# VERIFICATION REPORT
# GLOBAL TAN ENERGY LIMITED TURKEY ANKARA BRANCH

## VERIFICATION OF THE SELIMOGLU 9.3 MW HYDROELECTRIC POWERPLANT

REPORT NO. TURKEY-VER/CER.1411.11.C45.REV1/2012

REVISION NO. 02

BUREAU VERITAS CERTIFICATION

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Report No: TURKEY-VER/ CER.1411.11.C45.REV1/2012 rev. 02

VERIFICATION REPORT

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| Date of first issue:<br>10/12/2012 | Organizational unit:<br>Bureau Veritas Certification Holding SAS |
| Client:<br>GLOBAL TAN ENERGY LIMITED TURKEY ANKARA BRANCH | Client ref.:<br>M. KEMAL DEMİRKOL |

Summary:
Bureau Veritas Certification has made the initial and 1st periodic, verification of the Selimoglu 9.3 Mw Hydroelectric Powerplant, Gold Standard ID Number GS635, project of Global Tan Energy Limited Turkey Ankara Branch located in Arsin District of Trabzon Province in Republic of Turkey, and applying the methodology ACM0002 version 09, on the basis of UNFCCC criteria for the CDM methodology, Gold Standard v.2.0 as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the applicable CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

The verification scope is defined as a periodic independent review and ex post determination by the Designated Operational Entity of the monitored reductions in GHG emissions during defined verification period, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.
The first output of the verification process is a list of Clarification, Corrective Actions Requests, Forward Actions Requests (CL, CAR and FAR), presented in Appendix A.

In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in validated and registered project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is already generating GHG emission reductions. The GHG emission reduction is calculated without material misstatements, and the emission reductions verified totalize 39,355 tons of $CO_2$eq for the monitoring period.
Our opinion relates to the project's GHG emissions and resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring, and its associated documents.

| | | | |
|---|---|---|---|
| Reporting period | : | 07/01/2010 to 30/06/2012 | |
| Baseline emissions | : | 39,370 | t $CO_2$ equivalents. |
| Project emissions | : | 15 | t $CO_2$ equivalents. |
| Leakage emissions | : | 0 | t $CO_2$ equivalents. |
| Emission Reductions | : | 39,355 | t $CO_2$ equivalents |


| | | |
|---|---|---|
| Report No.:<br>TURKEY-VER/CER.1411.11.C45.REV1/2012 | Subject Group:<br>GS-VER | |
| Project title:<br>Selimoglu 9.3 Mw Hydroelectric Powerplant | | |
| Work carried out by:<br>Mustafa UNAL – Lead verifier | | |
| Internal Technical Review carried out by:<br>Burcu MUTMAN BORAN – Internal Technical Reviewer | | |
| Date of this revision:<br>20/02/2013 | Rev. No.:<br>02 | Number of pages:<br>65 |

**Indexing terms**

Work approved by:
Matthieu Martini

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# 1 INTRODUCTION

Global Tan Energy Limited Turkey Ankara Branch (GTE) has commissioned Bureau Veritas Certification to verify the emissions reductions of its GS-VER project Selimoglu 9.33 MW Hydroelectric Powerplant (hereafter called "the project") at Arsin, Trabzon, Turkey.

This report summarizes the findings of the verification of the project, performed on the basis of applicable UNFCCC criteria, Gold Standard v.2.0 requirements, as well as criteria given to provide for consistent project operations, monitoring and reporting.

## 1.1 Objective

In carrying out its verification work, the DOE shall ensure that the project activity complies with the requirements of paragraph 62 of the CDM modalities and procedures.

Based on the applicable requirements of paragraph 62 of the CDM modalities and procedures, this assessment shall:

(a) Ensure that the project activity has been implemented and operated as per the registered GS-VER-PDD and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place;

(b) Ensure that the monitoring report and other supporting documents provided are complete in accordance with latest applicable version of the completeness checklist for requests for issuance of CERs and verifiable and in accordance with applicable CDM and GS-VER requirements;

(c) Ensure that actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology;

(d) Evaluate the data recorded and stored as per the monitoring methodology.

## 1.2 Scope

The verification scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations as well as GS v.2.0 requirements.

The verification is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions may

provide input for improvement of the project monitoring towards reductions in the GHG emissions.

## 1.3 GHG Project Description

Project activity is a hydroelectric power plant application by Arsin Enerji Elektrik Uretim Sanayi Ticaret A.S. (ARSIN) with an installed capacity of 8.8 MWe from two horizontal axis Francis turbines. Waters of the Yanbolu Creek are derived by the project weir of 25 m height located at 226,5m altitude. Project has a 2748 m long closed rectangular conveyance channel, 140 m of penstock and a head of 100 m. Generated electricity is transferred to the national grid through a 10 km long transmission line to the Arsin Substation.

## 1.4 Verification Team

The verification team consists of the following personnel:

| FUNCTION | NAME | CODE HOLDER* | TASK PERFORMED |
|---|---|---|---|
| **Lead Verifier** | Mustafa UNAL | ☒ **Yes** ☐ **No** | ☒ **DR** ☒ **SV** ☒ **RI** |
| **Verifier** | N/A | ☐ **Yes** ☐ **No** | ☐ **DR** ☐ **SV** ☐ **RI** |
| **Technical Specialist** | N.A. | ☐ **Yes** ☐ **No** | ☐ **DR** ☐ **SV** ☐ **RI** |
| **Internal Technical Reviewer (ITR)** | Burcu MUTMAN BORAN | ☒ **Yes** ☐ **No** | ☐ **DR** ☐ **SV** ☒ **RI** |
| **Specialist supporting ITR** | N.A. | ☐ **Yes** ☐ **No** | ☐ **DR** ☐ **SV** ☐ **RI** |

*DR = Document Review; SV = Site Visit; RI = Report issuance

# 2 METHODOLOGY

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

In order to ensure transparency, a verification protocol was customized for the project, according to the version 01.2 of the Clean Development Mechanism Validation and Verification Manual, issued by the Executive Board at its 55$^{th}$ meeting on 30/07/2010. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from verifying the identified criteria. The verification protocol serves the following purposes:

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

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

## 2.1 Review of Documents

The verification of the project documentation provided by the project participant is based upon both quantitative and qualitative information on emission reductions. Quantitative information comprises the reported numbers in the monitoring report submitted to the DOE. Qualitative information comprises information on internal management controls, calculation procedures, and procedures for transfer of data, frequency of emissions reports, and review and internal audit of calculations.

In addition to the monitoring documentation provided by the project participants, the DOE reviews:

(a) The registered GS-VER-PDD, including the monitoring plan and the corresponding validation report;

(b) Previous verification reports, if any;

(c) Previous monitoring reports, if any;

(d) The revised monitoring plan, if any, and its impact on the current verification;

(e) The applied monitoring methodology;

(d) Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board;

(e) Any other information and references relevant to the project activity's resulting emission reductions (e.g. IPCC reports, data on electricity generation in the national grid or laboratory analysis and national regulations).

## 2.2 Follow-up Interviews

On 01/08/2012 Bureau Veritas Certification performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of GTE and ARSIN were interviewed (see References). The main topics of the interviews are summarized in Table 1.

**Table 1 Interview topics**

| Interviewed organization | Interview topics |
|---|---|
| ARSIN | ➢ Management and Operational Structure<br>➢ Sustainable Development Indicators<br>➢ Sales of Electricity and Monitoring Practices<br>➢ Project Implementation |
| GTE | ➢ Emission Reduction Calculations<br>➢ Monitoring Report |
| Local Stakeholders | ➢ Sustainable Development Indicators and local impacts of the project |

## 2.3 Resolution of Clarification, Corrective and Forward Action Requests

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

Findings established during the initial verification can either be seen as a non-fulfilment of criteria ensuring the proper implementation of a project or where a risk to deliver high quality emission reductions is identified.

Corrective Action Requests (CAR) is issued, where:

(a) Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;

(b) Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;

(c) Issues identified in a FAR during validation or previous verifications to be verified during verification have not been resolved by the project participants.

Forward Action Requests (FAR) are issued, for actions if the monitoring and reporting require attention and/or adjustment for the next verification period.

The verification team may also use the term Clarification Request (CL), if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

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

## 2.4 Internal Technical Review

The verification report underwent a Internal Technical Review (ITR) before requesting issuance of CERs for the project activity.

The ITR is an independent process performed to examine thoroughly that the process of verification has been carried out in conformance with the requirements of the verification scheme as well as internal Bureau Veritas Certification procedures.

The Lead Verifier provides a copy of the verification report to the reviewer, including any necessary verification documentation. The reviewer reviews the submitted documentation for conformance with the verification scheme. This will be a comprehensive review of all documentation generated during the verification process.

When performing an Internal Technical Review, the reviewer ensures that:

> The verification activity has been performed by the team by exercising utmost diligence and complete adherence to the CDM methodology rules and GS v.2.0 requirements.
>
> The review encompasses all aspects related to the project which includes project design, baseline, additionality, monitoring plans and emission reduction calculations, internal quality assurance systems of the project participant as well as the project activity, review of the stakeholder comments and responses, closure of CARs, CLs and FARs during the verification exercise, review of sample documents.

The reviewer compiles clarification questions for the Lead Verifier and Verification Team and discusses these matters with Lead Verifier.

After the agreement of the responses on the 'Clarification Request' from the Lead Verifier as well as the PP(s) the finalized verification report is accepted for further processing such as uploading on the Gold Standard webpage.

# 3 VERIFICATION CONCLUSIONS

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

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

The Clarification, Corrective and Forward Action Requests are stated, where applicable, in the following sections and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in 15 Corrective Action Requests, 18 Clarification Requests, and 02 Forward Action Requests.

The CARs, CLs and FARs were closed based on adequate responses from the Project Participant(s) which meet the applicable requirements. They have been reassessed before their formal acceptance and closure.

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

## 3.1 Remaining issues from previous validation/verification

All CARs and CLs raised were successfully closed during the validation stage of the project activity, and no remaining issues were left.

Two outstanding FARs were identified from the project validation report, CCP.VAL0518, rev.04, dd. 25/02/2010.

FAR #07b was raised as the metering equipment for the monitoring of generated energy has not been installed yet. The meters were verified during the site visit as Alster brand type A1500 meters with 0,2s sensitivity in line with the relevant regulations. Their serial numbers are 395378 for the main meter and 395370 for the backup meter. Meters wre installed and sealed by CEDAS (Coruh Elektrik Dagitim – energy distributor in the region), verified through the first index protocol. FAR #07b is closed.

FAR #32 was raised related to the verification of the expert report regarding the functionality of the fish passage and the PPs management of it and minimum water release arrangements. Expert report prepared by academics, Sezgin HACISALIHOGLU, Mustafa SEZGIN, Sefa AKBULUT, Selcuk GUMUS, dd. 01/10/2011 and update with an addendum dd. 15/03/2012 was verified by the DOE team. The implications have been discussed in detail under the relevant sections of this report. FAR #32 is closed.

FAR #14 was raised regarding the access of locals around the project area to water, after project implementation. This was monitored as parameter 14 in the sustainable development monitoring plan and is explained in detail in section 3.4. FAR is closed.

## 3.2 Compliance of the project implementation with the registered project design document (228)

The implementation status of the project is implemented in accordance with the validated GS-VER-PDD and has been commissioned officially on 07/01/2010 as verified through the provisionary acceptance protocol with the same date. The same document confirms the site visit observations that the project involves 2 x 4.4 MWe units of horizontal Francis turbines generating electricity using the 100.55 gross head between the regulator structure and the turbines.

Coordinates of the project regulator has been verified as 40°51'25" (N) 39°56'29" (E) and the powerhouse as 40°52'12" (N) 39°58'15" (E).

Project consists of a single site and no phased implementation. The actual operation of the proposed project activity is generating electricity from the hydro power to be fed into the grid. Total net emission reductions for this initial and first periodic verification period are 39,355 tCO2. On the other hand the estimated emission reduction is defined in the registered PDD as 44,885 tCO2 for the initial and first verification period of 30 months. Actual emission reduction value (39,355 tCO2) is smaller than the estimated emission reduction value (44,885 tCO2). Annual fluctuations in the flow regime have been indicated as the reason.

No emergencies were reported during the monitoring period. As described in the GS-VER-PDD, calibration and maintenance responsibility for the electricity meters that are the primary source of monitoring for the fundamental parameter to be monitored belong to TEIAS. No erroneous measurements have been reported; therefore no calibration or maintenance was required for the monitoring equipment

CAR15 was raised to clarify the company name change which resulted in the revision of the generation license. As the new license under ARSIN name refers to the Hidro Kontrol license, the CAR was satisfactorily closed.CL02 was raised questioning if any downtimes or special events happened during this monitoring period and the PP revised the MR to indicate that none had happened. CL was closed.

## 3.3 Compliance of the monitoring plan with the monitoring methodology including applicable toos(s) (232)

The monitoring plan is in accordance with the approved methodology applied by the registered GS-VER project activity

## 3.4 Compliance of monitoring activities with the registered monitoring plan (235)

Monitoring has been carried out in accordance with the monitoring plan contained in the registered GS-VER-PDD except minor deviations that does not affect the implementation of the monitoring methodology or the monitoring plan's ability to monitor the net electricity generated.

The parameters required by the monitoring plan and the way the Verification Team has verified the information flow (from data generation, aggregation, to recording, calculation and reporting) for these parameters including the values in the monitoring reports are described below:

(a) Net electricity supplied by the project activity to the grid ($EG_y$):

Models, specifications and serial numbers of the main and backup meters identified as the monitoring equipment for the parameter have been verified during the site visit:

| | Electricity Meter (Primary) | Electricity Meter (Secondary) |
|---|---|---|
| Manufacturer | ELSTER | ELSTER |
| Model | A1500 | A1500 |
| Serial number | 395378 | 395370 |
| Accuracy | 0.2s | 0.2s |

As a minor deviation from the registered GS-VER-PDD, remote reading to generated electricity has started with the OSOS system, so instead of signed protocols, OSF.07.02 forms approved by the TEIAS representative has been the basis for the data. PMUM (Market Financial Settlement Center) records have been the source of crosschecking for this parameter during verification. As indicated earlier, no maintenance, calibration activities by TEIAS was performed on the meters, during the monitoring period. Initial calibration dates for the meters have been verified through the first index protocols as 17/12/2009 and will be valid for 10 years, in accordance with the national regulations, unless a discrepancy is determined in the monitored amounts.

Based on the records, GTE has prepared a spreadsheet to report the generation values and performed the emission reduction calculations. Net generation values were reached by subtracting the consumption of the plant from the gross amount of electricity supplied to the grid. Reported amount of total electricity generated in the monitoring period is indicated as 70,054 MWh for this monitoring period, which is from 07/01/2010 to 30/06/2012 (inclusive).

(b) Installed capacity of the hydro power plant after the implementation of the project activity ($Cap_{PJ}$):

Installed capacity has been verified through the equipment labels and validated project documentation as 2 x 4.4 MWe.

(c) Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full ($A_{PJ}$):

Reservoir formed by the Selimoglu regulator has a surface area of 11,414.3 m2. This is the maximum surface area allowed by the water height at the design maximum of the regulator, verified through technical drawings and the registered GS-VER-PDD.

(d) Diesel consumption of the auxiliary power unit ($FC_{Diesel,j,y}$):

Amount of diesel consumed during the monitoring period has been verified during the site visit through the total working hours displayed on the generator, 279 and the generators theoretical maximum hourly consumption, which is 20 lt/hr. Consumed amount of diesel calculated theoretically and in a conservative manner as 5580 liters. No invoices were made available for cross-checking as a deviation from the monitoring plan. However as the total working hours are assumed conservatively, monitoring ability of the plan is considered intact. Using 2010 TEIAS data and 2012 UNFCCC national report values for the diesel and the formula from the applied methodology the corresponding Project Emissions were calculated as 15 tCO2-eq, which is below 1% of the baseline emissions.

In addition to these parameters monitored as a part of the monitoring plan required by the applied UNFCCC CDM methodology, project has additional sustainable development parameters set forth by the GS v.2.0 requirements. These are:

(1.1) $SO_2$ emissions by thermal power plants:

Using UNFCCC national inventory reports and 2010 TEIAS data, $SO_2$ emissions avoided corresponding to 70,054 MWh of generation during this monitoring period is 137 tonnes.

(1.2) $NO_x$ emissions by thermal power plants:

Using UNFCCC national inventory reports and 2010 TEIAS data, $SO_2$ emissions avoided corresponding to 70,054 MWh of generation during this monitoring period is 105 tonnes.

(2.1) Flow rate of water released from the weir:

DSI determined value for minimum release amount is 0.452 $m^3/s$ based on the 10% of average flow data for the last ten years. However, in the addendum of the expert report, released on 15/03/2012 to serve as an update to the situation observed in the original report, the amount is set as 0.600 $m^3/s$ as the DSI amount was deemed insufficient. The PP has agreed to this through a written protocol, annex to the addendum expert report. Signed reports from DSI were provided for 10/03/2010-

30/09/2010; 01/10/2010-30/09/2011; 01/10/2011-30/06/2012. Flow data up to 15/03/2012 were verified against the 0.452 value and was compliant. Flow data after 03/2012 were verified against the revised 0.600 value and were compliant.

(2.2) Waste water:

Waste water from the plant is accumulated in an underground impermeable cesspit. The PP informed the team that the tank was a dual compartment tank with a 100 $m^3$ total capacity. Cesspit was seen during the site visit and its management was verified through the written statement of the firm to the provincial environmental directorate, dd.01/02/2010. Findikli Municipality's 25/09/2012 dated M.61.8.FIN.0.10/192 numbered correspondence confirms that the cesspit was inspected and was not full yet.

(3) Flow released from the fish passage:

Please see item (g) for the monitored amounts. Fish passage design was found to be appropriate by the expert, section 4.3, page 49 of the report. The AGI station monitoring the minimum water release requirements have been moved to the exit of the fish passage, as requested by the addendum expert report.

(4) Functionality of the fish passage:

Fish passage design was found to be appropriate by the expert, section 4.3, page 49 of the report. The AGI station monitoring the minimum water release requirements have been moved to the exit of the fish passage, as requested by the addendum expert report.

(5) Number of people trained:

HSE trainings for the construction subcontractor and the contract with the HSE expert were verified for the construction period. Relevant personnel's operating with high voltage equipment was also verified (. The HSE trainings for the operational personnel, however has not been completed yet. PP provided an offer from a HSE training provider, dated 15/09/2012. **FAR01** has been raised to verify the completion of the HSE trainings for the operational personnel.

(6) Compensations made to locals [related to expropriation activities]:

Deeds of expropriated lands and relevant payments have been verified. Husamettin KARA, owner of the area where the headpool is situated was also interviewed in person and had no complaints. His transactions were also verified.

(7) Amount of natural gas imported for power production:

Using TEIAS 2010 data, GTE has calculated in the spreadsheet that by generating 70,054 MWh of electricity through renewable means, a corresponding 15.55 $Mm^3$ of natural gas import has been avoided.

(8) Payments made to staff:

Social security records and payrolls for the operational personnel were verified.

(9) Currency saving:

The amount of natural gas import avoided that has been calculated in parameter 7 has been turned to a monetary value by using a m3 price of 0,701 (lowest tariff applied to industrial facilities by Eskisehir gas provider) and a euro exchange rate of 2.2 €/TL. 15,55 m3 of natural gas corresponds to 5 Million €, saved.

(10) Soil erosion and leakage within the project site.

No discernable erosion was observed during the site visit. Plant cover on the slopes was unbroken and continuous. Initial expert report has revealed observations that certain slopes above the access road shoved signs of tendency for erosion. PP has performed tree planting (2500 trees) on these endangered slopes for stabilization. This was confirmed by the addendum expert report and also by the invoices made to the planting firm. PP has built a retaining wall to the banks at the tail water exit of the regulator, on the request of the locals, as confirmed by the expert report addendum and site visit. -Banks were fortified with walls in line with the request of State Hydraulics Works (DSI) on the excavation dumping sites against erosion into the river.

(11) Sediment transport along the river:

Existence and functionality of the sediment passages were verified during the site visit. As the visit was performed on a dry season, all water was flowing through the fish passage during the visit; there was no accumulation up or down stream of the project regulator structure.

(12) Storage of excavation wastes in appropriate locations:

Positions of the three excavation storage sites were verified through approved project documentation and site visit observations. Site #1 under Yesilyali Municipality jurisdiction, downstream from project site and was used for the waste from the powerhouse construction. Most was utilized by parties other than the project owner for road building and bank stabilization. Yesilyali Municipality's permit on the use of the site was verified. Permits by the private owners of the #2 and #3 sites were also verified. Owner of a rented excavation site, a Guneyce local has expressed his pleasure about the arrangement as the filling and the retaining wall built on the bank to isolate the excavation from the river has saved his land, which was naturally eroding away prior to project acitivities.

(13) Demand for use of corn mill by locals.

No such demand has been made as verified through the interview with the Guneyce muhktar.

(14) Availability of water for locals around project site:

Project validation report on page 94 states that *"Potential measures to counteract any negative impacts onto water supply from wells appear satisfactory. As check can be made only during initial verification, FAR closed out in the frame of validation"*. The PP has indicated in the 8-week registration review (footnote 2) that an agreement has been made between the locals and the project owner for a pipe system. This agreement has been verified, dd. 28/07/2010. Also the agreement for the building of a water tank for the use of locals was verified through the relevant protocol dated 31/03/2010. Nurettin Sahin's personal complaint was amended by providing him with necessary length of piping to circumvent the problem. This was documented with the protocol between the parties on 03/05/2010. The pipe system has also been verified visually on site. No concerns about the issue were raised by interviewed stakeholders during the site-visit.

(15) Disposal of oil and other wastes (solid and liquid wastes):

Disposal of operational liquid domestic wastes have been evaluated under parameter 2.2, in this section.

Solid household wastes are collected and disposed by the municipality as verified through the relevant protocol between ARSIN and Findikli Municipality and the observed municipality garbage bins at the powerhouse.

Disposal of waste oil could not be verified as the PP stated that the oil in the system did not need replacing and so no waste oil has been produced as of yet. An offer with a laboratory for the testing of oil condition was provided and **FAR02** is raised to verify proper disposal arrangements for oil wastes.

(16) Dust formation around the project site:

Company stated that they have performed irrigation against dust emissions by their own trucks. Locals indicated no dust pollution except minor, transient disturbances.

CAR01 and CAR02 were raised regarding the generator working hours. PP has adopted the log value however as the crosschecking means were not available this was changed to generator total working hours to be conservative and CAR was closed. CAR04 was raised for the PP to provide specifics about the monitoring equipment used to monitor EGy and to provide information on calibration activities. MR was revised to include the accuracy class and calibration practices and the CAR was closed. CAR06 has been raised to clarify the source of the provided $A_{PJ}$ value. PP responded by pointing out that the same map has been used as the source for the validated value in the registered GS-VER-PDD,

theoretical maximum, therefore accepted and CAR closed. CAR09 has been raised to question the authenticity of the provided AGI data as they were unofficial electronic copies. PP provided signed and stamped documentation from DSI 22. Region and the CAR was cosed. CAR10, CAR11, CAR12 and CAR 13 were raised to acquire the objective evidence related to, respectively, social security records, domestic waste water management, HSE training records of personnel, waste oil management. Social security records were provided under the name of company managing the plant, MEKEL, waste water was verified through the municipality protocol and FARs 01 and 02 were raised for operational personnel's HSE trainings and waste oil management issues. CL13 and 14 was raised regarding the evidence for excavation waste management and dust mitigation measures. Relevant protocols for excavation waste sites were provided and 14 was closed through locals' input.

## 3.5 Compliance with the calibration frequency requirements for measuring instruments (243)

Initial calibration dates for the meters have been verified through the first index protocols as 17/12/2009 and will be valid for 10 years,
The calibration was conducted at the frequency as specified by the methodology, monitoring plan of the registered GS-VER-PDD.

## 3.6 Assessment of data and calculation of emission reductions (246)

A complete set of data for parameters related to emission reduction calculations during the specified monitoring period were made available.

The following actions were taken to ensure that the most conservative assumption theoretically possible has been made:

(a) Official sources (TEIAS, UNFCCC) were used for verification and crosschecking of generation values, as declared in the registered GS-VER-PDD monitoring methodology;

(b) All parameters used for the calculation of emission reductions (such as $EF_{CO2}$, NCV) were taken from the publicly available and contemporary values from sources such as TEIAS and UNFCCC;

(c) All the data are consistent with the values input in the Monitoring Report;

(d) Formulae used are in line with the applied methodology;

Emission reductions were determined as:

*ERy = BEy – PEy – LEy*

Where:
*ERy :* Emission reductions in year y (tCO2)
*BEy :* Baseline emissions in year y (tCO2)
*PEy :* Project emissions in year y (tCO2)
*LEy* : Leakage emissions in year y (tCO2)
*Y :* Refers to a given year

**Baseline Emissions:**

$BE = EF_{grid\ CM} \times EG$

Where:
BE = Baseline emissions in tones CO2-eq
EFgrid,CM = Combined Margin CO2 emission factor in tCO2-eq/MWh (0.562 tCO2-eq/MWh value was validated ex-ante in the registered GS-VER-PDD)
EG = Electricity supplied to the grid in MWh

The calculation of net electricity delivered to the grid in initial and first periodic monitoring period are as shown in Table below.

| Month | (A) Electricity supplied to the grid [MWh] | (B) Electricity consumption from the grid [MWh] | (C) = (A) - (B) EG Net electricity supplied to the grid [MWh] | Baseline emission: BR = EG * EF) [t $CO_2$-eq] |
|---|---|---|---|---|
| Jan 2010 | 1.161,087 | 3,359 | 1.157,728 | **14,549** |
| Feb 2010 | 2.554,383 | 0,808 | 2.553,575 | |
| Mar 2010 | 3.760,704 | 0,806 | 3.759,898 | |
| Apr 2010 | 4.675,646 | 0,039 | 4.675,607 | |
| May 2010 | 5.180,368 | 0,000 | 5.180,368 | |
| Jun 2010 | 2.658,021 | 0,010 | 2.658,011 | |
| Jul 2010 | 1.704,657 | 0,060 | 1.704,597 | |
| Aug 2010 | 394,570 | 0,000 | 394,570 | |
| Sept 2010 | 545,557 | 0,000 | 545,557 | |
| Oct 2010 | 2.326,420 | 2,090 | 2.324,330 | |
| Nov 2010 | 776,050 | 0,080 | 775,970 | |
| Dec 2010 | 159,615 | 0,380 | 159,235 | |
| | | | | |
| Jan 2011 | 201,608 | 2,920 | 198,688 | **14,547** |

| | | | | |
|---|---|---|---|---|
| Feb 2011 | 1.218,759 | 2,370 | 1.216,389 | |
| Mar 2011 | 2.530,695 | 0,180 | 2.530,515 | |
| Apr 2011 | 5.573,824 | 0,000 | 5.573,824 | |
| May 2011 | 6.258,544 | 0,000 | 6.258,544 | |
| Jun 2011 | 4.091,780 | 0,000 | 4.091,780 | |
| Jul 2011 | 1.234,176 | 0,000 | 1.234,176 | |
| Aug 2011 | 888,601 | 0,000 | 888,601 | |
| Sept 2011 | 603,195 | 0,000 | 603,195 | |
| Oct 2011 | 1.403,389 | 0,010 | 1.403,379 | |
| Nov 2011 | 1.379,831 | 1,270 | 1.378,561 | |
| Dec 2011 | 510,240 | 3,360 | 506,880 | |
| | | | | |
| Jan 2012 | 726,828 | 4,300 | 722,528 | **10,274** |
| Feb 2012 | 715,798 | 5,640 | 710,158 | |
| Mar 2012 | 1.931,510 | 2,130 | 1.929,380 | |
| Apr 2012 | 5.700,748 | 0,000 | 5.700,748 | |
| May 2012 | 6.259,848 | 0,093 | 6.259,755 | |
| Jun 2012 | 2.959,104 | 1,405 | 2.957,699 | |

| | | | | |
|---|---|---|---|---|
| **Sum (07/01/2010 - 31/06/2012** | **70,085.556** | **31.310** | **70,054.246** | **39,370** |

$BE_{2010}$ = 14,549 $tCO_2$-eq
$BE_{2011}$ = 14,547 $tCO_2$-eq
$BE_{2012(Jan.-Jun)}$ = 10,274 $tCO_2$-eq

$BE_{1stMP}$= 39,370 $tCO_2$-eq

**Project Emissions:**

$PE = FC_{Diesel} \times NCV_{Diesel} \times EF_{CO2Diesel}$

Where:

PE = Project emissions due to auxiliary power unit in tCO2-eq
$FC_{Diesel}$ = Consumption of diesel in auxiliary power unit in L
$NCV_{Diesel}$ = Net Calorific Value of Diesel in GJ/L
$EF_{CO2Diesel}$ = CO2 emission factor of diesel tCO2-eq/GJ

Using the current values from publicly available sources for diesel, and the monitored amount of diesel consumed (verified through the counter in the generator) the project emissions are:

$PE_{1stMP}$ =
(20 lt/hr x 279 hrs x 0,845 kg/lt / $10^6$) x 42991.117 Gj/kt x 0.073 tCO2/Gj
= 14.865 $tCO_2$-eq ~ 15 $tCO_2$-eq

$PE_{2010}$ = 6 $tCO_2$-eq
$PE_{2011}$ = 6 $tCO_2$-eq
$PE_{2012(Jan.-Jun)}$ = 3 $tCO_2$-eq

As the $A_{PJ}$ and $Cap_{PJ}$ have not changed, the power density of the project has not changed from the value in the registered GS-VER-PDD: PD = 817.4 $W/m^2$

**Leakage emissions:**

In line with the requirements of the applied approved methodology ACM0002 v.09,

$L_{1stMP}$ = 0 $tCO_2$-eq;

Hence the emission reductions for the initial and first periodic Monitoring Period [07/01/2010 to 30/06/2012 (inclusive)] are:

$ER_{1stMP} = BE_{1stMP} – PE_{1stMP} – L_{1stMP}$ = 39,370 – 15 – 0 = 39,355 $tCO_2$-eq

$ER_{2010}$ = 14,453 $tCO_2$-eq
$ER_{2011}$ = 14,541 $tCO_2$-eq
$ER_{2012(Jan.-Jun)}$ = 10,271 $tCO_2$-eq

The reported data was cross-checked by the relevant sources described for each parameter in the registered GS-VER-PDD, except for the reported deviation in the crosschecking of diesel consumption through fuel invoices as these were not available. A conservative approach based on total consumption hours and maximum consumption rate of the generator was adopted.

CAR07 was raised to report the generation values in the spreadsheet without any rounding and to keep a constant number of decimal places reported to avoid materiality issues. CAR was closed as the spreadsheet was revised. CAR08 was also related to the calculations and data reporting spreadsheet and was raised to make sure that sources for all data used are clearly stated and all calculations were re-traceable. GTE

complied with the request, revised the documentation and the CAR was closed. CL08 was raised to ensure that the formulae notation used is in line with the applied methodology, PP revised the MR and the CL was closed. CL10 was raised to compare the achieved emission reductions with estimated values in the validated GS-VER-PDD for the duration of the whole monitoring period, not a single year. Estimated values were extrapolated to 30 months for comparison and the CL was closed.

Appropriate methods and formulae for calculating baseline emissions, project emissions and leakage have been followed. Total net emission reductions for this initial and first periodic verification period are 39,355 tCO2. On the other hand the estimated emission reduction is defined in the registered PDD as 44,885 tCO2 for the initial and first verification period of 30 months. Actual emission reduction value (39,355 tCO2) is smaller than the estimated emission reduction value (44,885 tCO2). Annual fluctuations in the flow regime have been indicated as the reason.

The assumptions, emission factors and default values that were applied in the calculations have been justified.

# 4 VERIFICATION OPINION

Bureau Veritas Certification has performed the initial and 1st periodic, verification of the Selimoglu 9.3 Mw Hydroelectric Powerplant Project in Turkey, which applies the methodology ACM0002 version 09. The verification was performed based on the applicable requirements set by the CDM and relevant guidance provided by CMP and the CDM Executive Board as well as Gold Standard v.2.0.

The verification consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion.

The management of ARSIN and GTE are responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions of the project on the basis set out within the project Monitoring Plan indicated in the registered GS-VER-PDD. The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of GHG emission reductions from the project, is the responsibility of the management of the project.

Bureau Veritas Certification verified the Project Monitoring Report version 05 for the reporting period as indicated below. Bureau Veritas Certification confirms that the project is implemented as described in validated and registered project design documents. Installed equipment

being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions

Bureau Veritas Certification can confirm that the GHG emission reduction is calculated without material misstatements. Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions reported and related to the valid and registered project baseline and monitoring, and its associated documents. Based on the evidence and information that are considered necessary to guarantee that GHG emission reductions are appropriately calculated, Bureau Veritas Certification confirms the following statement:

Reporting period: From 07/01/2010 to 30/06/2012
Baseline emissions : 39,370 t $CO_2$ equivalents.
Project emissions : 15 t $CO_2$ equivalents.
Leakage emissions : 0 t $CO_2$ equivalents
Emission Reductions : $ER_{2010}$ = 14,453 $tCO_2$-eq
$ER_{2011}$ = 14,541 $tCO_2$-eq
$ER_{2012(Jan.-Jun)}$ = 10,271 $tCO_2$-eq.

20/02/2013

Burcu MUTMAN BORAN
Internal Technical Reviewer

20/02/2013

Mustafa ÜNAL
Lead Verifier

## 5 REFERENCES

**Category 1 Documents:**
Documents provided by ARSIN and GTE that relate directly to the GHG components of the project.

/1/ Selimoglu HPP Monitoring Report, v.01, dd. 18/07/2012
/2/ Selimoglu HPP MR, v.02, dd. 23/10/2012
/3/ Selimoglu HPP MR, v.03, dd. 26/11/2012
/4/ Selimoglu HPP MR, v.04, dd. 27/11/2012
/5/ Selimoglu HPP MR, v.05, dd. 12/12/2012
/6/ Selimoğlu Verification, dd. 18/07/2012 – data/calculations spreadsheet
/7/ Selimoglu Verification, dd. 05/09/2012 - data/calculations spreadsheet
/8/ EPDK Generation License, ARSIN, EU/3201-9/1931, dd. 04/05/2011
/9/ Selimoglu Regulator and HPP Provisional Acceptance Protocol, dd. 07/01/2010
/10/ Selimoğlu HES İnşaat Çalışan – listing and SGK data of construction personnel
/11/ Selimoglu Reg. and HPP Ecosystem Evaluation Report, dd. 01/10/2011

/12/ Selimoglu Reg. and HPP Ecosystem Evaluation Report Addendum, dd. 15/03/2012
/13/ TEIAS First Index Protocol, S/N: 395378, dd. 17/12/2009
TEIAS First Index Protocol, S/N: 395370, dd. 17/12/2009
/14/ OSF Forms for 07/01/2010 – 30/06/2012
/15/ PMUM 'Dengeleme Listeleme' screens for 07/01/2010- 30/06/2012
/16/ Cummins Power Generation DGCG data sheet
/17/ Protocol between Findikli Municipality and ARSIN regarding solid waste collection
/18/ TEIAS ID Omer Akbulut, #5570, dd. 01/08/2009
TEDAS High Voltage Operation ID, Salim Karakoc, #12246, 20/01/2012 (renewal)
TEDAS High Voltage Operation ID, Ali Bektas, #22156, 01/12/2009
TEDAS High Voltage Operation ID, Bunyamin Cavusoglu, #4489, 08/04/2008
/19/ Dereli İnsaat Taahhüt invoices #22191, #22190 - plantation
/20/ Turkish Commercial Registty Gazette, dd. 26/11/2010, #7695 ARSIN
Turkish Commercial Registty Gazette, dd. 09/10/2007, #6912 HidroKontrol
/21/ Circular of signature, dd. 04/01/2011, #00442 - ARSIN
Circular of signature, dd. 22/12/2009, #06804 - Hidrokontrol
/22/ Mutlu Conctstruction HSE training participation list, dd. 25/11/2008, 25/12/2008, 30/01/2009
/23/ Balci Engineering contract for HSE services, dd. 10/11/2008
/24/ Balci Engineering invoice for HSE services, dd. 26/03/2009
/25/ AGI records from DSI 22. Region for 10/03/2010-30/09/2010; 01/10/2010-30/09/2011; 01/10/2011-30/06/2012
/26/ Is Guvenligi engineering proposal dd. 15/09/2012 for HSE services
/27/ Findikli Municipality statement regarding cesspit, # M.61.8.FIN.0.10/192, dd. 25/09/2012
/28/ Commitment letter – Yesilyali Municipality and Hidrokontrol for storage site 1
Commitment letter – Various individuals and Hidrokontrol for storage site 2
Commitment letter – Galip Keles and Hidrokontrol for storage site 3
/29/ Selimoglu reservoir map
/30/ Artek proposal for oil analysis, dd. 15/10/2012
/31/ Oguz village expropriation master plan
/32/ Ownership deed for lots 1, 3, 4, 5, 7, 8, 9, 10, 11, 13
/33/ Guneyce village expropriation master plan
/34/ Ownership deed for lots 1, 2, 3, 4
/35/ Powerhouse expropropriation plan and related land titles

**Category 2 Documents:**
Background documents related to the design and/or methodologies employed in the design or other reference documents.

/1/ Selimoglu PDD version 09, dd. 22/02/2011
/2/ Selimoglu GS Passport, dd.26/04/2011
/3/ Selimoglu 9.33 MW HEPP Validation Report, revision 04, dd. 25/02/2010, SGS
/4/ GS635_8-week review_15042011
/5/ ACM0002 "Consolidated methodology for grid-connected electricity generation

from renewable sources", Version 9
/6/ "Tool for the demonstration and assessment of additionality", Version 05.2
/7/ ''Tool to calculate the emission factor for an electricity system'', Version 01.1
/8/ CDM Validation Verification Manual v.01.2
/9/ Gold Standard v.02, Requirements
/10/ Gold Standard v.02, Toolkit
/11/ Selimoglu on-site memo - MSU

**Persons interviewed:**

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

/1/ Ahmet KALKAN – Guneyce muhktar - +905327325651
/2/ Bayram GENCTURK – Oguz muhktar - +905394386275
/3/ Yilmaz KOC – Findikli mukhtar - +905355740178
/4/ Ali Kemal KOZ – Guneyce resident – land lender
/5/ Huseyin KOZ – Guneyce resident – land lender
/6/ Husamettin KARA – Findikli resident – land lender
/7/ Ahmet Goksal CAN – Operations Manager – MEKEL
/8/ Ali Kemal KAZANCI – Project Manager - MEKEL
/9/ M. Burcu ERSOZ – Management Assistant - Oztay
/10/ Zeren ERIK – Project Manager - GTE
/11/ Dilek OZCAN – Project Supervisor - GTE

# 6. CURRICULA VITAE OF THE DOE'S VERIFICATION TEAM MEMBERS

**Lead Verifier: Mr. Mustafa Unal – Metallurgical and Materials Engineer**

Bureau Veritas Certification – Lead Verifier

Mustafa Unal is a Metallurgical and Materials Engineer and an auditor for environment, safety and quality management systems. He has worked in automotive and civil aviation industries. He has participated online seminars in the Gold Standard Academy in 2011/2012.

**Internal Technical Review: Mrs. Burcu Mutman- Environmental Engineer**
Bureau Veritas Certification, Lead Verifier

Burcu Mutman is an auditor for environment, safety and quality management systems. She is also lead verifier for GHG projects.

# APPENDIX A: COMPANY CDM PROJECT VERIFICATION PROTOCOL

## VERIFICATION PROTOCOL (revision 06)

**Table 1** Verification requirements based on the Clean Development Mechanism Validation and Verification Manual (Version 01.2)

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|---|
| ***1 Compliance of the monitoring report with the guidelines for completing the monitoring report form*** | | | | | |
| a ***Brief description of the project activity*** | | | | | |
| a. Is the description of the project activity to be presented in this section a brief summary of the detailed description given in the section .B.1 Implementation status of the project activity? | EB 54 | Ann 34 | Brief technical description about the project structures and equipment, capacity information (8.8 MWe), annual generation expectation (31.97 GWh) and corresponding expected emission reductions (17,954 tCO2eq) have been given in line with the registered PDD.<br>Net electricity generated (66.19 GWh) and the corresponding emission reductions (38,498.6 tCO2)<br>A timeline was provided, identical except two dates to the timeline provided in the registered PDD. First of the additional dates, commissioning, was verified through the Provisional Acceptance Protocol as 07/01/2010. Start of the crediting period was also added, as the expected date in the registered PDD: 01/01/2010<br><br>Kindly include information on purpose of the project activity and the measures taken for GHG emission | CL01 | OK |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|---|
| | | | reductions<br><br>On the cover page please report the estimated amount of GHG emissions for 30 months too. | CL16 | |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|---|
| b. Does this description include: | EB 54 | Ann 34 | | | |
| i. Purpose of the project activity and the measures taken to reduce greenhouse gas emissions? | EB 54 | Ann 34 | Please see above | OK | OK |
| ii. Brief description of the installed technology and equipments; | EB 54 | Ann 34 | Please see above | OK | OK |
| iii. Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.)? | EB 54 | Ann 34 | Please see above | OK | OK |
| iv. Total emission reductions achieved in this monitoring period? | EB 54 | Ann 34 | Please see above | OK | OK |
| b ***Project participants*** | | | | | |
| a. Are the project participants listed? | EB 54 | Ann 34 | Indicated in section A.3 in line with the registered PDD.<br>However the site visit showed that the generation license is not to the name of HidroKontrol. Please justify this providing the necessary legal evidence. | CAR15 | OK |
| c ***Location of project activity*** | | | | | |
| a. Is complete information of the location of the project activity: town, city, country and GPS coordinates.provided? | EB 54 | Ann 34 | Location has been given in table 2 Arsin Trabzon Turkey and table 3 provides the coordinates for the weir and the powerhouse (weir: E 39°56'28.86" N 40°51'24.84"; powerhouse: E 39°58'14.76" N 40°52'12.25") | OK | OK |
| d ***Technical description of the project*** | | | | | |
| a. Are a escription of the technology applied in the project activity and detailed technical process, including diagrams provided? | EB 54 | Ann 34 | A brief summary of the project technical aspects have been included. No diagrams were used. | OK | OK |
| e ***Title, reference and version of the baseline*** | | | | | |

| | CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|---|---|
| | ***and monitoring methodology applied to the project activity*** | | | | | |
| a | Are the complete reference of the methodology applied and tools whenever is applicable included? | EB 54 | Ann 34 | ACM0002 v.09; "Tool for the demonstration and assessment of additionality", Version 05.2; ''Tool to calculate the emission factor for an electricity system'', Version 01.1 | OK | OK |
| | f ***Registration date of the project activity*** | | | | | |
| a | Is the registration date of the project activity provided? | EB 54 | Ann 34 | Registration date is provided on the cover page as 11/04/2012 and this was verified through the GS registry. | OK | OK |
| | g ***Crediting period of the project activity and related information (start date and choice of crediting period)*** | | | | | |
| a | Does the description also include changes to the start date of the crediting period post-registration that have been accepted by the Board, when applicable? | EB 54 | Ann 34 | No changes were declared, N/A | OK | OK |
| | h ***Name of responsible person(s)/entity(ies)*** | | | | | |
| a | Is the contact information of the person(s)/entity(ies) responsible for completing the monitoring report form (CDM-MR) provided? | EB 54 | Ann 34 | This has not been required by the VVS track F-CDM-MR template | OK | OK |
| | i ***Implementation status of the project activity*** | | | | | |
| a | Does this section include a description of the implementation and operational status of the project as of this monitoring period in accordance with the latest version of the CDM Validation and Verification Manual (CDM-VVM)? | EB 54 | Ann 34 | Location, equipment, operation start date and the declaration that no special events to effect applicability of the methodology was included | OK | OK |

| | CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|---|---|
| b | Does the description include inter alia: | EB 54 | Ann 34 | | | |
| i | The starting date of operation of the project activity? For project activities that consist of more than one site, the report shall clearly describe the status of implementation and starting date of operation for each site. For CDM project activities with phased implementation, the report shall indicate the progress of the proposed CDM project activity achieved in each phase. | EB 54 | Ann 34 | Start of operation of project has been given as 07/01/2010 and this has been verified through the provisional acceptance protocol. | OK | OK |
| ii | The information regarding the actual operation of the project activity during this monitoring period, including information on special events, for example overhaul times, downtimes of equipment, exchange of equipment, etc? | EB 54 | Ann 34 | Please provide information on the actual operation indicated downtimes and other special events if applicable. | CL02 | OK |
| iii | A brief description of: (i) events or situations that occurred during the monitoring period, which may impact the applicability of the methodology, and (ii) how the issues resulting from these events or situations are being addressed? | EB 54 | Ann 34 | It is indicated that there were no events or situations that may prevent the applicability of the methodology during the monitoring period. | OK | OK |
| | ***j Revision of the monitoring plan*** | | | | | |
| a | Is it indicated if the monitoring plan has been revised?. | EB 54 | Ann 34 | No registered revisions were reported. | OK | OK |
| b | Is the date of approval, if revised, included? | EB 54 | Ann 34 | N/A | OK | OK |
| | ***k Request for deviation applied to this monitoring period*** | | | | | |
| a | Is any deviation applied to this monitoring period indicated? | EB 54 | Ann 34 | However, some permanent changes were reported under B.2.3 of the monitoring report: | | OK |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|---|
| | | | 1. Due to changes in the meter reading practices of TEIAS (implementation of OSOS), monthly generation records are now presented not on mutually signed protocols but on OSF forms. These have been defined as the primary source of generation data that will be crosschecked with PMUM records.<br>2. It has been reported that there are no counter records from the generator and that the fuel invoices fail to specifically indicate fuel purchased for the generator as they represent cumulative purchases (vehicles, etc.).<br>However, the site-visit shows that the counter is available although the value (279 hrs) is not in line with the value reported by forms (65hrs).<br><br>Please revise section as the counter records are available and this reported deviation cannot be permanent and should be under temporary deviations(as the counter reading and invoices have been determined as the primary documents for monitoring of this parameter defined in the registered PDD)<br><br>Please revise project emission calculations and therefore emission calculations to reflect the verified working hours to be conservative.<br><br>As the first does not affect the monitoring plan's ability to successfully monitor the electricity | CL15<br><br>CAR01 | |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|---|
| | | | generated and the second is temporary, no official request for change/deviation from the monitor plan was requested. | | |

| | CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|---|---|
| b | Is the reference number, if any deviation applied, included? | EB 54 | Ann 34 | N/A | OK | OK |
| | l ***Notification or request of approval of changes*** | | | | | |
| a | Is any notification or request of approval of changes from the project activity as described in the registered CDM-PDD indicated? | EB 54 | Ann 34 | No request for changes | OK | OK |
| b | Is the date of approval, if applicable, included? | EB 54 | Ann 34 | N/A | OK | OK |
| | m ***Description of the monitoring system*** | | | | | |
| a | Is a description of the monitoring system provided? | EB 54 | Ann 34 | A description of the monitoring plan was given under section C of the MR. | OK | OK |
| b | Does his section include data collection procedures (information flow including data generation, aggregation, recording, calculation and reporting), organizational structure, roles and responsibilities of personnel, and emergency procedures for the monitoring system? | EB 54 | Ann 34 | Please also indicate the data collection and reporting procedures for generator related data. | CAR02 | OK |
| c | Does this include line diagrams showing all relevant monitoring points? | EB 54 | Ann 34 | Figure 2 has been included depicting the positioning of energy meters. | OK | OK |
| | n ***Data and parameters*** | | | | | |
| a | Does this section include parameters used to calculate baseline, project, and leakage emissions as well as other relevant parameters required by the approved methodology and the monitoring plan; and specific information on how data and parameters have been monitored during the monitoring period? | EB 54 | Ann 34 | Parameter EGy is a monitored parameter that is not fixed ex-ante. Please revise section D.1 to include the ex-ante fixed data/parameter(s) | CL04 | OK |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|---|
| b Are data that is determined only once for the crediting period but are used after registration of the project activity included here under section D.1.? | EB 54 | Ann 34 | Please see CL04 | CL04 | OK |
| c For each parameter the following information, using the tables provided, is provided: | | | Please revise tables under D.2 to conform with the template used F-CDM-MR v.02.0 | CL05 | OK |
| i Value of monitored parameter in the period for the purpose of calculating emission reductions? To report multiple values, a table may be used and included in this monitoring report or include references to spreadsheet. For default value (such as an IPCC value), where it is ex-post confirmed, the most recent value shall be applied. | EB 54 | Ann 34 | Please indicate the monitored value in the period for all monitored parameters. | CAR03 | OK |
| ii Description of the equipment used to monitor each parameter, including details on accuracy class, and calibration information (frequency, date of calibration and validity), if applicable as per monitoring plan? | EB 54 | Ann 34 | Please indicate<br>1. the accuracy class of the metering equipment for Egy;<br>2. Kindly clarify the mentioned period of calibration with justification for Egy;<br>3. Please indicate if any calibration activities took place during this monitoring period; | CAR04 | OK |
| iii Measuring and recording method: how the parameters are measured/calculated, specifying the measurement and recording frequency? | EB 54 | Ann 34 | For Egy:<br>a) Please indicate how the value for the parameter is calculated as it is not directly monitored;<br>b) Kindly indicate the Measuring/Reading/ Recording frequency; | CAR05 | OK |
| iv Source of data: logbooks, daily records, surveys, etc? | EB 54 | Ann 34 | Sources for the parameters have been identified. | OK | OK |
| v Where relevant, the calculation method of the parameter? | EB 54 | Ann 34 | Please see CAR05.a | | OK |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|---|
| vi The QA/QC procedures applied (if applicable per monitoring plan)? | EB 54 | Ann 34 | QA/QC procedures have been defined. | OK | OK |
| vii Include information about appropriate emission factors, IPCC default values and any other reference values that have been used in the calculation of emission reductions? | EB 54 | Ann 34 | Please indicate the source for all values used under in emission reduction calculations in a manner that can be re-traced by the verifier. | CL06 | OK |
| o ***Baseline emissions calculation*** | | | | | |
| a Does this section include all formulae used and description to calculate the baseline emissions applying actual values? | EB 54 | Ann 34 | Under E.1. it is indicated that "ex-ante" emission reductions will be calculated. Calculations are ex-post, using monitored data. Please correct. | CL07 | OK |
| | | | Please revise baseline emissions formula, parameters and their descriptions to reflect the methodology (e.g. Efy – $EF_{grid,CM,y}$) | CL08 | OK |
| b Was a table used and included in this monitoring report or include references to spreadsheet? | EB 54 | Ann 34 | A screen-capture of the provided excel sheet is included; however it only depicts the generation values and does not show the emissions. | OK | OK |
| p ***Project emissions calculation*** | | | | | |
| a Does this section include all formulae used and description to calculate the project emissions applying actual values? | EB 54 | Ann 34 | All formulae have been provided in line with the relevant methodology and tool.<br><br>Please provide a source for the indicated reservoir area in line with the source identified in the registered PDD (project documentation) and provide a copy of the source document for verification. | CAR06 | OK |
| b Was a table used and included in this monitoring report or include references to spreadsheet? | EB 54 | Ann 34 | Calculations were provided in spreadsheet and also a summery table was also included.<br><br>Please see CAR01 | | OK |

| | CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|---|---|
| | | | | Please provide references for all parameters used for project emission calculations (e.g. EF,COEF, etc.) | CL09 | OK |
| | q ***Leakage calculation*** | | | | | |
| a | Does this section include all formulae used and description to calculate the leakage applying actual values? | EB 54 | Ann 34 | N/A since leakage is assumed zero in line with the guidance of the applied methodology | OK | OK |
| b | Was a table used and included in this monitoring report or include references to spreadsheet? | EB 54 | Ann 34 | N/A | OK | OK |
| | r ***Emission reductions calculation/table*** | | | | | |
| a | Does this section include the formulae used to calculate the emission reductions and the total of the emission reductions achieved during the monitoring period? | EB 54 | Ann 34 | Formulae have been given in the beginning of the section. And total emission reductions have been indicated in table 7 | OK | OK |
| i | Total baseline emissions: | EB 54 | Ann 34 | Given as a total of 38,502 tCO2 | OK | OK |
| ii | Total project emissions: | EB 54 | Ann 34 | Given as a total of 3.418,<br>However please see CAR01 | | OK |
| iii | Total leakage: | EB 54 | Ann 34 | N/A since leakage is assumed zero in line with the guidance of the applied methodology | OK | OK |
| iv | Total emission reductions: | EB 54 | Ann 34 | Total emission reductions have been given as 38,498.6 tCO2<br>However please see CAR01 | | OK |
| | s ***Comparison of actual emission reductions with estimates in the CDM-PDD*** | | | | | |
| a | Does this section include a comparison of actual values of the emission reductions achieved during the monitoring period with the estimations in the registered CDM-PDD? | EB 54 | Ann 34 | Section E.5 does have a comparison of estimated and realized emission reductions. However this should be applied for the whole monitoring period of 30 months. | CL10 | OK |

| | CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
|---|---|---|---|---|---|---|
| | t ***Remarks on difference from estimated value in the PD*** | | | | | |
| a | Is an explanation of the cause of any increase in the actual emission reductions achieved during the current monitoring period (e.g. higher water availability, higher load plant factor, etc), including all information (i.e. data and/or parameters) that is different from that stated in the registered CDM-PDD provided? | EB 54 | Ann 34 | Achieved emission reductions are lower than estimated. | OK | OK |
| ***2*** | ***Project implementation in accordance with the registered project design document*** | | | | | |
| a | Are all physical features of the proposed CDM project activity proposed in the registered PDD in place? | VVM | 196 | Project is implemented in line with the approved design as verified through the provisional acceptance protocol and the site visit. | OK | OK |
| b | Have the project participants operated the proposed CDM project activity as per the registered PDD? | VVM | 196 | Project operation has been in line with the proposed CDM activity and no alterations or deviations that will affect the projects ability to generate the registered amount of emissions was identified. | OK | OK |
| c | Was an on-site visit conducted? | VVM | 196 | A site visit has been performed on 01/08/2012 | OK | OK |
| d | If not, justify the rationale of the decision. | VVM | 196 | N/A | OK | OK |
| e | Does the implementation or operation of CDM project activity conform with the description contained in the registered PDD? | VVM | 197 | Project and its implementation are in line with the registered PDD. | OK | OK |
| f | If not, which are the potential impacts due to these changes, according to the relevant guidelines established by the Executive Board (EB48-§73)? | VVM | 197 | N/A | OK | OK |
| g | Was any change identified close to the boundary | VVM | 197 | N/A | OK | OK |

| | CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
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| | of the project activity but outside it? | | | | | |
| h | If yes, which are the potential impacts due to these changes? | VVM | 197 | N/A | OK | OK |
| i | Was a notification or a request for approval of changes from the project activity as described in the registered PDD submited prior to the conclusion of the verification/certification for the corresponding? | VVM | 197 | N/A | OK | OK |
| ***3 Compliance of the monitoring plan with the monitoring methodology*** | | | | | | |
| a | Is the validated monitoring plan in accordance with the approved methodology applied by the proposed CDM project activity? | VVM | 200 | Validated monitoring plan is in line with the applied methodology | OK | OK |
| b | If no, was a request for revision of the monitoring plan was done? (The DOE may request for revision of the monitoring plan covering the monitoring period under verification, for approval by the CDM Executive Board) | VVM | 201 | N/A | OK | OK |
| c | Are there any monitoring aspects of the project activity that are not specified in the methodology, particularly in the case of small-scale methodologies (e.g. additional monitoring parameters, monitoring frequency and calibration frequency)? | VVM | 202 | The project is registered and implemented in accordance with Gold Standard v.2.0 requirements, therefore has Sustainable Development Parameters to be monitored. These are:<br><br>1. Regarding Air Quality:<br>1.1. SO2 emissions by thermal power plants;<br>1.2. Nox emissions by thermal power plants;<br>2. Regarding Water Quality and Quantity:<br>2.1. Flow rate of water released from the weir;<br>2.2. Waste water; | OK | OK |

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| | | | 3. Regarding Biodiversity: Flow released from the fish passage;<br>4. Regarding biodiversity: Functionality of fish passage;<br>5. Regarding Quality of Employment: Number of people trained;<br>6. Regarding Livelihood of the poor: Compensations made to locals;<br>7. Regarding Access to clean and affordable energy services: Amount of natural gas imported for power production;<br>8. Regarding Quantitative employment and income generation: Payments made to staff;<br>9. Regarding Balance of payments: Currency saving;<br>11. Regarding Soil condition: Soil erosion and leakage within the project site;<br>12. Regarding soil condition: Sediment transfer along the river;<br>13. Regarding soil condition: storage of excavation wastes in appropriate locations;<br>14. Regarding Livelihood of the poor: Demand for use of corn mill by locals;<br>15. Regarding Livelihood of the poor: Availability of water for locals around project site;<br>16. Regarding other pollutants: Disposal of oil and other wastes (solid and liquid wastes);<br>17. Regarding other pollutants – dust: dust formation around the project site | | |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
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| ***4 Compliance of monitoring with the monitoring plan*** | | | | | |
| a Have the monitoring plan and the applied methodology been properly implemented and followed by the project participants? | VVM | 205 | • Parameters related to the applied methodology:<br>1. Egy: As defined in the registered PDD the monthly reading records of TEIAS (with the exception of the medium of recording, OSF forms as reported in the MR) were crosschecked with PMUM values. Complete data for the monitoring period was available.<br>2. Fci,j,y: Cross-checking sources were not available however total working hours were verified as 279 hrs from the generator screen.<br>3. CapPJ: monitored in line with the plan;<br>4. Apj: Please see CAR06;<br><br>• Parameters related to GS v.2:<br>1. Regarding Air Quality:<br>1.1. SO2 emissions by thermal power plants; Calculated through monitored EG data and public data. Please clearly show all related calculations in a traceable manner, providing sources for all parameters used.<br><br>1.2. Nox emissions by thermal power plants; Please clearly show all related calculations in a traceable manner, providing sources for all parameters used | CAR06<br><br>CAR08<br><br>CAR08 | OK |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
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| | | | 2. Regarding Water Quality and Quantity:<br>2.1. Flow rate of water released from the weir;<br>Please provide the official AGI data on the flow released. | CAR09 | |
| | | | 2.2. Waste water;<br>For construction: Please provide information with evidence on how the waste water was handled during construction phase | CL11 | |
| | | | For operation: It was indicated that a cesspit is utilised that has not been emptied yet. Please justify this with a declaration signed by both parties with the municipality that no discharge has been made yet. | CAR11 | |
| | | | 3. Regarding Biodiversity: Flow released from the fish passage;<br>Please provide the official AGI data on the flow released. | CAR09 | |
| | | | 4. Regarding biodiversity: Functionality of fish passage;<br>The passage itself has been found appropriate by the expert report. | | |
| | | | 5. Regarding Quality of Employment: Number of people trained;<br>High voltage certifications for the related | | |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
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| | | | personnel were verified although these are not project related. While constructional personnel have been trained in HSE, trainings of operational personnel have not been realized. Please justify. | CAR12 | |
| | | | 6. Regarding Livelihood of the poor: Compensations made to locals;<br>Please provide documentation on the expropriation activities.<br>Interviews with locals that were a part of the expropriations and the interview with the village head revealed no complaints about the payments. | CL12 | |
| | | | 7. Regarding Access to clean and affordable energy services: Amount of natural gas imported for power production;<br>Calculated through monitored EG value and public gas prices and TEIAS natural gas statistics. | | |
| | | | 8. Regarding Quantitative employment and income generation: Payments made to staff;<br>Please provide social security records for the current employees and construction workers. | CAR10 | |
| | | | 9. Regarding Balance of payments: Currency saving;<br>Calculated through monitored EG value and | | |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
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| | | | public gas prices and TEIAS natural gas statistics.<br><br>11. Regarding Soil condition: Soil erosion and leakage within the project site;<br>No erosion was observed, plantation of trees to mitigate was documented and local interviews revealed no complaints regarding this issue;<br><br>12. Regarding soil condition: Sediment transfer along the river;<br>Sediment passage was verified and no unusual build-up observed. This was also indicated by the expert report.<br><br>13. Regarding soil condition: storage of excavation wastes in appropriate locations;<br>Two sites were indicated, site 2 (near regulator was private land and its owner was interviewed)<br>Please provide the relevant documentation regarding disposal of excavation for site 1(e.g. permits, land contracts, etc.)<br><br>14. Regarding Livelihood of the poor: Demand for use of corn mill by locals;<br>The waterway for the corn mill has been opened to allow water. However no demand for an active mill was voiced by the interviewed locals and the mill is left defunct. | CL13 | |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
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| | | | 15. Regarding Livelihood of the poor: Availability of water for locals around project site;<br>PP has contributed to the locals through pipelines to mitigate any effect that might have been caused. Verified through the contracts for these works. Locals indicated no concerns.<br><br>16. Regarding other pollutants: Disposal of oil and other wastes (solid and liquid wastes);<br>Solid wastes are collected by the municipality as evidenced by the relevant protocol. Disposal of waste oils are handled by giving the waste oil back to the provider, Gunsel Oil. Please clarify if a contract is made with Gunsel Oil on the issue and how Gunsel Oil disposes of the waste oil delivered to it, if they are authorized disposers or if they contracted one.<br><br>17. Regarding other pollutants – dust: dust formation around the project site<br>No specific dust formation was observed and none of the interviewed locals voiced concerns on the issue.<br>Please provide any available evidence regarding dust mitigating measures during the construction phase | CAR13<br><br>CL14 | |
| b Have the previous monitoring reports been reviewed? | VVM | 205 | This is the initial verification for the project, however the validation report for the project (SGS Project # CDM.VAL0518, dd. 25/02/2010) was | OK | OK |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
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| | | | reviewed.<br>All monitoring concerns have been addressed by the relevant parameters in the plan except two outstanding FARs:<br><br>1. FAR #07b: verification of the existence of electrometers compliant with the regulations. The project has two sealed Alster A1500 meters with 0.2s accuracy class. The main meter has a S/N 395378 and the backup meter has a S/N 395370; Installation and initial testing of meters was verified through the Initial Index Protocols.<br>2. FAR #32: checking the results of the expert study. A study was published on 01/10/2011 and was re-evaluated (dd. 15/03/2012) by the same team to clarify and assess the progress of the project activities.<br>• Although certain habitat degradations were observed, it was clearly mentioned that the project is not the source for this but rather the activities of various other parties (e.g.DSI).<br>• It was indicated by the expert that the minimum flow requirements were being met. However these depend on spot checks and the continous conformance of the project will be evaluated through DSI data as a part of the SD monitoring | | |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
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| | | | plan.<br>• The location of the AGI for monitoring of minimum flow release was found unsuitable since depositing was affecting the device's ability to provide healthy data. Expert's advice has been to re-place the AGI to the exit of the fish passage. This has been realized as verified during the site visit.<br>• Installing an entrance AGI station was another suggestion of the expert however this was denied by the relevant authority, DSI, since another HEPP under construction above the project will have an exit AGI, which will provide entrance data for Selimoglu.<br>• Excavations were collected on a documented site (site #2) where walls do exist on the banks and no additional excavation wastes were observed during the site-visit.<br>• Planting of trees to stabilize the slopes were verified by the expert as well as the verification team on –site and through payment documentation.<br>• No concerns about dust were indicated by the locals and no particular dust pollution was observed during the site-visit. | | |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
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| | | | • No other specific effect of the project on the local flora and fauna was identifed by the expert as long as the minimum water flow requirements (600 lt/sn) are met meticulously.<br>• The company has signed a protocol documenting these and will be reporting periodically to the expert on the results. | | |

| | CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
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| c | Where applicable, has the impact of revision in the monitoirng plan on the current verification been reviewed ? | VVM | 205 | N/A | OK | OK |
| d | Does the registered/approved monitoring plan have any description of an illustration to calculate net electricity supplied to the grid by the project activity ? | VVM | 205 | Does not. Just as the monitoring plan. Hence CAR05 was raised. | | OK |
| e | If yes to (d) above, has the verification team verified /confirmed the validity of such illustration with supporting documents ? | VVM | 205 | N/A | OK | OK |
| f | Have all parameters stated in the monitoring plan, the applied methodology and relevant CDM Executive Board decisions been sufficiently monitored and updated as applicable, including: | VVM | 205 | | | OK |
| | i Project emission parameters? | VVM | 205 | To be conservative the total working hours on the diesel generator shall be used to calculate project emissions as the monitoring for this parameter was not implemented as registered. Please see CAR01 | | OK |
| | ii Baseline emission parameters? | VVM | 205 | Monitored as registered. | OK | OK |
| | iii Leakage parameters? | VVM | 205 | N/A | OK | OK |
| | iv Validation of entire procedure of apportioning, if applicable | VVM | 205 | N/A | OK | OK |
| | v Management and operational system: the responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan? | VVM | 205 | The responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan | OK | OK |
| g | Is the accuracy of equipment used for monitoring in accordance with the relevant guidance provided by the CDM Executive Board and are equipment | VVM | 205 | CAR04 was raised to gather more information on the calibration activities.<br>Accuracy of the devices is in line with the requirements (0.2s) | | OK |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
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| controlled and calibrated in accordance with the monitoring plan? | | | and was verified through the site visit.<br>Calibration and maintenance responsibilities/rights for the e/meters solely belong TEIAS | | |
| i Are monitoring results consistently reccorded as per approved frequency? | VVM | 205 | All parameters have been monitored in line with the periods defined. | OK | OK |
| ii Have quality assurance and quality control procedures been applied in accordance with the monitoring plan monitoring plan? | VVM | 205 | Fuel invoices for the diesel generator could not be seen as they could not be identified amongst the whole diesel purchases. PP was notified on the issue. However as the total hours from the generator will be used to calculate project emissions resulting values will be conservative. | OK | OK |
| iii Has the verification team confirmed whether the applicability and correct implementation of any procedure that replaces direct calibration of meters, and any procedure that leads to calculation of parameters used in the ER determination ? | VVM | 205 | N/A | OK | OK |
| ***5 Assessment of data and calculation of greenhouse gas emission reductions*** | | | | | |
| a Is a complete set of data for the specified monitoring period is available? (If no, i.e., only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, the DOE shall opt to either make the most conservative assumption theoretically possible in finalizing the verification report, or raise a request for deviation prior to submitting request for issuance, if appropriate). | VVM | 208 | Please provide the "Uzlaştırma Bildirimi" screens for the monitoring period for crosschecking OSF data<br><br>10 months show generation but no consumption from the grid on the OSF forms, please clarify<br><br>Please revise table to include and display all values from all decimals of the data without rounding and revise calculations accordingly, while keeping the number of decimal places represented constant throughout (e.g. $10^{-3}$?). | CAR14<br><br>CL17<br><br>CAR07 | OK |

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| | | | For Fci,j,y total working hours from the generator itself is to be used, please see CAR01<br><br>For CapPJ on-site verification was done. Registered values are valid<br>For Apj please see CAR06 | CAR01<br><br>CAR06 | |

| | CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
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| b | Has information provided in the monitoring report been cross-checked with other sources such as plant log books, inventories, purchase records, laboratory analysis? | VVM | 208 | Generation values from OSF records were crosschecked with PMUM screens.<br>Fci,j,y is calculated from total working hours but could not be cross-checked due to lack of available data.<br>CapPJ was crosschecked with the EMRA license and provisional acceptance protocol.<br>Apj is an assumption depending on the theoretical design maximum of the plant to be crosschecked with the approved design of the plant. | OK | OK |
| c | Have calculations of baseline emissions, proposed CDM project activity emissions and leakage, as appropriate, been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document? | VVM | 208 | Will be answered after CARs related to the emission reduction data and calculations have been closed. | | OK |
| d | Have any assumptions used in emission calculations been justified? | VVM | 208 | The total hours from the generator will be used to calculate project emissions resulting values will be conservative.<br>Apj is an assumption depending on the theoretical design maximum of the plant to be crosschecked with the approved design of the plant. | OK | OK |
| e | Have appropriate emission factors, IPCC default values and other reference values been correctly applied? | VVM | 208 | Please see CL08 | | OK |

**Table 2** Resolution of Corrective Action / Forward Action / Clarification Requests.

| Draft report clarifications and corrective action requests by verification team | Reference to checklist question in Periodic Verification Checklist | Summary of project owner response | Verification team conclusion |
|---|---|---|---|
| CAR01<br>Please revise project emission calculations and therefore emission calculations to reflect the verified working hours | Table 1.1.j.a. | Project emission calculation has been revised as per value at screen of diesel generator | Review:<br>Calculations have been revised with the on-site verified value 279 hrs.<br><br>CAR is closed. |
| CAR02<br>Please also indicate the data collection and reporting procedures for project emission related data. | Table 1.1.m | Relevant information has been added to part c in monitoring report. | Review:<br>PPs records indicate much less hours of activity therefore the total working hours have been accepted to ensure conservativeness.<br><br>CAR is closed |
| CAR03<br>Please indicate the monitored value in the period for all monitored parameters. | Table 1.1.n.c.i | All monitored values have been indicated for all monitored parameter in section D<br><br>Response to Review:<br><br>279 Hour has been removed and values of the monitored parameter has been added as 4.715 ton | Review:<br>Monitored value reported for FC is not consistent with the unit defined for this parameter (e.g. 279 hrs - Mass or volume unit per year)<br><br>CAR remains open.<br><br>Review2:<br>Corrected in tons, OK |

| Draft report clarifications and corrective action requests by verification team | Reference to checklist question in Periodic Verification Checklist | Summary of project owner response | Verification team conclusion |
|---|---|---|---|
| | | | CAR is closed. |
| CAR04<br>Please indicate<br>4. the accuracy class of the metering equipment for Egy;<br>5. Kindly clarify the mentioned period of calibration with justification for Egy;<br>Please indicate if any calibration activities took place during this monitoring period; | Table 1.1.n.c.ii | These are indicated in section D<br>Response to Rewiew:<br><br>There is no calibration during the monitoring period. Last calibration date has been added as commissioning date. (07/01/2010)<br><br>Response to Review 2:<br>It has been corrected to 17/12/2009 based on the first index protocol. | Review:<br>1. Accuracy class have been indicated as 0,2s, OK and<br>2. Calibration period is 10 years (at least), initial calibration date has been given as the commissioning date in the validated PDD, OK<br><br>Please indicate if any calibration activities took place during this monitoring period;<br><br>CAR remains open<br><br>Review2:<br>Meter sealing records the first index protocol indicate a different date, please clarify<br><br>CAR remains open<br><br>Review3:<br>Revised, OK<br>CAR is closed. |

| Draft report clarifications and corrective action requests by verification team | Reference to checklist question in Periodic Verification Checklist | Summary of project owner response | Verification team conclusion |
|---|---|---|---|
| CAR05<br>For Egy:<br>c) Please indicate how the value for the parameter is calculated as it is not directly monitored;<br>Kindly indicate the Measuring/Reading/ Recording frequency; | Table 1.1.n.c.iii | The net generation measuring and calculation method has been added to section D. Moreover measuring/Reading/Recording Frequency has been added.<br><br>Response to Review<br>1. These statement has been revised.<br>2. Calculation method has been moved to 'Calculation method' cell | Review:<br>1. Section C indicates the net electricity generation is MEASURED and RECORDED, however this is not true, please revise;<br>2. Please indicate the calculation method in the relevant cell of the EGy table in section D.2 of the MR (method given under source of data).<br><br>CAR remains open<br><br>Review2:<br>1. Corrected, OK.<br>2. Indicated, OK.<br><br>CAR is closed. |
| CAR06<br>Please provide a source for the indicated reservoir area in line with the source identified in the registered PDD (i.e. project documentation) and provide a copy of the source document for verification. | Table 1.1.p.a | The map is provided to the DOE again.<br><br>Validated and registered PDD( page 29) and definition of Apj defines the value very clearly as it | Review:<br>Please justify that the documented reservoir area corresponds to the maximum reservoir level indicated in the feasibility as this has been defined as the source in the validated PDD. |

| Draft report clarifications and corrective action requests by verification team | Reference to checklist question in Periodic Verification Checklist | Summary of project owner response | Verification team conclusion |
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| | | corresponds to maximum area which has already been validated. | CAR remains open<br><br>Review2:<br>Accepted since conservative,OK<br><br>CAR is closed. |
| CAR07<br>Please revise table to include all values from all decimals of the data without rounding and revise calculations accordingly, while keeping the number of decimal places represented constant throughout. | Table 1.5.a | All decimal points and calculations have been revised | Review:<br><br>Revised for compliance, OK.<br><br>CAR is closed. |
| CAR08<br>Please clearly show all related calculations in a traceable manner, providing sources for all parameters used. | Table 1.4.a | All calculations have been showed in traceable manner. | Review:<br>Calculations were shown appropriately in the excel workbook and sources were given.<br><br>CAR is closed. |
| CAR09<br>Please provide the official AGI data on the flow released. | Table 1.4.a | Agı records have been provided.<br><br>Response to Review:<br><br>The value of 0.484 has been corrected to 0.452 which is based | Review:<br>AGI records indicate that water released is below even the 0,484 value numerous times in May, June, July, November 2011 and January, February, march 2012, contrary to what |

| Draft report clarifications and corrective action requests by verification team | Reference to checklist question in Periodic Verification Checklist | Summary of project owner response | Verification team conclusion |
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| | | on the agreement with DSİ. This agreement has been sent to the DOE.<br>Moreover, For the May, June, july, Agi records were asked to DSİ. They examined the records, and indicated that that they calculated agi records for these months incorrectly. The corrections has been made and the related document has been provided to DOE. | is stated in the MR. Please clarify.<br><br>CAR remains open.<br><br>Review2:<br>Corrected values were validated.<br><br>Please clarify if there was sufficient water entering the plant in jan. feb. mar. 2012<br><br>CAR remains open<br><br>Review3:<br>No entrance AGI, revised value for DSI minimum flow indicated by correspondence dd. 06/09/2010 verified compliance<br><br>CAR is closed. |
| CAR10<br>Please provide social security records for the current employees and construction workers. | Table 1.4.a | The social security extract of the employees for Selimoglu HEPP during construction phase has been provided to the DOE. | Review:<br>Employment of staff has been documented.<br><br>CAR is closed. |

| Draft report clarifications and corrective action requests by verification team | Reference to checklist question in Periodic Verification Checklist | Summary of project owner response | Verification team conclusion |
|---|---|---|---|
| | | MEKEL ENERGY, the mother company to the project owner has 3 HEPPs within the same region in close vicinity. The SGK records of the employees during operation have been all registered under Mekel Energy for these 3 projects. Therefore, it was not possible to obtain a separate SGK extract for the employees of Selimoglu HEPP during operation. The SGK extract for 3 projects has been provided to the DOE as well as has been shown during the site visit.<br><br>For the future monitoring periods, the project owner will ensure that the employees SGK records are registered under the project owner's name. | |
| CAR11<br>Please justify this with a mutually signed declaration from the municipality | Table 1.4.a | The declaration has been provided. | Review:<br>Municipality's opinion that the pit is still not full has been documented.<br><br>CAR is closed. |

| Draft report clarifications and corrective action requests by verification team | Reference to checklist question in Periodic Verification Checklist | Summary of project owner response | Verification team conclusion |
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| CAR12<br>While constructional personnel have been trained in HSE, trainings of operational personnel have not been realized. Please justify. | Table 1.4.a | The trainings of the operational personnel have not been realized yet. However, all related trainings should be given according to the relevant regulations. Therefore, all trainings will be completed. Moreover, Proposal for trainings has been provided | Review:<br>No training related to project activity could be documented for the parameter in the operation phase.<br><br>CAR is closed. |
| CAR13<br>Please clarify if a contract is made with Gunsel Oil on the issue and how Gunsel Oil disposes of the waste oil delivered to it, if they are authorized disposers or if they contracted one. | Table 1.4.a | The turbines have not yet completed their working hours during the monitoring period. The project owner has agreed with an accredited laboratory to carry out the analysis of the waste oil. The waste oil will then be given to the accredited waste oil collector or Gunseli Oil in line with the results from the laboratory.<br><br>The agreements and proposal with the laboratory have been provided to the DOE.<br>The maintenance of the equipment during the construction phase were carried out by the | Review:<br>Please clarify how Gunseli oil disposes of waste oil as they were indicated as the recipient of the plant's waste oil.<br><br>CAR remains open.<br><br>PP states that no waste has been produced during this initial and first periodic verification, proper disposal will be verified during next verification.<br><br>CAR is closed. |

| Draft report clarifications and corrective action requests by verification team | Reference to checklist question in Periodic Verification Checklist | Summary of project owner response | Verification team conclusion |
|---|---|---|---|
| | | service of the vehicles and were dealt by the subcontractor. The service reports could not be obtained from the subcontractor..<br><br>Response to Review:<br><br>For the monitoring period, there has been no waste oil disposed yet. Because The turbines have not yet completed their working hours during the monitoring period. The project owner has agreed with an accredited laboratory to carry out the analysis of the waste oil<br>after the analysis results of waste oil, if gunsel oil is convenient as per the relevant regulations, waste oils can be given to Gunsel oil and relevant documents (like applicability of the recipient of the plant's waste oil ) will be submitted to DOE. | |

| Draft report clarifications and corrective action requests by verification team | Reference to checklist question in Periodic Verification Checklist | Summary of project owner response | Verification team conclusion |
|---|---|---|---|
| CAR14<br>Please provide the "Uzlaştırma Bildirimi" screens for the monitoring period for crosschecking OSF data | Table 1.4.a | Uzlaştırma Bildirimi records have been provided .However, records between January 2010 and July 2011 showed total generation of Yukarı Mahanoz HEPP and Selimoğlu HEPP. Therefore 'Dengeleme' screen should be used for crosscheck.<br><br>After the JULY 2011, The Project name is shown as Arsin.<br><br>Moreover, since December 2011, They have been using YEKDEM screen<br><br>Moreover,' Pmum Dengeleme' screen for July 2010 has been corrected. It has been provided under the file.<br><br>Response to review:<br>Provided data are official, consistent and objective data. Beliefs of reviewer are subjective. Provided data are PMUM records | Review:<br>Reviewer believes that generation data should be able to be shown separately for different facilities, please clarify.<br><br>CAR remains open<br><br>Review2:<br>Issue is regarding the source of data, not its authenticity.<br>Meter protocols can be contested, therefore are not final. Reviewer is trying to determine if the 'dengeleme listeleme' screens provide uncontested and therefore final data for a healthy crosschecking.<br><br>As the provided screens indicate the generation and consumption data with losses included, accepted.<br><br>CAR is closed. |

| Draft report clarifications and corrective action requests by verification team | Reference to checklist question in Periodic Verification Checklist | Summary of project owner response | Verification team conclusion |
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| | | and in line with documents and MP. Moreover, separate records for Selimoğlu were sent to DOE as 'PMUM dengeleme' screen. There is no other screen show the generation records separately. | |
| CAR15<br>However the site visit showed that the generation license is not to the name of HidroKontrol. Please justify this providing the necessary legal evidence. | | The legal evidences have been provided.<br><br>Response to Review:<br>Ownership has not changed. Only name of the company has changed. Relevant records including revised generation license and official registration documents have been sent already. There cannot be any other document and the documents submitted are very clear and demonstrates the change of name. moreover, at the first page of the generation licence, it is indicated that, this licence is a follow –up licence of | Review:<br>The provided documentation do not evident the change of ownership of the project. Please provide evidence for the transfer of ownership.<br><br>CAR remains open<br><br>Review2:<br>Provided evidence does not indicate anything about a name change, however, as the revised certificate indicates that this is a continuation of the old certificate dd. 25/01/2007, accepted.<br><br>CAR is closed. |

| Draft report clarifications and corrective action requests by verification team | Reference to checklist question in Periodic Verification Checklist | Summary of project owner response | Verification team conclusion |
|---|---|---|---|
| | | Selimoğlu Regulatorü ve HES | |
| | | | |
| CL01<br>Kindly include information on purpose of the project activity and the measures taken for GHG emission reductions | Table 1.1.a | The purpose of the project activity has been added.<br><br>Response to Review:<br>It has been moved to the section B.1 | Review:<br>Clarification has been raised regarding the content of section B.1 of MR. Please move the mentioned purpose here.<br><br>CL request remains open<br><br>Review2:<br>Revised, OK.<br><br>CL request is closed. |
| CL02<br>Please provide information on the actual operation indicated downtimes and other special events if applicable. | Table 1.1.i.ii. | There is no downtime and other special event. This has been also corrected in Monitoring report. | Review:<br>Stated in section B.1, OK<br><br>CL request is closed. |
| CL04<br>Parameter Egy is a monitored parameter that is not fixed ex-ante. Please revise section D.1 to include the ex-ante fixed data/parameter | Table 1.1.n.a | İt has been revised | Review:<br>Revised, OK.<br><br>CL request is closed. |
| CL05<br>Please revise tables under D.2 to conform with the template used F-CDM-MR v.02.0 | Table 1.1.n.c | Tables have been revised according to template | Review:<br>Monitoring frequencies for Apj and CapPJ are not correct, please revise |

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| | | Response to Review:<br>These are revised as yearly | CL request remains open<br><br>Review2:<br>Frequencies are revised to be in line with the validated PDD.<br><br>CL request is closed. |
| CL06<br>Please indicate the source for all values used under in emission reduction calculations in a manner that can be re-traced by the verifier. | Table 1.1.n.c.vi | The source for all values used under in the emission reduction calculations in a manner that can be re-traced has been revised. | Review:<br>Sources were provided, OK:<br><br>CL request is closed. |
| CL07<br>Under E.1. it is indicated that "ex-ante" emission reductions will be calculated. Calculations are ex-post, using monitored data. Please correct. | Table 1.1.o.a | It has been corrected.<br><br>Response to Review:<br>Formula has been added to | Review:<br>Formula is missing<br><br>CL request remains open<br><br>Review2:<br>Added,ok.<br><br>CL request is closed. |
| CL08<br>Please revise baseline emissions formula, parameters and their descriptions to reflect the methodology (e.g. Efy – $EF_{grid,CM,y}$) | Table 1.1.o.a | It has been corrected | Review:<br>Notation corrected, OK.<br><br>CL request is closed. |

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| CL09<br>Please provide references for all parameters used for project emission calculations | Table 1.1.p.b | All references has been added. | Review:<br>All sources have been indicated in the spreadsheet.<br><br>CL request is closed. |
| CL10<br>Section E.5 does have a comparison of estimated and realized emission reductions. However this should be applied for the whole monitoring period of 30 months. | Table 1.1.s.a | It has been corrected | Review:<br>The annual estimation of 17,954 tCO2 was extrapolated to the length of the reported monitoring period (30 months) as 44,885 tCO2.<br><br>CL request is closed. |
| CL11<br>Please provide information with evidence on how the waste water was handled during construction phase | Table 1.4.a | As it mentioned in site visit, most of the employees were local, therefore, they did not lodge in the site, and they did not cause waste water. Cesspit was not used too much. Moreover, the documentation about cesspit have been provided<br>Response to Review:<br>Parameter 2.2 has been added. | Review:<br>Justification accepted.<br>However, in the MR, sustainability parameter 2.2 is missing, please revise<br><br>CL request remains open.<br><br>Review2:<br>Added, OK.<br><br>CL request is closed. |
| CL12<br>Please provide documentation on the | Table 1.4.a | The documentation has been provided. | Review:<br>Please provide proof of payments for |

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| expropriation activities. | | Compensation payment documents have been provided. | the documented expropriation activities to evident the compensations.<br><br>CL request remains open<br><br>Review2:<br>Expropriated land deeds and proofs of payments have been verified.<br><br>CL request is closed. |
| CL13<br>Please provide the relevant documentation regarding disposal of excavation (e.g. permits, land contracts, etc.) | Table 1.4.a | The documentation about excavation waste has been provided. | Review:<br>Protocols for the excavation storage sites were provided, OK<br><br>CL request is closed. |
| CL14<br>Please provide any available evidence regarding dust mitigating measures during the construction phase | Table 1.4.a | They irrigated roads via their own trucks and therefore there is no evidence about that issue. However, This issue could be asked to locals | Review:<br>Locals indicated no dust pollution except minor, transient disturbances, hence accepted.<br><br>CL request is closed. |
| CL15<br>Please revise section as the counter records are available and this reported deviation cannot be permanent and | Table 1.1.j.a. | The section has been corrected | Review:<br>Lack of diesel invoices for generator consumption has been reported in the MR as a temporary deviation. Project |

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| should be under temporary deviations (as the counter reading and invoices have been determined as the primary documents for this parameter defined in the registered PDD) | | | emissions were conservatively calculated from total working hours, hence<br><br>CL request is closed. |
| CL16<br>On the cover page please report the estimated amount of GHG emissions for 30 months too. | | GHG emissions for 30 months has been added to cover page. | Review:<br>Revised, OK.<br><br>CL request is closed. |
| CL17<br>10 months show generation but no consumption from the grid on the OSF forms, please clarify | | These ten months has been asked to project owner and İt has been explained that while generating electricity, Plant consume electricity directly from their generation. They do not use grid electricity. Therefore these month consumption is shown as 0<br><br>Electricity consumption is either from internal generation, diesel generator or from the grid. If there is no consumption from the grid, it means either internal generation is sufficient or diesel generator is | Review:<br>The reviewer would like it clarified then how come while other months where electricity generation is available, there is also traction from the grid?<br><br>CL request is open<br><br>Review2:<br>Closed.<br><br>CL request is closed. |

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| | | used. That is why we have diesel generator and include it in calculations. | |
| CL18<br><br>Please round down the reported emission reductions on the cover and sections E.4 and E.5 for conservativeness. | | Emission reduction has been round down. | Review:<br>OK.<br>CL request is closed. |