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Verification Report

Noun Energy Romania SRL

First Periodic Verification of the JI track 1 project Municipal Cogeneration Targoviste (Romania)

Report No. 1096910

27 April 2011

TÜV SÜD Industrie Service GmbH
Carbon Management Service
Westendstr. 199 - 80686 Munich - GERMANY

Industrie Service

Report No.	Date of first issue	Version	Date of this revision	Certificate No.
1096910	09-02-2011	02	27-04-2011	

Subject:	First Periodic Verification (for 2006 and 2007 a pre-JI verification has been done)

Executing Operational Unit:

TÜV SÜD Industrie Service GmbH, Carbon Management Service
Westendstrasse 199 - 80686 Munich, Federal Republic of Germany

Project Participant:

Nuon Energy Romania SRL, Frigoriferului Nr 6 Hala 4, Sibiu, România (AIE contractor)

N.V. Nuon Warmte, Utrechtseweg 68, 6812 AH Arnhem, Netherlands

Registration number / Project Title	RO 1000173 / Municipal Cogeneration Targoviste (Romania) Technical Areas: 1.2 /3.1
Monitoring period:	01-01-2008 to 31-12-2008
Published Monitoring Report (version/date)	Version 01 / 13-01-2009
Final Monitoring Report (version/date)	Version 02 / 23-01-2009

Summary:

TÜV SÜD Industrie Service GmbH has performed the first periodic verification for 2008 of the JI Track 1 project: "Municipal Cogeneration Targoviste (Romania)" that is registered by the JISC (see link: http://ji.unfccc.int/JIITLProject/DB/JZ3NVK4GDR3I7BVX7BWLWLVBY5ZPTD/details. The management of Nuon Energy Romania SRL is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions. A document review, followed by a site visit was conducted to verify the information submitted by the project participant regarding the present verification period. Based on the assessment carried out, the verifier confirms:

- that the project has been implemented and operated in accordance with the description given in the registered PDD (24-05-2004) with the attachment for baseline setting (05-12-2008).
- that the project is completely implemented as described in the PDD with attachment.
- that the monitoring plan complies with the applied methodology (described in PDD with attachment) and the monitoring has been carried out as exactly following the monitoring plan.

Installed equipments essential for generating emission reductions run reliably and the meters are calibrated appropriately. The project is generating emission reductions that are to be issued as ERUs.

The verifier can confirm that the GHG emission reductions are calculated without material misstatements. Our opinion refers to the project's GHG emissions and resulting GHG emission reductions reported, both determined due to the valid and project's baseline, its monitoring plan and its associated documents. Based on the information we have seen and evaluated we confirm that the implementation of the project resulted in **52,523 t CO2e** in **2008**. The figures are lower than the ex-ante estimated figures in the PDD. This is due to a lower demand than expected.

Verification team:	Technical Reviewer:
• ATL Robert Mitterwallner • Verifier Madis Maddison • Trainee Laura Vaida	Thomas Kleiser

Abbreviations

AAU	Assigned Amount Unit
ACM	Approved Consolidated Methodology
AIE	Accredited Independent Entity (also verifier)
CAR	Corrective Action Request
DFP	Designated Focal Point
DVM	Determination and Verification Manual, Annex 4 of JISC 19 report
ER	Emissions reduction
ERU	Emission Reduction Unit
FAR	Forward Action Request
GHG	Greenhouse Gas
IETA	International Emission Trading Association
JI	Joint Implementation
KP	Kyoto Protocol
MP	Monitoring Plan
MR	Monitoring Report
PDD	Project Design Document
PP	Project Participant
PVC	Periodical Verification Checklist
SD	Sustainable Development
TÜV SÜD	TÜV SÜD Industrie Service GmbH, Carbon Management Service
UNFCCC	UN Framework Convention on Climate Change
VER	Verified Emission Reductions
VP	Verification Protocol

Main Documents (referred to in this report)

Methodology (name / version)	Project specific	
Registered PDD:	PDD (24-05-2004) /IRL1/ and attachment to the orginal PDD for baseline setting of the Municipal Cogeneration Târgovişte Project in Romania (05-12-2008) /IRL2/	
	Version	Date
Published Monitoring Report	01	13-01-2009 for the year 2008 /IRL3/
Final Monitoring Report	02	23-01-2009 or the years 2008 /IRL4/
Project documentation link:	http://ji.unfccc.int/JIITLProject/DB/JZ3NVK4GDR3I7BVX7BWLWLVBY5ZPTD/details	

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1. INTRODUCTION

1.1 Objective

Nuon Energy Romania SRL ordered independent first periodic verification services for the MUNICIPAL COGENERATION TÂRGOVIŞTE (ROMANIA) by TÜV SÜD. For the years 2006 and 2007 pre-JI verification has been performed by TÜV SÜD.

The objective of the verification work is to check the compliance of the project with the requirements of paragraph 62 of the CDM Modalities and Procedures. According to this assessment TÜV SÜD shall:

- ensure that the project activity has been implemented and operated as per the PDD with attachment "MUNICIPAL COGENERATION TÂRGOVIŞTE (ROMANIA)" Version PDD 24-05-2004 with attachment from 05-12-2008, and that all physical features (technology, project equipment, monitoring and metering equipment) of the project are in place,
- ensure that the published MR and other supporting documents provided are complete and verifiable and in accordance with applicable JI requirements,
- ensure that actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the project specific methodology,
- evaluate the data recorded and stored as per Monitoring Plan described in PDD with attachment.
- The official link to the published documents is:

http://www.netinform.net/KE/Wegweiser/Guide22.aspx?ID=5973&Ebene1_ID=50&Ebene2_ID=1901&mode=5

The verified emission reduction figures are lower than the ex-ante estimated figures in the PDD that is due to a lower demand than expected. However, this fact does not affect the verification of the project.

1.2 Scope

The verification scope is defined as an independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the Accredited Independent Entity. The verification is based on the submitted monitoring report, the determined project design documents including its monitoring plan and re-determination report, initial, first and second periodic verification report, the applied monitoring methodology, relevant decisions, clarifications and guidance from the CMP and the JISC and any other information and references relevant to the project activity's resulting emission reductions. These documents are reviewed against the requirements of the Kyoto Protocol, the CDM Modalities and Procedures and related rules and guidance.

TÜV SÜD has, based on the requirements in the DVM applied a risk based approach. The principles of accuracy and completeness, relevance, reliability and credibility were combined with a conservative approach to establish a traceable and transparent verification opinion.

The verification considers both quantitative and qualitative information on emission reductions.

The verification is not meant to provide any consultancy towards the client. However, stated requests for clarifications, corrective and/or forward actions may provide input for improvement of the monitoring activities.

1.3 GHG Project Description

Project activity:	"MUNICIPAL COGENERATION TÂRGOVIŞTE (ROMANIA)"
UNFCCC registration number:	1096910
Project Participants:	City Hall Târgovişte – Ms. Ana George Bogdan – Vice Mayor (owner of Termica); S.C. Termica S.A. – Mr. Viorel Tabacu – General Manager (operator of the project); S.C. Nuon Energy Romania Srl. – Leo Paulissen (CO_2 credits owner)
Location of the project:	GPS coordinates 44° 54' 59" Nord; 25° 26' 33" East.

The core part of the project was to install new cogeneration facilities with a total capacity of about 6.8 MWe and new heat only boilers with a capacity of 14.0 MWth, as well as to rehabilitate the existing heat transportation networks and an existing heat only boiler with a capacity of 58.2 MWth. The installations found during verification audit were in compliance with the project design. The project intends to solve the heat supply problems in the City of Târgovişte, and to drastically improve the efficiency of electricity and heat production and it produces electricity and heat at lower cost and environmental friendlier than at present. The produced electricity will be partly consumed internally by the beneficiaries of the project and partly sold to a third party, whereas the produced heat will be delivered to the customers of S.C. TERMICA S.A., which is the municipality owned operator of the plant.

2 METHODOLOGY

2.1 Verification Process

The verification process is based on the approach depicted in the DVM (Annex 4, JISC 19).

Standard auditing techniques have been adopted. The verification team performs first a desk review, followed by an on-site visit which results in a protocol including all the findings. The next step is to close out the findings through direct communication with the PPs and finally prepare the verification report. This verification report and other supporting documents then undergo an internal quality control by the CB "climate and energy" before submission to the host country DFP.

2.2 Verification Team

The appointment of the team takes into account the coverage of the technical areas, sectoral scopes and relevant host country experience for verifying the ER achieved by the project activity in the relevant monitoring period for this verification.
The verification team was consisting of the following members:

Name	Qualification	Coverage of technical area 1.2	Coverage of technical area 3.1	Host country experience
Robert Mitterwallner	ATL	☑	☑	☑
Madis Maddison	VER	☑		
Laura Vaida	T			☑

Robert Mitterwallner is located at TUV SÜD Industrie Service in Munich since 1990 and has a background as auditor for environmental management systems, as expert in environmental permit procedures for industrial plants and as expert for environmental impact studies assessment. He has received training in the JI determination/verification and CDM validation/verification process and applied successfully as GHG Determiner, GHG Validator, GHG Verifier as well as Assessment Team Leader and Technical Reviewer for climate change projects, among others, in the scope energy industries. Moreover, he has been appointed as Auditor for Renewable Energy Certification.

Madis Maddison is specialized in auditing of greenhouse gas emission reduction projects. This experience he has gained (in co-operation with TÜV Süd Industrie Service) in determination and verification of Joint Implementation (JI) projects in Estonia, Lithuania, Poland, Romania and Bulgaria. He has received training in the JI determination as well as CDM validation and verification process and applied successfully as GHG Auditor.

Laura Vaida - is engineer from Romania with B.Sc. in Engineering and Management of Production Systems. She has work experience in the field of mechanical engineering and quality assurance. As GHG trainee she has been appointed scopes 4 and 9 as per UNFCCC definition.

2.3 Review of Documents

The Monitoring Report version 02 was submitted by the PP which was made publicly available on the netinform website before the verification activities started. The published MR was assessed based on all the relevant documents as listed earlier. The aim of the assessment in the desk review was to verify the completeness of the data and the information presented in the MR. The compliance check of the MR with respect to the monitoring plan depicted in the PDD with attachment and the project specific methodology was carried out. Particular attention to the frequency of measurements, the quality of the metering equipment including calibration requirements, and the quality assurance and quality control procedures was paid. The evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions was also carried out. A complete list of all documents reviewed is available in Annex 2 of this report.

2.4 On-site Assessment and follow-up Interviews

During 23 and 24-03-2009, TÜV SÜD performed (together with the pre-JI verification) a physical site inspection and on-site interviews with project stakeholders to:

- confirm the implementation and operation of the project,
- review the data flow for generating, aggregating and reporting the monitoring parameters,
- confirm the correct implementation of procedures for operations and data collection,
- cross-check the information provided in the MR documentation with other sources (raw data),
- check the monitoring equipments against the requirements of the PDD with attachment and the project specific methodology, including calibrations, maintenance, etc.,
- review the calculations and assumptions used to obtained the GHG data and ER,
- Indentify if the quality control and quality assurance procedures are in place to prevent or correct errors or omissions in the reported parameters.

The following persons were interviewed during this verification activity:

1. Mr. Viorel Tabacu, S.C. Termica S.A. General Manager (operator of the project);
2. Mr. Leo Paulissen, General Manager S.C. Nuon Energy Romania Srl. (CO2 credits owner).
3. Mr. Ioan Isaila – Engineer, Nuon Energy Romania
4. Mr. Marius Sala – Interpreter S.C. TERMICA S.A. Targoviste

2.5 Quality of Evidence to Determine Emission Reductions

Among many others the following relevant and reliable evidences have been used by the audit team during the verification process:

1. Operational reports of the Plant including Failure Register;
2. Monitoring report for 2008
3. Heat production records;
4. Reports on heat delivered to secondary network;
5. Reports on produced electricity;
6. Gas consumption reports;
7. Invoices of electricity sold to the grid;
8. Invoices of consumed gas
9. Initial, first and second periodic Verification Report;

Sufficient evidence covering the full verification period in the required frequency is available to validate the figures stated in the final MR. The source of the evidences will be discussed in chapter 3 of this report. Specific cross-checks have been done in cases that further sources were

available. All figures in the monitoring report were cross-checked by the audit team against the raw data. The data collection system meets the requirements of the monitoring plan as per the project specific methodology.

2.6 Resolution of Clarification and Corrective and Forward Action Requests

The objective of this phase of the verification process was to resolve any outstanding issues which needed to be clarified for TÜV SÜD's positive conclusion on the GHG emission reduction calculation. The findings raised as Forward Action Requests (FARs) (if any) indicated in previous reports (determination/verification) were clarified during communications between the PP and TÜV SÜD.

To guarantee the transparency of the verification process, the concerns raised, based on the desk review and subsequent on-site audit assessment and follow up interviews, together with the responses given are documented in Annex 1 (verification protocol).

A Corrective Action Request is raised where TÜV SÜD identifies:

- non-conformities in monitoring and/or reporting with the monitoring plan and/or methodology;
- that the evidence provided is not sufficient to prove conformity;
- mistakes in assumptions, data or calculations that impair the ER;
- FARs stated during determination that are not solved until the on-site visit.

A Clarification Request is raised where TÜV SÜD does not have enough information or the information is not clear in order to confirm a statement or data.

A Forward Action Request is raised where TÜV SÜD identifies that monitoring and/or reporting required special attention or adjustments for the next verification period.

Information or clarifications provided as response to a CAR, CL or FAR could also lead to a new CAR.

2.7 Internal Quality Control

As an ultimate step of verification the final documentation including the verification report and the protocol have to undergo an internal quality control by the Certification Body (CB) "climate and energy", i.e. each report has to be finally approved either by the Head of the CB or the Deputy. In case one of these two persons is part of the assessment team the approval can only be given by the other one. If the documents have been satisfactorily approved, the Request for Issuance is submitted to the host country DFP along with the relevant documents.

3 VERIFICATION RESULTS

In the following sections the results of the verification are stated. The verification results relate to the project performance as documented and described in the final Monitoring Report Version 02 / 23-01-2009 for the year 2008. The verification findings are presented below.

3.1 FARs from Previous Verification

There was 1 Forward Action Request raised in the pre-JI Verification Report No. 1096909 by TÜV SÜD Industrie Service GmbH. Since the audit for 2008 data has been performed together with the previous verification, the FAR has to be solved until the second periodic verification under JI track 1.

3.2 Project Implementation in accordance with the PDD with attachment

The project is fully implemented according to the description presented in the PDD with attachment. The verifier confirms, through the visual inspection that all physical features of the proposed JI project activity including data collecting systems and storage have been implemented in accordance with the PDD with attachment. The project activity is completely operational and the same has been confirmed on-site.

No data and/or variables presented in the MR differ significantly from the stated in the PDD with attachment, which would to cause an increment of the ER in this period or in future periods in relation to the estimates in the PDD with attachment.

3.3 Compliance of the Monitoring with the Monitoring Plan

The monitoring has been carried out in accordance with the monitoring plan contained in the PDD with attachment. All parameters were monitored and determined as per the Monitoring Plan.

The verification of the parameters required by the monitoring plan are provided as follows:

Data / Parameter:	Heat production total
Data unit:	MWh
Description:	Total annual heat produced through all systems in the project boundaries.
Source of data used:	Monitoring is based on meter readings. There are heat meters installed at every steam boiler and cogeneration engine, see Annex 1 table 3.2.1. All meters are fully functional and properly calibrated.

Means of verification/Comments:	The amount of heat produced was verified by entering randomly selected raw data into calculation of annual totals.
Cross-check	The heat production of the Plant was crosschecked by comparing it to the Reports on produced heat (printouts from SCADA).

Data / Parameter:	Net Electricity production
Data unit:	MWh
Description:	The net electricity produced in the generators within the boundaries of the project.
Source of data used:	Monitoring is based on power meter readings. There are electricity meters installed at every cogeneration engine, see Annex 1 table 3.2.2. All meters are fully functional and properly calibrated.
Means of verification/Comments:	The amount of net electricity produced was verified by entering randomly selected raw data into calculation of annual totals.
Cross-check	The net electricity production of the Plant was crosschecked by comparing it to the Reports on produced heat (printouts from SCADA).

Data / Parameter:	Total gas consumption
Data unit:	Nm^3
Description:	The total volume of gas consumed for the production of energy within the boundaries of the project.
Source of data used:	Monitoring is based on gas meter readings. There is a gas meter installed at the gas supply pipeline, see Annex 1 table 3.2.3. The meter is fully functional and properly calibrated.
Means of verification/Comments:	The amount of gas consumption was verified by entering randomly selected raw data from monthly bills from the gas supplier into calculation sheet.
Cross-check	The gas consumption was crosschecked by comparing it to the Reports on produced heat (printouts from SCADA).

Data / Parameter:	Heat delivered to secondary network
Data unit:	MWh
Description:	The total heat delivered outside the boundaries of the project including make-up water for the secondary network.
Source of data used:	Monitoring is based on heat meter readings. The total heat delivered outside the boundaries of the project is metered at every thermal point in the city in 55 locations. At each thermal point heat is metered by two meters (in total 110 meters): main heat meter and make-up water for the secondary network, see Annex 1 table 3.2.4. The meters are fully functional and properly calibrated.
Means of verification/Comments:	The amount of heat delivered to secondary network was verified by entering randomly selected raw data from the monthly readings into calculation sheet.
Cross-check	The heat delivered to secondary network was crosschecked by comparing it to the Reports on produced heat (printouts from SCADA).

Data / Parameter:	Natural Gas lower Calorific value
Data unit:	KCal/m³
Description:	The Natural Gas lower Calorific value is used to compute the Consumed Energy
Source of data used:	Monitoring is based on the data issued by Romanian Energy Regulatory Authority. The value is a public one established by the national authority in the field in Romania and therefore its level uncertainty could be considered as acceptable
Means of verification/Comments:	The Natural Gas lower Calorific value was verified with the result from the Analysis Report from Distrigaz Sud.
Cross-check	The Natural Gas lower Calorific value was cross-checked from http://www.transgaz.ro/puteri_calorifice.php .

All other parameters used in ERU calculations (such as Specific CO_2 Emissions for gas and lignite, Theoretical gas consumption of the gas engines, Heat losses in transport network, The gas boiler net efficiency and Electric efficiency lignite fired plant) where fixed in PDD with attachment and do not require monitoring.

3.4 Assessment of Data and Calculation of Greenhouse Gas Emission Reductions

All data has been available and all the parameters have been monitored in accordance with the registered monitoring plan.

The reported data has been cross check against other sources when available as explained above in chapter 3.3.

The verifier confirms that the methods and formulae used to obtain the baseline, project and leakage emissions are appropriate. The same have been done in accordance with the methods and formulae described in the monitoring plan and project specific methodology.

The verifier confirms that all the emission factors and default values (ex-ante values from PDD with attachment) have been correctly justified.

4 SUMMARY OF FINDINGS

The verifier can confirm that the published MR and related documents are complete and verifiable in accordance with the JI requirements. All the findings raised by the verification team, the responses by the PPs and the conclusion from the team are presented in Annex 1.

All together 20 Clarification Requests and one Forward Action Request were issued.

The most important CRs are listed herewith:

CL # 4: A clarification request related to what happens in case of data discrepancies. As response of the PP, no case of data discrepancies was present up to now. Often readings of meters will make available a wide set of readings. If any wrong reading of meter appears it will not affect the result of the monitoring because this information will not be used, but the closest good information which will be available at distance of maximum 24 hours and will not affect the results of data monitoring at year level. The issue is considered solved for the audit team.

CL # 11: Another clarification request was about the last calibration date for the plant heat meters. As for the PP, this information can be found in the centralizer (excel table) with all the meters in the plant. It can be concluded by the audit team, that this information is presented in the file "Meters Plant Centralizer_090520.xls" (IRL12).

CL # 19: A clarification request related to data processing and interpretation in order to clarify the aspect of data reliability and plausibility. As for PP, this information is available on the CD-ROM given to AIE representatives on 240309, during the visit in Targoviste. A copy of the data processing and interpretation was received from PP (IRL16 and IRL17). Hence, the issue is considered solved.

FAR#1: A Forward Action Request related to "Written (paper or digital) procedure for data transfer shall replace verbal transfer" was issued because the data transfer from the operator to the Control Room is currently done only verbally by phone and there is a certain risk of misunderstanding the data or wrong interpretation of the message. The Project Owner agreed and stated that "The Project includes an automatic data collection / storage system, part of SCADA system. Data collection is still under verification and can be used for data verification if needed." The issue shall be checked and dealt with during the next verification audit.

5 VERIFICATION STATEMENT

TÜV SÜD Industrie Service GmbH has performed the first periodic verification of the JI track 1 project: "MUNICIPAL COGENERATION TÂRGOVIŞTE (ROMANIA)". The verification is based on the currently valid documentation of the UN Framework Convention on Climate Change (UNFCCC).

The management of S.C. Termica S.A. is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions on the basis set out within the project's Monitoring Plan indicated in the PDD from 2004 and the attachment to the PDD and the project specific methodology. The verifier can confirm that:

- the development and maintenance of records and reporting procedures are in accordance with the monitoring plan;
- the project is operated as planned and described in the re-determined PDD with attachment;
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately;
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements;
- the monitoring plan in Monitoring Report is as per the PDD with attachment;
- the monitoring plan in the PDD with attachment is as per the project specific methodology.

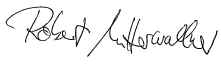
The verified emission reduction figures are lower than the ex-ante estimated figures in the PDD that is due to a lower demand than expected. However, this fact does not affect the verification of the project. Our opinion refers to the project's GHG emissions and resulting GHG emission reductions reported both determined due to the valid project's baseline, its monitoring plan and its associated documents. Based on the information we have seen and evaluated, we confirm the following statement. Verified emissions in the above reporting period to be issued as ERUs:

Reporting period	**From 01-01-2008 to 31-12-2008**
Baseline emissions	94,661 tCO_2e
Project emissions	42,138 tCO_2e
Leakage emission:	0.0 tCO_2e
Emission reductions:	52,523 tCO_2e

Munich, 27-04-2011

Thomas Kleiser
Technical Reviewer

Munich, 27-04-2011



Robert Mitterwallner
Assessment Team Leader

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Annex 1
Verification Protocol

Verification Protocol, first periodic

Project Title: Municipal Cogeneration Targoviste
Date of Completion: 2011-04-27
Number of Pages: 50

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Input by audit team in blue colour

Template text in black colour

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1. Project Activity Implementation

1.1. Technology

PDD	Verified Situation	Conclusion
Location (s)		
Description / Address:	*S.C. Termica S.A.* *Centrala Termică Târgovişte Sud* Str. Laminorului nr. 14, Târgovişte, 130089-România	☑
GSP coordinates:	44˚ 54' 59" Nord; 25˚ 26' 33" East (as per Google Earth readings)	☑
Technical Equipment – Main Components		
Component 1: *Description*	*One (1) Cogeneration Engine, designated as "Andreea" 0.14 MW electric, located at the above address*	☑
Component 1: *Technical Features*	*Engine MAN, Engine type E2842E, Generator Stamford HC 434 2D, Electric Capacity 145 kW, Qualifying heat capacity 266 kW, commissioning date November 2003*	☑
Component 2: *Description*	*Hot Water Boiler HOB 3, 58.1 MW Thermal, located at the above address*	☑
Component 2: *Technical Features*	*Initial CAF5, Vulcan Bucuresti, Refurbished Hot Water Boiler with 8 Baltur burners 58.1 MW thermal, Commissioning date in the upgraded version November 2005*	☑

PDD	Verified Situation	Conclusion
Component 3: Description	*Hot Water Boiler HOB 4, 15 MW Thermal, located at the above address*	☑
Component 3: Technical Features	*Danstocker Hot Water Boiler 15.0 MW thermal, Commissioning date October 2005*	☑
Component 4 Description	*Nine (9) Cogeneration Engines, 0.81 MW electric, located at the above address*	☑
Component 4: Technical Features	*Engine Perkins, Engine type 4016 TESI 140 HC, Generator Newage HC634K, Electric Capacity 0.81 MW electric, Qualifying heat capacity 1,24 MW, Commissioning date August-September 2006*	☑
Operation Status during verification		
Approvals / Licenses N/A	*Licence for the production of power energy, no. 742/08.06.2006 (References 2-21)* *Licence for thermal energy production, no. 28/28.06.2000 (References 2-20)* *Licence for the transport of thermal energy, no. 29/28.06.2000 (Ref. 2-22)* *Licence for the thermal energy distribution, no. 30/28.06.2000 (Ref. 2-23)* *Licence for the delivery of thermal energy, no. 31/28.06.2000 (Ref. 2-24)* *Environmental Licence of operation, no. 106/13.11.2006 (Ref 2-25), expiring date 30.12.2008.*	☑
Actual Operation Status N/A	Under construction ☐ In operation ☒ *for the Engines 1+9, HOB 3 and HOB 4* Out of operation ☐ Reason (when out of operation):	☑

PDD	Verified Situation	Conclusion
Remarks to Special Operational Status During the Verification Period	*The steam boiler shall be used only for process purposes. It is under refurbishment since 2007. The HOB 6, HOB 7, HOB 8 are designated as peak load boilers and back-up boiler for the other boilers and engines. They are in the final stage of construction but they have not reached the stage of testing. However these boilers are not the part of JI project.*	☑

1.2. Organization

PDD	Verified Situation	Conclusion
Project Participant (s)		
Entity / Responsible person:	*City Hall Târgovişte – Ms. Ana George Bogdan – Vice Mayor (owner of Termica)* *S.C. Termica S.A. – Mr. Viorel Tabacu – General Manager (operator of the project)* *S.C. Nuon Energy Romania Srl. – Leo Paulissen (CO_2 credits owner)*	☑
Project management:	*S.C. Termica S.A. – Mr. Viorel Tabacu – General Manager (operator of the project)* *S.C. Nuon Energy Romania Srl. – Leo Paulissen (CO_2 credits owner)*	☑

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1.3. Quality Management System

PDD	Verified Situation	Conclusion
Quality Management Manual:	The existing but not yet certified Quality Management System does cover operational and management structure of the project relevant organization and staff. The management system is actively used and it is the guiding document for managing the company.	☑
Responsibilities:	*Ms. Mariana Mândrescu - Termica Quality Manager* *Mr. Valentiva Popa – Termica Environment Auditor*	☑
Qualification and Training:	*For Ms. Mariana Mândrescu:* *Training of Quality Management acc. to ISO 9001 done in 2005* *Training as Internal Auditor done with QUASARO in 2005* *For Ms. Valentina Popa:* *Training as Internal Auditor done with QUASARO in 2005 and* *Internal Audit for the ISO 14001-ISO 9001 training course done in 2007* ***CL # 1*** *Provide certificates for trained persons*	**CL # 1**
Implementation of QM-system	*The system is in operation. The responsibilities are defined. The procedures are known by the operators and responsible people and used in daily activities.*	☑

1.4. Remaining FARs from Determination report (pre-JI verification was simultaneous with 1. Verification)

Remaining Requests from Previous Verifications	Summary of project owner response	Audit team conclusion
	-	-

2. Data Management System

2.1. Description

Structure of raw data archiving				
Describe all the different data collection systems				
Type	Name	Responsible	Procedures	Comments
Raw data collection	*Registers*	*Operators on the field*	*PO-CM-13 (Ref 1-6)*	*Raw data are recorded into registers at the beginning of the 12-hours shift and at the end of it and a Shift Report is dated and signed by all people involved. Data are normally each hour recorded (e.g. natural gas meters, heat meters at the Termica premises, electricity meters). The data from Heat Meters outside the Termica are collected once per day. There are further sent for centralization each end of the day (19:00 hours). Data from HOB 3 and Engine 9 were checked during the audit and found in consistency with the officially collected data*
Raw data storage	*Computer*	*Operators and dispatcher on charge*	*PO-CM-13 (Ref 1-6)*	*All raw data are recorded manually. The computerized collection raw data is implemented (SCADA) but it delivers sometimes faulty data and therefore it is not used for the mo-*

				ment for the raw data collection
Raw data storage	*Computer*	*NUON representatives*	*PO-CM-13 (Ref 1-6)*	*All raw data are recorded manually. The computerized collection raw data is implemented (SCADA) but it delivers sometimes faulty data and therefore it is not used for the moment for the raw data collection*
Laboratory results	*N/A*	*N/A*	*N/A*	*No laboratory analysis is done within the company*
Sampling	*N/A*	*N/A*	*N/A*	*There are no samples taken during the raw data recording process*
Accounting	*N/A*	*N/A*	*N/A*	*No accounting information is currently used in calculations*
External data	*Gas calorific power factor*	*Ms. Valentina Popa, Environment Responsable Person*	*DISTRIGAZ SUD chemical analysis internal procedure*	*DISTRIGAZ is offering on special request this analysis for their clients. It was obtained such a chemical analysis report on 2008 from DISTRIGAZ and it was used for the calculation purposes* ***CL # 2*** *Provide chemical analysis report from DISTRIGAZ.*
Cross-check Approach: *Data are each hour recorded (e.g. natural gas meters, heat meters at the Termica premises, electricity meters). The data from Heat Meters outside the Termica are collected once per day. There are further sent for centralization each end of the day (19:00 hours). The risks for material misstatement are reduced by these control measures and the remaining risk is low.* *The risk related to the gas calorific value is to be less conservative.* *Using a less conservative gas calorific value is not possible because the value is updated each year using the report from the*				

DISTRIGAZ company which has a high interest to provide values as high as possible, this value finally characterizing their sold product.

Further Remarks: *No further remarks*

2.2. Raw Data Archiving and Protection measures

Name	Description of data archiving and protection measures	Risks and comments	Concl.
Form a	*N/A*	*N/A*	N/A
Computer a	*The raw data collected from the operators and introduced in the registers are afterwards transmitted verbally by telephone to the Operators from the Control Room. They are stored into the computerized data base in excel. All data of interest for this project are sent once per day to the General Manager, to the Production Manager, and to NUON Energy. They are distributed by e-mail. Also monthly the IT department of Termica is collecting all these data and it is making a supplementary back-up system.* *There is only one storing computer in the Control Room.* **CL # 3** *Provide procedure of recording data in several places and how is this risk eliminated*	*Risks of some data lost is between the daily data delivery because of a computer failure is eliminated by means of recording in several places the data collected manually and recording all these data also into registers, manually.*	**CL # 3**
Computer b	*The computer of the General Manager for which is responsible himself*	*The break down of the computer. The data are available on the other listed computers*	☑
Computer c	*The computer of the Technical Manager for which is responsible himself*	*The break down of the computer. The data are available on the other*	☑

		listed computers	
Computer d	*The computer of the Production Manager for which is responsible himself*	*The breakdown of the computer. The data are available on the other listed computers*	☑
Computer e	*The computer of the NUON Energy representative for which is responsible himself*	*The breakdown of the computer. The data are available on the other listed computers*	☑
Form b	*N/A*	*N/A*	N/A
Form c	*N/A*	*N/A*	N/A
Form d	*N/A*	*N/A*	N/A
Invoice	*N/A*	*N/A*	N/A
Form e	*N/A*	*N/A*	N/A
Cross-check Approach: *The raw data are collected in the Control Room and archived on the computer from this room and also, once per day, the data are sent to four other parties for storage. The risks of losing the archived data are moderate.* **Further Remarks:** No further remarks			☑

2.3. Data transfer

Description of data transfer from raw data archiving to calculation tool			
Name	Description and responsibilities	Risks and comments	Concl.
Form a	*Data transfer from the operator to the Control Room is done verbally by phone and stored electronically*	*Misunderstanding of data or message wrongly interpretation. This risk is eliminated by further data collection and comparison with old data as well as by means of further calculations* **FAR # 1.** Written (paper or digital) procedure for data transfer shall replace verbal transfer	**FAR # 1**
Computer a	*The raw data are collected in the Control Room and archived on the computer from this room. Also, once per day, the data are sent to four other parties for storage.*	*The break down of the computer. The data are available on the other listed computers*	☑
Computer b	*The computer of the General Manager for which is responsible himself*	*The break down of the computer. The data are available on the other listed computers*	☑
Computer c	*The computer of the Technical Manager for which is responsible himself*	*The break down of the computer. The data are available on the other listed computers*	☑
Computer d	*The computer of the Production Manager for which is responsible himself*	*The breakdown of the computer. The data are available on the other listed computers*	☑
Computer e	*The computer of the NUON Energy representative for which is responsible himself*	*The breakdown of the computer. The data are available on the other listed*	☑

		computers	
Form b	*N/A*	*N/A*	N/A
Form c	*N/A*	*N/A*	N/A
Form d	*N/A*	*N/A*	N/A
Invoice	*N/A*	*N/A*	N/A
Form e	*N/A*	*N/A*	N/A
Cross-check Approach: The *misunderstanding of data or messages wrongly interpreted is eliminated by further data collection and comparison with old data as well as further calculations. The computer from the Control Room used for data storage and computation has a password known by the responsible people in charge with these activities. The eventual faulty inserted or managed data can be checked throughout the other back-up systems (the other four computers). The risks for material misstatement are reduced by these control measures and the remaining risk is low.* **Further Remarks:** *See **FAR # 1***			☑

2.4. Data Processing

Description of data processing from transferred data to final results in the calculation tool			
Step	Description	Risks and comments	Concl.
Consistency	*There are some changes done since the PDD was developed but they were accepted on the monitoring of 2007. Since then, no further changes were done.*	*No risks with respect to this issue*	☑
Calculation Tool	*The data collected in the Control Room are further used for calcu-*	*There is a small risk to make a mistake*	***CL # 4***

description	*lation. The calculation is done by means of excel data sheets. These calculations are done in parallel by Termica and NUON Energy. Any discrepancy in the final results is immediately discussed between the two parties.* *There are some changes in the calculation formula determined by faulty meters operation which required utilization of mean data for the period of their faulty operation.* *All formulae are clearly described, consistent with the PDD, transparent and using correct units in compliance with the PDD*	*in the same way by so that it cannot be seen by all parties because of the wrong reading of the monthly data. The risk is automatically solved either by data interpretations or by future readings.* *The risk is to make some wrong calculations far from reality* ***CL # 4*** *Provide document describing procedure followed in case of data discrepancies*.	
Transformation from transferred data to useable data	*Data is missing* *Data are incorrect*	*No data can be missed. If data is missing, the registers are available and the data is collected again from these registers.* *Data are compared with previous data and any discrepancy can be either remarked from data collection or from data computation*	☑
Elimination of not plausible data	*Not plausible data are detected by redundant measurements which are consisting of comparison of energy meters located at the entrance and exist of each Thermal Points. This energy meters represents about 95% of delivered energy.* ***CL # 5*** *Provide information where is metered the rest of the thermal energy?*	*A faulty operation of a meter is immediately noticed by analysing the Thermal Point efficiency where the primary and secondary systems are jointed.*	***CL # 5***
Transformation from useable data to input data for further	*Mean values are used only when faulty data are recorded and the faulty operation of a meter is suspected.*	*In such a case, there is a procedure PO-CM-14, which describes the way to handle this situation. This procedure*	***CL # 6***

calculation		*presents what is happening when is a faulty data recorded or a meter problem.* ***CL # 6*** *Provide the procedure PO-CM 14.*	
Ex-ante data	*Data are collected in the same way from the beginning of the PDD. There are additional meters installed in the last months/years. But this is not changing the calculation.*	*The additional data collected via new meters is not changing the calculation itself but is improving it. No data was assumed at the early stage of the project. They were only based on fewer data collection systems.*	☑
Default parameter	*The only default parameter is the Gas calorific power and it is given by DISTRIGAZ. Its unit is correct.*	*There is a risk that non-conservative value of this parameter to be used. Actually, this value should always be conservative vis-à-vis this project, considering the fact that a non-conservative value would be in the detriment of DISTRIGAZ, which cannot be the case.*	☑
Formulae check	*Yes.*	*They were checked at the time of PDD development and during the project Re-determination. There are no changes of these formulae in the mean time*	☑
Rounding functions	*Rounding values are used as they were described in the initial PDD and further on accepted in the Re-determination report.*	*The rounding used in the initial PDD was accepted at that time.*	☑
Calculation tool changes and protection measures	*The unauthorized access to the data calculation computer is protected by means of passwords.* *There are only excel calculation sheets which are using formulae agreed at the time of PDD development and project re-determination*	*The electronic protection of data is further secured by storing and handling the same data by several parties in parallel.*	**CL # 7**

		CL # 7 *Provide information how it is ensured, that formulas are protected against unauthorized changes?*	
Cross-check Approach: *Faulty similar calculations by both parties may result from calculation or faulty monthly readings. Faulty monthly readings are automatically corrected either by data interpretation or by subsequent data readings* . ***CL # 8*** *Provide information for data interpretation in case of faulty monthly readings.* ***CL # 9*** *Provide list of responsible persons for data interpretation* **Further Remarks:** *See **CL # 8, CL # 9***			☑ ***CL # 8*** ***CL # 9***

2.5. Work Instruction out of protocol Algorithms

Description of data processing from transferred data to final results in the calculation tool			
Step	Description	Risks and comments	Concl.
Methodology formulae	*CO2 emissions reduction from cogeneration, cell F98 =Total CO2 emissions heat and electricity production (Baseline definition), cell F70 - Total CO2 emissions heat and electricity production (co-generation), cell F94* *Total CO2 emissions heat and electricity production (Baseline definition), cell F70 = CO2 emissions electricity production, cell*	*Formulae to calculate the baseline emissions were not indicated in the PDD but are part of the Excel Spread Sheet for calculation.*	☑

	F68 + CO2 emissions heat production, cell F61 *Total CO2 emissions heat and electricity production (cogeneration), cell F94= CO2 emissions heat production, cell F92 + CO2 emissions cogen plant (electricity & heat production) cell F83*		
Describe the use of each formula in the calculation tool	*CO2 emissions reduction from cogeneration, kton, cell F98 =Total CO2 emissions heat and electricity production (Baseline definition), kton, cell F70 - Total CO2 emissions heat and electricity production (cogeneration), kton, cell F94* *Total CO2 emissions heat and electricity production (Baseline definition), kton, cell F70 = CO2 emissions electricity production, kton, cell F68 + CO2 emissions heat production, kton, cell F61* *CO2 emissions electricity production, kton, cell F68= Specific CO2 emissions (from base-line definition), kg CO2/GJ, cell F67 * Lignite consumption, GJ , cell F66 / 10^6* *Lignite consumption, GJ, cell F66 =(Electricity net production, MWhe, cell F63 / Electric efficiency,% (LHV) (from base-line definition), cell F65*3.6)* *Electricity net production, MWhe, cell F63 ='1-2008'!F17+'2-2008'!F17+'3-2008'!F17+'4-2008'!F17+'5-2008'!F17+'6-2008'!F17+'7-2008'!F17+'8-2008'!F17+'9-2008'!F17+'10-2008'!F17+'11-2008'!F17+'12-2008'!F17* *Total CO2 emissions heat and electricity production (cogeneration), kton, cell F94= CO2 emissions heat production, kton, cell F92 + CO2 emissions cogen plant (electricity & heat production), kton, cell F83* *CO2 emissions heat production, kton, cell F92 = (Natural gas consumption new HOB's, GJ, cell F87+ Natural gas consumption degasser, GJ, cell F90)* Specific CO2 emissions, kg CO2/GJ, cell F91/10^6* *Natural gas consumption new HOB's, GJ, cell F87= Gas Con-*	*Formulae to calculate the baseline emissions were not indicated in the PDD but are part of the Excel Spread Sheet for calculation.*	☑

	*sumption HOBs, MWhgas, cell F26*3.6* *Gas Consumption HOBs, MWhgas, cell F26= HOBs, m3, cell D13 * Natural gas LCV / PCI, MJ/m3, cell K18/ 10^3 /3.6* *Natural gas LCV / PCI, MJ/m3, cell K18= Natural gas Lower Calorific Value (LCV) (from natural gas specifications), kcal/m3, cell K17 *4.1868/1000* *Natural gas consumption degasser, GJ, cell F90* = Gas consumption degasser, MWhgas, cell *F30*3.6* Gas consumption degasser, MWhgas, cell *F30 ='1-2008'!D12+'2-2008'!D12+'3-2008'!D12+'4-2008'!D12+'5-2008'!D12+'6-2008'!D12+'7-2008'!D12+'8-2008'!D12+'9-2008'!D12+'10-2008'!D12+'11-2008'!D12+'12-2008'!D12* *Specific CO2 emissions, kg CO2/GJ, cell F91= Specific CO2 emissions (from base-line definition), kg CO2/GJ, cell F60* *CO2 emissions cogeneration plant (electricity & heat production), kton, cell F83= Natural gas consumption cogeneration plant, GJ, kg CO2/GJ, cell F81* Specific CO2 emissions, kg CO2/GJ, cell F82/10^6* *Natural gas consumption cogeneration plant, GJ, cell F81= Cogeneration, MWhgas, cell F11 *3.6* *Cogeneration, MWhgas, cell F11= Cogeneration, m3, cell D11, * cell K18/10^3/3.6* *Cogeneration, m3, cell D11='1-2008'!D11+'2-2008'!D11+'3-2008'!D11+'4-2008'!D11+'5-2008'!D11+'6-2008'!D11+'7-2008'!D11+'8-2008'!D11+'9-2008'!D11+'10-2008'!D11+'11-2008'!D11+'12-2008'!* *Natural gas LCV / PCI, MJ/m3, cell K18= Natural gas Lower Calorific Value (LCV) (from natural gas specifications), kcal/m3, cell K17 *4.1868/1000* *Specific CO2 emissions, kg CO2/GJ, cell F82= Specific CO2*		

	emissions (from base-line definition), cell F60		
Report any additional calculation use to obtain values use in the formulae	*No additional calculation is required*	*Formulae were not indicated in the PDD but are part of the Excel Spread Sheet for calculation.*	☑

3. Monitoring Plan Implementation

3.1. List of Parameter to be monitored

ID-PDD	ID-Meth.	ID-Internal	Description	Conclusion
Instrumentation				
Heat production	*Heat production total*	*Heat production from CAF, from co-generation and from steam boiler*	*Total heat produced through all systems in the project boundaries*	☑
Electricity production	*Net Electricity production*	*Net Electricity production*	*The NETO energy produced in the generators within the boundaries of the project*	☑
Gas consumption	*Total Gas consumption*	*Total Gas consumption*	*The total volume of gas consumed for the production of energy within the boundaries of the project*	☑
Heat delivered to secondary network	*Total heat delivered to secondary network*	*The heat delivered to secondary network + make-up water primary to secondary*	*The total heat delivered outside the boundaries of the project*	☑

ID-PDD	ID-Meth.	ID-Internal	Description	Conclusion
Sampling				
N/A	*N/A*	*N/A*	*N/A*	☑
N/A	*N/A*	*N/A*	*N/A*	☑
N/A	*N/A*	*N/A*	*N/A*	☑
N/A	*N/A*	*N/A*	*N/A*	☑
N/A	*N/A*	*N/A*	*N/A*	☑
-				☑
Accounting				
N/A	*N/A*	*N/A*	*The accounting data are used only as a checking toll but not in calculations*	☑
External Data				
-	*Natural Gas lower Calorific value*	*Natural Gas lower Calo-rific value*	*The Natural Gas lower Calorific value is used to compute the Consumed Energy*	☑
CO2 Emissions factors for gas and lignite	*Specific CO2 Emissions for gas and lignite*	*-*	*These factors are used from Romanian national statistics as illustrated in the PDD*	☑
-	*Theoreti-cal gas consump-tion of the gas en-*	*-*	*There was foreseen a meter for this value. Instead of this parameter is taken from the technical documentation of the engines. Actually, because this value is part of the total gas consumption value which will not be influenced by the variation of this parameter.*	☑

ID-PDD	ID-Meth.	ID-Internal	Description	Conclusion
	gines			
Heat trans-portation losses	*Heat losses in transport network*	-	*This value is considered to be 26% in calculations. In the PDD was considered to be 22%. The reason for this difference is that In the mean time the production decreased and the losses are almost the same and consequently higher in percentage estimated initially in the PDD*	☑
The gas boiler net efficiency	*The gas boiler net efficiency*	-	*This factor was assumed at the time of PDD development*	☑
The lignite fired units net effi-ciency	*Electric efficiency lignite fired plant*	-	*This factor was assumed at the time of PDD development*	☑
Others				

3.2. Monitoring Instrumentation

3.2.1. Instrument 1 Heat Production

Back to 3.1. List of Parameter to be monitored

PDD	Verified Situation	Conclusion
Instrumentation Information		
ID-PDD:	*Heat production*	☑
ID-Internal:	*Heat production from CAF, from cogeneration and from steam boiler*	☑
Data to be Measured:	*Total heat produced through all systems in the project boundaries*	☑
Data Logging:	*-*	☑
Archiving of Raw Data:	*The data is hourly recorded*	☑
Measurement Principle:	*One direction*	☑
Period of Operating Time:	***CL # 10*** *Provide information of commissioning date of heat meters from CAF, from cogeneration and from steam boiler* *Until now*	**CL # 10**
Instrument Type:	*Electronic*	☑
Serial Number:	*There are various heat meters. The dates are presented in the " MetersPlant centralizer.xls " (Ref. 1-13; 1-12)*	☑
Manufacturer Model Nr.:	*There are various heat meters producers. The data are presented in the " Meters Plant centralizer.xls " (Ref. 1-13; 1-12)*	☑
Specific Location:	*The location of heat meter is presented in the document "DrawingMeter.jpg" (Ref. 2-1; 2-13)*	☑

Measurement Range:	*The data are presented in the " Meters Plant centralizer.xls " (Ref. 1-13; 1-12)*	☑
Measurement Unit:	*The dates are presented in the "Meters Plant centralizer.xls " (Ref. 1-13; 1-12)*	☑
Calibration:	**CL # 11** *Clarify the last calibration date for the plant heat meters.*	**CL # 11**
Required Calibration Frequency:	*See **CL # 11***	**CL # 11**
Uncertainty Level:	**CL # 12** *Provide information about the uncertainty level for the plant heat meters.*	**CL # 12**
Monitoring & Calculation		
Reading Frequency:	*Continuously*	☑
Recording Frequency:	*Daily*	☑
Trouble Shooting:	*In this case, default values are used based on a formula described in this procedure for different scenarios.* *The dispatcher is responsible to take actions when such faulty operations of the meters are encountered.* *It is an internal Termica procedure "PO-CM-14" which describes the way of data review and actions to be taken when data are found to be wrong* *Also the NUON representative is double checking the manually recorded data with the ones recorded by Scada system and takes actions and double check both data sources each time when discrepancies are found between these data*	☑

Industrie Service

Inspection Results During Verification			
Operation of Instrumen-tation	Method of Verification	Verification Results	Conclusion
Measuring Principle:	*According to PDD the heat value needs to be recorded continuously*	*The requirements are fulfilled.*	☑
Installation*:* *Manner of execution*	*Description*	*The meters are installed properly and are working normal.*	☑
Functionality:	*The meters are functioning*	-	☑
Quality assurance:	*See **CL # 11***	*See **CL # 11***	*See **CL # 11***
Maintenance:	*-*	*-*	☑
Cross-check Approach: *The NUON representative is double checking the manually recorded data with the ones recorded by Scada system and takes actions and double check both data sources each time when discrepancies are found between these data.* *The procedure "PO-CM-14" (Ref 1-7) describes the way of data review and actions to be taken when data are found to be wrong.* **Further Remarks:** *No further remarks.*			☑

3.2.2. Instrument ii Electricity production

PDD	Verified Situation	Conclusion
Instrumentation Information		
ID-PDD:	*Electricity production*	☑
ID-Internal:	*Net Electricity production*	☑
Data to be Measured:	*The NETO energy produced in the generators within the boundaries of the project*	☑
Data Logging:	*-*	☑
Archiving of Raw Data:	*The data is hourly recorded*	☑
Measurement Principle:	*Two directional*	☑
Period of Operating Time:	*Begin* **CL # 13** *Provide information regarding the commissioning date of the electric meters* *Until now*	**CL # 13**
Instrument Type:	*Electronic*	☑
Serial Number:	*36074899; 36074889*	☑
Manufacturer Model Nr.:	*ACTARIS SL 7000*	☑
Specific Location:	*Electric room "Targoviste 23.03.09 20 kV El.meter 1.jpg" "Targoviste 23.03.09 20 kV El.meter 2.jpg" (Ref 2-1)*	☑
Measurement Range:	*10000 imp/kWh for P; 10000 imp/kVArh for Q;*	☑
Measurement Unit:	*P=[kWh]; Q=[kVArh]*	☑

Calibration:	*Calibrated 22.05.2007*	☑
Required Calibration Frequency:	*8 years*	☑
Uncertainty Level:	*0.5 for P; 2 for Q*	☑
Monitoring & Calculation		
Reading Frequency:	*Continuously*	☑
Recording Frequency:	*Hourly*	☑
Trouble Shooting:	*It is an internal Termica procedure "PO-CM-14" which describes the way of data review and actions to be taken when data are found to be wrong.*	☑

Inspection Results During Verification			
Operation of Instrumentation	Method of Verification	Verification Results	Conclusion
Measuring Principle:	*According to PDD the electricity value needs to be recorded continuously*	*The requirements are fulfilled.*	☑
Installation: *Manner of execution*	*Only few people are allowed to enter this room.*	*The meter is installed properly and is working normal.*	☑
Functionality:	*The meters are functioning*	-	☑
Quality assurance:	*The meter is calibrated and sealed.*	*The calibration certificate has been checked.*	☑
Maintenance:	-	-	☑
Cross-check Approach: There are reports for determining the electric power delivered per month to the electric company (signed by both parts) and also monthly bills sent to the electricity company **Further Remarks:** *No further remarks*			☑

3.2.3. Instrument iii Gas consumption

PDD	Verified Situation	Conclusion
Instrumentation Information		
ID-PDD:	*Gas consumption*	☑
ID-Internal:	*Total Gas consumption*	☑
Data to be Measured:	*The total volume of gas consumed for the production of energy within the boundaries of the project*	☑
Data Logging:	*-*	☑
Archiving of Raw Data:	*The data is hourly recorded*	☑
Measurement Principle:	*One direction*	☑
Period of Operating Time:	**CL # 14** *Provide information regarding the commissioning date of the gas meters* *Until now*	**CL # 14**
Instrument Type:	*Electronic*	☑
Serial Number:	*86854010001; 9559211001*	☑
Manufacturer Model Nr.:	*ACTARIS CORUS PTZ FLUXI 2300*	☑
Specific Location:	*Termica courtyard (Ref. 2-1)*	☑
Measurement Range:	*200- 6500 m3/h; 1 imp=10 m3*	☑
Measurement Unit:	*m3*	☑
Calibration:	**CL # 15**	**CL # 15**

	Provide information of last calibration date of the gas meters.	
Required Calibration Frequency:	*5 years*	☑
Uncertainty Level:	**CL # 16** *Provide information of the uncertainty level for the gas meters*	**CL # 16**
Monitoring & Calculation		
Reading Frequency:	*Continuously*	☑
Recording Frequency:	*Hourly*	☑
Trouble Shooting:	*It is an internal Termica procedure "PO-CM-14" (Ref 1-7) which describes the way of data review and actions to be taken when data are found to be wrong*	☑

Inspection Results During Verification			
Operation of Instrumen-tation	Method of Verification	Verification Results	Conclusion
Measuring Principle:	*According to PDD the gas consumption needs to be re-corded continuously*	*The requirements are fulfilled.*	☑
Installation: *Manner of execution*	*It was done by DISTRIGAZ*	*The meter is installed properly and is working normal.*	☑
Functionality:	*The meters are functioning*	-	☑
Quality assurance:	*Calibration*	***CL # 15***	***See CL # 15***
Maintenance:			☑
Cross-check Approach: There are monthly bills sent from the gas company. **Further Remarks:** *No further remarks*			☑

3.2.4. Instrument iv *Heat delivered to secondary network*

Back to 3.1. List of Parameter to be monitored

PDD	Verified Situation	Conclusion
Instrumentation Information		
ID-PDD:	*Heat delivered to secondary network*	☑
ID-Internal:	*The heat delivered to secondary network + make-up water primary to secondary network*	☑
Data to be Measured:	*The total heat delivered outside the boundaries of the project is metered at every thermal point in the city in 55 locations. At each thermal point heat is metered by two meters (in total 110 meters): main heat meter and make-up water for the secondary network.*	☑
Data Logging:	-	
Archiving of Raw Data:	*The data is recorded daily*	☑
Measurement Principle:	*One direction*	☑
Period of Operating Time:	**CL # 17** *Provide information regarding the commissioning date of the heat meters of the secondary system* *Until now*	**CL # 17**
Instrument Type:	**CL # 18** *Provide a list of the heat meters of the secondary network with the following characteristics (instrument type; serial no., manufacturer, specific location, measurement range, measurement unit, calibration date, required calibration frequency, uncertainty level)*	**CL # 18**
Serial Number:	**CL # 18**	**CL # 18**

Manufacturer Model Nr.:	**CL # 18**	**CL # 18**
Specific Location:	**CL # 18**	**CL # 18**
Measurement Range:	**CL # 18**	**CL # 18**
Measurement Unit:	**CL # 18**	**CL # 18**
Calibration:	**CL # 18**	**CL # 18**
Required Calibration Frequency:	**CL # 18**	**CL # 18**
Uncertainty Level:	**CL # 18**	**CL # 18**
Monitoring & Calculation		
Reading Frequency:	*Continuously*	☑
Recording Frequency:	*Daily*	☑
Trouble Shooting:	*It is an internal Termica procedure "PO-CM-14" (Ref. 1-7) which describes the way of data review and actions to be taken when data are found to be wrong*	☑

Inspection Results During Verification			
Operation of Instrumentation	Method of Verification	Verification Results	Conclusion
Measuring Principle:	*According to PDD the value needs to be recorded continuously*	*The requirements are fulfilled.*	☑
Installation: *Manner of execution*	*Only few people are allowed to enter this room.*	*The meters are installed properly and are working normal.*	☑
Functionality:	*The meters are functioning*	-	☑
Quality assurance:	*Calibration*	**CL # 18**	**CL # 18**
Maintenance:	*Description*	-	-

3.3. Sampling Information- not applicable

3.4. Accounting information not applicable

3.5. External Data

PDD	Verified Situation	Conclusion
External Data		
ID-PDD:	*The natural gas lower calorific value Is not addressed in the PDD. Over there, the boiler efficiency factor is used instead*	☑
ID-Internal:	*Natural gas lower calorific value*	☑
Description of Data / Data Refers to:	*This value is used to compute the fuel energy inside the project boundaries*	☑
Unit of Data (if appropriate):	*KCal/m3 and further converted in MJ/m3*	☑
Date of Data Income:	*The start of the project*	☑
Source of Data:	*Romanian Energy Regulatory Authority*	☑
Reliability of Data Source:	*The source is reliable*	☑
Is the Data up-to-date?	*The current value is 8.057 kcal/m3 which is slightly higher than the one used in calculations*	☑
Uncertainty Level:	*The value is a public one established by the national authority in the field in Romania and therefore its level uncertainty could be considered as acceptable*	☑
Cross-check Approach: *The values of this parameter could vary mainly based on the source of gas (e.g. Romania, Russia, Azerbaijan, etc.). The current value will determine a variation of 0.065% of the computed value in comparison with the one defined at the beginning of the project. The fluctuation of this value could be in both directions. Nevertheless, considering its range of variation, it could be neglected.* **Further Remarks:** *No further remarks*		☑

Back to 3.1. List of Parameter to be monitored

PDD	Verified Situation	Conclusion
External Data		
ID-PDD:	*CO2 Emissions factors for gas and lignite*	☑
ID-Internal:	*CO2 Emissions for gas and lignite*	☑
Description of Data / Data Refers to:	*The CO2 Emissions for gas and lignite are the values of CO2*	☑
Unit of Data (if appropriate):	*Kg CO2/GJ*	☑
Date of Data Income:	*The date of data income were collected at the beginning of project (PDD development)*	☑
Source of Data:	*IPCC*	☑
Reliability of Data Source:	*The source is reliable*	☑
Is the Data up-to-date?	*Yes. The value is the same at this moment*	☑
Uncertainty Level:	*0 from our point of view*	☑
Cross-check Approach: *The values of this parameter are coming from a very reliable source and they should not vary because of its unit of data Kg CO2/GJ. The value could be accepted as it is all along the project duration* **Risk Classification:** **Further Remarks:** *No further remarks.*		☑

Back to 3.1. List of Parameter to be monitored

PDD	Verified Situation	Conclusion
External Data		
ID-PDD:	*The lignite fired units net efficiency*	☑
ID-Internal:	*Electric efficiency lignite fired plant*	☑
Description of Data / Data Refers to:	*This parameter describes the lignite boiler net efficiency*	☑
Unit of Data (if appropriate):	*%*	☑
Date of Data Income:	*The time of PDD development*	☑
Source of Data:	*TRANSELECTRICA S.A. (the National Electricity Transport Company)*	☑
Reliability of Data Source:	*The source could be considered as reliable*	☑
Is the Data up-to-date?	*The value is annually updated considering a conservative scenario*	☑
Uncertainty Level:	*It was considered as acceptable*	☑
Further Remarks: *No further remarks*		☑

3.6. Others Not applicable

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4 Data Verification

4.1 Internal Review

Description and performance of internal review			
	Description	Comments	Concl.
Procedure	*There is a internal Termica procedure "PO-CM-14" (IRL7) which describes the way of data review and actions to be taken when data are found to be wrong* *Also the NUON representative is double checking the manually recorded data with the ones recorded by Scada system and takes actions and double check both data sources each time when discrepancies are found between these data*	*Both ways of checking are assuring the correctness of data for the previous collections.*	☑
Documentation	*Only the faulty operation of the meters is documented based on the Termica internal procedure PO-CM-14 (IRL7). Other reviews which reveal no problems are limiting themselves to data collection and comparison*	*non*	☑
Responsibilities	*The dispatcher is responsible to take actions when such faulty operations of the meters are encountered.*	*non*	☑
Cross-check Approach: *The only problem remaining is to run more than couple of hours with faulty values. Even in this situation the faulty value will be corrected shortly after its appearance based on the average old values from the last hours of meter operation.* *This situation is reflecting the scenario when normal boiler/engine operation is taking place.* **Further Remarks:** *No further remarks.*			☑

4.2 Usage of default values

Description and performance of internal review			
	Description	Comments and Results	Concl.
Procedure	*The Termica Internal procedure PO-CM-14 (IRL7) describes the way to handle the situations when faulty meter indications are encountered. In this case, default values are used based on a formula described in this procedure for different scenarios.*	*The default values are computed based on formulas accepted at the time of PDD development.*	☑
Documentation	*The faulty operation of the meters is documented based on the Termica internal procedure PO-CM-14 (IRL7).*	*The Metrology department is issuing Faulty Operation reports as per PO-CM-14 (IRL7).*	☑
Responsibilities	*The dispatcher is responsible to take actions when such faulty operations of the meters are encountered.*		☑
Cross-check Approach: *For the gas and heat meters, there is a risk to evaluate too high the heat delivered during the faulty operation of the meter or too low the gas volume used for the production. The risk of default data selection and its calculation should be minimized by the direct relations with the clients considering that the clients will not accept values to high in comparison with the normal ones for the periods of time when the meters are not in operation of revealed faulty values. The same situation is taking place with respect to the gas meters.* **Further Remarks:** *No further remarks*			☑

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4.3 Reproducibility

Description and performance of the assessment			
	Description	Comments and Results	Concl.
Procedure	*The calculations were checked by means of verifying the input data collection and transmission.*	*The values were find reproducible based on the raw data*	☑
Cross-check Approach: *As mentioned before, raw data collected are used in calculations and stored by different parties and therefore, the probability of occurrence of mistakes in these processes is highly reduced.* **Further Remarks:** *No further remarks*			☑

4.4 Peculiarities

Description of Peculiarities and unexpected Daily Events during the verification period			
	Description	Comments and Results	Concl.
Performance	*The usual performance of the facility is good. The abnormal operation of the plant is encountered when forced shut-downs occurred because of heating pipes broking down.*	*These events were considered into calculations as losses resulting from differences between the produced energy and delivered one*	☑
Documentation	*These events are documented into Termica daily reports.*	*The result of such an event is to decrease the CO_2 emissions saved and therefore it increases the conservativeness of the approach*	☑
Measures	*Measures are taken to assess the damage causes and to take corrective and preventive measures vis-à-vis such events*	*These measures are mainly technically oriented*	☑
Further Remarks: *No further remarks*			☑

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4.5 Reliability and Plausibility

Description of crosschecks and plausibility checks			
	Description	Comments and Results	Concl.
Performance	*The data are plausible and no faulty should be expected to de found. No discrepancies from the normal trend were found. Some deviations from the smooth variation of data in time were found but they had clear reasons for them.* *Data collected, stored and used for calculation in this project are actually crosschecked through the invoicing department.*	*Some diagrams analyzed and asked from NUON as attached documents to this paragraph* *All reported data must comply and are complying with those introduced in in-voices and accepted for payment by the clients.* **CL # 19** *Provide a copy of the data processing and interpretation in order to clarify the aspect of data reliability and plausibility*	**CL # 19**
Cross-check Approach: *Through invoicing, the risk of increasing the energy delivered values would immediately determine a reaction from the end users of the energy and using lower values of the energy used cannot be done considering the fact that the gas volume is taken from a meter property of the TRANSGAZ which has no interest to accept lower values as they are in reality.* **Further Remarks:** *No further remarks*			☑

4.5 Completeness and Correctness

Description of completeness and correctness			
	Description	Comments and Results	Concl.
Correctness	*All data checked were found to be corrected collected, calculated and stored and further interpreted as for CO2 emission reduction purposes*	*non*	☑
Completeness	*All necessary data are there for a complete evaluation of the project results.*	*There are some CR's which need to be clarified*	☑
Further Remarks: -			

5 Additional requirements

Description of additional requirements to be checked			
	Description	Comments and Results	Concl.
e.g. environmental issues	*It was discussed the recommendation included into the PDD to make an Environmental Impact Assessment and issue a report on it with the obtained results*	*There is a report of Environmental Impact Study. It was developed by the ICEMENERG – The Institute of Energetic Researches, and it is required for obtaining the Environmental License as well as Operational Licenses. It shall be prepared and forwarded by the owner to TUEV* **CL # 20** *Provide a copy of the Environmental Impact Assessment Report*	**CL # 20**
-	-	-	☑
Cross-check Approach: *This report was done by the specialized company in Romania (ICEMENERG – The Institute of Energetical Researches) with the abilities of issuing such reports.* **Risk Classification:** *The risk is very low* *See **CL # 20*** ***Further Remarks:** -*			**see CL # 20**

6 Data Reporting

Description of the Monitoring Report		
	Comments and Results	Concl.
Compliance with UNFCCC regulations	*All UNFCC regulations are considered within this project* *The verification period is from 01.01.2008 – 31.12. 2008*	☑
Completeness and Transparency	*The data analyzed were complete and transparently presented*	☑
Correctness	*All data checked were found to be correctly transfer and interpreted*	☑
Cross-check Approach: *There are several activities running in parallel for raw data collection, data storage and interpretation.* **Risk Classification:** **Further Remarks:** *No further remarks*		☑

7 Compilation and Resolutions of CARs, CLs and FARs

Corrective Action Requests by audit team	Summary of project owner response	Audit team conclusion
-		
Clarification Requests by audit team	**Summary of project owner response**	**Audit team conclusion**
CL # 1 Provide certificates of auditor training for the persons from the Quality Department.	The certificates for trained persons (*For Ms. Mariana Mândrescu: Training of Quality Management acc. to ISO 9001 done in 2005* *Training as Internal Auditor done with QUASARO in 2005* *For Ms. Valentina Popa: Training as Internal Auditor done with QUASARO in 2005 and* *Internal Audit for the ISO 14001-ISO 9001 training course done in 2007*) were presented.	A copy of the certificates for the trained persons is presented on the CD "CD_TUV_090324" (IRL11; IRL12; IRL13; IRL14) The issue is considered solved. ☑
CL # 2 Provide chemical analysis of gas report from DISTRIGAZ.	The chemical analysis report from DISTRIGAZ was presented.	A copy of the chemical analysis report is presented on the CD "CD_TUV_090324" (IRL7) The issue is considered solved. ☑
CL # 3 Provide procedure of recording data in several places and how is this risk is eliminated.	Data is collected by radio transmission, from the thermal points to the dispatch and written from the plant to the Dispatch. Readings are done at least 1 time in 24 hours. If mistake in data reading or reception they will be corrected at next reading (within maximum 24 hours). Wrong reading will be eliminated or corrected	In the procedure PO-CM-13 (IRL6) and "Municipal Cogeneration Targoviste " and in the document Additional clarification "Completare clarificare CL#5" (IRL5) - "Method of data reading and recording" are presented how data is recorded in several places.

Corrective Action Requests by audit team	Summary of project owner response	Audit team conclusion
	and will not affect the end result of the calculation. Collected data is sent via e-mail to the persons involved from Termica and NER one time in 24 hours. This will solve also the safety of data storage, by storing it on more computers. Description of these operations can be found in the procedure PO-CM-13 of Termica, available on the CD-ROM given to TUV representatives on 240309, during the visit in Targoviste	The issue is considered solved. ☑
CL # 4 Provide document that presents what happens in case of data discrepancies.	No case of data discrepancies up to now. Often readings of meters will make available a wide set of readings. If any wrong reading of meter appears will not affect the result of the monitoring because this information will not be used, but the closest good information which will be available at distance of maximum 24 hours and will not affect the results of data monitoring at year level.	There was no case of data discrepancies until now. The issue is considered solved. ☑
CL # 5 Provide information where is metered the rest of the thermal energy?	The thermal energy is measured in the plant, at the production units (boiler and engines) and in the thermal points, as supply and make-up energy. These are the measuring points, at the borders of the project.	All the measurement points of the project energy are presented. The issue is considered solved. ☑
CL # 6 Provide the procedure PO-CM 14.	The procedure PO-CM 14 was presented	The procedure PO-CM 14 (IRL7) presents what is happening when faulty data is recorded or when a meter problem is. The issue is considered solved. ☑

Corrective Action Requests by audit team	Summary of project owner response	Audit team conclusion
CL # 7 Provide information how it is ensured, that formulas are protected against unauthorized changes?	The interpretation of data and calculation files are done by booth, NER and Termica representatives. Results are compared and verified together. Formulas protection was not possible in Excel. Unauthorized changes into the formulas will not be possible without affecting the end result of a computation in visible way. In case of this happens will be repaired at verification by booth parties.	Due to the fact that the calculation files are done by all the parties involved, any unauthorized changes into the formulas will be visible. This issue is considered solved. ☑
CL # 8 Provide information for data interpretation in case of faulty monthly readings.	See CL # 4. Hourly readings available. In case of one wrong reading this will be ignored. As long as the information on the meter is correct wrong reading cannot affect the result of calculation because of wide range of data available, including the data stored in Scada.	The issue is considered solved. ☑
CL # 9 Provide list of responsible persons for data interpretation.	Mr. Ioan Isaila – NER Mr. Viorel Tabacu – Termica Mrs. Margareta Ionescu – Termica Mrs. Mariana Mandrescu – Termica	The list of responsible persons for data interpretation is presented. The issue is considered solved. ☑
CL # 10 Provide information of commissioning date of heat meters from CAF, from cogeneration and from steam boiler.	This information can be found in the centralizer (excel table) with all the meters in the plant.	This information is presented in the file “Meters Plant Centralizer_090520.xls” (IRL12). The issue is considered solved. ☑
CL # 11 Clarify the last calibration date for the plant heat meters.	This information can be found in the centralizer (excel table) with all the meters in the plant.	This information is presented in the file “Meters Plant Centralizer_090520.xls” (IRL12).

Corrective Action Requests by audit team	Summary of project owner response	Audit team conclusion
		The issue is considered solved. ☑
CL # 12 Provide information about *the uncertainty level* for the plant heat meters.	This information can be found in the centralizer (excel table) with all the meters in the plant.	This information is presented in the file "Meters Plant Centralizer_090520.xls" (IRL12). The issue is considered solved. ☑
CL # 13 Provide information regarding the commission-ing date of the electric meters.	This information can be found in the centralizer (excel table) with all the meters in the plant.	This information is presented in the file "Meters Plant Centralizer_090520.xls" (IRL12). The issue is considered solved. ☑
CL # 14 Provide information regarding the commission-ing date of the gas meters.	This information can be found in the centralizer (excel table) with all the meters in the plant.	This information is presented in the file "Meters Plant Centralizer_090520.xls". (IRL12). The issue is considered solved. ☑
CL # 15 Provide information of last calibration date of gas meters.	This information can be found in the centralizer (excel table) with all the meters in the plant.	This information is presented in the file "Meters Plant Centralizer_090520.xls". (IRL12). The issue is considered solved. ☑
CL # 16 Provide information of the uncertainty level for the gas meters.	This information can be found in the centralizer (excel table) with all the meters in the plant.	This information is presented in the file "Meters Plant Centralizer_090520.xls". (IRL12).

Corrective Action Requests by audit team	Summary of project owner response	Audit team conclusion
		The issue is considered solved. ☑
CL # 17 Provide information regarding the commissioning date of the heat meters of the secondary system.	Heat meters on the secondary system are not part of the project. The boundary of the project is the exit from the primary system.	According to PDD the heat meters for the heat delivered to the secondary network are within the boundary of the project and it was received information about these meters in the folder „TP_Data “ (Ref 1-14) The issue is considered solved. ☑
CL # 18 Provide a list of the heat meters of the secondary network with the following characteristics (instrument type; serial no., manufacturer, specific location, measurement range, measurement unit, calibration date, required calibration frequency, uncertainty level).	Heat meters on the secondary system are not part of the project. The boundary of the project is the exit from the primary system.	According to PDD the heat meters for the heat delivered to the secondary network are within the boundary of the project and it was received information about these meters in the folder „TP_Data “ (Ref 1-14) The issue is considered solved. ☑

Corrective Action Requests by audit team	Summary of project owner response	Audit team conclusion
CL # 19 Provide a copy of the data processing and interpretation in order to clarify the aspect of data reliability and plausibility.	This information is available on the CD-ROM given to TUV representatives on 240309, during the visit in Targoviste. (see files from folder Calculation 2008)	A copy of the data processing and interpretation was received (IRL16; IRL17). The issue is considered solved. ☑
CL # 20 Provide a copy of the Environmental Impact Assessment Report.	A copy of the Environmental Impact Assessment Report was presented.	The issue is considered solved (IRL4). ☑
Forward Action Requests by audit team	**Summary of project owner response**	**Audit team conclusion**
FAR # 1 Written (paper or digital) procedure for data transfer shall replace verbal transfer	The Project includes an automatic data collection / storage system, part of SCADA system. Data collection is still under verification and can be used for data verification if needed.	The issue will be verified during the next periodic verification. ☑

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Annex 2
Information Reference List

Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date(dd/mm/yyyy)	Additional Information (Relevance in JI Context)
		Onsite interview carried out by TÜV SÜD: Validation Team: Madis Maddison, TÜV SÜD Laura Vaida, TÜV SÜD Interviewed Persons: Mr. Viorel Tabacu, S.C. Termica S.A. General Manager (operator of the project); Mr. Leo Paulissen, General Manager S.C. Nuon Energy Romania Srl. (CO2 credits owner). Mr. Ioan Isaila – Engineer, Nuon Energy Romania Mr. Marius Sala – Interpreter S.C. TERMICA S.A. Targoviste	23-03-2009 24-03-2009	*See Participation List*
1.	Nuon	Erupt 4 - Final PDD;;	24-05-2004	http://ji.unfccc.int/JIITLProject/DB/JZ3NVK4GDR3I7BVX7BWLWLVBY5ZPTD/details; Registration Number: RO 1000173
2.	Nuon	Attachment of the final PDD	5-12-2008	
3.	Nuon	Monitoring Report for the year 2008	13-01-2009	Version 01
4.	Nuon	Monitoring Report for the year 2008	23-01-2009	Version 02
5.	Nuon	Gas certificate “Buletin analiza gaze”	No date	
6.	Nuon	Procedura PO-CM-13 “Municipal Cogeneration Targoviste ”	No date	

Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date(dd/mm/yyyy)	Additional Information (Relevance in JI Context)
7.	Nuon	Procedura PO-CM-14 „Modalitati de stabilire a consumurilor energetice si de apa“	No date	
8.	Nuon	Test certificates for electricity meters	No date	
9.	Nuon	Invoices of sold electricity	No date	
10.	Nuon	Reports of invoices delivered to Electric company	2008	
11.	Nuon	Gas invoices of Distrigaz	2008	
12.	Nuon	Meters Plant Centralizer_090520.xls	2009	Excel file
13.	Nuon	Meters Plant Centralizer.xls	No date	Excel file
14.	Nuon	Thermal Points Information folder “TP_Data”	No date	
15.	Nuon	Additional clarification ”Completare clarificare CL#5”	No date	
16.	Nuon	Data processing folder “Calculation2008”	2008	
17.	TÜV SÜD	List of Audit participants	23-03-2009	
18.				
19.	TÜV SÜD	Re-determination report	17-12-2008	No. 1096909
20.	Romanian DFP	LoA	20-05-2004	
21.	NL DFP	Declaration of Approval	16-04-2004	

Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date(dd/mm/yyyy)	Additional Information (Relevance in JI Context)
22.	TÜV SÜD	Photo report	03-2009	
23.	Nuon	General plan map of the plant “Plan general”	No date	
24.	Nuon	Detailed map of the Plant “Plan amplasare in zona”	No date	
25.	Nuon	Environmental Impact Assessment Report	No date	
26.	Nuon	Final Startup Report for cogeneration units “Proces verbal final de punere in functiune” No. 3605	No date	
27.	Nuon	Documents of reception at finishing works “Proces verbal de receptie la terminarea lucrarilor” No.2867	No date	
28.	Nuon	Documents of reception at finishing works “Proces verbal de receptie la terminarea lucrarilor” No.24292	No date	
29.	Nuon	Document for changing the measurement units “Proces verbal de schimbare a mijloacelor de masurare”	No date	
30.	Nuon	Certificat de absolvire Mariana Mandrescu “Auditori intern pentru sistemul calitatii”	No date	
31.	Nuon	Certificat Popa Valentina Lidia “Auditor intern pentru sisteme de management de mediu”	No date	

Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date(dd/mm/yyyy)	Additional Information (Relevance in JI Context)
32.	Nuon	Certificat Mariana Mandrescu “Managementul calitatii ISO 9001:2000”	No date	
33.	Nuon	Certificat de absolvire Popa Valentina Lidia “Auditori intern pentru sistemul calitatii”	No date	
34.	Nuon	Drawing meters.jpg	No date	
35.	Nuon	Test certificates for gas meters	No date	
36.	Nuon	Test certificates for heat meters	No date	
37.	Nuon	Electricity license production	No date	
38.	Nuon	Thermal energy license production	No date	
39.	Nuon	Licence for the production of power energy	No date	
40.	Nuon	Licence for the transport of thermal energy	No date	
41.	Nuon	Licence for the thermal energy distribution	No date	
42.	Nuon	Licence for the delivery of thermal energy	No date	
43.	Nuon	Integrated Environmental Authorisation Termica Sud	No date	