DETERMINATION REPORT
E-ENERGY B.V.

DETERMINATION OF THE
GREENHOUSE GASES EMISSION REDUCTION DUE TO REPLACEMENT OF POWER, GENERATED BY THE TRADITIONAL FUEL FIRED POWER PLANTS, AS A RESULT OF REHABILITATION AND CONSTRUCTION OF THE SMALL HYDROPOWER PLANTS, OPERATED BY EEA "NOVOSVIT" AND "ENERGOINVEST", LTD

REPORT NO. UKRAINE/0011/2008

REVISION NO. 03

BUREAU VERITAS CERTIFICATION

DETERMINATION REPORT

Date of first issue:	Organizational unit:
31/05/2010	Bureau Veritas Certification Holding SAS
Client:	**Client ref.:**
E-Energy B.V.	Mr. Arturas Strolia

Summary:

Bureau Veritas Certification has made the determination of the "Greenhouse gases emission reduction due to replacement of power, generated by the traditional fuel fired power plants, as a result of rehabilitation and construction of the small hydropower plants, operated by EEA "Novosvit" and "Energoinvest", Ltd" project of E-Energy B.V. located in Vinnytsya, Khmelnytsky, Ternopil, Chernivtsi, Cherkasy, Ivano-Frankivsk and Lviv regions, Ukraine on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria. The project is submitted under the track 1 procedure.

The determination scope is defined as an independent and objective review of the project design document, the project's baseline study, monitoring plan and other relevant documents, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final determination report *and opinion. The overall determination, from Contract Review to Determination Report & Opinion, was* conducted using Bureau Veritas Certification internal procedures.

The first output of the determination process is a list of Clarification and Corrective Actions Requests (CL and CAR), presented in Appendix A. Taking into account this output, the project proponent revised its project design document.

In summary, it is Bureau Veritas Certification's opinion that the project correctly applies the baseline and monitoring methodology developed according the Guidance on Criteria for Baseline Setting and Monitoring and meets the relevant UNFCCC requirements for the JI and the relevant host country criteria.

On behalf of determination team *Flavio Gomes, Bureau Veritas Certification Holding SAS Global Product* Manager for Climate Change, approved final version of the Determination Report. Determination Report is signed by Ivan Sokolov authorized Bureau Veritas Certification Holding SAS Local product manager for Climate Change in Ukraine.

Report No.:	Subject Group:
UKRAINE/0011/2008	JI

Project title:
Greenhouse gases emission reduction due to replacement of power, generated by the traditional fuel fired power plants, as a result of rehabilitation and construction of the small hydropower plants, operated by EEA "Novosvit" and "Energoinvest", Ltd

Work carried out by:
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Bureau Veritas Certification Holding SAS

Date of this revision:	Rev. No.:	Number of pages:
25/11/2010	03	74

Indexing terms

Climate Change, Kyoto Protocol, JI, Emission Reductions, Verification

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Abbreviations

CAR	Corrective Action Request
JI	Joint Implementation
ERU	Emission Reduction Unit
EIA	Environmental Impact Assessment
CL	Clarification Request
CO_2	Carbon Dioxide
AIE	Accredited Independent Entity
GHG	Green House Gas(es)
HPP	Hydro Power Plant
I	Interview
IETA	International Emissions Trading Association
MoV	Means of Verification
MP	Monitoring Plan
NGO	Non Government Organization
PCF	Prototype Carbon Fund
PDD	Project Design Document
UNFCCC	United Nations Framework Convention for Climate Change

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1 INTRODUCTION

E-Energy B.V. has commissioned Bureau Veritas Certification to determinate its JI project "Greenhouse gases emission reduction due to replacement of power, generated by the traditional fuel fired power plants, as a result of rehabilitation and construction of the small hydropower plants, operated by EEA "Novosvit" and "Energoinvest", Ltd" (hereafter called "the project") located in Vinnytsya, Khmelnytsky, Ternopil, Chernivtsi, Cherkasy, Ivano-Frankivsk and Lviv regions, Ukraine.

This report summarizes the findings of the determination of the project, performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 Objective

The determination serves as project design verification and is a requirement for all projects. The determination is an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are determined in order to confirm that the project design, as documented, is sound and reasonable, and meet the stated requirements and identified criteria. Determination is a requirement for all JI projects and 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 Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

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 Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

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.

1.3 GHG Project Description

The project's main goal is the reduction of the greenhouse gases emissions from the thermal power plants which consume traditional fossil fuel by means of replacement of electric power generated by them to the state grid with the electric power generated by the small hydro power plants as a renewable, due to rehabilitation, renewing and retrofit of

existing obsolete small HPPs and building of the new ones. Increasing of the capacities and share of the hydro power generating in total power scope will result in greenhouse gases emissions reduction from the generating enterprises of Ukraine relative to the current practice.

In Ukraine the small hydro power plants were used for production of both mechanical and electric energy since fifties of the 20-th century. However, the advantages of the centralized production of electric power and high-voltage transmission in the recent half-century have led to that a lot of small hydro-electric power plants became neglected and fall into decay.

At the beginning of the 21-th century the growing significance of ecological problems, promoted interest to the renewing energy sources as well as the necessity of improving the reliability of power supply to rural area caused the interest to renewing of the small HPPs.

Renovation of the small HPPs will help to solve the ecology problems, to improve infrastructure of rural regions, to create the systems of reliable local power supply, to improve water supply, to advance the fish industry, etc.

The project foresees the increase of power generation by means of capacity increasing, rehabilitation of existing and construction of the new hydroelectric generators at the existing and new small hydro power plants, operated by EEA "Novosvit" and "Energoinvest", Ltd., on the rivers of Pivdennyj Buh, Zbruch, Ushytsya, Ros, Hirskyj Tykych, Hnylyj Tykych, Sluch, Koropets, Bily Cheremosh, Perclub, Sarata, Yalovechora, Murafa, Prut, Stryj and Zolota Lypa. It will result in the reduction of greenhouse gases, namely CO_2, emissions due to decreasing of the power production by the power generating capacities of the state grid of Ukraine.

The supplier for this project is the External Economic Association "Novosvit", which at present operates 15 small hydropower plants with the installed capacity of 10 280 kW. The first three of them (Sandratska HPP, Gordashivska HPP and Bodnarivska HPP) were renovated in 1999-2000 by the Ukrainian Energy Consortium, the founder of the EEA "Novosvit", and were then rented by EEA "Novosvit", these small HPP are not included in the project. After getting experience on their renovation and operation, the EEA "Novosvit" made the decision to rent and renovate step-by-step several small HPP. The other 12 already rehabilitated/constructed are included in the project, as well as 9 HPPs that are planned for rehabilitation/ construction, in total 21 small HPPs with total scheduled installed capacity of 13.360 MW.

Also, the EEA "Novosvit" is empowered to represent in this project the interests of company "Energoinvest», Ltd., which at present operates 11 already rehabilitated/constructed small hydropower plants with total installed capacity of 13.038 MW. 10 of these small HPPs are included in the project, as well as 2 HPP which are planed to retrofit, in total 12 small HPPs with total scheduled installed capacity of 12.488 MW.

Thus, in frames of this project, the total installed capacity of the 22 small hydropower plants that are already rehabilitated/renovated up to the end of 2009, is 20.528 MW, and the total installed capacity of all 33 small hydropower plants included in the project at the present stage is planned to be 25.848 MW.

1.4 Determination team

The determination team consists of the following personnel:

Nadiya Kaiiun

Bureau Veritas Certification, Team leader, Climate Change Lead Verifier

Igor Kachan,

Bureau Veritas Certification, Team member, Climate Change Verifier

Olena Manziuk,
Bureau Veritas Certification, Team member, Climate Change Verifier-trainee

Denis Pischalov,
Bureau Veritas Certification, Team member, Financial Specialist

The determination report was reviewed by:
Ivan Sokolov
Bureau Veritas Certification, Internal Technical Reviewer

2 METHODOLOGY

The overall determination, from Contract Review to Determination Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

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

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

The determination protocol consists of five tables. The different columns in these tables are described in Figure 1.

The completed determination protocol is enclosed in Appendix A to this report. **Determination Protocol Table 1: Mandatory Requirements**

Requirement	Reference	Conclusion	Cross reference
The requirements the project must meet.	Gives reference to the legislation or agreement where the requirement is found.	This is either acceptable based on evidence provided (**OK**), a **Corrective Action Request (CAR)** or a **Clarification Request (CL)** of risk or non-compliance with stated requirements. The CAR's and CL's are numbered and presented to the client in the Determination Report.	Used to refer to the relevant protocol questions in Tables 2, 3 and 4 to show how the specific requirement is determined. This is to ensure a transparent determination process.

Determination Protocol Table 2: Requirements 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 various requirements of baseline and monitoring methodologies should be met. The checklist is organized in several 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 Request (CL)** is used when the determination team has identified a need for further clarification.

Determination Protocol Table 3: Legal requirements

Checklist Question	Reference	Means of verification (MoV)	Comment	Draft and/or Final Conclusion
The national legal requirements the	Gives reference	Explains how conformance	The section is used to	This is either acceptable based

project must meet.	to documents where the answer to the checklist question or item is found.	with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	on evidence provided (**OK**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question. (See below). **Clarification Request (CL)** is used when the determination team has identified a need for further clarification.

Determination Protocol Table 4: Resolution of Corrective Action and Clarification Requests			
Report clarifications and corrective action requests	**Ref. to checklist question in tables 2/3**	**Summary of project owner response**	**Determination conclusion**
If the conclusions from the 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 Tables 2, 3 and 4 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 determination team should be summarized in this section.	This section should summarize the determination team's responses and final conclusions. The conclusions should also be included in Tables 2, 3 and 4, under "Final Conclusion".

Figure 1 Determination protocol tables

2.1 Review of Documents

The Project Design Document (PDD version 05) was submitted by E-Energy B.V. 16/02/2010 together with supporting documentation in terms of calculation of GHG emission. PDD Version 05 was made publicly available for comments on Bureau Veritas Ukraine site from 18 February 2010. PDD Version 05 and supporting documentation as well as additional background documents related to the project design, baseline, and monitoring plan, such as Kyoto Protocol, host Country laws and regulations, JI guidelines, JISC Guidance on criteria for baseline setting and monitoring, and Guidelines for users of the JI PDD Form were reviewed.

The first deliverable of the document review was the Draft Determination Report with 38 CAR's and 8 CL.

To address Bureau Veritas Certification corrective action and clarification requests, E-Energy B.V. revised the PDD and as a response issued PDD version 07 dated 23/11/2010 and resubmitted it on 23/11/2010. The determination findings presented in this report relating to the project as described in the PDD version 05 and 06.

2.2 Follow-up Interviews

On 24/03/2010 Bureau Veritas Certification performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of EEA "Novosvit" and project developer the Institute of Engineering Ecology were interviewed (see References). The main topics of the interviews are summarized in Table1.

Table 1 Interview topics

Interviewed organization	Interview topics
EEA "Novosvit"	➢ Organizational structure. ➢ Responsibilities and authorities. ➢ Training of personnel. ➢ Quality management procedures and technology. ➢ Rehabilitation/Implementation of equipment (records). ➢ Metering equipment control. ➢ Metering record keeping system, database.
Local community representatives	➢ Local stakeholder's response. ➢ Social impacts.
Institute of Engineering Ecology	➢ Baseline methodology. ➢ Monitoring plan.

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the determination is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the project design.

To guarantee the transparency of the determination process, the concerns raised are documented in more detail in the determination protocol in Appendix A.

3 DETERMINATION FINDINGS

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

1) The findings from the desk review of the original project design documents and the findings from interviews during the follow up visit are summarized. A more detailed record of these findings can be found in the Determination Protocol in Appendix A.

2) Where Bureau Veritas Certification had identified issues that needed clarification or that represented a risk to the fulfillment of the project objectives, a Clarification or Corrective Action Request, respectively, have been issued. The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Determination Protocol in Appendix A. The

determination of the Project resulted in 38 Corrective Action Requests and 9 Clarification Requests.
3) The conclusions for determination subject are presented.

3.1 Project Design

Bureau Veritas Certification recognizes that this Project is helping the host country fulfill its goals of promoting sustainable development. The project is expected to be in line with the host-country specific JI requirements.
The Project Scenario is considered additional in comparison to the baseline scenario, and therefore eligible to receive Emissions Reductions Units (ERUs) under the JI, based on an analysis, presented by the PDD, of investment, technological and other barriers, and prevailing practice.
The project design is sound and the geographical (Project site is Vinnytsya, Khmelnytsky, Ternopil, Chernivtsi, Cherkasy, Ivano-Frankivsk and Lviv regions, Ukraine) and temporal (382 months) boundaries of the project are clearly defined.
CARs, CLs (CAR1-CAR6, CAR27-CAR29, CL1-CL4) and their resolution/conclusion applicable to project design are listed in the APPENDIX A: DETERMINATION PROTOCOL (Table 4) below.
The project has no approvals by the Parties involved, therefore CAR1 remains pending.

3.2 Baseline and Additionality

The "Greenhouse gases emission reduction due to replacement of power, generated by the traditional fuel fired power plants, as a result of rehabilitation and construction of the small hydropower plants, operated by EEA "Novosvit" and "Energoinvest", Ltd" project uses the baseline and monitoring approach developed according and meets the relevant UNFCCC requirements for the JI and the relevant host country criteria.
Thus, the approved consolidated baseline and monitoring methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (version 09, valid from 13 February, 2009) has been used for the baseline scenario construction, where the project foresees the emission reduction due to rehabilitation and construction of new hydro power plants and reduction of power production by fossil fuel power plants.
This methodology ACM0002 is applicable to grid-connected renewable power generation project activities that involve electricity capacity addition.
The proposed project deals with the grid-connected renewable power generation and activities in frames of it involve electricity capacity addition through rehabilitation and renovation of existing small hydropower plants and construction of new mini hydropower plants; thus it meets the area of applicability of methodology ACM0002.
The methodology ACM0002 is applicable, in particular, under the following conditions:
- The project activity is the installation or modification/retrofit of a power plant/unit of one of the following types: hydro power plant/unit (either with

a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit.
- In case of hydro power plants:
a) The project activity is implemented in an existing reservoir, with no change in the volume of reservoir;
b) The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the Project Emissions section, is greater than 4 W/m^2;
c) The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4 W/m^2.
d) The geographic and system boundaries for the relevant electricity grid can be clearly identified and information on the characteristics of the grid is available; and
- 5 years of historical data (or 3 years in the case of non hydro project activities) have to be available for those project activities where modification/retrofit measures are implemented in an existing power plant.
In the proposed project:
- The project activity is the installation or modification/retrofit of hydro power plants with run-of-river reservoirs.
- The project activity is implemented in existing reservoirs, with no change in the volume of a reservoir. Only one new mini-HPP is constructed and one is planned to be constructed, both at escapage of existing HPP without a new reservoir.
- The geographic and system boundaries for the relevant electricity grid are clearly identified since this is the joined state grid, and information on the characteristics of the grid is available; and
- 5 years of historical data are available for those project activities where modification/retrofit measures are implemented in an existing power plant. Moreover, prior to the project activity the most of the small HPP included in the project were out of operation for a long period of time (for decades).
Thus the proposed project complies with all criteria of the methodology ACM0002; also this methodology does not include any limits concerning the minimum of capacity which is installed/retrofitted in the project.
The small-scale methodology AMS-I.D is not applicable to the project, because the project was previously the part of the larger project "District Heating System Rehabilitation in Vinnytsya", and the total scheduled power capacity of all included small HPP is over the eligibility limit of 15 MW for a small-scale project activity.
Baseline development, project additionality background and the assessment of green-house gases emissions reduction were hold according to the approved consolidated baseline and monitoring methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (version 09).
Identification of the baseline scenario:

For modification/retrofit of an existing grid-connected renewable power plant/unit the baseline scenario is the following:
In the absence of the JI project activity, the existing facility would continue to supply electricity to the grid at historical average levels, until the time at which the generation facility would likely be replaced or retrofitted. According to the previous practice in Ukraine, this time is over 30 years.

The additionality of the project activity is demonstrated and assessed below in accordance with the approved consolidated baseline and monitoring methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (version 09), using the "Tool for the demonstration and assessment of additionality" (version 5.2).
It was identified three realistic and credible options for baseline scenario for power generation – the proposed project activity with registration as a JI project activity, and two alternatives to this project:
- the proposed project activity, undertaken without being registered as a JI project activity;
- the continuation of the current situation, i.e. to use all power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance, without rehabilitation of existing HPP or construction of new HPP;
In the absence of the project activity, the existing facilities would continue to supply electricity to the grid at historical levels.
The first alternative requires substantial. Without carbon credits sales the project is not economically favourable for a Supplier, which is financially unattractive due to the high capital costs comparably to the operational costs of the company and long pay back period for investments, and makes implementation of most activities impossible.
The second alternative is the continuation of the current situation (no project activity or other alternatives undertaken), i.e. business-as-usual scenario without or with minimum maintenance works at operating small HPP and without any rehabilitation works at non-operating small HPP, in this case no replacement of power generated at the power plants in the power systems consuming the fossil fuel would take place.
This scenario is less environmentally favourable for the near future (including first commitment period 2008-2012), since GHGs emissions from power generation to grid will continue to be kept at the same level or even higher (due to degradation of the equipment), but economically such scenario is more attractive.
Consistency with mandatory laws and regulations:
According to The Law of Ukraine "On Power Energy" № 575/97VR dated October 16, 1997 (in reduction from April 25, 2009), execution of business activity in fields of electricity production, distribution and supply require a license that is to be issued by the National Power Energy Regulation Committee of Ukraine.
The EEA "Novosvit" and "Energoinvest», Ltd. have the necessary licenses for supply of the electric power by the unregulated tariff, according to the

Law of Ukraine "On Power Energy", as well as other licenses and permissions necessary for the project implementation.
There are no legal or regulatory requirements in Ukraine which oblige to rehabilitate or renovate the obsolete small HPPs at small rivers in country regions; in any case the local administrations that usually are the owners of small HPPs have not enough funds for such activity.
Thus the described alternatives are in compliance with the mandatory laws and regulations.
The investments analysis included in the PDD and the annexes show that the project is not attractive for investments, but using of JI mechanism enables to improve such attractiveness.
The project can not be implemented without carbon credits because of some barriers, such as:
- investment barrier. For the investor, the project of such kind is not enough attractive for making investments. The discount rate in Ukrainian banks is very high, and placing money in bank is more attractive and less risky than investing into this project.
- technological barrier (there are difficulties caused by the need of individual approach in designing, purchasing and installing of hydro power equipment for each power plant or unit. Skilled and/or properly trained personnel necessary to operate and maintain the small HPP is practically not available in some villages neighbouring to the HPPs, which leads to an unacceptably high risk of equipment disrepair, malfunctioning or other underperformance).
- organizational barrier (the difficulties concerning the relations with electric energy pricing regulative body could occur).
Therefore, the proposed project activity faces various serious barriers that prevent the implementation of the proposed project activity; and do not prevent at least one of the alternatives – continuation of the current situation, i.e. business-as-usual scenario.
It is stated in the PDD that not any similar activities on rehabilitation of the obsolete small HPPs that have been implemented previously or are currently underway are observed in Ukraine.
In general, all additionality tests have shown a positive result which proves that JI project as additional.
CARs, CLs (CAR7-CAR26, CL5-CL8) and their resolution/conclusion applicable to baseline and additionality are listed in the APPENDIX A: DETERMINATION PROTOCOL (Table 4) below.

3.3 Monitoring Plan

Monitoring plan is chosen according to the approved consolidated baseline and monitoring methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (version 09) and meets the relevant UNFCCC requirements for the JI project and the relevant host country criteria.
The most objective and cumulative factor that will give a clear picture of whether emission reductions really took place – is the increasing of effective output of power by a small HPP. It can be identified as a

difference between baseline effective output and effective output of power after project implementation.
EEA "Novosvit" and "Energoinvest", Ltd. collect and keep the data on generation of power in form of electronic files and acts and on effective output of power to the grid in form of acts, bills and reports.
The detailed description of the parameters to be monitored is presented in section D of the PDD and was found satisfactory.
CARs (CAR30-CAR34) and their resolution/conclusion applicable to monitoring plan are listed in the APPENDIX A: DETERMINATION PROTOCOL (Table 4) below.

3.4 Calculation of GHG Emissions

As per approach proposed, the emissions reduction will be achieved due to creation and increasing of installed and operational capacity of small hydropower plants by means of their rehabilitation and construction of new hydropower units. Implementation of this activity will provide the substituting amount of power to the consumers without consumption of carbon-intensive fossil fuel.
Therefore, due to project implementation the fuel consumption at the conditional traditional power plant connected to the grid for generation of this substituting amount of power will be zero relatively to the baseline fuel consumption, and corresponding emissions will be zero.
In accordance with ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", the project emissions from water reservoirs of hydro power plants in year y ($PE_{HP,y}$) should be taken into account only if hydro power project activities result in new reservoirs or in the increase of existing reservoirs. In case of this project no new reservoirs are to be created and no increase of existing reservoirs is planned, thus project emissions in year y PE_y=0. Thereafter, the project emissions will be zero.
According to ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", the baseline emissions, which include only the CO_2 emissions from electricity generation by the traditional fossil fuel power plants that are displaced due to the project activity, are calculated as follows:

$$BE_y = (EG_y - EG_{baseline}) \cdot EF_{grid,CM,y}$$

Where: BE_y - baseline emissions in year y (tCO_2/yr)
EG_y - electricity supplied by the project activity to the grid (MWh)
$EG_{baseline}$ - baseline electricity supplied to the grid in the case of modified or retrofit facilities (MWh).
$EF_{grid,CM,y}$ - combined margin CO_2 emission factor for grid connected power generation in year y.
According to the proposed approach baseline emissions consist of one type of GHG emissions: CO_2 emissions from electricity generation to the grid by the traditional thermal power generating units which consume the fossil fuel, in amount that will be replaced after project implementation and increasing of power generation by the small hydropower plants.
Emission reductions are calculated as follows:

$ER_y = BE_y – PE_y – LE_y$
Where:
ER_y - emission reductions in year y (tCO_2/yr)
BE_y - baseline emissions in year y (tCO_2/yr)
PE_y - project emissions in year y (tCO_2/yr)
LE_y - leakage emissions in year y (tCO_2/yr)

Average annual emissions reduction after complete project implementation is supposed to be 37 761 tCO_2 equivalent.
Total installed capacity of all 33 small hydropower plants included in the project at the present stage is planned to be 25.848 MW.

No areas of concern applicable to calculation of GHG emissions were identified.

3.5 Environmental Impacts

According to the Ukrainian legislation (Laws of Ukraine "On the Environment Protection" (1991), "On the Ecological Expertise" (1995), "On Wastes" (1998), Water Code of Ukraine (1995), Soil Code of Ukraine (2001) etc) the design documentation for the new building, reconstruction and technical re-equipment of industrial and civil objects must include the environmental impact assessment, the main requirements for which are listed in the State Building Norms of Ukraine A.2.2-1-2003 "Structure and content of documents on environmental impact assessment when designing and constructing of enterprises, buildings and structures" .
EEA „Novosvit" and "Enenrgoinvest", Ltd. has the necessary Environmental Impact Assessments for their activity according to Ukrainian legislation.
In general, the project will have positive effect on the environment. At the rehabilitation of the neglected small hydropower plants the renovation and purification of the specific conservation reservoirs and parts of the river from the silt and wastes is carried out. Fuel consumption reduction by the traditional power plant at the power generation plants using the fossil fuel will reduce emissions of SO_x, NO_x, CO and particulate matter.
Impact on the water medium
Impact on the water medium is positive. At the rehabilitation of neglected small hydropower plants the renovation and purification of specific conservation reservoirs and parts of the river from the silt and wastes is carried out. Operation of small HPPs makes possible to regulate a daily water flow, floods and ice drifting, prevent under flooding of soil and buildings, to carry out bank stabilization, purification of rivers and derivation channels, to provide sanitary dumping of water from reservoirs.
Project implementation will provide improvement of the basic channel of the rivers, including the zones of recreation. By regular washing of a channel, improvement of a bottom condition the decrease of microbial pollution of water will be achieved.
Installation of miniturbines does not lead to changes of an existing hydrological mode. Moreover, water is enriched by oxygen. So, for example, at Korsun'-Shevchenkivsky water basin the water intake is

carried out from depth of 0.83 m (a mark 98.98), that is 3.27 m above the previous mark. Besides, on tail-water reach it is established water-split well, at falling in which from height of 6.5 m water is additionally sated with oxygen, which is more, than at usual passage through overflow dam with difference of heights of 2.9 m.

Effects on land use

Green plantings and natural landscape are not subject to changes.

Water basin operation will be carried out according to Service regulations in which the safe mode of operation of a water basin is defined (dam and water outflow operation, level water basin mode, the minimum expenses of water for the normal sanitary-biological condition of the river, filling and draining of water basin).

Project implementation will provide improvement of the basic channel of the rivers, including the zones of recreation. The project implementation will not entail any change of the area of water basin or the flooded land areas.

Effects on biodiversity

The project has obtained positive conclusions of the regional main administrations of fishing control subject to carrying out observations with the aim of determining the quantity and state of fishing resources after the siphon appliance with the aim of determining the need of fish-protective appliance installation. The fishery characteristics of the appropriate river area are analyzed. Hydrounits at work, owing to a turn of turbines, produce noise which extends in thickness of water that creates acoustic effect of fish protection.

Waste generation, treatment and disposal

At the project implementation waste generation will occur after disassembling of physically and morally obsolete equipment at the rehabilitation of hydraulic units of hydropower plants. The industrial and discharged waters are absent when operating the HPPs.

CAR36 and CAR37 and their resolution/conclusion applicable to environmental impacts are presented in the APPENDIX A: DETERMINATION PROTOCOL (Table 4) below.

3.6 Comments by Local Stakeholders

As the activities by the project do not foresee the negative impact on the environment and negative social effect, the special public discussion was not necessary. Moreover, project implementation will provide improvement of sanitary conditions of the zones of recreation. Consults with Stakeholders have been hold at the sessions of local authorities, also through newspapers publications, scientific seminars and publications.

The local community was informed about the start of the project by declarations of intent, published in local newspapers. The local community, which is presented by local councils, has approved the project.

During the determination at site visit local representative was interviewed (chairman of village council) and only positive response was observed.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOs

According to the modalities for the Determination of JI projects, the AIE shall make publicly available the project design document and receive, within 30 days, comments from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available.

Bureau Veritas Certification published the project documents on the website http://www.bureauveritas.com.ua on 18/02/2010 and invited comments by Parties, stakeholders and non-governmental organizations. There are no comments from stakeholders.

5 DETERMINATION OPINION

Bureau Veritas Certification has performed a determination of the "Greenhouse gases emission reduction due to replacement of power, generated by the traditional fuel fired power plants, as a result of rehabilitation and construction of the small hydropower plants, operated by EEA "Novosvit" and "Energoinvest", Ltd" project in Ukraine. The determination was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The determination consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) the resolution of outstanding issues and the issuance of the final determination report and opinion.

Project participant/s used the latest tool for demonstration of the additionality. In line with this tool, the PDD provides analysis of investment, technological and other barriers to determine that the project activity itself is not the baseline scenario. An analysis of the investment and technological barriers demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

The review of the project design documentation (version 07) and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfillment of stated criteria. 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 us and the engagement conditions detailed in this report.

6 REFERENCES

Category 1 Documents:

Documents company that relate directly to the GHG components of the project.

/1/ PDD "Greenhouse gases emission reduction due to replacement of power, generated by the traditional fuel fired power plants, as a result of rehabilitation and construction of the small hydropower plants, operated by EEA "Novosvit" and "Energoinvest", Ltd", version 05, dated 05.05.09

/2/ PDD "Greenhouse gases emission reduction due to replacement of power, generated by the traditional fuel fired power plants, as a result of rehabilitation and construction of the small hydropower plants, operated by EEA "Novosvit" and "Energoinvest", Ltd", version 06, dated 27.04.10

/3/ PDD "Greenhouse gases emission reduction due to replacement of power, generated by the traditional fuel fired power plants, as a result of rehabilitation and construction of the small hydropower plants, operated by EEA "Novosvit" and "Energoinvest", Ltd", version 07, dated 23.11.10

/4/ Decree of Cabinet of Ministers of Ukraine № 206, dated 22.02.2006

/5/ Glossary of JI terms, ver. 02, JISC.

/6/ JISC "Clarification regarding the public availability of documents under the verification procedure under the Joint Implementation Supervisory Committee", ver. 03.

/7/ Guidelines for users Joint of the Implementation Project Design Document Form, ver. 04, JISC

/8/ 2006 IPCC Guidelines for National Greenhouse Inventories. Energy.

/9/ Letter of Endorsement # 4907/11/10-08 dated 15.04.2008 issued by the National Environmental Investments Agency of Ukraine

/10/ Guidance on criteria for baseline setting and monitoring (version 02), JISC

Category 2 Documents:

Background documents related to the design and methodologies employed in the design or other reference documents.

/1/ Statement АП #000983 of state admission of getting into operation of built facility dated September 2007 at Korsun-Shevchenkivskyi city.

/2/ Statement of getting into industrial operation of automated system of electrical energy commercial accounting dated 10.02.2009 of Foreign Trade Association "Novosvit" Korsun-Shevchenkivska mini-HPP.

/3/ Statement of getting into industrial operation of automated system of electrical energy commercial accounting dated 10.02.2009 of Foreign Trade Association "Novosvit" Lotashivska HPP.

/4/ Statement of getting into industrial operation of automated system of electrical energy commercial accounting dated 21.08.2008 of Foreign Trade Association "Novosvit" Korsun-Shevchenkivska HPP.

/5/ Statement of getting into industrial operation of automated system of electrical energy commercial accounting dated 21.08.2008 of Foreign Trade Association "Novosvit" Steblivska HPP.

/6/ Statement of check to compliance with requirements of environmental protection legislation dated 31.03.2009. Lotashivska HPP.

/7/ Statement of check of metering equipment of electrical energy dated 14.11.2008. FTA "Novosvit" Lotashivska HPP.

/8/ Statement of check of metering equipment of electrical energy dated 23.08.2007. FTA "Novosvit" Korsun-Shevchenkivska mini-HPP.

/9/ Statement ЧК #000884 of state admission of getting into operation of built facility dated 30.12.2008 at Lotasheve village.

/10/ License АБ #220655 to electrical energy generation by Foreign Trade Association "Novosvit" 10.11.2005. License is valid from 16.10.2002 to 15.10.2012.

/11/ Passport 1ГГ.768.000 ПС of current transformer ТОЛ-10-І-2 У2, ser. #13076.

/12/ Passport 1ГГ.768.000 ПС of current transformer ТОЛ-10-І-2 У2, ser. #13082.

/13/ Passport of voltage transformer НТМИ-І-10 У3, ser. #2239.

/14/ Protocol of electrical energy meters SL7000 verification of FTA "Novosvit" of Cherkasy branch, ser. number of the meter 33004616, ser. number of the meter 33004606, ser. number of the meter 30316086, ser. number of the meter 30315969, ser. number of the meter 33022615, ser. number of the meter 33001526.

/15/ Account #304 of advance payment dated 21.01.2009 for planned electrical energy for February 2009 estimated 10.02.2009.

/16/ Account #359 of advance payment dated 01.12.2009 p.for planned electrical energy for December 2009 estimated 10.12.2009.

/17/ Sales invoice #304 dated 18.06.2009 for electricity energy consumption for January 2009.

/18/ Sales invoice #304 dated 19.05.2009 for electricity energy consumption for May 2009.

/19/ Sales invoice #304 dated 20.03.2009 for electricity energy consumption for March 2009.

/20/ Sales invoice #304 dated 20.08.2009 for electricity energy consumption for August 2009.

/21/ Sales invoice #304 dated 20.11.2009 for electricity energy consumption for November 2009.

/22/ Sales invoice #304 dated 21.01.2009 for electricity energy consumption for January 2009.

/23/ Sales invoice #304 dated 21.04.2009 for electricity energy consumption for April 2009.

/24/ Sales invoice #304 dated 21.07.2009 for electricity energy consumption for July 2009.

/25/ Sales invoice #304 dated 21.09.2009 for electricity energy consumption for September 2009.

/26/ Sales invoice #304 dated 21.10.2009 for electricity energy consumption for October 2009.

/27/ Sales invoice #304 dated 21.12.2009 for electricity energy consumption for December 2009.

/28/ Sales invoice #304 dated 23.02.2009 for electricity energy consumption for February 2009.

/29/ Sales invoice #359 dated 21.09.2009 for electricity energy consumption for September 2009.

/30/ Sales invoice #359 dated 21.12.2009 for electricity energy consumption for December 2009.

/31/ Sales invoice #359 dated 22.10.2009 for electricity energy consumption for October 2009.

/32/ Sales invoice #359 dated 23.11.2009 for electricity energy consumption for November 2009.

/33/ Sales invoice #359 dated 27.08.2009 for electricity energy consumption for August 2009.

/34/ Certificate of state metrological attestation #9 dated 14.09.2005 TFA "Novosvit" Korsun-Shevchenkivska HPP.

/35/ Certificate of the work measurement device verification #231 dated 16.07.2007, ser. #43874. FTA "Novosvit" Stevlivska HPP. Valid to 16.07.2011.

/36/ Certificate of the work measurement device verification #232 dated 16.07.2007, ser. #13387. FTA "Novosvit" Stevlivska HPP. Valid to 16.07.2011.

/37/ Certificate of the work measurement device verification #233 dated 16.07.2007, ser. #33711. FTA "Novosvit" Stevlivska HPP. Valid to 16.07.2011.

/38/ Certificate of the work measurement device verification #234 dated 16.07.2007, ser. #55244. FTA "Novosvit" Stevlivska HPP. Valid to 16.07.2011.

/39/ Certificate of the work measurement device verification #235 dated 16.07.2007, ser. #00488. FTA "Novosvit" Korsun-Shevchenkuvska HPP. Valid to 16.07.2011.

/40/ Certificate of the work measurement device verification #236 dated 16.07.2007, ser. #02159. FTA "Novosvit" Korsun-Shevchenkuvska HPP. Valid to 16.07.2011.

/41/ Certificate of the work measurement device verification #237 dated 16.07.2007, ser. #28859. FTA "Novosvit" Korsun-Shevchenkuvska HPP. Valid to 16.07.2011.

/42/ Certificate of the work measurement device verification #238 dated 16.07.2007, ser. #1076. FTA "Novosvit" Korsun-Shevchenkuvska HPP. Valid to 16.07.2011.

/43/ Certificate of the work measurement device verification #239 dated 16.07.2007, ser. #00868. FTA "Novosvit" Korsun-Shevchenkuvska HPP. Valid to 16.07.2011.

/44/ Certificate of the work measurement device verification #376 dated 29.10.2007, ser. #22916. FTA "Novosvit" Korsun-Shevchenkuvska HPP. Valid to 29.10.2011.

/45/ Certificate of the work measurement device verification #378 dated 29.10.2007, ser. #00881. FTA "Novosvit" Korsun-Shevchenkuvska HPP. Valid to 29.10.2011.

/46/ Certificate of the work measurement device verification #379 dated 29.10.2007, ser. #00872. FTA "Novosvit" Korsun-Shevchenkuvska HPP. Valid to 29.10.2011.

/47/ Certificate of the work measurement device verification #530/108 dated 14.12.2009. FTA "Novosvit" Korsun-Shevchenkuvska mini-HPP. Valid to 14.12.2011. Protocol of verification #32/108 dated 15.12.2008.

/48/ Certificate of the work measurement device verification #531/108 dated 14.12.2009. FTA "Novosvit" Lotashivska HPP. Valid to 14.12.2012.

protocol of verification #31/108 dated 15.12.2008.

/49/ Certificate of the work measurement device verification #532 dated 14.12.2009, ser. #33004616. FTA "Novosvit", branch of Cherkasy. Valid to 14.12.2015.

/50/ Certificate of the work measurement device verification #533 dated 14.12.2009, ser. #33004606. FTA "Novosvit", branch of Cherkasy. Valid to 14.12.2015.

/51/ Certificate of the work measurement device verification #534 dated 14.12.2009, ser. #30316086. FTA "Novosvit", Steblivska HPP. Valid to 14.12.2015.

/52/ Certificate of the work measurement device verification #535 dated 14.12.2009, ser. #30315969. FTA "Novosvit", Steblivska HPP. Valid to 14.12.2015.

/53/ Certificate of the work measurement device verification #536 dated 14.12.2009, ser. #33022615. FTA "Novosvit", Steblivska HPP. Valid to 14.12.2015.

/54/ Certificate of the work measurement device verification #537 dated 14.12.2009, ser. #33001526. FTA "Novosvit", Steblivska HPP. Valid to 14.12.2015.

/55/ Operation rules of Lysansk reservoir, Zvenygorodka reservoir, and Lotashiv reservoir at the river Gnylyi Tikych, Cherkasy region. Approved on 07.02.2009.

/56/ Instruction for electrician of repair and service of electrical equipments and hydro facilities of HPP. Approved on 02.01.2010.

/57/ Job description of master Y.M. Volkova of Gordashivska and Lotashivska HPP. Approved on 02.01.2010.

/58/ Log book of protocols of knowledge verification at branch of Cherkasy, FTA "Novosvit". Opened on 07.08.2008.

/59/ Annex 1 List of measurement devices that are in operation and have to be verified in 2010 of electrical data measurement dated December 2009.

/60/ Operation journal FTA "Novosvit" Lotashivska HPP. Opened on 01.01.2010

/61/ Log journal of electrical energy accounting of FTA "Novosvit" Lotashivska HPP. Opened on 01.11.2008.

/62/ Statement on electrical energy generation by Gordashivska and Lotashivska HPP, FTA "Novosvit" for November 2009 dated 30.11.2009.

/63/ Annex 3 Measurement equipments and verification of measurement equipment HPP FTA "Novosvit".

/64/ Report of industrial output production for 2009.

/65/ Balance of production and distribution of electrical energy for 2009.

/66/ Report of the work of hydro electro plant for 2009 of Lotashivska HPP.

/67/ Photo - Meter #34147891

/68/ Log book of registration of generators work at Korsun-Shevchenkivska mini-HPP. Opened on 05.09.2007.

/69/ Log book of registration of generators work at #2 Korsun-Shevchenkivska HPP. Opened on 01.11.2004.

/70/ Statement of electrical energy generation by Korsun-Shevchenkivska HPP, Steblivska HPP, and Korsun-Shevchenkivska mini-HPP FTA "Novosvit" for November 2009 dated 01.12.2009.

/71/ Balance of production and distribution of electrical energy for 2007. Korsun-Shevchenkivska HPP.

/72/ Balance of production and distribution of electrical energy for 2007. Korsun-Shevchenkivska mini-HPP.

/73/ Balance of production and distribution of electrical energy for 2006. Korsun-Shevchenkivska HPP.

/74/ Balance of production and distribution of electrical energy for 2005. Korsun-Shevchenkivska HPP.

/75/ Balance of production and distribution of electrical energy for 2004. Korsun-Shevchenkivska HPP.

/76/ Report of the work of hydro electro plant for 2003 of Korsun-Shevchenkivska HPP.

/77/ Report of the work of hydro electro plant for 2002 of Korsun-Shevchenkivska HPP.

/78/ Statement of sampling and analysis of the water samples to the identification of dissolved oxygen dated 18.09.2008. Korsun-Shevchenkivska HPP.

/79/ Information letter of electrical energy generation by Korsun-Shevchenkivska HPP and Steblivska HPP for 1990-1999 and 8 months 2000.

/80/ Working draft. Installation and switching on 2 mini-turbines of electrical plant of FTA "Novosvit" on the dam of Korsun-Shevchenkivska HPP. Volume 4. Book 1. Environmental impact assessment (EIA) 127/8-2007 dated 2007.

/81/ Decision #24 of environmental state deterioration of the mainstream river Ros below dam of Korsun-Shevchenkivska HPP dated 27.05.2004.

/82/ Decision #10 of building approvals of mini hydro electrical plant near the dam of Korsun-Shevchemkivska HPP dated 16.03.2005.

/83/ Decision #48 of concession of the permit to Foreign Trade Association "Novosvit" on designing and installation of mini hydro electrical plant near the dam of Korsun-Shevchemkivska HPP dated 23.03.2005.

/84/ Decision #98-2 of concession of the permit to FTA "Novosvit" on order of project documents of facility building of mini hydro electrical plant at the dam of Korsun-Shevchemkivska HPP at Korsun-Shevchenkivskyi city, 80-a Chapaeva str. dated 23.05.2006.

/85/ Opinion of the state environmental expertise #06-6-11/5 dated 04.09.2007.

/86/ Report of investigation of qualitative and quantitative indicators of fish that may fall into the siphon facilities of mini turbines of electrical plant FTA "Novosvit" that located on the dam of Korsun-Shevchemkivska HPP dated 2008.

/87/ Construction and further maintenance of Steblivska mini HPP at Stebliv village of Korsun-Shevchenkivskyi district, Cherkasy region (installation and connection of 2 mini turbines on the dam of Steblivska HPP). Choice of land area. Environmental impact assessment (EIA) dated 2009.

/88/ Decision #27-8 of concession of the permit to the development of materials of choice of land area dated 15.05.2009.

/89/ Opinion #49 of choice (allocation) of land area for construction dated 12.08.2009.

/90/ Letter #1365/11 to the general director S.O. Kultamatskyi of FTA "Novosvit" on approval of the place of land area allocation for construction and further maintenance of Steblivska mini HPP with the

end use of energy needs at Stebliv village of Korsun-Shevchenkivskyi district, Cherkasy region, total area 0,01 hectares dated 02.11.2009.

/91/ Permit #Укр 4486-А/Чрк on the special water usage. Foreign Trade Association "Novosvit" (Korsun-Shevchenkivska HPP, Korsun-Shevchenkivska mini-HPP) dated 07.09.2009. Period of validity was continued to 01.01.2015.

/92/ Permit #Укр 4405-А/Чрк on the special water usage. Foreign Trade Association "Novosvit" (Steblivska HPP) dated 07.09.2009. Period of validity was continued to 01.01.2015.

/93/ Permit #Укр 4631-А/Чрк on the special water usage. Foreign Trade Association "Novosvit" (Lotashivska HPP) dated 06.11.2008. Period of validity is to 01.01.2012.

/94/ Installation of 2 mini turbines of electrical plant FTA "Novosvit" on the dam of Steblivska HPP. Working draft С1 2009-05. Volume 1. Explanatory note dated 2009.

/95/ Installation of 2 mini turbines of electrical plant FTA "Novosvit" on the dam of Steblivska HPP. Working draft С1 2009-05. Volume 2. Drawing dated 2009.

/96/ Working draft. Connection of Steblivska mini-HPP to the grid of OJSC "Cherkasyoblenergo" ЭС.2009-05. Volume 3. Explanatory note. Electrical equipment dated 2009.

/97/ Opinion of experts #36/4/666 of the state department of fire safety of the Ministry of Emergency of Ukraine dated 12.02.2010.

/98/ Declaration of intent on installation and switching of 2 mini turbines on the dam of Steblivska HPP.

/99/ Opinion #20 on construction project dated 25.12.2009.

/100/ Expert opinion #1/4-3 territorial agency for state supervision in the sphere of civil protection and ethnogeny safety in Cherkaska region dated 19.02.2010.

/101/ Expert opinion #71.01.04.0031.10 on labour protection issues concerning project documentation dated 11.02.2010.

/102/ Letter # 852/01-16 to S. Kulmatytskyi, General Director FTA "Novosvit" dated 29.12.2009.

/103/ Newspaper "Nadrossia" dated 01.12.2009. Statement of intention.

/104/ Letter #109/01-18 to S. Kulmatytskomyi, General Director FTA "Novosvit", dated 22.01.2010.

/105/ Resolution #38-1 On concession of permit for making of technical documentation dated 25.02.2010.

/106/ Annex 1 List of measurement devices that are in operation and have to be verified in 2010 of electrical data measurement dated 21 December 2009. Steblivska HPP.

/107/ Annex 1 List of measurement devices that are in operation and have to be verified in 2010 of electrical data measurement dated 21 December 2009. Korsun-Shevchenkivska HPP.

/108/ Annex 1 List of measurement devices that are in operation and have to be verified in 2010 of electrical data measurement dated 21 December 2009. Korsun-Shevchenkivska mini-HPP.

/109/ Balance and distribution of electric energy for 2006. Steblivska HPP.

/110/ Balance and distribution of electric energy for 2007. Steblivska HPP.

/111/ Balance and distribution of electric energy for 2005. Steblivska HPP.

/112/ Balance and distribution of electric energy for 2004. Steblivska HPP.

/113/ Report on Steblivska HPP operation for 2003.

/114/ Report on Steblivska HPP operation for 2002.

/115/ Expert opinion №71-04-05-1509.09 (№71.04.02.0200.09) dated 31.04.2009.

/116/ Contract on electricity supply #359 dated 31.04.2009.

/117/ Journal of energy account at Steblivska HPP.

/118/ Certificate #86 on overall energy production for the years 1996-2001 by Shchedrivska and Novokostiantynivska hydroelectric power stations dated 05.03.2009.

/119/ Letter # 1284/04-01 to S. Kulmatytskyi, General Director FTA "Novosvit", on energy production for the years 1996-2001 integral asset complex which includes K-Shevchenkivska and Steblivska hydroelectric power stations dated 04.03.2009.

Persons interviewed:

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

/1/ Anatoliy Yarovoy - director of Cherkassy branch of EEA "NOVOSVIT"

/2/ Igor Mikryukov – deputy director of Cherkassy branch of EEA "NOVOSVIT"

/3/ Sergey Polischyuk – chairman of village council

/4/ Konstantin Mandebora – representative of EEA "NOVOSVIT"

/5/ Yuriy Volkov - branchwork manager of Lotashyvska and Gordashyvska HPP

/6/ Vasiliy Kosmenuk – serviceman of Lotashyvska HPP

/7/ Viktor Moklyuchenko - serviceman of Lotashyvska HPP

/8/ Vladimir Shpilko - serviceman of Korsun-Shevchenkyvska HPP

/9/ Tatyana Movtsik – engineer of production and technical department of Korsun-Shevchenkyvska HPP

/10/ Alexander Sakhno - chief serviceman of Steblyvska HPP

/11/ Marina Denisyuk – representative of the PDD developer the Institute of Engineering Ecology

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ANNEX A: JI PROJECT DETERMINATION PROTOCOL

Table 1 Mandatory Requirements for Joint Implementation (JI) Projects

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
1. The project shall have the approval of the Parties involved	Kyoto Protocol Article 6.1 (a)	**CAR1**. Letters of Approval form National Environmental Investment Agency of Ukraine and Sponsor party are not received. Please provide Letters of Approval. After finishing of project determination report, the PDD and Determination Report will be presented to National Environmental Investments Agency of Ukraine for receiving of the Letter of Approval.	Table 2, Section A.5
2. Emission reductions, or an enhancement of removal by sinks, shall be additional to any that would otherwise occur	Kyoto Protocol Article 6.1 (b)	OK	Table 2, Section B
3. The sponsor Party shall not acquire emission reduction units if it is not in compliance with its obligations under Articles 5 & 7	Kyoto Protocol Article 6.1 (c)	Article 5 requires "…Annex I Parties to having in place, no later than 2007, national systems for the estimation of greenhouse gas	

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
		emissions by sources and removals by sinks." Article 7 requires "... Annex I Parties to submit annual greenhouse gas inventories, as well as national communications, at regular intervals, both including supplementary information to demonstrate compliance with the Protocol". Netherlands has submitted its Initial Report on the 21th of December 2006.	
4. The acquisition of emission reduction units shall be supplemental to domestic actions for the purpose of meeting commitments under Article 3	Kyoto Protocol Article 6.1 (d)	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	Marrakech Accords, JI Modalities, §20	Ukraine and The Netherlands have designated its Focal Points. National guidelines and procedures for approving JI projects have been published. Contact data in Ukraine: National Environmental Investment Agency of Ukraine 35, Urytskogo str., Ukraine Email:	

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
		info.neia@gmail.com Mr. Orlenko Leonid Head of National Environmental Investment Agency of Ukraine Phone: +380445949111 Fax: +380 44 594 9115 Email: info.neia@gmail.com Contact data in Netherlands: Ministry of Economic Affairs, SenterNovem, Catharijnesingel 59, P.O. Box 8242, 3503 RE Utrecht, Netherlands Mr. Derk de Haan Phone: +31 30 239 3413 Email: d.de.haan@senternovem.nl	
6. The host Party shall be a Party to the Kyoto Protocol	Marrakech Accords, JI Modalities, §21(a)/24	Ukraine is a Party (Annex I Party) of the Kyoto Protocol and has ratified the Kyoto Protocol on April 12th, 2004.	
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	In the Initial Report submitted by Ukraine on 29. Dec. 2006 the AAUs are quantified with:	

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
		925 362 174.39 (x 5) = 4 626 810 872 tCO_2-e.	
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	The designed system of the national registry has been described in the Initial Report mentioned above.	
9. Project participants shall submit to the independent entity a project design document that contains all information needed for the determination	Marrakech Accords, JI Modalities, §31	OK	
10. The project design document shall be made publicly available and Parties, stakeholders and UNFCCC accredited observers shall be invited to, within 30 days, provide comments	Marrakech Accords, JI Modalities, §32	The PDD has been made public available via http://www.bureauveritas.com.ua/ website from 18.02.2010 to 19.03.2010	
11. Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, in accordance with procedures as determined by the host Party shall be submitted, and, if those impacts are considered significant by the project participants or the Host Party, an environmental impact assessment in accordance with procedures as required by the Host Party shall be carried out	Marrakech Accords, JI Modalities, §33(d)	See CARs and CLs, table 2, section F below.	Table 2, Section F
12. The baseline for a JI project shall be the scenario that reasonably represents the GHG emissions or removal by sources that would occur	Marrakech Accords, JI Modalities,	OK	Table 2, Section B

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
in absence of the proposed project	Appendix B		
13. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances	Marrakech Accords, JI Modalities, Appendix B	See CARs and CLs, table 2, section B below.	Table 2, Section B
14. The baseline methodology shall exclude to earn ERUs for decreases in activity levels outside the project activity or due to force majeure	Marrakech Accords, JI Modalities, Appendix B	OK	Table 2, Section B
15. The project shall have an appropriate monitoring plan	Marrakech Accords, JI Modalities, §33(c)	See CARs and CLs, table 2, section D below.	Table 2, Section D
16. A project participant may be: (a) A Party involved in the JI project; or (b) A legal entity authorized by a Party involved to participate in the JI project.	JISC "Modalities of communication of Project Participants with the JISC" Version 01, Clause A.3	A project participant is the legal entity authorized by the Party involved to participate in the JI project	Table 2, Section A

Table 2 Requirements Checklist

CHECKLIST QUESTION	Ref	MoV	COMMENTS	Draft Concl	Final Concl
A. General Description of the project					
A.1 Title of the project					
A.1.1. Is the title of the project presented?	1, 2, 6	DR	Yes. Greenhouse gases emission reduction due to replacement of power, generated by the traditional fuel fired power plants, as a result of rehabilitation and construction of the small hydropower plants, operated by EEA "Novosvit" and "Energoinvest", Ltd. **CAR2** Please indicate in section A.1. of the PDD number and title of sectoral scope to which the project pertains.	**CAR2**	OK
A.1.2. Is the current version number of the document presented?	1, 2, 6	DR	Yes. Version 07 is indicated.	OK	OK
A.1.3. Is the date when the document was completed presented?	1, 2, 6	DR	Yes. The date is Novermber 23, 2010	OK	OK
A.2. Description of the project					
A.2.1. Is the purpose of the project included?	1, 2, 6	DR I	The project's main goal is the reduction of the greenhouse gases emissions from the thermal power plants which consume traditional fossil fuel by means of replacement of electric power generated by them to the state grid with the electric power generated by the small hydro power plants as a renewables, due	OK	OK

A.2.2. Is it explained how the proposed project reduces greenhouse gas emissions?	1, 2, 6	DR	to rehabilitation, renewing and retrofit of existing obsolete small HPPs and building of the new ones. Increasing of the capacities and share of the hydro power generating in total power scope will result in greenhouse gases emissions reduction from the generating enterprises of Ukraine relative to the current practice. Yes. See section A.4.3 of the PDD. The emission reduction will be achieved due to increasing of the installed and operational capacity of small hydropower plants by means of their rehabilitation and construction of the new hydroelectric units. Implementation of these measures will provide the consumers with the same amount of power without use of carbon-intensive fossil fuels.	OK	OK
A.3. Project participants					
A.3.1. Are project participants and Party(ies) involved in the project listed?	1, 2,3, 6	DR	Ukraine (Host party): EEA "Novosvit""; The Netherlands (Sponsor party): E-Energy B.V.	OK	OK
A.3.2. Are project participants authorized by a Party involved?	1, 2,3, 6	DR	See **CAR1** Letters of Approval form National Environmental Investment Agency of Ukraine and Sponsor party are not received. Please	**CAR1**	-

			provide Letters of Approval.		
A.3.3. The data of the project participants are presented in tabular format?	1, 2, 6	DR	Yes. The project participants are presented in tabular format in section A.3. **CAR3** Please correct formatting of the table in section A.3. of the PDD as per *Guidelines for users of the JI PDD form ver.04*	**CAR3**	OK
A.3.4. Is contact information provided in annex 1 of the PDD?	1, 2, 6	DR	Yes. See Annex I.	OK	OK
A.3.5. Is it indicated, if it is the case, if the Party involved is a host Party?	1, 2, 6	DR	Yes. Ukraine is indicated as the Host Party.	OK	OK
A.4. Technical description of the project					
A.4.1. Location of the project activity					
A.4.1.1. Host Party(ies)	1, 2, 6	DR	Ukraine	OK	OK
A.4.1.2. Region/State/Province etc.	1, 2, 6	DR	Project is located in Vinnytsya, Khmelnytsky, Ternopil, Chernivtsi, Cherkasy, Ivano-Frankivsk and Lviv regions	OK	OK
A.4.1.3. City/Town/Community etc.	1, 2, 6	DR	The small hydropower plants operated and planned to be operated by EEA "Novosvit" and "Energoinvest", Ltd., are placed at the rivers of Pivdennyj Buh, Zbruch, Ushytsya, Ros, Hirskyj Tykych, Hnylyj Tykych, Sluch, Koropets, Bily Cheremosh, Perclub, Sarata, Yalovechora, Murafa, Prut, Stryj and	**CAR4**	OK

			Zolota Lypa. **CAR4** Please provide maps in the PDD in English. (page 7 – 8 of the PDD)		
A.4.1.4. Detail of the physical location, including information allowing the unique identification of the project. (This section should not exceed one page)	1, 2, 6	DR	See section A.4.1.4. of the PDD. **CAR5** Please reduce section A.4.1.4. up to one page as per *Guidelines for users of the JI PDD form ver. 04.* or transfer appropriate information to annex.	**CAR5**	OK
A.4.2. Technology(ies) to be employed, or measures, operations or actions to be implemented by the project					
A.4.2.1. Does the project design engineering reflect current good practices?	1, 2, 6	DR	**CL1** Please state in section A 4.2. of the PDD if the project design engineering reflects current good practices.	**CL1**	OK
A.4.2.2. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	1, 2, 6	DR	**CL2** Please include clear indication whether the project uses state of the art technology or the technology would result in a significantly better performance than any commonly used technologies in the host country.	**CL2**	OK
A.4.2.3. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1, 2, 6	DR	EEA "Novosvit" and "Energoinvest", Ltd schedule to fulfil the maintenance works up to the extensive repairs of the HPPs, which they operate every approximately twenty (up to thirty) years. This term is determined on the base of	OK	OK

			existing experience, both already own and available from statistics and history of small HPPs in previous Soviet Union, including Ukraine. Without such renovation the small hydro power plants gradually approach and reach the end of their service life and become obsolete. Such capital maintenances should enable the effective long-term operation of these power plants.		
A.4.2.4. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	1, 2, 6	DR	**CL3** There is no clear indication whether the project requires extensive initial training and maintenance efforts in order to work as presumed during the project period. Please clarify.	**CL3**	OK
A.4.2.5. Does the project make provisions for meeting training and maintenance needs?	1, 2, 6	DR	**CL4** Please clarify in the PDD if the project makes provisions for meeting training and maintenance needs.	**CL4**	OK
A.4.3. Brief explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed JI project, including why the emission reductions would not occur in the absence of the proposed project, taking into account national and/or sectoral policies and circumstances					
A.4.3.1. Is it stated how anthropogenic GHG emission reductions are to be achieved? (This section should not exceed one	1, 2, 6	DR	Yes. See section A.4.3 of the PDD	OK	OK

page)					
A.4.3.2. Is it provided the estimation of emission reductions over the crediting period?	1, 2, 6	DR	Yes. See section A.4.3.1 of the PDD	OK	OK
A.4.3.3. Is it provided the estimated annual reduction for the chosen credit period in tCO_2e?	1, 2, 6	DR	Yes. See section A.4.3.1 of the PDD	OK	OK
A.4.3.4. Are the data from questions A.4.3.2 to A.4.3.4 above presented in tabular format?	1, 2, 6	DR	**CAR6** Please prepare formatting of the table in section A.4.3.1. in compliance with *Guidelines for users of the JI PDD form ver. 04*	**CAR6**	OK
A.5. Project approval by the Parties involved					
A.5.1. Are written project approvals by the Parties involved attached?	1,2, 6,3, 8	DR	Conclusion is pending a response to **CAR1**	**Pending**	-
B. Baseline					
B.1. Description and justification of the baseline chosen					
B.1.1. Is the chosen baseline described?	1,2, 6,9	DR	Yes. The baseline chosen is described in sections A.1. and B.1 of the PDD. **CAR7** The methodology ACM0002 applied is not the recent valid version. Please state in the PDD if the JI specific approach with elements of approved CDM methodology has been used.	**CAR7**	OK
B.1.2. Is it justified the choice of the applicable baseline for the project category?	1,2, 6,9	DR	See section B.1 of PDD. **CAR8** Please provide the key information and data used to	**CAR8**	OK

B.1.3. Is it described how the methodology is applied in the context of the project?	1,2, 6,9	DR	establish the baseline in tabular form in section B. of the PDD as per *Guidelines for users of the JI PDD form ver. 04* Yes. See section B.1 of the PDD. **CL6** Please clarify why the value of historical output has been multiplied by 0,38; 0,62; 0,54; 0,46 for arithmetic mean value of historical electricity output calculation of for Korsun-Shevchenkivska HPP, Steblivska HPP, Novokostyantynivska HPP, Shchedrivska HPP (Excel file: Appendix 1_1). Please provide documentary evidence about installed capacities of Korsun-Shevchenkivska HPP, Steblivska HPP, Novokostyantynivska HPP, Shchedrivska HPP. Please consider operational hours in calculation of part of historical useful power output Please attach corrected Excel file «Appendix 1_1». **CL7** Please clarify why the combined historical data of electricity output have been used to calculate baseline emissions for Korsun-Shevchenkivska HPP, Steblivska HPP, Novokostyantynivska HPP and	**CL5** **CL6** **CAR9** **CAR10**	OK

			Shchedrivska HPP (Excel file: Appendix 1_1). **CAR9** Please explain and justify using of the coefficients (n/12, n÷1-11) to calculate baseline electricity production for the 1-st year of operation after reconstruction for each HHP (Excel file: Appendix 1_1). Please include and describe appropriate formulas in the PDD. Please provide documentary evidence about installed capacities of Korsun-Shevchenkivska HPP, Steblivska HPP, Novokostyantynivska HPP, Shchedrivska HPP. Please consider operational hours in calculation of part of historical useful power output Please attach corrected Excel file «Appendix 1_1». Please include explanation in the PDD. **CAR10** $EF_{grid,CM,y}$ should be used according to methodology ACM0002, ver.10. However $EF_{grid,OM,y}$ has been used to calculate baseline emissions starting from 2006. Please correct. Please include explanation in the PDD.		
B.1.4. Are the basic assumptions of the baseline methodology in the context of	1,2, 6,9	DR	**CAR11** Annex 2 shall contain a summary of the key elements.	**CAR11**	OK

the project activity presented (See Annex 2)?			Please add appropriate information to Annex 2.		
B.1.5. Is all literature and sources clearly referenced?	1,2, 6,9	DR	**CAR12** Please provide traceable reference for the next source: "Table B1 "Baseline carbon emission factors for JI projects generating electricity" of operational Guidelines for PDD's of JI projects (ERUPT 4, Senter, the Netherlands)", p.61 of the PDD. Please indicate full reference including issue, page, table etc.		OK
B.2. Description of how the anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the JI project					
B.2.1. Is the proposed project activity additional?	1,2, 6,9	DR	**CL8** Please clarify how "organizational barrier" may prevent the implementation of the Project. **CAR13** Please summarize the history of the project including its JI component. As a part of the history of JI component, please provide an evidence as to when the project started to be considered as JI (to prove its additionally). **CAR14** In the section devoted to demonstration of the additionality the developer states that it is following the Methodological Tool for the demonstration and assessment	**CL8 CAR 13-23**	OK

			of additionality (hereinafter referred as Additionality Tool) and the Guidance for the Assessment of Investment analysis (hereinafter referred as the Guidance). Apparently the additionality assessment does not follow the pattern prescribed by the Additionality Tool. For example steps 2,3,4 are not divided in proper sub-steps. Consequently the chapter dealing with additionality assessment shall be reworked accordingly. **CAR15** The developer states that comparison analysis is used in the document. The use of the comparison analysis in the present form is not applicable as the only options compared are implementation of the Project with and without JI mechanism which clearly not sufficient for proving additionality. The benchmark analysis would be much more appropriate approach in this case. Please clarify. Please specify clearly in the sub-step 2b the parameter which is used as the benchmark. I believe that that IRR is used in this particular case. Please note that in this case the calculation of NPV and simple pay		

			back period are not necessary. The NPV is calculated for the period of 2001-2020 instead of 2001-2030. Either correct or eliminate at all. **CAR16** IRR derived from the commercial bank rates in foreign currency available in Ukraine can be used for definition of the benchmark. The developer is basing calculations on the data available as of November 2009 so we take the average loan interest rate for that month which was 10.1%. (The source for banks interest rates: http://bank.gov.ua/Fin_ryn/Pot_tend/2009.zip)Please describe the benchmark origin in detail in PDD Sub-step 2B. Please note that IRR derived from UAH rates can not be applied in case if you make calculations in EUR. The major reason why you should not do so is the substantial difference in inflation levels for UAH and EUR. If you insist on using NBU discount rate as the source for IRR benchmark please make all calculations in UAH. **CAR17** The developer apparently chosen to use actual prices for the period of 2001-2008 so the future prices shall be obtained through forecast as		

			well. The simple solution would be using 12 years average inflation index for EuroZone (we apply EuroZone inflation because financial calculations are made in Euros) for the period of 1997-2008 which is is 2,1%. (Source is Eurostat http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&language=en&pcode=tsieb060&tableSelection=1&footnotes=yes&labeling=labels&plugin=1) All future prices, revenues and expenses shall be adjusted by 2.1% from 2009 onwards. The major point is that the prices used for calculation of the cash flows in the future periods (2010-2030) shall be adjusted for expected inflation. Please note that inflation in Ukraine is very high and actually is on of the major reasons for high interest rates. Dismissing the adjustment for inflation in long term models like this one will return you absolutely wrong results. The yearly adjustment for expected inflation level can be calculated basing on recent CPI (12,5% for 2009) if you prefer calculations in UAH. **CAR18** Please provide the reference for the electricity sales prices used for 2001-2009 calculations. Please take into account the remarks above regarding		

			adjustment of future tariffs after 2012 for inflation. **CAR19** Please use correct historical UAH/EUR exchange rates for calculation of revenues/expenses for the period of 2001-2008. **CAR20** Please indicate whether input figures (costs, prices etc) are with or without VAT included. The operational costs are presented without VAT included while investment costs contain VAT. If this is the case please add the additional cash flow from VAT savings generated by the purchase of the equipment with gradual reimbursement of this value through not paying VAT generated from operational activity. **CAR21** Please provide detailed breakdown for the operational costs (referred as "first cost" in your Excel file). Please provide detailed break down of the operational costs in Appendix 3 for example: Salaries …….. Spare parts and repairs …….. Fuel…….. Etc. **CAR22** The developer uses the period of more than 20 years for financial analysis of the project		

			which is in lines of the Guidance taking into account inherently long lifetime of the HPP equipment. At the same Guidance article 4 requires the fair value of the assets at the end of the assessment period to be included in the cash flow for the final year now missing. Please correct. Please provide the estimate of the scrap value of the assets purchased for the project activities and add this value to the cash flow for the year 2030. **CAR23** The developer failed to provide sensitivity analysis required by Additionality Tool. For the present project the following deviation scenarios may be considered: +-10% change of electricity prices and +-10% change of future investment costs. Please provide the calculations for the deviation scenarios in Excel file and actual results calculated in Sub-step 2d in transparent and reproducible manner as required by the Tool for the demonstration and assessment of additionality.		

B.2.2. Is the baseline scenario described?	1,2, 6,9	DR	The baseline scenario is the following: in the absence of the JI project activity, the existing facility would continue to supply electricity to the grid at historical average levels, until the time at which the generation facility would likely be replaced or retrofitted.	OK	OK
B.2.3. Is the project scenario described?	1,2, 6,9	DR	The proposed project involve electricity capacity addition through rehabilitation and renovation of existing small hydropower plants and construction of new mini hydropower plants	OK	OK
B.2.4. Is an analysis showing why the emissions in the baseline scenario would likely exceed the emissions in the project scenario included?	1,2, 6,9	DR	The anthropogenic emissions of GHGs will be reduced due to renovation and rehabilitation of existing old small hydropower plants, increasing of their installed and operating capacity by means of their rehabilitation and construction of the new hydro units and mini-HPPs, that will result in step-by-step increasing of the annual power generation by them, with corresponding replacement and decreasing of power generation at fossil fuel burning power plants. Project implementation will provide obtaining of the same amount of power by the consumers but without using of carbon-intensive fossil fuel.	OK	OK

B.2.5. Is it demonstrated that the project activity itself is not a likely baseline scenario?	1,2, 6,9	DR	Yes. See section B of the PDD.	OK	OK
B.2.6. Are national policies and circumstances relevant to the baseline of the proposed project activity summarized?	1,2, 6,9	DR	Yes. See section B.2. of the PDD	OK	OK
B.3. Description of how the definition of the project boundary is applied to the project activity					
B.3.1. Are the project's spatial (geographical) boundaries clearly defined?	1,2, 6	DR	See section B.3 of the PDD. **CAR24** Please clarify how the emissions of CH_4 from the reservoirs have been assessed in the baseline scenario. Please see Table 10 in section B.3.	**CAR24**	OK
B.4. Further baseline information, including the date of baseline setting and the name(s) of the person(s)/entity(ies) setting the baseline					
B.4.1. Is the date of the baseline setting presented (in DD/MM/YYYY)?	1,2, 6	DR	**CAR25** Please provide date of the baseline setting in DD/MM/YYYY format.	**CAR25**	OK
B.4.2. Is the contact information provided?	1,2, 6	DR	Yes. See section B.4. of the PDD	OK	OK
B.4.3. Is the person/entity also a project participant listed in Annex 1 of PDD?	1,2, 6	DR	**CAR26** Please indicate in the PDD if the person/entity establishing the monitoring plan is also a project participant.	**CAR26**	OK
C. Duration of the project and crediting period					

C.1. Starting date of the project					
C.1.1. Is the project's starting date clearly defined?	1,2, 4,6	DR	**CAR27** Please provide any evidence that the project's starting date is the 1st of March 2001.	**CAR27**	OK
C.2. Expected operational lifetime of the project					
C.2.1. Is the project's operational lifetime clearly defined in years and months?	1,2, 4,6	DR	**CAR28** Please state the expected operational lifetime of the project in years and months.	**CAR28**	OK
C.3. Length of the crediting period					
C.3.1. Is the length of the crediting period specified in years and months?	1,2, 4,6	DR	**CAR29** Please state the length of crediting period in years and months and make consistent with the data in Appendix 1.	**CAR29**	OK
D. Monitoring Plan					
D.1. Description of monitoring plan chosen					
D.1.1. Is the monitoring plan defined?	1,2, 6,9	DR	See section D.1 of the PDD. Monitoring plan is chosen according to the approved consolidated baseline and monitoring methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (version 09) has been applied to define monitoring plan. Conclusion is pending a response to CAR in section B.1.1. above.	**CAR30** **CAR31**	OK

			CAR30 According to *Guidelines for users of the JI PDD form ver. 04:* Please explicitly and clearly distinguish: a) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination regarding the PDD; b) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination regarding the PDD; and c) Data and parameters that are monitored throughout the crediting period. Please make the data in section D consistent with the data in Annex 3. **CAR31** Please clarify source of data for parameters included in Annex 3.		
D.1.2. Option 1 – Monitoring of the emissions in the project scenario and the baseline scenario.	1,2, 6,9	DR	See section D of the PDD Conclusion is pending a response to **CAR** in section D.1.1. above.	**Pending**	OK
D.1.3. Data to be collected in order to monitor emissions from the project, and how these data will be archived.	1,2, 6,9	DR	It is stated in the PDD that project emissions are estimated to be zero. **CAR32** Please correct table in section D.1.1.1. of the PDD.	**CAR32**	OK

D.1.4. Description of the formulae used to estimate project emissions (for each gas, source etc,; emissions in units of CO2 equivalent).	1,2, 6,9	DR	OK. See section D.1.1.2. of the PDD	OK	OK
D.1.5. Relevant data necessary for determining the baseline of anthropogenic emissions of greenhouse gases by sources within the project boundary, and how such data will be collected and archived.	1,2, 6,9	DR	Conclusion is pending a response to **CAR** in section D.1.1. above.	**Pending**	OK
D.1.6. Description of the formulae used to estimate baseline emissions (for each gas, source etc,; emissions in units of CO2 equivalent).	1,2, 6,9	DR	**CAR33** Please use appropriate formulae from ACM0002 ver.10 to estimate baseline emissions and document in the PDD which of the options form methodology has been applied.	**CAR33**	OK
D.1.7. Option 2 – Direct monitoring of emissions reductions from the project (values should be consistent with those in section E)	1,2, 6,9	DR	**CAR34** Please state in the PDD which option (Option 1 or Option 2) has been applied for monitoring and insert appropriate data in section D.	**CAR34**	OK
D.1.8. Data to be collected in order to monitor emission reductions from the project, and how these data will be archived.	1,2, 6,9	DR	Conclusion is pending a response to CAR in section D.1.7. above.	**Pending**	OK
D.1.9. Description of the formulae used to calculate emission reductions from the project (for each gas, source etc,; emissions/emission reductions in units of CO2 equivalent).	1,2, 6,9	DR	Conclusion is pending a response to CAR in section D.1.7. above.	**Pending**	OK
D.1.10. If applicable, please describe the data and information that will be	6,9	DR	N/A	OK	OK

collected in order to monitor leakage effects of the project.					
D.1.11. Description of the formulae used to estimate leakage (for each gas, source etc,; emissions in units of CO2 equivalent).	6,9	DR	N/A	OK	OK
D.1.12. Description of the formulae used to estimate emission reductions for the project (for each gas, source etc,; emissions in units of CO2 equivalent).	1,2, 6,9	DR	See section D.1.4. of the PDD.	OK	OK
D.1.13. Is information on the collection and archiving of information on the environmental impacts of the project provided?	6,9	DR, I	Not applicable for this project.	OK	OK
D.1.14. Is reference to the relevant host Party regulation(s) provided?	6,9	DR, I	Not applicable for this project.	OK	OK
D.1.15. If not applicable, is it stated so?	6,9	DR, I	Not applicable for this project.	OK	OK
D.2. Qualitative control (QC) and quality assurance (QA) procedures undertaken for data monitored					
D.2.1. Are there quality control and quality assurance procedures to be used in the monitoring of the measured data established?	1,2, 6,9	DR	Conclusion is pending a response to **CAR** in section D.1.1. above.	**Pending**	OK
D.3. Please describe of the operational and management structure that the project operator will apply in implementing the monitoring plan					
D.3.1. Is it described briefly the operational	1,2,	DR	**CL9** Please clarify responsibilities of	**CL9**	OK

	and management structure that the project participants(s) will implement in order to monitor emission reduction and any leakage effects generated by the project	6,9		the departments and include diagram or scheme (if applicable)		
D.4. Name of person(s)/entity(ies) establishing the monitoring plan						
D.4.1.	Is the contact information provided?	1,2, 6,9	DR	See section D.4. of the PDD.	OK	OK
D.4.2.	Is the person/entity also a project participant listed in Annex 1 of PDD?	1,2, 6,9	DR	**CAR35** Please indicate in the PDD if the person/entity establishing the monitoring plan is also a project participant.	**CAR35**	OK
E. Estimation of greenhouse gases emission reductions						
E.1. Estimated project emissions						
E.1.1.	Are described the formulae used to estimate anthropogenic emissions by source of GHGs due the project?	1,2, 6	DR	Project emissions = 0 tCO_2e	OK	OK
E.1.2.	Is there a description of calculation of GHG project emissions in accordance with the formula specified in for the applicable project category?	1,2, 6	DR	See section E.1.1. above	OK	OK
E.1.3.	Have conservative assumptions been used to calculate project GHG emissions?	1,2, 6	DR	Yes. According to ACM0002 approach project emissions are not expected	OK	OK
E.2. Estimated leakage						
E.2.1.	Are described the formulae used to estimate leakage due to the project	1,2, 6	DR	Leakage is not expected.	OK	OK

activity where required?					
E.2.2. Is there a description of calculation of leakage in accordance with the formula specified in for the applicable project category?	1,2, 6	DR	Refer to section E.2.1 above.	OK	OK
E.2.3. Have conservative assumptions been used to calculate leakage?	1,2, 6	DR	Refer to section E.2.1 above.	OK	OK
E.3. The sum of E.1 and E.2.					
E.3.1. Does the sum of E.1. and E.2. represent the project activity emissions?	1,2, 6	DR	Yes. See section E.3. of the PDD.	OK	OK
E.4. Estimated baseline emissions					
E.4.1. Are described the formulae used to estimate the anthropogenic emissions by source of GHGs in the baseline using the baseline methodology for the applicable project category?	1,2, 6	DR	Yes. See section D of the PDD.	OK	OK
E.4.2. Is there a description of calculation of GHG baseline emissions in accordance with the formula specified in for the applicable project category?	1,2, 6	DR	See section D of the PDD.	OK	OK
E.4.3. Have conservative assumptions been used to calculate baseline GHG emissions?	1,2, 6	DR	Yes. For detailed information please see section B and D of the PDD.	OK	OK
E.5. Difference between E.4. and E.3. representing the emission reductions of the project					
E.5.1. Does the difference between E.4. and E.3. represent the emission reductions due to the project during a given period?	1,2, 6	DR	Conclusion is pending a response to CAR in section D.1.6. above	**Pending**	OK

E.6. Table providing values obtained when applying formulae above					
E.6.1. Is there a table providing values of total CO_2 abated?	1,2, 6	DR	Conclusion is pending a response to CAR in section D.1.6. above	**Pending**	OK
F. Environmental Impacts					
F.1. Documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party					
F.1.1. Has an analysis of the environmental impacts of the project been sufficiently described?	1,2, 6	DR, I	Typical potential environmental effects are presented in sections F of the PDD.	OK	OK
F.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is and EIA approved?	1,2, 6	DR, I	Yes. EEA „Novosvit" and "Enenrgoinvest" Ltd. have the necessary Environmental Impact Assessments for their activity. EIA is available to the accredited independent entity.	OK	OK
F.1.3. Are the requirements of the National Focal Point being met?	1,2, 6	DR, I	Conclusion is pending a response to **CAR1**.	**Pending**	-
F.1.4. Will the project create any adverse environmental effects?	1,2, 6	DR, I	At the project implementation waste generation will occur after disassembling of physically and morally obsolete equipment at the rehabilitation of hydraulic units of hydropower plants. **CAR36** It is stated in the PDD that "quantitative and quality indicators	**CAR36**	OK

			of fish which can get to turbines will be carried out in 2007-2008". Please provide the results obtained.		
F.1.5. Are transboundary environmental considered in the analysis?	1,2, 6	DR, I	**CAR37** Please describe if the transboundary environmental considered in the analysis. Please state in the PDD if it is so.	**CAR37**	OK
F.1.6. Have identified environmental impacts been addressed in the project design?	1,2, 6	DR, I	Identified environmental impacts have been addressed in section F of the PDD.	OK	OK
***G.* Stakeholders' comments**					
G.1. Information on stakeholders' comments on the project, as appropriate					
G.1.1. Is there a list of stakeholders from whom comments on the project have been received?	1,2, 6	DR	**CAR38** Please provide list of stakeholders (if available) from whom comments on the project have been received.	**CAR38**	OK
G.1.2. The nature of comments is provided?	1,2, 6	DR	Pending a response to **CAR** in section G.1.1. above.	**Pending**	OK
G.1.3. Has due account been taken of any stakeholder comments received?	1,2, 6	DR	Conclusion is pending a response to CAR from section G.1.1. above.	**Pending**	OK

Table 3 Legal requirements

CHECKLIST QUESTION	Ref	MoV	COMMENTS	Draft Concl	Final Concl
Legal requirements					
Is the project activity environmentally licensed by the competent authority?	1,2, 3,6	DR, I	The company has permit on water consumption and land management works.	OK	OK

CHECKLIST QUESTION	Ref	MoV	COMMENTS	Draft Concl	Final Concl
Are there conditions of the environmental permit? In case of yes, are they already being met?	1,2, 3,6	DR, I	Yes. The conditions of the environmental are included in the EIA and permitted.	OK	OK
Is the project in line with relevant legislation and plans in the host country?	1,2, 3,6	DR, I	Yes. The project does not contradict relevant legislation in the host country.	OK	OK

Table 4 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
CAR1 Letters of Approval form National Environmental Investment Agency of Ukraine and Sponsor party are not received. Please provide Letters of Approval.	Table 2, checklist question A.3.2	National Environmental Investment Agency of Ukraine issued the Letter of Endorsement for this JI project (# 4907/11/10-08 from 15.04.2008). After obtaining of the final determination report, the PDD and Determination Report will be submitted to the National Environmental Investment Agency of Ukraine for issuing the Letter of Approval. The Letter of Approval from the country of the project participant - purchaser will be provided after approval of project by Ukraine.	This CAR will be closed after report finalizing
CAR2 Please indicate in section A.1. of the PDD number and title of sectoral scope	Table 2, checklist question	Corrected. Sectoral scope is included in section A.1. of the PDD version 06.	PDD was checked. Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
to which the project pertains.	A.1.1.		
CAR3 Please correct formatting of the table in section A.3. of the PDD as per *Guidelines for users of the JI PDD form ver. 04.*	Table 2, checklist question A.3.3.	Formatting of the table in section A.3. of the PDD is corrected in PDD version 06.	PDD was checked. Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
CAR4 Please provide maps in the PDD in English. (page 7 – 8 of the PDD)	Table 2, checklist question A.4.1.3.	Maps in the PDD (page 7 – 8 of the PDD) are provided in English in the PDD v.06.	PDD was checked. Issue is closed.
CAR5 Please reduce section A.4.1.4. up to one page as per *Guidelines for users of the JI PDD form ver. 04.* or transfer appropriate information to annex.	Table 2, checklist question A.4.1.4.	Section A.4.1.4. is reduced up to one page in the PDD v.06	PDD was checked. Issue is closed.
CAR6 Please prepare formatting of the table in section A.4.3.1. in compliance with *Guidelines for users of the JI PDD form ver. 04*	Table 2, checklist question A.4.3.4.	Formatting of the table in section A.4.3.1. of the PDD is corrected in PDD version 06.	PDD was checked. Issue is closed.
CAR7 The methodology ACM0002 applied is not the recent valid version. Please state in the PDD if the JI specific approach with elements of approved CDM methodology has been used.	Table 2, checklist question B.1.1.	Baseline and monitoring methodology used in this project is based on the CDM methodology ACM0002 version 09. This may be treated as the JI project specific approach. Corresponding statement is pointed out in PDD v.06.	PDD was checked. Issue is closed.
CAR8 Please provide the key information and data used to establish the baseline in tabular form in section B. of the PDD as per *Guidelines for users of the JI PDD form ver. 04*	Table 2, checklist question B.1.2.	The key information and data used to establish the baseline are indicated in tabular form in Appendix 1, with reference in section B.1, and are added into section B.1 of PDD v.06.	PDD was checked. Issue is closed.
CAR9 Please explain and justify using	Table 2,	The 1-st year of operation after reconstruction is	The explanation

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
of the coefficients (n/12, n÷1-11) to calculate baseline electricity production for the 1-st year of operation after reconstruction for each HHP (Excel file: Appendix 1_1). Please include and describe appropriate formulas in the PDD. Please provide documentary evidence about installed capacities of Korsun-Shevchenkivska HPP, Steblivska HPP, Novokostyantynivska HPP, Shchedrivska HPP. Please consider operational hours in calculation of part of historical useful power output Please attach corrected Excel file «Appendix 1_1». Please include explanation in the PDD.	checklist question B.1.3.	the year, when the HPP was launched after the reconstruction. These coefficients (n/12, n÷1-11) show a part of the year (rounded to months) when a HPP was in operation. Explanation is included in the PDD v.06	is found to be satisfactory. PDD was checked. Issue is closed.
CAR10 ***EFgrid,CM,y*** should be used according to methodology ACM0002, ver.10. However ***EFgrid,OM,y*** has been used to calculate baseline emissions starting from 2006. Please correct. Please include explanation in the PDD.	Table 2, checklist question B.1.3.	Combined margin CO2 emission factor is a combination of the Operating Margin (OM) and the Build Margin (BM) to estimate the emissions in absence of the project activity. Strictly applying BM in accordance with ACM0002 would result in a BM of zero as the latest additions to the Ukrainian grid were nuclear power plants. Therefore applying BM taking past additions to the Ukrainian grid would result in an unrealistic and distorted picture of the emission factor of	Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
		the Ukrainian grid. Therefore the Operating Margin only can be used to develop the baseline in Ukraine. Therefore, for Ukraine EFgrid,CM,y = EFgrid,OM,y. = EFgrid,produced,y	
CAR11 Annex 2 shall contain a summary of the key elements. Please add appropriate information to Annex 2.	Table 2, checklist question B.1.1.	Summary of the key elements in the tabular form is added into Annex 2 to PDD version 6.	PDD was checked. Issue is closed.
CAR12 Please provide traceable reference for the next source: "Table B1 "Baseline carbon emission factors for JI projects generating electricity" of operational Guidelines for PDD's of JI projects (ERUPT 4, Senter, the Netherlands)", p.61 of the PDD. Please indicate full reference including issue, page, table etc.	Table 2, checklist question B.2.1.	Traceable reference on the above document is provided in the PDD v.06	PDD was checked. Issue is closed.
CAR13 Please summarize the history of the project including its JI component. As a part of the history of JI component, please provide an evidence as to when the project started to be considered as JI (to prove its additionally).	Table 2, checklist question B.2.1.	The main milestones of the history of the project including its JI component are described in details in section A.5 of PDD v.06.	PDD was checked. Issue is closed.
CAR14 In the section devoted to demonstration of the additionality the	Table 2, checklist question	Additionality of the project activity is demonstrated and assessed with using the Methodological Tool "Tool for the demonstration	The relevant section of the PDD now is in

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
developer states that it is following the Methodological Tool for the demonstration and assessment of additionality (hereinafter referred as Additionality Tool) and the Guidance for the Assessment of Investment analysis (hereinafter referred as the Guidance). Apparently the additionality assessment does not follow the pattern prescribed by the Additionality Tool. For example steps 2,3,4 are not divided in proper sub-steps. Consequently the chapter dealing with additionality assessment shall be reworked accordingly.	B.2.1.	and assessment of additionality" (version 05.2). Steps 2, 3, 4 are divided in proper sub-steps according to this Tool, the chapter dealing with additionality assessment is reworked accordingly in PDD v.06.	line with Tool for the demonstration and assessment of additionality" (version 05.2)
CAR15 The developer states that comparison analysis is used in the document. The use of the comparison analysis in the present form is not applicable as the only options compared are implementation of the Project with and without JI mechanism which clearly not sufficient for proving additionality. The benchmark analysis would be much more appropriate approach in this case. Please clarify. Please specify clearly in the sub-step	Table 2, checklist question B.2.1.	Really, the benchmark analysis would be much more appropriate approach in this case. The corresponding corrections are made in PDD v.06.	PDD was checked. Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
2b the parameter which is used as the benchmark. I believe that that IRR is used in this particular case. Please note that in this case the calculation of NPV and simple pay back period are not necessary. The NPV is calculated for the period of 2001-2020 instead of 2001-2030. Either correct or eliminate at all.			
CAR16 IRR derived from the commercial bank rates in foreign currency available in Ukraine can be used for definition of the benchmark. The developer is basing calculations on the data available as of November 2009 so we take the average loan interest rate for that month which was 10.1%. (The source for banks interest rates: http://bank.gov.ua/Fin_ryn/Pot_tend/2009.zip)Please describe the benchmark origin in detail in PDD Sub-step 2B. Please note that IRR derived from UAH rates can not be applied in case if you make calculations in EUR. The major reason why you should not do so is the substantial difference in inflation levels for UAH and EUR.	Table 2, checklist question B.2.1.	The corresponding corrections are made in PDD v.06.	PDD and relevant Annexes were checked. Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
If you insist on using NBU discount rate as the source for IRR benchmark please make all calculations in UAH.			
CAR17 The developer apparently chosen to use actual prices for the period of 2001-2008 so the future prices shall be obtained through forecast as well. The simple solution would be using 12 years average inflation index for EuroZone (we apply EuroZone inflation because financial calculations are made in Euros) for the period of 1997-2008 which is is 2,1%. (Source is Eurostat http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&language=en&pcode=tsieb060&tableSelection=1&footnotes=yes&labeling=labels&plugin=1) All future prices, revenues and expenses shall be adjusted by 2.1% from 2009 onwards. The major point is that the prices used for calculation of the cash flows in the future periods (2010-2030) shall be adjusted for expected inflation. Please note that inflation in Ukraine is very high and actually is on of the major	Table 2, checklist question B.2.1.	The corresponding corrections are made in PDD v.06	PDD and relevant Annexes were checked. Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
reasons for high interest rates. Dismissing the adjustment for inflation in long term models like this one will return you absolutely wrong results. The yearly adjustment for expected inflation level can be calculated basing on recent CPI (12,5% for 2009) if you prefer calculations in UAH.			
CAR18 Please provide the reference for the electricity sales prices used for 2001-2009 calculations. Please take into account the remarks above regarding adjustment of future tariffs after 2012 for inflation.	Table 2, checklist question B.2.1.	Till August 2009 the electricity sales prices were formed in accordance with the monthly based regulations of the National Electricity Regulatory Commission (NERC) and with agreements with industrial consumers on the individual base. Average month electricity sales prices for the enterprise as a whole were calculated as the cost of all electricity sold divided by the amount of sold electricity. Since August 2009 sale of all electricity generated by small HPPs at SE "Energorynok" has been formed by the "green" tariff. Value of a monthly "green" tariff was adopted according to the regulations of the NERC. The electricity sales prices used for 2001-2009 calculations are presented in Appendix 3. The corresponding corrections are made in PDD v.06	PDD and relevant Appendixes were checked. Issue is closed.
CAR19 Please use correct historical UAH/EUR	Table 2, checklist	The corresponding corrections are made in PDD v.06.	OK

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
exchange rates for calculation of revenues/expenses for the period of 2001-2008.	question B.2.1.		
CAR20 Please indicate whether input figures (costs, prices etc) are with or without VAT included. The operational costs are presented without VAT included while investment costs contain VAT. If this is the case please add the additional cash flow from VAT savings generated by the purchase of the equipment with gradual reimbursement of this value through not paying VAT generated from operational activity.	Table 2, checklist question B.2.1.	The input figures (costs, prices etc) are without VAT included.	The additional documents (proofs) were submitted. Issue is closed.
CAR21 Please provide detailed breakdown for the operational costs (referred as "first cost" in your Excel file). Please provide detailed break down of the operational costs in Appendix 3 for example: Salaries …….. Spare parts and repairs …….. Fuel…….. Etc.	Table 2, checklist question B.2.1.	The operational costs are calculated as distribution costs of products sold under number of sales according to the item 9 of National regulations of accounting in Ukraine №9 "Resource" and item number 16 of National regulations of accounting in Ukraine №11 "Costs". The operational costs used for 2001-2009 calculations are presented in Appendix 3. Detailed break down of the operational costs was provided AIE	PDD and relevant Appendixes were checked. Issue is closed.
CAR22	Table 2,		The clarification

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
The developer uses the period of more than 20 years for financial analysis of the project which is in lines of the Guidance taking into account inherently long lifetime of the HPP equipment. At the same Guidance article 4 requires the fair value of the assets at the end of the assessment period to be included in the cash flow for the final year now missing. Please correct. Please provide the estimate of the scrap value of the assets purchased for the project activities and add this value to the cash flow for the year 2030.	checklist question B.2.1.	The scrap value of the assets purchased for the project activities was estimated and added to the cash flow for the year 2030. The corresponding corrections are made in PDD v.06	was found to be clear and satisfactory. Issue is closed.
CAR23 The developer failed to provide sensitivity analysis required by Additionality Tool. For the present project the following deviation scenarios may be considered: +-10% change of electricity prices and +-10% change of future investment costs. Please provide the calculations for the deviation scenarios in Excel file and actual results calculated in Sub-step 2d in transparent and reproducible	Table 2, checklist question B.2.1.	The corresponding corrections are made in PDD v.06	PDD was checked. Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
manner as required by the Tool for the demonstration and assessment of additionality.			
CAR24 Please clarify how the emissions of CH4 from the reservoirs have been assessed in the baseline scenario. Please see Table 10 in section B.3.	Table 2, checklist question B.3.1.	Emissions of CH4 from the reservoirs have not been assessed in the baseline scenario since they are not changed in the project scenario. Appropriate corrections were included in the PDD.	PDD was checked. Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
CAR25 Please provide date of the baseline setting in DD/MM/YYYY format.	Table 2, checklist question B.4.1.	Date of the baseline setting in DD/MM/YYYY format is added in PDD version 06.	PDD was checked. Issue is closed.
CAR26 Please indicate in the PDD if the person/entity establishing the monitoring plan is also a project participant.	Table 2, checklist question B.4.3.	Indication is added in PDD version 06.	PDD was checked. Issue is closed.
CAR27 Please provide any evidence that the project's starting date is the 1st of March 2001.	Table 2, checklist question C.1.1.	The appropriate documentation have been submitted to AIE. Clarification was added to PDD.	The documents and PDD were checked. Issue is closed.
CAR28 Please state the expected operational lifetime of the project in years and months.	Table 2, checklist question C.2.1.	The expected operational lifetime of the project in stated in full years, see C.2.	PDD was checked. Issue is closed.
CAR29 Please state the length of crediting period in years and months and make consistent with the data in Appendix 1.	Table 2, checklist question C.3.1.	The expected length of crediting period of the project in stated in full years, see C.3. Data in Appendix 1 are made consistent with the tables in PDD.	PDD and relevant Appendixes were checked. Issue is closed.
CAR30 According to *Guidelines for users of the JI PDD form ver. 04:* Please explicitly and clearly distinguish: a) Data and parameters that are not	Table 2, checklist question D.1.1.	The data in section D of PDD v.06 are made consistent with the data in Annex 3.	PDD and relevant Appendixes were checked. Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination regarding the PDD; b) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination regarding the PDD; and c) Data and parameters that are monitored throughout the crediting period. Please make the data in section D consistent with the data in Annex 3.			
CAR31 Please clarify source of data for parameters included in Annex 3.	Table 2, checklist question D.1.1.	Sources of data for parameters included in Annex 3 are specified in Data tables, and are namely the each project site, i.e. each HPP.	PDD was checked. Issue is closed.
CAR32 Please correct table in section D.1.1.1. of the PDD.	Table 2, checklist question D.1.3.	The project emissions are estimated to be zero. Table in section D.1.1.1. of the PDD reflects the emissions avoided in the reported year according to the baseline scenario.	Corrections were checked. Issue is clised.
CAR33 Please use appropriate formulae from	Table 2, checklist	Baseline and monitoring methodology used in this project is based on the CDM methodology	PDD was checked. Issue

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
ACM0002 ver.10 to estimate baseline emissions and document in the PDD which of the options form methodology has been applied.	question D.1.6.	ACM0002 version 09. This may be treated as the JI project specific approach. Option 1 is applied for monitoring. Corrections were included in the PDD.	is closed.
CAR34 Please state in the PDD which option (Option 1 or Option 2) has been applied for monitoring and insert appropriate data in section D.	Table 2, checklist question D.1.7.	Option 1 is applied for monitoring. Corrections were included in the PDD.	PDD was checked. Issue is closed.
CAR35 Please indicate in the PDD if the person/entity establishing the monitoring plan is also a project participant.	Table 2, checklist question D.4.2.	Information is indicated in the PDD v.06	PDD was checked. Issue is closed.
CAR36 It is stated in the PDD that "quantitative and quality indicators of fish which can get to turbines will be carried out in 2007-2008". Please provide the results obtained.	Table 2, checklist question F.1.4.	This extra information is removed from PDD v. 06	Issue is closed.
CAR37 Please describe if the transboundary environmental considered in the analysis. Please state in the PDD if it is so.	Table 2, checklist question F.1.5.	The transboundary environmental is not considered in the analysis. Corrections were included in the PDD.	PDD was checked. Issue is closed.
CAR38 Please provide list of stakeholders (if available) from whom comments on the	Table 2, checklist question	No comments on the project have been received	PDD was checked. Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
project have been received.	G.114.		
CL1 Please state in section A 4.2. of the PDD if the project design engineering reflects current good practices.	Table 2, checklist question A.4.2.1.	Project design engineering reflects current good practices. Is added into section A 4.2. of the PDD v.06.	PDD was checked. Issue is closed.
CL2 Please include clear indication whether the project uses state of the art technology or the technology would result in a significantly better performance than any commonly used technologies in the host country.	Table 2, checklist question A.4.2.2.	The project uses state of the art technology. Is added into section A 4.2. of the PDD v.06..	PDD was checked. Issue is closed.
CL3 There is no clear indication whether the project requires extensive initial training and maintenance efforts in order to work as presumed during the project period. Please clarify.	Table 2, checklist question A.4.2.4.	The project requires extensive initial training and maintenance efforts in order to work as presumed during the project period, since for the majority of technical personnel this will be the new type of activity. Is added into section A 4.2. of the PDD v.06.	PDD was checked. Issue is closed.
CL4 Please clarify in the PDD if the project makes provisions for meeting training and maintenance needs.	Table 2, checklist question A.4.2.5.	Training of the technical personnel is provided at the beginning of employment and periodically according to enterprise's schedule. Is added into section A 4.2. of the PDD v.06.	PDD was checked. Issue is closed.
CL6 Please clarify why the value of historical output has been multiplied by 0,38; 0,62; 0,54; 0,46 for arithmetic mean value of historical electricity	Table 2, checklist question B.1.3.	The historical data (1996-2000) on the power output supplied to grid by these small HPPs are available from Oblenergo only in combined manner: for Korsun-Shevchenkivska HPP plus Steblivska HPP, and for Novokostyantynivska	The appropriate documents were provided to AIE. PDD and relevant

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
output calculation of for Korsun-Shevchenkivska HPP, Steblivska HPP, Novokostyantynivska HPP, Shchedrivska HPP (Excel file: Appendix 1_1). Please provide documentary evidence about installed capacities of Korsun-Shevchenkivska HPP, Steblivska HPP, Novokostyantynivska HPP, Shchedrivska HPP. Please consider operational hours in calculation of part of historical useful power output Please attach corrected Excel file «Appendix 1_1»		HPP plus Shchedrivska HPP, respectively. Reconstruction of these HPP's had been completed not simultaneously. To follow the principle of conservatism, it would be better to separate the data and to find the part of useful power output for each HPP in the total output. The part of useful power output was determined proportionally to the installed capacities of HPP's. the corresponding changes for Novokostyantynivska and Shchedrivska HPPs (0.45 and 0.55) are made in PDD v.06. Calculations of part of historical useful power output are made with using the month period as the unit, and is reflected in Excel file «Appendix 1_1».	Appendixes were checked. Issue is closed
CL7 Please clarify why the combined historical data of electricity output have been used to calculate baseline emissions for Korsun-Shevchenkivska HPP, Steblivska HPP, Novokostyantynivska HPP and Shchedrivska HPP (Excel file: Appendix 1_1).	Table 2, checklist question B.1.3.	The historical data (1996-2000) on the power output supplied to grid by these small HPPs are available from Oblenergo only in combined manner: for Korsun-Shevchenkivska HPP plus Steblivska HPP, and for Novokostyantynivska HPP plus Shchedrivska HPP, respectively.	The appropriate documents were provided to AIE. Issue is closed
CL8 Please clarify how "organizational barrier" may prevent the implementation of the Project.	Table 2, checklist question B.2.1.	The difficulties concerning the relations with electric energy pricing regulative body could occur.	Issue is closed.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 2, 3 and 4	Summary of project owner response	Determination team conclusion
CL9 Please clarify responsibilities of the departments and include diagram or scheme (if applicable)	Table 2, checklist question B.3.1.	Responsibilities of the departments /persons are added in PDD version 06, section D.3.	PDD was checked. Issue is closed..

ANNEX B: VERIFIERS CV's

Work carried out by:

Nadiya Kaiiun, M. Sci. (environmental science)
Team Leader, Climate Change Lead Verifier
Bureau Veritas Ukraine HSE Department project manager.
She has graduated from National University of Kyiv-Mohyla Academy with the engineer Degree in Environmental Science. She is a Lead auditor of Bureau Veritas Certification for Environment Management System (IRCA registered). She performed over 15 audits since 2008. She has undergone intensive training on Clean Development Mechanism /Joint Implementation and she is involved in the validation of 6 JI projects.

Igor Kachan, Ph.D. (analytical chemistry)
Team member, Climate Change Verifier
Bureau Veritas Ukraine Health, Safety and Environment Project Manager
Igor Kachan has graduated from Kyiv National Taras Shevchenko University and took the Ph.D. degree in the speciality of analytical chemistry. He has successfully completed IRCA registered Lead Auditor Training Course for Environment Management Systems and Quality Management Systems. Igor Kachan has undergone a training course on Clean Development Mechanism /Joint Implementation and has performed determination/verification of 9 JI projects.

Olena Manziuk (bachelor of ecology)
Team member, Climate Change Verifier-trainee
Bureau Veritas Ukraine Health, Safety and Environment Department specialist
She has graduated from National University of "Kyiv-Mohyla Academy" with the Bachelor Degree in Ecology. She has successfully completed IRCA registered Lead Auditor Training Course for Environment Management Systems and Quality Management Systems. She has completed training intensive course on Clean Development Mechanism (CDM) /Joint Implementation (JI), and is involved in the verification of 3 JI projects.

Denis Pishchalov (specialist in economics)
Team member, Financial Specialist
Bureau Veritas Ukraine Specialist in economics
Master of foreign trade, he has more than five year of experience in foreign trade and procurement. In particular one year as foreign trade manager in the Engineering Corporation (manufacturer and contractor in the municipal sector) and one year in the NIKO publishing house, one year as sales manager in the ITALCOM srl. In addition Denis has spent four years working as procurement specialist in Ukrainian Energy Service Company and two years as chief product manager in the Altset JSC. At the moment Denis is deputy director for finance and economy in the SUD of UTEM JSC.

The determination report was reviewed by:
Ivan G. Sokolov, Dr. Sci. (biology, microbiology)
Bureau Veritas Certification Internal reviewer, Climate Change Lead Verifier, Local Climate Change Product Manager for Ukraine.
He has over 25 years of experience in Research Institute in the field of biochemistry, biotechnology, and microbiology. He is a Lead auditor of Bureau Veritas Certification for Environment Management System (IRCA registered), Quality Management System (IRCA registered), Occupational Health and Safety Management System, and Food Safety Management System. He performed over 140 audits since 1999. Also he is Lead Tutor of the IRCA registered ISO 14000 EMS Lead Auditor Training Course, and Lead Tutor of the IRCA registered ISO 9000 QMS Lead Auditor Training Course. He has undergone intensive training on Clean Development Mechanism /Joint Implementation and he is involved in the determination/verification of 26 JI projects.