CLEAN DEVELOPMENT MECHANISM
SIMPLIFIED PROJECT DESIGN DOCUMENT
FOR SMALL-SCALE PROJECT ACTIVITIES (SSC-CDM-PDD)
Version 02

CONTENTS

Revision history of this document

Version Number	Date	Description and reason of revision
01	21 January 2003	Initial adoption
02	8 July 2005	• 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>.

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

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

"Switching fossil fuels in an industrial facility" by Indorama Cement Ltd

Version: 1.0
Date: 25.12.2005

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

Indorama Cement Ltd. (IRCL) belongs to US$600 million Indorama SPL group having diversified business interests in chemical, textile and cements. The Group has manufacturing facilities in Indonesia, Thailand, **India**, Turkey, Sri Lanka and marketing offices in Europe, Africa, Latin America, Hong Kong and Singapore. IRCL has a cement manufacturing capacity of 0.972 MTPA at Raigarh, Maharastra. IRCL is catering to cement demand in western India (mainly to state of Maharashtra). IRCL is the only cement company in the western region of India to produce Portland Slag Cement (PSC).

In the project activity IRCL is using waste fuel gases from the blast furnace, herein after referred to as Blast Furnace Gas (BFG), from neighbouring steel plant as fuel in Hot Air Generator (HAG).Prior to start of the project activity LDO was used for HAG, hence the project activity displaces use of LDO as fuel. The project activity results into reduction in GHG emissions associated with LDO burning. For utilising BFG as fuel IRCL has installed system for carrying the BFG from steel plant to its unit along with complete set of gas train arrangement and dual fired HAG has also been installed.

Hot air is required for drying the clinker, slag & gypsum to the permissible limits before grinding to make PSC. For drying the clinker, slag & gypsum IRCL uses hot air generated in a hot air generator where LDO was burned as fuel to meet the thermal energy demand. In the project activity IRCL uses waste BFG as fuel displacing LDO consumption. The project activity largely depends on the availability of BFG from the steel plant, which is in no way under the control of IRCL. Any investments in the project activity thus carry an inherent risk of not getting enough BFG. There is also a risk of not getting proper quality BF gas which increases uncertainties in the cement production process.

Sustainable Development:
Proposed CDM project activity has following sustainable development aspects:

Social well being:
The project activity helps in reduction of GHG emissions which otherwise would have generated from LDO burning in HAG. It also helps in conservation of natural resources i.e. LDO contributing towards energy security of the nation to some extent. The project activity has also generated employment opportunities during installation, operation and maintenance for the same.

Economic well being:
Since this project activity is first of its kind to be started in a cement industry, successful implementation will encourage similar kind of projects and funding for R&D of technological improvements.

Environmental well being:

Activities during construction & operation did not affect the bio-diversity in the region. There is no impact on soil, water quality, and forest cover due to the power project. Use of waste energy in place of fossil fuel has also helped in conservation of the natural resource. Avoidance of LDO as a fuel helps in reduction of Greenhouse gas emissions.

Technological well being:
The technology used in the cement plant is well proven and safe. Success of project activity will further encourage efforts in improving the involved machinery and technology.

A.3. Project participants:

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)
Government of India	Indorama Cement Ltd.	No

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

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

A.4.1.1. Host Party(ies):

Host Country: India

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

State of Maharashtra

A.4.1.3. City/Town/Community etc:

Village : Khar Karvi
Taluka : Pen
District: Raigarh

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

The plant is situated at Khar Karvi near Pen in Raigarh district, about 75 km from Mumbai in Maharashtra.

18° 39' North, 72° 55' East

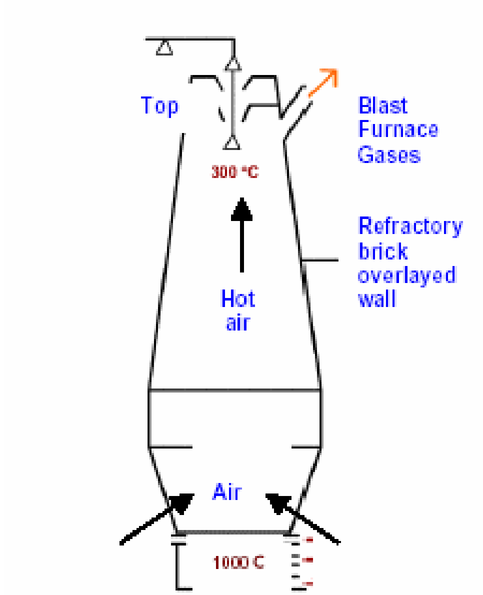

GUJARAT
MADHYA PRADESH
MAHARASHTRA
ANDHRA PRADESH
KARNATAKA
DADRA AND NAGAR HAVELI
DAMAN
VINDHYA RANGE
SATPURA RANGE
AJANTA RANGE
BALAGHAT RANGE
WESTERN GHATS
EASTERN GHATS
Arabian Sea
Gulf of Khambhat
Bay of Bengal
Vadodara
Bhavnagar
Surat
Navsari
Daman
Silvassa
Mumbai
Thane
Bhiwandi
Kalyan
Ulhasnagar
Alibag
Pune
Chinchwad
Nashik
Aurangabad
Ahmadnagar
Nagpur
Hyderabad
Satara
Ratnagiri
Kolhapur
Sholapur
Raigarh
North
50 Miles
50 Kilometres
DHARMJAIGARH
LAILUNGA
GHARGHODA
TAMNAR
KHARSIA
RAIGARH
PUSAUR
SARANGARH
SARAI LENGHA [BARAM

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

The project is a small scale CDM project activity. The project activity uses approved methodology for small scale activities AMS "**TYPE III-B: Switching fossil fuels"** of Appendix B of the simplified modalities and procedures for small-scale CDM project activities. As per category IIIB, the project activity should directly emit less than 15 kilo tones per annum. The project activity results into direct emissions below 15 kilo tones per annum.

IRCL produces Portland Slag Cement (PSC) and Ground Granulated Blast Furnace Slag (GGBS) in the plant (Blast furnace slag is procured from nearby steel plant). The production processes require drying of slag and clinker, the main constituents for manufacturing PSC & GGBS. The drying of slag, clinker and gypsum is done with hot air, which is generated in a Hot Air Generator (HAG). The fuel used in HAG in the normal course is LDO which is carbon intensive and results into GHG emissions when burned. In the project activity IRCL uses waste blast furnace gases (BFG) in place of LDO as fuel. To carry BFG from the steel plant, IRCL has installed a network of pipes and ducts along with complete set of gas train arrangement and dual fired HAG has also been installed.

A.4.3. Brief explanation of how the anthropogenic emissions of anthropogenic greenhouse gas (GHGs) by sources are to be reduced by the proposed small-scale project activity, including why the emission reductions would not occur in the absence of the proposed small-scale project activity, taking into account national and/or sectoral policies and circumstances:



A typical diagram of Blast furnace (source of BFG)

The blast furnace gas coming out of the top, with un-burnt component, which in normal circumstances is flared, is used as a fuel in place of LDO in Hot Air Generator (HAG). The greenhouse gas considered in the baseline calculations is CO2 from LDO burning.

The project activity has resulted in avoidance of LDO burning for hot air generation. LDO burning results in GHG emissions and thus cutting on consumption of LDO thereby the project activity has helped in reduction of GHG emissions. In the absence of project activity IRCL would have continued generating hot air using LDO burning in hot air generator.

The project activity faces many barriers such as financial and operational to implementation and would not have come-up without accounting for CDM benefits. Also as an environmentally conscious company IRCL wants to promote cleaner technologies.

The total of GHG emissions reduction from the project activity in tones of CO2 equivalent = 106,000 tCO2e over the crediting period of 10 years.

A.4.3.1 Estimated amount of emission reductions over the chosen crediting period:

Years	**Annual estimation of emission reductions in tones of CO2 e**
Apr 06- Mar 07	10600
Apr 07- Mar 08	10600
Apr 08- Mar 09	10600
Apr 09- Mar 10	10600
Apr 10- Mar 11	10600
Apr 11- Mar 12	10600
Apr 12- Mar 13	10600
Apr 13- Mar 14	10600
Apr 14- Mar 15	10600
Apr 15- Mar 16	10600
Total estimated reductions (tonnes of CO2 e)	106000
Total number of crediting years	10 years fixed crediting period
Annual average over the crediting period of estimated reductions (tonnes of CO2e)	10600

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

No public funding for the project activity.

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

As per Appendix C of the Simplified Modalities and Procedures for Small-Scale CDM project activities – "A proposed small-scale project activity 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; and
- 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"

The project activity is not a de-bundled component of a large project activity as –

There is no small scale CDM project activity or an application registered by IRCL, in the same project category in the last two years within 1 km of the project boundary of the proposed small-scale project activity.

SECTION B. Application of a baseline methodology:

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

The project is a small scale CDM project activity. It is based on "**TYPE III-B: Switching fossil fuels"** of Appendix B of the simplified modalities and procedures for small-scale CDM project activities.

B.2 Project category applicable to the small-scale project activity:

As described in category TYPE III-B "*This category comprises fossil fuel switching in existing industrial, residential, commercial, and institutional or electricity generation applications. Fuel switching may change efficiency as well. If the project activity primarily aims at reducing emissions through fuel switching, it falls into this category. If fuel switching is part of a project activity focused primarily on energy efficiency, the project activity falls in category II.D or II.E. Measures shall both reduce anthropogenic emissions by sources and directly emit less than 15 kilo-tonnes of carbon dioxide equivalent annually*."

The project activity from IRCL is a fuel switch project where LDO has been replaced by BFG from nearby steel plant. The project activity helps in GHG emissions reduction associated with LDO burning. It directly emits emit less than 15 kilo-tonnes of carbon dioxide as required by the category applied.

B.3. 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:

Proposed project activity is eligible to use simplified methodologies as

- It conforms to project category in "Appendix B of the simplified modalities & procedures for small scale CDM-project activities under AMS TYPE IIIB– "***Switching fossil fuels***"
- Measures have reduced anthropogenic emissions by sources and direct emissions are less than 15 kilo-tonnes of carbon dioxide equivalent annually.
- It is not a debundled component[1] of a larger project activity, as it qualifies guidelines in "appendix C to the simplified M&P for the small-scale CDM project activities for guidance on how to determine whether the proposed project activity is not a debundled component of a larger project activity"

Establishing Baseline

[1] Refer section A.4.5

Project Alternatives:

Scenario 1: Continuation of LDO burning in hot air generation
This is a continuation of existing practice. This scenario faces no barriers hence it is the most probable option.

Scenario 2: Installation of system for utilising the waste blast furnace gases as fuel in hot air generator in project activity.

In Scenario 2 IRCL with no prior experience in running this kind of operations, installed new HAG for dual firing and a dedicated line from M/s Ispat to bring in BFG.

Additionality of the project activity has been established as per the guidelines suggested in Attachment A to Appendix B.

- ***Financial/economical*** *– This barrier evaluates the viability, attractiveness and financial and economic risks associated with each scenario, considering the overall economics of the project and/or economical conditions in the country.*

- ***Technical/technological*** *– This barrier evaluates whether the technology is currently available, if there are indigenous skills to operate it, if the application of the technology is a regional, national or global standard, and generally if there are technological risks associated with the particular project outcome being evaluated.*

- ***Prevailing business practice*** *– This barrier evaluates whether the project activity represents prevailing business practice in the industry. In other words, this barrier assesses whether in the absence of regulations it is a standard practice in the industry, if there is experience to apply the technology and if there tends to be high-level management priority for such activities.*

Financial Barrier:

In Scenario 1 IRCL would have continued use of LDO without requiring replacement of HAG for dual firing system. In this scenario there would have been no additional investment requirement. However for scenario 2 there is additional investment required in setting up new equipments, duel firing system, dedicated pipeline for transporting BFG to the cement plant, training of plant people for the operation of new system etc,

The project activity largely depends on the availability of BFG from the steel plant, which is in no way under the control of IRCL. Any investments in the project activity thus carry an inherent risk of not getting enough BFG.
There is also a risk of not getting proper quality BF gas which might hamper the cement production process.

Technological Barrier:

This was a new project for IRCL and it had no prior experience in running this kind of operations. Also, BFG from the steel plant is inconsistent in its quality as this is a waste gas from the blast furnaces of steel plant and the quality of BFG is not the controlling/critical performance parameter for the steel plant. There is variation in quality of BFG which leads to a number of operational problems associated in burning of BFG in HEG such as flame control in the burner, flame getting switched off at low pressure and low quantity, temperature controls etc. It also requires keener observations and working in maintaining the system.

Due to uncertain quantity and quality of BFG plant operation suffers leading to production loss. On the other hand use of LDO poses no problems to plant operations making it the best choice fuel option. However use of fossil fuel lead to GHG emissions and BFG is anyway flared in the atmosphere, to deal with these two problems it was decided to shift to BFG for heating purposes.

So the main technical troubles can be listed as

- Acquiring technical know how
- Uncertainties related to BFG supply
- Operational problems due to BFG quality

However use of fossil fuel lead to GHG emissions and BFG is anyway flared in the atmosphere, to deal with these two problems it was decided to shift to BFG for heating purposes.

Prevailing Business/Common Practices Analysis

It is not a common practice in the region. It is not a common practice in the region. IRCL is the only plant of its kind in the state of Maharashtra which is producing PSC and utilising BFG from the steel plant.

Regulatory or policy requirements

There is no regulatory or policy requirement for installing systems for utilisation of BFG as fuel.

Summary

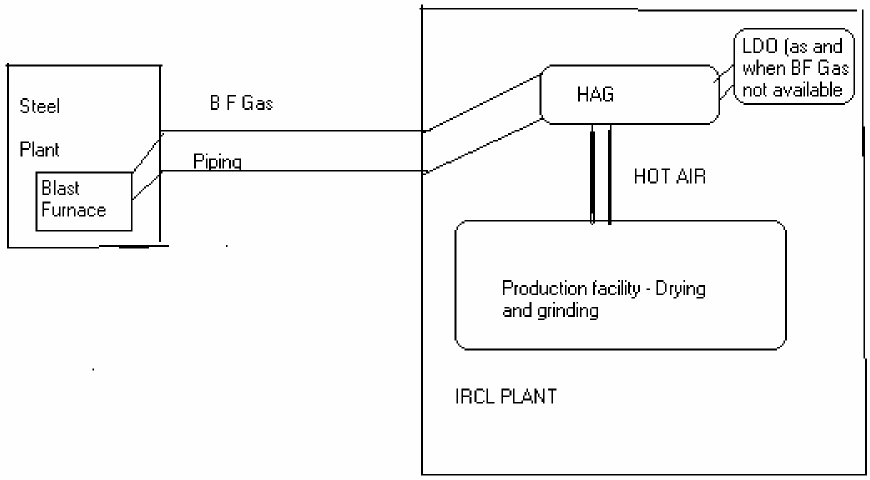
Barrier Evaluated	Scenario 1	Scenario 2
Financial/Investment Barrier	No	Yes
Technological Barrier	No	Yes
Prevailing Business Practice	No	First of its kind in the state

The proposed project activity is not a business-as-usual scenario and carries financial & technology risks and thus qualifies the additionality tests. The project activity is not a common practice in the region and also not mandated by law. These investment & technology barriers are due to poor availability and inconsistent quality of gas available which stall implementation of such type of project activity as evident by region's poor performance on account of fewer number of such installations. In the absence of the project activity IRCL would have continued with LDO for hot air generation to meet its thermal energy requirement.

B.4. Description of how the definition of the project boundary related to the baseline methodology selected is applied to the small-scale project activity:

"The project boundary is the physical, geographical site of the industrial facility, processes or equipment that is affected by the project activity".

This project boundary includes the production facility, Hot Air Generator (HAG), auxiliary equipments & machinery, piping and allied systems.



B.5. Details of the baseline and its development:

Please refer section B.3 for details of the key steps adopted for determining the baseline for the project activity.

Date of determining the baseline: 05.12.2005

Developed by:
Indorama Cement Ltd. (Also a Project participant)
207, Vardhman Chambers
Sector 17, Vashi, Navi Mumbai
Maharashtra
400 705

SECTION C. Duration of the project activity / Crediting period:

C.1. Duration of the small-scale project activity:

C.1.1. Starting date of the small-scale project activity:

Jan 2001

C.1.2. Expected operational lifetime of the small-scale project activity:

20 years

C.2. Choice of crediting period and related information:

C.2.1. Renewable crediting period:

-NA-

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

-NA-

C.2.1.2. Length of the first crediting period:

C.2.2. Fixed crediting period:

C.2.2.1. Starting date:

01.07.06

C.2.2.2. Length:

10 years

SECTION D. Application of a monitoring methodology and plan:

D.1. Name and reference of approved monitoring methodology applied to the small-scale project activity:

This comes under the Appendix B of the simplified modalities & procedures for small-scale CDM-project activities under Category IIIB– "***Switching fossil fuels***"

D.2. Justification of the choice of the methodology and why it is applicable to the small-scale project activity:

The project primarily aims at reducing emissions through displacement of LDO by BFG (Type IIIB) – the monitoring methodology and baseline are selected here as suggested in the document 'Simplified Modalities and Procedures for Small-Scale CDM project activities'

This project proposed to implement following monitoring methodology, this is inline with monitoring guidelines provided in appendix B: IIIB– ***Switching fossil fuels***

Project utilizes waste gas streams as fuel from blast furnace of the nearby steel plant in a hot air generator displacing fossil fuel LDO. .

D.3 Data to be monitored:

ID number	Data type	Data variable	Data unit	Measured (m), calculated © or estimated (e)	Recording frequency	Proportion of data to be monitored	How will the data be archived? (electronic/ paper)	For how long is archived data to be kept?	Comment
1.1	$Q_{LDO,,y}$	*Fuel*	KL	*Estimated/ calculated*	*Monthly*	*100%*	*Electronic*	*10 years*	*For baseline determination*
1.2	$COEF_{LDO}$	*Coefficient of Emission for LDO*	tCO2e/KL	*Calculated*	*Monthly*	*100%*	*Electronic*	*10 years*	*For baseline determination*
1.3	Q_{BFG}	*Quantity of BFG consumed in the year*	Nm3	*Measured*	*Monthly*	*100%*	*Electronic*	*10 years*	*For baseline determination; measured from the plant operations*
1.4	NCV_{BFG}	*Net calorific value of BFG*	Kcal/Nm3	*Estimated*	*Monthly*	*100%*	*Electronic*	*10 years*	*For baseline estimation; lab test data for BFG*
1.5	NCV_{LDO}	*Net calorific value of LDO*	Kcal/L	*Estimated*	*Yearly*	*100%*	*Electronic*	*10 years*	*For baseline determination; Lab test data for LDO*
1.6	EF_{LDO}	*Emission factor for LDO*	tCO2e/TJ	*Estimated*	*Yearly*	*100%*	*Electronic*	*10 years*	*For baseline IPCC default value*

D.4. Qualitative explanation of how quality control (QC) and quality assurance (QA) procedures are undertaken:

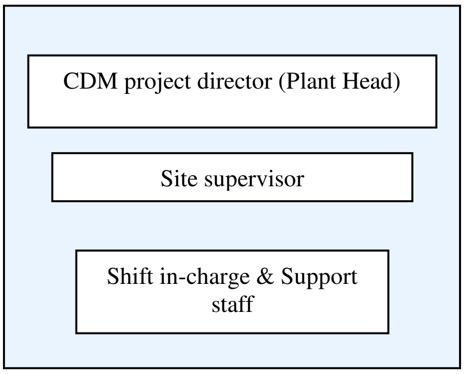
Data *(Indicate table and ID number e.g. 3.-1.; 3.2.)*	Uncertainty level of data (High/Medium/Low)	Explain QA/QC procedures planned for these data, or why such procedures are not necessary.
Table D.3 (ID numbers from 1.1-1.6)	Low	The data will be collected as part of normal plant level operations. QA/QC requirements consist of cross- checking these with other internal company report.

D.5. Please describe briefly the operational and management structure that the project participant(s) will implement in order to monitor emission reductions and any leakage effects generated by the project activity:

IRCL is an ISO certified company, and maintains all production/purchase/sales records as per audit guidelines. IRCL has procedures in place for operation and maintenance of the plant machinery, equipments and instruments and it maintains data on maintenance & calibration of the equipments. The equipments used for CDM project are also part of these procedures and document on maintenance and rectification done on all the monitoring equipments are maintained.

Organisational Structure:

A CDM project team is constituted with participation from relevant departments. People are trained on CDM monitoring plan. This team is responsible for data collection and archiving. This team meets periodically to review CDM project activity, check data collected, emissions reduced, etc. On a monthly basis, the monitoring reports are checked and discussed by the team. In case of any irregularity observed by any of the CDM team member, it is informed to the concerned person for necessary actions. On a periodic basis, these reports are forwarded to CDM project director.



CDM Project Director (Plant Head): Overall responsibility for compliance with the CDM monitoring plans.

Site Supervisor: Responsibility for completeness of data, reliability of data (calibration of meters), and monthly report generation

Shift In-charge: Responsibility of data collection

CDM Data Monitoring Plan

Quality Management System:
IRCL has an elaborate quality management system for the plant operations. Monitoring of BFG/LDO operated HAG quality management system will also be made part of this standard QMS.

Data to be monitored:
IRCL monitors data as described in section D3.

Data Collection Frequency:
The frequency for data monitoring is as per the monitoring details in Section D3.

Day to day data collection and record keeping:
Plant data is collected on operation under the supervision of the respective Shift-in-charge and record would be kept in daily logs.

Day Archiving:
Data is archived in electronic/paper form (as per AMS-IIIB) and is kept for crediting period + 2 years.

Calibration/Maintenance of Measuring and Analytical Instruments:
All measuring and analytical instruments are being regularly calibrated. All meters for measurement of calorific value and quantity of fuel being used are to be calibrated every month as per internationally accepted norms. Maintenance is done as per in IRCL's Quality management system procedures.

Training of CDM team personnel:
The CDM team is conversant with CDM concepts and data monitoring plan.

Internal audits of CDM project compliance:
CDM audits are carried out to check the correctness of procedures and data monitored by the internal auditing team entrusted for the work. Report on internal audits done, faults found and corrective action taken shall be maintained and kept for external auditing.

Emergency preparedness:
The cement plant has a well documented emergency preparedness plan. The project activity does not result in any unidentified activity that can result in substantial emissions from the project activity. Hence there no major need for emergency preparedness in data monitoring is expected.

Report generation on monitoring:
After verification of the data and due diligence on corrective ness if required an annual report on monitoring and estimations shall be maintained by the CDM team and record to this effect shall be maintained for verification.

Sustainable Development Indicators Monitoring:
The CDM project activity leads to following improvement sustainable development for the society
- GHG reduction (Monitoring plan elaborated above)
- Employment Generation: IRCL maintains data regarding employees involved in plant construction, plant operations & maintenance.

D.6. Name of person/entity determining the monitoring methodology:

Indorama Cement Ltd.
207, Vardhman Chambers
Sector 17, Vashi, Navi Mumbai
Maharashtra
400 705

SECTION E.: Estimation of GHG emissions by sources:

E.1. Formulae used:

NA

E.1.1 Selected formulae as provided in appendix B:

NA

E.1.2 Description of formulae when not provided in appendix B:

Applicable

E.1.2.1 Describe the formulae used to estimate anthropogenic emissions by sources of GHGs due to the project activity within the project boundary:

No project emissions.

E.1.2.2 Describe the formulae used to estimate leakage due to the project activity, where required, for the applicable project category in appendix B of the simplified modalities and procedures for small-scale CDM project activities

Not required as per the methodology adopted.

E.1.2.3 The sum of E.1.2.1 and E.1.2.2 represents the small-scale project activity emissions:

Zero

E.1.2.4 Describe the formulae used to estimate the anthropogenic emissions by sources of GHGs in the baseline using the baseline methodology for the applicable project category in appendix B of the simplified modalities and procedures for small-scale CDM project activities:

$BE_y = Q_{LDO} * COEF_{LDO}$

Where;

BE_y=Baseline emissions in the year y, tCO2e/y

Q_{LDO}=Quantity of LDO saved on account of BFG burning in the year y, KL

$COEF_{LDO}$=Carbon emission factor of LDO, tCO2e/KL

$Q_{LDO} = Q_{BFG} * NCV_{BFG} / NCV_{LDO}$

Where;

Q_{LDO}= Quantity of LDO saved on account of BFG burning in the year y, KL

NCV_{LDO}= Net Calorific value of LDO, kcal/l

Q_{BFG}= Quantity of BFG utilized in the year y, Nm3

NCV_{BFG}=Net Calorific value of BFG, kcal/Nm3

$COEF_{LDO} = NCV_{LDO} * K * OXID * EF_{LDO} / 1000/ 1000$

Where;

$COEF_{LDO}$=Carbon emission factor of LDO, tCO2e/KL

NCV_{LDO}= Net Calorific value of LDO, kcal/l

K=Conversion factor = 4.187, kJ/kcal

OXID= Oxidation factor for LDO, 0.990

EF_{LDO}=Emission factor for LDO, tCO2/ TJ

E.1.2.5 Difference between E.1.2.4 and E.1.2.3 represents the emission reductions due to the project activity during a given period:

$ER_y = BE_y - PE_y - L_y$

ER_y = Effective Reduction in emissions in year y

BE_y = Emissions in baseline scenario in year y

PE_y = Emissions in project scenario in year y

L_y = Leakages in project activity in year y

E.2 Table providing values obtained when applying formulae above:

SN	Operating Years	Baseline Emissions (tCO2)	Project Emissions in Sources (tCO2)	Leakages (tCO2)	CO2 Emission Reductions (tCO2)
1.	Apr 06- Mar 07	10600	0	0	10600
2.	Apr 07- Mar 08	10600	0	0	10600
3.	Apr 08- Mar 09	10600	0	0	10600
4.	Apr 09- Mar 10	10600	0	0	10600
5.	Apr 10- Mar 11	10600	0	0	10600

SN	Operating Years	Baseline Emissions (tCO2)	Project Emissions in Sources (tCO2)	Leakages (tCO2)	CO2 Emission Reductions (tCO2)
6.	Apr 11- Mar 12	10600	0	0	10600
7.	Apr 12- Mar 13	10600	0	0	10600
8.	Apr 13- Mar 14	10600	0	0	10600
9.	Apr 14- Mar 15	10600	0	0	10600
10.	Apr 15- Mar 16	10600	0	0	10600
Total		106000	0	0	106000

SECTION F.: Environmental impacts:

F.1. If required by the host Party, documentation on the analysis of the environmental impacts of the project activity:

The project activity does not require any EIA to be done. However IRCL has conducted an internal assessment of the impacts that the project activity would have had on the environment.

The assessment was carried out on various aspects of environment i.e. air, water, soil. The study shows that the project activity has only positive impacts on environment in lesser quantity of GHGs emitted. The gases are conveyed from the steel plant to IRCL unit via pipes and there is no chance of any leakages.

Activities during construction & operation did not affect the bio-diversity in the region. There is no impact on soil, water quality, and forest cover due to the power project.

SECTION G. Stakeholders' comments:

The project activity helps in the sustainable development of the region by–

- Reducing the problems associated with handling, storage and disposal of the BFG generated in the nearby steel plants.
- Employment generation in plant operations & maintenance
- Conservation of the natural resources ie LDO
- Reduction in GHG emissions

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

IRCL has called for stakeholders' comments on the project activity on different levels i.e. district and village level through gram panchayat. IRCL has arranged a meeting with people from local community to discuss about the project activity. The meeting started with the welcome note and thereafter they were briefed about IRCL and the project activity. Comments/suggestions were invited from the participants.

G.2. Summary of the comments received:

There is no negative impact from any of the stakeholders' representatives for the project activity. More over the project activity has helped in the sustainable development of the region by solving to some extent the problem of BFG disposal for the neighbouring steel plant, conserving the invaluable natural resources and increasing employment for the local community.

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

There was no negative comment on the project activity from the stakeholders, hence no corrective action needed.

Annex 1

CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY

Organization:	Indorama Cement Ltd.
Street/P.O.Box:	207
Building:	Vardhman Chambers
City:	Sector 17, Vashi, Navi Mumbai
State/Region:	Maharashtra
Postfix/ZIP:	400 705
Country:	India
Telephone:	91 22 2789 6004/ 07
FAX:	91 22 2789 6010/6020
E-Mail:	irclvashi@indorama.co.in
URL:	www.indorama.co.in
Represented by:	
Title:	DGM-Finance
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Annex 2

INFORMATION REGARDING PUBLIC FUNDING

No Public Funding available for this project.

Annex 3

Glossary of terms	
UNFCCC	United Nations Framework Convention on Climate Change
DNA	Designated National Authority
MoEF	Ministry of Environment & Forest
CDM	Clean Development Mechanism
IPCC	Intergovernmental Panel on Climate Change
CER	Certified Emissions Reduction
DOE	Designated Operational Entity
CEA	Central Electricity Authority
PSC	Portland Slag Cement
GGBS	Ground Granulated Blast Furnace Slag
HAG	Hot Air Generator
BFG	Blast Furnace Gas
IRCL	Indorama Cement Ltd.

Annex 4

References

cdm.unfccc.int	CDM website
Plant Operations data for IRCL	
Ministry of Environment & Forest- India	
Stakeholder consultation & EIA report	
HAG technical details	