



Subject: Response to incompleteness issues identified during Information and Reporting check for CDM Reg no 9554 (Mae Klong Hydropower Project) covering period of 01 January 2014 to 31 December 2014

Bureau Veritas Certification Holding SAS (BVCH), performed the verification of the above-mentioned project and it would like to provide joint responses to the issues raised as given below.

1: Scope: The validation report does not contain information on how the DOE validated that the changes from the registered monitoring plan are in accordance with paragraphs 4 and 5 of the Appendix 1 of Project Standard which do not require prior approval of the Board as per VVS version 09.0 paragraphs 289 and 312.

Issue:

In the revised monitoring plan, the cross-checking procedure of parameter EG_{export,y} (i.e. Data measured by meters and recorded in logbook will be cross checked by electricity sales receipt, page 23 of the revised PDD with track changes) has been removed. The DOE is requested to provide information how it has validated the completeness of the revised monitoring plan, since the cross-checking procedure of parameter EG_{export,y} is required (i.e. page 11 of AMS I.D version 17). In addition, the revised PDD is required to specify which option of AMS I.D version 17 page 11 has been applied in the cross-checking procedure.

Response:

It's noted that EGAT (Project participant or PP) is a state-owned power utility. It is responsible for electric power generation and transmission for the whole country as well as bulk electric energy sales. PEA (Electricity off taker and counterpart of Power Purchase Agreement or PPA) is a state-owned company and it is responsible for supply and distribution of electricity to business and industrial sectors and general public in various provincial areas of Thailand, with the exception of Bangkok, Nonthaburi, and Samut Prakan provinces.

As both EGAT and PEA are state-owned, therefore the quantity of power supplied from EGAT to PEA is summarized and charged to PEA in overall of all power plants. Therefore the amount of electricity supplied to the grid for individual power plant or this project activity is not directly provided in the receipt/tax invoice. During the validation process for post registration change, validation team had reviewed the receipt/tax invoice raised by EGAT on PEA was reviewed. It is confirmed that the information provided in the evidence is consistent with the justification from PP that the amount of electricity supplied to the grid from this project activity is not directly provided. However, it is found that parameter EG_{export,y} which referred from monthly report (internal document) had still been cross-checked with the reference of the receipt/tax invoice called 'reading export meter report'. Validation team reviewed the evidence 'reading export meter report' and found that this is official document according to PPA. According to section 8 of PPA dated on 30/07/2013, the reading export meter report is used to confirm the quantity of power supplied to PEA on monthly basis at 12.00 A.M. in the end of each month. This document was verified and signed by both EGAT officer and PEA officer. Both parties would have the copy of this document, and later it was used as one of the reference with receipt/tax invoice by both EGAT and PEA. Validation team found that there is no significant change on cross-checking procedure and this is similarly the same process with registered PDD.

During validation process for post registration change, PP had provided the evidences of both monthly report and reading export meter report for January 2014 to December 2014 that covers current verification period. Validation team cross checked both evidences and confirmed that there is no material discrepancy between the data on monthly report and reading export meter report in this verification period.

Based on justification above, the information of cross-checking procedure had been clarified by PP in section B.7.1 and appendix 6 of revised PDD version10 dated on 17/10/2016 as following;

QA/QC procedures	<p>The reading data from the electricity meters are recorded in the monthly report and it will be cross checked by the reading export meter report. The reading export meter report is an official document to confirm the quantity of power supplied as indicated in the PPA. These recorded data shall be verified by off-taker party (PEA officer). The verified data shall be countersigned by PEA and EGAT officer.</p> <p>In case of main meter failure, the data from back up meter will be applied in such period.</p> <p>The energy meter will be calibrated at least once in two year subject to national standards.</p>
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Validation team reviewed and accepted the revised PDD version10 dated on 17/10/2016. Validation team revised PRCV report version 04 dated on 28/10/2016 and verification report version 04 dated 28/10/2016 following the same clarification. It is also confirmed that cross-checking procedure is the same as described in the registered PDD. Validation team confirms that cross checking procedure is in line with the requirements as stipulated in the AMS I D version 17 page 11.

2: The project participant has revised the PDD using CDM-SSC-PDD-FORM version 6, include the revised monitoring plan. However, the revised PDD (section A.3) did not provide information on the monitoring equipments and their location in the system. Please refer to page 10 of CDM-SSC-PDD-FORM version 6, or page 11 of the CDM-SSC-PDD-FORM version 8.

Response:

With reference to closure of CL02 under appendix 3 of PRCV report, validation team confirmed that the monitoring equipment and their location in the system remained the same as stated the registered PDD.

Based on CDM-SSC-PDD-FORM version 6, the information on the monitoring equipments and their location had been added in section A.3 of revised PDD version10 dated on 17/10/2016 as following;

The monitoring equipments for the project activity are comprised of 4 electricity meters of which 2 are main meters and 2 are back up meters which are used to measure parameters $EG_{export,y}$ and $EG_{import,y}$ as indicated below;

Monitoring equipment	Accuracy class	Location
1. Electricity meter for unit 1 for parameter $EG_{export,y}$ and $EG_{import,y}$ (Main meter)	0.2S	The electricity meter is located in the control room
2. Electricity meter for unit 2 for parameter $EG_{export,y}$ and $EG_{import,y}$ (Main meter)	0.2S	The electricity meter is located in the control room
3. Electricity meter for unit 1 for parameter $EG_{export,y}$ and $EG_{import,y}$ (Back up meter)	0.2S	The electricity meter is located in the control room
4. Electricity meter for unit 2 for parameter $EG_{export,y}$ and $EG_{import,y}$ (Back up meter)	0.2S	The electricity meter is located in the control room

Furthermore, the information in revised PDD version10 dated on 17/10/2016 is now in line with CDM-SSC-PDD-FORM version 6.

Validation team confirms that the information about monitoring equipment and their location are in line with the actual installation observed during onsite inspection on 25/11/2015.

3: Scope: *The validation report does not provide a conclusion whether the changes do not require prior approval by the Board in accordance with appendix 1 of Project Standard as per VVS version 09.0 paragraphs 289 and 317.*

Issue:

The project description in section A.1 of the PDD has been revised from “a small-scale greenfield run-of-the-river hydroelectric power plant with an installed capacity of 12.35 MW constructed on an excavated channel which diverse from the MaeKlong river, on the left bank of the Mae Klong irrigation dam” to “a small-scale greenfield run-of-the-river hydroelectric power plant with an installed capacity of 12.35 MW at Mae Klong river. Prior to implementation of the project activity, there are two existing water ways for Mar Mae Klong river; 1) Main water way (pass through the Mae Klong irrigation dam) and 2) By-pass water way (left bank of the Mae Klong irrigation dam). There are no any hydro power projects for both water ways. The project is implemented on the left bank of the existing Mae Klong irrigation dam by using the by-pass water flow to generate the electricity.” However, the DOE did not provide its validation opinion on this change. Further, it is observed that construction costs of the water channel was considered in the investment costs (i.e. page 127 of the validation report of the submitted request for registration). The DOE is requested to validate whether it is a change of project design. If so, the DOE is further requested to provide information on: (a) whether the change would adversely affect impact on additionality of the registered CDM project activity; and (b) when the changes occurred, reasons for these changes taking place, whether the changes would have been known prior to registration of the registered CDM project activity. Please refer to VVS version 9, paragraph 326 (b) & (c) (i).

Response:

In regard to the project description, validation team had reviewed the timeline of the project activity along with the image evidence from Google Earth program as follows;

Figure 1 showed the image of the project activity area on March 2006 prior to the project start date on 11 Dec 2008 (p.45 of validation report of the submitted request for registration). It confirmed that there is only one water channel.

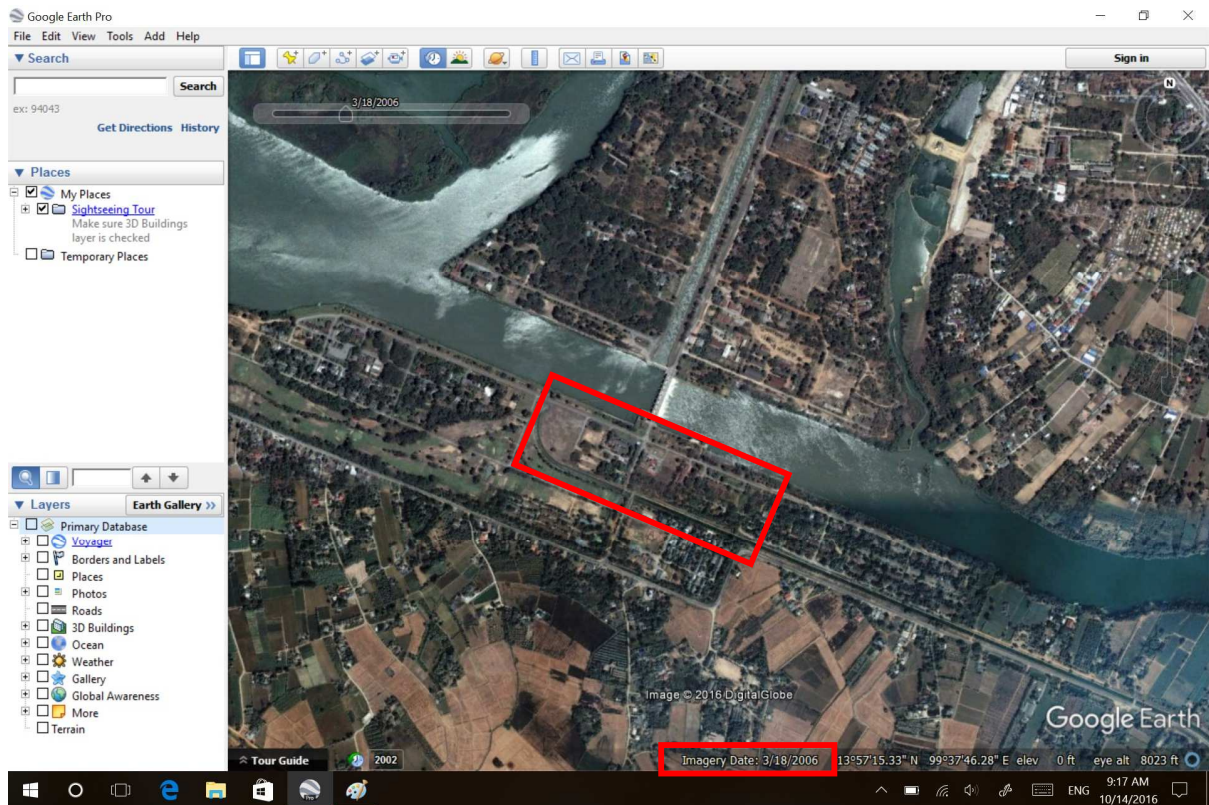


Figure 1: Project activity area in 2006

Later on, validation activity on request for registration started on 10 Sep 2009 (p.10 of validation report of the submitted request for registration). During the validation activity on request for registration, on-site inspection was performed during 19 to 20 Nov 2009 and 25 Nov 2009 (p.10 of validation report of the submitted request for registration). With reference to p.71, 94, and 99-100 of the validation report of the submitted request for registration, validation team under validation activity on request for registration confirmed that *'The proposed project activity is during the constructing phase at the time of on-site visit', 'during the on-site visit, civil construction had begun', and 'during the onsite assessment, the validation team has found the river channel and the turbine are newly installed'*. This is in line with Figure 2 which showed the image on April 2010 that the construction of excavated canal was less than 50% completion.

In June 2011, the project activity was still under construction as shown in Figure 3 before the registration date on 01 Feb 2013 (Date of registration action is on 04 Oct 2013) as stated on the UNFCCC CDM website. Finally, the construction of water channel was completed during end of 2013, and EGAT started exporting the electricity to the grid on 29 Jan 2014 as confirmed through the evidence of photo of exporting date event and COD date in invoice from PEA. This is in line with Figure 4 which showed the image of the completion of the water channel of project activity in April 2014.

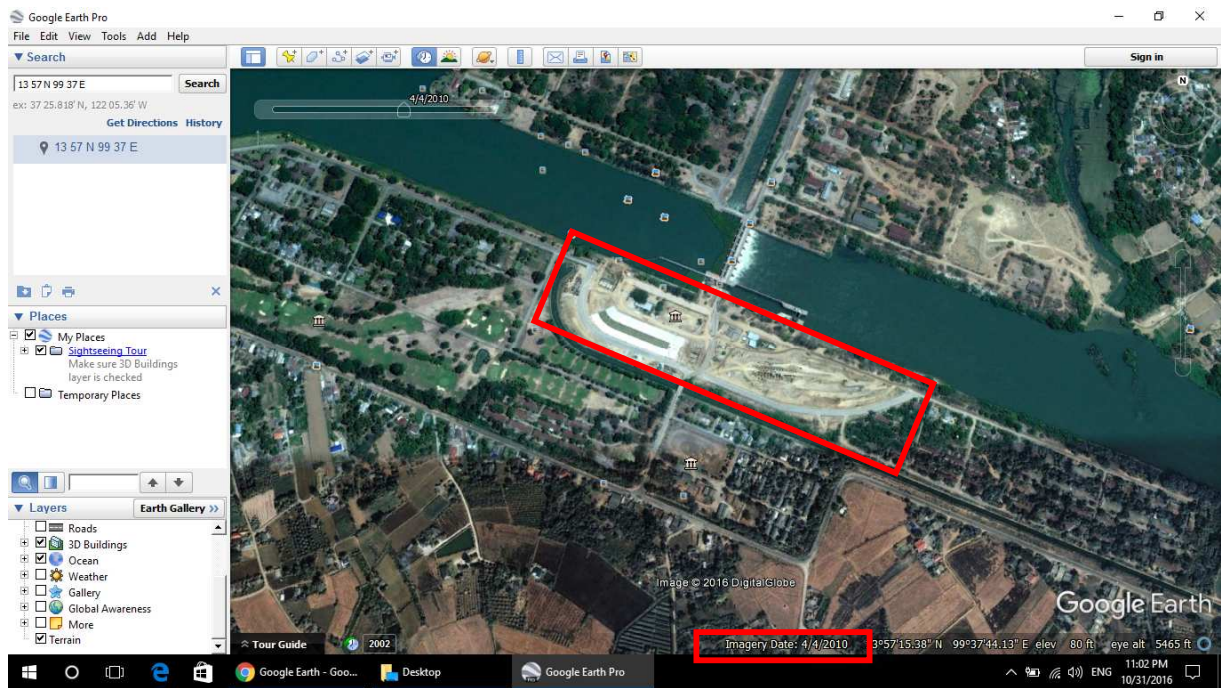


Figure 2: Project activity area in 2010 (under construction)

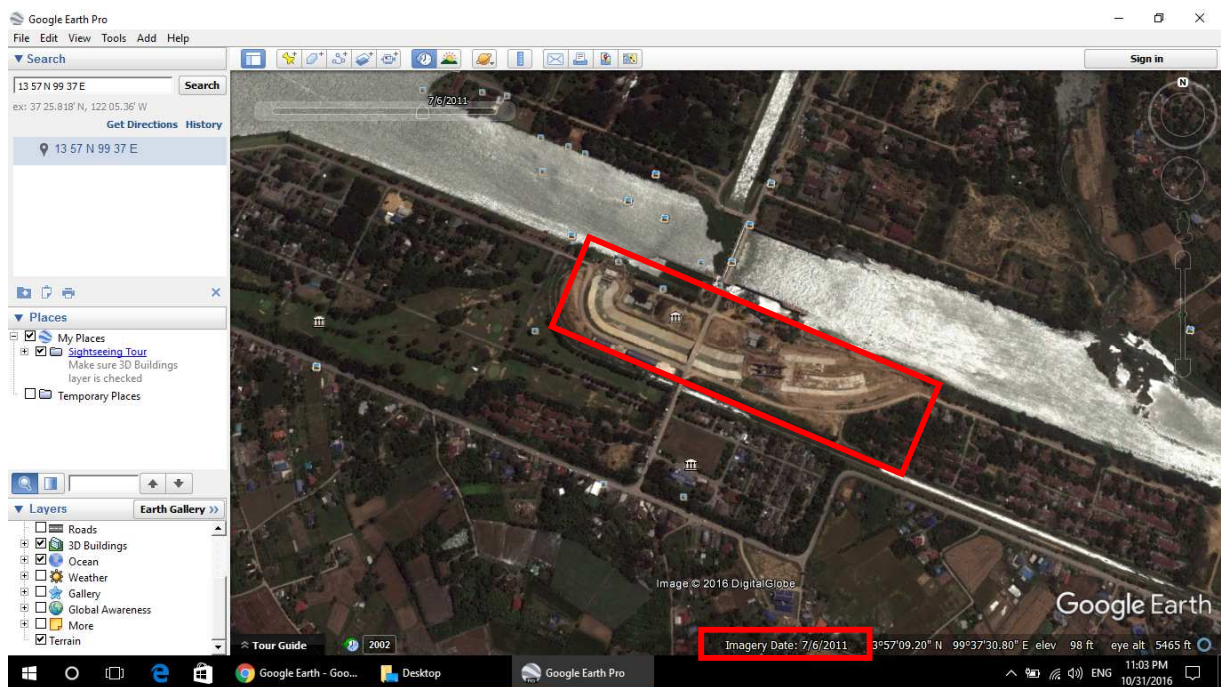


Figure 3: Project activity area in 2011 (under construction)

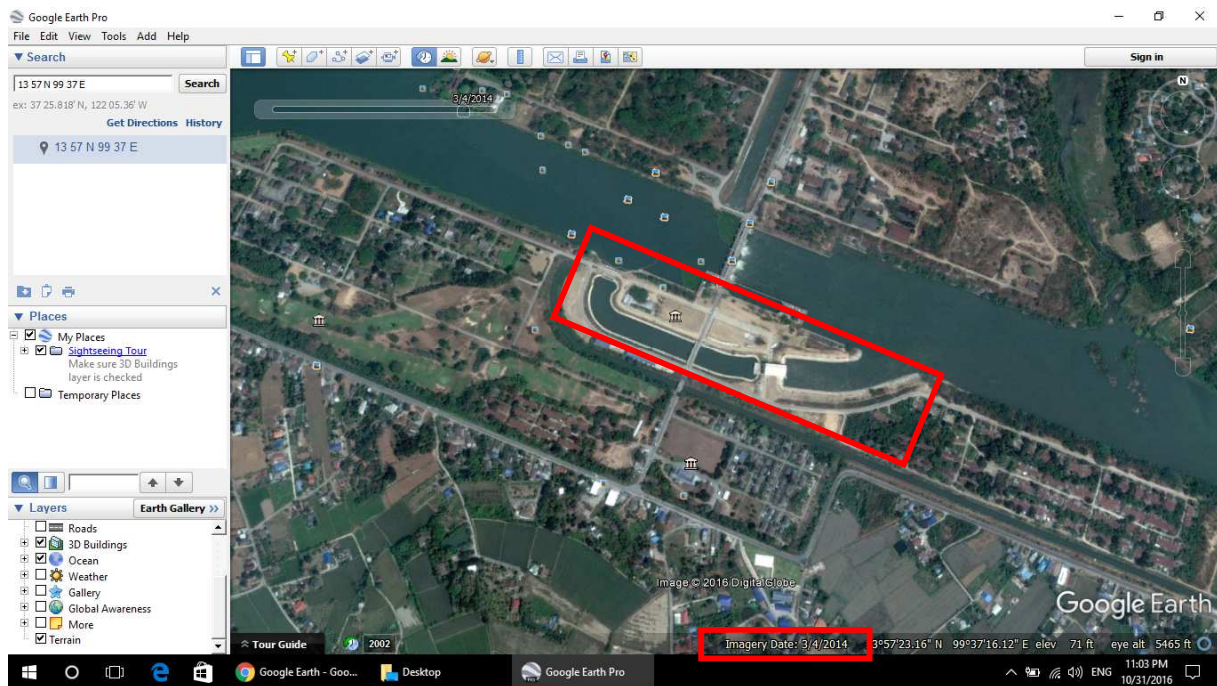


Figure 4: Project activity area in 2014

Therefore, the project description in section A.1 in the revised PDD version 9 is incorrect; there is only one water flow (pass through the Mae Klong irrigation dam). The new water flow channel was specially constructed for the project activity (please see photos prior implementation as attachment) on the left bank of Mae Klong irrigation dam. So, the project design is not change for this issue and the project description has been revised by PP in section A.1 of the revised PDD version 10 as follows;

Mae Klong hydropower project is a small-scale greenfield run-of-the-river hydroelectric power plant with an installed capacity of 12.35 MW at Mae Klong river. As it is a Greenfield project, prior to implementation of the project activity there are no any hydro power projects at the project site. The project is implemented on the left bank of the existing Mae Klong irrigation dam by using the by-pass water flow channel to generate the electricity. The by-pass water flow channel was specially constructed for the project activity. The proposed project developed by the Electricity Generating Authority of Thailand (herein after as EGAT) would utilise the hydro resource of Mae Klong river in the Kanchanaburi Province of Thailand.

Based on the justification and evidence above, validation team confirmed that there was no change in the project design on this issue. The revised description is now corrected. Validation team observed that the actual implementation and revised description had no significant change from the description in the registered PDD. And the civil work on establishment of the water channel was performed according to Feasibility Study Report and EPC contract. Thus, the requirement from VVS version 9, paragraph 326 (b) & (c)(i) are not applicable to this issue. There is no change taking place, hence there is no impact on the overall operation/ability of the project activity to deliver emission reductions as stated in the PDD. Moreover, there are no changes that would adversely affect the conclusions of the validation report of the registered PDD with regard to the additionality of the registered CDM project activity,

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"With reference to the request for registration for project activity "Mae Klong Hydropower Project" (9554), kindly note the following issue to be raised during the information and reporting stage.

Issue:

Regarding the cross-checking of monitored $EG_{export,y}$ in this monitoring period, the reporting in the verification report and the submitted document "Response_to_incomplete_reporting_check_rev01_3Nov2016" are not consistent:

(a) Page 13 of the verification report stated that there was no available data which could be cross-checked for $EG_{export,y}$;

(b) Page 1 of the "Response" stated that PP had provided the evidences of reading export meter report for January 2014 to December 2014 and the DOE has cross checked the evidences.

The DOE is requested to address this inconsistency. In doing so, the DOE is requested to clarify whether the cross-checking has been conducted as per the monitoring plan, and specify how the monitored $EG_{export,y}$ is cross-checked with the reading export meter report."

Response:

Verification team confirmed that the cross-checking had been conducted according to monitoring plan and AMS I D version 17 page 11. With reference to evidence received and findings during on-site inspection, verification team found that the monitored $EG_{export,y}$ value was consistent with internal 'Monthly report' or primary evidence. The same value had been cross-checked with 'Reading export meter report (previously called 'Monthly Meter reading report')' or cross-checked evidence as per the monitoring plan and AMS I D version 17. PP had provided both evidences - 'Monthly report' and 'Reading export meter report' for the whole monitoring period of January to December 2014 during the verification process. This is in line with the description provided in section E.6.2 under column 'Evidence checked' of 'Findings' of verification report. Moreover, Verification team found that there is no material discrepancy between the data on monthly report, reading export meter report and ER Calculation spreadsheet.

With reference to para 357 (c) of VVS version 09.0, DOE shall *cross-check the monitoring report against other sources such as comparable information, where available, from sources other than those used in the monitoring report to determine whether the stated figures are correct.* Verification team then tried to cross-check comparable information from relevant sources of evidences except from those two evidences mentioned used in Monitoring report; 'Monthly report' and 'Reading export meter report'. This was described in section E.6.2 under column 'Verification Findings' of 'Findings' of verification report that *'.....Verification team tried to cross-check the data with other sources than those used in the monitoring report by checking with the publicly available data.....'* However, the result of this attempt is that there was no data available for the current monitoring period or specific to this project activity that could be compared with $EG_{export,y}$.

With reference to the justification above, the verification finding was revised for more clarity in the revised verification report version 04.1 dated 13/01/2017 as follows;

<i>Topic (Page 13 under section E.6.2)</i>	<i>Verification Report version 04.0 dated 28/10/2016</i>	<i>Revised Verification Report version 04.1 dated 13/01/2017</i>
Evidence Checked	• Monthly Meter reading report (countersigned by both EGAT	• Reading export meter report (countersigned by both EGAT

	and PEA) for Jan-Dec 2014 • Internal Monthly reports for Jan-Dec 2014	and PEA) for Jan-Dec 2014 • Internal Monthly reports for Jan-Dec 2014
Verification Findings	<p>The data found to be consistent with the evidences for all 12 months. Even though, Monthly Meter reading report were countersigned and approved by PEA. Verification team tried to cross-check the data with other sources than those used in the monitoring report by checking with the publicly available data from the following organization:</p> <ul style="list-style-type: none"> - Energy Regulatory Commission (ERC). - Energy Policy & Planning Office, Thailand (EPPO) - Ministry of Energy <p>However, there was no available data which are in the same monitoring period or specific to this project activity that could be cross-checked with data.</p>	<p>The data found to be consistent with Internal Monthly reports for all 12 months. Furthermore, verification team also reviewed the cross-checked evidence under AMS-I.D. ver.17 and Monitoring plan 'Reading export meter report' for the period of Jan-Dec 2014, it is confirmed that there is no material discrepancy between the data on monthly report, reading export meter report, and ER Calculation spreadsheet in this verification period.</p> <p>According to para 357 (c) of VVS version 09.0, verification team tried to cross check the data with other sources than those used in the monitoring report by checking with the publicly available data from the following organization:</p> <ul style="list-style-type: none"> - Energy Regulatory Commission (ERC). - Energy Policy & Planning Office, Thailand (EPPO) - Ministry of Energy <p>However, there was no data available for the same monitoring period or specific to this project activity to be reviewed.</p>