





Annex 27

FORM FOR SUBMISSION OF REQUESTS FOR DEVIATION PRIOR TO SUBMITTING REQUEST FOR ISSUANCE

(Version 01)

F-CDM-DEV-ISS

 <p align="center">CDM: Form for submission of requests for deviation prior to submitting request for issuance (Version 01)</p> <p align="center"><i>(To be used by the DOE for requesting a deviation prior to submitting request for issuance)</i></p>	
<i>Name of the entity (DOE) submitting this form</i>	TÜV Rheinland (China) Ltd.
<i>Project Ref./Title of the project activity</i>	1756: MY08-WWP-34, Methane Recovery in Wastewater Treatment, Pahang and Negeri Sembila, Malaysia
<i>Title/Subject (give a short title or specify the subject of your submission, maximum 200 characters):</i>	Deviation on the monitoring wastewater volume & electricity consumed by the project activity equipment
<i>Specify the monitoring period for which the request is valid:</i>	Deviation 1: 03 March 2010 – 18 July 2010 Deviation 2: 03 March 2010 – 11 May 2010
<i>Date and signature for the DOE</i>	06 April 2012 Praveen Nagaraje Urs 
<p><u>Description of the request for deviation</u></p> <p>Please use the space below to describe the deviation and substantiate the reason for requesting a deviation from provisions of registered monitoring plan.</p>	



The request for deviation is being applied for the registered CDM project activity titled “MY08-WWP-34, Methane Recovery in Wastewater Treatment, Pahang and Negeri Sembila, Malaysia” with project reference number: 1756. The project was registered on 25 November 2009. Methodology applied for this registered CDM project activity is AMS-III.H Version 9. During the 1st periodic CDM verification (i.e. covered by the verification team from 01 March 2010 to 30 September 2011), TÜV Rheinland (China) Ltd. found the following deviation from the registered monitoring plan:

Deviation 1 : Estimation of wastewater volume treated during equipment outage period

According to monitoring plan defined in the registered PDD, $Q_{y,ww}$ (volume of wastewater treated) is to be monitored continuously and recorded daily by a flow meter. However, $Q_{y,ww}$ was not measured and recorded daily via flow meter since the monitoring period started from 03 March 2010 till 30 June 2010 (for Anaerobic 1A lagoon) & from 03 March 2010 till 18 July 2010 (for Anaerobic 1B lagoon). It was confirmed during on site verification that the flow meter was only in operation starting from 01 July 2010 onwards for Anaerobic 1A lagoon & starting from 19 July 2010 onwards for Anaerobic 1B onwards.

Remarks: This Request for Deviation is applicable for Kilang Kelapa Sawit Serting site

Both lagoons were covered since the start of the monitoring period, but waste water flow meters were installed at separate timing. The actual start of monitoring period is from 3 March 2010 instead of 1 March 2010 as evident via review of the raw data records, collected for monitoring parameters via data logger. The verification team considered this to be conservative as the project participant decided not to claim for any emission reductions from 1 March 2010 to 2 March 2010

Similarly at the 2nd site, i.e. Kilang Sawit Jengka 8, the actual start of monitoring period is from 5 March 2011. The project participant also will not claim for any emission reductions starting from 1 March 2011 till 4 March 2011, which is deemed to be conservative

The reason for the deviation is described as follows:

1. The original PDD submitted to the UNFCCC for registration defined the wastewater volume ($Q_{y,ww}$), using an approach taken from publication released by the Department of Environment (DoE), Malaysia (i.e. Industrial Processes & The Environment (Handbook No.3), Crude Palm Oil Industry). It uses an effluent (Palm Oil Mill Effluent) conversion factor to estimate the wastewater amount. Hence, the formula used for determination of wastewater volume is:

Volume of waste water = Fresh fruit bunches (FFB) processed X Effluent conversion factor

2. The conversion factor has been determined as the ratio between the amount (m^3) of wastewater generated by the palm oil mill and the amount (ton) of fresh fruit bunches (FFB) processed by the palm oil mill
3. However during the initial stage of project activity at Kilang Kelapa Sawit Serting, the project experienced delay in the installation of waste water flow meter. The delay resulted from the rotation of asset installation at all project participant sites. The priority of the equipment to be installed will be in accordance to the fully operational sites first followed by Serting site, which was just commissioned in March 2010. Hence, the installation process at this site took a few months after the unit was purchased. These are all supported via review of the “Work schedule for wastewater flow meter installation in 2010”, “OMM Site Visit Checklist Form”, “Weekly Report Week 26” & email containing summary of OMM (Operation Management Meeting) discussion dated 14 July 2010

From the review of the “Work schedule for wastewater flow meter installation in 2010”, the verification team was able to verify that there are 7 other projects sites (belong to the same project participant i.e. AES AgriVerde Services (Malaysia) Sdn. Bhd.) that are scheduled for flow meter installation starting from beginning of January 2010 till June 2010, prior to Serting site (in July 2010). Hence, the verification team accepted the justifications provided by the project participant, regarding the delay for installation of the flow meter



Through the review of the “Weekly Report Week 26”, “OMM Site Visit Checklist Form” and also through cross checking the raw data recorded via data logger during on site visit, the verification team was able to confirm that on 01 July 2010, the flow meter had started to be operational (for Anaerobic 1A lagoon).

As for the flow meter installation for Anaerobic 1B lagoon, it was evidenced through the email containing summary of OMM (Operation Management Meeting) discussion dated 14 July 2010 & “OMM Site Visit Checklist Form”, the installation was completed on 14 July 2010. However, it experienced some error in data capture & further repair was carried out. Eventually on 19 July 2010, flow meter starts the operation for Anaerobic 1B lagoon. Cross checked the raw data recorded via data logger & confirmed there are no readings available between 14 July 2010 until 18 July 2010. The raw data recording had started eventually on 19 July 2010

4. Hence, for the period prior to the installation of flow meter i.e. from 03 March 2010 till 18 July 2010, $Q_{y,ww}$ has been determined as follows:

$$Q_{y,ww} = \text{Site specific conversion factor (m}^3/\text{ton FFB)} \times \text{Vintage FFB processed (ton)}$$
5. The site specific effluent conversion factor ($\text{m}^3/\text{ton FFB}$) will be determined based on the monitoring data gathered starting from the installation of the wastewater flowmeter until the end of the crediting period (30 September 2011) divided with the quantity of FFB processed during the period.
6. Vintage ton FFB processed will be based on the amount of fresh fruit bunches processed during vintage period prior to the installation of the wastewater flow meter.
7. Remarks: The request for deviation period is from 03 March 2010 till 18 July 2010. In view of separate installation dates for the waste water flowmeter at Anaerobic 1A & 1B lagoon (approximately 19 days apart), the project participant decided to apply the for deviation up to 18 July 2010. This is also due to partial available data of Q_{ww} during the period from 01 July 2011 till 18 July 2010. The decisions has been accepted by the verification team as this is deemed more conservative – see details below (Section: Estimating impact of deviation to the emission reductions)

Deviation 2 : Estimation of project electricity consumption prior installation of kWh meter at Kilang Kelapa Sawit Serting

As-built drawing on 10 January 2010 shows presence of electricity meter upon completion of electrical works at site. This was confirmed in an email by Kyowa stating electrical job completed on 29 Jan 2010 with test run and commissioning at site, which include multi-range meter. However, the equipment experienced force outage from the start up of operation until it was being replaced on 12 May 2010.

The initial unit of electricity meter installed on 29 January 2010 had to be replaced due to the unit required to enter a code in order for data retrieving. This is evident via email communication & reporting by the Regional Maintenance Technician dated 01 April 2010. The project participant took another more than a month for the replacement to be made by their contractor. It was to source, install and test satisfactorily of the electricity meter at the project site until it was replaced on 12 May 2010. Delivery order dated 6 May 2010 was verified & accepted by the verification team

For the period prior to the replacement of the kWh meter starting from 01 March 2010 till 11 May 2010, kWh_{project} is determined as:

Rated capacity of equipment (kW) x 24 hours / day x 365 days / year x (1+10%) (to account for distribution loss)



Please use the space below to describe and substantiate the assessment of the DOE that the deviation does not require a revision of monitoring plan or the changes from the project activity as described in the registered project design document.

Deviation 1 : Estimation of wastewater volume treated during equipment outage period

The proposed deviation does not require a revision of monitoring plan or the changes from the project activity as described in the registered project design document since the deviation is only applicable for the specific period during the 1st verification.

The volume of wastewater has been measured continuously via the use of flow meter since its operational date starting from 01 July 2010 onwards for Anaerobic 1A lagoon & starting from 19 July 2010 onwards for Anaerobic 1B lagoon & this is in line with the monitoring plan described in the registered PDD

The verification team was able to verify the evidence of operational date based on review of OMM Site Visit Checklist Form & also cross checking the raw data excel sheet which contains data downloaded from datalogger & confirmed the operational dates stated in the monitoring report as correct

Deviation 2 : Estimation of project electricity consumption prior installation of kWh meter at Kilang Kelapa Sawit Serting

The proposed deviation does not require a revision of monitoring plan or the changes from the project activity as described in the registered project design document since the deviation is only applicable for the specific period during the 1st verification.

The electricity consumed by the project activity equipment has been measured continuously via the use of kWh meter since its operational date starting from 12 May 2010 onwards (i.e. the date when the kWh meter was replaced) & this is in line with the monitoring plan described in the registered PDD

The verification team was able to verify the evidence of operational date based on review of raw data spreadsheet which indicated that the kWh readings are available starting from 12 May 2010 onwards



Please use the space below to describe the impact of the deviation on the estimates of the emissions reductions for the proposed project activity with the use of approved methodology as existing and with the deviation.

Please substantiate the estimations with relevant and verifiable data.

Deviation 1 : Estimation of wastewater volume treated during equipment outage period

The proposed deviation does not have any impact on the estimates of the emission reductions for the proposed project activity. The reason is because the parameter $Q_{y,ww}$ is only used for the demonstration of methane produced per unit of chemical oxygen demand (COD) removed. The emission reduction of the project activity is based on the actual amount of methane destroyed by the project. Based on the registered PDD and validation report, in the event that methane produced per unit of COD removed is more than the baseline, project emissions would have to be deducted from the emission reduction. This is in line with AMS.III.H Version 9 methodology

According to AMS-III.H Version 9 methodology, paragraph 34 “.....the calculation of emission reductions shall be based on the amount of methane recovered and fuelled or flared, that is monitored ex-post. Also for these cases, the project emissions and leakage will be deducted from the emission reductions calculated from the methane recovered and combusted, except where it can be demonstrated that the technology implemented does not increase the amount of methane produced per unit of COD removed (COD removed is the difference between the inflow COD ($COD_{y,ww,untreated}$) and outflow COD ($COD_{y,ww,treated}$)), compared with the technology used in the baseline.”

During on site verification, it was found that the site specific conversion factor has been calculated as $1.16 \text{ m}^3 / \text{tFFB}$. This has been calculated starting from 19 July 2010 onwards (available data of flow meter readings since 19 July 2010) for Anaerobic 1A & 1B lagoon till 30 September 2011.

The values are accepted since the amount of FFB processed per month is similar during the period when the volume of wastewater was not monitored (i.e. 03 March to 18 July 2010)

The verification team found that based on the entire monitoring period (i.e. from 03 March 2010 to 30 September 2011), the methane produced per unit of COD removed calculated is $0.0539 \text{ tonnes CH}_4 / \text{tonnes of COD}$ which is lower than the baseline value ($0.17 \text{ tonnes CH}_4 / \text{tonnes of COD}$).

Comparing with the published conversion factor ($0.70 \text{ m}^3 / \text{tFFB}$, taken from publication released by the Department of Environment (DoE), Malaysia (i.e. Industrial Processes & The Environment (Handbook No.3), Crude Palm Oil Industry), the methane produced per unit of COD removed calculated is $0.0600 \text{ tonnes CH}_4 / \text{tonnes of COD}$ which is also lower than the baseline value ($0.17 \text{ tonnes CH}_4 / \text{tonnes of COD}$).

This is clearly in line with the AMS-III.H Version 9 methodology, paragraph 34 requirements. Therefore, this substantiates that the proposed deviation does not caused any impact on the estimates of the emission reductions

**Deviation 2 : Estimation of project electricity consumption prior installation of kWh meter at Kilang Kelapa Sawit Serting**

Hence, for crediting period data prior the installation, a conservative approach was employed to estimate the electricity consumption of the project activity. The project electricity consumption was compared between actual site specific data and estimation from equipment specification. The estimation was determined by project activity equipment running at fully rated capacity with 24 hours and 365 days of operation plus 10% to account for distribution losses and the more conservative value was selected.

For the period prior to the replacement of the kWh meter starting from 01 March 2010 till 11 May 2010, kWh_{project} has been calculated & found to be much higher than the months where the actual monitoring occurred (i.e. average of approximately more than 14,000 kWh). The actual total monitored kWh_{project} = 12,280 kWh, (taking total from 12 May 2010 till 30 September 2011)

The deviation has resulted in higher project emissions (PE_{y, power}) for March till 11 May 2010

Hence, according to AMS-III.H Version 9 methodology, paragraph 34 requirements, project emission (i.e. PE_{y, power}) will be calculated & deducted from the emission reductions calculated

Link to the documentation made available at validation stage or the monitoring report	http://cdm.unfccc.int/Projects/DB/DNV-CUK1206699817.97/iProcess/TUEV-RHEIN1319699648.74/view
If necessary, list attached files containing relevant information which is not available through the above link	<ul style="list-style-type: none"> MS Excel Spreadsheet “1756 ER spreadsheet V2” MS Excel Spreadsheet “1756 WCampaign”

History of document

Version	Date	Nature of revision
01	EB 49, Annex 27 11 September 2009	Initial adoption: This form replaces the form included as part of the <u>Procedure for request for deviation to the Executive Board</u> (version 02, EB24, Annex 30). This form should be used in conjunction with <u>Procedure for request for deviation prior to submitting request for issuance</u> .
Decision Class: Regulatory Document Type: Form Business Function: Issuance		