

Responses to the Incomplete Issues

JCI

I. Identified issues for PoA design:

Issue 1.

As reported in Section B.1 of the PoA-DD (Demonstration of additionality for PoA, page 5), no barrier analysis will be conducted at the CPA level therefore an investment analysis will be conducted to identify the baseline scenario and demonstrate additionality of each CPA.

Furthermore, it is confirmed in Section B.2 of the PoA-DD (Eligibility criteria for inclusion of a CPA in the PoA, page 8) that investment analysis will be used for the demonstration of additionality as per the option (a) (i) of paragraph 13 in "Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for PoA"

However, as per the generic CPA-DD (Part II of PoA-DD, page 24) and the specific CPA-DD (page 19), investment barriers and technological barriers have also been identified and discussed under the barrier analysis. The specific CPA-DD further reports that it has been optionally chosen to follow step 3 (investment analysis) to further substantiate the investment barrier and provide quantitative arguments, however as per the PoA-DD investment analysis is the main option to identify baseline scenario and demonstrate additionality.

The DOE is requested to provide clarification on this inconsistency.

PP's response to Issue 1

1. The project participant (PP) has decided to change the procedure on additionality demonstration that is to apply "Simplified procedures" in ACM0001 ver.15, instead of applying the procedures of "Combined tool to identify the baseline scenario and demonstrate additionality".
2. Based on the change of the procedure, this PoA is designed to satisfy the applicability condition which is stipulated in the Paragraph 21 in ACM0001 ver.15 as the condition of "automatically additional".
3. According to the design change of PoA, CPA-1 is also changed to apply the Paragraph 21, as "Simplified procedures" in ACM0001 ver.15 under the confirmation of satisfaction on the following condition.
 - Prior to the implementation of the CPA-1, the LFG from Oti landfill in Kumasi is only vented to the atmosphere but not utilized for energy generation.
 - (a) The project activity use to generate electricity total capacity 2.5 MW (0.834 x 3) that is below 10MW.
4. Consequently, description on the procedures on additionality demonstration in the PoA-DD and CPA-1 became very simple by using the "Simplified procedures" in Section 5.3.1 of the ACM0001 Ver. 15 and description on the procedures in the former PoA-DD and CPA-1 using the "Combined tool to identify the baseline scenario and demonstrate additionality", such as Barrier analysis, Investment analysis, Common practice, is not required any more.
5. Revised Sections in PoA-DD and CPA-1 are as follows due to the above change of procedure.
 - (1) Section B.1. Demonstration of additionality for PoA-DD, (Procedures on Step 0-Step 4, such as Barrier analysis, Investment analysis, Common practice, etc are deleted)
 - (2) Section B.4.and D.4., "Description of baseline scenario" in generic PoA-DD and specific CPA (CPA-1)

DOE's response to Issue 1

1. DOE has validated and confirmed the change on procedures of additionality demonstration in the PoA and subsequent change in CPA-1 as appropriate from the following aspects.
 - (1) The condition of "automatically additional" can be applied for this PoA and CPA-1, in which the procedure is complying with the requirement stipulated in the Paragraph 21, as "Simplified procedures" of ACM0001 ver.15.
 - (2) The PoA-DD has properly revised to control and manage the CPAs and to apply "Simplified procedures" of ACM0001 ver.15
 - (3) The CPA-DD has properly revised on the applicability conditions under the PoA that is to be applied "Simplified procedures" of ACM0001 ver.15
2. Consequently, this Issue 1 is considered as "not applicable".
3. VR (Validation Report) has been revised on the procedures on additionality demonstration by replacing the description of "Combined tool to identify the baseline scenario and demonstrate additionality version 05" with the description of "Simplified procedures" in ACM0001 ver.15, according to the revision of the PoA-DD.
 - (1) Revised section on the VR
 - Section IV.6.1 Demonstration of additionality of the PoA as a whole
 - (2) Deleted sections on the VR.
 - Section IV.6.2 Start date of a PoA/CPA
 - Section IV.6.3 Identification of alternatives
 - Step 1. Identification of alternatives
 - Step 2 Barrier Analysis
 - Step 3 Investment analysis
 - Step 4 Common practice analysis

<p>I. Identified issues for PoA design:</p> <p>Issue 2.</p> <p>As required by paragraph 36 and 37 of the “Combined tool to identify the baseline scenario and demonstrate additionality version 05.0.0” the latest version of the “Guidelines on common practice” available on the UNFCCC website shall be applied to conduct common practice analysis.</p> <p>However, the PoA-DD (page 6) and the generic CPA-DD (Part II of PoA-DD, page 28) do not specifically refer to the “Guidelines on common practice” and the steps mentioned in the referred guidelines.</p>
<p>PP’s response to Issue 2</p>
<p>Since the “Common practice analysis” is not required by applying "Simplified procedures" of ACM0001 ver.15 as explained in the Issue 1 above, the paragraph on “Common practice analysis” in PoA-DD and CPA-1 was deleted. Accordingly, Issue 2 is considered as “not applicable”.</p>
<p>DOE’s response to Issue 2</p>
<p>DOE validated and confirmed that the change of procedures on additionality demonstration under this PoA is appropriate, therefore, Common practice analysis in the Section IV.6.3 of the VR is not required any more. Consequently, Issue 2 is considered as “not applicable”.</p>

<p>I. Identified issues for PoA design:</p> <p>Issue 3.</p> <p>The methodological tool for “Project emissions from flaring, version 02.0.” referred in the applied methodology ACM0001 version 15.0, requires to document in the CDM-PDD the flare specifications set by the manufacturer for the correct operation of the flare. For this purpose the parameter SPEC_{flare} has been included in the list of “Data and parameters not monitored” This parameter is applicable in case of enclosed flares for which a default value for the flare efficiency will be applied.</p> <p>As reported in the PoA-DD (page 46) the CPAs under this PoA will use enclosed flares and default flare efficiency will be adopted.</p> <p>However, the parameter SPEC_{flare} is not listed in Section B.6.2 of the generic CPA-DD (part II of POA-DD, page 52) and the specific CPA-DD (page 47) under “Data and parameters that are to be reported ex-ante” (2014.04.10)</p>
<p>PP’s response to Issue 3</p>
<p>1. The PP has added the parameter “SPEC_{flare}” in the PoA-DD and CPA as follows:</p> <ul style="list-style-type: none"> • Section B.6.2 of the generic CPA-DD (part II of POA-DD, page 52) • CPA-DD (page 47) under “Data and parameters that are to be reported ex-ante” <p>2. The parameter “SPEC_{flare}” which is including the parameters of “Temperature” and “Flow rate” of the enclosed Flare, shall be determined in ex-ante by the Flare manufacturers data.</p> <p>As for the ex-post, “Temperature” and “Flow rate” of the Flare, shall be determined by monitoring parameters as defined as “T_{EG,m}” and “V_{t,db,flare}” listed in the monitoring parameters.</p>
<p>DOE’s response to Issue 3</p>
<p>1. DOE validated and confirmed on the addition of parameter “SPEC_{flare}” for ex-ante in the PoA and CPA-1 as appropriate.</p> <p>Since the parameter “SPEC_{flare}” is including the “Temperature” and “Flow rate” of the closed Flare, values for “Temperature” and “Flow rate” of the Flare shall be determined by the Flare manufacturer’s data in ex-ante. On the other hand, in ex-post, “Temperature” and “Flow rate” of the Flare shall be determined by monitoring parameters as defined as “T_{EG,m}” and “V_{t,db,flare}” listed in the monitoring parameters.</p> <p>Therefore, it is confirmed that the necessary procedures are provided for ex-ante and ex-post.</p> <p>2. The VR has revised to add the parameter “SPEC_{flare}” in ex-ante estimation.</p> <p>(1) Revision on VR</p> <ul style="list-style-type: none"> ▪ Table IV-8.7 in Section IV.8.5.12 Project emissions (PE_y ex-ante estimate).

<p>I. Identified issues for PoA design:</p> <p>Issue 4.</p> <p>According to the methodological tool “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion, version 02”) the three data and parameters required to be monitored for accounting project emissions from the usage of fossil fuel in the project activity are as follow: FC_{i,j,y} (Quantity of fuel type i combusted during the year y); NCV_{i,y} (Weighted average net calorific value of fuel type i in year y) and EF CO_{2,i,y} (Weighted average CO₂ emission factor of fuel type i in year y).</p> <p>However, only two parameters are listed in Section B.7.1 of the generic CPA-DD (Part II of PoA-DD) and Section D.7.1 of the specific CPA-DD : FC_{i,j,y} (Quantity of fuel type i combusted during the year y) and NCV_{i,y} (Weighted average net calorific value of fuel type I in year y), while the parameter EF CO_{2,i,y} (Weighted average CO₂ emission factor of fuel type i in year y) has not been included in the monitoring plan.</p>
<p>PP’s response to Issue 4</p>
<p>The PP has included the parameter “EF_{CO_{2,i,y}}” in section B.7.1 of the PoA-DD, in Section B.7.1 of the generic CPA-DD (Part II of PoA-DD) , Section D.7.1 of the specific CPA-DD and ER_Calculation_Oti_V9_140504.</p>
<p>DOE’s response to Issue 4</p>
<p>1. DOE has revised the VR to add the parameter “EF_{CO_{2,i,y}}” in the monitoring plan.</p> <p>(1) Revision on VR</p> <ul style="list-style-type: none"> ▪ Table IV-8.13 in Section IV.8.7 Monitoring Plan.

<p>II. Identified issues for the specific CPA:</p> <p>Issue 5.</p> <p>As per the specific CPA-DD (page 7), the start date of the CPA is 01/02/2014, which is the expected date of start of construction works.</p> <p>However, the validation report indicates the different dates for the expected start date of the specific CPA such as 01/07/2014 (page 19 of validation report), 01/02/2013 (Table IV-6.2 in page 19 of validation report), and 01/07/2013 (page 32 of validation report).</p> <p>The DOE is requested to clarify on this inconsistency. (2014.04.10)</p>
<p>PP’s response to Issue 5</p>
<p>1. The PP has decided that the Stat date of the CPA-1 is to be applied “01/06/2014” as for the expected start date of construction works ” by the updated schedule of construction named “10.Programme of construction work”</p> <p>2. The PP has confirmed that no real contract agreement on the construction work has been signed earlier than “01/06/2014” so the “01/06/2014” is the expected start date of construction works and “is the earliest date among the implementation or construction or real action” defined in the Glossary, CDM Terms.</p> <p>3. Accordingly, the PP has revised the Section A.8.1. Stat date of the CPA-1 as 01/06/2014 by applying the expected start date of construction works.</p>
<p>DOE’s response to Issue 5</p>
<p>1. DOE has validate and confirmed that the Stat date of the CPA-1 is to be applied the “01/06/2014” for the expected start date of construction works ” by the updated schedule of construction named “10.Programme of construction work” /10.5/, because the PP has confirmed that no real contract agreement has been done earlier than “01/06/2014”, therefore it is considered to be concluded that the “01/06/2014” is the expected start date of CPA-1 complying with the Glossary, CDM Terms.</p> <p>2. The VR has been revised on the Start date of the CPA-1 as “01/06/2014 in the Section III.4</p>

II. Identified issues for the specific CPA:

Issue 6.

As per the applied methodology ACM0001 version 15.0 (paragraph 3(d)), the methodology is applicable if the project activity does not reduce the amount of organic waste that would be recycled in the absence of the project activity. The DOE has confirmed the compliance of this requirement for the specific CPA by referring to the document referenced as /5.11/.

However, the referred document /5.11/ is "Education Needs Assessment for the City of Kumasi, Ghana (Working Paper No. 13/2010)" prepared by MCI Millennium Cities Initiative (MCI) at the Earth Institute, Columbia University and the report presents the financial, human resources and infrastructure requirements needed to provide universal primary education to all children in the city of Kumasi, Ghana.

The DOE is requested to clarify on how the referred document is relevant to demonstrate that the specific CPA does not reduce the amount of organic waste that would be recycled in the absence of the project activity.
(2014.04.10)

PP's response to Issue 6

1. The PP has prepared the following documented evidences to demonstrate that the specific CPA does not reduce the amount of organic waste that would be recycled in the absence of the project activity and submitted to DOE.

1) "Kumasi-Water-Sanitation-Needs-Assessment, September 2010, Moumié Maoulidi, MCI SOCIAL SECTOR WORKING PAPER SERIES N 16/2010, Millennium Cities Initiative (MCI) at the Earth Institute, Columbia University". Available at <http://mci.ei.columbia.edu/files/2012/12/Kumasi-Water-Sanitation-Needs-Assessment.pdf>. This document states in Page 20 "Although most household waste generated in Kumasi is organic, recycling and composting are not widely practiced in Kumasi. Some residents and a few enterprises salvage such materials as plastic bottles, metals and bags, and some people re-use items like plastic bottles to store different types of liquids, but recycling is still not officially part of solid waste disposal management. Nor do the private contractors engaged by KMA to collect and haul solid waste engage in recycling".

2) "Declaration on operation and management of the Oti Landfill (Kumasi)", 28 April 2014, signed by Anthony Mensah, Waste Management Director of Kumasi Metropolitan Assembly, is provided to the DOE under the name "36. Declaration of the Operation of Oti LFS" as the evidence.
This document clearly states "the propose project does not reduce the amount of organic waste that would be recycled in the absence of the project activity"

DOE's response to Issue 6

1. DOE has confirmed that the referred document /5.11/ is not completed document, therefore, following additional documents are obtained from the website and from the PP, in which the statements on "the specific CPA does not reduce the amount of organic waste that would be recycled in the absence of the project activity" can be clearly confirmed.

1) "Kumasi-Water-Sanitation-Needs-Assessment, September 2010, Moumié Maoulidi, MCI SOCIAL SECTOR WORKING PAPER SERIES N 16/2010, Millennium Cities Initiative (MCI) at the Earth Institute, Columbia University".
<http://mci.ei.columbia.edu/files/2012/12/Kumasi-Water-Sanitation-Needs-Assessment.pdf> >

2) "Declaration on operation and management of the Oti Landfill (Kumasi)", 28 April 2014, signed by Anthony Mensah, Waste Management Director of Kumasi Metropolitan Assembly. (Attachment of this document)

2. The VR has revised on the Document list in Section III.4 by adding references as /5.12/, /5.13/, for the above evidences.

II. Identified issues for the specific CPA:

Issue 7.

According to paragraph 66 of "Tool to calculate the emission factor for an electricity system, Version 04.0", the average OM emission factor (EF_{grid}, OM-ave,y) is calculated as the average emission rate of all power plants serving the grid, using the methodological guidance as described under Step 4 (section 6.4.1) for the simple OM, but also including the low-cost/must-run power plants in all equations.

However, it is observed that three years' weighted average operating margin OM2010-2008 (cell C57_ tab OM of EF_Grid_Ghana.xls) has been calculated taking into account only electricity generation excluding low-cost/must-run source.

The DOE is requested to provide information how the calculation of OM is in line with the applied tool. (2014.04.10)

PP's response to Issue 7

The PP has amended the spreadsheet including the low-cost/must-run sources (values in cells Input!E21:E23). The calculation in the cell C57_ tab OM of EF_Grid_Ghana_140507.xls has been revised as follows for the inclusion of the low-cost/must-run sources: =SUMAPRODUCT(C54:C56,Input!E21:E23/SUMA(Input!E21:E23)).

The resulting value for EF_{grid,CM,y} is now 0.4550 tCO₂/MWh and has been updated in the following documentation:

- EF_{grid} in Page 52 of CPA-1,
- ER_Calculation_Oti
- EF_{grid} related calculation results in Page 8, 60,61,62 of CPA-1

DOE's response to Issue 7

1. DOE has validated and confirmed on the revised values of average OM in the revised EF calculation spread sheet named "EF_Ghana_140507", in which the calculation of OM is in line with the applied tool by including the low-cost/must-run sources.
2. The VR has been revised in related sections on the value of average OM and EF_{CO₂,grid,y}.

II. Identified issues for the specific CPA:

Issue 8.

The DOE did not report in detail how it has considered the data sources and data values (such as amount, net calorific values, CO₂ emission factor and density of fossil fuels, and net electricity generated and supplied to the grid) used in the calculation of grid emission factor for Ghana are valid and appropriate in line with the monitoring table given in methodological tool "Tool to calculate the emission factor for an electricity system, version 04.0"

PP's response to Issue 8

1. The PP has revised the values and sources on NCV, EFCO₂, and Density for the fossil fuel used in each P/S in the Ghana grid in spread sheet of EF_Grid_Ghana_140507.xls as follows.

1. Check for NCV (GJ/ton) and EF(tonCO₂/GJ) of fossil fuels used for EF calculation

Fossil fuels	NCV (GJ/ton)		EF(tonCO ₂ /GJ)	
	EF_Ghana_20140507	IPCC Table 1.2	EF_Ghana_20140507	IPCC Table 1.4
LCO	40.1	40.1- 44.8	0.0711	0.0711 - 0.0755
Diesel	41.4	41.4 - 43.0	0.0726	0.0726 - 0.0748
DFO	42.4	42.4 -45.2	0.0708	0.0708 - 0.0737
NG	46.5	46.5 - 50.4	0.543	0.543 - 0.583

2. Check for Density of fossil fuels(ton/m³) of fossil fuels used for EF calculation

Fossil fuels	EF_Ghana_20140507	Source :University of Birmingham, UK*
LCO	0.832	0.832 - 0.880
Diesel	0.829	0.829 – 0.845
DFO	0.942	0.942 - 0.976
NG	0.000729	0.000729 – 0.000807

* University of Birmingham, UK is used as the source, because Density of fossil fuels does not appear in IPCC

The resulting value for EF_{grid,CM,y} is now 0.4550 tCO₂/MWh and has been updated in the following documentation:

- EF_{grid} in Page 52 of CPA-1,
- ER_Calculation_Oti
- EF_{grid} related calculation results in Page 8, 60,61,62 of CPA-1

The official source in the webpage of the Energy Commission

<<http://www.energycom.gov.gh/old/pgs/newdetails.php?recordID=6>> only has information up to 2009

DOE's response to Issue 8

1. DOE has validated and confirmed on the data sources and data values (such as amount of fuels, net calorific values, CO₂ emission factor and density of fossil fuels, and net electricity generated and supplied to the grid) as follows.

(1) The annual fuel consumed amount and net electricity generated and supplied to the grid in each P/S though 2001-2010 in Ghana grid can be evidenced from the file "20.2 Fuel con, data" and "25.2. Data Request" by the file "20.1. Evidence EF source_Ghana"

(2) Change of values for NCV, Density and EF for fuel in the grid are selected as conservative approach.

1. Check for NCV (GJ/ton) of fossil fuels used for EF calculation

Fossil fuels	EF_Ghana_20140507	IPCC Table 1.2	Checked
LCO	40.1	40.1 - 44.8	OK, conservative value is selected
Diesel	41.4	41.4 - 43.0	OK, ditto
DFO	42.4	42.4 - 45.2	OK, ditto
NG	46.5	46.5 - 50.4	OK, ditto

2. Check for EF(tonCO₂ /GJ) of fossil fuels of fossil fuels used for EF calculation

Fossil fuels	EF_Ghana_20140507	IPCC Table 1.4	Checked
LCO	0.0711	0.0711 - 0.0755	OK, conservative value is selected
Diesel	0.0726	0.0726 - 0.0748	OK, ditto
DFO	0.0708	0.0708 - 0.0737	OK, ditto
NG	0.543	0.543 - 0.583	OK, ditto

3. Check for Density of fossil fuels(ton/m³) of fossil fuels used for EF calculation

Fossil fuels	EF_Ghana_20140507	Source :University of Birmingham, UK	Checked
LCO	0.832	0.832 - 0.880	OK, conservative value is selected
Diesel	0.829	0.829 - 0.845	OK, ditto
DFO	0.942	0.942 - 0.976	OK, ditto
NG	0.000729	0.000729 - 0.000807	OK, ditto

* University of Birmingham, UK is used as the source, because Density of fossil fuels does not appear in IPCC

As a result of the revision of EF grid is as follows.

	EF (CO ₂ /MWh)
Average OM	0.211
BM	0.6991
CM	0.4550

2. The VR has been revised on the related values of OM, BM, CM and consecutive calculation used the value of CM.

<p>II. Identified issues for the specific CPA:</p> <p>Issue 9.</p> <p>The page 35 of the validation report states that "JCI has confirmed that the project boundary is just as shown on the section B.3. of CPA-1. The fly ash treatment facility, the landfill site for the residue waste and treated fly ash for the plant is located just adjacent to the project. The waste water from the project activity is treated at the waste water treatment facilities inside of the plant. The treated waste water is discharged to municipal water treatment plant. The 2 sets of steam turbine generator with capacity of 18 MW are installed at steam turbine generator plant."</p> <p>However, as per the CPA description provided in the section A.3 and A.5 of the CPA-DD and section 5 of the validation report, the specific CPA involves installation of the LFG collecting and flaring system and, later, the power generating gas engine (2,502 kW = 834MW x 4 units) to utilize collected LFG.</p> <p>The DOE is requested to clarify this inconsistency regarding specific CPA description.</p>
PP's response to Issue 9
Not applicable
DOE's response to Issue 9
<p>1. DOE has clarified that the description in the Section 8.3 of the VR is editorial error, so the description has revised as follows.</p> <p>(1) The description in the Section IV.8.3 Boundary of the VR has been replaced with "JCI has confirmed that the project boundary is just as shown on the section B.3. of CPA-1. The LFG collecting and gas pre-treatment station, LFG flaring system, and later, the power generating gas engine (2,502 kW = 834kW x 3 units) to utilize collected LFG."</p>

<p>II. Identified issues for the specific CPA:</p> <p>Issue 10.</p> <p>The DOE did not report in detail how it has validated the following input parameters to the investment analysis: i) Annual electricity production; and ii) Depreciation of LFG collection and electricity generation system.</p> <p>Furthermore, the DOE is requested to: a) indicate dates of all documented evidences that are used to determine and cross check the values of input parameters to the investment analysis; and b) report on how it has considered that the input values from the documented evidences are valid and applicable at the time of investment decision.</p>
PP's response to Issue 10
<p>Since the "Investment analysis" is not required by applying "Simplified procedures" of ACM0001 ver.15 as explained in the Issue 1 above, the paragraph on "Investment analysis" in PoA-DD and CPA-1 has been deleted.</p> <p>Accordingly, Issue 10 is considered as "not applicable".</p>
DOE's response to Issue 10
<p>DOE validated and confirmed that the change of procedures on additionality demonstration under this PoA is appropriate, therefore, Investment analysis in the Section IV.6.3 of the VR is not required any more.</p> <p>Consequently, Issue 10 is considered as "not applicable".</p>



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Kumasi Metropolitan Assembly

TO WHOM IT MAY CONCERN

DECLARATION ON OPERATION AND MANAGEMENT OF THE OTI LANDFILL (KUMASI).

In relation to the development of the CDM project at Oti Landfill, Kumasi Metropolitan Assembly (KMA) herewith declares the following:

1. Currently the Oti Landfill in Kumasi is operated and managed by J Stanley Owusu Group of Companies.
2. The gas from the Oti Landfill in Kumasi is only vented to the atmosphere but not utilized for energy generation.
3. After implementation of the proposed project, J Stanley Owusu Group of Companies will still operate and manage the landfill.
4. There is no organic waste recycling present at the landfill and 100% of the waste is landfilled. Therefore, the proposed project activity does not reduce the amount of organic waste that would have been recycled in the absence of the project activity.
5. Puresphere Ghana Limited has obtained the rights to use the landfill gas generated at Oti landfill. Puresphere Ghana Limited is not entitled to interfere in operation and management of the landfill, nor can Puresphere Ghana Limited change the way of waste amount or composition in order to change the produced amount of landfill gas;
6. The management and operation of the Oti Landfill is not deliberately changed in order to increase methane generation compared to the situation prior to implementation of the project activity.

This declaration is provided in order to clarify the rights of Puresphere Ghana Limited and the operation of the Oti landfill during the project activity. We are convinced this declaration provides the required clarification.

Date: 28 April 2014

Kumasi Metropolitan Assembly

FOR: **METROPOLITAN CHIEF EXECUTIVE
(ANTHONY MENSAH)
WASTE MANAGEMENT DIRECTOR**