



RINA

GOLD STANDARD VERIFICATION/CERTIFICATION REPORT

Final

“Gunaydin WPP”
in
Turkey

Monitoring period: 01/12/2012 to 30/04/2014

Report N° 2014-TQ-18-MD

Revision N° 1.2Aa

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Project Title: Gunaydin WPP	Country: Turkey	Estimated VERs (tCO₂e): 31,195
GS Registration Reference N°: 1178	Monitoring period: 01/12/2012 to 30/04/2014	Certified VERs (tCO₂e): 31,737
Client: Manres Elektrik Uretim A.S.	Client contact: Aysun KARASOY	
Report No.: 2014-TQ-18-MD	Revision: 1.2Aa	Date of this report: 19/08/2014
Approved by (Final Report – Authorized officer signing for the DOE):  Laura Severino		Date of approval: 29/08/2014

Methodology

Number: ACM0002	Version: 13.0.0 of 11/05/2012	Title: Consolidated baseline methodology for grid-connected electricity generation from renewable sources	Scale Small	SS(s): 1
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RINA Services S.p.A. (RINA), commissioned by Manres Elektrik Uretim A.S., has verified the greenhouse gas emission reductions reported for the project activity “Gunaydin WPP” in Turkey, GS Registration Reference N° 1178, for the period 01/12/2012 to 30/04/2014, with regard to the relevant requirements for GS activities. The verification shall ensure that reported emission reductions are complete and accurate in accordance with applicable GS VER requirements, which refer to CDM rules, in order to be certified.

The project was validated by RINA (validation report N° 2012-TQ-16- MD, version 1.2 of 25/07/2013) and it was registered on 14/06/2013 under the GS registration reference N° 1178.

The GHG emission reductions were calculated on the basis of the approved methodology ACM0002, version 13.0, “Consolidated baseline methodology for grid-connected electricity from renewable sources” of 11/05/2012 and the monitoring plan included in the registered Project Design Document, version 7 of 22/07/2013.

In conclusion, it is RINA's opinion that the project activity “Gunaydin WPP”, in “Turkey, as described in the Monitoring Report version 03 of 15/08/2014, meets all relevant requirements for GS and CDM activities and all relevant host Party criteria and correctly applies the baseline and monitoring methodology “ACM0002”, “Consolidated baseline methodology for grid-connected electricity from renewable sources”, version 13.0.0 of 11/05/2012. Hence, RINA is able to certify that the emission reductions from the project during the monitoring period 01/12/2012 to 30/04/2014 amount to 31,737 tCO₂e.

Baseline Emissions	31,737 tCO ₂ e
Project Emissions	0 tCO ₂ e
Leakage	0 tCO ₂ e
Net GHG emission reductions/removal	31,737 tCO ₂ e

Work carried out by:

Tugce KIRATLI



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Work verified by (Final Report)

Rita Valoroso



Keywords:

Climate Change, Kyoto Protocol, Verification, Gold Standard

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Abbreviations

BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM M&P	Modalities and Procedures CDM
CDM-PCP	Clean Development Mechanism Project Cycle Procedure
CDM-PS	Clean Development Mechanism Project Standard
CDM-VVS	Clean Development Mechanism Validation and Verification Standard
CER(s)	Certified Emission Reduction (s)
CH ₄	Methane
CR	Clarification Request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
ER	Emission Reductions
GHG(s)	Greenhouse gas(es)
GS	Gold Standard
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
LSC	Large scale
MoV	Means of Verification
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non-governmental Organization
ODA	Official Development Assistance
PDD	Project Design Document
PE	Project Emission
PP(s)	Project Participant(s)
PMUM	Market Financial Conciliation Center (Piyasa Mali Uzlastirma Merkezi)
Ref.	Document Reference
RINA	RINA Services Spa
SDI	Sustainable Development Indicator
SS(s)	Sectoral Scope(s)
SSC	Small Scale
TEIAS	Turkish Electricity Transmission Company (Turkiye Elektrik Iletim A.S.)
UNFCCC	United Nations Framework Convention on Climate Change
VERs	Verified Emission Reduction(s)

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1 INTRODUCTION

Manres Elektrik Uretim A.S. has commissioned RINA to carry out the verification and certification of emission reductions reported for the registered “Gunaydin WPP” project in Turkey, GS Registration Reference N°1178, for the period 01/12/2012 to 30/04/2014.

This report summarizes the findings of the verification of the project, performed on the basis of GS VER requirements, which refer to CDM rules, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 Objective

The objective of the verification is to have an independent review ex post determination by a Designated Operational Entity (DOE) of the monitored reductions in GHG emissions that have occurred as a result of the registered GS project activity during a defined monitoring period and to monitor the impact of project activity on sustainable development, throughout the monitoring of the non-neutral Sustainable Development Indicators and moreover to monitor all the mitigation and compensation measures put in place. Certification is the written assurance by the DOE that, during a specific time period, a proposed GS project activity achieved the reductions in anthropogenic emissions by sources of GHGs as verified and that all the defined Sustainable Development Indicators to be monitored have been monitored according to the sustainability monitoring plan and that all the mitigation measures forecast have been correctly and effectively implemented.

The objective of this verification/certification was to verify and certify emission reductions and effective implementation of the monitoring of sustainable development indicators and mitigation measures, reported for the “Gunaydin WPP” project in Turkey for the period 01/12/2012 to 30/04/2014.

1.2 Scope

The verification scope is:

- to verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan;
- to evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement;
- to verify that reported GHG emission data is sufficiently supported by evidence;
- to evaluate whether all the mitigation measures have been effectively put in place according to the monitoring plan and that all the sustainable development indicators have been correctly monitored.

Verification shall ensure that reported emission reductions are complete and accurate in accordance with applicable GS VER requirements which refer to CDM rules, in order to be certified.

UNFCCC criteria for CDM refer to Article 12 of the Kyoto Protocol, the CDM modalities and procedures, and the subsequent decisions by the CDM Executive Board.

The GS criteria refer to GS requirements, GS Toolkit and supporting annexes.

Verification is not meant to provide any consultancy towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the monitoring.

2 METHODOLOGY

Verification was conducted using RINA procedures in line with the requirements specified in the GS Requirements, CDM M&P, the latest version of the CDM Validation and Verification Standard, and relevant decisions of the COP/MOP and the CDM EB and applying standard auditing techniques.

The verification consisted of the following three phases:

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- Desk review;
- On-site assessment;
- The resolution of outstanding issues and the issuance of the final verification report and certification.

The following sections outline each step in more detail.

2.1 Desk Review

The monitoring report version 03 of 15/08/2014 [/3/](#), the emission reduction calculations provided in the form of a spreadsheet “Conf_Gunaydin_VER_Calcs_06052014_v1.xlsx” version 1.0 of 06/05/2014 [/9/](#), the approved baseline and monitoring methodology ACM0002 version 13.0 of 11/05/2012 [/7/](#) and all the documentation provided to support the monitoring period [/1 – 33/](#) were assessed as part of the verification. In addition, the Project Design Document (PDD) version 07 of 22/07/2013 [/1/](#), in particular as regards the baseline estimations and the monitoring plan, the Passport, version 04 of 22/07/2013 [/2/](#) and the validation report revision 1.2 of 25/07/2013 [/8/](#) for the project, were reviewed.

The following table lists the documentation that was reviewed during the verification.

/1/	Global Tan Energy Ltd.: GS-PDD for “10 MW Gunaydin WPP” in Turkey, version 07 of 22/07/2013
/2/	Global Tan Energy Ltd.: Gold Standard Passport for Project Activity “10 MW Gunaydin WPP” in Turkey, version 04 of 22/07/2013
/3/	Global Tan Energy Ltd.: Monitoring Report for “Gunaydin WPP” in Turkey, version 03 of 15/08/2014 Global Tan Energy Ltd.: Monitoring Report for “Gunaydin WPP” in Turkey, version 02 of 28/05/2014 Global Tan Energy Ltd.: Monitoring Report for “Gunaydin WPP” in Turkey, version 01 of 06/05/2014
/4/	Gold Standard Foundation: Gold Standard Requirements, version 2.1 of 01/07/2009
/5/	Gold Standard Foundation: Gold Standard Toolkit, version 2.1 of 01/07/2009
/6/	CDM Executive Board: Clean Development Mechanism Validation and Verification Standard, version 06.0 of 11/04/2014
/7/	CDM Executive Board: Baseline and monitoring methodology “ACM0002”, “Consolidated baseline methodology for grid-connected electricity from renewable sources”, version 13.0.0 of 11/05/2012
/8/	RINA: Validation Report for “10 MW Gunaydin WPP” No. 2012-TQ-16-MD, version 1.2 of 25/07/2013
/9/	Global Tan Energy Ltd.: Emission Reduction Calculation Spreadsheet “Conf_Gunaydin_VER_Calcs_06052014_v1.xlsx” version 1.0 of 06/05/2014
/10/	CDM Executive Board: Guideline for Completing the Monitoring Report Form, version 04.0 of 04/10/2013
/11/	CDM Executive Board: Methodological Tool “Tool to calculate the emission factor for an electricity system”, version 02.2.1 of 29/08/2011
/12/	CDM Executive Board: Methodological Tool “Tool for the demonstration and assessment of additionality”, version 06.0.0 of 25/11/2011
/13/	CDM Executive Board: Monitoring Report Form (F-CDM-MR), version 03.2 of 05/11/2013
/14/	Cetinel Muhendislik Madencilik Insaat Ozel Egitim ve Danismanlik Gida Turizm Ithalat Ihracat: Completion Certificate of Professional Competence Training for 6 Employees of 28/02/2014
/15/	Ilk Dost: Health and Safety Training for 9 Employees of 25/03/2014
/16/	Social Insurance Institution: Registration Document for 9 Employees of 02/2014

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/17/	Residence Certificates of All Employees, submitted on 06/05/2014 (9 employees)
/18/	Market Financial Conciliation Center (PMUM): Monthly Electricity Records within the Monitoring Period (from 01/12/2012 to 30/04/2014)
/19/	Turkish Electricity Transmission Company (TEIAS): Monthly Meter Readings within the Monitoring Period (from 01/12/2012 to 30/04/2014)
/20/	Energy Market Regulatory Authority: Communiqué for Measurement Devices used in the Electricity Market of 22/03/2003
/21/	The Ministry of Trade and Industry: Regulation of Metering and Testing of Metering Systems of 24/07/1994
/22/	Kesir Muhendislik: Calibration Certificate of Electricity Meter with a Serial No: 65000752 of 13/07/2012
/23/	Kesir Muhendislik: Calibration Certificate of Electricity Meter with a Serial No: 65000753 of 13/07/2012
/24/	Picture of the Main and Backup Electricity Meters, submitted on 06/05/2014
/25/	GL Garrad Hassan Deutschland GmbH: Preliminary Assessment of the Energy Production of the Proposed Gunaydin Wind Farm of 02/11/2011 (last amended on 20/01/2012)
/26/	Doga Arastirmalari (Suleyman Eksioglu): Ornithology Report of 08-10/2012 Ankara University (Levent Turan): Ornithology Report of 2013
/27/	Manyas Municipality: Correspondence About Waste Disposal Transportation, no: M.10.6.MAN.0.13 of 26/11/2013
/28/	Energy Market Regulatory Authority: Generation License EU/3490-17/2141 of 11/11/2011 amended on 09/02/2012 (based on 10 MWe/12.5 MWm installed capacity)
/29/	The Ministry of Energy and Natural Resources: Temporary Acceptance Protocol of 20/11/2012
/30/	Gulmus Nakl. Ins. Tur. Taah. Tic. San. Ltd. Sti.: Invoices of Sewage Truck, No: 40070 of 27/03/2014
/31/	The Gold Standard Foundation: 10 MW Gunaydin WPP, Turkey (GS1178) 8-week Issuance Review Period Document of 30/08/2013
/32/	Görlitz: Remote Reading System Screenshots, submitted on 28/05/2014
/33/	Turkish Redcrescent: First Aid Certificates for 2 Employees of 22-23/01/2013

2.2 On-site assessment

On 20/05/2014, RINA visited project site located at Yaylakoy Village of Manyas District within boundaries of Balıkesir Province. During the on-site assessment of the project, RINA assessed the implementation and operation of the proposed project activity, reviewed the information flows for generating, aggregating and reporting the monitoring parameters, interviewed key personnel of the plant to confirm the operational and data collection procedures, cross-checked between information provided in the monitoring report and data plant, checked the monitoring equipment including calibration performance, reviewed calculations and assumptions made in determining the GHG data and emission reductions, checked the quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters, checked the correct and effective implementation of the mitigation measures foreseen in the sustainability monitoring plan, to prevent violation or the risk of violating a safeguarding principle of the “Do No Harm” Assessment or to “neutralize” a Sustainable Development Indicator.

The project area was visited on 20/05/2014. The project employee were interviewed about the implementation status of the project, monitoring equipment and operation, generated electricity, monitoring of gold standard parameters, wastewater disposal, waste disposal, death birds, payments made to staff and trainings given to the employment.

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In addition, the mukhtar was interviewed about benefits of the project activity and logbook given by project owner. He showed us the logbook. However, no negative or positive feedback was written in the book. In addition, he mentioned that all the stakeholders were satisfied with the project activity.

The key personnel interviewed and the main topics of the interviews are summarized in the table below.

	Date	Name and Role	Organization	Topic
/a/	20/05/2014	Gani ELDELEKLIOGLU <i>The Consultant</i>	GTE Carbon	Implementation status of the project
/b/	20/05/2014	Aysun KARASOY <i>Operation Specialist</i>	Manres Elektrik A.S.	Monitoring equipments and operation Generated Electricity
/c/	20/05/2014	Deniz DOGRU <i>Operation Manager</i>	Manres Elektrik A.S.	Monitoring of Gold Standard Parameters Wastewater Disposal
/d/	20/05/2014	Ismail AYGORMUS <i>Operation Technician</i>	Manres Elektrik A.S.	Waste Disposal Death Birds Trainings Payments
/e/	20/05/2014	Selahattin BASARAN <i>The Mukhtar</i>	Yayla Village	Benefits of the project activity Logbook

2.3 Resolution of outstanding issues

The objective of this phase of the verification is to resolve any outstanding issues which need to be clarified for RINA's positive conclusion on the monitoring report and emission reductions.

To guarantee transparency a verification protocol has been customized for the project. The protocol shows in a transparent manner the requirements, means of verification and the results from verifying the identified criteria. The verification protocol consists of three tables; the different columns in these tables are described in the figure below (see Figure 1). The completed verification protocol is enclosed in Appendix A to this report.

A corrective action request (CAR) is raised if one of the following occurs:

- Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impair the estimate of emission reductions;
- Issues identified in a FAR during validation to be verified during verification have not been resolved by the project participants.

A clarification request (CR) is raised if information is insufficient or not clear enough to determine whether the applicable GS VER requirements, which refer to CDM rules, have been met.

CARs, CRs identified are included in the verification protocol in Appendix A of this report.

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Figure 1 Gold Standard Verification protocol tables

Verification Protocol, Table 1 - Requirement checklist				
Checklist Question	Ref.	MoV	Comments	Conclusion
Checklist questions organized in five different sections.	Makes reference to documents where the answer to the checklist question or item is found.	Explain how conformance with the checklist question is investigated. Examples are document review (DR), interview or any other follow-up actions (I), cross checking (CC) with available information relating to projects, (N/A) means not applicable.	The discussion on how the conclusion is arrived at and the conclusion on the compliance with checklist question so far.	For CAR and CR see the definitions above. OK is used if the information and evidence provided is adequate to demonstrate compliance with GS VER/CDC requirements which refer to CDM rules.

Verification Protocol, Table 2: Resolution of Corrective Action Requests and Clarification			
Corrective action requests and/or clarification requests	Reference to Table 1	Response by project participants	Verification Conclusion
The CAR and/or CRs raised in table 1 are repeated here.	Reference to the checklist question number in Table 1 where the CAR or CR is explained.	The responses given by the project participants to address the CARs and/or CRs.	The verification team's assessment and final conclusion of the CARs and/or CRs.

Verification Protocol, Table 3 - Forward Action Requests		
Forward action request	Reference to Table 1	Response by project participants Verification Conclusion
The FAR raised in table 1 is repeated here.	Reference to the checklist question number in Table 1 where the FAR is explained.	Response by the project participants on how forward action request will be addressed.

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2.4 Internal quality control

All the revisions of the verification report, before being submitted to the client, were subjected to an independent internal technical review to confirm that all verification activities had been completed according to the pertinent RINA instructions.

The technical review was performed by a technical reviewer(s) qualified in accordance with RINA's qualification scheme for CDM/GS validation and verification.

2.5 Verification team and the technical reviewer(s)

The verification team and the technical reviewers consist of the following personnel:

Role/Qualification	Last Name	First Name	Type of involvement*					
			DR	SV	REP	TE	TR	TER
Team Leader	Kiratli	Tugce	X	X	X	X	-	-
GS Verifier	Kiratli	Tugce	X	X	X	X	-	-
Technical Expert (TA 1.2)	Kiratli	Tugce	X	X	X	X	-	-
Technical Reviewer	Valoroso	Rita	-	-	-	-	X	-

*DR: Document Review; SV: Site Visit/Interview; REP: Reporting; TE: Technical Expert in Technical Area; TR: Technical Review; TER: Technical Expert in Technical Area for Technical Review.

3 VERIFICATION FINDINGS

The findings of the verification related to the monitoring period from 01/12/2012 to 30/04/2014 as documented and described in the monitoring report version 03 of 15/08/2014 and previous versions [/3/](#) are stated in the following sections.

The verification requirements, the means of verification and the results from verifying the identified criteria are documented in more detail in the verification protocol in Appendix A.

3.1 Description of the project activity

The main information of the project is summarized in the table below.

Project Participant(s)	Manres Elektrik Uretim A.S. and Global Tan Energy Ltd.		
Project Title	Gunaydin WPP		
Location of the project	Manyas District, Balikesir Province, Turkey		
Methodology(ies)	ACM0002, "Consolidated baseline methodology for grid-connected electricity from renewable sources", version 13.0 of 11/05/2012 /7/		
Sectoral Scope(s)	1	RINA's Technical Area(s)	1.2
Registered PDD	Revision 07 of 22/07/2013		
Date of registration	14/06/2013	GS Registration Reference N°	1178

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Starting date of the crediting period	01/12/2012
Project's crediting period	01/12/2012 to 30/11/2019
Monitoring period	01/12/2012 to 30/04/2014
Project documentation link	http://mer.markit.com/br-reg/public/index.jsp?q=gunaydin&s=cp

The project activity is a wind power plant consists of 5 GE 2.5-100 MW wind turbines each capacities are 2.5 MWm with a total capacity of 12.5 MWm/10 MWe as confirmed through the Generation License /28/. The generated electricity is fed to the Turkish national grid. The estimated net electricity production is 36,700 MWh and the annual emission reductions are estimated to be 22,020 tCO₂e per year.

The project activity aims to reduce the greenhouse gas emissions in Turkey by replacing fossil fuel power generation and contribute to the development of the wind energy sector in Turkey, as well as aims to support the local economy by creating local employment and providing equipment locally.

3.2 Remaining issues (FARs) from previous validation or verification

Based on the review of the Gold Standard Foundation /31/, 2 FARs were raised during the validation. All FARs have been closed successfully.

FAR#1: the PP shall provide the bird assessment report at the time of first verification, and the verifying DOE shall also verify the same. The guidelines given in the FAR # 5 of the GS LSC review shall be taken into consideration for the bird assessment study.

Two ornithology reports /26/ performed on 2012 and 2013 are provided to the verification team. According to the ornithology reports, there is no risk and adverse interactions with appreciable sizes are not expected. During on site visit, Ismail Aygormus (employee) who is the most authorized person in the rapprochement to the turbines except the employee of GE is interviewed also about the bird deaths. No negative feedback was received. No bird death was observed.

Hence, this FAR was closed.

FAR#2: The verifying DOE shall verify the logbook at the time of first verification with the help of interviews with the stakeholders.

During on site visit the mukhtar of Yayla Village was interviewed about logbook. He showed us the logbook. However, no negative or positive feedback was written in the book. In addition, he mentioned that all the stakeholders were satisfied with the project activity.

Hence, this FAR was closed.

3.3 Monitoring Report

The Monitoring Report for the project activity "Gunaydin WPP", in "Turkey", version 03 of 15/08/2014 and the previous versions submitted by the Manres Elektrik Uretim A.S. have been the basis for the verification process.

The main changes between the MR version 01 of 06/05/2014 at the starting date of the verification activity and the MR version 03 of 15/08/2014 submitted for registration are the following:

Section of the MR	Description and reason for changing the information in that section
B.1. Description of implemented registered project activity	The FARs were presented related to this monitoring period.
B.2. Post Registration	The two post registration changes about the PMUM records used as

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Changes		basis of emission reduction calculations and the future trainings of the project activity is explained.
SECTION Description monitoring system	C. of	Organizational Chart is corrected as per the current situation.
D.1. Data and parameters fixed ex ante or at renewal of crediting period		The parameter $EF_{grid,CM,y}$ is added to the fixed ex-ante parameters since it will not be re-calculated for this crediting period.
D.2. Data and parameters monitored		The unit and the Measuring/Reading/Recording frequency is corrected as per the registered PDD.
E.6. Remarks on difference from estimated value in registered PDD		The value of estimated and the actual are compared.
ANNEX-I		First Aid trainings performed during this monitoring period were added. The necessary explanation about the second ornithology report was added.

RINA confirms that the above MR is based on the currently valid MR template [/13/](#) and is completed in accordance with the applicable guidance document [/10/](#).

3.4 Project implementation

Actual implementation of the registered project activity

It was verified during the site visit that the proposed project activity has been implemented and it is in operation in accordance with the project activity described in the registered PDD [/1/](#). The starting date of operation and the crediting period is 01/12/2012. All turbines have been commissioned in one phase on 20/11/2012 [/29/](#).

The project activity consists of 5 model of GE 2.5-100 MW wind turbines each capacities are 2.5 MWm/2.0 MWe making the total installed capacity of 12.5 MWm/10 MWe as confirmed through the Generation License [/28/](#). The technical details of the wind turbines given as a figure in the monitoring report is comply with the registered PDD [/1/](#). It is confirmed during the site visit that all installed turbines are GE 2.5-100 MW turbine, each with an output of 2.5 MW. The project boundary in the registered PDD [/1/](#) is in line with the actual project boundary. The generated electricity is supplied to the National Electricity Transmission Grid of Turkey via Mustafa Kemal Pasa Transmission Line as confirmed through the Generation License [/28/](#).

Based on the onsite inspection and checking the above documents, RINA confirms that the project activity has been implemented and it is in operation as described above in accordance with the project activity in the registered PDD [/1/](#).

Post registration changes

The electricity generation and the electricity consumption are based on PMUM records and the monthly meter readings are used to crosscheck since remote reading records signed by TEIAS (National Energy Transmission Company) operators are no longer available.

The future target for the training records such as working at heights, erection of wind turbine and turbine rescue training are changed since Manres Elektrik Uretim A.S. has purchased turbine services from GE.

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3.5 According to the GS comment, the project name is revised from “10 MW Gunaydin WPP” to “Gunaydin WPP” related to a possible design change. Methodology for determining Emission Reductions.

According to the applied methodology “ACM0002”, “Consolidated baseline methodology for grid-connected electricity from renewable sources” [/7/](#), the emission reductions have been calculated based on the following formula:

$$ER_y = BE_y - PE_y - L_y$$

Where:

BE_y = Baseline emissions in year y (tCO_2e/yr)

PE_y = Project emissions in year y (tCO_2e/yr)

L_y = Leakage emissions in year y (tCO_2e/yr)

The baseline emissions include the CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity, multiplying the electricity supplied to the grid (MWh) with the combined margin CO_2 emission factor for grid connected power generation in year.

$$BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$$

Where:

$EG_{PJ,y}$ = Net electricity supplied to the grid (MWh)

$EF_{grid,CM,y}$ = Combined margin grid emission factor (tCO_2/MWh)

The project emissions are assumed to be zero as per the ACM0002 [/7/](#) since the project is a renewable energy project as defined in the registered PDD [/1/](#) and validation report [/8/](#). The leakage emissions are assumed to be zero as per the ACM0002 [/7/](#) as defined in the registered PDD [/1/](#). Since the project and leakage emissions are zero, the emission reduction equals to baseline emissions.

3.5.1 Compliance of the monitoring plan with the monitoring methodology and applicable methodological tools

The registered project activity applies the approved baseline and monitoring methodology ACM0002 version 13.0.0 [/7/](#). RINA confirms that the monitoring plan in the registered PDD [/1/](#) complies with the applied CDM methodology and the sustainability indicators established by the Appendix D of the Gold Standard requirements [/4/](#).

3.5.2 Deviation in GHG emission reduction

Additionality assessment has been performed according to the “Tool for the demonstration and assessment of additionality” approved by UNFCCC in the registered PDD [/1/](#). The baseline scenario selection and the calculation of emission reductions have been carried out in a conservative manner. An approved CDM methodology, ACM0002 version 13.0 has been applied in order to determine the baseline scenario and calculate emission reductions.

3.5.3 Compliance of monitoring with monitoring plan

The monitoring plan presented in the monitoring report version 3 of 15/08/2014 and the previous versions for the period of 01/12/2012 to 30/04/2014 (both days included) [/3/](#) complies with the monitoring plan in the registered PDD [/1/](#).

The only monitoring parameter is “Quantity of net electricity generation supplied by the project plant to the grid in year y ($EG_{facility,y}$)” as per the registered monitoring plan presented in the registered PDD [/1/](#).

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The parameter is monitored continuously by two electricity meters that are located at Mustafa Kemal Pasa substation. Two electricity meters are installed at Mustafa Kemal Pasa substation, one is the main meter (ITRON SL7000 with serial number 65000752) and the other one is the backup meter (ITRON SL7000 with serial number 65000753). The accuracy of the meters is 0.5s as confirmed through the calibration reports [/22/](#) [/23/](#), performed by Kesir Muhendislik. The accuracy class of the meters complies with the "Communiqué for Measurement Devices used in the Electricity Market" [/20/](#). The electricity meters are sealed by TEIAS as confirmed during the site visit. TEIAS is responsible for calibration and maintenance of the devices. The project owner has no control on the meters since the meters are sealed by the TEIAS. If any major discrepancy occurs between the two meters, TEIAS performs necessary calibration. The meters were calibrated on 13/07/2012 by Kesir Muhendislik [/22/](#) [/23/](#). The recalibration of these meters will be done in line with the equipment requirements and through the period defined by national metrology institutes country by country and for Turkey this period is defined as 10 years. The calibration of meters is deemed appropriate and in compliance with the national regulation [/21/](#). At the last day of each month, the electricity generation supplied to the grid and electricity consumption from the grid is read remotely from the electricity meters through Automatic Meter Reading System by the TEIAS personnel. Also the PMUM records are available for the project participant. All protocols [/18/](#) [/19/](#) within this monitoring period was checked during the site visit. The PMUM records [/19/](#) are crosschecked with the monthly official electricity metering reports (OSF Forms) [/18/](#) during this monitoring period. The Monthly Meter Reading Protocols, PMUM records and emission reduction calculation spreads sheet [/9/](#) are in line. During the monitoring period of 01/12/2012 to 30/04/2014 (both days included) the net electricity supplied to the grid amount to 52,897 MWh and the emission reductions to 31,737 tCO₂e.

According to the monitoring plan in the registered PDD [/1/](#) and in the monitoring report version 3 of 15/08/2014 [/3/](#), the following sustainability parameters are monitored: "Air Quality", "Water Quality and Quantity", "Soil Condition", "Access to Affordable and Clean Energy Services", "Biodiversity", "Quality of Employment", "Quantitative Employment and Income Generation", "Balance of Payment and Investment".

The following parameters have been monitored in accordance with the monitoring plan in the registered PDD [/1/](#) and the monitoring report [/3/](#).

3.5.3.1 Data and parameters fixed ex-ante or at renewal crediting period

DATA/PARAMETER	Source of data	Reported value for the project period	Assessment/Observation
Combined Margin Emission Factor	TEIAS statistics	0.600 tCO ₂ /MWh	As per the approved methodology ACM0002 version 13.0.0, the combined emission factor has been determined using the ex-ante option and so it is not requested to monitor and recalculate the emission factors during the crediting period. The combined emission factor is determined to be 0.600 tCO ₂ /MWh in the registered PDD /1/ and validation report /8/ .
Leakage	-	0 tCO ₂	As per the approved methodology ACM0002 version 13.0.0, the leakage emissions were neglected.
Project Emissions	-	0 tCO ₂	As per the approved methodology ACM0002 version 13.0.0, the project emissions were neglected.

3.5.3.2 Sampling plan

Not applicable.

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3.5.3.3 Data and parameters monitored ex-post

DATA/PARAMETER	EG _{facility,y}
Data Unit	GWh
Description	Net Electricity generated and delivered to the grid by the project in year y
Source of data to be used	PMUM (Market Financial Settlement Center) records and Monthly Meter Reading Records of main meters are cross-checked
Value data for the monitoring period	52,897
Measuring and reporting frequency; recording procedure.	Continuously monitoring and monthly recording
Type of monitoring equipment and its accuracy	Two electricity meters are installed at the project site, one is the main meter (ITRON SL7000 with serial number 65000752) and the other one is the backup meter (ITRON SL7000 with serial number 65000753). The accuracy of the meters is 0.5s as confirmed through the calibration reports /22/ /23/ , performed by Kesir Muhendislik.
Calibration frequency/interval	TEAIS is responsible for calibration and maintenance of the devices as per the registered PDD. The project owner has no control on the meters since the meters are sealed by the TEIAS. If any major discrepancy occurs between the two meters, TEIAS performs necessary calibration. During this monitoring period no discrepancy was occurred. The meters were calibrated on 13/07/2012 by Kesir Muhendislik /22/ /23/. The recalibration of these meters will be done in line with the equipment requirements and through the period defined by national metrology institutes country by country and for Turkey this period is defined as 10 years. The calibration of meters is deemed appropriate and in compliance with the national regulation /21/. During on-site assessment, it was confirmed that the meters are in place and functions well. During the monitoring period, no brake down has been recorded.
How were the values in the monitoring report verified and cross-checked?	The net electricity supplied to the grid has been crosschecked with the PMUM Screenshots /19/ .
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	At the last day of each month, the quantity of electricity supplied by the project plant/unit to the grid; and the quantity of electricity delivered to the project plant/unit from the grid are read remotely from the electricity meters by Automatic Meter Reading System by the TEIAS personnel. Also the PMUM records are available for the project participant. All protocols /18/ /19/ within this monitoring period was checked during the site visit. The PMUM records /19/ are crosschecked with the monthly official electricity metering reports (OSF Forms) /18/ during this monitoring period. The plant personnel records the electricity generation from the meters every day and the responsible engineer checks the figures regularly. In the case of difference

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	between the data, TEIAS will be informed. The electricity generation supplied to the grid and electricity consumption from the grid is stored by PMUM on the web site. The Project owner has an ID and password to access this data on the web site. The project owner can easily access the data by using this portal.
If only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	All the data were available for the whole monitoring period.

3.5.3.4 Gold Standard sustainability monitored parameters

Data variable	Source of Data	Reported value for the project period
Air Quality SO ₂ and NO _x emissions from grid connected plants	Electricity Generation and Calculation	37 tons SO₂ 71 tons NO_x
Assessment		
<u>SO₂ and NO_x emissions from grid connected plants:</u> The parameter is monitored yearly by calculation with the Turkey's GHG Inventory and TEIAS Statistics. The value for this monitoring period is defined as 37 tons for SO ₂ and 71 tons for NO _x .		

Data variable	Source of Data	Reported value for the project period
Water Quality and Quantity Disposal of the waste water	Waste Disposal Records	The wastewater is transported by sewage trucks
Assessment		
<u>Disposal of the waste water:</u> The parameter is monitored annually by assessing disposal methods during site visits and checking waste disposal records /30/. It is confirmed that the waste water is stored in a septic tank on site and disposed of periodically with vacuum.		

Data variable	Source of Data	Reported value for the project period
Soil Condition Amount of non-hazardous solid wastes	Correspondence with Manyas Municipality	Waste disposal are transferred to the storage area of Manyas Municipality
Assessment		
<u>Amount of non-hazardous solid wastes during construction and operational phases. Appropriate management of all waste in line with regulations:</u> The parameter is monitored annually site visit and checking waste disposal records. During on site visit it is confirmed that the waste disposal are transferred to the storage area of Manyas Municipality /27/.		

Data variable	Source of Data	Reported value for the project period
Access to affordable and clean energy services Fossil fuel replaced	Electricity Generation and Calculation	23.09 bn m ³ natural gas been used
Assessment		

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Fossil fuel replaced: The parameter is monitored yearly through comparing electricity generated by proposed project and natural gas that would be used to produce the same amount of electricity by a thermal power plant. The calculation is clearly presented in the excel sheet [/9/](#).

Data variable	Source of Data	Reported value for the project period
Biodiversity Number of bird species and affected species	- Ornithology Reports - Interview with employees	No bird deaths was observed

Assessment

Number of bird species and affected species: The parameter is monitored once by ornithology reports [/26/](#). As per the Gold Standard Foundation [/31/](#), the PP shall provide the bird assessment report at the time of first verification, and the verifying DOE shall also verify the same. Two ornithology reports performed on 2012 and 2013 are provided to the verification team. According to the ornithology reports, there is no risk and adverse interactions with appreciable sizes are not expected. During on site visit, Ismail Aygormus (employee) who is the most authorized person in the rapprochement to the turbines except the employee of GE is interviewed also about the bird deaths. No negative feedback was received. No bird death was observed.

Data variable	Source of Data	Reported value for the project period
Quality of Employment Number of personnel certified/trained during operation phase	Certificates and attendance lists of the trainings	Employees participated to the trainings.

Assessment

Number of personnel certified/trained during operation phase: The parameter is monitored yearly by review employment records and training documents/certificates. All the trainings [/14/ /15/ /33/](#) during this monitoring period was provided to the verification team. All the employees attend to the trainings.

Data variable	Source of Data	Reported value for the project period
Quantitative Employment and Income Generation	- Residence Certificates - Registration Document	9 employees are hired

Assessment

Payments made to staff: This parameter is monitored yearly by the evaluation documents for wages paid and social security documents. It was confirmed that 9 employees are hired by the project activity as confirmed through the Residence Certificates [/17/](#) and Registration Document [/16/](#). Their wage was credited by Manres Elektrik A.S. as confirmed through the Social Insurance Institution [/16/](#).

Data variable	Source of Data	Reported value for the project period
Balance of Payments and Investment	Electricity Generation and Calculation	2.58 million €

Assessment

Currency saving due to avoided fuel import: This parameter is monitored yearly by through comparing electricity generated by Gunaydin WPP and natural gas that would be used to produce the same amount of electricity according to baseline scenario. The value for this monitoring period is 2.58 million € as given in the monitoring report and calculated in the excel sheet [/9/](#).

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3.5.4 Assessment of data and calculation of emission reductions

All the monthly meter protocols [/18/](#) are available for the project participant. All PMUM records [/19/](#) within this monitoring period was checked during the site visit. The PMUM records [/19/](#) were crosschecked with the monthly meter reading protocols [/18/](#).

The data of generated electricity are transferred correctly to the excel sheet [/9/](#) and emission reduction is calculated correctly. The excel sheet is crosschecked with the PMUM records [/19/](#) and the monthly meter reading protocols [/18/](#) and it seems appropriate.

3.5.5 Accuracy of emission reduction calculations

The emission reduction calculations provided in the spreadsheet [/9/](#) have been verified to be correct and in line with the registered PDD [/1/](#).

The emission reductions from the project for the monitoring period as reported in the monitoring report version 3 of 15/08/2014 [/3/](#) is equivalent to 31,737 tCO₂e. The reported emission reductions are 1.74% higher than the estimated emission reduction of 31,195 tCO₂e for the period as per the registered PDD [/1/](#). According to the statement made by the project owner, it is very close to the expected amount.

The data presented in the monitoring report [/3/](#) were assessed by reviewing in detail project documentation, collection of monitored data, observation of established monitoring and reporting practices and assessment of the reliability of monitoring equipment. Sufficient evidence was presented and verified by RINA for the reported emission reductions as listed in the above Section 3.5.3.3.

3.5.6 Accuracy of the GS indicators of sustainable development

All the documented evidences related to the sustainable monitored parameters such as sewage truck invoice [/30/](#), correspondence of Manyas Municipality [/27/](#), ornithology reports [/26/](#), training records [/14/](#) [/15/](#) [/33/](#), Residence Certificates [/17/](#), Registration Document [/16/](#) are provided as objective evidences.

3.5.7 Management system and quality control

The electricity generation supplied to the grid and electricity consumption from the grid is read remotely from the electricity meters through Automatic Meter Reading System by the TEIAS personnel. The plant personnel records the electricity generation from the meters every last day of the month and the responsible engineer checks the figures regularly. In case of difference between the data, TEIAS will be informed. The generated electricity is measured by two meters that were sealed by TEIAS. The project owner has no control on the meters.

The electricity generation supplied to the grid and electricity consumption from the grid is stored by PMUM on the web site. The Project owner has an ID and password to access this data on the web site. The project owner can easily access the data by using this portal. The project owner also archives a hardcopy of these protocols, scanned and stored electronically.

The collected data during the monitoring period will be kept by the project owner at least two years after the last issuance of VERs as stated in the registered PDD [/1/](#) and monitoring report [/3/](#) in line with the ACM0002 version 13.0 [/7/](#).

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4 VERIFICATION AND CERTIFICATION OPINION

RINA Services Spa (RINA) has performed verification of the emission reductions reported for the project activity "Gunaydin WPP" in Turkey, GS Registration Reference N° 1178, for the period 01/12/2012 to 30/04/2014, with regard to the relevant requirements for GS activities.

The project participants of the "Gunaydin WPP" project are responsible for:

- the preparation of greenhouse gas emissions data and the reported greenhouse gas emission reductions from the project on the basis set out in the monitoring plan contained in the registered Project Design Document version 7 of 22/07/2013
- the development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of greenhouse gas emission reductions of the project.

It is the responsibility of RINA to express an independent verification opinion about the project's conformity with the requirements of paragraph 62 of the CDM modalities and procedures, GS requirements and on the reported greenhouse gas emission reductions from the project.

Based on documented evidence and corroborated by an on-site assessment RINA can confirm that:

- the project has been implemented and operated as per the registered PDD;
- the monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable CDM and GS VER requirements;
- monitoring is in place as per the applied baseline and monitoring methodology;
- monitoring complies with the monitoring plan in the registered PDD;
- the monitoring plan in the registered PDD is as per the applied baseline and monitoring methodology.

It is RINA's opinion that the GHG emission reductions stated in the monitoring report version 3 of 15/08/2014 for the "Gunaydin WPP" project in Turkey for the period 01/12/2012 to 30/04/2014 are fairly stated. The GHG emission reductions were calculated correctly, the sustainability development indicators were correctly monitored, on the basis of the approved monitoring methodology "ACM0002", "Consolidated baseline methodology for grid-connected electricity from renewable sources", version 13.0.0 of 11/05/2012 and the monitoring plan contained in the registered PDD.

Hence, RINA is able to certify that the emission reductions from the project during the monitoring period 01/12/2012 to 30/04/2014 amount to 31,737 tCO₂e.

Year 2012 01/12/2012 to 31/12/2012 1,773 tCO₂e

Year 2013 01/01/2013 to 31/12/2013 22,461 tCO₂e

Year 2013 01/01/2014 to 30/04/2014 7,503 tCO₂e

GHG Emission Reductions or Removals	tCO ₂ e
Baseline Emissions	31,737
Project Emissions	0
Leakage	0
Net GHG emission reductions or removals	31,737

Istanbul, 19/06/2014

Genova, 29/08/2014



Tugce KIRATLI
GS Team Leader

RINA Denizcilik ve Belgelendirme Ltd. Sti.



Laura Severino
Authorized officer signing for the DOE

RINA Services S.p.A.

APPENDIX A

GOLD STANDARD VERIFICATION PROTOCOL

TABLE 1 REQUIREMENTS CHECKLIST

Checklist Question	Reference	Mov ¹	Comments	Conclusion
A Description of Project Activity				
A.1 Title of the project activity, revision number and date of Monitoring Report	/1/ /3/ /8/ /31/	DR	The title of the project activity is given as "10 MW Gunaydin WPP" in the Monitoring Report version 01 /3/. The title is in line with the registered PDD /1/ and validation report /8/. The revision number and date of the Monitoring Report seems appropriate. The registration date of the project activity is 14/06/2013 as confirmed through the GS 8-week Issuance Review Period Document of 30/08/2013 /31/. The Monitoring report form (F-CDM-MR) is in line with the latest version.	OK
A.2 Is the actual implementation and operation of the proposed project activity in accordance with the project activity in the registered PDD?	/1/ /3/ /28/ /29/	DR, CC, I	It is confirmed during the site visit performed on 20/05/2014 that project activity is implemented and operated as per the registered PDD /1/. The starting date of operation and crediting period is 01/12/2012. All turbines have been commissioned in one phase. The commissioning date of the 5 turbines is 20/11/2011 as confirmed through the Temporary Acceptance Protocol /29/. The project activity consists of 5 GE turbines each having 2.5 MWh making the total installed capacity of 10 MWe as confirmed through the Generation License /28/. The generated electricity is supplied to the National Electricity Transmission Grid of Turkey via Mustafa Kemal Pasa Substation as confirmed through the PDD /1/ and Generation License /28/. The UTM coordinates of the turbines are confirmed through the registered PDD /1/ and the generation	CR-1 OK

¹ Mov: DR document review, I interview, CC cross checking

Checklist Question	Reference	MoV ¹	Comments	Conclusion
			license /28/ . The estimated emission reduction given in the cover page and Section E.5 of Monitoring Report version 1.0 /3/ is in line with the registered PDD /1/ . The crediting period is defined as 01/12/2012 to 30/11/2019 which is line with the PDD. During on site visit, it is confirmed that the organization chart is not in line with the current situation. Please correct. The actual emission reduction calculated in the excel sheet and given in the first page of the monitoring report is correct. The estimated and the actual are compared in section E.6. However, please discuss the real values and the difference with %+- in the monitoring report.	
A.3	/1/ /7/	DR	The registered project activity applies the approved baseline and monitoring methodology ACM0002 version 13.0.0 of 11/05/2012 /7/ .	OK
B Monitoring				
B.1 Monitoring plan				
B.1.1	/1 /7/	DR, CC	The monitoring plan of the registered GS project activity complies with the applied methodology ACM0002 version 13.0 /7/ .	OK
B.1.2	/1/ /2/ /7/	DR, CC	Quantity of net electricity generation supplied by the project plant to the grid in year y ($EG_{facility,y}$) needs to be monitored as per the ACM0002 version 13.0.0 /7/ and registered PDD /1/ . In addition, since the project is developed under Gold standard, the following GS sustainable development parameters needs to be monitored for the second monitoring period as per the registered GS Passport /2/ : "Air Quality", "Water Quality and Quantity", "Soil Condition", "Access to Affordable and Clean Energy Services", "Biodiversity", "Quality of Employment", "Quantitative Employment and Income Generation", "Balance of Payment and Investment".	OK

Checklist Question	Reference	MoV ¹	Comments	Conclusion
B.1.3 Do the sustainability indicators included in the monitoring report comply with the minimum contents specified in paragraph 4.1 of the GS toolkit?	/4 /5/	DR, CC	The project activity is developed and registered under Gold standard Version 2.1; therefore, GS Toolkit 2.1 is applicable to the project activity. The sustainability indicators in the monitoring report complies with the sustainability indicators established by the Gold Standard.	OK
B.1.4 Have any changes been made to the key sustainable development indicators?	/1/ /7/	DR, CC, I	No change has been occurred to the sustainable development indicators during the monitoring period of 01/12/2012 to 30/04/2014 as confirmed through the site inspection and interviews.	OK
B.2 Data and parameters that are available at validation and that are not monitored				
B.2.1 Which parameters were available at validation and how were they verified?	/1/ /7/ /8/	DR, CC	All the given parameters in the monitoring report are in line with the registered. However, for the parameter of “ $\eta_{m,y}$ ” the unit is not in line with the registered PDD. Please correct. Combined Margin Emission Factor: As per the approved methodology ACM0002 version 13.0.0, the combined emission factor has been determined using the ex-ante option, so it is not requested to monitor and recalculate the emission factors during this crediting period. The combined emission factor is determined to be 0.600 tCO ₂ /MWh in the registered PDD /1/ and validation report /8/ . However, it is not discussed in the monitoring report. Please add the parameter of “EF _{grid,CM,y} ” as per the methodology /7/ .	GR-2 OK
B.3 Data and parameters monitored				
B.3.1 Data/Parameter monitored / Data unit / Description / Source of data to be used / Value data for the monitoring period	/1/ /18/ /19/	DR, CC, I	Net Electricity generated and delivered to the grid by the project in year y (EG_{facility,y}): The electricity generation and electricity consumption is measured in GWh and it is monitored by two electricity meters that are located at Mustafa Kemal Pasa substation. However, the unit of the parameter stated as “MWh” in the monitoring report is not in line with the registered PDD. In addition, the measuring-reading-recording frequency of the parameter is not in line with the registered PDD. Please correct.	GR-3 OK

Checklist Question	Reference	MoV ¹	Comments	Conclusion
B.3.2 Is the measurement equipment described? Is the accuracy of the measurement equipment addressed and deemed appropriate?	/3/ /22/ /23/	DR, CC, I	The electricity generation and electricity consumption of the project activity is based on the PMUM records /18/. The PMUM records are crosschecked with the monthly official electricity metering reports (OSF Forms) /19/ during this monitoring period. However, this explanation is not in line with the registered PDD. Please add clear explanation to Section B.2.2 of the MR. Two electricity meters are installed at Mustafa Kemal Pasa substation. The project owner can also read the generation electricity remotely. Please give a reference (screenshot) to confirm it. The main meter is ITRON SL7000 with serial number 65000752 and the backup meter is ITRON SL7000 with serial number 65000753. The meters have the accuracy of 0.5s as confirmed through the calibration reports /22/ /23/, performed by Kesir Muhendislik. The description of the meters presented in the monitoring report is in line with the operation as confirmed through the site visit observation.	CR-4 OK
B.3.3 Are the requirements for maintenance and calibration of measurement equipment described and deemed appropriate?	/1/ /3/ /22/ /23/	DR, CC, I	TEIAS is responsible for calibration and maintenance of the devices as per the registered PDD /1/. The project owner has no control on the meters since the meters are sealed by the TEIAS as confirmed during the site visit. If any major discrepancy occurs between the two meters, TEIAS performs necessary calibration. During this monitoring period no discrepancy was occurred. The calibration reports given by Kesir Muhendislik on 13/07/2012 for the ITRON SL7000 electricity meters with a serial no 65000752 and 65000753 /22/ /23/ have been provided to the Verification team. It could be confirmed that the electricity meters were calibrated before installation.	OK
B.3.4 Is the monitoring frequency adequate for all monitoring parameters? Is it in line with the registered monitoring plan?	/1/ /3/ /7/	DR, CC, I	The electricity generation supplied to the grid and electricity consumption from the grid is monitored continuously (reading in real time) by two meters as verified during the site visit. Monitoring frequency is in	OK

Checklist Question	Reference	Mov ¹	Comments	Conclusion
B.3.5	/1/ /3/ /7/	DR, CC, I	line with the applied methodology and registered PDD. The electricity generation supplied to the grid, electricity consumption from the grid is recorded monthly. This is in line with the monitoring plan in the registered PDD.	OK
B.3.6	/3/ /19/	DR, CC, I	At the last day of each month, the electricity generation supplied to the grid and electricity consumption from the grid is read and the monthly official electricity metering reports /19/ is prepared. The monthly reading protocols are filled by the Project personnel and sent to TEIAS. In this way, it is checked if there are inconsistencies between the values read by OSOS and the reading protocols. The plant staff explained the monitoring procedures during the site visit. As confirmed through the observation, the plant personnel records the electricity generation from the meters and fills the monthly reading protocols.	OK
B.4 Monitoring of GS indicators of sustainable development /environmental impacts				
B.4.1	/2/ /3/ /9/ /14/ /15/ /16/ /17/ /26/ /27/ /30/ /31/	DR, CC, I	The following GS sustainable development parameters are monitored as per the registered GS Passport /2/: "Air Quality", "Water Quality and Quantity", "Soil Condition", "Access to Affordable and Clean Energy Services", "Biodiversity", "Quality of Employment", "Quantitative Employment and Income Generation", "Balance of Payment and Investment". Air Quality: <i>SO₂ and NO_x emissions from grid connected plants:</i> The parameter is monitored yearly by calculation with the Turkey's GHG Inventory and TEIAS Statistics. The value for this monitoring period is defined as 37 tons for SO ₂ and 71 tons for NO _x . However, the values given as "167.89 Gg and 324.30 Gg" in the "current situation of the parameter" could not be confirmed. Please correct the footnote 9. Water Quality and Quantity: <i>Disposal of the waste water:</i> The parameter is monitored	GR-5 OK

Checklist Question	Reference	Mov ¹	Comments	Conclusion
			annually by assessing disposal methods during site visits and checking waste disposal records /30/. It is confirmed that the waste water is stored in a septic tank on site and disposed of periodically with vacuum. Soil Condition: <u>Amount of non-hazardous solid wastes during construction and operational phases. Appropriate management of all waste in line with regulations:</u> The parameter is monitored annually site visit and checking waste disposal records. During on site visit it is confirmed that the waste disposal are transferred to the storage area of Manyas Municipality /27/. Access to affordable and clean energy services: <u>Fossil fuel replaced:</u> The parameter is monitored yearly through comparing electricity generated by proposed project and natural gas that would be used to produce the same amount of electricity by a thermal power plant. The calculation is clearly presented in the excel sheet. Biodiversity : <u>Number of bird species and affected species:</u> The parameter is monitored once by ornithology report /26/. As per the Gold Standard Foundation /31/, the PP shall provide the bird assessment report at the time of first verification, and the verifying DOE shall also verify the same. Two ornithology reports performed on 2012 and 2013 are provided to the verification team. According to the ornithology reports, there is no risk and adverse interactions with appreciable sizes are not expected. During on site visit, Ismail Aygormus (employee) who is the most authorized person in the rapprochement to the turbines except the employee of GE is interviewed also about the bird deaths. No negative feedback was received. No bird death was observed. Quality of Employment: <u>Number of personnel certified/trained during operation phase:</u> The parameter is monitored yearly by review	

Checklist Question	Reference	Mov ¹	Comments	Conclusion
			employment records and training documents/certificates. All the trainings /14/ /15/ during this monitoring period was provided to the verification team. All the employees attend to the health and safety trainings. However, the trainings given in the future target are not in line with the current situation. Turbine trainings such as working at heights, erection of wind turbine and turbine rescue training could not be given to employees since Manres Elektrik Uretim A.S. has purchased turbine services from GE. Please correct the future target and add clear explanation to section B.2.2 of the monitoring report. In addition, during on site visit, PP mentioned that employees participated in first aid training. However, the certificates or the attendance list of the training are not provided to the verification team. It is confirmed that 6 person is participated to the Professional Competence Training. However, "5" is mentioned in the MR. Please correct. Quantitative Employment and Income Generation: <u>Payments made to staff:</u> This parameter is monitored yearly by the evaluation documents for wages paid and social security documents. It was confirmed that 9 employees are hired by the project activity as confirmed through the Residence Certificates /17/ and Registration Document /16/. Their wage was credited by Manres Elektrik A.S. as confirmed through the Social Insurance Institution /16/. Balance of payments and investment: <u>Currency saving due to avoided fuel import:</u> This parameter is monitored yearly by through comparing electricity generated by Gunaydin WPP and natural gas that would be used to produce the same amount of electricity according to baseline scenario. The value for this monitoring period is 2.58 million € as given in the monitoring report and calculated in the excel sheet /9/.	

Checklist Question	Reference	Mov ¹	Comments	Conclusion
			As per the Gold Standard Foundation /31/, the verifying DOE shall verify the logbook at the time of first verification with the help of interviews with the stakeholders. The mukhtar of Yayla Village showed us the logbook. However, no negative or positive feedback was written in the book. In addition, he mentioned that all the stakeholders were satisfied with the project activity. Please add the FARs related to this monitoring period and remove the old closed ones.	
B.4.2	/1/ /2/ /3/	DR, CC, I	The monitoring complies with the monitoring plan presented in the registered PDD.	OK
B.5 Management, quality assurance and quality control				
B.5.1	/1/ /3/	DR, I	An on-site inspection has been performed on 20/05/2014 and it could be confirmed that the monitoring arrangements in the monitoring plan are feasible within the project design.	OK
B.5.2	/1/ /3/	DR, I	The electricity generation supplied to the grid and electricity consumption from the grid is monitored by two meters as verified during the site visit. The meters are sealed by TEIAS. The electricity generation supplied to the grid and electricity consumption from the grid is read remotely from the electricity meters by TEIAS. The reading results are stored by PMUM on the web site. The project manager explained the monitoring procedures during the site visit. As confirmed through the observation, the plant staff monitors and records the data at the end of each month from both meters, fills the forms and compares the values for consistency. Also, the data was measured hourly, transferred to excel and reported daily. The responsible engineer performs regular checks of this procedure each month. If any difference occurs between the two meters, TEIAS has to be informed.	OK
B.5.3	/1/ /3/ /19/	DR, I	The generated electricity is measured by two meters that were sealed by TEIAS. The project owner has no control	OK

Checklist Question	Reference	MoV ¹	Comments	Conclusion
emission reductions achieved by/resulting from the project can be reported ex post and verified?			on the meters. The electricity generation supplied to the grid and electricity consumption from the grid is stored by PMUM on the web site. The project owner also archives a hardcopy of the monthly official electricity metering reports /19/, scanned and stored electronically.	
B.5.4 Will all monitored data required for verification and issuance be kept for two years after the end of the crediting period or the last issuance of VERs, for this project activity, whichever occurs later?	/1/ /3/ /7/	DR, I	The collected data during the monitoring period will be kept by the project owner at least two years after the last issuance of VERs as stated in the monitoring report /3/ and registered PDD /1/ line with the ACM0002 version 12.1.0 /7/.	OK

TABLE 2 RESOLUTION OF CORRECTIVE ACTION REQUESTS AND CLARIFICATION REQUESTS

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Verification conclusion
CR 1 During on site visit, it is confirmed that the organization chart is not in line with the current situation. Please correct. The actual emission reduction calculated in the excel sheet and given in the first page of the monitoring report is correct. The estimated and the actual are compared in section E.6. However, please discuss the real values and the difference with %+/- in the monitoring report.	A.2	1st round: Organization chart has been updated. In section E.6 , percentage comparison has been added.	Review 1 (29/05/2014): The organizational chart is corrected as per the current situation. The value of estimated and the actual are now compared in section E.6 clearly. Hence, CR 1 is closed.
CR 2 All the given parameters in the monitoring report are in line with the registered. However, for the parameter of " $\eta_{m,y}$ " the unit is not in line with the registered PDD. Please correct. Combined Margin Emission Factor: As per the approved methodology ACM0002 version 13.0.0, the combined emission factor has been determined using the ex-ante option, so it is not requested to monitor and recalculate the emission	B.2.1	1st round: Unit for the efficiency parameter has been removed. Combined Margin Emission Factor parameter " $EF_{grid,CM,y}$ " , has been added under fixed parameters.	Review 1 (29/05/2014): The unit of the parameter " $\eta_{m,y}$ " is now in line with the registered PDD. The parameter of " $EF_{grid,CM,y}$ " is now added and in line with the registered PDD and the methodology. Hence, CR 2 is closed.

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Verification conclusion
factors during this crediting period. The combined emission factor is determined to be 0.600 tCO ₂ /MWh in the registered PDD /1/ and validation report /8/ . However, it is not discussed in the monitoring report. Please add the parameter of "EF _{grid,CM,y} " as per the methodology /7/ .			
CR 3 Net Electricity generated and delivered to the grid by the project in year y (EG_{facility,y}): The electricity generation and electricity consumption is measured in GWh and it is monitored by two electricity meters that are located at Mustafa Kemal Pasa substation. However, the unit of the parameter stated as "MWh" in the monitoring report is not in line with the registered PDD. In addition, the measuring-reading-recording frequency of the parameter is not in line with the registered PDD. Please correct. The electricity generation and electricity consumption of the project activity is based on the PMUM records /18/. The PMUM records are crosschecked with the monthly official electricity metering reports (OSF Forms) /19/ during this monitoring period. However, this explanation is not in line with the registered PDD. Please add clear explanation to Section B.2.2 of the MR.	B.3.1	1st round: Parameter has been aligned with the PDD Procedure has been explained under B.2.2	Review 1 (29/05/2014): Net Electricity generated and delivered to the grid by the project in year y (EG_{facility,y}): The unit and the measuring-reading-recording frequency of the parameter are now corrected as GWh in the monitoring report, version 02. It is now clearly mentioned in the monitoring report that The electricity generation and electricity consumption of the project activity is based on the PMUM records /18/. The PMUM records are crosschecked with the monthly official electricity metering reports (OSF Forms) /19/. Hence, CR 3 is closed.
CR 4 Two electricity meters are installed at Mustafa Kemal Pasa substation. The project owner can also read the generation electricity remotely. Please give a reference (screenshot) to confirm it.	B.3.2	1st round: Remote reading sample screenshots have been sent to the DOE	Review 1 (29/05/2014): The remote reading system screenshots /32/ are provided to the verification team. As per the screenshots, it could be confirmed that the project owner is also connect the electricity meters and measure the generated electricity remotely. Hence, CR 4 is closed. Review 1 (29/05/2014):
CR 5	B.4.1	1st round:	

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Verification conclusion
Air Quality: <u>SO₂ and NO_x emissions from grid connected plants:</u> The parameter is monitored yearly by calculation with the Turkey's GHG Inventory and TEIAS Statistics. The value for this monitoring period is defined as 37 tons for SO₂ and 71 tons for NO_x. However, the values given as "167.89 Gg and 324.30 Gg" in the "current situation of the parameter" could not be confirmed. Please correct the footnote 9. Quality of Employment: <u>Number of personnel certified/trained during operation phase:</u> The parameter is monitored yearly by review employment records and training documents/certificates. All the trainings <u>14/ 15/</u> during this monitoring period was provided to the verification team. All the employees attend to the health and safety trainings. However, the trainings given in the future target are not in line with the current situation. Turbine trainings such as working at heights, erection of wind turbine and turbine rescue training could not be given to employees since Manres Elektrik Uretim A.S. has purchased turbine services from GE. Please correct the future target and add clear explanation to section B.2.2 of the monitoring report. In addition, during on site visit, PP mentioned that employees participated in first aid training. However, the certificates or the attendance list of the training are not provided to the verification team. It is confirmed that 6 person is participated to the Professional Competence Training. However, "5" is mentioned in the MR. Please correct. Please add the FARs related to this monitoring period and remove the old closed ones.		Air Quality: Footnote 9 revised. Quality of Employment: Future target revised. First aid trainings have been added FARs from the registration have been revised.	Air Quality: <u>SO₂ and NO_x emissions from grid connected plants:</u> The footnote 9 is revised and the values could now be confirmed as per the link. Quality of Employment: <u>Number of personnel certified/trained during operation phase:</u> Turbine trainings such as working at heights, erection of wind turbine and turbine rescue training are now removed from the future target of the parameter and a clear explanation is added to Section B.2.2 of the monitoring report, version 02. The certificates <u>133/</u> of first aid training performed on 22-23/01/2013 are now provided to the verification team. The miswriting is corrected as 6 in the monitoring report, version 02 of 28/05/2014 The FARs related to this monitoring period are now added to the monitoring report. Hence, CR 5 is closed.

TABLE 3 FORWARD ACTION REQUEST

Forward action request	Reference to Table 1	Response by project participants Verification conclusion
FAR 1 DOE to carry out interviews with locals to enquire about the location of the project extension to make sure the cemetery has not been disturbed and cross check that the project location is not an issue for the local stakeholders'.		



RINA

CERTIFICATO DI QUALIFICA QUALIFICATION CERTIFICATE

Si attesta che il sig./sig.ra:
We declare that Mr/Mrs/Ms:

Tugce Kiratli

è qualificato come¹:
is qualified as:

CDM-TEC, JI-TEC, VCS-TEC, GS-TEC, VCS-VAL, VCS-
VER, GS-VAL, GS-VER, GS-TL, VCS-TL

per le seguenti aree tecniche:
for the following technical areas:

1.2, 13.1

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.2*	Energy generation from renewable energy sources	1
13.1	Waste handling and disposal	13

*Just for GS and VCS, not for CDM

in accordo alle istruzioni della Divisione Certificazione.
in accordance with the instructions of the Certification Division.

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
4	14/01/2014	Updated qualification as VCS-GS TL
0	26/11/2012	-

Il Resp. QPT
Head of QPT

¹ Legend:

VAL: Validator
VER: Verifier
TEC: Technical Expert
TL: Team Leader
FIN-EXP: Financial Expert
DET: Determiner

CDM: Clean Development Mechanism
VCS: Verified Carbon Standard:
GS: Gold Standard
SCS: SocialCarbon Standard
JI: Joint Implementation

RINA Services S.p.A. è accreditato da UNFCCC, quale Entità Operativa Designata (DOE), per condurre la Validazione e la Verifica di Progetti CDM, da VCSA per condurre la Validazione e la Verifica di Progetti VCS, da GS Foundation, per condurre la Validazione e la Verifica di Progetti GS, da Ecologica Institute per condurre la Validazione e la Verifica di rapporti SCS

RINA Services S.p.A. is accredited by the UNFCCC, as Designated Operational Entity (DOE), to carry out Validation and Verification of CDM Projects, by the VCSA, to carry out Validation and Verification of VCS Projects, by the GS Foundation, to carry out Validation and Verification of GS Projects and by the Ecologica Institute, to carry out Validation and Verification of SCS Reports



RINA

CERTIFICATO DI QUALIFICA QUALIFICATION CERTIFICATE

Si attesta che il sig./sig.ra:
We declare that Mr/Mrs/Ms:

Rita Valoroso

è qualificato come1:
is qualified as:

CDM/VCS/GS/SCS/JI – TEC
CDM/VCS/GS/SCS – VAL, VER, TL
TECHNICAL REVIEWER

per le seguenti aree tecniche:
for the following technical areas:

1.2, 13.1

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.2	Energy generation from renewable Energy sources	1
13.1	Waste Handling and Disposal	13

in accordo alle istruzioni della Divisione Certificazione.
in accordance with the instructions of the Certification Division.

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
0	18-01-10	-
8	31-07-14	Update qualification according to IS-QPT-GHG-00 REV13

Il Resp. QPT
Head of QPT

¹ Legend:

VAL: Validator
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TEC: Technical Expert
TL: Team Leader
FIN-EXP: Financial Expert
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VCS : Verified Carbon Standard:
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