



BUREAU
VERITAS

VERIFICATION REPORT

CJSC “NATIONAL CARBON SEQUESTRATION FOUNDATION”

VERIFICATION OF THE
RECONSTRUCTION OF THE OXYGEN
COMPRESSOR PLANT AT THE JSC
“ZAPORIZHSTAL”, UKRAINE
(FIFTH PERIODIC FOR PERIOD
01 JULY 2011 – 29 FEBRUARY 2012)

REPORT No. UKRAINE-VER/0411/2011
REVISION No. 02

BUREAU VERITAS CERTIFICATION



VERIFICATION REPORT

Date of first issue: 23/05/2012	Organizational unit: Bureau Veritas Certification Holding SAS
Client: CJSC "National Carbon Sequestration Foundation"	Client ref.: Yuriy Fedorov

Summary:

Bureau Veritas Certification has made the 5th periodic verification of the project "Reconstruction of the oxygen compressor plant at the JSC "Zaporizhstal", Ukraine", ITL project ID UA 1000189, project of CJSC "National Carbon Sequestration Foundation" located in city of Zaporizhzhya, Zaporizhzhya Region, Ukraine, and applying the JI specific approach, on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

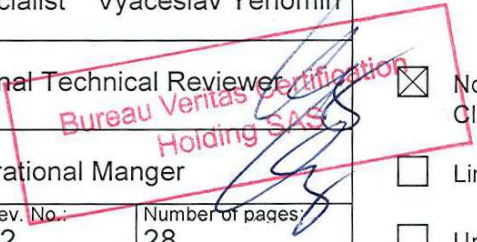
The verification scope is defined as a periodic independent review and ex post determination by the Accredited Entity of the monitored reductions in GHG emissions during defined verification period, and consisted of the following three phases: i) desk review of the monitoring report against project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the verification process is a list of Clarification, Corrective Action Requests, Forward Action Requests (CL, CAR and FAR), presented in Appendix A.

In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in approved project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions. The GHG emission reduction is calculated without material misstatements, and the ERUs issued totalize 73284 tonnes of CO2 equivalent for the monitoring period from 01/07/2011 to 29/02/2012.

Our opinion relates to the project's GHG emissions and resulting GHG emission reductions reported and related to the approved project baseline and monitoring, and its associated documents.

Report No.: UKRAINE-ver/0411/2011	Subject Group: JI
Project title: "Reconstruction of the oxygen compressor plant at the JSC "Zaporizhstal", Ukraine"	
Work carried out by: Team Leader, Lead Verifier: Oleg Skoblyk Team Member, Verifier: Rostislav Topchiy Team Member, Verifier: Vitaliy Minyaylo Team Member, Specialist: Vyaceslav Yeriomin	
Work reviewed by: Ivan Sokolov – Internal Technical Reviewer	
Work approved by: Ivan Sokolov – Operational Manger	
Date of this revision: 31/05/2012	Rev. No.: 02
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1 INTRODUCTION

CJSC “National Carbon Sequestration Foundation” has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project “Reconstruction of the oxygen compressor plant at the JSC “Zaporizhstal”, Ukraine” project of CJSC “National Carbon Sequestration Foundation” located in city of Zaporizhzhya, Zaporizhzhya Region, Ukraine.

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

1.1 Objective

Verification is the periodic independent review and ex post determination by the Accredited Independent Entity of the monitored reductions in GHG emissions during defined verification period.

The objective of verification can be divided in Initial Verification and Periodic Verification.

UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

1.2 Scope

The verification scope is defined as an independent and objective review of the project design document, the project’s baseline study, monitoring plan and monitoring report, and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

The verification 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 monitoring towards reductions in the GHG emissions.

1.3 Verification Team

The verification team consists of the following personnel:

Oleg Skoblyk

Bureau Veritas Certification, Team Leader, Climate Change Lead Verifier

Rostislav Topchiy

Bureau Veritas Certification, Team Member, Climate Change Verifier



Vitaliy Minyaylo
Bureau Veritas Certification, Team Member, Climate Change Verifier

Vyaceslav Yeriomin
Team Member, Technical Specialist

This verification report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification, Internal Technical Reviewer

2 METHODOLOGY

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

In order to ensure transparency, a verification protocol was customized for the project, according to the version 01 of the Joint Implementation Determination and Verification Manual, issued by the Joint Implementation Supervisory Committee at its 19 meeting on 04/12/2009. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from verifying the identified criteria. The verification protocol serves the following purposes:

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

The completed verification protocol is enclosed in Appendix A to this report.

2.1 Review of Documents

The Monitoring Report (MR) submitted by CJSC “National Carbon Sequestration Foundation” and additional background documents related to the project design and baseline, i.e. country Law, Project Design Document (PDD), Guidance on criteria for baseline setting and monitoring, Host party criteria, Kyoto Protocol, Clarifications on Verification Requirements to be Checked by an Accredited Independent Entity were reviewed.



The verification findings presented in this report relate to the Monitoring Report version 01.1 of 10/02/2012, version 02.1 of 18/05/2012 and project as described in the determined PDD.

2.2 Follow-up Interviews

On 28/04/2012 Bureau Veritas Certification performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of CJSC “National Carbon Sequestration Foundation” and JSC “Zaporizhstal” were interviewed during site visit (see References for the list of interviewed persons). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
JSC “Zaporizhstal”	<ul style="list-style-type: none"> ➤ Organizational structure ➤ Responsibilities and authorities ➤ Roles and responsibilities for data collection and processing ➤ Installation of equipment ➤ Data logging, archiving and reporting ➤ Metering equipment control ➤ Metering record keeping system, database ➤ Training of personnel ➤ Quality management procedures and technology ➤ Internal audits and check-ups
Consultant: CJSC “National Carbon Sequestration Foundation”	<ul style="list-style-type: none"> ➤ Monitoring plan ➤ Monitoring report ➤ Deviations from PDD ➤ ERUs calculation model

2.3 Resolution of Clarification, Corrective and Forward Action Requests

The objective of this phase of the verification is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the GHG emission reduction calculation.

If the Verification Team, in assessing the monitoring report and supporting documents, identifies issues that need to be corrected, clarified or improved with regard to the monitoring requirements, it should raise these issues and inform the project participants of these issues in the form of:



- (a) Corrective action request (CAR), requesting the project participants to correct a mistake that is not in accordance with the monitoring plan;
- (b) Clarification request (CL), requesting the project participants to provide additional information for the Verification Team to assess compliance with the monitoring plan;
- (c) Forward action request (FAR), informing the project participants of an issue, relating to the monitoring that needs to be reviewed during the next verification period.

The Verification Team will make an objective assessment as to whether the actions taken by the project participants, if any, satisfactorily resolve the issues raised, if any, and should conclude its findings of the verification.

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

3 VERIFICATION CONCLUSIONS

In the following sections, the conclusions of the verification are stated.

The findings from the desk review of the original monitoring documents and the findings from interviews during the follow up visit are described in the Verification Protocol in Appendix A.

The Clarification, Corrective and Forward Action Requests are stated, where applicable, in the following sections and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in 02 Corrective Action Requests and 04 Clarification Requests.

The number between brackets at the end of each section corresponds to the DVM paragraph.

3.1 Remaining issues and FARs from previous verifications

Remaining issues and FARs from previous verification are absent.

3.2 Project approval by Parties involved (90-91)

The project was approved by the Host party, Ukraine (Letter of Approval No 1514/23/7 of 14/12/2009 issued by National Environmental Investment Agency of Ukraine). Written project approval by Switzerland (Letter of approval for a project under article 6 of the Kyoto Protocol (JI) Ref.



No J294-0485 dated 23/07/2010 issued by the Federal Office for the Environment (FOEN) of Switzerland), the other party involved, has been issued by the NFP of that Party.

The abovementioned written approvals is unconditional.

3.3 Project implementation (92-93)

The project which is being implemented at the JSC “Zaporizhstal” is aimed at reconstruction of oxygen compressor plant (OCP) with a purpose of supply of the oxygen in required level for pig iron and steel production of the steel mill. Also the project serves to replace the worn-out air-separation units. Starting date of operation is 01/01/2008.

The OCP reconstruction at the JSC “Zaporizhstal” is implemented by the construction of the air-separation unit (ASU) VRU-60, manufactured by Air Liquide (France). The air-separation unit VRU-60 will make it possible to provide production needs with the required amount of oxygen upon achievement following effects:

- reduction of electric power consumption;
- reduction in manufacturing water consumption;
- generation of oxygen without additional compression;
- decrease of oxygen losses during production;
- increase of oxygen concentration up to 99,5%.

The implementation of the project by the construction of VRU-60 will make it possible, versus the situation in the absence of this project (reconstruction of OCP by the construction of a new air-separation units KAAr-32), to significantly reduce the electric power consumption supplied for the OCP operation from the power grid of Ukraine. The reduction in the supply of electric power from the grid will enable electric power generation at the electricity-generating plants of Ukraine to be decreased at the equivalent rate. This will lead to a reduction in the emissions of GHG as a result of the reduction in the consumption of fuel-and-energy resources for electric power.

The construction works under the project had lasted from February 2005 till October 2006. The installation work was performed in November 2005–May 2007; start and adjusting work took place in June – December 2007. The air separation unit VRU-60 was put into operation in December 2007 (27/12/2007).

The project was operational during the monitoring period for the period 01/07/2011-29/02/2012.



During the 5th monitoring period some deviations of actual emission reductions from emission reductions estimated in PDD were observed.

Deviations of actual emission reductions from estimated value in July 2011 - February 2012 are insignificant - less than 2%. The deviations are to explained by oxygen consumption decrease at JSC “Zaporizhstal” at the current monitoring period in comparison to the forecasted data used for GHG emission reductions estimation.

The identified areas of concern as to Project implementation, project participants response and BV Certification’s conclusion are described in Appendix A Table 2 (refer to CAR 01, CAR 02).

3.4 Compliance of the monitoring plan with the monitoring methodology (94-98)

The monitoring occurred in accordance with the revised monitoring plan ver.01 of 15/09/2010 which was positively determined in course of the 1st verification under the project. The determined PDD as well as determination of the revision to the monitoring plan within the framework of 1st verification report are listed on the UNFCCC JI website.

For calculating the emission reductions, key factors, such as electric power consumption by the OCP, oxygen production in the air-separation unit VRU-60, oxygen production in the reserved air-separation units, distributed oxygen, number of days then the OCP was operated in operating conditions, output of the air-separation units (KAAR-32) in operating conditions, emission factor during electric power generation supplied by the power system of Ukraine, influencing the baseline emissions and the activity level of the project and the emissions as well as risks associated with the project were taken into account, as appropriate.

Data sources used for calculating emission reductions, such as logbook records, monthly reports of JSC “Zaporizhstal”, the study of standardized emission factors for the Ukrainian electricity grid, internal standards, are clearly identified, reliable and transparent.

Emission factors, including default emission factors, are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.

The calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner.



The identified areas of concern as to Compliance of the monitoring plan with the monitoring methodology, project participants response and BV Certification's conclusion are described in Appendix A Table 2 (refer to CL 01, CL 02).

3.5 Revision of monitoring plan (99-100)

In course of the previous verifications under the project, the project participants introduced the revisions to the approved monitoring plan from the PDD. The revisions to the approved monitoring plan were positively determined during the first verification and followed during current (fifth) monitoring period (see category 1 documents References 1, 2).

In course of the 5th monitoring (01/07/2011 – 29/02/2012) no new revision of the monitoring plan has happen.

3.6 Data management (101)

The data and their sources, provided in monitoring report, are clearly identified, reliable and transparent. The implementation of data collection procedures is in accordance with the monitoring plan, including the quality control and quality assurance procedures. The procedures of GHGs emission reductions monitoring are determined by the Company standard STP 8.2-13-11 "Integrated quality system. Monitoring of GHGs emissions reductions", approved by Order #552 dated on 12/12/2011.

In monitoring of GHGs emission reductions under the project the following departments of JSC "Zaporizhstal" are involved:

- Laboratory of environment protection;
- Power bureau of Chief Power Engineer Department;
- Recording bureau of Chief Power Engineer department;
- Technical bureau of Plant of networks and substations;
- Technical bureau of Oxygen compressor plant.

Scheme of collecting and carrying of monitoring data for GHGs emission reductions are shown on the fig. B.2-1 of the Monitoring report. Units of company included in the monitoring of GHGs emissions, responsible specialists and their functions are shown in table B.2-1 of the Monitoring report.

The quality assurance and quality control procedures are determined by the Standard of STP 8.2-13-11 "Monitoring of GHG emission reductions" and other respective internal documents.

The function of the monitoring equipment, including its calibration status, is in order. Automation and metrological department of JSC "Zaporizhstal" is responsibility for organization of monitoring meters verification.



Verification of meters are provided by State enterprise “Zaporizhzhya Scientific production center of standardization, metrology and certification”.

The evidence and records used for the monitoring are maintained in a traceable manner. All necessary information for monitoring of GHGs emission reductions are stored in paper and electronic files and will be saved till the crediting period and for two years after the last operation with ERUs from the project. The procedures of monitoring data archiving and responsible person are determined by STP 8.2-13-11 “Integrated quality system. Monitoring of GHGs emissions reductions” and other internal documents. The description of data processing and storage is described in the section B.2. of the monitoring report.

The data collection and management system for the project is in accordance with the monitoring plan.

The identified areas of concern as to Data management, project participants response and BV Certification’s conclusion are described in Appendix A Table 2 (refer to CL 03, CL 04).

3.7 Verification regarding programmes of activities (102-110)

Not applicable.

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the 5th periodic verification of the project “Reconstruction of the oxygen compressor plant at the JSC “Zaporizhstal”, Ukraine” project in city of Zaporizhzhya, Zaporizhzhya Region, Ukraine, which applies the JI Specific approach. The verification 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 verification consisted of the following three phases: i) desk review of monitoring report against the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion.

The management of CJSC “National Carbon Sequestration Foundation” is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions of the project on the basis set out within the project Monitoring Plan as per determined changes. The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of



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GHG emission reductions from the project, is the responsibility of the management of the project.

According to the results of the Monitoring Report for the project “Reconstruction of the oxygen compressor plant at the JSC “Zaporizhstal”, Ukraine” for the monitoring period from 01/07/2011 to 29/02/2012, the actual achieved GHG emission reductions are larger than it was indicated as prognostic estimation in the PDD. According to Revision of the monitoring plan Version 01 of 15/09/2010, emission reductions for period 01/07/2011 - 29/02/2012 were expected 72132 tonnes of CO₂ equivalent. According Monitoring Report version 02.1 emission reductions achieved are 73284 tonnes of CO₂ equivalent for period 01/07/2011 - 29/02/2012. The reasons of the difference between the prognostic estimation of emission reductions in the PDD and the actual emission reductions are explained in sections D.5.

Bureau Veritas Certification verified the Project Monitoring Report version 02.1 for the reporting period as indicated below. Bureau Veritas Certification confirms that the project is as planned and described in approved project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions.

Bureau Veritas Certification can confirm that the GHG emission reduction is calculated without material misstatements. Our opinion relates to the project’s GHG emissions and resulting GHG emissions reductions reported and related to the approved project baseline and monitoring, and its associated documents. Based on the information we have seen and evaluated, we confirm the following statement:

Reporting period: From 01/07/2011 to 29/02/2012

For the period from 01/07/2011 to 31/12/2011

Baseline emissions	:	306826	tonnes of CO ₂ equivalent.
Project emissions	:	251234	tonnes of CO ₂ equivalent.
Emission Reductions	:	55592	tonnes of CO ₂ equivalent.

For the period from 01/01/2012 to 29/02/2012

Baseline emissions	:	102559	tonnes of CO ₂ equivalent.
Project emissions	:	84867	tonnes of CO ₂ equivalent.
Emission Reductions	:	17692	tonnes of CO ₂ equivalent.

Total for the period from 01/07/2011 to 29/02/2012

Baseline emissions	:	409385	tonnes of CO ₂ equivalent.
Project emissions	:	336101	tonnes of CO ₂ equivalent.
Emission Reductions	:	73284	tonnes of CO ₂ equivalent.



5 REFERENCES

Category 1 Documents:

Documents provided by CJSC “National Carbon Sequestration Foundation” that relate directly to the GHG components of the project.

- /1/ Monitoring Report, version 01, dated 15 September 2010 (changed monitoring plan).
- /2/ Verification Report, 2010 (determination of Monitoring Plan changes).
- /3/ Monitoring Report, version 01.1, dated 02 April 2012
- /4/ Monitoring Report, version 02.1, dated 18 May 2012
- /5/ Project Design Document, version 03, dated 03 August 2009
- /6/ Letter of Approval from National Environmental Investment Agency of Ukraine ref. No 1514/23/7, issued on 14/12/2009
- /7/ Letter of approval for a project under article 6 of the Kyoto Protocol (JI) of the Federal Office for the Environment (FOEN) of Switzerland ref. No J294-0485, issued on 23/07/2010
- /8/ Excel spreadsheet of the emission reductions calculation version
- /9/ Determination and Verification Manual, version 01.

Category 2 Documents:

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

№ п/п	Name of the document
1.	Permission №1412336600-24 on pollutants emissions into the atmosphere by stationary sources (30.12.2009-29.12.2019)
2.	Report on air protection form 2-TP "air" in 2011
3.	Report on air protection form 2-TP "air" in 2011 in the 3rd quarter of 2011
4.	The Standard 8.2-13-11 Monitoring of the reduction of greenhouse gases
5.	Report on the consumption of electricity. OCP, February, 2012
6.	Report on the consumption of electricity. OCP, January, 2012
7.	Report on the consumption of electricity. OCP, December, 2011
8.	Report on the consumption of electricity. OCP, November, 2011
9.	Report on the consumption of electricity. OCP, October, 2011
10.	Report on the consumption of electricity. OCP, September, 2011
11.	Report on the consumption of electricity. OCP, August, 2011

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12.	Report on the consumption of electricity. OCP, July, 2011
13.	Form №2. Consumption of electricity on manufacturing. Oxygen compressor plant, July, 2011
14.	Form №2. Consumption of electricity on manufacturing. Oxygen compressor plant, August, 2011
15.	Form №2. Consumption of electricity on manufacturing. Oxygen compressor plant September, 2011
16.	Form №2. Consumption of electricity on manufacturing. Oxygen compressor plant, October, 2011
17.	Form №2. Consumption of electricity on manufacturing. Oxygen compressor plant, November, 2011
18.	Form №2. Consumption of electricity on manufacturing. Oxygen compressor plant, December, 2011
19.	Form №2. Consumption of electricity on manufacturing. Oxygen compressor plant, January, 2012
20.	Form №2. Consumption of electricity on manufacturing. Oxygen compressor plant, February, 2011
21.	Register of the primary electricity metering. The daily sheet. (28.06.2011-16.08.2011)
22.	Register of the primary electricity metering. The daily sheet. (16.08.2011-01.10.2011)
23.	Register of the primary electricity metering. The daily sheet. (02.10.2011-21.11.2011)
24.	Register of the primary electricity metering. The daily sheet. (22.11.2011-09.01.2012)
25.	Register of the primary electricity metering. The daily sheet. (10.01.2012-27.02.2012)
26.	Automated system of metering of energy consumption in the shops of JSC "Zaporizhstal"
27.	Report on electricity consumption. OCP, 29.02.2012
28.	Protocol №11-229 of 28.10.2011 on internal audit of management systems. OCP
29.	Order №18 of 09.11.2011 on oxygen compressor plant
30.	Protocol №11-189 of 01.09.2011 on internal audit of management systems. OCP
31.	Certificate of verification of the working measuring instrument № 19-20/4135-09. Ultrasonic gas meter АПГ-31.2 №171
32.	Passport. Ultrasonic gas meter АПГ-31.2 № 171
33.	Passport. Disk-250M №1511
34.	Passport. ДМ-3583 №40445
35.	Passport. КСД-3 №118805
36.	Passport. Saphyr-5440 №11802921
37.	Passport. СПГ-762. №1355
38.	Passport. Disk-250M №53353



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39.	Passport. ДМ-3583 №58848
40.	Passport. КСД-250 №68583
41.	Passport. Disk-250M №53355
42.	Passport. ДМ-3583 №2913
43.	Passport. КСД-250 №68584
44.	Passport. Disk-250M №53356
45.	Passport. ДМ-3583 №14294
46.	Passport. КСД-250 №73535
47.	Passport. СПГ-762. №1352
48.	Passport. Saphyr-5420 №08282132
49.	Passport. ДМ-3583 №61341
50.	Passport. КСД-3 №202713
51.	Passport. Rosemount 3051-CD №8066805
52.	Passport. Rosemount 3051-CD №8066806
53.	Passport. ДМ-3583 №481
54.	Passport. КСД-3 №250891
55.	Passport. ДМ-3583 №24020
56.	Passport. КСД-3 №59498
57.	Passport. Electricity meter EA05RALX-B-4 №01089275
58.	Passport. Electricity meter EA05RALX-B-4 №1103414
59.	Passport. Electricity meter EA05RALX-B-4 №01103386
60.	Passport. Electricity meter EA05RALX-B-4 №01059589
61.	Passport. Electricity meter EA05RALX-B-4 №01126401
62.	Passport. Electricity meter EA05RALX-B-4 №01144050
63.	Passport. Electricity meter EA05RALX-B-4 №01103398
64.	Passport. Electricity meter EA05RALX-B-4 №01103406
65.	Passport. Electricity meter EA05RALX-B-4 №01059551
66.	Passport. Electricity meter EA05RALX-B-4 №01059594
67.	Passport. Electricity meter EA05RALX-B-4 №01050775
68.	Passport. Electricity meter EA05RALX-B-4 №01050766
69.	Passport. Electricity meter EA05RALX-B-4 №01089278
70.	Passport. Electricity meter EA05RALX-B-4 №01059555
71.	Passport. Electricity meter EA05RALX-B-4 №01059531
72.	Passport. Electricity meter EA05RALX-B-4 №01059569
73.	Passport. Electricity meter EA05RL-B-4 №01103338
74.	Passport. Electricity meter EA05RL-B-4 №01103311
75.	Passport. Electricity meter EA05RL-B-4 №01103220
76.	Passport. Electricity meter EA05RL-B-4 №01103221
77.	Passport. Electricity meter EA05RALX-B-4 №01050771
78.	Passport. Electricity meter EA05RALX-B-4 №01059590
79.	Passport. Electricity meter EA05RALX-B-4 №01050778
80.	Passport. Electricity meter EA05RALX-B-4 №01059584

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81.	Passport. Electricity meter EA05RL-B-4 №01103223
82.	Passport. Electricity meter EA05RL-B-4 №01103231
83.	Passport. Electricity meter EA05RL-B-4 №01103339
84.	Passport. Electricity meter EA05RL-B-4 №01103288
85.	Passport. Electricity meter EA05RALX-B-4 №01089275
86.	Passport. Electricity meter №01089275. Attachment CD-26/9
87.	Passport. Electricity meter №01103414. Attachment CD-21/27
88.	Passport. Electricity meter №01103386. Attachment CD-29/29
89.	Passport. Electricity meter №01059589. Attachment CD-20/12
90.	Passport. Electricity meter №01126401. Attachment CD-23/14
91.	Passport. Electricity meter №01144050. Attachment CD-28/20
92.	Passport. Electricity meter №01103398. Attachment CD-27/18
93.	Passport. Electricity meter №01103406. Attachment CD-30/28
94.	Passport. Electricity meter №01059551. Attachment CD-32/45
95.	Passport. Electricity meter №01059594. Attachment CD-33/49
96.	Passport. Electricity meter №01050775. Attachment CD-31/47
97.	Passport. Electricity meter №01050766. Attachment CD-34/51
98.	Passport. Electricity meter №01089278. Attachment CD-22/42
99.	Passport. Electricity meter №01059555. Attachment CD-36/48
100.	Passport. Electricity meter №01059531. Attachment CD-35/46
101.	Passport. Electricity meter №01059569. Attachment AD-1/19
102.	Aggregate log VRU-60
103.	Order №713 of 26.12.2011 regarding the overhaul of air settings VRU-60
104.	The decision of Zaporizhzhya City Council №552/6 of 07.12.2007 "On approval of the act of state examining commission on acceptance into service of the oxygen plant with installation of air distribution unit on the territory of the public corporation "Zaporizhzhya metallurgical plant "Zaporizhstal".
105.	Act of the State Commission of 12.14.2007 acceptance into service of the completed construction of the object "Reconstruction of the oxygen compressor plant with the construction of VRU-60 on the territory of JSC« ZMK "Zaporizhstal"
106.	Conformance Certificate Series AA №04132 on the products "air distribution unit 2000 t/d capacity of 60,000 m3 of gaseous oxygen - VRU-60 in the kit".
107.	Photo. The air distribution unit VRU-60
108.	Certificate № 43 of apparatus worker Zhuravl' N.P.
109.	Previous Protocol of Acceptance of the settings VRU-60
110.	Photo. Meter Rosemount 3051CD №8066805 (production of oxygen in the VRU-60
111.	Photo. Meter Rosemount 3051CD №8066806 (production of oxygen in the ASE-60)



112.	Photo. Meter ВФС-М 2H000 №3539 (production of oxygen in CTC-35-3)
113.	Photo. Meter ВФС-М 240R0 №15506 (production of oxygen in CTC-35-3)
114.	Photo. Meter КСФ-3 №1119 (production of oxygen in KTK-35 -3)
115.	Photo. Meter КСФ-3 № 18 (production of oxygen in KTK-35 -3)
116.	Photo. КСД-250 Meter №73535 (production of oxygen in Kap-30)
117.	Photo. Meter Disk-250 №53356 (production of oxygen in Kap-30)
118.	Photo. Meter Disk-250 №53356 (production of oxygen in БР-30)
119.	Photo. Meter Disk-250 №53355 (production of oxygen in БР-30)
120.	Photo. Meter КСД-250 №68583 (production of oxygen in the БР-2)
121.	Photo. Meter Disk-250 №53353 (production of oxygen in the БР-2)
122.	Photo. Meter СПГ-762 №1355 (putting into the open-hearth shop №1)
123.	Photo. Meter Safir-М №11802921 (putting into open-hearth shop №1)
124.	Photo. Meter СПГ-762 №1352 (putting into the open-hearth shop №3)
125.	Photo. Meter Safir 5420 №11802921 (putting into open-hearth shop №3)
126.	Photo. Meter КСД-3 №104941 (putting into the open-hearth shop №3)
127.	Photo. Meter КСД-3 №118805 (putting into the JSC "Dneprospetsstal")
128.	Photo. Meter КСД -3 №250891 (putting into the gas plant - autogenous necessities)
129.	Photo. Meter КСД -3 №59498 (putting into the gas plant - autogenous necessities)
130.	Photo. Meter АПГ 31.2 №171 (putting into CHP)
131.	Photo. Meter Disk-250 № 1511 (putting into the CHP)
132.	Certificate №43 of apparatus worker of air distribution Zhuravel N.P.
133.	Special training program on safety of workers in oxygen compressor plant on the profession "apparatus worker of air distribution"
134.	Internship Program for workers of oxygen compressor plant for a profession with high risk.
135.	Register of oxygen production by VRU-60
136.	Form of accounting "balance of oxygen for the period from 01.07.2011 to 31.07.2011»
137.	Form of accounting "balance of oxygen for the period from 01.08.2011 to 31.08.2011»
138.	Form of accounting "balance of oxygen for the period from 01.09.2011 to 30.09.2011»



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139.	Form of accounting "balance of oxygen for the period from 01.10.2011 to 31.10.2011»
140.	Form of accounting "balance of oxygen for the period from 01.11.2011 to 30.11.2011»
141.	Form of accounting "balance of oxygen for the period from 01.12.2011 to 31.12.2011»
142.	Form of accounting "balance of oxygen for the period from 01.02.2012 to 29.02.2012»
143.	Form of accounting "balance of oxygen for the period from 01.01.2012 to 31.01.2012»
144.	Form №1 Production and distribution of oxygen in July, 2011
145.	Form №1 Production and distribution of oxygen in August, 2011
146.	Form №1 Production and distribution of oxygen in September, 2011
147.	Form №1 Production and distribution of oxygen in October, 2011
148.	Form №1 Production and distribution of oxygen in November, 2011
149.	Form №1 Production and distribution of oxygen in December, 2011
150.	Form №1 Production and distribution of oxygen in January, 2012
151.	Form №1 Production and distribution of oxygen in February, 2012
152.	Form №2 Electricity consumption for the production of oxygen in the oxygen compressor plant in July, 2011
153.	Form №2 Electricity consumption for the production of oxygen in the oxygen compressor plant in August, 2011
154.	Form №2 Electricity consumption for the production of oxygen in the oxygen compressor plant in September, 2011
155.	Form №2 Electricity consumption for the production of oxygen in the oxygen compressor plant in October, 2011
156.	Form №2 Electricity consumption for the production of oxygen in the oxygen compressor plant in November, 2011
157.	Form №2 Electricity consumption for the production of oxygen in the oxygen compressor plant in December, 2011
158.	Form №2 Electricity consumption for the production of oxygen in the oxygen compressor plant in January, 2012
159.	Form №2 Electricity consumption for the production of oxygen in the oxygen compressor plant in February, 2012
160.	Form №3 Summary data on the work of oxygen compressor plant in July, 2011
161.	Form № 3 Summary data on the work of oxygen compressor plant in August, 2011
162.	Form №3 Summary data on the work of oxygen compressor plant in September, 2011
163.	Form №3 Summary data on the work of oxygen compressor plant in October, 2011
164.	Form №3 Summary data on the work of oxygen compressor plant



	in November, 2011
165.	Form №3 Summary data on the work of oxygen compressor plant in December, 2011
166.	Form №3 Summary data on the work of oxygen compressor plant in January, 2012
167.	Form №3 Summary data on the work of oxygen compressor plant in February, 2012
168.	Diagram "Consumption of oxygen by the open-hearth shop", 31.08.2011
169.	Diagram "Consumption of oxygen by the open-hearth shop", 25.08.2011
170.	Diagram "Consumption of oxygen by the open-hearth shop", 26.08.2011
171.	Shift register of operators of VRU-60
172.	The initial form of self-supporting data for accounting output and consumption of fuel by new oxygen unit VRU-60 on 30.12.2011
173.	The initial form of self-supporting data for accounting output and consumption of fuel by new oxygen unit VRU-60 on 29.02.2012
174.	Production Report of the oxygen compressor plant in July, 2011
175.	Production Report of the oxygen compressor plant in November, 2011
176.	Production Report of the oxygen compressor plant in January, 2012
177.	Production Report of the oxygen compressor plant in February, 2012

Persons interviewed:

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

- /1/ I. Kholina – Head of the laboratory of environment protection of JSC “Zaporizhstal”
- /2/ V. Jarysh – Deputy chief power engineer department of JSC “Zaporizhstal”
- /3/ A. Grabko – Head of automation and metrology department of JSC “Zaporizhstal”
- /4/ Y. Akimov – Deputy head of oxygen compressor plant of JSC “Zaporizhstal”
- /5/ M. Kozachenko – Head of technological bureau of the Plant of



networks and substation of JSC “Zaporizhstal”

- /6/ V. Ilchenko – Deputy head of the Plant of networks and substation of JSC “Zaporizhstal”
- /7/ R. Kazakov – Principal specialist of CJSC “National CarbonSequestration Foundation”



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APPENDIX A: VERIFICATION PROTOCOL

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Check list for verification, according to the JOINT IMPLEMENTATION DETERMINATION AND VERIFICATION MANUAL (Version 01)

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Project approvals by Parties involved				
90	Has the DFPs of at least one Party involved, other than the host Party, issued a written project approval when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest?	DFP of Switzerland have issued written project approval (LoA) when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines.	OK	OK
91	Are all the written project approvals by Parties involved unconditional?	Yes, all the written project approvals by Parties involved are unconditional.	OK	OK
Project implementation				
92	Has the project been implemented in accordance with the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	<p>The project has been implemented in accordance with the PDD which was positively determined. The construction works under the project had lasted from February 2005 till October 2006. The installation work was performed in November 2005–May 2007; start and adjusting work took place in June – December 2007. The air separation unit VRU-60 was put into operation in December 2007 (27/12/2007).</p> <p>CAR 01. There are no numbering and table names in the monitoring report. Please make the appropriate changes.</p> <p>CAR 02. Please indicate in the monitoring report, which the organization of Switzerland is a party to the project.</p>	CAR 01 CAR 02	OK OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
93	What is the status of operation of the project during the monitoring period?	Monitoring report indicated the current status of the project activity implementation. Based on provided materials, there is known that all project equipments were operational in the reporting period.	OK	OK
Compliance with monitoring plan				
94	Did the monitoring occur in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	Data used for calculation of emissions reduction based on information that confirmed by JSC "Zaporizhstal" documents. CL 01. Please give an explanation of why the numbering of the formulas does not match the section number («B» - «D»)?	CL 01	OK
95 (a)	For calculating the emission reductions or enhancements of net removals, were key factors, e.g. those listed in 23 (b) (i)-(vii) above, influencing the baseline emissions or net removals and the activity level of the project and the emissions or removals as well as risks associated with the project taken into account, as appropriate?	All key factors influencing the baseline emissions or net removals and the activity level of the project and the emissions or removals as well as risks associated with the project were taken into account, as appropriate for calculating the emission reductions or enhancements of net removals.	OK	OK
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	The data sources used for calculating emission reductions are clearly identified, reliable and transparent. Data sources include logbook records, monthly reports of JSC "Zaporizhstal", the study of standardized emission factors for the Ukrainian electricity grid, internal standards.	OK	OK
95 (c)	Are emission factors, including default emission factors, if used for calculating the emission reductions or enhancements of net removals, selected by carefully balancing accuracy and reasonableness, and appropriately justified of	Emission factors, including default emission factors, if used for calculating the emission reductions or enhancements of net removals, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.	CL 02	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	the choice?	CL 02. Please provide justification why oxygen compressor plant at JSC "Zaporizhstal" are referred to the first class of electricity consumers.		
95 (d)	Is the calculation of emission reductions or enhancements of net removals based on conservative assumptions and the most plausible scenarios in a transparent manner?	The calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner. As a result of documents revision, all data connected with estimation of emission reduction are consistent through the Monitoring report and excel spreadsheets with calculation.	OK	OK
Applicable to JI SSC projects only				
96	Is the relevant threshold to be classified as JI SSC project not exceeded during the monitoring period on an annual average basis? If the threshold is exceeded, is the maximum emission reduction level estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined?	N/a	N/a	N/a
Applicable to bundled JI SSC projects only				
97 (a)	Has the composition of the bundle not changed from that is stated in F-JI-SSCBUNDLE?	N/a	N/a	N/a
97 (b)	If the determination was conducted on the basis of an overall monitoring plan, have the project participants submitted a common monitoring report?	N/a	N/a	N/a
98	If the monitoring is based on a monitoring plan that provides for overlapping monitoring periods, are the monitoring periods per component of the project clearly specified in the monitoring report?	N/a	N/a	N/a



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	Do the monitoring periods not overlap with those for which verifications were already deemed final in the past?			
Revision of monitoring plan				
Applicable only if monitoring plan is revised by project participant				
99 (a)	Did the project participants provide an appropriate justification for the proposed revision?	N/a	N/a	N/a
99 (b)	Does the proposed revision improve the accuracy and/or applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans?	N/a	N/a	N/a
Data management				
101 (a)	Is the implementation of data collection procedures in accordance with the monitoring plan, including the quality control and quality assurance procedures?	All data necessary for the CO ₂ emission reductions calculation is collected. The scheme of data flow and a description of reporting procedures introduced in Monitoring report. The implementation of data collection procedures are in accordance with the monitoring plan included in the determined PDD. Position and roles of person in the GHG data management process are defined in the monitoring report and are implemented on-site.	OK	OK
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	All monitoring equipments have calibration. It is calibrated with periodic frequency (passport states the calibration frequency for every device) according to the national regulations. During site visit verifiers received and reviewed passports and/or certificates on calibration of all measurement	CL 03	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		equipments. CL 03. Please send documents are proofing of replacement electricity meters № 01126401, 01126395, 01126402, 01126399, 01126397.		
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	The evidence and records used for the monitoring are maintained on site of some devices and in responsible departments in a traceable manner. CL 04. According to the data registered in the aggregate log VRU-60, in the second half of 2011 booster compressor stopped. Section B.5 Monitoring Report states that the special conditions of the equipment have not been identified. Please provide clarification on the impact of booster compressor stops on the results of monitoring the reduction of greenhouse gas emissions.	CL 04	OK
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	The data collection and management system for the project is in accordance with the approved monitoring plan. Implementation of monitoring system was checked through site visit, and concluded that monitoring system is completely in accordance with the monitoring plan. This fact is also confirmed by the documents.	OK	OK
Verification regarding programs of activities (additional elements for assessment)				
102	Is any JPA that has not been added to the JI PoA not verified?	N/A	N/A	N/A
103	Is the verification based on the monitoring reports of all JPAs to be verified?	N/A	N/A	N/A
103	Does the verification ensure the accuracy and conservativeness of the emission reductions or enhancements of removals generated by each JPA?	N/A	N/A	N/A



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
104	Does the monitoring period not overlap with previous monitoring periods?	N/A	N/A	N/A
105	If the AIE learns of an erroneously included JPA, has the AIE informed the JISC of its findings in writing?	N/A	N/A	N/A
Applicable to sample-based approach only				
106	Does the sampling plan prepared by the AIE: (a) Describe its sample selection, taking into account that: (i) For each verification that uses a sample-based approach, the sample selection shall be sufficiently representative of the JPAs in the JI PoA such extrapolation to all JPAs identified for that verification is reasonable, taking into account differences among the characteristics of JPAs, such as: – The types of JPAs; – The complexity of the applicable technologies and/or measures used; – The geographical location of each JPA; – The amounts of expected emission reductions of the JPAs being verified; – The number of JPAs for which emission reductions are being verified; – The length of monitoring periods of the JPAs being verified; and – The samples selected for prior verifications, if any?	N/A	N/A	N/A
107	Is the sampling plan ready for publication through the secretariat along with the verification report and supporting documentation?	N/A	N/A	N/A



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
108	Has the AIE made site inspections of at least the square root of the number of total JPAs, rounded to the upper whole number? If the AIE makes no site inspections or fewer site inspections than the square root of the number of total JPAs, rounded to the upper whole number, then does the AIE provide a reasonable explanation and justification?	N/A	N/A	N/A
109	Is the sampling plan available for submission to the secretariat for the JISC.s ex ante assessment? (Optional)	N/A	N/A	N/A
110	If the AIE learns of a fraudulently included JPA, a fraudulently monitored JPA or an inflated number of emission reductions claimed in a JI PoA, has the AIE informed the JISC of the fraud in writing?	N/A	N/A	N/A



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Table 2 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
CAR 01. There are no numbering and table names in the monitoring report. Please make the appropriate changes.	92	The table names and their numbering are provided in the monitoring report.	CAR 01 is closed due to the correction made in the MR.
CAR 02. Please indicate in the monitoring report, which the organization of Switzerland is a party to the project.	92	The buyer of emission reduction units achieved by the JI project implementation is OHANA LLP according to the Contract #VP.1323.37515.1173I dated on 01/07/2011 (attached). The information about project approval is stated in the section A.3. of the monitoring report.	CAR 02 is closed.
CL 01. Please give an explanation of why the numbering of the formulas does not match the section number («B» - «D»)?	94	The used numbering of the formulas corresponds to the approved monitoring plan stated in the Revision of the monitoring plan Version 01 of 15.09.2010. Addition to the Monitoring report version 05 of 27.11.2009 for period 01.01.2008-31.12.2008. The necessary clarification is provided in the section B of the monitoring report.	Based on the information received, CL 01 is closed.



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<p>CL 02. Please provide justification why oxygen compressor plant at JSC “Zaporizhstal” are referred to the first class of electricity consumers.</p>	95 (c)	<p>The class of the electricity consumers at the oxygen compressor plant is confirmed by the attached certificates of electricity consumption at JSC “Zaporizhstal”. The choice of the emission factor value for the first class of electricity consumers is based on conservative approach and verified in the previous monitoring period.</p>	Based on the information received, CL 02 is closed.
<p>CL 03. Please send documents are proofing of replacement electricity meters № 01126401, 01126395, 01126402, 01126399, 01126397.</p>	101 (b)	<p>The certificates of replaced and installed electricity meters are attached to the monitoring report.</p>	Based on the information received, CL 03 is closed.
<p>CL 04. According to the data registered in the aggregate log VRU-60, in the second half of 2011 booster compressor stopped. Section B.5 Monitoring Report states that the special conditions of the equipment have not been identified. Please provide clarification on the impact of booster compressor stops on the results of monitoring the reduction of greenhouse gas emissions.</p>	101 (c)	<p>The section B.5 of the monitoring report is completed with the clarification of identified special equipment regimes exploitation on the results of monitoring the reduction of greenhouse gas emissions.</p>	Based on the information received, CL 04 is closed.