

**CLEAN DEVELOPMENT MECHANISM
PROJECT DESIGN DOCUMENT FORM (CDM-SSC-PDD)
Version 03 - in effect as of: 22 December 2006**

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Revision history of this document

Version Number	Date	Description and reason of revision
01	21 January 2003	Initial adoption
02	8 July 2005	<ul style="list-style-type: none">• The Board agreed to revise the CDM SSC PDD to reflect guidance and clarifications provided by the Board since version 01 of this document.• As a consequence, the guidelines for completing CDM SSC PDD have been revised accordingly to version 2. The latest version can be found at http://cdm.unfccc.int/Reference/Documents.
03	22 December 2006	<ul style="list-style-type: none">• The Board agreed to revise the CDM project design document for small-scale activities (CDM-SSC-PDD), taking into account CDM-PDD and CDM-NM.

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SECTION A. General description of small-scale project activity
A.1 Title of the small-scale project activity:

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Title: CEMEX Mexico: Efficiency project at Yaqui cement plant.

Version 01

Date: 31/07/2007

A.2. Description of the small-scale project activity:

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In order to meet the growing cement demand in México, CEMEX is building a new cement line at its existing Yaqui plant. The economically most attractive option for the new cement line would be a modern kiln with a five-stage preheater. The project activity is to build a kiln with a six-stage preheater having less heat consumption in clinker production.

The additional preheater stage will reduce specific fuel consumption by 30 kcal/kg of Clinker. The corresponding emission reduction is estimated to be around 14.538 tCO₂/year.

Environmental and social benefits other than GHG emission reductions

In addition to lower GHG emissions, other environmental and social benefits would include:

- The project activity reduces specific thermal consumption for cement production and contributes to the conservation of petroleum coke, a non-renewable natural resource, and making petroleum coke available for other important applications.
- Local economy is benefited due to the employment creation during the construction phase.
- In addition to the energy savings and the associated reduction emissions of CO₂ and other substances the project substantially reduces the water consumption of the plant. The latter is a particularly important contribution to the local sustainable development because the project is located in a very dry area.

A.3. Project participants:

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Name of Party involved (*) ((host) indicates a host Party)	Private and/or public entity(ies) project participants (*) (as applicable)	Kindly indicate if the Party involved wishes to be considered as project participant (Yes/No)
Govt. of México (Host)	CEMEX México S.A. de C.V.	No

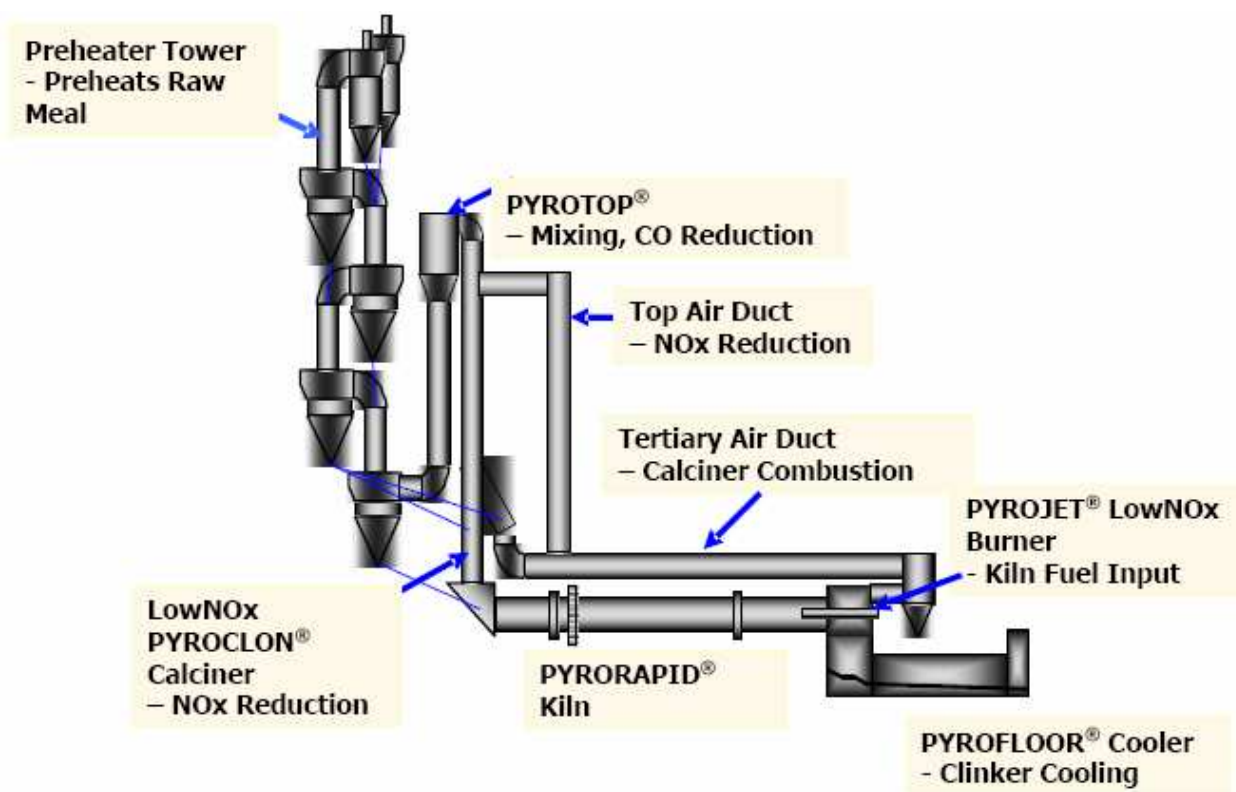
Table 1. Project participants information

A.4. Technical description of the small-scale project activity:

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The energy savings obtained from the Preheater System are as follows:

- Finely ground raw meal is fed to the top of a preheater tower from a storage silo.
- When the meal is introduced to the gas duct, the gas flow, which is from bottom to top, will carry the meal up into a cyclone; at the same time heat is exchanged between the (hotter) exhaust gas and the (cooler) raw meal. In the cyclone the raw meal and gas will be separated.
- While the gases are leaving through the top of the cyclone, the meal is dropping down into the next stage of the preheater tower.
- Depending on the number of stages this process is repeated several times. Each stage added to the tower allows to recover more of the thermal energy that the exhaust gas inevitably takes out of the main tube of the kiln system in order to efficiently dry and preheat raw materials before they enter the kiln, thus reducing the heat consumption. The project activity proposes the building of the new cement line with a modern kiln with a six-stage preheater.



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A.4.1. Location of the small-scale project activity:

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A.4.1.1. Host Party(ies):

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México

A.4.1.2. Region/State/Province etc.:

>>

State of Sonora

A.4.1.3. City/Town/Community etc:

>>

Hermosillo

A.4.1.4. Details of physical location, including information allowing the unique identification of this small-scale project activity :

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Yaqui cement plant is located at Hermosillo City of Sonora State in Mexico. The plant's address is Carr. A La Colorada km 17.5, Sucursal Nuevo Hermosillo C.P. 85540.



A.4.2. Type and category(ies) and technology/measure of the small-scale project activity:

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Type and Category of the project activity

The project activity meets the applicability criteria of the small-scale CDM project activity category, Type-II: energy efficiency improvements projects (D: Energy efficiency and fuel switching measures for industrial facilities) of the ‘Indicative simplified baseline and monitoring methodologies for selected small scale CDM project activity categories’.

Main Category: Type II – Energy efficiency improvements projects

Sub Category: D. Energy efficiency and fuel switching measures for industrial facilities

As per provisions of appendix B of simplified modalities and procedures for small scale CDM project activities (version 09), Type II D “Comprises any energy efficiency and fuel switching measure implemented at a single industrial or mining and mineral production facility. This category covers project activities aimed primarily at energy efficiency; a project activity that involves primarily fuel switching falls into category III.B.1 Examples include energy efficiency measures (such as efficient motors), fuel switching measures (such as switching from steam or compressed air to electricity) and efficiency measures for specific industrial or mining and mineral production processes (such as steel furnaces,

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paper drying, tobacco curing, etc.). The measures may replace, modify or retrofit existing facilities or be installed in a new facility. The aggregate energy savings of a single project may not exceed the equivalent of 60 GWh_e per year. A total saving of 60 GWh_e per year is equivalent to a maximal saving of 180 GWh_{th} per year in fuel input.”

As per paragraph 1 of II.D. of appendix B of the UNFCCC defined simplified modalities and procedures for small-scale CDM project activities, ‘The aggregate energy savings of a single project may not exceed the equivalent of 60 GWh_e per year. A total saving of 60 GWh_e per year is equivalent to a maximal saving of 180 GWh_{th} per year in fuel input.’ The project activity is energy efficiency project and saving depends on the preheater system reducing the heat consumption using a modern kiln with a six-stage preheater. The reduction in heat consumption is 30 kcal/kg clinker, based on data provided by KHD Humboldt Wedag, the technology supplier, in the new cement line compared to a kiln with a five-stage preheater that is otherwise comparable (capacity, fuel etc.). Energy savings will not be greater than the threshold of 180 GWh_{th} per year in fuel input. Even under the assumption that the kiln produces without any interruption at full capacity the energy savings would be around 45 GWh_{th} per year in fuel input (30 Mcal/tClinker specific savings*3.500 tClinker/day*365 days/year* 1,163E-09 GWh_{th}/kcal). See also section B.2.

The baseline and emission reduction calculations from the project would be based on paragraphs 3 and 4 of appendix B (version 09, dated 18 May 2007) and the monitoring methodology would be based on guidance provided in paragraph 7 and 8 of II.D. of the same appendix B.

Technology applied to the project activity

CEMEX Mexico will work together with KHD Humboldt Wedag in order to build the new cement line facility at Yaqui plant. KHD Humboldt Wedag has been delivering key technologies for industrial processes for more than 140 years, a company that concentrates its efforts on the field of cement and processing technology.

The specific energy consumption of the kiln system depends directly on the number of stages in the preheater tower. Each stage added to the tower lowers the outlet temperature of the preheater, as more heat is transferred into the fresh raw meal, thus reducing the heat consumption.

As the residual heat of the gases leaving the preheater tower can be used to dry the raw meal, typically a balance has to be struck between heat consumption and the requirements for drying in the raw mill. However, in the case of the project activity the raw material from the quarry is so dry that this has no implication for the design of the preheater tower.

A.4.3 Estimated amount of emission reductions over the chosen crediting period:

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The GHG emission reductions for a 10 year crediting period for the new kiln at Yaqui cement plant are provided in Table 2.

Year	Annual estimation of emission reductions in tonnes of CO ₂ e
2008	8.481
2009	14.538

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2010	14.538
2011	14.538
2012	14.538
2013	14.538
2014	14.538
2015	14.538
2016	14.538
2017	14.538
2018	6.058
Total estimated reductions (tonnes of CO₂ e)	145.380
Total number of crediting years	10 Years
Annual average over the crediting period of estimated reductions (tonnes of CO₂ e)	14.538

Table 2. Emission reductions for the new kiln at Yaqui cement plant

A.4.4. Public funding of the small-scale project activity:

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NA

A.4.5. Confirmation that the small-scale project activity is not a debundled component of a large scale project activity:

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According to paragraph 2 of *Appendix C of the Simplified Modalities and Procedures for Small-Scale CDM project activities*, a proposed small-scale project shall be deemed to be a debundled component of a large project activity if there is a registered small-scale CDM project activity or an application to register another small-scale CDM project activity:

- With the same project participants;
- In the same project category and technology / measure;
- Registered within the previous 2 years; and
- Whose project boundary is within 1 km of the project boundary of the proposed small scale activity at the closest point.

In view of mentioned points of de-bundling, Yaqui project activity is not a part of any of the above, therefore, considered as small scale CDM project activity.

SECTION B. Application of a baseline and monitoring methodology
B.1. Title and reference of the approved baseline and monitoring methodology applied to the small-scale project activity:

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AMS-II.D.: Energy efficiency and fuel switching measures for industrial facilities. (Version 09)

Reference: Appendix B of the simplified modalities and procedures for small-scale CDM project activities – Indicative Simplified Baseline and Methodology for Selected Small – Scale CDM Project Activity Categories.

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B.2 Justification of the choice of the project category:

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The project is Type II.D. Energy efficiency and fuel switching measures for industrial facilities in accordance to the Appendix B of the simplified M&P for small-scale CDM Project Activities. The project reduces the energy consumption in cement industry facility

Energy savings will not be greater than the threshold of 180 GWh_{th} per year in fuel input. Even under the assumption that the kiln produces without any interruption at full capacity the energy savings would be around 45 GWh_{th} per year in fuel input.

Clinker production	3.500 Ton clinker/day
Specific heat consumption reduction	30 Mcal/Ton clinker
Thermal energy savings	38.325E+6 Mcal/year
	44.57 GWh _{th} /year

Table 3. Energy savings

The real savings will be only around 41 GWh_{th} per year in fuel input because the kiln is expected to produce at 90% of the theoretical capacity.

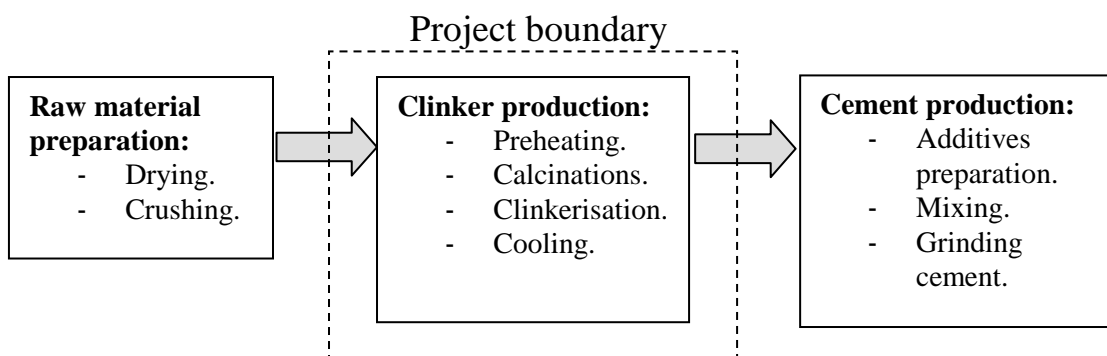
Based on above calculations it is clear that the project activity is well within the range of small scale project activity II.D.

B.3 Description of the project boundary:

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Boundary: Project boundary is the clinker kiln of the new cement line at CEMEX Yaqui plant.

The following diagram shows the project boundary:


B.4 Description of baseline and its development:

>>

As per paragraph 3 of II.D. of appendix B of the UNFCCC defined simplified modalities and procedures for small-scale CDM project activities, 'In the case of replacement, modification or retrofit measures, the baseline consists of the energy baseline of the existing facility or sub-system that is replaced, modified or

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retrofitted. In the case of a new facility the energy baseline consists of the facility that would otherwise be built'. The energy baseline consists of the energy consumption of the five – stage preheater kiln facility that would otherwise be built under the circumstances of the project location. IPCC emission coefficients are used for the fossil fuel saved.

In order to determine the baseline emissions, KHD provided an analysis of the specific heat consumption for clinker production comparing 4, 5 and 6 stage preheaters. It is based on the same conditions, i.e. raw materials, fuels, other equipment, etc. It therefore provides a good representation of the influence the preheater tower takes on the heat consumption, or energy efficiency, meaning that while the absolute consumption will depend on the factors mentioned specific savings of a six-stage preheater versus a five-stage preheater are constant. According to the study results using a six-stage preheater kiln reduces the specific heat consumption by 30 kcal/kg clinker compared to a five-stage preheater kiln.

The information regarding baseline and project data are presented in the table below:

Variable	Parameter	Data source
Baseline Scenario		
1	Specific heat consumption for the five-stage preheater kiln facility.	Calculated
2	Specific heat consumption reduction	Technology supplier
Project Scenario		
3	Clinker production	Plant records
4	Fuel used in clinker manufacturing	Plant records
5	Heating value of the fuel used	Plant records
6	Emission factor of the fuel used	Default emission factor from IPCC

Table 4. Baseline information

B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered small-scale CDM project activity:

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In accordance with paragraph 3 of simplified modalities and procedures for small-scale CDM project activities, a simplified baseline and monitoring methodology listed in Appendix B may be used for small-scale CDM project activity if project participants are able to demonstrate to a designated operational entity that the project activity would otherwise not be implemented due to the existence of one or more barrier(s) listed in Attachment A of Appendix B. These barriers are:

- Investment barrier.
- Technological barrier.
- Barrier due to prevailing practice.
- Other barriers.

The project would not be implemented without the additional revenues stream from the sale of the CERs because of two barriers:

Investment barrier:

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When comparing the five – stage preheater kiln (baseline) and the six – stage preheater kiln (project) the differential cash flow can be used to calculate the profitability of the additional sixth stage. The net incremental investment of the project versus the baseline is 1.4 million of USD. The net impact on the variable costs is around 230,000 USD (mainly fuel savings, without inflation). With these numbers the IRR of the project is 5.06%. Considering CERs sales at the price of 15 USD/CER the IRR reaches 18.59%.

Net Savings (USD/year)	230,000
Additional investment (USD)	1,400,000
Project duration (years)	30
Income tax	30%
IRR (%) without CERs sales	5.06%
IRR (%) with CERs sales (15 USD/tCO ₂)	18.59%

Table 5. IRR information.

The low IRR of the “differential” project shows that without the CERs the five-stage preheater is the economic optimum. Extra income from CERs sales of between 5 to 25 USD/tCO₂ will bring the project's IRR to a reasonable level, and would make the project feasible. At the currently assumed level of price of CERs, the increase on the IRR of the project is 13.53%.

The main driver for performing a sensitivity analysis would be the price of the tCO₂ in organized markets.

The increment of the IRR for scenarios with different price of CER:

	Price of tCO ₂ (US\$/tCO ₂)				
	3	5	7	10	15
Project's IRR increment	8.10%	10.01%	11.84%	14.47%	18.59%

Table 6. Increase on IRR with different scenarios.

National policies and circumstances:

National and circumstances do not affect the project activity.

B.6. Emission reductions:

B.6.1. Explanation of methodological choices:

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The following equations will be applied for the emission reductions. Please note that calculations are restricted to combustion-related emissions as process-related emissions from the calcination of the raw meal are not affected by the project activity:

1. Project emissions:

Step 1. Calculate GHG emissions from the six-stage preheater kiln:

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$$PE = \sum (QF_i \times HV_i \times EF_i)$$

where:

- PE = GHG emissions from the six-stage preheater kiln (tCO_{2e}/yr)
 QF_i = monitored fuels input in clinker production for the project activity (tonnes/yr).
 HV_i = heating value(s) of the fuel(s) used (TJ/tonne fuel).
 EF_i = emission factor(s) of fuel(s) used (tCO_{2e}/TJ).

2. Baseline emissions:

Step 2. Calculate the project activity specific heat consumption.

$$SC_{PR} = \frac{\sum QF_i \times HV_i}{C_{PR}}$$

where:

- SC_{PR} = specific heat consumption for the six-stage preheater kiln (TJ/ton clinker)
 QF_i = monitored fuels input in clinker production for the project activity (tonnes/yr).
 HV_i = heating value(s) of the fuel(s) used (TJ/tonne fuel).
 C_{PR} = clinker production in the project activity (ton clinker/yr)

Step 3. Calculate the baseline specific heat consumption.

$$SC_{BL} = SC_{PR} + Es$$

where:

- SC_{BL} = specific heat consumption for the five-stage preheater kiln (TJ/ton clinker)
 SC_{PR} = specific heat consumption for the six-stage preheater kiln (TJ/ton clinker)
 Es = specific heat consumption savings originated by the sixth stage preheater tower compared to a five stage preheater tower. (TJ/ton clinker)

Step 4. Calculate GHG emissions from the five-stage preheater kiln:

$$BE = SC_{BL} \times C_{PR} \times EF_{wa}$$

where:

- BE = GHG emissions from the five-stage preheater kiln (tCO_{2e}/yr)
 SC_{BL} = specific heat consumption for the five-stage preheater kiln (TJ/ton clinker)
 C_{PR} = clinker production in the project activity (ton clinker/yr)

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EF_{wa} = the weighted average annual CO₂ emission factor (tCO_{2e}/TJ) for the fuel(s) consumed and monitored during the corresponding verification period (e.g. the period during which the emission reductions to be certified have been achieved).

3. Leakage emissions:

Not applicable as neither the energy efficiency technology is transferred from another activity nor is existing technology transferred to another activity, cf. paragraph 6 of appendix B of the simplified modalities and procedures for small-scale CDM project activities.

4. Emission Reductions

Total emission reductions are given by the following formula:

$$ER = BE - PE$$

where:

ER = GHG emissions reduction from the project activity (tCO_{2e}/yr)

BE = GHG emissions from the five-stage preheater kiln (tCO_{2e}/yr)

PE = GHG emissions from the six-stage preheater kiln (tCO_{2e}/yr)

B.6.2. Data and parameters that are available at validation:

Data / Parameter:	EF_i						
Data unit:	tCO ₂ /TJ						
Description:	Fuel emission factor						
Source of data to be used:	IPCC						
Value of data applied for the purpose of calculating expected emission reductions in section B.5	<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Ton CO₂/TJ</th> </tr> </thead> <tbody> <tr> <td>Fuel Oil</td> <td style="text-align: center;">77.3</td> </tr> <tr> <td>Petcoke</td> <td style="text-align: center;">97.5</td> </tr> </tbody> </table>		Ton CO₂/TJ	Fuel Oil	77.3	Petcoke	97.5
	Ton CO₂/TJ						
Fuel Oil	77.3						
Petcoke	97.5						
Justification of the choice of data or description of measurement methods and procedures actually applied :	Data archived: entire crediting period. IPCC default value.						
Any comment:	For each fossil fuel consumed during the crediting period						

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Data / Parameter:	Es
Data unit:	TJ/ton clk
Description:	Specific heat consumption savings originated by the sixth stage preheater tower compared to a five stage preheater tower.
Source of data to be used:	Technology supplier (KHD Humboldt Wedag)
Value of data applied for the purpose of calculating expected emission reductions in section B.5	1.254 E-4 TJ/ton clk
Justification of the choice of data or description of measurement methods and procedures actually applied :	Data archived: entire crediting period. Standard measurement procedures, value from technology supply
Any comment:	

B.6.3 Ex-ante calculation of emission reductions:
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See Annex 3

B.6.4 Summary of the ex-ante estimation of emission reductions:
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Total emission reduction during the crediting period: 145.380 tCO₂

Year	Estimation of project activity emissions (tonnes of CO ₂ e)	Estimation of baseline emissions (tonnes of CO ₂ e)	Estimation of leakage (tonnes of CO ₂ e)	Estimation of overall emission reductions (tonnes of CO ₂ e)
2008	199.292	207.772	0	8.481
2009	341.643	356.181	0	14.538
2010	341.643	356.181	0	14.538
2011	341.643	356.181	0	14.538
2012	341.643	356.181	0	14.538
2013	341.643	356.181	0	14.538
2014	341.643	356.181	0	14.538
2015	341.643	356.181	0	14.538
2016	341.643	356.181	0	14.538
2017	341.643	356.181	0	14.538
2018	142.351	148.409	0	6.058
Total (tonnes of	3.416.433	3.561.813	0	145.380

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CO2 e)				
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Table 7. Ex-ante estimation emission reductions.

The registration of the project will take place before its commissioning, so there will be no emission reductions prior to its registration

B.7 Application of a monitoring methodology and description of the monitoring plan:

B.7.1 Data and parameters monitored:

Data / Parameter:	C_{Pr}
Data unit:	Tonnes
Description:	Clinker production.
Source of data to be used:	Plant records (GrafOper)
Value of data applied for the purpose of calculating expected emission reductions in section B.5	1.149.750 tons/year (3.500 tons/day at 90% capacity utilization)
Description of measurement methods and procedures to be applied:	Instrument used: Weighing feeders. Recorded and calculated and reported monthly Data Archived: 2 years after the end of the crediting period.
QA/QC procedures to be applied:	Instrument should be calibrated according to manufacturer’s guidelines. All data is available and recorded according to ISO 9001 and ISO 14001 management systems.
Any comment:	

Data / Parameter:	QF_i
Data unit:	Ton
Description:	Fuels consumption
Source of data to be used:	Plant records.
Value of data applied for the purpose of calculating expected emission reductions in section B.5	See Annex 3.
Description of measurement methods and procedures to be applied:	Instrument used: Scale. Recorded continuously and reported monthly and adjusted according to stock change. Data Archived: 2 years after the end of the crediting period.
QA/QC procedures to be applied:	Instrument should be calibrated according to manufacturer’s guidelines. All data is available and recorded according to ISO 9001 and ISO 14001 management systems.

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Any comment:	
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Data / Parameter:	HV_i									
Data unit:	TJ/Tonne									
Description:	Heating value.									
Source of data to be used:	Plant records.									
Value of data applied for the purpose of calculating expected emission reductions in section B.5	<table border="1"> <thead> <tr> <th>Fuel Type</th> <th>kcal/kg</th> <th>TJ/ton</th> </tr> </thead> <tbody> <tr> <td>Fuel Oil</td> <td>9.920</td> <td>0.041</td> </tr> <tr> <td>Petcoke</td> <td>8.170</td> <td>0.0341</td> </tr> </tbody> </table>	Fuel Type	kcal/kg	TJ/ton	Fuel Oil	9.920	0.041	Petcoke	8.170	0.0341
Fuel Type	kcal/kg	TJ/ton								
Fuel Oil	9.920	0.041								
Petcoke	8.170	0.0341								
Description of measurement methods and procedures to be applied:	Instrument used: Calorimeter. Recording frequency: monthly. Data Archived: 2 years after the end of the crediting period.									
QA/QC procedures to be applied:	Instrument should be calibrated according to manufacturer's guidelines. All data is available and recorded according to ISO 9001 and ISO 14001 management systems.									
Any comment:										

Data / Parameter:	EF_i						
Data unit:	tCO ₂ /TJ						
Description:	Emission factor of fuels						
Source of data to be used:	IPCC						
Value of data applied for the purpose of calculating expected emission reductions in section B.5	<table border="1"> <thead> <tr> <th></th> <th>Ton CO₂/TJ</th> </tr> </thead> <tbody> <tr> <td>Fuel Oil</td> <td>77.3</td> </tr> <tr> <td>Petcoke</td> <td>97.5</td> </tr> </tbody> </table>		Ton CO ₂ /TJ	Fuel Oil	77.3	Petcoke	97.5
	Ton CO ₂ /TJ						
Fuel Oil	77.3						
Petcoke	97.5						
Description of measurement methods and procedures to be applied:	For each fossil fuel consumed during the crediting period.						
QA/QC procedures to be applied:	Not applicable.						
Any comment:							

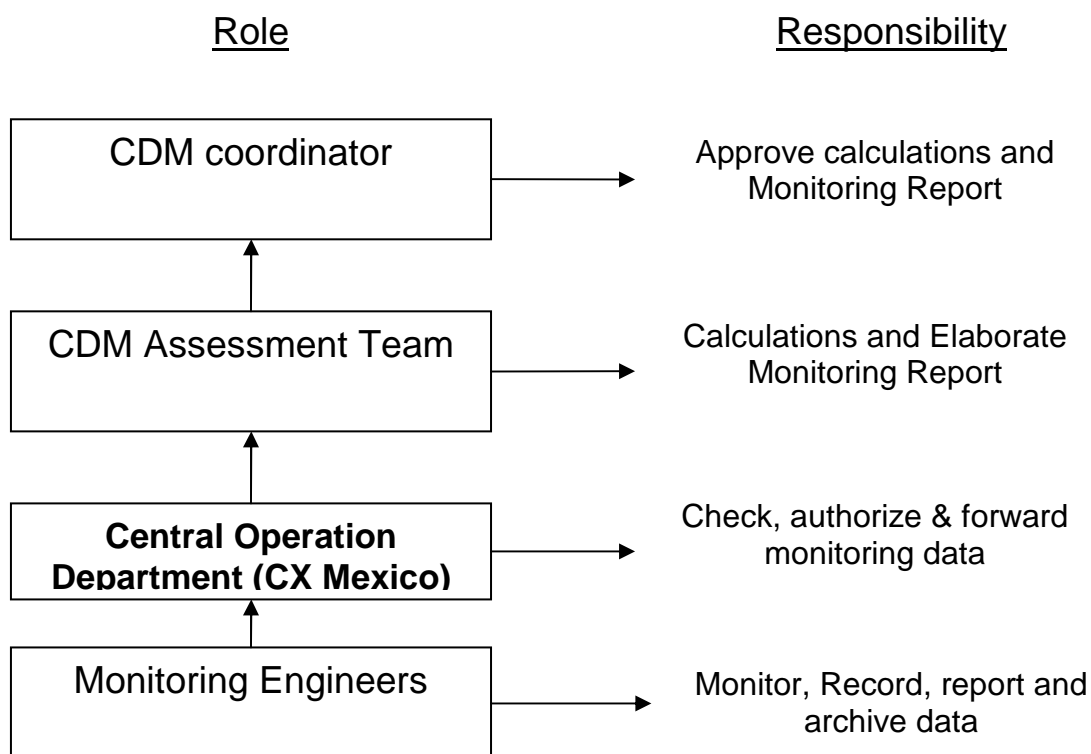
B.7.2 Description of the monitoring plan:
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The project meets the applicability criteria under the monitoring methodology for the **category II.D. – Energy efficiency and fuel switching measures for industrial facilities.**

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This figure describes the operational and management structure that will monitor emissions reductions generated by the project activity.



Emission Monitoring and Calculation Procedure	
Data Source and collection	Data are taken from plant records.
	Most data are available and registered according to the existing data management system (GrafOper and SICA).
	Frequency of data is based on existing data management system.
	Data are monitored by monitoring engineers for Yaqui cement plant. All data are reviewed by Operations Department. In the plant the role of monitoring engineer is assigned to the person that is responsible for the proper management of all operational data at the plant.
Data compilation	Data from Yaqui cement plant is centralised at Monterrey.
	Data is collected by CDM Team
Emission calculation and Monitoring Report	Emission calculations are conducted on yearly basis from data which is collected daily, monthly or annually, depending on the nature of the data.
	All data is transcribed by CDM Team, using a excel spreadsheet. Monitoring Report will be elaborated from calculations by CDM Team.

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Emission data review and approval	Calculation and Monitoring Report is reviewed and approved by CDM coordinator.
Record keeping	All data will be recorded electronically. Monitoring engineers are responsible for record keeping.

B.8 Date of completion of the application of the baseline and monitoring methodology and the name of the responsible person(s)/entity(ies)

>>

Date of completion: July 2007

Alexander Röder
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SECTION C. Duration of the project activity / crediting period
C.1 Duration of the project activity:
C.1.1. Starting date of the project activity:

>>

01/05/2008

C.1.2. Expected operational lifetime of the project activity:

>>

50 years

C.2 Choice of the crediting period and related information:
C.2.1. Renewable crediting period

>>

NA

C.2.1.1. Starting date of the first crediting period:

>>

NA

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C.2.1.2. Length of the first <u>crediting period</u>:
--

>>
NA

C.2.2. <u>Fixed crediting period</u>:
--

C.2.2.1. Starting date:

>>
01/05/2008

C.2.2.2. Length:

>>
10 years 0 month

SECTION D. <u>Environmental impacts</u>
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D.1. If required by the <u>host Party</u>, documentation on the analysis of the environmental impacts of the project activity:

>>
The project activity under consideration does not require any Environmental Authorization from the host country as it does not fall under the project category which requires mandatory EIA study for clearance. However the impact of the activity on the environment has been meticulously examined by the project proponent.

Direct reduction in GHG emissions: Clinker production is the main source of CO₂ emission in cement production. By the construction of the new cement kiln at Yaqui plant with a six-stage preheater tower, the CO₂ emissions are reduced proportionately due to the specific heat consumption reduction.

Resource conservation: The project activity conserves resources in the following way:

- Reduction of fossil fuels used for cement production.
- Reduction of the water consumption by the plant.

Thus, there are positive impacts from the project activity.

D.2. If environmental impacts are considered significant by the project participants or the <u>host Party</u>, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the <u>host Party</u>:

>>
Environmental impacts of the project activity are not considered significant by the project participants or the Host country.

SECTION E. <u>Stakeholders'</u> comments

>>

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E.1. Brief description how comments by local stakeholders have been invited and compiled:

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Stakeholder comments have been obtained through two routes:

- National stakeholders: The project participant has interviewed the following authorities and entities:
 - CANACEM (“*Cámara Nacional de Cementos*”) has been informed of the project activity. CANACEM has expressed a positive global opinion; it is in favour for the project implementation because it will contribute with several benefits such as the conservation of natural renewable and non-renewable resources, water consumption savings and CEMEX contribution to the international effort for sustainable development.
 - *Designated National Authority* (DNA). Under the terms proposed, the implementation of the project activity will contribute to the Mexico’s sustainable development. The DNA has expressed directly about the sustainability of the project where they found that there are no related environmental risks. Also the DNA considered that in addition to the GHG emissions reduction, the project implementation is convenient for the country because it increases the sector investment and competitiveness. The DNA is linked to SEMARNAT, México’s Environment and Natural Resources Secretariat.
- Local stakeholders: the local stakeholder consultation process was carried out as follows:
 - CEMEX Mexico invited different groups from Yaqui cement plant local community: neighbours, personnel of the plant, local authorities, etc.
 - The project activity was presented to the local stakeholders.
 - After the presentation, doubts were cleared and CEMEX proceeded to give to each participant a questionnaire in which it was asked their opinion about the project, their concerns and if they agreed or not for CEMEX to develop this project.

E.2. Summary of the comments received:

>>

No objections were received by the project participant.

E.3. Report on how due account was taken of any comments received:

>>

All comments received by the stakeholders were positive. No suggestions concerning the project activity were received.

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Annex 1**CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY**

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Annex 2

INFORMATION REGARDING PUBLIC FUNDING

NA

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Annex 3

BASELINE INFORMATION

Please, refer to Section B.

Annex 4
MONITORING INFORMATION

The following figure describes the necessary equipments to meter the variables defined in Section B.7.

