TÜV Rheinland Group

DETERMINATION REPORT

DETERMINATION OF THE JOINT IMPLEMENTATION PROJECT

"Implementation of resource and energy saving measures in the subsidiary "Ukrtransgas" of National Joint Stock Company "Naftogaz of Ukraine"

Report No. TRU022JI – DR
Revision No. 02

Customer: SIA "Vidzeme Eko"

DETERMINATION REPORT

Date of first issue: 18/08/2011	Project No: TRU022JI
Executor: TÜV Rheinland Group	Organizational unit: Ltd. TÜV Rheinland Ukraine
Customer: SIA "Vidzeme Eko"	Client ref.: Alexey Doumik

Summary:

TÜV Rheinland Group/TÜV Rheinland Ukraine has performed a determination of the project "Implementation of resource and energy saving measures in the subsidiary "Ukrtransgas" of National Joint Stock Company "Naftogaz of Ukraine" 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 serves as project design objective and complete assessment, and is a requirement of all projects. It consists of the following three phases:

i) a desk review of the project design documents including analysis of the baseline justification and monitoring plan;

ii) follow-up interviews with project stakeholders including on site visit;

iii) the 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 TÜV Rheinland Group/TÜV Rheinland Ukraine internal procedures.

To address TÜV Rheinland Group/TÜV Rheinland Ukraine corrective action and clarification requests SIA "Vidzeme Eko" revised the PDD and resubmitted it on 18/08/2011 as version 2.0.

The determination findings presented in this report relate to the project as described in the PDD version 2.0.

In summary, it is TÜV Rhineland's Group/TÜV Rhineland's Ukraine opinion that the project complies with the criteria for baseline setting and monitoring methodology according to developed specific approach, and meets the relevant UNFCCC requirements for the JI and the relevant host country criteria.

Report No.: TRU022JI – DR	Subject Group: JI	
Project title: "Implementation of resource and energy saving measures in the subsidiary "Ukrtransgas" of National Joint Stock Company "Naftogaz of Ukraine"		
Work carried out by: Irina Nikolaieva – Team leader, Ganna Zadnipriana - Climate Change Verifier, Dmitry Rakovich - Climate Change Verifier.		
Work verified by: Prof., dr. Valery Yakubovsky		
Date of this revision: 18/08/2011	Revision No.: 02	Number of pages: 70

Abbreviations change / add to the list as necessary

CO_2	Carbon Dioxide
AIE	Accredited Independent Entity
BE	Baseline Emission
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CL	Clarification Request
CPS	Cathode protection system
CS	Compressor station
DNA	Designated National Authority
DR	Document Review
EIA	Environmental Impact Assessment
ERU	Emission Reduction Unit
FAR	Forward Action Request
GHG	Greenhouse Gas
GPI	Gas-pumping installation
GPU	Gas-pumping unit
GT	Gas turbine
I	Interview
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
LoA	Letter of Approval
LoE	Letter of Endorsement
MoV	Means of Verification
MP	Monitoring Plan
NC4	National Coordination Committee on Climate Change
NG	Natural gas
NJSC	National Joint-Stock Company
OSV	On Site Visit
PDD	Project Design Document
PE	Project Emissions
QA	Quality assurance
QC	Quality control
SA	Sensitivity Analysis
SD	Supporting documentation
STHS	Stakeholder Survey
t	tonne
UNFCCC	United Nations Framework Convention on Climate Change

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1 DETERMINATION OPINION

The audit team of TÜV Rheinland Group/TÜV Rheinland Ukraine has performed a determination of the project "Implementation of resource and energy saving measures in the subsidiary "Ukrtransgas" of National Joint Stock Company "Naftogaz of Ukraine" 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:

- a desk review of the project design document (PDD) including analysis of the baseline justification and monitoring plan;
- follow-up interviews with project stakeholders including on site visit;
- the resolution of outstanding issues and the issuance of the final determination report and opinion.

Project participants used the JI specific approach for demonstration of the additionality. In line with paragraph 2(c) of Annex B to the "Guidance on criteria for baseline setting and monitoring", version 0.2 the PDD provides analysis of investment, technological and other barriers to determine that the project activity itself is not the baseline scenario.

By synthetic description of the project, the project is likely to result in reductions of GHG emissions. 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 2.0 and the subsequent interviews have provided TÜV Rheinland Group/TÜV Rheinland Ukraine 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.

2 INTRODUCTION

SIA "Vidzeme Eko" has commissioned TÜV Rheinland Group/TÜV Rheinland Ukraine to determinate its JI project "Implementation of resource and energy saving measures in the subsidiary "Ukrtransgas" of National Joint Stock Company "Naftogaz of Ukraine" (hereafter called "the project") located at all regions throughout Ukraine where the Ukrtransgas facilities are located (accept Crimea).

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.

2.1 Objective

The determination serves as project design objective and complete assessment and is a requirement of 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 meets 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 JISC, as well as the host country criteria.

2.2 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.

2.3 JI Project Description

The proposed project is being implemented as a three groups of subprojects throughout the facilities of "Ukrtransgas" and is aimed to reduction of GHG emissions from the following sources:

1. Reduction of CO_2 emissions due to stationary combustion of NG in the compressor drives, auxiliary boilers and heaters through equipment replacement, modernization or retrofit.
2. Reduction of indirect CO_2 emissions due to consumption of electricity by cathode protection systems from the Ukrainian power grid.
3. Reduction of direct methane emissions which are occurring due to blow down and venting of NG from pipeline sections under repair activities by implementation of innovative repair methods.

Emissions due to physical methane leakage are not the subject of the proposed project.

3 METHODOLOGY

The determination consists of the following three phases:

I) a desk review of the project design documents including analysis of the baseline justification and monitoring plan;

II) follow-up interviews with project stakeholders including on site visit;

III) the resolution of outstanding issues and the issuance of the final determination report and opinion.

The following sections outline each step in more detail.

3.1 Desk Review of the Project Design Documentation

The Project Design Document (PDD) submitted by SIA "Vidzeme Eko" and additional background documents related to the project design to be checked by an Accredited Independent Entity were reviewed.

The list of submitted documentation is provided below.

To address TÜV Rheinland Group/TÜV Rheinland Ukraine corrective action and clarification requests SIA "Vidzeme Eko" revised the PDD and resubmitted it on 18/08/2011 as version 2.0.

The determination findings presented in this report relate to the project as described in the PDD version 2.0.

The following tables outlines the documentation reviewed during the determination:

Category 1 Documents:

Documents provided by SIA "Vidzeme Eko" that relate directly to the components of the JI project.

/1/ PDD "Implementation of resource and energy saving measures in the subsidiary "Ukrtransgas" of National Joint Stock Company "Naftogaz of Ukraine" version 1.0 dated 16/07/2011;

/2/ PDD "Implementation of resource and energy saving measures in the subsidiary "Ukrtransgas" of National Joint Stock Company "Naftogaz of Ukraine" version 2.0 dated 18/08/2011;

/3/ Estimates of the project GHG emissions in Excel format;

/4/ Estimates of NPV and IRR financial performance in Excel (4 files).

/5/ "Guidelines for users of the Joint implementation project design document form", version 04, JISC;

/6/ "Guidance on Criteria for Baseline Setting and Monitoring", version 02, JISC;

/7/ "Tool for demonstration and assessment of additionality" version 05.2.;

/8/ Kyoto Protocol;

/9/ Marrakech Accords, JI Modalities;

/10/ JI guidelines. Annex to decision 4/CMP.1;

/11/ "Joint implementation determination and verification manual", version 01, JISC;

/12/ Letter of Endorsement for the project "Implementation of resource and energy saving measures in the subsidiary "Ukrtransgas" of National Joint Stock Company "Naftogaz of Ukraine" № 1893/23/7 dated 21.07.2011 issued by the State Environmental Investment Agency.

Category 2 Documents:

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

/1/ Registration certificate #508 from Ministry of Environment of Ukraine on development of document which justify the volume of emissions for enterprises, organizations and citizen-business entities (affiliated company Cherkassytransgas) – 2 pages

/2/ Annex to attestation certificate #РЯ 066/10 from 18.07.2011 (scope- mobile laboratory dedicated detection and elimination of natural gas leakages at transmission gas pipelines at subsidiary "Cherkassytransgas" allowing providing measurements in the fields of environment, metering of energy and resources) – 5 pages

/3/ Resolution on issuance of permit for emission of air pollutants from stationary sources (Cherkassytransgas)

/4/ Resolution on issuance of permit for emission of air pollutant from stationary sources # 7121589001-2 from 29.12.2008 (compressor station Sofieyevska)

/5/ Annex to permit for emission of air pollutants from stationary sources (compressor station Sofieyevska) - 6 pages.

/6/ Resolution of Ministry of Environment of Ukraine on issuance of permit for emission of air pollutants from stationary sources #7124988701-3 (gas distribution station Cherkassy-2).

/7/ Permit #7124988701-3 from Ministry of environment of Ukraine for emission of air pollutants (Cherkassytransgas).

/8/ Annex to permit for emission of air pollutants (Cherkassytransgas) – 6 pages.

/9/ Notice from 24.01.2010 # 33/01-20 on intention of Zolitoniske local production unit of transmission pipelines of Cherkassytransgas to obtain permit for emission of air pollutants.

/10/ Conclusions of state sanitary-epidemiologic expertise #05.03.02-07/81790 from 18.12.2008 (Cherkassytransgas)

/11/ Protocol of state sanitary-epidemiologic expertise #03/1-4786 from 16.12.2008 (Cherkassytransgas)/

/12/ Letter # 27/05 from 10.01.09 to the head of state division of Ministry of environment of Ukraine in Cherkassy region Khomenko V.N. from the head of environmental inspection in Cherkassy region Klymenko M.G. (on absent of reason to include additional requirements in the permits to waste disposal and emission of air pollutants and draft permits on wastes for 2009 and permits for handling the poisonous materials).

/13/ Act of acceptance for the project Reconstruction of GPA GTN-25 at compressor station Sofiyevska.

/14/ Order #332 from 22.11.2005 on approval of acceptance act on the project

Reconstruction of GPA GTN-25 at compressor station Sofiyevska.
/15/ Pictures taken. Switchgears (folder Cherkassytransgas. Pict. 004-Pict. 006).
/16/ Pictures taken. Gas pumping unit GTK-10-i. (Folder Cherkassytransgas. Pict. 007-024).
/17/ Pictures taken. Gas turbine drive of GPA-3 (folder Cherkassytransgas. Pictures 015-017).
/18/ Pictures taken. Gas compressor of GPA-3 (folder Cherkassytransgas. Pictures 018-020).
/19/ Pictures taken. Flow diagram of compressor station 34-B Sofiyevska at gas transmission pipeline "Progress".
/20/ Pictures taken. Operation control system of compressor station.
/21/ Shift engineer of CS-34-B – KS 1 log book. Zolotoniske production unit (folder Ckerkassytransgas, Pict. 023-026).
/22/ Pictures taken. Lubrication oil system of the drive DN-80L.
/23/ Pictures taken. Starting screen of a gas compressor unit.
/24/ Report on operation of gas compressor unit GPA 25 MN80 at KS 34-B for November 2010.
/25/ Monthly report Ukrtransgas for 1 Nov.2010-30 Nov.2010.
/26/ Annual report 2010 for KS-34-B – 5 pages (folder Cherkassytransgas, pict. 031-035).
/27/ Act of commissioning of drive DN 80L, ser. # D2N802027 in the compressor unit GPA-25MN80.01, station #2 at KS 34-B Sofiyevska dated 22.05.2007.
/28/ Drive DN90L01. Record of service N 80108208 FO – 2 pages (folder Cherkassytransgas, pict. 039-040).
/29/ Attestation certificate # РЯ 0164/08 from 05.11.08 – 2 pages. (Folder Cherkassytransgas, pict. 039-040).
/30/ Pictures taken. Chemical analyses laboratory (folder Cherkassytransgas, pict. 041-042).
/31/ Natural gas composition (November 2010).
/32/ Certificate of natural gas composition – 2 pages.
/33/ List of meters in operation which are to be calibrated in 2011.
/34/ Pressure sensor (protocol of calibration, certificate of calibration of measuring device).
/35/ Certificate of calibration of measuring device #134 (sensor).
/36/ Metrological and technical parameters (pressure difference sensors, pressure sensors and temperature sensors).
/37/ Pictures taken. Sensor.
/38/ Protocols of technical survey of gas compressor unit # GTK-25-I # 2 (2008), #3 (2008, 2009).
/39/ Report on technical diagnostic of gas compressor unit # GTK-25-I #3 (2005), 3 pages.
/40/ Report on technical diagnostic of gas compressor unit # GTK-25-I #1 (2006), 5

pages
/41/ Record of service. Drive DG59L2 (unit #1).
/42/ Act of completion of overhaul GPU-16 (KS-34-B).
/43/ Pictures taken. Control room GPA-4.
/44/ Pictures taken. GPU-16.
/45/ Act of acceptance. Commissioning of GT GTN-25 #3 at KS Sofiyevska (2005).
/46/ Pictures taken. Implementation of individual measure of SP2 2.1 (folder Measure 02. Pictures 01-03).
/47/ Pictures taken. Implementation of individual measure of SP 3.1 (folder measures 03, pictures 01-03).
/48/ Picture taken. Determination team.
/49/ Act of readiness for operation from 20.12.2010 (KS Yahotyn).
/50/ Repair act for taps from 20.08.2008. (KS Yahotyn).
/51/ Repair act for taps from 21.08.2008. (KS Yahotyn).
/52/ Protocol of estimate of required amount of fuel gas and electricity for pumping the gas from 08.08.2011.
/53/ User's manual of data acquisition system EXPERT – 19 pages.
/54/ Maintenance and repair gas compressor units (GPA) and other compressor station equipment regulation at Ukrtransgas.
/55/ Structure of gas consumption for operation and servicing of gas transmission pipelines.
/56/ Regulation on calculation and correction of planned and actual energy consumption norms at Ukrtransgas.
/57/ Standard procedures of work related to venting the gas at gas transmission pipelines, gas distribution stations, gas metering stations, compressor stations and underground gas storages.
/58/ Act of commissioning of drive #3 at KS 32-P Romny dated 23.09.2005.
/59/ Act of acceptance dated 17.11.2008 of KS 05 Bobrovnitskaya at transmission pipeline Tula-Shostka-Kyiv.
/60/ Act of acceptance on commissioning (Opary VUPSG).
/61/ Order 385 from 09.11.2007 on acceptance of act of commissioning of compressor station Opary.
/62/ Act of acceptance of gas turbine drive GT-750-6 after major overhaul (completion date 23.06.2008)
/63/ Passports of cathode protection systems (#40, #656, #13, #651, #76, # 42).
/64/ Acts of work acceptance. Pipe repair carried out by company Kiaton (individual measures 08c01, 05c08, 06k14, 08d01, 05p04, 06h05, 10h13, 05L01, 10L06).
/65/ Pictures of patents obtained for inventions of innovative pipeline repair methods (folded Patents, PP.1.3, pictures 01 – 09).
/66/ Certificate on quality control management system dated 15.03.2010 #UA 2.003.04290-10 (on Ukrtransgas compliance to DSTU ISO 9001:2009)/
/67/ Order #12 from 19.01.2005 "On approval of standard on planning and control of

energy saving measures"
/68/ Standard procedures planning and control of energy saving measures
/69/ Order #69 dated 28.03.2005 on approval of company standard SOU 60.3-30019801-019:2005.
/70/ Clarification on use of compressibility factor Z for natural gas.
/71/ Estimate of uncertainty of measurement and calculation of volume of gas saved due to implementation of subproject 3 (English).
/72/ Environmental management system certificate # UA2.003.02217-06 dated 28.12.2006 (on Ukrtransgas compliance to DSTU ISO 14001:2006.
/73/ Act on performance testing of heat recovery boiler TUV-8 at KS Soyus, Novopskov LVUMG on GTA #3.
/74/ Environmental policy of Ykrtransgas, signed by Ukrtransgas director S.O. Vinokurov 21.04.2010.
/75/ Attestation certificate #PT-271/11 from 30.06.2011 (scope- mobile laboratory dedicated detection and elimination of natural gas leakages at transmission gas pipelines at subsidiary "Kyivtransgas".
/76/ Attestation certificate #100-4100/2011 from 29.07.2011 (scope- mobile laboratory dedicated detection and elimination of natural gas leakages at transmission gas pipelines at subsidiary "Kharkivtransgas" - 3pages.
/77/ Order #361 from 12.12.2002 on approval of company standards of Ukrtransgas.
/78/ Letter #3737/26-001 from 11.04.2001 on confirmation of ownership of gas transmission system assets.
/79/ Letter #8596/26 – 004 on methane content in natural gas.
/80/ List of equipment which is legally used by Ukrtransgas and was included in the borders of project "Implementation of resource and energy saving measures in the subsidiary "Ukrtransgas" of National Joint Stock Company "Naftogaz of Ukraine"

3.2 Interviews with project stakeholders

TÜV Rheinland Group/TÜV Rheinland Ukraine performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Affiliated Company «Ukrtransgas» of National Joint-Stock Company «Naftogaz of Ukraine» were interviewed and their names are summarized in Table 1. The main topics of the interviews are summarized in Table 2.

Table 1 Persons interviewed

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

	Name	Position	Organization
/1/	Doumik Alexey	Project Manager	SIA "VIDZEME EKO"
/2/	Titkov Vasyliy	Engineer	SIA "VIDZEME EKO"
/3/	Pryshchepo Oleksandr	Head of Department of regulation fuel energy resources and energy saving	Subsidiary company "Ukrtransgaz" of National Joint Stock Company "Naftogaz of Ukraine"
/4/	Scherbak Oleksandr	Chief of Welding operation of MG and GRS	Subsidiary company "Ukrtransgaz" of National Joint Stock Company "Naftogaz of Ukraine"
/5/	Podolyan Oleksandr	Ph.D., Deputy Director NPIP "Kiaton"	NPIP "Kiaton"
/6/	Nalisnyy Mykola	Deputy Chief Engineer of production	The apparatus of UMG "Cherkassytransgas"
/7/	Nowakiwska Natalka	Head of ecology, natural resources and energy efficiency	The apparatus of UMG "Cherkassytransgas"
/8/	Kostenko Oleg	Deputy Head of ecology, natural resources and energy efficiency	The apparatus of UMG "Cherkassytransgas"
/9/	Sagaydak Bogdan	Senior Engineer of Department	The apparatus of UMG "Cherkassytransgas"
/10/	Nurmukhametov Timur	Acting Chief of LVUMG - Chief Engineer of LVUMG	Zolotoniske LVUMG
/11/	Lymar Volodymyr	Engineer of metrology group of service AP (automation of production)	Zolotoniske LVUMG
/12/	Shitik Yuriy	Engineer of the AP (automation of production)	Zolotoniske LVUMG
/13/	Kulish Tetyana	Head of production of chemical-analytical laboratory (PCAL)	Zolotoniske LVUMG
/14/	Paliy Maksym	Head of GCS-34 Sofiyivska	Zolotoniske LVUMG

/15/	Lysenko Yuriy	Acting Head of GCS-34B	Zolotoniske LVUMG
/16/	Strembitskyy Igor	Alternating engineer of GCS-34B	Zolotoniske LVUMG
/17/	Lipsky Oleksandr	Acting Head of GCS-35	Zolotoniske LVUMG
/18/	Komarov Serhiy	Engineer of equipment repair GCS-35	Zolotoniske LVUMG
/19/	Martynyuk Volodymyr	Deputy Head of the GCS-35B	Zolotoniske LVUMG
/20/	Maleha Serhiy	Engineer of equipment repair GCS-35B	Zolotoniske LVUMG
/21/	KALYTYUK Valery	Head of pipelines linear production management	Yagotynske LVUMG
/22/	ANDRIYISHYN Nazar	Chief Engineer	Yagotynske LVUMG
/23/	PRYYMAK Mykhaylo	Head of compressor station "Yagotin"	Yagotynske LVUMG
/24/	SLUKHAY Oleksandr	Head of compressor station "Hlushkivska"	Yagotynske LVUMG
/25/	KONDRYTSKYY Anatoly	Head linear supply-control service	Yagotynske LVUMG
/26/	BABYCH Serhiy	Engineer of environmental protection of II category	Yagotynske LVUMG

Table 2 Interview topics

	Date	Interviewed organization	Interview topics
/1/	10/08/2011	SIA "Vidzeme Eko"	➢ Methodology acceptability ➢ Baseline and project scenario ➢ Analysis of barriers ➢ Justification additionality ➢ Common practice analysis ➢ Monitoring Plan ➢ Assessment of leakage ➢ Compliance with the requirements of the JI PDD
/2/	08/08/2011	Affiliated Company «Ukrtransgas» of National Joint-Stock Company «Naftogaz of Ukraine»	➢ Project History ➢ Project timetable ➢ Project Management Organization ➢ Environmental Impact Assessment ➢ Responsibility for monitoring project

			➢ Monitoring equipment ➢ Quality control and quality assurance
/3/	08/08/2011	Staff management UMG "Cherkassytransgas"	➢ Project History ➢ Project timetable ➢ Project Management Organization ➢ Environmental Impact Assessment ➢ Responsibility for monitoring project ➢ Monitoring equipment ➢ Quality control and quality assurance
/4/	09/08/2011	Zolotoniske LVUMG, Yagotynske LVUMG	➢ Project History ➢ Project timetable ➢ Project Management Organization ➢ Environmental Impact Assessment ➢ Responsibility for monitoring project ➢ Monitoring equipment ➢ Quality control and quality assurance
/5/	10/08/2011	NPIP "Kiaton"	➢ Project History ➢ Project timetable ➢ Project Management Organization ➢ Monitoring equipment ➢ Quality control and quality assurance

3.3 Resolution of Clarification and Corrective Action Requests

The overall determination, from Contract Review to Determination Report & Opinion, was conducted using TÜV Rheinland Group/TÜV Rheinland Ukraine internal procedures.

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 TÜV Rheinland Group/TÜV Rheinland Ukraine positive conclusion on the project design.

In order to ensure transparency, a determination protocol (Annex A to the Determination report) was customized for the project, according to the Annex to "Joint Implementation Determination and Verification Manual", version 01. 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 verifier will document how a particular requirement has been determined and the result of the determination.

The determination protocol consists of three tables. The different columns in these tables are described in Figure 1.
To guarantee the transparency of the determination process, the concerns raised are documented in more detail in the determination protocol (Annex A to the Determination report).

The PDD, Version 2.0 dated 18/08/2011, has been submitted to the audit team for final determination, which is revised based on the first version of the determination report and the issued corrective action requests and clarification requests. The major changes include: more detailed identification of project activities; statement about actions before project commencement; starting dates of project activity; baseline discussion on Alternative; archiving of the project monitoring data indicated; procedures on quality control and quality assurance included; monitoring plan revised; background information of stakeholder questionnaire provided.

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, 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 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*: 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 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, under "Final Conclusion".

Figure 1 Determination protocol tables

3.4 Internal Quality Control

The determination report including the determination findings underwent a technical review before requesting registration of the project activity. The technical review was performed by an internal technical reviewer qualified in accordance with TÜV Rheinland Group/TÜV Rheinland Ukraine qualification scheme for JI project determination and verification.

3.5 Determination team

The determination team consists of the following personnel:

Irina Nikolaieva TÜV Rheinland Group/TÜV Rheinland Ukraine	Team Leader, Climate Change Verifier
Ganna Zadnipriana TÜV Rheinland Group/TÜV Rheinland Ukraine	Climate Change Verifier
Dmitry Rakovich TÜV Rheinland Group/TÜV Rheinland Ukraine	Climate Change Verifier
Vladimir Gordyichuk	Technical expert
Yuriy Boboshko	Technical expert
Valery Yakubovsky TÜV Rheinland Group/TÜV Rheinland Ukraine	Internal technical reviewer

4 DETERMINATION FINDINGS

In the following subsections the determination findings are stated 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 (Annex A to the Determination report);
2) in case TÜV Rheinland Group/TÜV Rheinland Ukraine 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 subsections and are further documented in the Determination Protocol (Annex A to the Determination report). The determination of the Project resulted in 27 Corrective Action Requests and 17 Clarification Requests and 1 request for forward action;
3) the conclusions for determination subject are presented in each subsection.

4.1 Project Design

The project is expected to be in line with host-country specific JI requirements. The project activity is aimed at reducing GHG emissions by:

1. Reduction of CO_2 emissions due to stationary combustion of NG in the compressor drives, auxiliary boilers and heaters through equipment replacement, modernization or retrofit.
2. Reduction of indirect CO_2 emissions due to consumption of electricity by cathode protection systems from the Ukrainian power grid.
3. Reduction of direct methane emissions which are occurring due to blow down and venting of NG from pipeline sections under repair activities by implementation of innovative repair methods.

TÜV Rheinland Group/TÜV Rheinland Ukraine recognizes that this project helps the country in which it is implemented to achieve sustainable development. The project meets the JI specific requirements of the host country.

The Project Scenario is considered additional in comparison to the baseline scenario, and therefore eligible to receive Emissions Reductions Units (ERUs) under the JI project, based on an analysis, of investment, technological and other barriers and on prevailing practice presented by the PDD.

The project design is sound and the geographical (all regions throughout Ukraine) and temporal (5 years or 60 months) boundaries of the project are clearly defined.

Identified problem areas for project design, project participants' answers and conclusions of TÜV Rheinland Group/TÜV Rheinland Ukraine are described in Annex A Table 3 (refer to CAR 01-09, CL 01-09).

4.2 Baseline and Additionality

The baseline for the JI project "Implementation of resource and energy saving measures in the subsidiary "Ukrtransgas" of National Joint Stock Company "Naftogaz of Ukraine" was set in accordance with Appendix B of the Annex to decision 9/CMP.1 (JI guidelines) and with the "Guidance on criteria for baseline setting and monitoring", version 0.2 developed by the Joint Implementation Supervisory Committee (JISC). For this project, which consists of three different subprojects, aimed at saving natural gas as fuel, saving energy and reducing emissions of methane during repair and maintenance, any of the existing methodologies are not applicable and project participants used a JI specific approach regarding baseline setting and monitoring for each sub-group of the same species.
Baseline setting (for 3 sub-groups) based on the selection of most likely scenarios. All options and barriers that meet the applicable laws and regulations were taken into account to identify all realistic and possible alternatives.

The alternatives considered for determination of the baseline scenario for each of subproject in the context of the project activity the following:

1. The possible alternative baseline scenarios for subproject 1.1 (replacement of gas turbine (GT) drives of gas compressors by new ones of higher fuel efficiency) are the following:
   - to continue the existing practice, to operate the existing units and provide required service to them to ensure their serviceability;
   - to invest in replacement of existing low efficiency gas turbine drives by new ones of better efficiency.

2. The possible alternative baseline scenarios for subproject 1.2 (modernization or retrofit of existing gas turbine drives/gas piston engines to improve their efficiency) are the following:
   - to continue the existing practice, to operate the existing units and provide required service to them to ensure their serviceability;
   - to invest in modernization of existing low efficiency gas turbine drives.

3. The possible alternative baseline scenarios for subproject 1.3 (installation of GT exhaust heat recovery boilers instead of separate gas fired space heating boilers, replacement of existing gas fired space heating boilers by the new ones with higher efficiency) are the following:
   - to continue the existing practice, to use gas fired heating boilers;
   - to invest in heat recovery boilers at gas turbine exhaust to replace gas fired boilers.

4. The possible alternative baseline scenarios for subproject 2 (modernization of cathode protection system of underground pipelines) are the following:
   - to operate the existing cathode protection system with existing underground anodes;
   - to invest in modernization of underground anodes.

5. The possible alternative baseline scenarios for subproject 3 (usage of innovative repair techniques with the aim of avoidance of methane venting practices) are the following:
    - to cut the deficient pipe section and welding in a new pipe;
    - application of innovative pipeline repair methods which would allow repairing the deficient pipe without stopping its operation and without venting the gas;
    - usage of mobile compressors stations, which would pump out the gas contained in the repaired sections to adjacent pipelines prior to start the repair.

The most likely alternative for projects mentioned above - to continue the existing practice, as it doesn't indicate extremely high barriers and obstacles.

The baseline options considered do not include those options that:

- do not comply with legal and regulatory requirements; or
- depend on key resources such as fuels, materials or technology that are not available at the project site.

The most possibly alternative among the alternatives mentioned above has been selected as continue the existing practice, since such alternative is not expected to face any barriers that could have prevented it from being taken up as the project activity.

Identified problem areas for baseline and additionality proofs, project participants' answers and conclusions of TÜV Rheinland Group/TÜV Rheinland Ukraine are described in Annex A Table 3 (refer to CAR 10-13, CL 10-11).

4.3 Monitoring Plan

The project ''Implementation of resource and energy saving measures in the subsidiary "Ukrtransgas" of national joint stock company "Naftogaz of Ukraine" uses the JI specific approach in order to determine monitoring for each particular group of subprojects. Please refer to discussions on the applicability of the methodology at section 4.2 above.

The adopted monitoring methodology has been chosen based on the following reasons.
Monitoring for the proposed project consists of three sections, each for particular group of subprojects:
Group 1: Stationary combustion.
A number of subprojects (1.1 to 1.3) is aimed at saving of NG which is combusted in compressor drives, different boilers and heaters through implementation of energy conservation measures.
Group 2: Electricity saving.
A number of energy efficiency measures is implemented at compressor stations, involving cathode protection systems (subproject 2.1).
Group 3: Reduction of direct methane emissions trough reduction of NG losses occurring during repair activities.
It includes a number of individual measures aimed at venting avoidance by using innovative repair techniques, recovery of gas which would be otherwise vented during repairs (subproject 3).

Monitoring for the first two groups of subprojects will be assessed using option (a) of Annex 2 to "Guidance on criteria for baseline setting and monitoring" and the monitoring of Group 3 will be based on option (b) of the Annex 2 to the Guidance mentioned above: direct assessment of emission reductions.
Identified problem areas for monitoring plan, project participants' answers and conclusions of TÜV Rheinland Group/TÜV Rheinland Ukraine are described in Annex A Table 3 (refer to CAR 15-20, CL 12-15).

4.4 Calculation of GHG Emissions

In order to estimate emissions in the baseline scenario for each particular group of subprojects the project participant has chosen the JI specific approach as further described under sections B.1. and D.1. of the PDD.
Some sources have been excluded from the project boundary:
1. Fugitive methane emissions occurring due to leakages in taps, valves and joints of pipelines;
2. Emissions of methane due to venting of gas at compressor stations.

These emission sources are not attributable to the proposed project, however are to a great extent under control of the project participant.

In the baseline scenario for subproject 1.1. and subproject 1.2. the emissions occur due to combustion of fossil fuel (natural gas) in the gas turbine drives at compressor stations. In the baseline scenario for subproject 1.3. emissions occur due to combustion of natural gas in the existing boilers which supply heat to consumers.

The baseline emissions of subprojects 1.1., 1.2., 1.3. are calculated under the formula:

$$BE_y = \sum_i BE_{i,y}$$

where

BE_y - baseline emissions in year "y" (tCO_2);

$BE_{i,y}$ - baseline emissions from boiler "i" in year "y" (tCO_2).

The detailed algorithms are described later under sections D.1.1.4. of the PDD.

In the baseline scenario for subproject 2.1. indirect grid emissions occur due to consumption of electricity by cathode protection systems.

The baseline emissions of subproject 2.1. are calculated under the formula:

$$BE_y^{2.1} = \sum_i BE_{i,y}$$

where

$BE^{2.1}_y$ - baseline emissions for subproject 2.1. in year "y" (tCO_2);

$BE_{i,\ y}$ - baseline emissions for "i" cathode protection system in year "y" (tCO_2)

The detailed algorithms are described later under sections D.1.1.4. of the PDD.

According to the option (b) of Annex 2 to "Guidance on criteria for baseline setting and monitoring" version 02 direct monitoring of resulting emission reductions was selected to monitoring the emission reductions from subproject 3.1. Emissions in the baseline are equal to emissions reductions monitored:

$BE^3_y = ER^3_y$

where

BE^3_y - baseline emissions for subproject 3.1. in year "y" (tCO_2);

ER^3_y - the resulting emission reduction from implementation of individual measures in subproject 3.1. in year "y" (tCO_2).
Separate calculations of emissions in the baseline scenario will not be conducted.

As per JI specific approach, which the project participant has chosen for each particular group of subprojects, the project emissions are:

1. CO_2 emissions due to stationary combustion of NG in the compressor drives, auxiliary boilers and heaters.
2. Indirect CO_2 emissions due to consumption of electricity by cathode protection systems from the Ukrainian power grid.
3. Direct methane emissions which are occurring due to blow down and venting of NG from pipeline sections under repair activities.

The project emissions of subprojects 1.1., 1.2., 1.3. are calculated by the formula:

$$PE_y = \sum_i PE_{i,y}$$

where

PE_y - project emissions in year "y" (tCO_2);

$PE_{i,y}$ - project emissions from combustion of gas at "i" GT (for subprojects 1.1., 1.2.) project emissions from boiler "i" (for subproject 1.3.) in year "y" (tCO_2).
The detailed algorithms are described later under sections D.1.1.2. of the PDD.

The project emissions of subproject 2.1. are calculated by the formula:

$$PE_y^{2.1} = \sum PE_{i,y}$$

where

$PE^{2.1}_y$ - project emissions for subproject 2.1. in year "y" (tCO_2);

$PE_{i,y}$ - project emissions due to consumption of grid electricity by "i" cathode protection system in year "y" (tCO_2).
The detailed algorithms are described later under sections D.1.1.2. of the PDD.
According to the option (b) of Annex 2 to "Guidance on criteria for baseline setting and monitoring" version 02 the project emissions of subproject 3.1. are equal to zero:

$PE^{3.1}_{y}=0$

where

$PE^{3.1}_{y}$ - project emissions for subproject 3.1. in year "y" (tCO_2).

As per JI specific approach project does not lead to any leakage. The estimated annual average of 2,505,438 tCO_2e over the crediting period of emission reduction represents a reasonable estimation using the assumptions given by the project.

Identified problem areas for calculation of GHG emissions, project participants' answers and conclusions of TÜV Rheinland Group/TÜV Rheinland Ukraine are described in Annex A Table 3 (refer to CAR 21-23).

4.5 Environmental Impacts

The environmental assessment impact has been performed according the Ukrainian legislation in force as described in section F of the PDD.

Activities of Ukrtransgas are performed within the current legislation of Ukraine, in particular it compliance to the Law of Ukraine "On Environment Protection", Law of Ukraine "On ecological expertise", Law of Ukraine "On protection of atmospheric air ", Law of Ukraine "On Waste management" and other applicable norms and regulations.

Compliance to the environmental norms requires systematic approach and continuous improvement of environmental management. For this purpose the Standard of Enterprise «Guidance on the principles of environmental management and means of ensuring» was developed, enacted by the Order No.361 dated 26/12/2002.

Environmental management system of Ukrtransgas has been certified according to the requirements of ISO 14001:2006 "Environmental management systems. Guidelines for application". Certificate was registered in the registry on 28 December 2006 (its validity up to 27 December 2011).

Permanent attention is paid to environmental security of company operation. There are laboratories which control the emissions from stationary and mobile sources, including wastewater.

Technologies involved in implementation of proposed measures do not increase the emissions of pollutants.

Therefore it can be concluded that the proposed project has positive environmental impact.

Identified problem areas for environmental impacts, project participants' answers and conclusions of TÜV Rheinland Group/TÜV Rheinland Ukraine are described in Annex A Table 3 (refer to CAR 24–26, CL 16).

4.6 Comments by Local Stakeholders

The project complies with the current norms and requirements stipulated in Ukraine. Due to the proposed project nature (replacement of equipment to more efficient, modernization and retrofit activities made on existing equipment) no major civil or construction work is involved. There is no legislative enforcement of host country to obtain stakeholders comments for these types of activities. Therefore no stakeholders' comments were obtained.

Identified problem areas for comments by local stakeholders, project participants' answers and conclusions of TÜV Rheinland Group/TÜV Rheinland Ukraine are described in Annex A Table 3 (refer to CL 17).

5 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.

TÜV Rheinland Group/TÜV Rheinland Ukraine published the project design documents on the website (http://www.tuv.com.ua) on 18/07/2011 and invited comments within 17/08/2011 by Parties, stakeholders and non-governmental organizations.

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ANNEX A: JI PROJECT DETERMINATION PROTOCOL

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

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference/Comment
1. The project shall have the approval of the Parties involved.	Kyoto Protocol Article 6.1 (a)	**FAR 01** Conclusion is pending	Table 2, section A.5. **FAR 01.** The project has no approval of the Host Party and an investor country. Verifiers note: JISC Glossary of joint implementation terms, version 02 defines the following: a) At least the written project approval(s) by the host Party(ies) should be provided to the AIE and made available to the secretariat by the AIE when submitting the determination report regarding the PDD for publication in accordance with paragraph 34 of the JI guidelines; b) At least one written project approval by a Party involved in the JI project, other than the host Party(ies), should be provided to the AIE and made available to the secretariat by the AIE when submitting the first verification report for publication in accordance with paragraph 38 of the JI guidelines, at the latest. To obtain a Letter of Approval a final Determination Report should

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference/Comment
			be submitted to the State Environmental Investment Agency of Ukraine, including the Determination Protocol and a list of reference information. Letter of Approval from the United Kingdom, as investor country at this stage of the project is not obtained. **FAR 01** will be closed after issuing Letters of Approval by the parties involved.
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	Please refer to 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)	OK	Article 5 requires: “Each Party included in Annex I shall have in place, no later than one year prior to the start of the first commitment period, a national system for the estimation of anthropogenic emissions by sources and removals by sinks of all greenhouse gases”. According to the Article 7: “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”.

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference/Comment
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**	Please refer to Table 2, section B.2.
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	**OK**	Ukraine has designated its Focal Point. National guidelines and procedures for approving JI projects have been published. Contact data in Ukraine: State Environmental Investment Agency of Ukraine 35 Urytskogo St, Kyiv, P.O. 03035 Phone: +380 44 594 91 11 Fax: +380 44 5949115 Ukrainian national guidelines and procedures for the approval of JI projects are available on the site www.neia.gov.ua. On February 22, 2006 the Cabinet of Ministers of Ukraine adopted the Regulation № 206, which established assessment and implementation procedures of JI projects within the Kyoto Protocol.
6. The host Party shall be a Party to the Kyoto Protocol.	Marrakech Accords, JI Modalities, §21(a)/24	**OK**	The Ukraine is a Party (Annex I Party) to the Kyoto Protocol and has ratified the Kyoto Protocol at February 4th, 2004.
7. The host Party's assigned amount shall have been calculated and recorded in accordance with the modalities	Marrakech Accords, JI Modalities,	**OK**	The arranged extent for Ukraine is 100% of its emissions by 1990.

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference/Comment
for the accounting of assigned amounts.	§21(b)/24		In the Initial Report (Ukraine's Initial Report Under Article 7, Paragraph 4, Of The Kyoto Protocol) submitted by Ukraine to the UNFCCC Secretariat, on the 26 May 2006 the AAUs are quantified with: 925 362 174.39 (x 5) = 4 626 810 872 tCO_2e http://unfccc.int/files/national_reports/initial_reports_under_the_kyoto_protocol/application/pdf/ukraine_aa_report.pdf Currently Ukraine has submitted to the UNFCCC its fifth national communication on climate change under the Kyoto Protocol.
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	**OK**	The designed system of the national registry has been described in the Initial Report: http://unfccc.int/files/national_reports/initial_reports_under_the_kyoto_protocol/application/pdf/ukraine_aa_report.pdf
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**	Project participant SIA "Vidzeme Eko" submitted to the Accredited Independent Entity TÜV Rheinland Group/TÜV Rheinland Ukraine PDD that contains all information needed for the determination.

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference/Comment
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	**OK**	The PDD has been made publicly available through http://www.tuv.com.ua website from July, 18th to August, 17th 2011.
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)	**OK**	Please refer to Table 2, section F.
12. The baseline for a JI project shall be the scenario that reasonably represents the GHG emissions or removal by sources that would occur in absence of the proposed project.	Marrakech Accords, JI Modalities, Appendix B	**OK**	Please refer to Table 2, section 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	**OK**	Please refer to 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**	Please refer to Table 2, section B.
15. The project shall have an appropriate monitoring plan.	Marrakech Accords, JI Modalities, §33(c)	**OK**	Please refer to Table 2, section D.
16. A project participant is a legal entity authorized by a Party involved to participate in the JI project.	"Glossary of Joint Implementation Terms", Version 02.	Conclusion is pending a follow-up on **FAR 01**.	Please refer to Table 2, section A. The Ukrainian project participant will be authorized by the Host Party through the issuance of the approval for the project.

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					
1.1. Is the title of the project activity presented?	PDD	DR	"Implementation of resource and energy saving measures in the subsidiary "Ukrtransgas" of National Joint Stock Company "Naftogaz of Ukraine".	OK	OK
1.2. Is(are) the sectoral scope(s) to which the project pertains presented?	PDD	DR	Sectoral scope: 4 - Manufacturing industries. **CL 01.** Please clarify what the choice of sectoral scope is based on?	**CL 01**	OK
1.3. Are the version number and date of the document presented?	PDD	DR	PDD, version 1.0 dated 16/07/2011	OK	OK
A.2. Description of the project					
2.1. Is the purpose of the project indicated (with the concise, summarizing explanation of the situation existing prior to the starting date of the project, baseline scenario and project scenario)?	PDD	DR	The project purpose is to reduce greenhouse gas emissions. **CAR 01.** Section A.2. of the PDD should not exceed 2 pages. Correct, please. **CAR 02.** Please provide as supporting document "Long term energy and	**CAR 01** **CAR 02** **CAR 03**	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
			resource saving program, which included procedures for identification of potential saving measures, their assessment, implementation and further monitoring of results achieved" as it indicated in section A.2. of the PDD. **CAR 03.** The brief description on the problem of GHG emissions at "the situation before the project" (the project reason) is absent in section A.2. of the PDD.		
2.2 . Is the history of the Project including its JI component summarized?	PDD	DR	Yes, the history of the project including its JI component is summarized in section A.2. of the PDD. **CL 02.** Please clarify the meaning of term"absolute value of losses" indicated in section A.2. of the PDD. **CL 03.** Please clarify the analysis indicated below the chart in figure 1 in section A.2. of the PDD namely: why is it stated that the reduction is since 2007, if Fig. 1 shows that the reduction since 2005?	**CL 02** **CL 03**	OK
2.1.1. Is it clarified how the proposed project activity reduces emissions GHG that would occur in the baseline scenario?	PDD	DR	The proposed project consists of three groups of subprojects is being implemented on the Ukrtransgas facilities and is aimed to reduction of GHG emissions.	OK	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
A.3. Project participants					
3.1 . Are project participants and Party(ies) involved in the project listed?	PDD	DR	Affiliated Company "Ukrtransgas" of National Joint-Stock Company "Naftogaz of Ukraine"; SIA "Vidzeme Eko"	OK	OK
3.2 . Is contact information provided in Annex 1 of the PDD that is indicated in section A.3?	PDD	DR	The contact informaion of project participants is provided in Annex 1 of the PDD.	OK	OK
3.3. Is it indicated, if the Party involved is a Host Party?	PDD	DR	Ukraine is indicated as a Host Party.	OK	OK
3.4. Is it indicated, if it is the case, if the Party involved wishes to be considered as a project participant?	PDD	DR	Parties involved don't wish to be considered project participants.	OK	OK
A.4. Technical description of the project					
A.4.1. Location of the project					
4.1.1. Host Party(ies)	PDD	DR	Ukraine	OK	OK
4.1.2. Region/State/Province etc.	PDD	DR	All regions throughout Ukraine where the Ukrtransgas facilities are located. The map in section A.4.1.2. of the PDD depicts the layout of gas transmission facilities, including pipelines, compressor stations and gas storages of Ukrtransgas where the proposed project consisting of individual measures is being implemented.	OK	OK
4.1.3. City/Town/Community etc.	PDD	DR	Ukrtransgas facilities are located throughout the whole territory of	OK	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
			Ukraine in or nearby a big number of cities, towns and villages along the transmission pipelines and their branches as it is shown in Figure in section A.4.1.2.		
4.1.4. Detail of the physical location, including information allowing the unique identification of the project (maximum one page)					
4.1.4.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s) (this section should not exceed one page)?	PDD	DR	The proposed project will be implemented at all six Ukrtransgas subsidiaries. **CAR 04.** Please provide a list of equipment and assets (pipelines, compressor stations and gas distribution stations) as it indicated in section A.4.1.4. of the PDD. **CL 04.** Please clarify how location of 2nd subproject group (cathode protection systems) is identified. **CL 05.** Please clarify abbreviation "UMG" provided in section A.4.1.4. of the PDD, (ukrainian version). **CAR 05.** Please correct the abbreviation AIE in section A.4.1.4. of the PDD (english version).	**CAR 04** **CAR 05** **CL 04** **CL 05**	OK
A.4.2. Technology(ies) to be employed, or measures, operations or actions to be implemented by the project					
4.2.1. Are the technology(ies) to be employed, or measures, operations or actions to be implemented by the project described?	PDD	DR	The proposed project consists of three groups of subprojects, and each subproject consisting of a number of standardized individual measures,	**CAR 06** **CAR 07** **CAR 08**	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
			being continuously added since the project start in 2005. **CL 06.** In the PDD stated that the in the 3rd subproject group in the presence of more than 20 innovative repair methods but it is provided only 9 of them. Please clarify will be used other methods? **CAR 06.** Please decide on gradation of project groups or subprojects (leave group 1 and 2 or subprojects 1.1, 1.2, 1.3, 2 and 3) throughout the PDD. **CAR 07.** Please specify the number and name of figure in section A.4.2. of the PDD. **CL 07.** Please clarify what is meant by gas leakage indicated in section A.4.2. of the PDD, subproject 3? **CAR 08.** Please provide clarification of what efficiency value of old and new compressors is used for monitoring - passport or determined during testing performance. Provide passport of GTA as a supporting document. **CL 08.** Please provide clarification and confirmation that the measures for subproject 1.2 will not be held according to the compressors regulation. **CL 09.** Please clarify the useage of transformer efficiency value i subproject	**CL 06** **CL 07** **CL 08** **CL 09**	

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
			2 for the project period as reduced load transformer efficiency decreases.		
4.2.1.1. Does the project design engineering reflect current good practices?	PDD	DR	The design concept meets current good practice.	OK	OK
4.2.1.2. 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?	PDD	DR	The project uses state of the art technologies that will result a significantly better performance. Measures of subproject 3 have patents for innovative repair methods obtained that are listed in Annex 4 of the PDD.	OK	OK
4.2.1.3. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	PDD	DR	It is unlikely that at least during the project period, the technology used in the project can be substituted by more efficient. This is caused firstly by the fact that the project owner has limited financial capabilities. Secondly, apply innovative technologies currently are unique or better from a technical point of view alternatives.	OK	OK
4.2.2. Are all relevant technical data and the implementation schedule indicated?	PDD	DR	Yes. Please refer to section A.4.2. of the PDD and Annex 6 of the PDD.	OK	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					

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
4.3.1. Is it stated how anthropogenic GHG emission reductions are to be achieved? (This section should not exceed one page).	PDD	DR	The proposed project is aimed at reducing anthropogenic emissions. **CAR 09.** Please provide the necessary information in section A.4.3. of the PDD.	**CAR 09**	OK
A.4.3.1. Estimated amount of emission reductions over the crediting period					
4.3.1.1. Is it provided the estimated annual reduction for the chosen credit period in tCO2e?	PDD	DR	Yes. Section A.4.3.1. of the PDD provided the tables indicating estimated annual reduction for the chosen credit period in tCO_2e.	OK	OK
A.5. Project approval by the Parties involved					
5.1. Are written project approvals by the Parties involved attached? Are they unconditional?	PDD	DR	The project approval by the Host Party will be provided after the determination of the PDD. Conclusion is pending a response to **FAR 01**.	**FAR 01** Conclusion is pending	OK
B. Baseline					
B.1 Description and justification of the baseline chosen					
1.1. Is it indicated in PDD: - a detailed theoretical description of the baseline in a complete and transparent manner, as well as a justification of chosen baseline using the step-wise approach; - a justification of baseline setting; - references on regulations according to baseline setting.	PDD	DR	Yes. The chosen baseline is described. JI specific approach is used for baseline setting. A justification of chosen baseline and a detailed theoretical description are indicated in section B.1. of the PDD. JI specific approach is used for baseline selection. **CAR 10.** Please indicate the references	**CAR 10** **CL 10**	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
			on table numbers throughout the PDD. **CL 10.** Efficiency must be confirmed by testing on productivity before and after the implementation of energy efficiency measures or retrofit. Clarify please, why is efficiency in some acts before the implementation of measures specified in 2006, and after the implementation - in 2010.		
1.2. Is it indicated in the PDD that baseline was established:					
1.2.1. by listing and describing plausible (alternative) future scenarios on the basis of conservative assumptions and selecting the most plausible one?	PDD	DR, I	Plausible future scenarios are listing and describing on the basis of conservative assumptions and selecting the most plausible one in the context of this project. **CL 11.** Please provide the exact pressure value before starting repair work, according to information obtained during the site visit, the pressure is reduced to 2-3 atm. and then released into the air over a candle.	**CL 11**	OK
1.2.2. on a project-specific basis and/or using a multi-project emission factor?	PDD	DR	Yes. The justification of carbon emission factor is indicated in Annex 5 of the PDD. **CAR 11.** Please specify the parameter “carbon emission factor from combustion of natural gas – CEF” according to Appendix B “Guidance on	**CAR 11**	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
			criteria for baseline setting and monitoring", version 02.		
1.2.3. in a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, data sources and key factors?	PDD	DR	JI specific approach is used for baseline setting. **CAR 12.** Please specify according to which methodology is selected formula No.4 in section B.1. of the PDD, indicate references and provide as a supporting document.	**CAR 12**	OK
1.2.4. taking into account relevant national and/or sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the project sector?	PDD	DR	Please refer to section B.1. of the PDD.	OK	OK
1.2.5. in such a way that emission reduction units (ERUs) cannot be earned for decreases in activity levels outside the project activity or due to force majeure?	PDD	DR	In case of decrease in activity levels outside the project activity or force majeure, will be reduction of pumping gas "Ukrtransgas". This will reduce load time and its work, leading to a reduction in greenhouse gas emission reductions from project activities.	OK	OK
1.2.6. taking account of uncertainties and using conservative assumptions.	PDD	DR	Baseline was established taking account of uncertainties and using conservative assumptions.	OK	OK
1.3. Does the PDD explicitly indicate the approach used for identifying the baseline with references on regulations?	PDD	DR	JI specific approach is used for baseline setting.	OK	OK
1.4. Are number, name and version of the methodology clearly indicated in the context of the	PDD	DR	Not applicable.	OK	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
project?					
1.5. Is the applied version of the CDM methodology the most recent one and/or is this version still applicable?	PDD	DR	Not applicable.	OK	OK
1.6. Is it described how the chosen approach is applied in the context of the project?	PDD	DR	JI specific approach applied in the context of the project is completely and clearly described in section B.1. of the PDD.	OK	OK
1.7. Are the key information and data used to establish the baseline (variables, parameters, data sources etc.) indicated in tabular form?	PDD	DR	Yes, the necessary information in tabular form is provided in section B.1. of the PDD.	OK	OK
1.8. Are all regulations and sources clearly referenced?	PDD	DR	Yes.	OK	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					
2.1. Is the step-wise approach used for the demonstration of project additionality indicated and described?	PDD	DR	In order to demonstrate that the subproject or its group provides reductions in emissions by sources that are additional to any that would otherwise occur, the step-wise approach was used.	OK	OK
2.2. Does the PDD provide a justification of the applicability of the approach with a clear and transparent description with relevant reference on regulations?	PDD	DR	The CDM Executive Board approved "Tool for the demonstration and assessment of additionality", version 05.2 has been applied to show additionallity of project activity. **CAR 13.** Please indicate in section B.2. of the PDD all regulations according to	**CAR 13**	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
			which the baseline is justified and provide relevant references on them.		
2.3. Is it described how the chosen approach is applied in the context of the project?	PDD	DR	Yes, section B.2. of the PDD provided the description how the chosen approach is applied in the context of the project for 3 subprojects.	OK	OK
2.4. Are additionality proofs provided?					
2.4.1. If the application of the most recent version of the “Tool for the demonstration and assessment of additionality” is chosen, are all explanations, descriptions and analyses made in accordance with the selected tool or method?	PDD	DR	Yes, section B.2. of the PDD provides all explanations, descriptions and analyses in accordance with "Tool for demonstration and assessment of additionality", version 05.2.	OK	OK
2.4.2. Is an analysis showing why the emissions in the baseline scenario would likely exceed the emissions in the project scenario included?	PDD	DR	Detailed analysis provided in sections A.4.3., B.1. and B.2. of the PDD demonstrates that emissions in the baseline scenario would likely exceed the emissions in the project scenario by the implementation of project activities.	OK	OK
2.4.3. Is it demonstrated that the project activity itself is not a likely baseline scenario?	PDD	DR	Yes, it is clearly demonstrated that the project activity itself is not a likely baseline scenario in sections A.2., B.1. and B.2. of the PDD.	OK	OK
2.5. Are national policies and circumstances relevant to the baseline of the proposed project activity summarized?	PDD	DR	Baseline is set by taking into account relevant national policies and circumstances (please refer to sections B.1. and B.2. of the PDD). None of listed in section B.1. alternatives does not contradict Ukrainian legislation.	OK	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
B.3. Description of how the definition of the project boundary is applied to the project					
3.1. Does the project boundary defined in the PDD encompass all anthropogenic emissions by sources of GHGs that are: - under the control of the project participants; - reasonably attributable to the project; - significant?	PDD	DR	Yes, please refer to section B.3. of the PDD.	OK	OK
3.2. Is the project boundary defined on the basis of a case-by-case assessment with regard to the criteria referred to in 3.1. above?	PDD	DR	Some sources have been excluded from the project boundary based on the assessment of a particular case taking into account the criteria specified in item 3.1.	OK	OK
3.3. Are the delineation of the project boundary and the gases and sources included appropriately described and justified in the PDD by using a figure or flow chart as appropriate?	PDD	DR	Project boundaries and emission sources of relevant gases are indicated in section B.3. of the PDD as figure 15.	OK	OK
3.4. Are all gases and sources included explicitly stated, and the exclusions of any sources related to the baseline or the project are appropriately justified?	PDD	DR	Yes, justification for exclusion of sources is provided.	OK	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					
4.1 . Is the date of the baseline setting presented (in DD/MM/YYYY)?			Date of completion of the baseline study: 16/08/2011	OK	OK
4.2 . Is the contact information of persons setting the baseline provided?			Baseline was set by “SIA Vidzeme EKO”. The contact information is	OK	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
			provided in section B.4. of the PDD.		
4.3 . Is the person/entity also a project participant listed in Annex 1 of PDD?	PDD	DR	"SIA Vidzeme EKO" is the project participant listed in Annex 1.	OK	OK
C. Duration of the project/crediting period					
C.1. Starting date of the project					
1.1. Is the project's starting date clearly defined?	PDD	DR	The project's starting date is clearly defined in section C.1. of the PDD - 01/01/2005.	OK	OK
1.2. Does the PDD state the starting date of the project as the date on which the implementation or construction or real action of the project will begin or began?	PDD	DR	**CAR 14.** Please provide a confirmation of the starting date of the project indicated in sections A.2. and C.1. of the PDD.	**CAR 14**	OK
1.3. Is the starting date after the beginning of 2000?	PDD	DR	Yes. The starting date is after the beginning of 2000.	OK	OK
C.2. Expected operational lifetime of the project					
2.1. Is the project's operational lifetime clearly defined in years and months?	PDD	DR	The implemented measures provided proper maintenance can be operational at least for 10 years or 120 months.	OK	OK
C.3. Length of the crediting period					
3.1. Is the length of the crediting period specified in years and months?	PDD	DR	Five years (60 months or 1826 days). From 01/01/2008 until 31/12/2012.	OK	OK
3.2. Does the PDD state that the crediting period for issuance of ERUs starts only after the beginning of 2008 and does not extend beyond the operational lifetime of the project?	PDD	DR	Yes, please refer to section C.3. of the PDD.	OK	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
3.3. If the crediting period extends beyond 2012, does the PDD state that the extension is subject to the host Party approval? Are the estimates of emission reductions or enhancements of net removals presented separately for those until 2012 and those after 2012?	PDD	DR	Yes, it is indicated in section C.3. of the PDD that the extension of the crediting period is with the consent of host Party. Estimates of emission reductions for the period before 2012 and after 2012 are presented separately in section A.4.3.1. of the PDD.	OK	OK
D. Monitoring Plan					
D.1. Description of monitoring plan chosen					
1.1. Is it indicated in PDD a detailed theoretical description in a complete and transparent manner, as well as a justification of chosen monitoring plan using the step-wise approach?	PDD	DR	The justification of chosen monitoring plan is sufficient, theoretical description is indicated in section D.1. of the PDD.	OK	OK
1.2. Does the PDD explicitly indicate the chosen approach used for monitoring with references on regulations?	PDD	DR	The project participant has chosen the JI specific approaches regarding monitoring according to “Guidance on criteria for baseline setting and monitoring”, version 0.2.	OK	OK
1.3. Is the applied methodology considered being the most appropriate one?	PDD	DR	Yes, chosen JI specific approache is appropriate for this project.	OK	OK
1.4. If national or international monitoring standart has to be applied to monitor certain aspects of the project, is this standart identified and is the reference as to where a detailed description of the standart can be found provided?	PDD	DR	Yes, all relevant references are provided in section D of the PDD.	OK	OK
1.5. Are the description of the assumptions, formulas, parameters, data sources and key factors	PDD	DR	Yes, it is indicated in section D.1. of the PDD.	OK	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
indicated?					
1.5.1. Is it stated how uncertainties are taken into account and conservativeness is safeguarded?	PDD	DR	Yes, it is indicated in section D.1. of the PDD.	OK	OK
1.6. Is it described how the chosen approach is applied in the context of the project?	PDD	DR	Monitoring for the first two groups of subprojects will be assessed using option (a) of Annex 2 of "Guidance on criteria for baseline setting and monitoring", version 02 and the monitoring of Group 3 will be based on option (b).	OK	OK
1.7. Does the monitoring plan explicitly and clearly distinguish: 1) 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; 2) 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; 3) data and parameters that are monitored throughout the crediting period?	PDD	DR	All necessary information is explicitly and clearly indicated according to "Guidelines for users of the JI PDD form", version 04.	OK	OK
1.8. Are alternative tables used instead of the tables provided in sections D.1.1.1., D.1.1.3., D.1.2.1., D.1.3.1. and D.2. in line with the approach regarding monitoring chosen for all data/parameters?	PDD	DR	Not applicable.	OK	OK

<table>
<tr><th>CHECKLIST QUESTION</th><th>Ref.*</th><th>MoV**</th><th>COMMENTS</th><th>Draft Concl.</th><th>Final Concl.</th></tr>
<tr><td>1.8.1. Are all the required data / parameters according to the used methodology indicated?</td><td></td><td></td><td>Not applicable.</td><td>OK</td><td>OK</td></tr>
<tr><td colspan="6">1.8.2. Fill in the required amount of sub checklists for fixed data and comment any line answered with “No” (items may be added depending on the number of data parameters).</td></tr>
<tr><td>1.10.1. Parameter Title
<table><tr><th>Data Checklist</th><th>Yes/No</th></tr><tr><td>Is the title in line with methodology?</td><td></td></tr><tr><td>Are data unit correctly expressed?</td><td></td></tr><tr><td>Is the appropriate description of parameter indicated?</td><td></td></tr><tr><td>Is the time of monitoring clearly indicated?</td><td></td></tr><tr><td>Is the source clearly referenced?</td><td></td></tr><tr><td>Is the correct value provided?</td><td></td></tr><tr><td>Has this value been verified?</td><td></td></tr><tr><td>Is the choice of data correctly justified or is the measurement method correctly described?</td><td></td></tr><tr><td>Are quality control and quality assurance procedures indicated?</td><td></td></tr></table></td><td>PDD</td><td>DR</td><td>Not applicable.</td><td>OK</td><td>OK</td></tr>
<tr><td colspan="6">D.1.1. Option 1 – Monitoring of the emissions in the project scenario and the baseline scenario</td></tr>
<tr><td>1.1.1. Is the option 1 used for monitoring of the emissions in the project scenario and the baseline scenario?</td><td>PDD</td><td>DR</td><td>Monitoring using Option 1 is applied for subprojects 1.1; 1.2; 1.3; 2.1 . Project emissions for Group 3 are equal to zero (PE^{3}_{y}=0).</td><td>OK</td><td>OK</td></tr>
<tr><td colspan="6">D.1.1.1. Data to be collected in order to monitor emissions from the project, and how these data will be archived</td></tr>
<tr><td>1.1.1.1. Are the data to be collected in order to</td><td>PDD</td><td>DR</td><td>Table D.1.1.1. of the PDD indicates</td><td>OK</td><td>OK</td></tr>
</table>

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
monitor emissions from the project described?			data to be collected in order to monitor emissions from the project.		
1.1.1.2. Is it indicated how the data will be archived?	PDD	DR	Table D.1.1.1. of the PDD indicates how these data will be archived.	OK	OK
1.1.1.3. Is it indicated that data monitored are to be kept for two years after the last transfer of ERUs for the project?	PDD	DR	Please refer to **CAR.17** below.	OK	OK
D.1.1.2. Description of formulae used to estimate project emissions (for each gas, source etc.;emissions in units of CO_2 equivalent)					
1.1.2.1. Are the formulae clearly and consistently indicated throughout the PDD?	PDD	DR	Tthe formulae are clearly and consistently indicated in section D.1.1.2. of the PDD and throughout the PDD. **CAR 15.** Please indicate the data source of "capacity factor of i-drive" in formula No. 23 in section D.1.1.2. of the PDD. **CAR 16.** In formula No.23 in section D.1.1.2. of the PDD parameter η indices are different. Please correct. **CL 12.** Please clarify what is meant by replacing the electric motors in subproject 2 subgroup 2.1 in section D.1.1.2. PDD.	**CAR 15** **CAR 16** **CL 12**	OK
D.1.1.3. 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					

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
1.1.3.1. Are the data necessary for determining the baseline of anthropogenic emissions of greenhouse gases by sources within the project boundary described?	PDD	DR	The table D.1.1.3. of the PDD indicates data to be collected in order to monitor emissions from the project.	OK	OK
1.1.3.2. Is it indicated how data will be archived?	PDD	DR	Table D.1.1.3. of the PDD indicates how these data will be archived.	OK	OK
D.1.1.4. Description of formulae used to estimate baseline emissions (for each gas, source etc.; emissions in units of CO_2 equivalent)					
1.1.4.1. Are the formulae clearly and consistently indicated throughout the PDD?	PDD	DR	Tthe formulae are clearly and consistently indicated in section D.1.1.4. of the PDD and throughout the PDD.	OK	OK
D.1.2. Option 2 Direct monitoring of emission reductions from the project (values should be consistent with those in section E.)					
1.2.1. Is the option 2 used for monitoring of the emissions in the project scenario and the baseline scenario?	PDD	DR	This option is used to monitor the emission reductions resulting from subprojects of Group 3.	OK	OK
D.1.2.1. Data to be collected in order to monitor emission reductions from the project, and how these data will be archived					
1.2.1.1. Are the data to be collected in order to monitor emissions from the project described?	PDD	DR	The table D.1.2.1. of the PDD indicates data to be collected in order to monitor emissions from the project.	OK	OK
1.2.1.2. Is it indicated how the data will be archived?	PDD	DR	Table D.1.2.1. of the PDD indicates how these data will be archived.	OK	OK
1.2.1.3. Is it indicated that data monitored are to be kept for two years after the last transfer of ERUs for	PDD	DR	**CAR 17.** Please provide documentary manual, which indicates that data monitored and required for	**CAR 17**	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
the project?			determination are to be kept for two years after the last transfer of ERUs for the project.according to “Guidelines for users of the Joint Implementation project design document form”, version 04.		
D.1.2.2. Description of formulae used to calculate emission reductions from the project (for each gas, source etc.; emissions/emission reductions in units of CO2 equivalent):					
1.2.2.1. Are the formulae clearly and consistently indicated throughout the PDD?	PDD	DR	**CAR 18.** Please provide the reference on the regulatory documents in paragraph before formula No.24 in section D.1.2.2. of the PDD. **CAR 19.** Please provide the electronic address of the document indicated in reference No.41. **CL 13.** Please clarify how the accuracy of the value "volume of natural gas saved" calculated. **CL 14.** Please clarify where natural gas density (ρ_i) is used and how is determined Z_i. **CAR 20.** Please provide the confirmation as a supporting document of value “volumetric share of methane contained in transmission pipelines” (CH_4), indicated in section D.1.2.2.	**CAR 18** **CAR 19** **CAR 20** **CL 13** **CL 14**	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
D.1.3. Treatment of leakage in the monitoring plan					
1.3.1. Are data and information that will be collected in order to monitor leakage effects of the project described, if applicable?	PDD	DR	Leakage is not expected.	OK	OK
1.3.2. Are formulae used to estimate leakage (for each gas, source etc.; emissions in units of CO2 equivalent) described?	PDD	DR	Leakage is not expected.	OK	OK
D.1.4. Description of formulae used to estimate emission reductions for the project (for each gas, source etc.; emissions/emission reductions in units of CO_2 equivalent)					
1.4.1. Are the formulae clearly and consistently indicated throughout the PDD?	PDD	DR	The description of formulae is clearly and consistently indicated in section D.1.4. of the PDD.	OK	OK
D.1.4. Where applicable, in accordance with procedures as required by the host Party, information on the collection and archiving of information on the environmental impacts of the project					
1.4.1. Is information on the collection and archiving of information on the environmental impacts of the project?	PDD	DR	Not applicable.	OK	OK
1.4.2. Is reference to the relevant host Party regulation(s) provided?	PDD	DR	Not applicable.	OK	OK
1.4.3. If not applicable is it stated so?	PDD	DR	Yes, it is stated in section D.1.5. of the PDD.	OK	OK
D.2. Quality control (QC) and quality assurance (QA) procedures undertaken for data monitored					
2.1. Are the quality assurance and control procedures for the monitoring process established? This includes, as appropriate, information on	PDD	DR	Quality control and quality assurance procedures undertaken for data monitored are indicated in tabular	**CL 15**	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
calibration and on how records on data and/or method validity and accuracy are kept and made available on request?			format in section D.2. of the PDD. **CL 15.** Please clarify detailed how quality control monitoring data ensured.		
2.2. Are data corresponded with those in section D.1?	PDD	DR	Yes.	OK	OK
D.3. Please describe the operational and management structure that the project operator will apply in implementing the monitoring plan					
3.1 Is it described briefly the operational and management structure that the project participants(s) will implement in order to monitor emission reduction and any leakage effects generated by the project?	PDD	DR	The operational and management structure are presented in section D.3. of the PDD in figure 16.	OK	OK
3.2. Are responsibilities and institutional arrangements for data collection and archiving clearly provided?	PDD	DR	Yes.	OK	OK
3.3. Does the monitoring plan, on the whole, reflect good monitoring practices appropriate to the project type?	PDD	DR	Monitoring plan, on the whole, reflects good monitoring practices appropriate to the project type	OK	OK
D.4. Name of person(s)/entity(ies) establishing the monitoring plan					
4.1. Is the contact information of person(s)/entity(ies) establishing the monitoring plan provided?	PDD	DR	The reference to Annex 1 of the PDD is provided.	OK	OK
4.2. Is the person/entity also a project participant listed in Annex 1 of PDD?	PDD	DR	The required information is provided in section D.4. of the PDD.	OK	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
E. Estimation of greenhouse gases emission reductions					
E.1. Estimated project emissions					
1.1. Are described the formulae used to estimate anthropogenic emissions by source of GHGs due to the project (for each gas, source etc.; emissions in units of CO_2 equivalent)?	PDD	DR	Formulae used to estimate project emissions are described in section D. Of the PDD. **CAR 21.** Please correct the relevant name of subproject 2 in tables of section E (pumps and fans are indicated).	**CAR 21**	OK
1.1.1. Is there a description of calculation of GHG project emissions in accordance with the formula? (supporting documentation)	PDD	DR	The description of calculation of GHG project emissions is provided in EXCEL electronic files as supporting documentation and it is made in accordance with the indicated formula. Results of calculations are provided in Section E.1. of the PDD. **CAR 22.** In measures 06K13, 06K14 preasure Pi is absent. Please recalculate the reduction of methane emissions with all components and make necessary corrections in section E of the PDD. **CAR 23.** Please correct the value of carbon emission factor from combustion of natural gas according to the PDD (0,0561) and make necessary	**CAR 22** **CAR 23**	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
			corrections in section E of the PDD.		
1.1.2. Have conservative assumptions been used to calculate project GHG emissions?	PDD	DR	Conservative assumptions were used to calculate project GHG emissions.	OK	OK
E.2. Estimated leakage					
2.1. Are described the formulae used to estimate leakage due to the project activity where required (for each gas, source etc.; emissions in units of CO_2 equivalent)?	PDD	DR	Leakage due to the project activity is not expected.	OK	OK
2.1.1. Is there a description of calculation of leakage in accordance with the formula? (supporting documentation)	PDD	DR	Leakage due to the project activity is not expected.	OK	OK
2.2. Have conservative assumptions been used to calculate leakage?	PDD	DR	Leakage due to the project activity is not expected.	OK	OK
2.3. If not applicable, is it stated in the PDD?	PDD	DR	Yes, it is stated in section E.2. of the PDD.	OK	OK
E.3. Sum of E.1 and E.2.					
3.1. Does the sum of E.1. and E.2. represent the project activity emissions?	PDD	DR	As a result the leakage of the project equal to 0, the sum of E.1. and E.2. is equal to E.1. (please refer to section E.3 of the PDD).	OK	OK
E.4. Estimated baseline emissions					
4.1. Are the formulae used to estimate the anthropogenic emissions by source of GHGs in the baseline using the baseline methodology for the applicable project category described (for each gas, source etc.; emissions in units of CO2 equivalent)?	PDD	DR	Formulae used to estimate baseline emissions are described in section D. of the PDD.	OK	OK
4.1.1. . Is there a description of calculation	PDD	DR	The description of calculation of	OK	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
of GHG baseline emissions in accordance with the formula? (supporting documentation)			baseline emissions is provided in EXCEL electronic files as supporting documentation and it is made in accordance with the indicated formula. Results of calculations are provided in Section E.1. of the PDD.		
4.2. Have conservative assumptions been used to calculate baseline emissions?	PDD	DR	Conservative assumptions were used to calculate baseline emissions.	OK	OK
E.5. Difference between E.4. and E.3. representing the emission reductions of the project					
5.1. Does the difference between E.4. and E.3. represent the emission reductions due to the project during a given period?	PDD	DR	Emission reductions due to the project are indicated in section E.6.	OK	OK
E.6. Table providing values obtained when applying formulae above					
6.1. Is the data provided under this section in consistency with data as presented by other chapters E of the PDD?	PDD	DR	The data provided under section E.6. is in consistency with data as presented by other chapters of the PDD.	OK	OK
6.2. Is there a table providing the total value of emission reductions?	PDD	DR	Yes.	OK	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					
1.1. Has an analysis of the possible environmental impacts of the project been sufficiently described?	PDD	DR	Yes, please refer to section F of the PDD.	OK	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
1.2. Are there any host Party requirements for an Environmental Impact Assessment (EIA)?	PDD	DR	According to Ukrainian legislation, projects of new construction, reconstruction and technical re-equipment, industrial and civilian objects must include Environmental Impact Assessment (EIA), the basic requirements which are listed in the State building norms Ukraine A.2.2-1-2003. **CAR 24.** Plese provide the correct name of Laws of Ukraine indicated in section F.1. of the PDD.	**CAR 24**	OK
1.3. Are transboundary environmental impacts considered in the analysis?	PDD	DR	Transboundary impacts of project activities according to their definition in the text ratified by Ukraine "Convention on Long-Range Transboundary Air Pollution" don't take place.	OK	OK
1.4. Are all regulations and sources clearly referenced?	PDD	DR	**CAR 25.** Please provide the Order No.361 indicated in section F.1. of the PDD as supporting document. **CAR 26.** Please indicate full name of the laboratory accreditation certificate details and provide a copy of it as a supporting document. **CL 16.** Please clarify whether the ISO 14000 was confirmed since 2006.	**CAR 25** **CAR 26** **CL 16**	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
F.2. If environmental impacts are considered significant by the project participants or the host Party, provision of conclusions and all references to supporting documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party					
2.1. Is viewpoint regarding significant environmental impacts of the project participants or the host Party indicated?	PDD	DR	Yes, in section F.2. of the PDD project participants concluded that the proposed project has a positive effect on the environment.	OK	OK
2.2. Have conclusions and all references to the supporting documentation on the analysis of the environmental impacts been indicated?	PDD	DR	Yes.	OK	OK
G. Stakeholders' comments					
G.1. Information on stakeholders' comments on the project, as appropriate					
1.1. Have relevant stakeholders been consulted and how?	PDD	DR	**CL 17**. Please provide clarifications in which media has been announced on project activities and how?	**CL 17**	OK
1.1.1. Have appropriate media been used to invite comments by local stakeholders?	PDD	DR	Please refer to **CL 17** above.	OK	OK
1.2. Is there a list of stakeholders from whom comments on the project have been received?	PDD	DR	Please refer to **CL 17** above.	OK	OK
1.3. Is the nature of comments provided?	PDD	DR	Please refer to **CL 17** above.	OK	OK
1.4. Has due account been taken of any stakeholder comments received?	PDD	DR	Please refer to **CL 17** above.	OK	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
Annexes					
Annex 1. Contact information on project participants					
1.1. Is the information provided in consistency with the one given under section A.3?	PDD	DR	The information provided in Annex 1 is in a consistency with the one given under section A.3.	OK	OK
1.2. Are the mandatory fields for each organisation listed in section A.3. of the PDD filled notably organisation, name of contact person, street, city, postal code, country, telephone number(s) and fax number or e-mail address?	PDD	DR	Yes.	OK	OK
Annex 2. Baseline information					
2.1. Is a table containing the key elements of the baseline (including variables, parameters and data sources) provided?	PDD	DR	The relevant information on key elements of the baseline is provided in Annex 2 of the PDD.	OK	OK
2.2. If additional background information on baseline data is provided: is this information in consistency with data presented by other sections of the PDD?	PDD	DR	Additional background information is absent.	OK	OK
Annex 3. Monitoring plan					
3.1. Is the detail description of all key elements of monitoring plan provided?	PDD	DR	All necessary information is presented in Annex 3 of the PDD.	OK	OK
3.2. Is the provided information on monitoring plan in consistency with data presented in section D of the PDD?	PDD	DR	The information on monitoring plan is in a consistency with the one given under section D. Of the PDD.	OK	OK

CHECKLIST QUESTION	Ref.*	MoV**	COMMENTS	Draft Concl.	Final Concl.
Annex 4. Patents for innovative repair methods obtained					
4.1. Are all patents for innovative repair methods that implemented by the project indicated?	PDD	DR	Yes.	OK	OK
Annex 5. Justification of Ukrainian grid emission factors					
5.1. Is the justification of Ukrainian grid emission factors completely indicated?	PDD	DR	Yes.	OK	OK
Annex 6. Referencing of individual measures within subprojects					
6.1. Is the provided information on individual measures in consistency with other information presented by other sections of the PDD?	PDD	DR	**CAR 27.** Annex 6 of the PDD provides pumps/fans. Please correct the information provided throughout of the PDD.	**CAR 27**	OK

Ref.* - gives reference to Category 1 and Category 2 documents (see section 3.1. of the Determination Report) where the answer to the checklist question or item is found.
MoV** - 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.

Table 3 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2	Summary of project owner response	Determination team conclusion
FAR 01. The project has no approval of the Host Party and an investor country.	Table 1, checklist question 1	The project is implemented as a bilateral project of JI. The country project supports Ukraine and partner-country - the United Kingdom. To obtain a Letter of Approval a final Determination Report should be submitted to the State Environmental Investment Agency of Ukraine, including the Determination Protocol and a list of reference information. Letter of Approval from the United Kingdom, as investor country at this stage of the project is not obtained.	**FAR 01** will be closed after issuing Letters of Approval by the parties involved.
CAR 01. Section A.2. of the PDD should not exceed 2 pages. Correct, please.	Table 2, checklist question A.2.1.	Corrected in PDD ver2.0.	**Issue is closed** based on corrections made in PDD ver2.0.
CAR 02. Please provide as supporting document "Long term energy and resource saving program, which included procedures for identification of potential saving measures, their assessment, implementation and further monitoring of results achieved" as it indicated in section A.2. of the PDD.	Table 2, checklist question A.2.1.	See documents obtained 10.08.2011 as supporting: Order #255 from 19.09.05 "On organization of Kyoto section"; Order #12 from 19.01.05 "On approval of standard on planning and control of energy saving measures" and "Plan of implementation of energy saving activities, introduction of energy saving equipment and technologies" which was approved 19.08.2005.	**Issue is closed** after submission of supporting document.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2	Summary of project owner response	Determination team conclusion
CAR 03. The brief description on the problem of GHG emissions at "the situation before the project" (the project reason) is absent in section A.2. of the PDD.	Table 2, checklist question A.2.1.1	Corrected in PDD ver2.0	Correction made was sufficient. **Issue is closed.**
CAR 04. Please provide a list of equipment and assets (pipelines, compressor stations and gas distribution stations) as it indicated in section A.4.1.4. of the PDD.	Table 2, checklist question A.4.1.4.1	All necessary documents (379 p) were submitted.	**Issue is closed** after review of documents by the determination team.
CAR 05. Please correct the abbreviation AIE in section A.4.1.4. of the PDD (english version).	Table 2, checklist question A.4.1.4.1	Corrections were made in PDD ver2.0.	**Issue is closed** based on corrections made in PDD ver2.0.
CAR 06. Please decide on gradation of project groups or subprojects (leave group 1 and 2 or subprojects 1.1, 1.2, 1.3, 2 and 3) throughout the PDD.	Table 2, checklist question A.4.2.1.	Corrected in PDD ver2.0: now Group 3 (SP 1.1; SP 1.2; SP 1.3) Group 2 (SP 2.1) ad Group 3 (SP 3).	**Issue is closed** based on corrections made in PDD ver2.0
CAR 07. Please specify the number and name of figure in section A.4.2. of the PDD.	Table 2, checklist question A.4.2.1.	Corrected in PDD ver2.0.	Corrections made in PDD ver2.0 are sufficient. Issue is closed.
CAR 08. Please provide clarification of what efficiency value of old and new compressors is used for monitoring - passport or determined during testing performance. Provide passport of GTA as a supporting document.	Table 2, checklist question A.4.2.1.	Efficiency is used which is determined at performance test. Copies of acts of acceptance of retrofits/repairs made were presented as supporting documents; they are taken from passports of GT drives.	**Issue is closed** based on documents presented to the determination team

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2	Summary of project owner response	Determination team conclusion
CAR 09. Please provide the necessary information in section A.4.3. of the PDD.	Table 2, checklist question A.4.3.1.	Added in PDD ver2.0	Corrections made are sufficient. **Issue is closed.**
CAR 10. Please indicate the references on table numbers throughout the PDD.	Table 2, checklist question B.1.1.	Added in PDD ver2.0	**Issue is closed** based on corrections introduced in PDD ver2.0.
CAR 11. Please specify the parameter "carbon emission factor from combustion of natural gas – CEF" according to Appendix B "Guidance on criteria for baseline setting and monitoring", version 02.	Table 2, checklist question B.1.2.2.	Corrected in PDD ver2.0	**Issue is closed** based on corrections introduced in PDD ver2.0.
CAR 12. Please specify according to which methodology is selected formula No.4 in section B.1. of the PDD, indicate references and provide as a supporting document.	Table 2, checklist question B.1.2.3.	In PDD a reference has been made to the Supporting Document 3 as a source of formulae/ SD 3 presented.	**Issue is closed** based on referencing made in PDD ver2.0 and document submitted to the determination team.
CAR 13. Please indicate in section B.2. of the PDD all regulations according to which the baseline is justified and provide relevant references on them.	Table 2, checklist question B.2.2.	Added in section B.2 of PDD ver2.0	**Issue is closed based on corrections introduced in PDD ver2.0.**
CAR 14. Please provide a confirmation of the starting date of the project indicated in sections A.2. and C.1. of the PDD.	Table 2, checklist question C.1.2.	As evidence that the project started as early as 01/01/2005 the following document were presented: Order #255 from 19.09.05 "On organization of Kyoto section"; Order #12 from 19.01.05 "On approval of standard on planning and control of energy saving measures" and "Plan of	**Issue is closed** based on review of presented documents.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2	Summary of project owner response	Determination team conclusion
		implementation of energy saving activities, introduction of energy saving equipment and technologies" which was approved 19.08.2005	
CAR 15. Please indicate the data source of "capacity factor of i-drive" in formula No. 23 in section D.1.1.2. of the PDD.	Table 2, checklist question D.1.1.2.1.	Clarification introduced in the text after the formula in PDD ver2.0	**Issue is closed** based on corrections made in PDD ver2.0.
CAR 16. In formula No.23 in section D.1.1.2. of the PDD parameter η indices are different. Please correct.	Table 2, checklist question D.1.1.2.1.	Corrected in PDD ver2.0	**Issue is closed** based on corrections made in PDD ver2.0.
CAR 17. Please provide documentary manual, which indicates that data monitored and required for determination are to be kept for two years after the last transfer of ERUs for the project.according to "Guidelines for users of the Joint Implementation project design document form", version 04.	Table 2, checklist question D.1.2.1.3.	See copy of order #320 that will be signed on 18/08/2011.	**Issue is closed** based on corrections made in PDD ver2.0 and documents presented to the determination team for review.
CAR 18. Please provide the reference on the regulatory documents in paragraph before formula No.24 in section D.1.2.2. of the PDD.	Table 2, checklist question D.1.2.2.1.	Referencing to the document is made in PDD ver2.0. In this version it is formulae 23.	**Issue is closed** based on corrections made in PDD ver2.0.
CAR 19. Please provide the electronic address of the document indicated in reference No.41.	Table 2, checklist question D.1.2.2.1.	Document presented as SD3.	**Issue is closed** based on documents submitted to the determination team.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2	Summary of project owner response	Determination team conclusion
CAR 20. Please provide the confirmation as a supporting document of value "volumetric share of methane contained in transmission pipelines" (CH_4), indicated in section D.1.2.2.	Table 2, checklist question D.1.2.2.1.	Official answer of project owner was presented which contains data on weighted average methane content in transmission pipelines in 2008-2010 and list of certificates of gas properties which were used to calculate weighted average methane content. Emissions reduction calculations were corrected based on these data/ Calculations presented in SD1 ER 1-2: SD1 ER3 from 16.08.2011	**Issue is closed** based on documents presented to the determination group.
CAR 21. Please correct the relevant name of subproject 2 in tables of section E (pumps and fans are indicated).	Table 2, checklist question E.1.1.	Mistake corrected in PDD ver2.0	**Issue is closed** based on corrections made in PDD ver2.0.
CAR 22. In measures 06K13, 06K14 preasure Pi is absent. Please recalculate the reduction of methane emissions with all components and make necessary corrections in section E of the PDD.	Table 2, checklist question E.1.1.1.	Pressure taken from act was used. Expected value was replaced by calculated one. See SD 1 ER 3 from 16.08.2011	**Issue is closed** based on correction made in PDD ver2.0.
CAR 23. Please correct the value of carbon emission factor from combustion of natural gas according to the PDD (0,0561) and make necessary corrections in section E of the PDD.	Table 2, checklist question E.1.1.1.	Corrected. Carbon emission factor from combustion of natural gas was taken based on newest data form "National inventory of GHG… 1990-2009" issued in 2011. http://www.neia.gov.ua/nature/doccatalog/document?id=128294	**Issue is closed** based on corrections introduced in PDD ver2.0.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2	Summary of project owner response	Determination team conclusion
CAR 24. Plese provide the correct name of Laws of Ukraine indicated in section F.1. of the PDD.	Table 2, checklist question F.1.2.	Corrected in PDD ver2.0 (Ukrainian language)	**Issue is closed** based on corrections introduced in PDD ver2.0.
CAR 25. Please provide the Order No.361 indicated in section F.1. of the PDD as supporting document.	Table 2, checklist question F.1.4.	Order #361 provided as supporting document	**Issue is closed** based on documents presented to the determination group.
CAR 26. Please indicate full name of the laboratory accreditation certificate details and provide a copy of it as a supporting document.	Table 2, checklist question F.1.4.	Copies of certificates of Cherkassy-, Kyiv- and Kharkivtransgas (with description of accreditation scopes, type of tests and accuracies) were provided	**Issue is closed** based on documents presented to the determination group.
CAR 27. Annex 6 of the PDD provides pumps/fans. Please correct the information provided throughout of the PDD.	Table 2, checklist question Додаток 6.1.	Mistake corrected. See PDD ver2.0	**Issue is closed** based on corrections made in PDD ver2.0.
CL 01. Please clarify what the choice of sectoral scope is based on?	Table 2, checklist question A.1.2.	Scopes changed to 3 and 10 in PDD ver.2.0	**Issue is closed** based on corrections made in PDD ver2.0.
CL 02. Please clarify the meaning of term ”absolute value of losses” indicated in section A.2. of the PDD.	Table 2, checklist question A.2.2.	Phrase corrected in Ukrainian translation of PDD ver2.0 to “…absolute value of losses..”	**Issue is closed** based on corrections made in PDD ver2.0.
CL 03. Please clarify the analysis indicated below the chart in figure 1 in section A.2. of the PDD namely: why is it stated that the reduction is since 2007, if Fig. 1 shows that the reduction since 2005?	Table 2 checklist question A.2.2.	Analysis of data has been corrected. See PDD ver2.0	**Issue is closed** based on corrections made in PDD ver2.0.
CL 04. Please clarify how location of	Table 2, checklist	Location of each of individual measures in	**Issue is closed** clarifications

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2	Summary of project owner response	Determination team conclusion
2nd subproject group (cathode protection systems) is identified.	question A.4.1.4.1.	SP 2 (cathode protection system) can be identified using individual passport of the system. These data are provided in annex 6 of PDD ver2.0.	and corrections are sufficient.
CL 05. Please clarify abbreviation "UMG" provided in section A.4.1.4. of the PDD, (ukrainian version).	Table 2, checklist question A.4.1.4.1.	Abbreviation clarified in PDD ver2.0.	**Issue is closed** based on corrections made in PDD ver2.0.
CL 06. In the PDD stated that the in the 3rd subproject group in the presence of more than 20 innovative repair methods but it is provided only 9 of them. Please clarify will be used other methods?	Table 2, checklist question A.4.2.1.	There are about 20 innovative pipe repair methods for which patents were obtained. In PDD only these are described which are most widely used in practical repair in Ukrtransgas.	**Issue is closed** based on clarifications and corrections made in PDD ver2.0.
CL 07. Please clarify what is meant by gas leakage indicated in section A.4.2. of the PDD, subproject 3?	Table 2, checklist question A.4.2.1.	Leakage here means unintentional and uncontrolled loss of methane through joints, seals etc.	**Issue is closed** based on clarifications provided.
CL 08. Please provide clarification and confirmation that the measures for subproject 1.2 will not be held according to the compressors regulation.	Table 2, checklist question A.4.2.1.	Measures in SP 1.2 are not obligatory and scheduled ones, as about 90% of GT drives at Ukrtransgas exceeded their work life limit. Implementation of these measures is not obligatory for the owner and it can select whether to maintain the operation of equipment or to invest in costly retrofits or major overhauls, As shown in section B.2 of PDD, implementation of them is not financially attractive for the owner.	**Issue is closed** based on clarifications provided.
CL 09. Please clarify the useage of transformer efficiency value i subproject	Table 2, checklist question A.4.2.1.	For calculations the conservative value of transformer (which is the part of AC/DC	**Issue is closed** based on clarifications provided.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2	Summary of project owner response	Determination team conclusion
2 for the project period as reduced load transformer efficiency decreases.		converter in each cathode protection system (CPS)) efficiency was taken- 70%. An assumption has been made that this efficiency is equal in both, baseline and project scenarios. For justification the following can be mentioned: 1) According to the engineering reference book at http://epasu.ru/content/zavisimost-kpd-ot-nagruzki efficiency of transformer stays relatively stable in a wide range of load. 2) There is a semiconductor based rectifier after the transformer, and its losses decrease if the load decreases.	
CL 10. Efficiency must be confirmed by testing on productivity before and after the implementation of energy efficiency measures or retrofit. Clarify please, why is efficiency in some acts before the implementation of measures specified in 2006, and after the implementation - in 2010.	Table 2, checklist question B.1.1.	Performance testing of GT to obtain efficiency is provided by specialized certified company Techdiagaz. Taking into account that over 450 GT drives are in operation at Ukrtransgas, performance testing of a particular drive to get its efficiency before and after the retrofit made can be beyond the schedule, e.g. if retrofit was completed in Dec 2008, the efficiency before could have been obtained several months in advance, and efficiency after the retrofit could have been obtained during spring or summer 2009.	**Issue is closed** based on clarifications provided.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2	Summary of project owner response	Determination team conclusion
CL 11. Please provide the exact pressure value before starting repair work, according to information obtained during the site visit, the pressure is reduced to 2-3 atm. and then released into the air over a candle.	Table 2, checklist question B.1.2.1.	In some cases of application of innovative repair methods a possibility existed to reduce the gas pressure in the pipeline prior to the repair by means of : -either to recover part of the gas through supplying it to the consumers via adjacent gas distribution station, or -to direct part of the gas in neighboring (parallel) gas pipeline In these cases the amount of gas venting avoidance is calculated using actual (reduced) gas pressure after saving part of it by means of one of the described ways. It is necessary to mention that in case of high pressure transmission pipelines in most cases it is impossible to stop the operatiuon for many tens of hours needed to evacuate the gas to consumers.	**Issue is closed** based on clarifications provided.
CL 12. Please clarify what is meant by replacing the electric motors in subproject 2 subgroup 2.1 in section D.1.1.2. PDD.	Table 2, checklist question D.1.1.2.1.	Mistake corrected in PDD ver2.0	**Issue is closed** based on corrections made in PDD ver2.0.
CL 13. Please clarify how the accuracy of the value "volume of natural gas saved" calculated.	Table 2, checklist question D.1.2.2.1.	See supporting document Error Estimate in which the error of calculation of gas volume contained in a pipe under particular pressure and temperature is provided	**Issue is closed** based on the review of clarification documents provided.
CL 14. Please clarify where natural gas density (ρ_i) is used and how is	Table 2, checklist question D.1.2.2.1.	See the supporting document in which the use of gas compressibility factor is described	**Issue is closed** based on the review of clarification documents provided.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2	Summary of project owner response	Determination team conclusion
determined Z_i .			
CL 15. Please clarify detailed how quality control monitoring data ensured.	Table 2, checklist question D.2.1.	Clarification provided in the PDD text of ver2.0	**Issue is closed** based on clarification made in the text of PDD ver2.0.
CL 16. Please clarify whether the ISO 14000 was confirmed since 2006.	Table 2, checklist question F.1.4.	See copy of certificate provided, it expires 27.12.2011	**Issue is closed** based on the review of clarification documents provided.
CL 17. Please provide clarifications in which media has been announced on project activities and how?	Table 2, checklist question G.1.1.	Legislation of host country does not require publication of intents for the proposed measures. Therefore no comments were obtained.	**Issue is closed** based on the clarification and corrections in the PDD ver2.0 provided.