



CDM proposed standardized baseline form (Version 01.0)

(To be used by a designated national authority (DNA) when submitting a proposed standardized baseline in accordance with the "Procedure for submission and consideration of standardized baselines".)

SECTION 1: GENERAL INFORMATION

DNA submitting this form:	Federal Democratic Republic of Ethiopia
Developer of the standardized baseline: <i>(Parties, project participants, international industry organizations or admitted observer organizations)</i>	Ethan Bio-Fuels Pvt. Ltd. Co. (Project Participant)
Party or Parties to which the standardized baseline applies:	Ethiopia
Sector to which the proposed standardized baseline applies: <i>(the sector according to the definition of sector in the "Guidelines for the establishment of sector specific standardized baselines")</i>	Cement Sector, Clinker Output

SECTION 2: LIST OF DOCUMENTS TO BE ATTACHED TO THIS FORM *(please check)*

- ☐ An assessment report presenting how the data was collected, processed and compiled to establish the proposed standardized baselines;
- As per Section 9 of "Procedure for submission and consideration of Standardized Baselines" V01.0, Assessment report is not required as this is the first proposed Standardized Baseline by the Host country with less than 10 registered CDM project activities.*
- ☐ Where the proposed standardized baseline applies to a group of Parties, letters of approval of all the DNAs of the Parties to which the standardized baseline applies;
- The proposed Standardized Baseline is submitted for a single Host Country i.e Ethiopia*
- ☒ Additional documentation supporting the submission (e.g. relevant data, documentation, statistics, studies, calculation tables, etc.), when applicable.
- Spreadsheet of aggregation data (Regional_Clinkerdata_Ethiopia) for each cement region, DNA QC report as well as scanned copies of raw data collected for each clinker plant in each cement region.*

Name of authorized officer signing for the DNA:	Mr Dessalegne Mesfin, Deputy Director General, Federal Environmental Protection Authority, FDRE
Date and signature for the DNA:	
Name and contact details of the focal point(s) for any follow up communication: <i>(all communication regarding procedural or technical issues will be sent to the focal point(s))</i>	Mr. Ambachew F. Admassie: Tel:00251-911-218626 , Email: ethanbiofuelsltd@gmail.com , For PP. Mr. Dereje Agonafir, (For DNA office), EPA Email: derejeagonafir@yahoo.com

PROPOSED STANDARDISED BASLINE
(CDM-PSB) - Version 01.0



CDM – Executive Board

SECTION BELOW TO BE COMPLETED BY THE UNFCCC SECRETARIAT	
CDM-PSB ID number:	
Date when the form was received at UNFCCC secretariat:	
Have <u>all</u> Parties for which the standardized baseline is applicable fewer than 10 registered CDM project activities as of 31 December 2010? (Y/N):	
CDM-PSB ID number and version: <i>(to be completed by UNFCCC)</i>	



CDM – Executive Board

**CLEAN DEVELOPMENT MECHANISM
PROPOSED STANDARDIZED BASELINE
(CDM-PSB)
(VERSION 01.0)**

“Standardized baselines for clinker production in Ethiopia”

Submission date: July 9, 2012

Version Number: 01

Source

If the standardized baseline was developed using a methodological approach contained in an approved methodology or tool please provide the name, number (if applicable) and version of the approved methodology or tool used.

If it was developed using the “*Guidelines for the establishment of sector specific standardized baselines*” please state the version of the guidelines used.

If a table of calculation is available for the development of the standardized baseline, please state the version of the table used, and submit it with this form.

It was developed using the “*Guidelines for the establishment of sector specific standardized baselines*” version 02.0. Moreover quick start threshold values for non priority sectors under, “Work program on standardized baselines” Version 01.0 is applied. The standardized baselines will replace the Additionality, Baseline Identification and Baseline Emission sections of ACM 0015V3 and the corresponding Additionality & Baseline Identification sections of ACM003 V07.4.1. Algorithms are conservatively simplified, when necessary, taking into account relevant assumptions while extending the applicability of both methodologies to both retrofit measures and/or new project plants.

Regarding quality of data used for establishing standardized baseline; primary data, data officially obtained by DNA for CDM purpose, and data collected by other Government Authorities have been used.

Type of standardized baseline approach

The standardized baseline is developed for:

- ☐ Additionality demonstration;
- ☐ Baseline identification;
- ☐ Baseline emission estimation.

Please note that one, two or all three items can be checked.



SECTION A: STANDARDIZED BASELINE DEVELOPED USING THE “GUIDELINES FOR THE ESTABLISHMENT OF SECTOR SPECIFIC STANDARDIZED BASELINES”

This section should only be completed when the standardized baseline is developed using the “Guidelines for the establishment of sector specific standardized baselines”.

Applicability of the standardized baseline

The Standardized Baseline is applicable for a single as well as multiple measures on existing as well as new cement plants.

Please provide the following information:

- The host country (ies) or region(s) within a host country to which the standardized baseline is applicable. In case of region(s) within a host country, please document transparently the geographical boundaries of the region (e.g. provinces, electric grids, etc).

Ethiopia is a big country with north-south and east-west distance more than 1000km each. There is no train cargo system. Land transport is the only inland cargo medium currently. The standardized baseline is established for each “Cement Region” in the host country and the definition of region is as follows. (Please see page 14 for further details)

Cement Regions	Coverage of Political Regions	Remark
Cement Region North	North Amhara & Tigray regions	Gondar, Tigray, Wollo
Cement Region Central	Addis Ababa and 300km radius	political regions intersected by 300km radius from Addis Ababa
Cement Region East	Dire Dawa, Harari, Afar & Somali regions	political regions intersected by 300km radius from Dire Dawa
Cement Region South	Southern region & South Oromia	-
Cement Region West	Benishangul and west Oromia	-

- The sector(s) to which the standardized baselines is applied. Note that a sector refers to a segment of a national economy that delivers defined output(s) (e.g. clinker production, domestic / household energy supply). The sector is characterized by the output(s) O_i it generates.

The sector to which the standardized baseline is applied is the cement sector.

- The output(s) to which the standardized baseline is applied, i.e. the goods or services with comparable quality, properties, and application areas (e.g. Clinker, lighting, residential cooking).

The output identified is CLINKER.

- The measure to which the standardized baseline is applicable:

☐ Fuel and feedstock switch; or

☐ Switch of technology with or without change of energy source (including energy efficiency improvement); or



CDM – Executive Board

- ☐ Methane destruction; or
- ☐ Methane formation avoidance.

Additionality demonstration

Please explain how the “Guidelines for the establishment of sector specific standardized baselines” were applied to demonstrate Additionality and develop a positive list of project activities that are deemed additional. Follow the steps and guidance of the “Guidelines for the establishment of sector specific standardized baselines”. Document all underlying data, data sources, assumptions, calculation steps and outcomes in a clear and transparent manner.

All the steps in Section V of the “Guidelines for the establishment of sector specific standardized baselines” are applied. Project participants shall apply the following steps for Additionality Demonstration:

Additionality Criteria: Positive list of fuels /feed stocks and technologies is selected as Additionality Criteria, determined by the fast start thresholds approved for Additionality by the CDM Executive Board under, “Work program on standardized baselines” Version 01.0.

- i. Kiln Fuel switch (all cement regions): Kiln fuels with carbon intensity less than that of Coal (which is the least carbon intensity fuel among the fuels used to produce 90% ($X_a = 90\%$) of the clinker produced by plants in the cement region) and facing barrier(s) are included in positive lists. Switch to any of such fuel type(s) is Additional.

There is a nationally enforced mandatory regulation in the host country enforcing switching from other historically practiced fossil fuels to use of coal as kiln fuel.

- ii. Feedstock switch:
 - a. Cement regions central, East, South and west

Feedstock types that result in carbon intensity (calcinations emission factor) less than that of Limestone and Clay (which is the feedstock types used to produce more than 90% ($X_a=90\%$) of the clinker produced by plants in the cement region) and facing barrier(s) or less commercially attractive (with their unit cost per ton or cost per unit clinker higher than that of limestone and clay) are included in positive lists. Switch to any of such feedstock type(s) is Additional.

- b. Cement region North

Feedstock types that result in carbon intensity (calcinations emission factor) less than that of Limestone and Clay (which is the feedstock types used to produce more than 90% ($X_a=90\%$) of the clinker produced by plants in the cement region) and facing barrier(s) or less commercially attractive (with their unit cost per ton or cost per unit of clinker higher than that with limestone and clay) are included in positive lists. Switch to any of such feedstock type(s) is Additional.



CDM – Executive Board

iii. Technology switch

a. Cement region central,

Kiln technologies with carbon intensity lesser than the carbon intensity of the best kiln technology (5 stage Pre-heater without pre-calciner and planetary cooler) among those used to produce aggregately 90% ($X_a=90\%$) of the total clinker produced by plants in the cement region, and facing barrier(s) or less commercially attractive (Ex: with their capital investment cost per unit of rated output higher than that of the above kiln) are included in positive lists. Switch to any of such technology types is Additional.

b. Cement regions East, South and west

Kiln technologies with carbon intensity lesser than the carbon intensity of the best kiln technology (Two stage Pre-heater rotary kiln) among those used to produce aggregately 90% ($X_a=90\%$) of the total clinker produced by plants in the cement region, and facing barrier(s) or less commercially attractive (Ex: with their capital investment cost per unit of rated output higher than that of the above kiln) are included in positive lists. Switch to any of such technology types is Additional.

c. Cement region north

Kiln technologies with carbon intensity lesser than the carbon intensity of the best kiln technology (5 stage Pre-heater with pre-calciner and Grate cooler) among those used to produce 90% ($X_a=90\%$) of the total clinker produced by plants in the cement region, and facing barrier(s) or less commercially attractive (Ex: with their capital investment cost per unit of rated output higher than that of the above kiln) are included in positive lists. Switch to any of such technology types is Additional.

There is no nationally or sub-nationally enforced mandatory regulation in the host country other than footnote 1 regarding specific use of kiln fuels, feedstock, technology or energy sources.

Where barriers are referred, PP's shall use "GUIDELINES FOR OBJECTIVE DEMONSTRATION AND ASSESSMENT OF BARRIERS" (Version 01) Guideline 7

Baseline identification

Please explain how the "*Guidelines for the establishment of sector specific standardized baselines*" were applied to identify the baseline for the measures. Follow the steps and guidance of the "*Guidelines for the establishment of sector specific standardized baselines*". Document all underlying data, data sources, assumptions, calculation steps and outcomes in a clear and transparent manner.

All steps in Section V of the "Guidelines for the establishment of sector specific standardized baselines" are applied. Project participants shall apply the following steps for Baseline Demonstration:

Baseline identification Criteria: Positive list of fuels /feed stocks and technologies is selected as baseline identification criteria, determined by the thresholds approved as fast start for Baselines by the CDM Executive Board under, "Work program on standardized baselines" Version 01.0. .

Project participants shall apply the following Baselines Identified:



CDM – Executive Board

- i. **Kiln Fuel switch** (all cement regions): ¹Coal, the fuel with the lowest carbon intensity among the fuels contributing to produce in aggregate 90% ($X_b=90\%$) of the Clinker output produced by plants in the cement region, is the baseline fuel.

ii. **Feedstock switch for clinker manufacturing:**

- a. Cement regions central, East, South and west

Limestone and Clay, the feedstock with the lowest carbon intensity (that result in lowest calcinations emission factor), among the feedstock contributing to produce in aggregate 90% ($X_b=90\%$) of the Clinker output produced by plants in the cement region, is the baseline feedstock.

- b. Cement region North

Limestone and Clay, the feedstock with the lowest carbon intensity (that result in lowest calcinations emission factor), among the feedstock contributing to produce in aggregate 90% ($X_b=90\%$) of the Clinker output produced by plants in the cement region, is the baseline feedstock.

iii. **Kiln technology switch/retrofit measure:**

- a. Cement regions central,

Five stage PH without pre-calciner (as operated by Mugher with three years average SKC_{BSL} value of 4.34GJ/t), the kiln technology with the lowest carbon emission factor among the kiln technologies contributing to produce in aggregate 90% ($X_b=90\%$) of the Clinker output produced by plants in the cement region, is the baseline kiln technology for clinker manufacturing.

- b. Cement regions East, South and west

Two stage Pre-heater rotary kiln (as operated by National cement SC with three years average SKC_{BSL} value of 5.44GJ/t), the kiln technology with the lowest carbon emission factor among the kiln technologies contributing to produce in aggregate 90% ($X_b=90\%$) of the Clinker output produced by plants in the cement region, is the baseline kiln technology for clinker manufacturing.

¹ Relevant Authority of the Host country issued a directive for all cement plants to switch to Coal as kiln fuel eliminating. Other less carbon intensive, alternative or renewable fuels could be project activities.



c. Cement region North

Five stage PH rotary kiln with pre calciner (as operated by Mossobo with three years average SKC_{BSL} value of 3.42GJ/t), the kiln technology with the lowest carbon emission factor among the kiln technologies contributing to produce in aggregate 90% ($X_b=90\%$) of the Clinker output produced by plants in the cement region, is the baseline kiln technology for clinker manufacturing.

Baseline emission factor estimation (if applicable)

Please explain how the “*Guidelines for the establishment of sector specific standardized baselines*” were applied to determine a baseline emission factor. Follow the steps and guidance of the “*Guidelines for the establishment of sector specific standardized baselines*”. Document all underlying data, data sources, assumptions, calculation steps and outcomes in a clear and transparent manner.

- i. The baseline emission for fuel switch is calculated using equations in ACM003 V07.4.1. The baseline kiln fuel identified is coal whose emission factor is obtained from IPCC default factor for the relevant type of coal at the lowest confidence level. If applicable, the project may also reduce CH₄ emissions from preventing disposal or uncontrolled burning of biomass residues.
 - ii. The baseline calcinations emission factor (EF_{fs}) for feedstock switch CDM measure (tCO₂/t clinker) is a ²combination of emission factor for clinker production ($BE_{calcin}/CLNK_y$) and emission factor for CKD dust ($BE_{Dust}/CLNK_y$).
- a. Emission factor (de-carbonization) for clinker production = $BE_{calcin}/CLNK_y$

$$BE_{Calcin} = \frac{CLNK_y}{CLNK_{BSL}} \cdot (0.785 \cdot (CaO_{CLNK,BSL} \cdot CLNK_{BSL} - CaO_{RM,BSL} \cdot RM_{BSL}) + \dots\dots\dots(1)$$

$$+ 1.092 \cdot (MgO_{CLNK,BSL} \cdot CLNK_{BSL} - MgO_{RM,BSL} \cdot RM_{BSL}))$$

Where:

- BE_{Calcin} = Baseline CO₂ emissions from calcination of calcium carbonate and magnesium carbonate (tCO₂)
- 0.785 = Stoichiometric emission factor for CaO (tCO₂/tonnes of CaO)
- 1.092 = Stoichiometric emission factor for MgO (tCO₂/tonnes of MgO)
- $CaO_{RM,BSL}$ = Non-carbonated CaO content in the raw materials in the baseline (tonnes of CaO/tonnes of raw material). These non-carbonated sources must be different from the non-carbonated materials used in the project activity

² IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories, CO₂ EMISSIONS FROM CEMENT PRODUCTION, 2. 2, page 177



CDM – Executive Board

$CaO_{CLNK,BSL}$	=	CaO content in the clinker produced in the baseline (tonnes of CaO/tonnes of clinker)
$MgO_{RM,BSL}$	=	Non-carbonated MgO content in the raw materials in the baseline (tonnes of MgO/tonnes of raw material). These non-carbonated sources must be different from the non-carbonated materials used in the project activity
$MgO_{CLNK,BSL}$	=	MgO content in the clinker produced in the baseline (tonnes of MgO/tonnes of clinker)
RM_{BSL}	=	Annual consumption of raw materials in the baseline (tonnes)
$CLNK_{BSL}$	=	Annual production of clinker in the baseline (tonnes). In case of new plants this is equal to the annual clinker production in year y.
$CLNK_y$	=	Annual production of clinker in the year y (tonnes)

Assuming the negative effect of ³impurities in limestone and clay ($InCaO = CaO_{RM,BSL} \cdot RM_{BSL}$) equals the positive effect of ⁴MgO component in clinker, equation becomes;

$$BE_{Calc} = \frac{CLNK_y}{CLNK_{BSL}} \cdot (0.785 \cdot (CaO_{CLNK,BSL} \cdot CLNK_{BSL}))$$

$$BE_{Calc}/CLNK_y = 0.785 \cdot CaO_{CLNK,BSL} \dots \dots \dots (1.a)$$

Where, $CaO_{CLNK,BSL}$ is the %CaO of the clinker produced in project activity.

Conservatively, $BE_{Calc}/CLNK_y = 0.507 \text{ tCO}_2/\text{t clinker}$ (IPCC default taking 64.6% for CaO)

b. Emission factor for CKD production = $BE_{Dust}/CLNK_y$

$$BE_{Dust} = \frac{\left\{ (C_{BSL} \cdot ByPass_{BSL}) + \frac{C_{BSL} \cdot d_{BSL}}{[C_{BSL} \cdot (1 - d_{BSL}) + 1]} \cdot CKD_{BSL} \right\}}{CLNK_{BSL}} \cdot CLNK_y \dots \dots \dots (2)$$

Where:

BE_{Dust}	=	Baseline CO ₂ emissions factor due to discarded dust from bypass and dedusting units (CDK) system (tCO ₂)
C_{BSL}	=	Baseline calcination emissions factor due to both de-carbonization reaction and fuel consumption in clinker production (tCO ₂ /tonne of clinker)
$ByPass_{BSL}$	=	Annual production of Bypass dust leaving kiln system (tonnes)
CKD_{BSL}	=	Annual production of CKD dust leaving kiln system in the baseline (tonnes)
d_{BSL}	=	CKD calcination rate (released CO ₂ expressed as a fraction of the total carbonate CO ₂ in the raw materials)

³ A default value of 2% for InCaO is already approved in ACM 0005 V07.1

⁴ Ethiopian standard allows a 3% MgO content in clinker but conservatively chosen not to consider associated baseline emission



CDM – Executive Board

$CLNK_{BSL}$ = Annual production of clinker in the baseline (tonnes)
 $CLNK_y$ = Annual production of clinker in the year y (tonnes)

The parameter C_{BSL} should be calculated as follows:

$$C_{BSL} = \frac{BE_{Calc} + BE_{FC_Calc}}{CLNK_{BSL}} \quad (2.a)$$

Where:

C_{BSL} = Baseline calcination factor due to both de-carbonization reaction and fuel consumption in clinker production (tCO₂/tonne of clinker).
 BE_{Calc} = Baseline CO₂ emissions from calcination of CaCO₃ and MgCO₃ (tCO₂)
 BE_{FC_Calc} = Baseline CO₂ emissions from fuel consumption in clinker production (tCO₂)
 $CLNK_{BSL}$ = Annual production of clinker in the baseline (tonnes of clinker). In case of new plants this is equal to the annual clinker production in year y.

Conservatively assuming all bypass dust is recycled ($ByPass_{BSL} = 0$) and full calcinations of dust, $d_{BSL} = 1$, equation simplifies to;

$$BE_{Dust} = C_{BSL} * CKD_{BSL} \quad (2.b)$$

⁵IPCC suggests that the CO₂ from lost CKD is commonly between 2-6% of the clinker produced. Conservatively taking 2% for the baseline plant,

$$BE_{Dust} = C_{BSL} * 2\% * CLNK_y$$

$$BE_{Dust} / CLNK_y = 0.02 * C_{BSL} \quad (2.c)$$

Total Baseline Emission factor for feedstock switch (tCO₂/tClinker) is;

$$EF_{fs} = 0.785 * CaO_{CLNK_y} + 0.02 * C_{BSL} \quad (3)$$

Baseline Emission is emission factor (EF_{fs}) multiplied with clinker produced in crediting year.

- iii. The baseline emission factor (tCO₂/t Clinker) for kiln technology switch or efficiency improvement CDM measure is obtained from;

$$EF_t = BE_{FC_Calc} / CLNK_y = SKC_{BSL} * EF_{CO_2,i} \quad (4)$$

Where;

EF_t = Baseline emission factor for kiln technology (tCO₂/t Clinker)

SKC_{BSL} Specific kiln calorific consumption of the baseline technology identified in the baseline section for each cement region, GJ/t Clinker

⁵ IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories, CO₂ EMISSIONS FROM CEMENT PRODUCTION, 2. 6. 2, page 179



CDM – Executive Board

$EF_{CO_2, f}$ is the emission factor of the project kiln fuel (tCO₂/GJ) (IPCC default value at lowest confidence level).

$BE_{FC, Calcin}$ = Baseline Emission; emission factor (EF_t) multiplied with clinker produced in crediting year.

- iv. The baseline emission factor (tCO₂/t Clinker) for use of fuel for the preparation of alternative raw materials and fuels (e.g. drying of materials or fuels using external diesel dryers) is zero (Conservatively assumed that all baseline technology utilizes waste heat from rotary kiln); PP's may also set the corresponding value for project emissions to zero.
- v. The baseline emission factor (tCO₂/t Clinker) for use of electricity (grid and self generated) for the preparation of raw materials and fuels, and for the operation of equipments related to the kiln (engines, compressors, fans, etc.) is zero assuming all plants are connected to national grid and the grid emission factor is nearly zero and that no plant has captive power plant. PP's may also set the corresponding value for project emissions to zero.
- vi. Potential cross effects

Since cross effect should be accounted and to capture the overall effect, PPs shall account all the emission sources (kiln fuel, kiln technology, dust and calcinations) before and after project implementation whether or not the project activity involves one or multiple of the above measures.

Example: any effect on kiln fuel consumption pattern due to a feedstock switch project activity will be captured in the equation for project emission corresponding to equation (4) above.

Use of the standardized baseline with an approved methodology

Please explain how the standardized baseline will be used with the relevant approved methodology(ies) or an approved tool, i.e. which (parts of) the approved methodology(ies) or the approved tool are replaced by the standardized baseline. Note that a standardized baseline derived from the "*Guidelines for the establishment of sector specific standardized baselines*" will usually replace the sections on demonstration of additionality, identification of the baseline scenario and the determination of baseline emissions, while the methodology sections on applicability, project boundary, project emissions, leakage emissions and provision to monitor project and leakage emissions may not be affected by the use of the standardized baseline. If an approved methodology is not available, a new methodology should be submitted to be used with the standardized baseline, following the relevant procedures ("*Procedure for the submission and consideration of a proposed new baseline and monitoring methodology for large scale CDM project activities*" or "*Procedures for the submission and consideration of a proposed new small scale methodology*").

a) Applicability Conditions

All other Applicability conditions of the existing methodology ACM0015V3 and ACM003 V07.4.1 prevail except that this standardized baseline can be used for retrofit as well as new project plants and hence no historical data are required for the project plant in a later case.

b) Baseline Scenario, Baseline Emission, Additionality

In case of feedstock and technology switch, the procedures under "Baseline Identification" and "Baseline Emissions Factor Estimation" above shall replace the "Baseline Scenario Identification" and "Baseline



CDM – Executive Board

Emission” section of the existing methodology ACM0015V3. The procedures under “Additionality demonstration” section above shall replace the “Additionality” section of the existing methodologies.

In case of fuel switch, the procedures under “Baseline Identification” and “Additionality demonstration” sections above shall replace the “Additionality” section of the existing methodology ACM003 V07.4.1. The “Baseline fuel emission factor” identified above shall be used in the baseline emission calculation while the “Baseline emission” section in the methodology shall remain applicable except no need of calculating fuel penalty, as it will be accounted for in equation 4.

c) “Project Emissions”, “Leakage” & Monitoring tables

The “Project Emissions” & “Leakage” sections of the existing methodologies shall still survive. The “Data and parameters to be monitored” pages in the “Monitoring” section of the existing methodologies shall largely prevail except omitting tables for parameters already substituted by standardized default values or omitted.

The following parameters are omitted from the monitoring tables due to Standardized Baseline;

No	Parameters	Approved Methodology
1	$ByPass_{BSL}$, CKD_{BSL} , SKC_{BSL}	ACM0015 V3
2	RM_{BSL} , $MgO_{RM,BSL}$, $CaO_{RM,BSL}$, $MgO_{CLNK,BSL}$, $CaO_{CLNK,BSL}$	ACM0015 V3
3	$EC_{CTO,BSL}$, d_{BSL} , $CTO_{BSL,m}$, $CLNK_{BSL_CNSM,m}$, $CLNK_{BSL}$	ACM0015 V3
4	$EC_{RM,SG}$, $EC_{KO,Grid}$, $EC_{KO,SG}$, $EC_{Feed,SG}$, $EC_{RM,Grid}$, $EC_{Feed,Grid}$	ACM0015 V3
5	$FC_{Dry,i}$	ACM0015 V3
6	$Daily FF_{ex,i}$, $Daily \%AMC_{ex}$, $Daily SKC_{ex}$, $Daily CLNK_{ex}$, $\%AMC_y$, SKC_j , $SKC_{ex} \text{ optimal range}$, $\%AMC_{ex} \text{ optimal range}$, $\%AMC_{ex}$, $SKC_{y,measured}$, SKC_{ex}	ACM0015 V3
7	Annex I	ACM0015 V3
8	$P_{clinker/quicklime,x}$, $P_{clinker/quicklime,x-1}$ and $P_{clinker/quicklime,x-2}$, $FC_{i,x}$, $FC_{i,x-1}$ and $FC_{i,x-2}$	ACM003V07.4.1
9	NCV_i , $EF_{CO2,FF,i}$	ACM003V07.4.1



CDM – Executive Board

Validity of the standardized baseline
--

Please state the period of time for which the standardized baseline is valid. Please note that Appendix I of the “Guidelines for the establishment of sector specific standardized baselines” provide interim values for data vintage and the frequency of update.

Data vintage of most recent three years available are used. The Host country is an underrepresented region and also an LDC where such intensive data collection is restrictive. It is proposed the standardized baseline will be updated five years after approval date of this standardized baseline.



SECTION B: STANDARDIZED BASELINE DEVELOPED USING A METHODOLOGICAL APPROACH CONTAINED IN AN APPROVED METHODOLOGY OR TOOL

This section should only be completed when the standardized baseline is developed using a methodological approach to estimate baseline emissions contained in an approved methodology or tool. An example for this is the application of the “Tool to calculate the emission factor for an electricity system” to estimate the emission factor for a electric grid.

Applicability of the standardized baseline

Please state the host country(ies) or region(s) within a host country to which the standardized baseline is applicable. In case of region(s) within a host country, please document transparently the geographical boundaries of the region (e.g. provinces, electric grids, etc).

Baseline emission estimation

Please explain how the methodological approach contained in the approved methodology or tool was applied to estimate the baseline emissions of a project activity in (a) country(ies) or region. Follow the steps and guidance of the approved methodologies or tools. Document all underlying data, data sources, assumptions, calculation steps and outcomes in a clear and transparent manner. Note that the underlying methodology or tool has to provide a methodological approach to derive the baseline emissions for a country or region in order to apply this step. This applies, for example, to the methodological tool “Tool to determine the emission factor of an electricity system”.

Use of the standardized baseline with an approved methodology

Please explain how the standardized baseline will be used with the relevant approved methodology (ies) or approved tool, i.e. which (parts of) the approved methodology (ies) or the approved tool are replaced by the standardized baseline.

Validity of the standardized baseline

Please state the vintage of the parameters used to derive the standardized baseline, in accordance with the requirements contained in the approved methodology or tool.



REFERENCES AND ANY OTHER INFORMATION

1. Information on cement regions

The definition of cement regions is based on the strategic low carbon direction the host country aspires in order to stimulate production and consumption of cement within 250km radius. This is consistent with definition of a region in ACM 0015V3. This reflects the economic implication of long distance road transport of cement and also the associated negative impact on sustainable development (sustainable production and consumption of commodities). Cities/towns of Addis Ababa, Dire Dawa, Woldya, GamoGofa and Wollega are considered indicative epicentres of central, East, North, South and West cement regions respectively. Cement plants falling between or on intersection between cement regions will take the region with most conservative standardized baseline value.

2. Data QA/QC (as per guideline for QA/QC of data used in Establishment of SB)

The guidance stated regarding data delivery protocol under Appendix 1 of the guideline has been successfully applied.

A. Purpose of data collection

All data was collected for CDM purpose including for standardized baselines establishment. All cement plants with clinker kiln operating in the host country are covered under data collection.

B. Confidentiality

Data will be treated confidential in order to assure continued cooperation from plants (Ex: at renewal).

C. Help Desk

Please contact the relevant focal point to facilitate this.

D. Data Types

All relevant data for the purpose are collected for clinker output.

E. Data acquisition/aggregation

Data acquisition/ aggregation has been made in accordance with the sub-regions (cement regions) identified under 1 above.

F. Traceability

All data input into the spreadsheet can be traced back to the original data archived in scanned copy of officialised document (from primary and secondary sources) or to other source information.

G. Delivery requirements

All delivery requirements have been met by data providers except few cases. In such cases the most conservative alternate value has been set as per the relevant clause in the data QA/AC guidance.

H. Quality Control (QC) report

The format for this report in accordance with appendix 2 of the guideline is annexed separately.



CDM – Executive Board

3. References

The following references were used to establish the standardized baseline.

- All relevant guidelines approved by CDM EB
- Primary data (data collected from cement plants with kilns in each cement region)
- Data collected by DNA and other ministries (Ministry of Industry, Investment Authority)
- Data from websites of the cement factories
**http://www.effortgroup.org/messebo/messebo_plant.htm
- Websites of other relevant independent sources

*http://investmentprojectdatabase.com/database/preview.htm?name=Mugher+Cement+enterprises&user=consultabc&pos=1019&search=&mode=topic&type=-1&requirement=1&trans_size=-1&businessplan=-1&location=

- Purchase contract of a VSK plant
- Purchase contract of a new 5 stage PH-PC kiln

PROPOSED STANDARDIZED BASELINE
(CDM-PSB) - Version 01.0



CDM – Executive Board

History of the document

Version	Date	Nature of revision(s)
01.0	23 March 2012	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Methodology		