



South Asia

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Gold Standard Verification Report

GOLD STANDARD VERIFICATION OF
PROJECT NO. GS-935
“SAMSUN LANDFILL GAS TO ENERGY PROJECT, TURKEY”

Report No. GS 600501210

04 March 2015

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Date of first issue of this report	Revision No. Of this report
30-01-2015	03
Project Participant (contractor): Samsun Avdan Enerji Üretim ve Tic. A.Ş.	Project Site(s): Latitude 41°14'45"N Longitude : 36°13'16"E Samsun Province Host Country: Turkey
Applied Methodology / Version: ACM0002, "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", v.12.1; ACM0001, "Consolidated baseline and monitoring methodology for land-fill gas project activities", v.11;	Scope(s): 01 & 13 Technical Area(s): 1.1 & 13.1
Monitoring Period: 01/12/2012 – 31/08/2014	
First MR Version : 23/06/2014	Final MR Version: 08/12/2014

VERIFICATION STATEMENT

TÜV SÜD has performed a verification of the aforementioned GS project activity. Standard auditing techniques have been used for the verification of the project. The review of the passport, monitoring report and the sustainability parameters followed by subsequent follow-up interviews, and further verification of references have provided TÜV SÜD with sufficient evidence to determine the fulfilment of stated criteria in the checklist. In the opinion of TÜV SÜD, the project meets all relevant Gold Standard requirements for the VER if the underlying assumptions do not change. TÜV SÜD recommends the project for issuance by the GS Technical Advisory Committee.

The project is generating emission reductions as a GS project. 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 registered project's baseline, its monitoring plan and associated documents. The verification has been performed following the GS v2.1 requirements and Validation and Verification Standard v3.0 (VVS) of UNFCCC.

Based on the information we have seen and evaluated we confirm that the implementation of the project resulted in 192,201 t CO₂e of emission reductions during the verification period 01/12/2012 to 31/08/2014.

Pune, 04/03/2015



Eswar Murty
Member
Certification Body "Environment and Energy"
TÜV SÜD South Asia

Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
VER	Verified Emission Reduction
CR	Clarification Request
DNH	Do No Harm
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission Reduction
GHG	Greenhouse gas(es)
GS	Gold Standard
LSC	Local Stakeholder Consultation
MDG	Millennium Development Goals
MP	Monitoring Plan
PDD	Project Design Document
SFR	Stakeholder Feedback Round
SD	Sustainable Development
TÜV SÜD	TÜV SÜD South Asia Pvt Ltd
TAC	Technical Advisory Committee
UNFCCC	United Nations Framework Convention on Climate Change

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1 METHODOLOGY

1.1 Objective

TÜV SÜD has been commissioned by the aforementioned client to perform an independent verification assessment.

The objective of the verification work is to comply with the requirements of Gold Standard v2.1, which was the applicable version of the GS standard at the time of registration. According to this assessment TÜV SÜD shall:

- ensure that the project activity has been implemented and operated as per the registered PDD 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, verifiable and in accordance with applicable GS requirements,
- ensure that the actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology,
- evaluate the data recorded and stored as per the applicable requirements.

1.2 Scope

The scope of any assessment is defined by the underlying legislation, regulation and guidance given by relevant entities or authorities. In the case of GS project activities, the scope is set by:

- Gold Standard v2.1 requirements
- Gold Standard Toolkit v2.1
- Clean Development Mechanism Validation And Verification Standard (VVS) published under <http://cdm.unfccc.int>
- Baselines and monitoring methodologies (including GHG inventories)
- Environmental issues relevant to the applicable sectoral scope
- Applicable environmental and social impacts and aspects of GS project activity
- Current technical and operational knowledge of the specific sectoral scope and information on best practice
- Stakeholder consultation and feedback

The verification process is not meant to provide any form of consulting for the project participant (PP). However, stated requests for clarifications, corrective actions, and/or forward actions may provide input for improvement of the project design.

Once TÜV SÜD receives the PDD/Passport/MR, it is made available on the GS Registry through a dedicated interface on the Gold standard website. The Verification shall commence only after the project documents are listed on the registry.

1.3 Verification Process

The information provided by the project participants is assessed by applying the means of verification specified in the GS v2.1, Toolkit and the VVS.

Once TÜV SÜD receives the Monitoring Report and a confirmation from any PP to upload, the MR is made available on the GS Registry.

A competent assessment team is selected prior to the start of the verification. The team is selected to cover the technical area(s), sectoral scope(s) and relevant host country experience for evaluating the GS project activity. Additionally a competent Technical Reviewer or Technical Reviewer Team is appointed to conduct checks on quality and completeness.

The verification team performs first a desk review, followed by an on-site visit, which results in the formation of a draft report and a list of findings. The next step involves the evaluation of the findings through direct communication with the PPs and then finally the preparation of the verification report. This verification report and other supporting documents then undergo an internal quality control by the CB "Environment and energy" before submission to the GS.

1.4 Appointment of the Team

According to the technical scopes and experiences in the sectoral or national business environment, TÜV SÜD has composed a assessment team in accordance with the appointment rules of the TÜV SÜD Certification Body "Environment and Energy".

The composition of an assessment team has to be approved by the Certification Body (CB) to assure that the required skills are covered by the team. The CB of TÜV SÜD operates the following qualification levels for team members that are assigned by formal appointment rules:

- Assessment Team Leader (ATL);
- Verifier (V);
- Verifier Trainee (T);
- Technical Experts (TE);
- Country expert (CE);
- Technical reviewer (TR).

It is required that the sectoral scope(s) and the technical area(s) (TA) linked to the methodology/ies and project have to be covered by the assessment team. Appointment certificates of the selected team members are attached to this report as Annex.

Assessment Team:

Name	Qualification	Scope	Technical Area	Host country experience	Onsite visit
Georgios Agrafiotis	ATL	☒	☒ 13.1	☒	☒
Konrad Tausche	V	☒	☒ (1.1)		

Technical Reviewer (s):

Name	Qualification	Scope	Technical area
Habbu Ajit	TR	☒	1.1
Eswar Murty	TR	☒	13.1

1.5 Review of Documents

Publication has been initiated before the verification activities started. Based on the published MR the assessment team performed a desk review to:

- verify the completeness of the data and the information presented in the MR,
- check the compliance of the MR with respect to the monitoring plan depicted in the registered PDD and verify that the applied 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,
- evaluate the data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

A complete list of all documents reviewed is available in the Information Reference List attached as Annex 2 to this report.

1.6 On-site Assessment and follow-up Interviews

During on-site visit on 18-19/09/2014, TÜV SÜD performed a physical site inspection and interviewed 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,
- check the monitoring equipment against the requirements of the PDD and the approved methodology, including calibrations, maintenance, etc.,
- review the calculations and assumptions used to obtain the GHG data and ER,
- identify if the quality control and quality assurance procedures are in place to prevent or correct errors or omissions in the reported parameters.

A list of all persons interviewed is included in the IRL attached as Annex 2 to this report.

1.7 Resolution of Clarification and Corrective and Forward Action Requests

The objective of this phase of the verification is to resolve the requests for corrective actions, clarifications, and any other outstanding issues which need to be clarified for TÜV SÜD's conclusion on the achieved emission reductions. The CARs and CRs raised by TÜV SÜD are resolved during communication between the client and TÜV SÜD. To guarantee the transparency of the verification process, the concerns raised and responses that have been given are documented in detail in the List of Findings that is attached as Annex 1 to this report.

1.8 Internal Quality Control

Internal quality control within the team is assured by means of a technical review process that takes place after the on-site assessment and after closure of findings. The internal quality control in the verification process is given by the final decision (Verification and Certification Conclusion) made by the CB "Environment and Energy".

2 CARBON VERIFICATION AND REPORTING

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 PDD and final Monitoring Report. The verification findings for each verification subject are presented below.

2.1 FARs from Validation / Previous Verification

In the previous verification report for the 1 PV one FAR was issued by the audit team of TÜV regarding the quality of the data set for the calculation tool (format of data, hourly display of values and consolidation of data sets). The presentation of the raw data for the calculation tool for the 2 PV has been clearly improved; still two CRs were issued during the 2 PV.

As part of the Request for Review that was posed by GS, two additional FARs were issued: the one referred to the necessity of the PP to assure together with the cooperation of the local public authority that the leachate management is appropriate. This has been tackled by the PP and proved by official letters (IRL 38 and IRL 66). The second FAR referred to the necessity to measure continuously the temperature of the gaseous stream of LFG that enters to the combustion and flaring facilities. PP implemented a procedure of manual measuring almost on a daily basis. This was verified also on-site, the measured values for the whole monitoring period were delivered to TÜV SÜD (IRL 56).

2.2 Project Implementation in accordance with the registered Project Design Document

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

The difference between the values of the data and/or variables presented in the MR and the stated data in the registered PDD is only partly significant. The landfill gas production has not reached the one estimated in the registered PDD. The difference in the values does not lead to a substantial increment of the ER in this period or in future periods in relation to the estimates in the registered PDD. On the contrary the total final claimed ERs are less than estimated in the PDD.

2.3 Compliance of the Monitoring Plan with the Monitoring Methodology

The revised monitoring plan is in accordance with the approved methodology applied by this GS project activity. During the 1 PV guidance has been sought by the PP from GS technical committee regarding one monitoring parameter that was included in the PDD although it was not required by any of the applicable methodologies and one additional monitoring parameter due to the application of the new version of the CDM Flaring tool. All issues were accepted by the GS technical committee (see IRL 57 & 59). No revision or deviation to the monitoring plan has been requested by the GS technical committee.

2.4 Compliance of the Monitoring with the Monitoring Plan

The monitoring has been carried out in accordance with the monitoring plan contained in the registered PDD with some exceptions, as explained in the above mentioned chapter. All parameters were basically monitored and determined as per the Monitoring Plan. The two exceptions are discussed in this chapter after the presentation of the monitoring parameters. The applied values are a result of detailed filtering as per minimum and maximum allowed values according to the technical specifications of the manufacturers. This has as result a conservative set of raw data. The verification of the parameters required by the monitoring plan as per registered PDD is provided as follows (the presented parameters follow the same sequence as per PDD chapter B.7.1):

Data / Parameter:	$EL_{LFG,y}$
Data unit:	MWh
Description:	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y
Source of data used:	The values of gross electricity production and consumption from grid are being measured by main and back-up meter on-site. These values are stored electronically at the computer on-site and also are being transmitted to the grid operator. www.dgpys.teieas.gov.tr/dgpys The equipment used has been calibrated according to the requirements of Turkey (calibration frequency 10 years). Last calibration was at 22.02.2011 (IRL 14)
Means of verification/Comments:	The values used in the calculation tool (excel file) and reported in the MR are correct and the same as in the raw data (IRL 54). The electricity production is confirmed by comparing the value with the values stated in the monthly protocols of the grid operator which are obtained from the physical electricity meters.
Cross-check	The monthly invoices have been also checked (IRL 12, 13, 41) in order to cross-check the values in the calculation tool. Further, the production data from the generator-meters have been used for plausibility control of the values of the grid operator.

Data / Parameter:	$PE_{FC,j,y}$
Data unit:	tCO ₂ e
Description:	Project emissions from fossil fuel combustion in process j during the year y
Source of data used:	During the 2 nd monitoring period there was no fossil fuel consumption. Fuel invoices will document the fuel consumption during the monitoring period.
Means of verification/Comments:	The small quantities of electricity that were necessary for own consumption were delivered by the grid.
Cross-check	The data of electricity consumption from the grid were checked on-site

	for all months of the monitoring period. For this check the online system was used, from the computer on-site.
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Data / Parameter:	LFG _{electricity,y}
Data unit:	Nm ³
Description:	Total amount of landfill gas (under normal conditions of 0° and 1 Atm) combusted in year y
Source of data used:	The measurements of LFG flow are continuously measured and recorded digitally every 10 minutes. The monitoring data is automatically collected and recorded by the system's data logger. The data is displayed on the local monitors of all devices. Historical data as well as calculated parameters, such as the amount of methane burnt, can be consulted via the local computer and the CDs. The equipment used has been calibrated according to the requirements of as specified by the methodology. Dates of last calibrations (IRL 30): 24.11.2010 10.05.2012 Calibration frequency as per manufacturer: 10 years (IRL 48) The flow meter was delivered calibrated for the activity (IRL 44), hence the information can be considered verifiable.
Means of verification/Comments:	The complete set of data for the whole MR has been delivered to the audit team. All data have been checked against the minimum and maximum allowed values as per manufacturer requirements.
Cross-check	The plausibility of the values has been cross checked by interviewing the local personnel and comparing with historical values from the 1 PV.

Data / Parameter:	LFG _{flare,y}
Data unit:	Nm ³
Description:	Total amount of landfill gas (under normal conditions of 0° and 1 Atm) flared in year y
Source of data used:	The measurements of LFG flow are continuously measured and recorded digitally every 10 minutes. The monitoring data is automatically collected and recorded by the system's data logger. The data is displayed on the local monitors of all devices. Historical data as well as calculated parameters, such as the amount of methane burnt, can be consulted via the local computer and the CDs. The equipment used has been calibrated according to the requirements of as specified by the methodology. Dates of last calibrations (IRL 30):

	24.11.2010 10.05.2012 Calibration frequency as per manufacturer: 10 years (IRL 48) The flow meter was delivered calibrated for the activity (IRL 44), hence the information can be considered verifiable.
Means of verification/Comments:	The complete set of data for the whole MR has been delivered to the audit team. All data have been checked against the minimum and maximum allowed values as per manufacturer requirements.
Cross-check	The plausibility of the values has been cross checked by interviewing the local personnel and comparing with historical values from the 1 PV.

Data / Parameter:	$LFG_{total,y}$
Data unit:	Nm^3
Description:	Total amount of landfill gas (under normal pressure and temperature) captured in year y
Source of data used:	The measurements of LFG flow are continuously measured and recorded digitally every 10 minutes. The monitoring data is automatically collected and recorded by the system's data logger. The data is displayed on the local monitors of all devices. Historical data as well as calculated parameters, such as the amount of methane burnt, can be consulted via the local computer and the CDs. The equipment used has been calibrated according to the requirements of as specified by the methodology. Dates of last calibrations (IRL 30): 24.11.2010 10.05.2012 Calibration frequency as per manufacturer: 10 years (IRL 48) The flow meter was delivered calibrated for the activity (IRL 44), hence the information can be considered verifiable.
Means of verification/Comments:	The complete set of data for the whole MR has been delivered to the audit team. All data have been checked against the minimum and maximum allowed values as per manufacturer requirements.
Cross-check	The plausibility of the values has been cross checked by interviewing the local personnel and comparing with historical values from the 1 PV.

Data / Parameter:	W_{CH_4}
Data unit:	%
Description:	Methane fraction in the landfill gas
Source of data used:	The measurements of methane fraction in the LFG are continuously measured and recorded digitally every 10 minutes. The monitoring data is automatically collected and recorded by the system's data logger. The

	data is displayed on the local monitors of all devices. Historical data as well as calculated parameters, such as the amount of methane burnt, can be consulted via the local computer and the CDs. Accuracy: 2% Calibration frequency: annually (IRL 19) Dates of last calibrations (IRL 58 & 59): 11.04.2013 10.09.2013
Means of verification/Comments:	The complete set of data for the whole MR has been delivered to the audit team. All data have been checked against the minimum and maximum allowed values as per manufacturer requirements.
Cross-check	N/A

Data / Parameter:	$PE_{\text{flare},y}$
Data unit:	tCO ₂ e
Description:	Project emissions from flaring of residual gas in year y
Source of data used:	The project emissions from flaring are being calculated by applying the formula of the Methodological tool "Project emissions from flaring"; v.02.0.0, EB68, Annex 15. This approach has been deemed as appropriate from GS (IRL 59). The emissions are calculated based on the flare efficiency (fixed value of 90% when the necessary conditions are fulfilled) and the flow of LFG. The equipment that delivers the values has been calibrated according to the requirements, as explained in the previous parameters.
Means of verification/Comments:	N/A
Cross-check	N/A

Data / Parameter:	T_{flare}
Data unit:	°C
Description:	Temperature in the exhaust gas of the flare.
Source of data used:	The temperature data is measured by the thermocouple which is installed on the flare at the position of the exhaust gases. The values are transmitted to the local computer and stored every ten minutes. No calibration required. The thermocouple is replaced annually (IRL 38).
Means of verification/Comments:	N/A

Cross-check	N/A
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Data / Parameter:	Operation of the power plant
Data unit:	h
Description:	Operation hours of the power plant
Source of data used:	When at least one of the two generators is in operation, the hour counter measures the working hours. In other case there is no measurement.
Means of verification/Comments:	N/A
Cross-check	N/A

Data / Parameter:	AF
Data unit:	%
Description:	Regulatory requirements relating landfill gas projects
Source of data used:	National laws and regulations in Turkey regarding waste treatment. Local expertise of TÜV SÜD was used in order to check any modifications in the legal requirements.
Means of verification/Comments:	The responsible director for environmental issues of the region of Samsun has been interviewed during the on-site audit. The compliance of the project with the laws and regulations
Cross-check	N/A

In comparison to the monitoring plan (MP) of the registered PDD there are two modifications in the current MP. Both modifications have been deemed as acceptable by the technical committee of GS (IRL 57 & 59):

- 1) Although the parameter $MG_{PR,y}$ had been included in the registered PDD as a monitoring parameter, it is not required by the applicable tools and methodologies. Therefore, this parameter is removed from the MR as a permanent deviation from the monitoring plan.
- 2) The parameter $F_{CH_4,RG,m}$ has been included in the MR for the 1 PV although it was not foreseen in the PDD. Finally this parameter has been included in the MR because of the use of methodological tool "Project emissions from flaring", v.02.0.0 (EB68, Annex 15). At the time of registration, this tool had not been introduced, therefore the inclusion of this parameter has been requested and accepted by GS as a permanent deviation to the monitoring plan in the revised MR. The flow of LFG [Nm^3] is automatically converted in [kg] at dry basis and normal conditions by the PLC system without any intervention of the PP.
- 3) The parameter Temperature of the gaseous stream [Tt] became part of the MP as a result of the Request for Review for the 1 PV. The procedure behind this measurement is explained in detail in the MR and was verified by TÜV SÜD.

2.5 Assessment of Data and Calculation of Greenhouse Gas Emission Reductions

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

The reported data have been cross-checked against other sources available as explained above in chapter 2.4.

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

The verifier confirms that the monitoring report includes all parameters and the monitored data at the intervals required by the methodology and PDD.

The verifier confirms that all the emission factors and default values (ex-ante values from PDD) have been correctly justified. All the emission factors and default values are explicitly mentioned in the monitoring report.

3 SUSTAINABILITY VERIFICATION

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

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

All nine monitored parameters mentioned in the GS passport have been correctly monitored and the information given in the final GS monitoring report has been confirmed to be correct. The improvement in the environmental performance and social impact to the local community is marginal due to the rather small scale of the GS project. Still, it has been documented transparently as defined in the GS passport.

3.1.1 SDI 01 Air quality: SO₂ and NO_x emissions reduced

The Project, by replacing electricity from fossil fuel combustion and the related fuel consumption, reduces the baseline SO₂ and NO_x emissions from electricity generation.

The reductions of SO₂ and NO_x emissions have been calculated by multiplying net electricity generation of the Project activity with the SO₂ and NO_x intensities. The value of each intensity stems from the national grid. The values of the respective intensities (SO₂ = 5.31 kg/MWh and NO_x = 1.65 kg/MWh) have been defined in the GS Passport (IRL 61). In each periodic verification only the electricity generation varies. This approach has been approved by GS in the published GS Passport.

3.1.2 SDI 02 Water quality and quantity

The Project reduces the baseline cooling water emissions generated by thermal power plants, by replacing electricity from fossil fuel combustion and the related fuel consumption. The reductions of cooling water emissions have been calculated by multiplying net electricity generation of the Project activity with the ex-ante calculated cooling water intensities. Information about the respective intensity were found at the official web-pages: Turkish Statistical Institute (<http://www.turkstat.gov.tr/PreHaberBultenleri.do?id=6171>)

and

TEIAS, [http://www.teias.gov.tr/T%C3%BCrkiyeElektrik%C4%B0statistikleri/istatistik2008/30\(84-08\).xls](http://www.teias.gov.tr/T%C3%BCrkiyeElektrik%C4%B0statistikleri/istatistik2008/30(84-08).xls)

3.1.3 SDI 03 Soil condition

The landfill area only accepts municipal (household) solid waste. This was proven by the respective evidence (IRL 51). Hazardous waste is not accepted at the gate of the landfill, which is operated by the Municipality. The Municipality collects an industrial waste collection fee, therefore it effectively minimizes the hazardous waste amount in the solid waste that is stored at the Project site.

3.1.4 SDI 04 Other pollutants

Under this category fall according to the GS passport the Volatile Organic Compounds that are found in the LFG. By combusting and flaring the LFG the biggest part of the VOCs is destroyed.

The reduction of VOCs is calculated by multiplying the total methane amount that is destroyed with the ex-ante constants for VOC fraction (2%) and combustion VOC destruction percentage (98%). Both percentages have been validated and approved from GS in the published GS Passport (IRL 61). In each periodic verification only the volume of captured LFG varies.

3.1.5 SDI 05 Quality of employment

The achieved improvement in the quality of employment is measured based on the working conditions on-site. All safety equipment is available and used by personnel. No work accident has happened during the monitoring period. Necessary trainings are given to the personnel regarding safety and emergency procedures. The tasks carried out by personnel are in compliance with legal employment and EHS requirements. All of the personnel have social security and they are paid in a timely manner. The respective evidence has been delivered in form of social security documents (IRL 5), Emergency Action Plan (IRL 9), Training certificates (IRL 6 & 7).

3.1.6 SDI 06 Access to affordable and clean energy services

The Project will generate and supply clean energy to the national grid, improving the carbon intensity of the power mix. It is assumed that the net electricity generation during the monitoring period will be distributed among fossil fuels with the same weight as per the energy mix of the Turkish grid. These values will be multiplied with the ex-ante fuel consumption intensities given above to find the respective reduction of fossil fuel consumption.

3.1.7 SDI 07 Quantitative employment and income generation

Regarding this indicator the creation of new jobs has been monitored. The employees have a contract with the operator of the GS project "Samsun Avdan Enerji Üretim ve Tic. A.Ş.". During the 2 PV the social security records which include also salary information have been verified (IRL 5, IRL 63). In comparison to the previous verification additional employees have been hired.

2.6.8 SDI 08 Balance of payments and investment

Regarding the contribution of this GS project to the country's economy, the avoided natural gas amount has been taken from the indicator "Access to affordable and clean energy services". The energy content of this amount has been multiplied by the ex-ante natural gas price. This calculation delivered the final value of import savings. This approach has been approved by GS in the published GS Passport (IRL 61). The price of gas will remain fixed and only the energy generation will vary.

2.6.9 SDI 09 Technology transfer and technological self-reliance

Local stakeholders and the Municipality gain information and best practice applications through site visits, training sessions and/or know how contributions made by international experts. This has been verified on-site through the interviews with the local employees of Samsun Avdan Enerji Üretim ve Tic. A.Ş: Mr. Celim, Mr. Edem.

Hence the audit team confirms that the criterion is fulfilled by the project as per the GS requirements.

Annex 1

List of Findings

List of Findings - Compilation and Resolutions

Project Title: Samsun Landfill Gas to Energy Project, Turkey

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Compilation and Resolutions of CARs, CRs and FARs

Corrective Action Requests by the assessment team		
	Comments and Results	Conclusion and IRL
Issue	<u>During the Request for Review for the first periodic verification, GS posed the following Forward Action request: "The PP shall install appropriate measurement device and include the measurement of the Temperature of the gaseous stream (Tt) to the monitoring plan".</u>	☒ IRL 53 IRL 56 IRL 72
Requirement	GS Toolkit v. 2.1, chapter 4.6: Project implementation	
Corrective Action Request	<u>Corrective Action Request No.1</u> - The continuous measurement of the Temperature of the gaseous stream (Tt) was implemented by the PP. The procedure that was chosen by the PP has to be reflected in the MR. - A copy of the calibration certificate of the used thermometer (GenTech) shall be delivered to the DOE. The technical data of this device (Serial number, type, calibration date) shall be added in the MR.	
Response	- The PP has installed a temperature measurement device at the system. Temperature of the gaseous stream (Tt) is not recorded real time, but is measured by the PP with manual readings, which are provided to the DOE. The readings indicate that Tt is below 60 °C and the "dry basis" approach can be safely used. - The certificate is delivered to the DOE (4f-GentekCalibrationCertificates.pdf). A new parameter, Tt, is added to the monitoring parameter (including the technical data of this device) as requested.	
Assessment Means of / verifica-	The parameter Tt has been included in the revised MR which now contains information about the measuring device, the reading frequency and the procedure behind the measurement. Also the manual measurements over the whole monitoring period have	

List of Findings - Compilation and Resolutions

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Corrective Action Requests by the assessment team		
tion	been delivered (IRL 56). They are all within the limits that assure dry conditions of the incoming LFG. b. Two calibration certificates have been delivered, from June 2012 and 2014 (IRL 72).	
Adjustment on project design OR Changes in the monitoring report or supporting annexes	The MR has been revised and additional documents were delivered.	

Corrective Action Requests by the assessment team		
	Comments and Results	Conclusion and IRL
Issue	<u>During the second monitoring period three engines were used to produce electricity. During the on-site audit it was also verified that another two engines have been installed.</u>	☒ IRL 53 IRL 54 IRL 71
Requirement	GS Toolkit v. 2.1, chapter 4.1: Monitor GHG reductions and sustainable development	
Corrective Action Request	<u>Corrective Action Request No.2</u> - Figure 1 in the MR shall be updated reflecting the number of engines that are relevant for the 2 PV as well as the current situation on-site. - In the MR is shall be added the exact date of operation start of the 3rd engine. - Some values of electricity capacity in the raw data are above 1,2 MW, which is the nominal electrical capacity. They shall be removed. - There are few electricity values in the raw data of the 4th generator (e.g. 10.09.2013). These values cannot be used for the ERs. - There are few electricity values in the raw data of the 3rd generator before the official start of operation. These values cannot be used for the ERs.	

List of Findings - Compilation and Resolutions

Project Title: Samsun Landfill Gas to Energy Project, Turkey

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Corrective Action Requests by the assessment team		
Response	a. Figure 1 is updated, as requested. Now it shows the 3rd engine as operational. Please note that the Project capacity is planned to be expanded after the monitoring period end. b. The third engine started operating officially on 27.09.2013. This information is added to the revised MR (section A.1) and also monitoring parameter "Operation of the power plant". c. It is normal for gas engines to exceed the nominal power of 1.2 MW by approx. 1%. A letter by the engine installing company (4e-EngineProvider-LoadFluctuations.pdf) in Turkish language is provided to the DOE as supporting evidence. In the emission calculation Excel sheet (0b-Samsun-ERcalculation-20141208.xls, workbook "LFG-Final Data", columns Y to AB) the values used for calculations are shown (maximum accepted values for generators are consistent with the stated range). d. The power values of the generator sets are not used in emission calculations, except for quality check purposes (Filter 7 in workbook "LFG-Data Filters"), which is updated from 2 to 3 engines to be more conservative. The 4th engine mentioned is an error particular to 10.09.2013, which was due to the formatting of the data (a shift of columns in Excel) during data system maintenance (change of frequency from 10 minutes to 30 minutes). This error does not affect the quality or the amount of ultimate emission reduction figures, which are based on flow meter readings. The data on that day after the maintenance are omitted in calculations. e. In accordance with the validated monitoring plan, methane destroyed by engines and the flare unit is measured with flow meters. The engines start operating before the official grid connection as a test phase, which means that they destroy landfill gas and generate electricity, i.e. the 3rd engine exports power to the grid for free. Based on the PDD, the emission reductions from methane destruction do not have any relation with the official inclusion of the 3rd engine. This is in line with the monitoring plan. It should be noted that before the official start of operation the Project is already permitted and licensed for the 3rd engine. The electricity generation values, on the other hand, are to be obtained from TEIAS PMUM records. Therefore, emission reductions from electricity generations are strictly bound with the official start. To be consistent with the monitoring plan and avoid deviation, the emission calculation approach is not changed.	

List of Findings - Compilation and Resolutions

Project Title: Samsun Landfill Gas to Energy Project, Turkey

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Corrective Action Requests by the assessment team		
Assessment Means of / verification	a. In the revised MR the 3rd engine has been added in figure 1. b. The date has been added. c. The official letter from the company that installed the generators was delivered (IRL 73). According to this a minor deviation of 1% from the maximum nominal capacity can sporadically occur. This leads to a capacity of 1.212 MW for each installed generator. According to the raw there is only one value for Generator 1 and two values for Generator 2 that marginally exceed this limit. TÜV SÜD considers them as valid for the calculation tool. d. The ERs from electricity generation are based on the net values from the grid operator. The raw data that are registered on-site are only for cross-checking purposes. The issue is closed. The grid operator uses different meters than the ones that deliver the values for the raw data. e. Issue is closed since these values of LFG_{flow} are used only for the calculation of the ERs from flaring and not from electricity generation.	
Adjustment on project design OR Changes in the monitoring report or supporting annexes	See revised MR.	

Corrective Action Requests by the assessment team		
	Comments and Results	Conclusion and IRL
Issue	a. <u>It was verified on-site that the electricity meter “Köhler 21” was also relevant for the second monitoring period (under the condition that the PP will finally decide to prolong the monitoring period). This meter was installed from 05.05.2014 until 27.08.2014, as it was proved against the installation protocols.</u>	☒ IRL 53 IRL 74

List of Findings - Compilation and Resolutions

Project Title: Samsun Landfill Gas to Energy Project, Turkey

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Corrective Action Requests by the assessment team		
	b. <u>On 27.08.2014 the meter “Köhler 21” was replaced by the meter “Köhler 11”. The last meter was verified on-site.</u>	IRL 75
Requirement	GS Toolkit v 2.1, chapter 4.1: The GHG emission reductions resulting from your project have to be monitored according to the monitoring plan of the PDD;	
Corrective Action Request	<u>Corrective Action Request No.3</u> a. The meter “Köhler21” and its main technical data shall be added in the MR where the parameter “Net amount of electricity” is discussed. b. The two exchange protocols from 05.05.2014 and 27.08.2014 shall be delivered to the DOE.	
Response	a. The measurement device replacements are added to section D.2, ID 1. b. The protocols are submitted to the DOE (4h-Replacement Protocol Elster, 4i-Replacement Protocol Koehler). As the units are installed by YEDAS, the local grid operator, calibration certificates of the units are not available to the PP. The PP has officially asked these certificates from the grid operator, but the operator has not provided them.	
Assessment Means of validation / verification	a. The revised MR contains the respective information. b. Both replacement protocols have been delivered to the DOE, the respective dates can be seen.	
Adjustment on project design OR Changes in the monitoring report or supporting annexes	See revised MR.	

List of Findings - Compilation and Resolutions

Project Title: Samsun Landfill Gas to Energy Project, Turkey

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Corrective Action Requests by the assessment team		
	Comments and Results	Conclusion and IRL
Issue	<u>SDI "Quality of employment".</u> a. <u>In comparison to the first verification, three additional employees have been employed for the project. The personnel consists of eight people in total: seven work on-site in Samsun and one in Istanbul.</u> b. <u>All employees undergo professional trainings regarding their specific tasks on-site.</u>	☒ IRL 63
Requirement	GS Toolkit 2.1, chapter 4.1: The sustainability impact of your project should be monitored according to the sustainability monitoring report.	
Corrective Action Request	<u>Corrective Action Request No.4</u> a. The documents "social security" of the three additional employees shall be delivered. Also the two register records shall be sent to the DOE. b. All ATAC-certificates of training shall be delivered to the DOE.	
Response	a. The social security personnel list, as well as the local residence documents of the new employed staff during the monitoring period is provided to the DOE (Folder "5-Employment") b. ATAC training certificates are provided to the DOE (Folder "7-Sustainability")	
Assessment Means of validation / verification	a. The additional evidence for the social security has been delivered to the DOE. b. All training certificates have been delivered	
Adjustment on project design OR Changes in the monitoring report or	N/A	

List of Findings - Compilation and Resolutions

Project Title: Samsun Landfill Gas to Energy Project, Turkey

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Corrective Action Requests by the assessment team		
supporting annexes		

Corrective Action Requests by the assessment team		
	Comments and Results	Conclusion and IRL
Issue	<u>The second verification period extends after the 01.01.2013. Since 1.1.2013 the GWP of Methane is considered to be 25 instead of 21. The revised value is confirmed to be correct based on the IPCC 4th Assessment Report: http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html).</u>	☒ IRL 54
Requirement	<u>GS Toolkit 2.1, chapter 4.1:</u> For the verification, in principle the rules as laid down in the CDM Validation and Verification Manual are applicable, unless Gold Standard requirements go beyond or are otherwise stated.	
Corrective Action Request	<u>Corrective Action Request No.5</u> The calculation tool shall be revised containing the new factor from 01.01.2013 onwards.	
Response	The GWP of methane is updated as 25 after 01.01.2013. As the monitoring period starts on 01.12.2012, GWP for that month only is used as 21. The changes are carried out in the calculation Excel sheet and the MR.	
Assessment Means of validation / verification	The calculation tool has been updated using the revised GWP of 25. This lead to an increase of the ERs in comparison to the first version of the MR (from 113,647 tCO ₂ e to 192,201 tCO ₂ e.	
Adjustment on project design OR Changes in the monitoring report or supporting annexes	See revised calculation tool.	

List of Findings - Compilation and Resolutions

Project Title: Samsun Landfill Gas to Energy Project, Turkey

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Clarification Requests by the assessment team		
	Comments and Results	Conclusion and IRL
Issue	<u>The PP is intending to prolong the second verification period until August 2014. In July 2014 several date and time values were wrong.</u>	☒ IRL 54
Requirement	GS Toolkit 2.1, chapter 4.1: For the verification, in principle the rules as laid down in the CDM Validation and Verification Manual are applicable, unless Gold Standard requirements go beyond or are otherwise stated.	
Clarification Request	<u>Clarification Request No. 1</u> It shall be clarified what was the reason for the wrong date and time values and how the problem was dealt. It shall be also clarified how it is ensured that the previous values of date and time are correct.	
Response	The Italian engineering firm Conveco has provided an explanation letter on this date issue, which is provided to the DOE (4k-ConvecoExplanation-incorrect dates registration problem). According to this letter, wrong dates are due to the computer's internal clock or battery failure, rather than measurement or recording errors. To conserve reliability and data quality, these data are omitted from emission calculations (e.g. days after 19.07.2014).	
Assessment Means of validation / verification	Based on the explanation of Conveco the conservative approach has been applied and the data sets with problematic date and time value have been removed from the final calculation of the ERs. This can be seen in the excel sheet "LFG final data", column W.	
Adjustment on project design OR Changes in the monitoring report or supporting annexes	See revised calculation tool.	

List of Findings - Compilation and Resolutions

Project Title: Samsun Landfill Gas to Energy Project, Turkey

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Clarification Requests by the assessment team		
	Comments and Results	Conclusion and IRL
Issue	The LFG_{flow} is measured at three places: at the main pipe (LFG_{total}), before the engines (LFG_{elec}) and before the flare (LFG_{flare}). In the raw data for the calculation tool, many values of LFG_{total} repeat themselves one after the other. In order to keep the flare constantly available, a small flame is burning in the flare. The LFG_{flare} quantities are very small. This is why in general LFG_{total} is almost equal to LFG_{elec}.	☒ IRL 53 IRL 76 IRL 78
Requirement	GS Toolkit 2.1, chapter 4.1: For the verification, in principle the rules as laid down in the CDM Validation and Verification Manual are applicable, unless Gold Standard requirements go beyond or are otherwise stated.	
Clarification Request	Clarification Request No. 2 - It shall be clarified why several LFG_{total} values repeat themselves, although they are recorded with a time interval of 10 minutes or even 30 minutes. - It shall be clarified how is it possible that at some sets of data the LFG_{total} is exactly equal to LFG_{elec}, although a small quantity goes to the flare.	
Response	- The Italian engineering firm Conveco has provided an explanation letter on this date issue, which is provided to the DOE (4j-ConvecoExplanation-Repeating data registration problem). Accordingly, these repeating data are not due to a measurement error, but rather to the resolution of the devices and do not hamper the quality of the data. - The Italian engineering firm Conveco has provided an explanation letter on this date issue, which is provided to the DOE (4l-ConvecoExplanation-flare flowrate problem). Accordingly, when the flare burns very small quantities the value is too low and the system register a 0 (zero) value. During the monitoring period the flare unit has seldom been used for destroying excess methane (flare methane use was ca. 1% of engines' methane use over the monitoring period), but rather run at minimum not to extinguish its small flare.	
Assessment Means of validation / verification	According to the official explanation provided by Conveco, the measurements occur based on a certain resolution. Depending on the measured value the resolution varies. When consecutive values are very close to each other and their difference below the resolution, then the real measured value is rounded up or rounded down, depending if it	

List of Findings - Compilation and Resolutions

Project Title: Samsun Landfill Gas to Energy Project, Turkey

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Clarification Requests by the assessment team		
	is above the half resolution or below. As soon as the measured value exceeds the range of the resolution then the actual measurement is displayed. Issue is closed. b. The official explanation that was delivered by Conveco (IRL 78) explains in a clear manner the reason for this peculiarity. Issue is closed.	
Adjustment on project design OR Changes in the monitoring report or supporting annexes	See revised calculation tool.	



South Asia

Annex 2

Information Reference List

Project title: Samsun Landfill Gas to Energy Project, Turkey

Interviewed Persons during onsite assessment:

Name	Function	Company
Mr. Erol Iren	Project owner	Samsun Avdan
Mr. Sinan Bektas	Landfill engineer	Samsun Avdan
Mr. Adem Söyler	Technical staff	Samsun Avdan
Mrs. Figen Akin	Environmental director	Prefecture of Samsun
Mr. Ali Iloc	Mayor of community	N/A
Mr. Yagmur Karabulut	Project developer	Mavi Consultants

Information Reference List	Verification of GS Project	Page 2 of 6	 South Asia
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Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date (dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
1.	GS Webpage	https://gs2.apx.com/mymodule/ProjectDoc/EditProjectDoc.asp?id1=935	N/A	General information
2.	Samsun Avdan Enerji Üretim ve Tic. A.Ş.	Registered PDD , version 4 Samsun Landfill Gas to Energy Project, Turkey	13/04/2012	General information
3.	Mavi Consultants	MR for 2 PV, Version 01 Samsun Landfill Gas to Energy Project, Turkey	23/06/2014	General information
0.	General technical documents. Calibration protocols from 1 PV are party valid also for the 2 PV.			
4.	City of Samsun	Annex 1a-Samsun-Residence Certificates	09/11/2012	GS Passport
5.	City of Samsun	Annex 1b-Samsun-Social Security Registries	09/11/2012	GS Passport
6.	Iltekno	Annex 2a-Samsun-Training by Iltekno	09/11/2012	Technical information
7.	Conveco	Annex 2b-Samsun-Training by Conveco	09/11/2012	Technical information
8.	Samsun Avdan Enerji Üretim ve Tic. A.Ş.	Annex 2c-Samsun-Equipment Protocol	09/11/2012	Technical information
9.	Samsun Avdan	Annex 2d-Samsun-Emergency Action Plan	09/11/2012	GS Passport
10.	Samsun Avdan	Annex 2e-Samsun-Work Instructions	09/11/2012	GS Passport
11.	Samsun Avdan	Annex 2f-Samsun-Stakeholder Site Visit Forms	09/11/2012	GS Passport
12.	Mavi	GS Passport-Approved by GS upon registration		General Information
13.	Mavi	GS Passport-Approved by GS upon registration		General Information
14.	Elster	Annex 4a-Samsun-Measurement Devices Calibration Protocols	09/11/2012	Technical information

Information Reference List	Verification of GS Project	Page 3 of 6	 South Asia
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Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date (dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
15.	Calik Yedas	Annex 4b-Samsun-Measurement Devices First Index Protocols	09/11/2012	Technical information
16.	Elster	Annex 4c-Samsun-Measurement Devices Brochure	09/11/2012	Technical information
17.	Conveco	Annex 4d-Samsun-Flowmeters Calibration Protocols	09/11/2012	Technical information
18.	Fuji Electric	Annex 4e-Samsun-Differential Pressure Transmitter Brochure	09/11/2012	Technical information
19.	Fuji Electric	Annex 4f-Samsun-Gas Analyser Technical Specifications	09/11/2012	Technical information
20.	Tecnova HT	Annex 4g-Samsun-Gas Analyser Calibration Protocol	09/11/2012	Technical information
21.	Contrec	Annex 4h-Samsun-Gas and Steam Flow Computer Brochure	09/11/2012	Technical information
22.	Fuji Electric	Annex 4i-Samsun-Pressure Transmitter Brochure	09/11/2012	Technical information
23.	Conveco	Annex 4j-Samsun-Gas Booster and Flare Stack Brochure	09/11/2012	Technical information
24.	AFAQ	Annex 4k-Samsun-Pressure Transmitter Inspection Report	09/11/2012	Technical information
25.	Fuji Electric	Annex 4l-Samsun-Pressure Transmitter Declaration of Conformity	09/11/2012	Technical information
26.	Fuji Electric	Annex 4m-Samsun-Pressure Transmitter Instructions Manual	09/11/2012	Technical information
27.	Fuji Electric	Annex 4n-Samsun-Pressure Transmitter-Safe Installation Instruction	09/11/2012	Technical information
28.	Conveco	Annex 4o-Samsun-Flow Computer User Manual	09/11/2012	Technical information
29.	Pronova	Annex 4p-Samsun-Gas Analyser User Manual	09/11/2012	Technical information
30.	Conveco	Annex 4r-Samsun-Periodical Calibration Protocol for Gas Analyzer and Flowmeter	09/11/2012	Technical information
31.	EPDK	Annex 5a-Samsun-Generation License	09/11/2012	Technical information
32.	Grid operator	Annex 5b-Samsun-Temporary Approval Document	09/11/2012	Technical information
33.	Samsun Avdan	Annex 6a-Samsun-Flare Raw Data	09/11/2012	Raw data/Invoices
34.	Samsun Avdan	Annex 6b-Samsun-Engine Raw Data	09/11/2012	Raw data/Invoices

Information Reference List	Verification of GS Project	Page 4 of 6	 South Asia
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Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date (dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
35.	BARTEK	Annex 7a-Samsun-Electricity Block Diagram	09/11/2012	Technical information
36.	Conveco	Annex 7b-Samsun-Gas Booster Unit and Flare Model	09/11/2012	Technical information
37.	BARTEK	Annex 7c-Samsun-Site Plan	09/11/2012	Technical information
38.	Samsun Avdan	Annex 7d-Samsun-Corrspondance on Leachate with the Municipality	09/11/2012	GS Passport
39.	Samsun Avdan	Annex 7e-Samsun-Details of Equipment Malfunction and Maintenance	09/11/2012	Technical information
40.	SGK	Annex 1c-Samsun-Social Security Registries (Oct-Nov)	08/02/2013	GS Passport
41.	Grid operator	Annex 3a-Samsun-PMUM Records and Electricity Invoices (Oct-Nov)	27/06/2014	Raw data/Invoices
42.	Tecnova HT	Annex 4aa-Samsun-Pressure Transmitter Calibration Documents	08/02/2013	Technical information
43.	Woodward	Annex 4bb-Samsun-Genset Controller Calibration Documents	08/02/2013	Technical information
44.	Conveco	Annex 4t-Samsun-Factory Acceptance Tests Certificates	08/02/2013	Technical information
45.	Conveco	Annex 4u-Samsun-Declaration about Thermocouple	01/02/2013	Technical information
46.	Conveco	Annex 4v-Samsun-Declaration about Flow meter accuracy	01/02/2013	Technical information
47.	Conveco	Annex 4w-Samsun-Declaration about Analysis System Maintenance Operation	08/02/2013	Technical information
48.	Technova HT	Annex 4x-Samsun-Declaration about Flow meter Calibration	21/12/2012	Technical information
49.	MWM	Annex 4y-Samsun-Power Generation Unit Brochure (V12)	08/02/2013	Technical information
50.	Conveco	Annex 4z-Samsun-Gas Booster and Flare Stack Brochure (full version)	08/02/2013	Technical information
51.	Samsun municipality	Annex 7f-Samsun-Corrspondance on Hazardous Wastes	15/01/2013	Technical information
52.	Samsun Avdan	Annex 7g-Samsun-Measured Pressure Value Location	08/02/2013	Technical information
0.	Documents delivered for the 2 PV			

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Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date (dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
53.	Mavi Consultants	Final MR for 2 PV, Version 1.1 Samsun Landfill Gas to Energy Project, Turkey	08/12/2014	General information
54.	Mavi Consultants	Final calculation tool	08/12/2014	General information
55.	Samsun Avdan	1-Booster Data (Raw data from engines and flare)	27/06/2014	Technical information
56.	Samsun Avdan	2-BoosterGasTemperatures (manual measurements of LFG _{temp})	27/06/2014	Technical information
57.	Samsun Avdan	3-Electricity Generation	27/06/2014	Technical information
58.	Conveco	4a-ConvecoServiceForm-April2013	27/06/2014	Technical information
59.	Conveco	4b-ConvecoServiceForm-Sep2013	27/06/2014	Technical information
60.	Woodward	4c-ThirdGeneratorUnit	27/06/2014	Technical information
61.	Woodward	4d-ThirdGeneratorUnit	27/06/2014	Technical information
62.	Samsun Municipality	5-ResidenceRegister	27/06/2014	Technical information
63.	Samsun Municipality Sosyal Güvenlik Kurumu	5-SocialSecurity	27/06/2014	Technical information
64.	EPDK	6a-GenerationLicenseRevision_3.6MW	27/06/2014	Technical information
65.	EPDK	6b-OperationStartProtocol_3.6MW	27/06/2014	Technical information
66.	Samsun Municipality Büyükşehir Belediyesi	7a-LeachateQualityLetter	27/06/2014	Technical information

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Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date (dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
67.	Samsun Avdan	7b-EmergencyPlan	27/06/2014	Technical information
68.	Samsun Avdan	7c-RiskAnalysisProcedure	27/06/2014	Technical information
69.	Samsun Avdan	7d-WasteTransportationForm	27/06/2014	Technical information
70.	Samsun Avdan	8-3rd Engine Electrical Drawing	27/06/2014	Technical information
71.	İL TEKNO	4e-EngineProvider-LoadFluctuations	02/12/2014	Technical information
72.	Gentek	4f-GentekCalibrationCertificates	09/12/2014	Technical information
73.	Yedas	4g-Electricity Meter Replacement Protocols	09/12/2014	Technical information
74.	Yedas	4h-Replacement Protocol Elster	09/12/2014	Technical information
75.	Yedas	4i-Replacement Protocol Koehler	09/12/2014	Technical information
76.	Conveco	4j-ConvecoExplanation-Repeating data registration problem	27/10/2014	Technical information
77.	Conveco	4k-ConvecoExplanation-incorrect dates registration problem	27/10/2014	Technical information
78.	Conveco	4l-ConvecoExplanation-flare flow rate problem	27/10/2014	Technical information
79.	CATAS	ATAC Training certificates	09/12/2014	General information
80.	Samsun Avdan	6c-OperationalStart-3rd Engine-27.09.2013	09/12/2014	General information



South Asia

Annex 3

Appointment Certificates



South Asia

CERTIFICATE OF APPOINTMENT

Mr. Agrafiotis, Georgios fulfills the requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd to participate in audits.

Qualification applicable to					
Standard	CDM	GS	VCS	ISO-14064-1: 2006	Other
	☒	☒	☒	☐	☐

Qualification as						
Status	Validator	Verifier	ATL	Technical Reviewer	Financial Expert	Technical Expert
	☒	☒	☒	☐	☒	☒
TA (s)	1.2, 13.1					

Country Expertise						
Region	1	2	3	4	5	Other
	☒	☐	☒	☐	☐	
Further countries						

Technical Area
1.2_Renewables
13.1_Solid waste and wastewater

This appointment is valid until 31.01.2016 and is bound by internal requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd.

In case of loss of validity of this certificate as per result of an assessment according to internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference no. CB-IND-CCP-0002/006.

Date	Signature
01/01/2015	



South Asia

CERTIFICATE OF APPOINTMENT

Mr. Murty, Eswar fulfills the requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd to participate in audits.

Qualification applicable to					
Standard	CDM	GS	VCS	ISO-14064-1: 2006	Other
	☒	☒	☒	☒	☐

Qualification as						
Status	Validator	Verifier	ATL	Technical Reviewer	Financial Expert	Technical Expert
	☒	☒	☒	☒	☒	☒
TA (s)	1.2, 3.1, 6.1, 13.1					

Country Expertise						
Region	1	2	3	4	5	Other
	☒	☐	☐	☐	☐	
Further countries						

Technical Area
1.2_Renewables
3.1_Energy demand
6.1_Construction
13.1_Solid waste and wastewater

This appointment is valid until 31.01.2016 and is bound by internal requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd.

In case of loss of validity of this certificate as per result of an assessment according to internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference no. CB-IND-CCP-0031/006.

Date	Signature
01/01/2015	

IS-CMS-CB-POG-01/05, version 03

TUV®



South Asia

CERTIFICATE OF APPOINTMENT

Mr. Habbu, Ajit fulfills the requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd to participate in audits.

Qualification applicable to					
Standard	CDM	GS	VCS	ISO-14064-1: 2006	Other
	☒	☒	☒	☐	☐

Qualification as						
Status	Validator	Verifier	ATL	Technical Reviewer	Financial Expert	Technical Expert
	☐	☐	☐	☐	☐	☒
TA (s)	1.1					

Country Expertise						
Region	1	2	3	4	5	Other
	☒	☐	☐	☐	☐	
Further countries						

Technical Area	
1.1_Thermal energy generation	

This appointment is valid until 31.01.2016 and is bound by internal requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd.

In case of loss of validity of this certificate as per result of an assessment according to internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference no. CB-IND-CCP-0016/005.

Date	Signature
01/01/2015	