity price for sale, dated 20.03.2003, checked by YMA (Ref. 64.)	File “Ref. 57_ref_21_Electricity price for sale.jp2”
58 (22)	Electricity generation and consumption 2000-2002, dated 30.10.2009	File “Ref. 58_ref_22_elec_gen_and cons_2000-2003.jp2”
59 (23)	Electricity tariff 1999-2003, dated 30.10.2009	File “Ref. 59_ref_23_Elect tariff 1999-2003.jp2”
60 (12)	Taxation Law#335/94, dated 28.12.1994	File “Ref. 60_ref_12_taxation law 335-94.doc”
61 (7)	Cabinet of Ministers of Ukraine Resolution N 925, dated 14.10.2008	File “Ref. 61_ref_7_C M U_Resolution_925.doc”
62 (8)	Interest rates as of 18.04.2003, checked by YMA (Ref. 64.)	File “Ref. 62_ref_8_interest rate.doc”
63 (14)	Excange rates as of Ref. 63_ref_14_exchange rate.doc	File “Ref. 63_ref_14_exchange rate.doc”
64	E-Mail by YMA with check of Ref. 57 (21) and Ref. 62 (8), dated 18.11.2009	File “Ref. 64_RE JI.VAL0243_ref. 8+21.msg”
65	The calculation of f_{wcm} factor	File “Fwcm calculation.xls”
66	Basic data on coke and electricity generation on JSC “YCP” received from the plant	File “Ref_66.rar”
67	Cabinet of Ministers of Ukraine Resolution N 206, dated 22.02.2006 with changes, dated 20/08/2008	File “CMU Resolution 206.doc”
68	Revised financial analysis from 10/12/2009	File “Finance analysis 20091210.xls”
69	Separate financial analysis for stage 2	File “Finance analysis for stage 2.xls”
70	Technical background of the project	File “Ref_70.rar”

Reference ID*	Title / Description	Comments
71	FDI and the Investment Climate in the CIS Countries, Clinton R. Shiells	File "FDI and the Investment Climate in the CIS Countries.pdf"
72	Institute for International Economic and Political Research: Threats to Russia's interests in Ukraine Head of the Center integration issues IIEPS RAS: Doctor of Economics AE Lebedev. Center staff integration problems IIEPS Sciences: PhD MY Golovnin, Ph.D. AM Liebman	File "Threats to Russian Interests in Ukraine.pdf"
73	Investment Climate in Ukraine in the First Half of 2005: Reasons for Concern. Irina Akimova (from Worldbank site)	File "Investment Climate in Ukraine in the First Half of 2005.doc"
74	Doing Business with Ukraine, third edition, Consultant editor: Dr Marat Terterov. GMB Publishing and Contributors, 2005	File "Doing business with Ukraine.pdf"
75	Letter of intention from Rutek, translation.	File "Letter of intention from Rutek, translation.doc"
76	Article from Esco journal	File "Article from Esco journal.doc"
77	Letter from NEIA to SGS dated 24/11/2009.	File "NAEI letter to SGS-24_11_2009.pdf"

Persons interviewed:

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

/int. 1/ Nikolay Kabyka, Chief Engineer of CHPP, JSC YCP

/int. 2/ Anatoliy Birchenko, Technical Director, JSC YCP

/int. 3/ Alexander Sevostyanov, Deputy of Chief Power Engineer, JSC YCP

/int. 4/ Sergiy Skybyk, Expert on energy efficiency and climate change, Environmental (Green) Investment Fund

/int. 5/ Dr. Georgiy Panchenko, Expert on energy efficiency and climate change, Environmental (Green) Investment Fund

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Annex 1 - Local Assessment Checklist

This checklist is designed to provide confirmation of in-country data and information provided in the Project Design Document for **UTILIZATION OF SURPLUS COKE OVEN GAS WITH THE ELECTRICITY GENERATION AT JSC «YASYNIVSKYI COKE PLANT»**

It serves as a "**reality check**" on the project that is completed by Arthur Pelchen, SGS Germany, and Yulia Marskova, SGS Russia.

All references in Russian or Ukrainian Language have been checked by the Local Assessor, Yulia Marskova, SGS Russia.

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
1. Find out the status of implementation of stage I and II.	In the moment coke ovens 1, 5, 6 are in operation. Oven 4 is under reconstruction. First PT-12 is in operation. Two older AR-6 are still in operation (one being rebuilt at the moment). This was confirmed during the site visit.	SV Ref. 9	OK
2. Discuss requirements for EIA and necessary permits with PP and collect relevant evidence.	Only for the first stage an EIA was prepared within the feasibility study. For stage II nothing has been prepared yet, because it is only planned for 2012. Additionally the construction and operation permits for the first stage are provided in Ref. 14 and 16. The approval of EIA for stage I is included in Ref. 12. The approval was obtained according to the Ukrainian legislation /Law on Environmental Review no. 45/95-BP dd. 19.03.2009/. For stage II a FAR/Observation should be raised regarding EIA development, its approval and the required permits.	DR, SV, I Ref. 12 Ref. 14 Ref. 16	OK FAR/Observation to be raised for stage II.

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
3. Discuss requirements for stakeholder consultation with PP and collect relevant evidence.	Permit on construction of PT-12 from the City Council can be taken as evidence for the stakeholder consultation. As the positive approval was obtained from the Ukrainian Ministry of Environment and Natural Resources according to the legislation that envisages public announcement of the project it can be concluded that the procedure for stakeholder consultation was followed. It should be noted that the construction of the two PT-12 is located within a greater coke oven compound and in the same building as two other turbines. It does therefore not lead to significant additional environmental or other impacts. Hence the only relevant stakeholders close to the plant would be the personnel of the plant itself. This was confirmed during the site visit.	DR, SV, I Ref. 14 Ref. 16	OK
4. Discuss regulation on early and late credits with PP and collect relevant evidence.	Early crediting is proven by the Letter of Endorsement from National Environmental Investment Agency for Ukraine (Focal Point). Late crediting is not regulated specifically in Ukraine.	DR, SV, I Ref. 17	OK
5. Discuss regulation on additionality with PP and collect relevant evidence.	According to PP there is no specific regulation on additionality in Ukraine.	SV, I	OK

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
6. Discuss national metering requirements with PP and check the installed meters for stage I turbine and existing turbines. How about redundant meters? Make sure that only net generation is accounted for.	Since only internal meters are used for monitoring, national requirements are not relevant. For the old AR-6 there are main and spare meters. They are sealed. For PT-12 there is only one meter. All meters measure gross generation. Calibration evidence for PT-12 meter is included in Ref. 10. It was last calibrated in 2005 during manufacturing and has to be recalibrated after 6 years in 2011. Calibration evidence for AR meter is included in Ref. 11. In addition the contract with the calibration institution was checked during the site visit. There is a contract with an independent organisation for meters calibration that has the appropriate certificate.	DR, SV, I Ref. 9 Ref. 10 Ref. 11	OK
7. Discuss the supply of surplus coke oven gas with the view that only 1 % were flared in the past. Where does the gas for the extra boiler and turbine come from? Why are other consumers not taking up more? Collect relevant evidence?	Once in operation oven battery no. 4 will supply additional coke oven gas that cannot be used on site and would be flared otherwise. There will be another consumer of coke oven gas in the future, but this organisation will only use a very small share of the coke oven gas (Ref. 7). A metallurgical factory in the neighbourhood was using coke oven gas up to 2006, but is not in operation anymore. A gas balance was checked during the site visit (Ref. 8). This confirms the orders of magnitude mentioned in the PDD and that only less than 1% of the gas is flared at the moment.	DR, SV, I Ref. 7 Ref. 8	OK

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
8. Discuss the electricity consumption before the project and in stage I and II of the project and collect relevant evidence.	There is an internal report on electricity generation and consumption for the years 2003 to 2036 (Ref. 13) as well as electricity prices signed (and stamped) by the head of the board of directors. This contains most of the data that are also contained in the financial and emission reductions calculation (Ref. 6).	DR, SV, I Ref. 13	OK
9. Check whether no additional purification for the coke oven gas is required. Is already installed equipment capable of cleaning all gas? Collect relevant evidence.	Since there have been six coke ovens in operation in the past, purification plant has enough capacity to cope with the extra coke oven gas from oven no. 4 in the future. The purification equipment is being replaced in the moment, but rebuilt for a capacity of six coke ovens (int.3). The gas that is/would be flared is/will be purified as well. Hence there is no extra electricity consumption from purification to be accounted for.	DR, SV, I	OK

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
10. Discuss with PP whether the assumption of f_{wcm}=1 is correct in the light of coal beeing used as reserve fuel.	Coal represents (roughly) 0.54 % of total primary energy input for the CHP (Ref. 13). 0.024 % of all the primary energy input in the CHP are used in PT-12 (Ref. 15). That means that based on past years the total input of coal for electricity generation is 0,013 %. This is indeed negligible. Nevertheless this seems to be in contradiction to the applicability criteria for type 2 projects, that no auxiliary energy should be used. This is to be included in a finding related to the methodology. Ref. 13 also shows, that use of coal was reduced by project implementation. According to PP this decrease is expected to continue once the JI project is implemented. According to the PP there are additional pollution limits which exclude the use of a higher share of coal. Nevertheless coal consumption needs to be monitored and checked in the future, to ensure it does not increase. This is foreseen in the PDD.	DR, SV, I Ref. 13 Ref. 15	OK Discussion on type 1 or 2 and use of f_{wcm} to be included in a finding.
11. Collect evidence for the electricity generation data of the years 2006 to 2008.	Evidence for the electricity generation data of the years 2006 to 2008 is provided in Ref. 13.	DR, SV, I Ref. 13	
12. Collect evidence for the electricity generation from AR-6 turbines before implementation of the project from the years 2003 to 2005.	Evidence for the electricity generation from AR-6 turbines before implementation of the project from the years 2003 to 2005 is provided in Ref. 13.	DR, SV, I Ref. 13	

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
13. Collect evidence for the assumption in the financial analysis.	Assumptions on electricity generation and costs are contained in Ref. 13. Electricity prices are further backed by contract for the sale of electricity in Ref. 18. Deviation in calculation is conservative. Electricity purchase prices were checked against internal statistic based on monthly invoices (Ref. 23). Calculation of specific electricity consumption by PT-12 is contained in Ref. 19. Equipment costs for stage I are checked against internal accounting document (Ref. 20). The source data remains unclear. PP to send more back-up information. Equipment costs for stage II are checked against pre-feasibility study (Ref. 21). Total Electricity consumption by YCP including CHP was checked against Ref. 22. There is an Ukrainian Regulation on Electricity Prices. This will be send by PP.	DR, SV, I Ref. 13 Ref. 18 Ref. 19 Ref. 20 Ref. 21 Ref. 22 Ref. 23	OK Ukrainian Regulation on Electricity Prices to be send by PP to Local Assessor for checking. PP to send more back-up information on Stage I costs.
14. Collect evidence for the IRR benchmark. Discuss new requirements from additionality tool.	PP presents several documents on the calculation mode and the data, which generally look plausible. I requested to explain the approach in the PDD and deliver evidence on this. This should be included in a finding.	DR, SV, I	Amendment of PDD to be requested in Findings List.
15. Discuss alternative baseline scenarios with PP.	PP correctly chose type 2. Main issue is whether there are other realistic options (2 - 4) for the use of the future surplus of coke of gas. PP will elaborate his explanation further in a revised PDD. This should be included in a finding.	SV, I	Amendment of PDD to be requested in Findings List.

ANNEX 2 Determination Protocol

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

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
1. The project shall have the approval of the Parties involved.	DR	Kyoto Protocol Article 6.1 (a)	The letter of approval of both Parties involved is missing. A letter of endorsement (Ref. 17) of the Ukrainian DFP is included, which provisionally approves the project. The final letter of approval will only be provided after the project has been validated and a draft determination report is send to the DFP. Therefore CAR 1 was raised.	CAR 1	
2. Emission reductions, or an enhancement of removal by sinks, shall be additional to any that would otherwise occur.	DR, I	Kyoto Protocol Article 6.1 (b)	OPEN see T3 below		
3. The sponsor Party shall not aquire emission reduction units if it is not in compliance with its obligations under Articles 5 & 7.	DR	Kyoto Protocol Article 6.1 (c)	Sponsor Party is Switzerland. According to http://maindb.unfccc.int/public/country.pl?country=CH regularly provides its National Communications to the UNFCCC. These are reviewed by the UNFCCC. They are therefore in compliance with their obligations under Articles 5 & 7. Section A.3 implies that Switzerland is a member of the project. It is unclear whether this is intended. Therefore CL 2 was raised. Data on project participants in Table A.3 and Annex 1 of PDD v.3 dd 27.10.2009 were revised accordingly and it is pointed that Switzerland would not like to be a member of the project. Hence, CL 2 was closed.	~~CL2~~	

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
4. The acquisition of emission reduction units shall be supplemental to domestic actions for the purpose of meeting commitments under Article 3.	DR	Kyoto Protocol Article 6.1 (d)	According to http://maindb.unfccc.int/public/country.pl?country=CH regularly provides its National Communications to the UNFCCC. These detail the domestic actions of Switzerland to meet its commitments under Article 3.	OK	OK
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.	DR	Marrakech Accords, JI Modalities, §20	According to http://ji.unfccc.int/JI_Parties/PartiesList.html both Ukraine and Switzerland have NFP with the relevant guidelines in place.	OK	OK
6. The host Party shall be a Party to the Kyoto Protocol.		Marrakech Accords, JI Modalities, §21(a)/24	According to http://maindb.unfccc.int/public/country.pl?country=UA Ukraine ratified the Kyoto Protocol on 12.04.2004.	OK	OK
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	According to http://ji.unfccc.int/JI_Projects/ProjectInfo.html there are seven Track 1 JI Projects in Ukraine registered in the ITL. The possibility to use Track 1 depends among others on the correct calculation of the parties assigned amount.	OK	OK
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	According to http://ji.unfccc.int/JI_Projects/ProjectInfo.html there are seven Track 1 JI Projects in Ukraine registered in the ITL. The possibility to use Track 1 depends among others on having in place a national registry.	OK	OK

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
9. The project desing document shall be made publicly available and Parties, stakeholders and UNFCCC accredited observers shall be invited to, within 30 days, provide comments.	DR	Marrakech Accords, JI Modalities, §32	It is unclear from the PDD, whether the PDD has been made publicly available according to this requirements. Therefore CL 3 was raised. The PDD was published from 21.08.2009 to 19.09.2009 under http://ji.unfccc.int/JI_Projects/DB/ZX22548P1E3XCOWDYNJ0LWP9LUBWOY/PublicPDD/RDB793WUBLW5YNMSOOX6ISFFSU9LFE/view.html. According to Ref. 27 no comments were received. Therefore CL 3 was closed out.	~~CL 3~~	OK
10. 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.	DR, I, SV	Marrakech Accords, JI Modalities, §33(d)	The EIA, its approval as well as relevant construction and operation permits by the relevant government authorities are missing. Therefore CL 4 was raised. During the site visit the approval of the EIA by the relevant government authority (Ref. 12a/b), the construction permit by the City Council (Ref. 14) and the operation permit by the Donetsk Regional Supervision Agency (Ref. 16) was provided by the PP. These permits/approvals are as taken an evidence, that local/national regulation on stakeholder consultation have been followed. Therefore CL 4 was closed out.	~~CL 4~~	OK
11. 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	DR, I	Marrakech Accords, JI Modalities, Appendix B	OPEN see T2A below		
12. 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	DR, I	Marrakech Accords, JI Modalities, Appendix B	OPEN see T2A below		

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
13. The baseline methodology shall exclude to earn ERUs for decreases in activity levels outside the project activity or due to force majeure	DR, I	Marrakech Accords, JI Modalities Appendix B	The chosen methodology guarantees, that no ERUs are earned for decreased activity levels. Emission reduction will be calculated from the measured amount of electricity fed to the grid. This does not depend on outside activity levels.	OK	OK
14. The project shall have an appropriate monitoring plan	DR, I	Marrakech Accords, JI Modalities, §33(c)	OPEN see T4A and T5 below		
15. Does the PDD use accurate and reliable information that can be verified in an objective manner?	DR, I		After all corrections according to the findings overview were implemented in the revised PDD and evidence was checked during and after the site visit, it I can be summarised that information in the PDD now was verified as accurate and reliable.	OK	OK
16. Will the project result in fewer GHG emissions than the baseline scenario?	DR		Yes, due to the use of otherwise unutilised waste energy streams the project does lead to a reduction of the GHG emissions compared to the baseline scenario represented by flaring of the surplus coke oven gas.	OK	OK

2 BASELINE METHODOLOGY(IES)

Flow chart	Answer	Next step
Does the project use an CDM approved baseline methodology	Yes	Complete table 2A
	No	Complete table 2B

Table 2A Application of approved methodology

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
As part of the determination, check if the selected approved methodology(ies) have been correctly applied. The determination of the additionality of the project is part of the methodology but is covered in table 4 *Using the WORD version of the PDD and a copy of the approved methodology(ies) undertake a section by section / line by line check of the PDD against the methodology. Answer all questions in this table to ensure that all parts of the methodology have been addressed. Highlight any deviations in the PDD and save using track changes mode. Compile the findings into UK.Findings.JI. Submit the PDD as part of the validation report.* *The methodology must be applied exactly as defined. Every parameter must be checked including formulas and the application of the formulas to calculate emissions and emission reductions (check spreadsheets if applicable). Check data sources – references to documents must be publicly available and cited fully in the PDD – a general web address is not sufficient..* *More than one methodology can be applied if the project consists of several activities. If this is the case, answer the questions below for each activity and methodology.*					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
2.1 Does the project meet all the applicability criteria listed in the methodology	1, 2, 3, 4, 33, 34	DR	The PP uses approved CDM methodology ACM0012, V 03.1. Because the PDD does not discuss all options and variants it is not transparent whether the methodology is followed correctly. Therefore CAR 9, CL 21, CAR 22 and CAR 23 are raised. The PPs have described the project as a type 1 and amended the PDD with relevant options discussion. Thus these CARs (9, 22, 23) and CL 21 can be closed out.	~~CAR 9 CL 21 CAR 22 CAR 23~~	
2.2 Is the project boundary consistent with the approved methodology	1	DR	Project boundary is defined correctly according to ACM0012, V 03.1. It includes the coke ovens, where the surplus coke oven gas is generated and the turbines, where it is used and converted to electricity and the national grid, where the generated electricity displaces grid electricity.	OK	OK
2.3 Are the baseline emissions determined in accordance with the methodology described			See Q 2.1 above		
2.4 Are the project emissions determined in accordance with the methodology described			See Q 2.1 above		
2.5 Is the leakage op the project activity determined in accordance with the methodology described	1, 2	DR	ACM0012, V03.1 does not require the consideration of leakage.	OK	OK
2.6 Are the emission reductions determined in accordance with the methodology described			See Q 2.1 above		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
2.7 Has the methodology been applied exactly as defined including formulas and the application of the formulas to calculate emissions and emission reductions? Check spreadsheets if applicable.	1, 2, 4, 5	DR	See Q 2.1 above The methodology ACM0012 requires the use of the Tool to calculate the emission factor for an electricity system", Version 01.1. The PP does not use this tool, but applies a grid emission factor from a Study by Global Carbon B.V., that determines an EF for the Ukrainian grid of 0.807 t CO_2/MWh valid for the years 2006 to 2012. According to the PDD this value was accepted by the JISC for the Project "Utilization of Coal Mine Methane at the Coal Mine named after A.F. Zasyadko" (UNFCCC project 0035). This was checked against the PDD of the project under http://ji.unfccc.int/UserManagement/FileStorage/Q5R65QBGA2B44Q2FUW5199HND2X0T1 and found to be correct. At the same time this means, that for the calculation of emission reductions post 2012 the grid emissions factor for Ukraine needs to be re-evaluated. Therefore CAR 8 was raised.	CAR 8	
2.8 Are all the data sources clear and are references to documents publicly available and cited fully in the PDD			See Q 2.1 above		

Table 3 Additionality

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
The project is results in reductions of GHG emissions or increases in sequestration when compared to the baseline; and the project can be reasonably shown to be different from the baseline scenario. Additionality will need to be determined in accordance with the relevant section of the approved methodology. Information provided to support the claims of additionality will need to be verified					
3.1 Is the discussion and selection of the baseline transparent?	1, 6, 33, 34	DR, SV, I	Because the PDD does not discuss all options and variants given by the methodology and the additionality tool it is not transparent whether the methodology is followed correctly. Therefore CAR 9, CL 21, CAR 22 and CAR 23 are raised. The PPs have described the project as a type 1 and amended the PDD with relevant options discussion. Thus these CARs (9, 22, 23) and CL 21 can be closed out. The sensitivity analysis in Annex 1 should also contain a reduction in costs and prices. Scenarios should also be provided with only on variable (either costs or prices) changing. Therefore CAR 17 was raised. The sensitivity analysis was amended with relevant reductions and CAR 17 can be closed out. Estimated IRR does not cross the determined benchmark. Barrier analysis should focus on barriers to the planned project and show that these barriers do not apply to any of the alternatives. Therefore CAR 18 was raised. PP does not use most recent version of "Tool for the demonstration and assessment of additionality", Version	~~CAR 9~~ ~~CL 21~~ ~~CAR 22~~ ~~CAR 23~~ ~~CAR 17~~ CAR 18 ~~CAR 19~~	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			05.2, dated 26.08.2008. This has also implication for the investment analysis. Therefore CAR 19 was raised. The Project developer implemented the necessary changes in the PDD v.3 by the project developer the formal changes were checked and considered appropriate. Hence CAR 19 was closed out.		
3.2 Is the discussion on the additionality clear and have all assumptions been supported by transparent and documented evidence?	1, 6, 13, 18, 19, 20, 21, 22, 23, 25, 26a, 26b, 28, 29, 30, 31, 32	DR	Financial analysis should differentiate between stage I and II, because from the data presented in the financial analysis (Ref. 6) it seems that stage I is economically viable and therefore not additional. It remains unclear why stage I and II are summarized in on project. There seems to be no technical or other reason for it. The fact that it was decided by the board in one decision (Ref. 25, 26a, 26b) is not sufficient. Some evidence for data in the financial analysis could not be provided during the site visit. In addition the IRR benchmark is including inflation, but the calculation doesn't. This must be consistent. For these issues CAR 20 was raised.	CAR 20	
3.3 Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?			See Q 3.1 above		
3.4 Is it demonstrated/justified that the project activity itself is not a likely baseline scenario?			See Q 3.1 above		
3.5 Are all the data sources clear and are references to documents publicly available and cited fully in			See Q 3.1 above		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
the PDD?					

4 MONITORING METHODOLOGY(IES)

Flow chart	Answer	Next step
Does the project use an CDM approved monitoring methodology	Yes	Complete table 4A
	No	Complete table 4B and table

Table 4A Application of an approved Monitoring methodology

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
As part of the determination, check if the selected approved methodology(ies) have been correctly applied. *Using the WORD version of the PDD and a copy of the approved methodology(ies) undertake a section by section / line by line check of the PDD against the methodology. Answer all questions in this table to ensure that all parts of the methodology have been addressed. Highlight any deviations in the PDD and save using track changes mode. Compile the findings into UK.Findings.JI. Submit the PDD as part of the validation report.* *The methodology must be applied exactly as defined. Every parameter must be checked including formulas and the application of the formulas to calculate emissions and emission reductions (check spreadsheets if applicable). Check data sources – references to documents must be publicly available and cited fully in the PDD – a general web address is not sufficient..* *More than one methodology can be applied if the project consists of several activities. If this is the case, answer the questions below for each activity and methodology.*					
4.1 Does the project meet all the applicability criteria listed in the monitoring methodology	1, 33, 34	DR	Because the PDD does not discuss all options and variants it is not transparent whether the methodology is followed correctly. Therefore CAR 9, CL 21, CAR 22 and CAR 23 are raised. The PPs have described the project as a type 1 and amended the PDD with relevant options discussion. Thus these CARs (9, 22, 23) and CL 21 can be closed out.	~~CAR 9~~ ~~CL 21~~ ~~CAR 22~~ ~~CAR 23~~	
4.2 Does the PDD provide for the monitoring of the baseline emissions as required in the monitoring methodology			See Q 4.1 above		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
4.3 Does the PDD provide for the monitoring of the project emissions as required in the monitoring methodology			See Q 4.1 above		
4.4 Does the PDD provide for the monitoring of the leakage as required in the monitoring methodology	1, 2	DR	ACM0012, V03.1 does not require the consideration of leakage.	OK	OK
4.5 Has the methodology been applied exactly as defined including formulas and the application of the formulas to calculate emissions and emission reductions? Check spreadsheets if applicable.			See Q 4.1 above		
4.6 Does the PDD provide for Quality Control (QC) and Quality Assurance (QA) Procedures as required in the monitoring methodology			See Q 4.1 above		

Table 5 Monitoring plan

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
In addition to the application of the monitoring methodology, the PDD should contain a monitoring plan. The content of the monitoring plan should be validated based on the questions below					
5.1 Monitoring of Sustainable Development Indicators/ Environmental Impacts					

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl	Final Concl
5.1.1 Does the monitoring plan provide the collection and archiving of relevant data concerning environmental, social and economic impacts?	1	DR	No negative impacts on sustainable development are expected. The positive (indirect) effect of reduced air pollution occurs in the grid connected power plant and cannot be measured by the PP. The positive economic impact all relate to the electricity generation and are measured anyway. JI-Guidelines do not require Sustainable Development Indicators/ Environmental Impacts to be monitored. Hence no indicators are defined. This seems reasonable in the context of this project.	OK	OK
5.1.2 Is the choice of indicators for sustainability development (social, environmental, economic) reasonable?	1	DR	See Q 5.1.1 above	OK	OK
5.1.3 Will it be possible to monitor the specified sustainable development indicators?	1	DR	See Q 5.1.1 above	OK	OK
5.1.4 Are the sustainable development indicators in line with stated national priorities in the Host Country?	1	DR	See Q 5.1.1 above	OK	OK
5.2 Project Management Planning *It is checked that project implementation is properly prepared for and that critical arrangements are addressed.*					
5.2.1 Is the authority and responsibility of project management clearly described?	1	DR	Information on project management is missing in section D.3 of the PDD. Therefore CL 10 was raised. The information on project management during implementation and operation was incorporated in the PDD and thus the CL 10 was closed out.	~~CL 10~~	

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl	Final Concl
5.2.2 Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	1	DR	Yes, this is described sufficiently. Nevertheless an organisational chart is missing, which would ease the understanding significantly. Therefore CL 11 was raised. The Project developer included the requested organisational chart in Section D.3 of the PDD v.3 which was found to be sufficient. Hence the CL was closed out.	~~CL 11~~	
5.2.3 Are procedures identified for training of monitoring personnel?	1	DR	Procedures and evidence for training monitoring personnel is missing in the PDD. Therefore CL 12 was raised. Evidence for training of appropriate staff including public sources (web-site of the JSC YCP) was made available for assessment and considered reliable.	~~CL 12~~	
5.2.4 Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	1	DR	No procedures are required for this, since in an emergency waste gas would be flared as before project implementation. Since the emission reduction is calculated from electricity generation, this does not cause any problems for the emission reduction calculations.	OK	OK

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl	Final Concl
5.2.5 Are procedures identified for calibration of monitoring equipment?	1, 10, 11	DR	According to information in PDD electricity meters are calibrated according to national standards. The procedure for calibration is not described in detail in the PDD. Therefore CL 13 was raised. During the site visit calibration protocols for the existing meters (Ref. 10, 11) were provided. Later other calibration evidence were made available for SGS (Ref. 46, 47, 48). Hence CL 13 was closed out.	~~CL 13~~	
5.2.6 Are procedures identified for maintenance of monitoring equipment and installations?	1	DR	Procedures for operating and maintenance are mentioned in the PDD. The procedure for maintenance is not described in detail in the PDD. Therefore CL 13 was raised. Appropriate calibration protocols for the existing meters (Ref. 10, 11, 46, 47, 48) were provided for SGS validation. The project developer amended the PDD v.3 with requested description of the procedure for maintenance and calibration of the meters that was considered sufficient. Hence CL 13 was closed out.	~~CL 13~~	
5.2.7 Are procedures identified for monitoring, measurements and reporting?	1	DR	Yes, the procedure for monitoring and reporting is described sufficiently in the PDD.	OK	OK
5.2.8 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	DR	Yes, the procedure for day to day data handling is described sufficiently in the PDD.	OK	OK

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl	Final Concl
5.2.9 Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	1	DR	Procedures for dealing with data gaps are missing in the PDD. Therefore CL 14 was raised. The PDD was amended with possible actions on data gaps and uncertainties dealing with what can be considered sufficient. Hence CL 14 can be closed out.	~~CL 14~~	
5.2.10 Are procedures identified for review of reported results/data?	1	DR	Procedures for review of data are missing in the PDD. Therefore CL 15 was raised. It was confirmed with the relevant certificate (Ref.24) that JSC YCP implemented quality management system according to ISO 9001. Brief description of quality assurance of collected data was included in the PDD v.3 (Section D.3) by the Project developer. Besides, the QMS envisages data review, internal audits, performance review and corrective actions and CHP included into scope of QMS that can be considered sufficient. Therefore, CL 15 was closed out.	~~CL 15~~	
5.2.11 Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	1	DR	Procedures for internal audits are missing in the PDD. Therefore CL 15 was raised. Please see 5.2.10	~~CL 15~~	
5.2.12 Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	1	DR	Procedures for performance reviews are missing in the PDD. Therefore CL 15 was raised. Please see 5.2.10	~~CL 15~~	

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl	Final Concl
5.2.13 Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	1	DR	Procedures for corrective actions are missing in the PDD. Therefore CL 15 was raised. Please see 5.2.10	~~CL 15~~	

Table 6 Environmental Impacts (Ref PDD Section F and relevant local legislation)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
Project participants have submitted to the designated operational entity documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts and, if those impacts are considered significant by the project participants or the host Party, have undertaken an environmental impact assessment in accordance with procedures as required by the host Party					
1. 6.1 Has an analysis of the environmental impacts of the project activity been sufficiently described?	1	DR	The description of environmental impacts itself is sufficient. The project represents a relatively small activity located in the middle of a huge area with heavy industrial activities. Since only (existing) waste energy from other activities are utilised, the project activity itself does not cause relevant additional environmental impacts. For noise emissions national standards will be fulfilled according to the PDD. This seems to be appropriate under the consideration that the project is located in an industrial area.	OK	OK
6.2 Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	1, 12a, 12b	DR, I, SV	According to the PDD an EIA was carried out. The EIA and its approval by the relevant government authorities are missing. Therefore CL 4 was raised. During the site visit the approval of the EIA by the relevant government authority (Ref. 12a/b) was provided by the PP. It is therefore assumed that the Host Party requirements on EIA are fulfilled. Therefore CL 4 was closed out.	~~CL 4~~	OK
6.3 Will the project create any adverse environmental effects?	1	DR	See Q 6.1	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
6.4 Are transboundary environmental impacts considered in the analysis?	1	DR	The project is located a minimum of 60 km away from any borders and does not cause additional emissions. Transboundary environmental impacts are therefore not expected.	OK	OK
6.5 Have identified environmental impacts been addressed in the project design?	1	DR, I, SV	Since no significant environmental impact is expected (see Q 6.1) no impacts need to be addressed. Noise emissions will comply with the national standards.	OK	OK
6.6 Does the project comply with environmental legislation in the host country?	1, 12°, 12b, 14, 16	DR, I, SV	This remains unclear, because the EIA, its approval as well as construction and operation permits by the relevant government authorities are missing. Therefore CL 4 was raised. During the site visit the approval of the EIA by the relevant government authority (Ref. 12a/b), the construction permit by the City Council (Ref. 14) and the operation permit by the Donetsk Regional Supervision Agency (Ref. 16) was provided by the PP. These permits/approvals are as taken an evidence, that local/national environmental legislation has been followed. Therefore CL 4 was closed out.	~~CL 4~~	OK

Table 7 Comments by local stakeholders (Ref PDD Section G)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
Project developers need to invite comments by local stakeholders and a summary of the comments received should be provided. The project developer will need to show that due account was taken of any comments that have been received					
2. 7.1 Have relevant stakeholders been consulted?	1, 12a, 12b, 14, 16, 27	DR	Information on stakeholder consultation is not sufficient and intransparent. Evidence for the described activities are missing. National requirements are unclear. Only phase one seems to be covered. Therefore CL 3 was raised. The PDD was published from 21.08.2009 to 19.09.2009 under http://ji.unfccc.int/JI_Projects/DB/ZX22548P1E3XCOWDYNJ0LWP9LUBWOY/PublicPDD/RDB793WUBLW5YNMSOOX6ISFFSU9LFE/view.html. According to Ref. 27 no comments were received. During the site visit the approval of the EIA by the relevant government authority (Ref. 12a/b), the construction permit by the City Council (Ref. 14) and the operation permit by the Donetsk Regional Supervision Agency (Ref. 16) was provided by the PP. These permits/approvals are as taken an evidence, that local/national regulation on stakeholder consultation have been followed. Therefore CL 3 was closed out.	~~CL 3~~	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
7.2 Have appropriate media been used to invite comments by local stakeholders?	1, 12a, 12b, 14, 16, 27	DR	See Q 7.1	OK	OK
7.3 If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	1, 12a, 12b, 14, 16, 27	DR	See Q 7.1	OK	OK
7.4 Is a summary of the stakeholder comments received provided?	27	DR	According to Ref. 27 no comments were received during the publication on the UNFCCC homepage. Therefore no summary needs to be provided.	OK	OK
7.5 Has due account been taken of any stakeholder comments received?	27	DR	According to Ref. 27 no comments were received during the publication on the UNFCCC homepage. Therefore no comments need to be taken into account.	OK	OK

Table 8 Other requirements

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
3. 8.1 Project Design Document *In a WORD version of the PDD, use track changes mode to note any deviations (however minor) from the PDD. Save this document with tracked changes showing and append it to the Validation report as evidence of the auditing process. Compile a list of the differences in UK.Findings.JI. Split these into Editorial and Substantive comments. Editorial issues can be listed on one CAR; substantive findings can be listed as individual findings*					
8.1.1 Editorial issues: does the project correctly apply the PDD template and has the document been completed without modifying/adding headings or logo, format or font.	1	DR	Yes, the document was checked against the most recent PDD form available on the UNFCCC homepage and found to be OK. Nothing was modified.	OK	OK
8.1.2 Substantive issues: does the PDD address all the specific requirements under each header. If requirements are not applicable / not relevant, this must be stated and justified	1	DR	All dates need to be stated in the format DD/MM/YYYY. This is not the case. Also the PDD contains some typos and minor errors. Therefore CAR 5 was raised. Having amended the PDD according to the 5 bullet points of the CAR, it has been closed out. For issues on the methodology, baseline, additionality, emission reductions and monitoring see tables 2 - 5 above.	~~CAR 5~~	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
4. 8.2 Technology to be employed *Project activities should lead to the transfer of environmentally safe and sound technologies and know-how. The validator should ensure that environmentally safe and sound technology and know-how is used.*					
8.2.1 Does the project design engineering reflect current good practices?	1	DR	Using waste energy streams does reflect good practice. According to Figure 8 of the PDD turbine PT-12 uses CHP technology although the description mentions condensation type turbine. This is contradictious and needs to be clarified. In addition it is unclear whether PT-12 represents a state of the art turbine type. Therefore CL 6 was raised. The (partly) use of CHP type turbines reflects current good practice. It was commented by the Project developer that the type of installed turbine PT-12 allows to operate with steam output or to operate in condensing mode. Quality of PT-12 turbines is substantiated with certification the manufacture. Therefore CL 2 was closed out.	~~CL 6~~	
8.2.2 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	DR	The use of the waste energy stream improves the performance significantly. For an analysis of the turbine technology used see Q 8.2.1.	OK	OK
8.2.3 Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1	DR	No, this is not very likely, since it represents good current practice. For an analysis of the turbine technology used see Q 8.2.1.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
8.2.4 Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	1	DR	In general the technology does not require additional know-how, since other turbines are already in use. It is not expected that extensive maintenance beyond that need in the other (existing) parts of the operation will be needed.	OK	OK
5. 8.3 Duration of the Project/ Crediting Period *It is assessed whether the temporary boundaries of the project are clearly defined.*					
8.3.1 Are the project's starting date and operational lifetime clearly defined and reasonable?	1	DR	Starting date should distinguish between stage I and II. Operational lifetime needs to be backed with evidence. Therefore CL 7 was raised. The project developer provided explanation on the operation commencement of Stage I and II, operational lifetime duration and relevant amendments were performed in the PDD v.3. Lifetime duration of 25 years for each turbine can be considered conservative. Hence, CL 7 was closed out.	~~CL 7~~	
8.3.2 Is the assumed crediting time clearly defined and reasonable?	1, 3, 5	DR, I, SV	Yes, it is clearly defined. The PDD distinguishes early credits for the years 2006 and 2007, credits for the first Kyoto commitment period 2008 to 2012 and late credits up to the year 2036. Late crediting should not be included in the relevant tables in the PDD, because the grid emission factor used in its calculation is not valid for the period post 2012. Therefore CAR 8 was raised.	CAR 8	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
8.3.3 Does the project's operational lifetime exceed the crediting period	1	DR	In the current version of the PDD (Ref. 1) the operational lifetime equals the crediting period. After the correction of the crediting time in a revised PDD operational lifetime will exceed the crediting period.	OK	OK

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Annex 3 Findings Overview

FINDINGS FROM VALIDATION OF UTILIZATION OF SURPLUS COKE OVEN GAS WITH THE ELECTRICITY GENERATION AT JSC «YASYNIVSKYI COKE PLANT» - JI.VAL0243

Each Table below represents a finding from the validation assessment. The findings are numbered consecutively, approximately in the order that they have been identified.

Description of table:

Type	Findings are either Clarification Requests (CL) or Corrective Action Requests (CAR). CARs are items that must be addressed before a project can receive a recommendation for registration. CLs may lead to the raising of CARs. Observations are included at the end and may or may not be addressed. They are primarily to act as signposts for the verifying DOE.
Issue	Details the content of the finding
Ref	refers to the item number in the Validation Protocol
Response	Please insert response to finding, starting with the date of entry.

Rows for comments and further response will be appended to the table until the Findings has been addressed to the satisfaction of the Lead Assessor.

Date: 13.09.2009 Raised by: Arthur Pelchen

No.	Type	Issue	Ref
1	CAR	The letter of approval of both Parties involved are missing. A letter of endorsement (Ref. 17) of the Ukrainian DFP is included, which provisionally approves the project. The final letter of approval by the Ukrainian DFP will only be provided after the project has been validated and a draft determination report by SGS is send to the DFP. Please provide the approval of Switzerland and – after SGS provides the draft determination report – the approval of Ukraine.	T1Q1
Date: 4.11.2009 Author: Sergiy Skybyk The letter of approval from Switzerland is in a process of legalization.			
Date: APE, 16.11.2009 The CAR cannot be closed, because both LoA are still missing. For the (final) determination report both LoA need to be provided.			
Date: 30.11.2009 Author: Sergiy Skybyk The letter of approval from Switzerland will only be provided after the project has been validated and a draft determination report by SGS is send to the DFP.			
Date: 14.12.09 Yulia Marskova This CAR cannot be closed prior LoA submission.			

Date: 13.09.2009 Raised by: Arthur Pelchen

No.	Type	Issue	Ref
2	CL	Section A.3 implies that Switzerland is a member of the project. It is unclear whether this is intended. Please confirm this with sufficient evidence.	T1Q3
Date: 21.10.2009 Author: Sergiy Skybyk			

Data about project participants were revised. At the moment Environmental Green Investments Fund (Ukraine) and Rutek Trading AG (Switzerland) are considered as project participants.

Consistent data about project participants in Table A.3 and Annex 1 will be used in latest version of PDD.

Switzerland is not a member of the project. Section A.3 was corrected. See data below:

Parties-participants	Legal entities – project participants (when necessary)	Please state whether Parties-participants would like to be members of the project
Ukraine (hosting)	JSC «YCP»	No
Ukraine (hosting)	Environmental (Green) Investments Fund ltd	No
Switzerland	Rutek Trading AG	No

Date: APE, 16.11.2009
Relevant corrections have been implemented in the revised PDD, V3, dated 27.10.2009 (Ref. 35). Information in A.3 and Annex 1 is now correct and consistent. CL 2 is therefore closed out.

Date: 13.09.2009 Raised by: Arthur Pelchen

No.	Type	Issue	Ref
3	CL	It is unclear from the PDD, whether the PDD has been made publicly available according to UNFCCC rules. Information on stakeholder consultation is not sufficient and intransparent. Evidence for the described activities are missing. National requirements are unclear. Only phase I seems to be covered. Please elaborate section G in the PDD further and provide sufficient evidence.	T1Q9, T7Q7.1

Date: 22.09.2009 Lead Assessor (APE)
The PDD was published from 21.08.2009 to 19.09.2009 under http://ji.unfccc.int/JI_Projects/DB/ZX22548P1E3XCOWDYNJ0LWP9LUBWOY/PublicPDD/RDB793WUBLW5YNMSOOX6ISFFSU9LFE/view.html. According to Ref. 27 no comments were received.
During the site visit the approval of the EIA by the relevant government authority (Ref. 12a/b), the construction permit by the City Council (Ref. 14) and the operation permit by the Donetsk Regional Supervision Agency (Ref. 16) was provided by the PP. These permits/approvals are as taken an evidence, that local/national regulation on stakeholder consultation have been followed.

Date: 22.09.2009 (APE)
CL 3 is closed out.

Date: 13.09.2009 Raised by: Arthur Pelchen

No.	Type	Issue	Ref
4	CL	The EIA, its approval as well as relevant construction and operation permits by the relevant government authorities are missing. Please provide the relevant documents.	T1Q10, T6Q6.2

Date: 22.09.2009 Lead Assessor (APE) During the site visit the approval of the EIA by the relevant government authority (Ref. 12a/b), the construction permit by the City Council (Ref. 14) and the operation permit by the Donetsk Regional Supervision Agency (Ref. 16) was provided by the PP. These permits/approvals are as taken an evidence, that local/national regulation on stakeholder consultation have been followed.
Date: 22.09.2009 (APE) CL 4 is closed out.

Date: 15.09.2009 Raised by: Arthur Pelchen

No.	Type	Issue	Ref
5	CAR	The following minor errors and typos should be corrected in the PDD: 1. All dates need to be stated in the format DD/MM/YYYY. 2. Environmental Investment Funds is not mentioned in section A.3 of the PDD, but in Annex 1. Rutek Trading is not mentioned in Annex 1, but in section A3. Please make sure section A.3 and Annex 1 are fully consistent. 3. Section A.4.3 mentiones the date of ACM0012 as 06.07.2007. This is incorrect. The correct date is 28.11.2008. 4. Table 3 and table 6 mention early crediting for the years 2008 to 2012. This should be “Kyoto Commitment Period”. 5. The Headline “Annex 5” is on page 46 instead 47 of the PDD. Please correct the PDD accordingly.	T8Q8.1.2
Date: 21.10.2009 Author: Sergiy Skybyk 1. All dates in latest version of PDD were stated in correct format. 2. Section A.3 and Annex 1 were corrected and are fully consistent. 3. The date of ACM0012 in section A.4.3 was corrected to 28.11.2008. 4. The mentioned typos were corrected in latest version of PDD. 5. The Headline was changed.			
Date: APE, 16.11.2009 Relevant corrections were made in the revised PDD (Ref. 35, see also CL 2). This was checked in the PDD and found to be alright. CAR 5 was therefore closed out.			

Date: 15.09.2009 Raised by: Arthur Pelchen

No.	Type	Issue	Ref
6	CL	According to Figure 8 of the PDD turbine PT-12 uses CHP technology (off-take of steam for production purposes) although the description mentions condensation type turbine. This is contradictious and needs to be clarified. Please explain in more detail in the PDD. In addition it is unclear whether PT-12 represents a state of the art turbine type. Please provide more detailed information on the efficiency of the turbine.	T8Q8.2.1

Date: 21.10.2009 Author: Sergiy Skybyk
More detailed information is provided in section A.4.2. PDD:
"The type of installed turbines allows to operate with steam extraction (for process needs the portion of steam in the relevant parameters is extracted) or to work in condensing mode (the entire volume of steam after the turbine enters the condenser) (see Table 2 of PDD). Quality of PT-12 turbines is confirmed by the fact that the plant manufacturer of these turbines (JSC "Kaluga Turbine Works") was certified in 2003 by the international quality standard EN ISO 9001:2000 by TŰV CERT5 company (registration number №041005007)".

Date: APE, 16.11.2009
The additional information provided above is plausible and sufficient. The situation is clarified by the explanation given. Information on the state of the turbine is weak, but acceptable. CL 6 is therefore closed out.

Date: 15.09.2009 Raised by: Arthur Pelchen

No.	Type	Issue	Ref
7	CL	Starting date should distinguish between stage I and II. Please amend PDD accordingly. Please explain briefly how the overlapping operational lifetimes of the individual PT-12 turbines lead to the project lifetime of 31 years.	T8Q8.3.1

Date: 21.10.2009 Author: Sergiy Skybyk
Changes are made in PDD sections C.1. and C.2.:

Beginning of the project investment stage – year 2004.
Exploitation stage 1 – year 2006.
Exploitation stage 2 – year 2012.

The operational lifetime of the main project equipment is 25 years. Since the first PT-12 begin operation in 2006, and the second - in 2012, the project operational lifetime includes the years from 2006 to 2036, i.e. 31 years.

Date: Yulia Marskova, Local Assessor
Beginning of the project investment stage – year 2004 is confirmed with ref. 53 Actual costs for stage 1 ex post, undated.

Exploitation stage 1 – year 2006 is confirmed with ref.16 Operation permit for PT-12 by Donetsk Regional Supervision Agency for Power Generation from Makiyivka, dated 15.05.2006.

Exploitation stage 2 – year 2012 is confirmed with ref. 25 Board decision concerning the JI project, dated 18.04.2003 and 20.03.2009.

APE, 16.11.2009
Explanation of the lifetime of the project is plausible. Lifetime of 25 years for the individual turbine seems conservative.
CL 7 is therefore closed out.

Date: 15.09.2009 Raised by: Arthur Pelchen

No.	Type	Issue	Ref
8	CAR	Late crediting should not be included in the relevant tables in the PDD, because the grid emission factor used in its calculation is not valid for the period post 2012. Please amend the PDD accordingly.	T2Q2.8, T8Q8.3.2

Date: 21.10.2009 Author: Sergiy Skybyk
The PDD was amended with the implementation of these requirements. Please see the latest version of PDD.

Date: APE, 16.11.2009
The changes in table 4 and 6 of the revised PDD (Ref. 35) are not sufficient. According to JI-Guidelines crediting is only possible until the year 2012. Hence as long as there is no post Kyoto agreement or host country order/decree post 2012 crediting should not be included in the PDD.

Date: 30.11.2009 Author: Sergiy Skybyk
Please find attached Cabinet of Ministers of Ukraine Decree №206 on 22/02/2006 with changes on 20/08/2008 (Ref. 67).

Date: 14.12.09 Yulia Marskova

Decree no.206 dd. 22.02.2006 of the Cabinet of Ministers of Ukraine states the following:
'Project operator can apply for deposit of AAUs not exceeding of planned emission reductions for its transfer into post-Kyoto period. NEIA approves requirements for duration of such projects. Deposit of AAUs should be envisaged by LoA.'

Since the LoA can be issued after determination process according to the established procedures /Ref.67/ this CAR should be kept open upon LoA issuing.

Date: 15.09.2009 Raised by: Arthur Pelchen

No.	Type	Issue	Ref
9	CAR	Because the PDD does not discuss all options and variants it is not transparent whether the methodology is followed correctly. Please amend the PDD so that all relevant options and alternatives given in the methodology are discussed. Arguments need to backed with sufficient evidence. At the same time integrate Annex 5 (additionality discussion) into section B.2 for consistency. In this context please observe the following specific comments: 1. Please discuss whether the project is a Type 1 or Type 2 project. 2. For all applicability criteria it should be discussed, whether and why the are fulfilled. It is not sufficient to just mention the criteria itself. Please note that there are two sets of criteria for Type 2 projects. 3. Please discuss, how you quantify the waste gas captured and utilised prior to project implementation. 4. Please discuss the options given in table 2 of the methodology. 5. Please discuss which philosophy according to section a.ii of the methodology is applied. 6. Which "study" is referred to in the explanation of $BE_{flst,y}$ on page 18 of the PDD. Please provide this "study". 7. Please also see Findings No. 21 to 23 below on this issues.	T2Q2.1, T3Q3.1, T4Q4.1, T5Q5.1

Date: 02.11.2009 Author: Sergiy Skybyk
Waiting for response on clarification request (letter to Arthur Pelchen from 02.11.2009).
2. Discussion for applicability criteria was improved into section B.2 of PDD.

6. As it was noted during site visit, coke oven gas goes through the same purification units irrespective of the fact that this gas going to be flared or going to be combusted in boiler. Hence, no additional energy resources are used for flaring of coke oven gas.

Date: APE, 16.11.2009
Ad 1) In general and with regard to your question, dated 02.11.2009 (Ref. 40) I do not see any reason not to describe the projects as Type 1 project. From my point of view all applicability criteria for Type 1 projects are met. Nevertheless this requires the right wording and explanation to be included in the PDD and the consistent discussion of all options and alternatives in the later parts of the PDD. Please amend the PDD accordingly and answer the remaining question, if still relevant for type 1 projects.
Ad 3, 4, 6, 7) These are not yet sufficiently answered and remain open.
Ad 2) The expanded discussion in the revised PDD (Ref. 35) is plausible and sufficient. No. 2 is therefore closed out.
Ad 5) This is not applicable for type 2 projects and No. 5 therefore closed out.
Because of unanswered parts of this finding CAR 9 remains open.

Date: 30.11.2009 Author: Sergiy Skybyk
1. Since all the criteria for applicability are met, then consider the project as a Type-1 project in accordance with the methodology ACM0012.
3. The PDD was amended with a brief discussion about how it is demonstrated use of waste energy in absence of JI project activity (please find in section B.1 of the latest version of PDD):
"The surplus of coke oven gas, which is utilized after the project implementation, came as a result of launch of coke oven battery №1 (for the first stage) and coke oven battery №4 (for the second) after the reconstruction. Prior to the project implementation this surplus was absent. Energy recovery activities were already implemented in other streams of coke oven gas.
For demonstration of waste energy use in the absence of JI project activity direct measurements of the energy content and amount of the coke oven gas produced for three years prior to the start of the project activity is applied (please find in coke oven gas balance - Ref. 8).
There is no decrease in energy generated from the waste energy recovered previous to the implementation of the JI project activity. This is confirmed by monitoring of electricity that generated at the existing AR-6 turbines and considered in baseline emissions estimation (see section D.1.1.4 of PDD)".
In accordance with ACM0012 in the PDD amount of electricity that generated or can be theoretically generated at the existing AR-6 turbines is determined after the comparison of the historical maximum of energy production for the last 3 years before the launch of the project on the existing AR-6 with the energy production on AR-6 after the realization of the project. The greater value is subtracted from the amount produced at CHP. Thus even if AR-6 are removed from service, the amount of energy generated by the project will not include the energy that could have been produced by this turbine.
4. The PDD was amended with a brief discussion about baseline options and scenarios applicable to ACM0012 methodology (please find in section B.1 of the latest version of PDD):
"This baseline scenario corresponds to Scenario 2 in ACM0012 methodology for electricity generation only:

- prior the project implementation a portion of the waste coke oven gas produced at the facility is captured and used for captive electricity generation, while the rest of the waste coke oven gas produced at the facility is flared;
- existing power generating equipment (AR-6 turbines) is maintained and additional electricity generated by grid connected power plants."

6. The enterprise doesn't use additional energy resources for flaring of coke oven gas. There is no specific "study" in your interpretation. It seems it is the translation inaccuracy. "Study" means that there is the fact which was ascertained during site visit before PDD preparation (please see answer from 2.11.2009 above). Coke oven gas goes through the same purification units

irrespective of the fact that this gas going to be flared or going to be combusted in boiler. Also there is no any energy resources are used to support flaring. Hence, no additional energy resources are used for flaring of coke oven gas. Lead Assessor had ascertained these facts during the site visit.
The latest version of PDD was corrected to exclude ambiguity
7. Please find answers on Findings No. 21 to 23 below.

Date: 14.12.09 Yulia Marskova
Section B.2 of the PDD ver. 4 dd. 11.12.09 contains formulas, calculation discussion and was amended with reference to Annex 5 with additionality issues discussions what is plausible.
1. PDD ver. 4 dd. 11.12.09 was amended accordingly with Type-1 applicability and proper description. Ok
3. PDD ver. 4 dd. 11.12.09 was amended with relevant information on utilization of waste gas prior to the project implementation. Ok
4. PDD ver. 4 dd. 11.12.09 was amended with proper discussion of chosen baseline options according to Table 2 of ACM0012. Ok
6. Misleading data presented in the PDD ver. 3 was deleted in the PDD ver. 4 so there is no study was performed for additional energy resources assessment. Ok
7. To be discussed under Findings Nos. 21 and 23.
CAR 9 can be closed out.

Date: 15.09.2009 Raised by: Arthur Pelchen

No.	Type	Issue	Ref
10	CL	Information on project management is missing in section D.3 of the PDD. Please amend the PDD accordingly.	T5Q5.2.1

Date: Author: 02.11.2009 Sergiy Skybyk
The PDD was amended with the implementation of these requirements. Please see section D.3 of the latest version of PDD:

Accounting of energy production
Reading of meters for the produced energy is conducted on unit-to-unit basis every 12 hours and is entered into the log book. The data is aggregated into the monthly and annual reports and is stored in paper and electronic formats.
Data collection is carried out by a *shift caretaker of the Main control board*. The responsible person for the collection and archiving of the data is the *head of the electricity area*.
Meters check is conducted according to the verification methodology certified by the Ukrainian state scientific-production center for standardization, metrology and certification (UkrCSM). The Electrotechnical laboratory of the enterprise (Ref. 42) is responsible for meeting the meters checks deadlines.
The amount of electricity consumed for the PT-12 own needs is determined by monthly calculations in consideration of the working auxiliary equipment load factor, as well as its capacity. The data is archived and stored in paper and electronic formats. The responsible person for the collection and archiving of the data is the *head of the electricity area*.

Accounting of coal consumption of CHP boilers
The amount of coal, consumed by the boilers, is determined when coal is supplied to the CHP by using the electro-mechanical scales. Data on the amount of coal is entered into the logbook. The responsible person is the *head of the production department*.
The NCV of coal supplied to the CHP and combusted in the boilers is determined according to the technical specifications У 10.1-23472138-161:2005 (Ref. 43) developed by state enterprise “Luganskstandardmetrology”.

Accounting of the coke oven gas consumption in CHP boilers
Accounting of the coke oven gas consumption in CHP is determined by the meter on gas-flow inlet to the boiler house (pie chart). The pie chart readings is conducted manually every 24 hours by *shift caretaker of Control, Measurement and Automation department* and entered into logbooks and electronic data base.
The responsible person for the collection and archiving of the data is the *head of Control, Measurement and Automation department*.
Coke oven gas NCV is determined monthly by the Central plant laboratory (Ref. 44). The results are entered into the logbook.

Employees responsible for the carrying out of the monitoring plan
The *vice-chief of heat and power sector of the plant* is responsible for the carrying out of the monitoring plan. The *chief metrologist of the plant* is responsible for the timely conduction of the scheduled meters calibration.

Date: 16.11.2009 Yulia Marskova, Local Assessor

Accounting of energy production
The project developer has made available Accreditation of JCP electric and technical laboratory with Certificate no.06544-2-4-152-VL dd.02.11.2006 valid till 02.11.2009 issued by the Ukrainian Ministry of Industrial Policy (Ref. 42). New certificate is to be received shortly that could be an issue for future verification.

Accounting of coal consumption of CHP boilers
Technical specifications U 10.1-23472138-161:2005 (Ref. 43) contain quality figures of the Donetsk coal (including NCV equal to 4,842 kcal/kg) but not methodology for NCV identification. PDD states that NCV will be obtained by the plant's laboratory calorimeter (see section D.1.1.1 row P2). It is unclear if this NCV from Ref. 43 will be taken as a default value or measured. Please ensure to describe the approach for NCV identification consistently in the PDD.

Accounting of the coke oven gas consumption in CHP boilers
The Central plant laboratory is accredited by the Ukrainian Ministry of Industrial Policy that is confirmed with certificate no.06544-5-1-125-VL valid till 07.10.2012 (Ref. 44). Discussion of NCV identification is in compliance with section D.1.1.1 row P3.

Employees responsible for the carrying out of the monitoring plan
No documented evidence has been submitted.

APE, 17.11.2009

In general all the information given above is not relevant to the finding. It is nevertheless useful to increase the understanding of the project and should stay in the PDD.
The finding relates to the project management, not to operational issues once the project is implemented and running. Please include a brief overview on the authority and responsibility of project management during the implementation phase and correct the above mentioned inconsistency on the NCV from coal. Therefore CL 10 remains open.

Date: 30.11.2009 Author: Sergiy Skybyk
Accounting of coal consumption of CHP boilers paragraph was corrected:
«The NCV of coal supplied to the CHP and combusted in the boilers is determined according to the technical specifications У 10.1-23472138-161:2005 for coal sort G, belonging to which was established by state enterprise "Luganskstandardmetrology"».

For future verification QA/QC procedures for coal NCV by state enterprise "Ukrniiugleobogaschenie" is anticipated. Also notation at the section D.1.1.1 row P2 was corrected. Responsibility of project management is presented in section D.3 of PDD. For monitoring report and corresponding calculations the specialists of "Environmental (Green) Investments Fund" are responsible. The data on monitoring is received from the central office of JSC «YCP». The *vice-chief of heat and power sector of the plant* is responsible for monitoring data getting and generalizing.
Date: 14.12.09 Yulia Marskova 1. NCV of coal: Ref. 43 p. 5 of technical specification U 10.1-23472138-161:2005 that was provided to SGS contain a default value for NCV of coal that was used for ex-ante calculations. For the purpose of ex-post emission reduction estimation the NCV of coal will be determined by an authorized laboratory measurements that will be identified further. 2. Project management is described in D.3 where organizational chart is presented. As seen from Figure 10 JSC YCP is an owner of the project and responsible for the project implementation and operations. EGIF is responsible for ER monitoring report development. Ok CL 10 can be closed out.

Date: 15.09.2009 Raised by: Arthur Pelchen

No.	Type	Issue	Ref
11	CL	An organisational chart is missing in section D.3 of the PDD, which would ease the understanding significantly. Please amend the PDD accordingly.	T5Q5.2.2
Date: Author: 05.11.2009 Sergiy Skybyk The PDD was amended accordingly to this request. Please find organisational chart of project monitoring at the Fig. 10 in the latest version of PDD.			
Date: 16.11.2009, Yulia Marskova, Local Assessor and APE, 17.11.2009 The organisational chart presented at Figure 10 of Section D.3 in PDD can be considered sufficient. CL 11 is therefore closed out.			

Date: 15.09.2009 Raised by: Arthur Pelchen

No.	Type	Issue	Ref
12	CL	Procedures for training of monitoring personnel are missing in section D.3 of the PDD. Please amend the PDD accordingly and provide evidence for the training measures.	T5Q5.2.3
Date: 02.11.2009 Author: Sergiy Skybyk The PDD was amended with the implementation of these requirements. Please see section D.3 of the latest version of PDD: "Employees of the metrological service of JSC «Yasynivskyi Coke Plant» were passed through Refresher trainings. Education was held in Kievan Research and Training Centre of Standardization, Certification and Quality of Gospotrebstandart of Ukraine". Information about passing of these courses by employees of the plant is indicated on the official website of the company: http://yakhz.com/index.php?id=3507&show=news&newsid=14948			
Date: 16.11.2009, Yulia Marskova, Local Assessor and APE, 17.11.2009			

Training of personnel of turbine units has been substantiated with Protocol of examination on safety issues no. 2 dd. 22.04.2009 (Ref. 45). Training of personnel of metrological service has been conducted in the Kievan Research and Training Centre of Standardization, Certification and Quality of Gospotrebstandart of Ukraine that is announced at the YCP web-site dd. 17.04.2008. CL 12 is therefore closed out.

Date: 15.09.2009 Raised by: Arthur Pelchen

No.	Type	Issue	Ref
13	CL	Procedures for the maintenance and calibration of meters and for the maintenance of the installations are missing in section D.3 of the PDD. Please amend the PDD accordingly.	T5Q5.2.5

Date: 02.11.2009 Author: Sergiy Skybyk
The PDD was amended with the implementation of these requirements. Please see section D.3 of the latest version of PDD.

Please find copies of calibration passports, where conducted meter checks are indicated. Calibration passport of meters for electricity generated by AR-6 turbines (Ref. 46), electro-mechanical railway scales calibration passport (Ref. 47) and calibration passport of meter for coke oven gas consumption (Ref. 48) was attached.

Since intercalibration interval of PT-12 turbine (installed in 2006) is 6 years, hence there is no additional calibration was conducted yet.

Date: 16.11.2009, Yulia Marskova, Local Assessor and APE, 17.11.2009

The calibration list with equipment specification and dates of last calibration is in place (Ref. 46); listed equipment for Generator nos. 1 and 2 are properly checked in 2009 (recalibration period is 4 years). Electromechanical railway scales are calibrated on 22.09.2009 with recalibration period of 0.5 year /Certificate AT-022 PS – (Ref. 47). Calibration passport for coke oven gas meter indicated date of last annual calibration on 11.06.2009 (Ref. 48).
No documented evidence has been submitted to confirm 6 years calibration period of PT-12 turbine (installed in 2006), but this is considered plausible.
Discussion of maintenance and calibration of meters can be considered sufficient.
CL 13 is therefore closed out.

Date: 15.09.2009 Raised by: Arthur Pelchen

No.	Type	Issue	Ref
14	CL	Procedures for dealing with data gaps and uncertainty are missing in the PDD. Please amend the PDD accordingly.	T5Q5.2.9

Date: 02.11.2009 Author: Sergiy Skybyk
The PDD was amended with the implementation of these requirements. Please see section D.3 of the latest version of PDD:
“At JSC “Yasynivskyi Coke Plant” was introduced and applied a quality management system ISO 9001:2000. This fact is evidenced by a certificate issued by TÜV CERT GmbH. The registration number is №78100061035. Procedures for dealing with data gaps and uncertainty conducts with accordance to this standard”.
http://yakhz.com/index.php?id=3507&show=15626

Date: 16.11.2009, Yulia Marskova, Local Assessor and APE, 17.11.2009
Quality Management System developed and implemented according to ISO 9001 does not necessarily envisage specific procedures to deal with data gaps and uncertainty. Please provide a brief description of these procedures in the PDD. Therefore CL 14 remains open.

Date: 9.11.2009 Author: Sergiy Skybyk Mentioned above paragraph was amended with the sentence follows: “In case any inconsistencies among the data are identified, the source of them will be investigated in collaboration with the specialists of “Environmental (Green) Investments Fund". If any inappropriateness of monitored data is revealed, corrective measures will be conducted either on the monitoring system for the item specified above. In such case, monitored data will be corrected in a conservative manner. All the information of corrective measures taken on the monitoring system and monitored data itself will be archived along with original monitored data for future verification of emission reductions. Responsibility and scheme of the monitoring is presented in section D.3 of PDD”.
Date: 14.12.09 Yulia Marskova Mentioned possible actions on data gaps and uncertainties dealing with can be considered sufficient. CL 14 can be closed out.

Date: 15.09.2009 Raised by: Arthur Pelchen

No.	Type	Issue	Ref
15	CL	Procedures for review of data, internal audits, performance reviews and corrective actions are missing in the PDD. Please amend the PDD accordingly.	T5Q5.2.10
Date: 02.11.2009 Author: Sergiy Skybyk The PDD was amended with the implementation of these requirements. Please see section D.3 of the latest version of PDD: “Quality assurance of collected data that directs to the *vice-chief of heat and power sector of the plant* is conducted by *chief engineer of the CHP*. Also, audit of the processes of CHP quality management system conducts at the JSC «Yasynivskyi Coke Plant» with accordance to ISO 9001:2000”. Please find internal audit reports, attached to this file (Ref. 49).			
Date: 16.11.2009, Yulia Marskova, Local Assessor and APE, 17.11.2009 The YCP has implemented Quality Management System based on ISO 9001 and perform internal audits of QMS in the CHP (proved by Reports on internal audit (Ref. 49). As the QMS envisages data review, internal audits, performance review and corrective actions and CHP included into scope of QMS that can be considered sufficient. CL 15 is therefore closed out.			

Date: 16.09.2009 Raised by: Arthur Pelchen

No.	Type	Issue	Ref
16	CL	Evidence for the relevant training measure for the plant operators is missing.	T5Q5.2.6
Date: 02.11.2009 Author: Sergiy Skybyk Trainings for mechanic and electrician operators of the plant were conducted. Latest trainings were over in may 2009. Information about passing of these courses by employees of the plant is indicated on the official website of the company: http://yakhz.com/index.php?id=3507&show=news&newsid=25972 http://yakhz.com/index.php?id=3507&show=news&newsid=29587 Also, CHP operators familiar with the Terms of design and safe operation of pressure vessels. Please find the protocol of this action, attached to this file (Ref. 45).			

Date: 16.11.2009, Yulia Marskova, Local Assessor and APE, 17.11.2009

Training of personnel of turbine units has been substantiated with Protocol of examination on safety issues no. 2 dd. 26.02.2009 and 22.04.2009 (Ref. 45). The company web-site announce on completion of YCP personnel training dd. 17.05.2009 (mechanics, electricians for maintenance of electrical equipment). CL 16 is therefore closed out.

Date: 16.09.2009 Raised by: Arthur Pelchen

No.	Type	Issue	Ref
17	CAR	The sensitivity analysis in Annex 1 should also contain a reduction in costs and prices. Scenarios should also be provided with only on variable (either costs or prices) changing. Please amend the sensitivity analysis accordingly.	T3Q3.1

Date: 4.11.2009 Author: Georgiy Panchenko

Sensitivity analysis (Ref. 36) was carried out in accordance with the Annex to the Methodological Tool "Tool for the demonstration and assessment of additionality" 5.2. We determined the changes in NPV and IRR separately for capex, opex and electricity production deviations within + 10% - 10%. The calculation results (Ref. 36) show that the values of IRR do not exceed the benchmark equal to 12,4%.
(See answ. CAR 20).

A sensitivity analysis of the proposed project has been carried out, showing the impact of the three main factors of influence: investment (capex), operating costs (opex) and electricity production on the IRR. The factors have been varied in a range of "+ 10 %" and "– 10 %".

Name of Value	IRR, %	NPV, ths UAH
Base case without ERU	9,462	-5295,71
capex + 10 % (without ERU)	0	-22361,44
opex + 10 % (without ERU)	10,60	-3161,41
electricity production + 10 % (without ERU)	10,06	-4159,95
capex – 10 % (without ERU)	10,73	-2631,84
opex – 10 % (without ERU)	8,38	-7430,02
electricity production – 10 % (without ERU)	1,70	-28870,67
with ERU selling, 4,60 euro per ton	12,43	43,39

The project is not financially attractive without additional income from emissions trading, the IRR does not exceed benchmark and NPV is negative. The project becomes financially attractive with additional revenues from ERUs starting with price of 4,60 Euro.

Date: APE, 17.11.2009
Due to errors in the calculation (see CAR 20) a meaningful check of this figures is not possible. Please correct the financial calculation according to CAR 20 and consequently correct the sensitivity figures here and in the PDD.
CAR 17 therefore remains open.

Date: 10.12.2009 Author: Georgiy Panchenko

Corrections in the calculations (Ref 68) included in the section of the latest version of the PDD.

Name of Value	IRR, %	NPV, ths UAH
Base case without ERU	9,69	-5999,8
capex + 10 % (without ERU)	8,42	-9904,3
opex + 10 % (without ERU)	8,82	-8010,1
electricity production + 10 % (without ERU)	11,59	-1750,9
capex - 10 % (without ERU)	10,04	-4924,5
opex - 10 % (without ERU)	7,62	-15678,5
electricity production - 10 % (without ERU)	6,97	-13006,9
with ERU selling, 4,60 euro per ton	12,41	25,5

Date: 14.12.09 Yulia Marskova
The calculation mistakes were addressed in the financial analysis dd.10.12.2009 /Ref.68/. The present sensitivity analysis seems to be correct and shows that the IRR does not cross the benchmark in the range of +/-10% variable parameters.
CAR 17 can be closed out.

Date: 16.09.2009 Raised by: Arthur Pelchen

No.	Type	Issue	Ref
18	CAR	Barrier analysis should focus on barriers to the planned project and show that these barriers do not apply to any of the alternatives. Arguments need to be backed with sufficient evidence. Please amend the PDD accordingly.	T3Q3.1

Date: 4.11.2009 Author: Oksana Butrim
Some barriers are typical for the proposed project activity only:
1) necessity of CHP extension (to install new electricity production facilities);
2) necessity of electricity scheme changing.
The CHP extension requires a number of additional inputs of finance, time and resources (Ref. 54). Inputs caused by the need to find areas within the territory of existing enterprise, as well as study and development of architectural design decisions on the location of additional facilities reflecting the recruitment of additional equipment. The addition area is not necessary for other alternatives of the projects activity for coke own gas that were considered above (see. chapter B.1, p. 18).
The same situation arises with necessity of electricity scheme changing. The additional voltage transformers for the conditions of the proposed project activity only are needed. It takes the additional financial and human resources for the purchase of equipment and documentation updating (Ref. 54).
Overcoming of these barriers becomes possible with getting of additional finance received from sale of GHG emissions reduction units, which are the result of the proposed project activity.

Date: APE, 20.11.2009
I am not convinced that any of these barrier hold for stage 1. The fact that new equipment needs to be installed and existing installations need to be changed is a regular part of the project and not a barrier. For stage 1 these barriers obviously did not stop the implementation in the year 2006. In general the arguments are of a financial nature, but stage 1 delivers an IRR of more than 20 %. Consequently financial arguments cannot be considered.

Date: 11.12.2009 Author: Marina Bereznytska

Investment barrier. Other than economic/financial barrier in Step 2 above.
No private capital was available from domestic or international capital markets due to real risks associated with investment in Ukraine on the moment of investment decision 2003, April. Analysis of the investment climate in Ukraine at the time of the project given below demonstrates this fact.
The project was carried out against the background of the general negative situation in the country at the time of preelection contesting (2004 president elections), time of intention to carry out constitutional reform. According to many international institutions of the country was on the verge of enormous change. Political instability associated with the upcoming 2004 presidential elections, as well as serious weaknesses in the Ukrainian legislation created a very negative investment climate. The share of direct investment in Ukraine's GDP in 2003 totalled 2,6% in 2004 2,4% and in absolute terms, respectively, amounted to 1,3 and 1,6 billion dollars High inflation rate (8% in 2003, 15% in 2004 and 25% in 2005). And as a consequence of expensive domestic borrowing significantly influenced the decision on investment projects. Ukraine's sovereign ratings assigned by the rating agency Standard & Poor's prior to May 2003 were in the "negative", and from May to October 2003 "stable" (Ref.71, 72, 73).
In addition to macroeconomic instability, innovation active enterprises have to overcome many administrative barriers related to permitting, licensing and other documentation prior to launching the project. According to numerous international studies major obstacles to innovation activities in Ukraine are:
- Instability and complexity of public administration
- Uncertainty of economic environment
- Uncertainty in the law
- High level of corruption
- Tax burden
- Problems with VAT refunds

Current conditions for banking operations were formed against the background of the introduction, in December 2002, FATF to strengthen monitoring and limiting transactions with Ukraine. Canada, Germany and the United Kingdom in accordance with the recommendations of the FATF imposed sanctions against Ukraine (Ref.74).

Investment barrier overcoming.
The project at the time of decision making was not investment attractive for the financial institutions, thought taking into account Kyoto protocol mechanisms it became possible to arouse some interest in those investors, who mind ecological factor (Ref. 75). This had initiated search of alternative ways of financing, including opportunities of Kyoto Protocol flexible mechanisms, particularly joint implementation mechanism in order to increase investment attraction of the project and reduction implementation risks.

Date: 14.12.09 Yulia Marskova Please see SGS comments dd. 14.12.2009. Closure of this CAR is related with CAR 20 discussion.

Date: 16.09.2009 Raised by: Arthur Pelchen

No.	Type	Issue	Ref
19	CAR	PP does not use most recent version of "Tool for the demonstration and assessment of additionality", Version 05.2, dated 26.08.2008. Please amend the discussion on additonality in the PDD and strictly follow the steps and use the correct headline from the new version of the tool. Please also check, that the discussion on the investment analysis in the PDD follows the quidelines attached to the tool.	T3Q3.1
Date: 4.11.2009 Author: Georgiy Panchenko Indeed, we checked PDD and adjusted the headlines (see Chapters resp.)			
Date: APE, 20.11.2009 The relevant changes have been implemented in the revised PDD (Ref. 35) and the financial calculation (Ref. 36). Changes were checked and found to be OK. CAR 19 is therefore closed out.			

Date: 16.09.2009 Raised by: Arthur Pelchen, David Diaz

No.	Type	Issue	Ref
20	CAR	Financial analysis should differentiate between stage I and II, because from the data presented in the financial analysis it seems that stage one is economically viable without ERUs and therefore not additional. It remains unclear why stage I and II are summarized in one project. There seems to be no technical or other reason for it. The fact that it was decided by the board in one board decision is not sufficient. If additionality of stage I cannot be proven by other means than the financial analysis, stage I should be taken out of the project. Please also make sure that depreciation and its effect on taxes is included in the financial calculation and include a residual value for the installation (or a sufficient explanation why the residual value is zero). In addition the IRR benchmark is including a factor for inflation, but the calculation doesn't include effects of inflation (constant electricity prices in the future and constant maintenance costs). To be comparable the IRR benchmark must be consistent with the calculation. Please exclude the factor on inflation from the calculation of the IRR benchmark. Please amend calculation and PDD accordingly and include the information the IRR benchmark in the PDD. Also please provide the following documents: 1. Information on regulation of electricity prices in Ukraine beyond October 2009 2. Evidence for stage I costs (only if it remains in the PDD) 3. Evidence for maintenance costs 4. Evidence for tax-rates 5. Evidence/explanation for ERU prices 6. Evidence for the exchange rate	T3Q3.2

Date: 4.11.2009 Author: Georgiy Panchenko

JSK "YCP" as a project owner continues to consider that the project is integral from the financial and technical point of view and division into stages is associated only with the time of objects putting into operation.

The National Environmental Investment Agency of Ukraine (NEIA) as the Kyoto protocol national designated focal point is interested in the most expedient implementation of this project, that could set a valuable example for other metallurgical enterprises and stimulate generation of new JI projects and GHG emission reductions in Ukraine (see NEIA letter (Ref. 50)). The project will be realized by using Track 1 mechanisms.

In accordance with the Annex to the Methodological Tool "Tool for the demonstration and assessment of additionality" 5.2. (p.6) please find attached Excel file with Financial analysis (Ref. 36) based on values valid at the time of the investment decision taken by the PP. Data for that time were presented by JSK "YCP" (Ref. 51, 52, 53, 54 – 59).

Residual value of the project equal to zero (Ref. 36), since the turbine will be depreciated within the life period of project.

Benchmark for IRR was taken as a discount rate *I*, which was determined by the formula:

i = (1+ R/100)* (1+ Inf/100)*(1+G/100) – 1,

where:

I – the discount rate, %;

R – risk free profitability rate, %;

Inf – inflation rate, %;

G – risk premium, %.

For this case the minimum guaranteed real rate of return was taken as the bank rate on deposits at the time of decision, the 18.04.2003, which amounted to R = 8,4% (Ref. 62). Percentage of inflation assumed to be equal to zero. Prize for the risk taken to be G = 4%.

Only in the case proposed project with ERU the IRR exceeds benchmark and NPV is positive. The project is not financially attractive without additional income, and becomes financially attractive with additional revenues from emissions trading.

Required evidences are presented in the materials:

1. Energy tariffs in accordance The Cabinet of Ministers of Ukraine Resolution on October 14, 2008 N 925 "On immediate measures to stabilize the situation in the mining, metallurgical and chemical sector" (Ref. 61). /http://search.ligazakon.ua/l_doc2.nsf/link1/KP080925.html/

2. Commercial proposal cost for the first stage, claimed by the manufacturer was 15980 thousand UAH (Ref. 52). The value of the actual cost for the first stage amounted to 31647 thousand UAH (Ref. 53).

3. Major repairs cost assumed to be equal to zero, which corresponds to a conservative estimate of costs.

4. Taxation rate is 25%. Law of Ukraine "On enterprises profit taxation" #335/94 of 28.12.94, article 10 (Ref. 60).

/http://zakon.rada.gov.ua/cgi-bin/laws/main.cgi?page=1&nreg=334%2F94-%E2%F0/

5. Project IRR sensitivity analysis taking into account the JI mechanism and ERU prices shows that the control point for IRR achieved at the price of ERUs 4,60 euro per tonne CO2-equivalent.

6. The exchange rate according to the National Bank of Ukraine on 18.04.2003 was 5,33 UAH/EUR. /http://www.bank.gov.ua/KURS/last_kurs1.htm/ (Ref. 63).

Date: 17.11.2009 Yulia Marskova Local Assessor comment
The following evidence was reviewed:

1. The client has sent the Ukrainian regulations on Electricity Price that issued by the National Committee for Electricity Power every month for 2009. These Regulations substantiate that for January-September 2009 the price was established at the same level (43.59 0.01UAH/kWh). Energy tariffs were fixed by the Resolution of the Cabinet of Ministers of Ukraine no.925 dd. 14.10.2008 and corresponding amendments dd. 24.06.2009 that prolong period till 01.01.2010. Since values from the time of decision making are to be taken into account, this reference is irrelevant.
2. Commercial proposal of Power Machines no. 02-06-03/02-1518 dd. 04.07.2003 contains 15 980 thousand UAH (Ref. 52). In contradiction true costs of 31,969,786.93 UAH are indicated in the Note on PT-12 investments (Ref. 53) signed by the Chief Accountant. Since costs at the time of decision making have to be used this is acceptable.
3. Acceptable.
4. Taxation rate (25%) is confirmed with the reference to the Law of Ukraine (Ref. 60).
5. The explanation can be accepted.
6. The exchange rate UAH/EUR on 18.04.2003 was 5.825 that is not in consistency with new calculation assumption made in Ref. 36. Please correct in the financial calculation accordingly.

APE, 17.11.2009
Neither the fact that the PP considers stage 1 and stage 2 together nor the letter by the Ukrainian DNA (Ref. 50) changes the fact, that stage 1 has an IRR beyond the relevant benchmark on its own. There might be other than financial barriers to proof the additionality of stage I. This issue remains open until SGS receives a clear answer on the treatment of additionality by the Ukrainian DNA either by letter or during a meeting envisaged for December 2009. CAR 20 therefore has to remain open.

The other issues are treated below in the following paragraphs:
Evidence (Ref. 51, 52, 53, 54 – 59) for the data in the revised financial analysis (Ref. 36) – checked by APE in Ref. 37 – is generally sufficient and plausible. Correctly the data are taken from the time of decision making in 2003. The following question/remarks arose while checking the calculation:

- Cells AI7:AN7 contain a copying error. (Since content of the cell is not used further, this does not influence the calculation result.) Please correct!
- In cell G22 the price for 2003 is wrong. It should be 0,1307. Please correct!
- Assuming a residual value of 0 doesn't seem to be appropriate. The fact that is is fully depreciated in not enough. The fact, that your AP-6 is still running after around 50 years is a strong hint for the existence of a residual value. Please reconsider using a residual value.
- Could you please explain what you mean with prime price (cells G12 and G15) and provide some evidence for the figures?
- Why is production from PT-12-1 exactly equivalent to the electricity consumption from Service Invest?
- Line 27 does not contain the gross profit, but the revenue. For gross profit depreciation and opex need to be taken into account. Please correct!
- Why is Opex equal to net profit? Meaning of opex (operational expenditure) seems to be misunderstood. Please state correct opex figures, provide evidence and correct the calculation of gross profit! This also extends to the sensitivity analysis.

Because of these issues CAR 20 remains open.

Date: 11.12.2009 Author: Georgiy Panchenko
Replies to APE comments:
1. It is included in the calculation (Ref. 68; Ref. 69).
2. In the previous calculations, the average tariff for 2002, equal to 0.1221 UAH / kWh was used. Since the calculation is performed for the time of the decision making, the 18/04/2003, the value of 0.1307 UAH / kWh can not be used in the calculation, since this is - the average tariff for the entire 2003. The new calculation uses the value of the tariff 0.1242 UAH / kWh which is equal to the average value of tariff for the first three months of 2003 (Ref.23).
3. Turbine life time for PT-12/13-3,4 / 1,0 on the project is 25 years. In the case of lifetime extension of the turbine PT-12, the parameters of its work will be lower than the initial and maintenance costs - higher. Therefore, the residual value of the turbines in the calculation adopted at the level of 25% of the original cost. This estimate corresponds to a conservative approach to financial analysis.
4. In the cells G12 and G15 values are set the value of production of 1 kWh of electricity in the first and second turbine generator PT-12, including amortization (Ref.55 (19) and 56 (20)). The new calculation uses the cost of electricity, from which the component, due to depreciation charges is deducted (Ref. 68; Ref. 69).
5. The assumption that production from PT-12-1 exactly equivalent to the electricity consumption from Service Invest, corresponds to the original plan of its operation. In the information about the project "Construction of turbines PT-12/13-3,4 / 1,0 with generators T-12-2U3 in CHP JSC “YCP" from 14.03.2003 g. (Ref. 70) it is stated: "With the putting into operation of the first coke oven battery and PT-12 turbo-generator the plant will be able to provide a 100% of its own electricity (with a sufficient excess coke oven gas), i.e. produce approximately 61.3 mln.kWh electricity per year. At this stage the project does not foresee the transfer of electricity to the external network.
6. It is taken into account in calculation (Ref. 68; Ref. 69).
7. This discrepancy is corrected (Ref. 68; Ref. 69).
Date: 11.12.2009 Author: Marina Bereznytska
The separate demonstration of additionality for stage 1 and stage 2 is provided. There is investment barrier analysis for stage 1 (please find Annex 5 in the latest version of PDD) and financial analysis for stage 2 (please find attached Excel file with financial analysis for stage 2, see Ref.69).
Also please find attached evidences for arguments, provided in PDD:
- Ukraine's sovereign ratings assigned by the rating agency Standard & Poor's prior to May 2003 were in the "negative", and from May to October 2003 "stable" (Ref.71, 72, 73).
- Canada, Germany and the United Kingdom in accordance with the recommendations of the FATF imposed sanctions against Ukraine (Ref.74).
- The project at the time of decision making was not investment attractive for the financial institutions, thought taking into account Kyoto protocol mechanisms it became possible to arouse some interest in those investors, who mind ecological factor (Ref. 75).- which financial institutions were contacted for funding? Was the funding refused and later how did the PP arrange their own funds?
- Risk of technological failure: the technology failure risk in the local circumstances is significantly greater than for other technologies; the particular technology used in the proposed project activity is not available in the relevant region. Scenarios 2-4 and the project scenario are characterized with this barrier. Scenario 5 is recognized as first of its kind for Ukraine for 2003. (Ref. 76).
- The implementation of similar projects after the invest decision making and implementation of YCP project has started since 2005: JSC “Avdeyevskiy KHZ” and JSC “Bagliykos” (City of Dniprodzerzhynsk) (Ref. 77).
- New barriers have arisen, promotional policies have ended, leading to a situation in which the proposed project activity can not be implemented without the incentive provided by the JI (Ref.76).

Date: 14.12.09 Yulia Marskova
Exchange rate of UAH/EUR on 18.04.2003 was 5.825 is corrected in the calculations dd.10.12.2009 /Ref.68/.

1. ok
2. ok
3. Residual value for TP-12 turbine considering as 25% of the original cost is not transparent. Please provide clear explanation of this figure with relevant evidence and how it was calculated. Please refer to Methodological tool "Tool for determining the remaining lifetime of equipment" if necessary. Taking into account the current practise of AR-6 turbine operation for already 50 years and development of technology the residual value of TP-12 turbine can be more than 25%.
4. ok
5. The explanation is sufficient. Ok
6. ok
7. ok

Listed above Investment barriers /Ref.71-74/ for Stage I of the project (comment of Marina Bereznytska dd. 11.12.2009) refers to the project in case of considering the external financing while the decision on financing the first TP-12 construction with own plant funds thus there is no connection with the Stage I financing barriers /Ref.25/. In this case it is necessary to justify if the YCP provided upfront financing as a pre-payment for expected ERU sells. Available Board decision concerning the JI project, dated 18.04.2003 and 20.03.2009 is not sufficient for demonstration of this issue /Ref.25/.
The project developer is kindly requested to right wording regarding 'first-of-its-kind' explanation for the project in the PDD (Annex 5, technological barriers) as the envisaged technology has been already used at YCP (there are AR-6 2 turbines/generators to use the coke oven gas to produce steam and electricity). Only statement that the project is the first of its kind is not sufficient. The Article /Ref.76/ provides the current situation regarding coke gas utilization and states '… lack of the required number of condensing turbines… Recently, the solution of this problem was found only at JSC YCP where PT-12 was installed in 2006…'. Lack of turbines does not justify 'first of its kind' as there were such turbines and technologies.
In view of above please revise wording in Annex 5 of the PDD.

Taking into account the following:

4. Stage II is not viable even with ERU selling (IRR is less than benchmark about **3 times**) /Ref.69/
5. Identical reasons for construction of both of TP-12 turbines are the coke production increase and surplus coke oven gas utilization
6. Preliminary financial assessments by JSC YCP were performed in 2003 for both turbines

It can be concluded that Stage II would not be implemented without Stage I consideration and JI incentives for Stage I as well. Internal assessment in Excel spreadsheet /Ref.68/ shows that the IRR of the Project activity does not cross IRR in case ERU selling from Stage II and only net profit from Stage I (without ERU selling). Thus it can be pointed out that if there is no ERU revenue Stage II cannot be implemented which is 'investment barrier'. Only in case of joint consideration of two stages the project reaches the benchmark and becomes viable.

National Environmental Investment Agency of Ukraine provided SGS with their opinion on the project that it is considered as **first of its kind** and **additional** and confirmed that there was a negative investment environment. The letter (reference ID 77) states, "during the last 20 years a very negative investment climate for the implementation of complex energy efficiency projects has been dominating the Ukraine. It is mostly caused by gaps in legislation, high inflation rate, unstable market trends, incompleteness of industry privatization, absence of positive experience in implementation of innovative decisions, low energy supply price (especially before year 2003 when the decision of project implementation was taken) and others.
The phase one of the potential JI project "Utilization of surplus coke oven gas with the electricity generation at JSC "Yasinivskyi Coke Plant" was considered first of its kind project activity in Ukraine under the given economic conditions."
Hence the project is considered additional.

Date: 14.10.2009 Raised by: Edgar Salinas, Arthur Pelchen

No.	Type	Issue	Ref
21	CL	The PDD states "Thus, during the three years before the project activity implementation, the average annual amount of coal used by the plant was about 1419 tons, while during the three years after the project's launch – 1332 tons of coal per year". A clarification request has been raised in order to ask project participants to clarify how the project activity meets the applicability condition that reads: "No auxiliary fossil fuel (except start-up fuel) is used in the waste gas boiler for the generation of captive electricity in the absence of the project". Project participants should bear in mind that although the use of coal as a back up fuel may be minimum, the methodology only refers to start-up fuels and does not contemplate exceptions for negligible amounts of back up fuel.	T2Q2.1, T3Q3.1, T4Q4.1, T5Q5.1

Date: 2.11.2009 Author: Sergiy Skybyk

Waiting on response for clarification request raised to Arthur Pelchen on 2.11.2009.

Date: APE, 16.11.2009
I do not see any reason not to describe the projects as Type 1 project. From my point of view all applicability criteria for Type 1 projects are met. That spares you the problem with applicability criteria in Type 2 projects on the auxiliary fuel. In this case f_{wcm} can be calculated a you propose in your answer on CAR 22. Nevertheless this requires the right wording and explanation to be included in the PDD. Please amend the PDD accordingly. CL 21 therefore remains open.

Date: 30.11.2009 Author: Sergiy Skybyk
As proposed project is described as Type 1 project, thus there is no the problem with applicability criteria mentioned above.

Date: 14.12.09 Yulia Marskova
Taking into account project as Type-1 the applicability criteria for Type-2 is not applicable.
Hence, CL 21 can be closed out.

Date: 14.10.2009 Raised by: Edgar Salinas, Arthur Pelchen

No.	Type	Issue	Ref
22	CAR	With regard to the f_{wcm} fraction, the methodology states: "If the steam used for generation of the electricity is produced in dedicated boilers but supplied through common header, this factor is estimated using equation (1d/1e). A corrective action request has been raised in order to ask project participants to make use of the appropriate equation for these cases.	T2Q2.1, T3Q3.1, T4Q4.1, T5Q5.1

Date: 2.11.2009 Author: Sergiy Skybyk
The recommendation has been taken into account. Please find our correcting presented in section B.2. PDD (page 21):

$$f_{WCM} = \frac{\sum_{h=1}^{8760} Q_{WCM,h} \cdot (Cp_{wcm} \cdot (t_{wcm,h} - t_{ref}) + NCV_{WCM,y})}{EG_{tot,y}} \cdot H_r ,$$

Where:
$Q_{WCM,h}$ - Quantity of coke oven gas recovered in hour h, (m^3/h);
$NCV_{WCM,y}$ - Net Calorific Value of coke oven gas in year *y*, (TJ/m^3);
$EG_{tot,y}$ - Total annual electric energy produced at the CHP, (TJ/year).
Cp_{wcm} - Specific Heat of coke oven gas (TJ/ m^3-deg C);

$t_{wcm,h}$ = The temperature of WECM in hour h (deg C);
t_{ref} = Reference temperature (0 deg C or any other suitable reference temperature with proper justification).
H_r = Average heat rate of the power plant where electricity is produced (1/efficiency) as calculated in equation 5 below;

The average heat rate of the power plant is given as:

$$H_r = \frac{\sum_{h=1}^{8760}\sum_{i=1}^{I} Q_{i,h} \cdot (Cp_i \cdot (t_{i,h} - t_{ref}) + NCV_{i,y})}{EG_{tot,y}},$$

Where:
$Q_{i,h}$ - Amount of individual fuel (coke oven gas and coal) i consumed at the energy generation unit during hour h, (kg or m^3);
Cp_i - Specific Heat of individual fuel i (TJ/kg -deg C or TJ/ m^3-deg C);
NCV_i - Net Calorific Value annual average for each individual consumed fuel and the WECM (TJ/kg);
$t_{i,h}$ - The temperature of individual fuel (coke oven gas and coal) i consumed at the CHP boilers during hour h (deg C).

Coke oven gas, obtained in coke batteries, is cooled for further purification and distribution to consumers of the plant. Thus, to the CHP boilers this gas goes cooled. Coal that is delivered to the boilers has the ambient temperature. Therefore, the temperature drop, as shown in formulas above, is neglected in view of smallness in comparison with the NCV of these fuels.

The results of the calculation of the f_{wcm} fraction are given in Table Ann.2.1. (Annex 2) PDD.

Date: APE, 20.11.2009
The factor f_{wcm} of the methodology is now correctly applied. Nevertheless the calculation itself cannot be checked as it is only provided intransparently in the PDD. Please provide a transparent calculation in Excel as well as the relevant evidence for the input data. Please also delete the "y" in equation (5) behind the NCV_i. CAR 22 therefore remains open.

Date: 30.11.2009 Author: Sergiy Skybyk
The calculation of f_{wcm} factor is attached (please find Ref. 65).

Date: 14.12.09 Yulia Marskova
The calculation was checked and to be considered as plausible. Input data were verified against Ref. 8, 66.
CAR 22 can be closed out.

Date: 14.10.2009 Raised by: Edgar Salinas, Arthur Pelchen

No.	Type	Issue	Ref
23	CAR	Concerning f_{cap}, the methodology states: "The ratio is 1 if the waste energy generated in project year y is same or less than that generated in base year". From what can be observed in the project boundary (p. 20, PDD), the waste energy that is going to be available in the project year y is going to be greater than the energy generated in base year since the boiler house is going to be receiving gas from coke oven batteries 5&6 and new ovens 1&4. To this extent, a corrective action request has been raised in order to ask project participants to calculate f_{cap} using equation 1f-2 or Method 3, Case 1 (pages 25 and 26 of ACM0012).	T2Q2.1, T3Q3.1, T4Q4.1, T5Q5.1

Date: 29.10.2009 Author: Sergiy Skybyk Waiting for response on clarification request (letter to Arthur Pelchen from 29.10.2009).
Date: APE, 16.11.2009 The clarification by the EB (Ref. 39) send in my E-Mail, dated 30.10.2009 (Ref. 38) is to be followed for f_{cap}. Please implement the above mentioned request in the PDD or discuss and explain why you do not implement it. CAR 23 therefore remains open.
Date: 30.11.2009 Author: Sergiy Skybyk The latest version of PDD was amended with implementation of your request. Please find in section B.2 of PDD: "To carry energy from primary WECM (heat of reaction (combustion) of coke oven gas) intermediate energy source (superheated steam) is used, which is finally used to generate the output energy in the final waste heat recovery equipment (PT-12 turbine). Thus, the project corresponds to the Case 2 of Method 3 for calculation of this fraction according to ACM0012 methodology. The following formula should be used: $f_{cap} = \frac{Q_{OE,BL}}{Q_{OE,y}}$, where $Q_{OE,BL}$ - output/intermediate energy that can be theoretically produced (in appropriate unit). $Q_{OE,y}$ - quantity of actual output/intermediate energy during year y (in appropriate unit). In equation the f_{cap} will become more than 1 and will be automatically set to 1 as per the definition of f_{cap} in ACM0012 (the ratio is 1 if the waste energy generated in project year *y* is same or less than that generated in base year)."
Date: 14.12.09 Yulia Marskova The ACM0012 was applied correctly to determine f_{cap}. Necessary amendments were done in the PDD ver.4. Thus CAR 23 can be closed out.

Observations:

1. Since stage II is not in operation yet, the EIA, the approval of the EIA, the construction permit, the operation permit and the calibration protocols are not existing yet and could therefore not be checked during the determination. This needs be made up for in the initial verification of stage 2.
2. Project developer can be recommended to include brief description of training procedures and contents in the PDD or refer to other separate documents already developed under the implemented Quality Management System.
3. For the purpose of emission reduction estimation it is planned to use authorized laboratory for NCV of coal determination that is to be checked during the first verification both the means of NCV determination and correspondent certificate of the laboratory.

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