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# Validation Report

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Client: Mitsubishi UFJ Securities Co., Ltd.

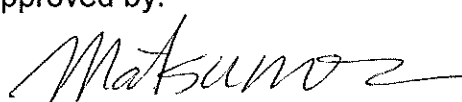
“Pure-low Temperature Waste Heat  
Recovery for Power Generation (2 x 7MW)  
in Guangdong Tapai Cement Co., Ltd.”

Project No. JQA-C0080  
(1812000091)

Date: 9 April 2009



JAPAN QUALITY ASSURANCE ORGANIZATION

Date of issue: 9 April 2009	Project No. JQA-C0080
Approved by:  Tsutomu Matsuno	Client: Mitsubishi UFJ Securities Co., Ltd

#### Summary:

This is the Validation Report for the project activity "Pure-low Temperature Waste Heat Recovery for Power Generation (2 x 7MW) in Guangdong Tapai Cement Co., Ltd.", proposed by Mitsubishi UFJ Securities Co., Ltd. and Guangdong Tapai Group Co., Ltd.

This project activity aims at reducing GHGs emissions by installing the waste heat recovery facilities with boilers at the front and rear of the cement kiln.

The approved baseline and monitoring methodology, ACM0012./Version 02 "Consolidated baseline methodology for GHG emissions reductions for waste gas or waste heat or waste pressure based energy system" is applied.

Japan Quality Assurance Organization (JQA) as a DOE conducted the validation on the basis of UNFCCC, Kyoto Protocol and relevant decisions of COP/MOP and CDM-EB.

The summary is as follows:

#### 1. Baseline and monitoring methodology

##### a) Applicability of the selected methodology

ACM0012 version 02 "Consolidated baseline methodology for GHG emission reductions for waste gas or waste heat or waste pressure based energy system" is selected.

The project activity is in conformance with all applicability conditions of the methodology.

##### b) Project boundary

Clearly delineated using flow diagram.

##### c) Baseline identification

Appropriately identified in accordance with the methodology.

##### d) Algorithms and/or formulae used to determine emission reductions

In the calculation of the emission factor of South China Power Grid, the value of each emission factor of fuel is used based on the Chinese DNA.

2. Additionality of the project activity
  - a) Prior consideration of the CDM
    - The Board decided at the meeting on 17/01/2006:
      - \* To start up the project activity ASAP and Longmen branch was authorized the all CDM-related work;
      - \* To commission Guangzhou Yulian Mechanism and Electron Co., Ltd. (Consulting Company) the CDM-related work, and to authorize Longmen branch to start the negotiation with Guangzhou Yulian Mechanism and Electron Co., Ltd. regarding the project development as CDM ASAP.
  - b) Barrier analysis
    - The investment barriers and technological barriers preventing the implementation of the project activity without the CDM are identified.
  - c) Common practice
    - The proposed project activity is not common in Guangdong, China (first-of-its kind in the region).
3. Monitoring plan
 

The monitoring plan is appropriate for the requirements of the methodology and tools. All necessary parameters are included in the section 7.1 and the monitoring system including data collection, data management and reporting is feasible.
4. Local stakeholder consultation
 

The procedures are appropriate.
5. Environmental impacts
 

The EIA has been conducted. And the approval was issued on 24/07/2006 by Guangdong Environmental Bureau of Guangdong Province.
6. Estimated anticipated reductions in tons of CO<sub>2</sub>: 67,040 t-CO<sub>2</sub>e/year

JQA confirmed that the project activity meets all relevant criteria. Through the Certification Committee deliberation, JQA determined the project activity to be valid as a CDM project activity.

Report No : JQA-C0080-VaR (Version 01)	Report Title: Pure-low Temperature Waste Heat Recovery for Power Generation (2 x 7MW) in Guangdong Tapai Cement Co., Ltd.	
Assessed by : Team Leader: Itaru Watanabe Member: Hiroshi Motokawa (UO)	Verified by: Leader: Dr. Ikuo Tamori Member: Dr. Hiroshi Kuribayashi (External)	

## Abbreviations

BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM-EB	CDM Executive Board
CER	Certified Emission Reduction
CL	Clarification Request
CM	Combined Margin
COP	Conference of the Parties
COP/MOP	Conference of the Parties serving as the Meeting of the Parties
DCS	Distributed Control System
DNA	Designated National Authority
EIA	Environmental Impact Assessment
GHG	Greenhouse Gas
GSP	Global Stakeholder Process
GWP	Global Warming Potential
IPCC	Intergovernmental Panel for Climate Change
ISO	International Organization for Standardization
JQA	Japan Quality Assurance Organization
LoA	Letter of Approval
MUS	Mitsubishi UFJ Securities Co., Ltd.
NDRC	National Development and Reform Commission
NGO	Non-governmental Organization
ODA	Official Development Assistance
OM	Operating Margin
PDD	Project Design Document
PP	Project Participant
QA/QC	Quality Assurance and Quality Control
SD	Sustainable Development
UNFCCC	United Nations Framework Convention on Climate Change
WHR	Waste Heat Recovery

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Appendix A: CDM Validation Checklist

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# 1 INTRODUCTION

## 1.1 Objective

The objective of the validation is to review whether the project activity is in conformance with the requirements defined by the UNFCCC, the Kyoto Protocol, CDM Modalities and Procedures and related decisions by COP/MOP and EB. The most important thing to be confirmed is to achieve GHGs emissions reductions against the baseline in along with the host Party's sustainable development policy.

## 1.2 Scope

The scope of this validation process is set as follows:

### a) Documentary

- UNFCCC
- Kyoto Protocol
- Relevant decisions of COP/MOP and CDM-EB including Validation and Verification Manual (Version 01)
- ACM0012 (Version 02): Sectoral Scope; 01 and 04
  - Requests for registration can be submitted until 15 Apr 09 23:59 GMT
- Tool to calculate the emission factor for an electricity system (Version 01)
- Tool for the demonstration and assessment of additionality (Version 05)
- PDD (Version 01) and PDD (Version 03)

### b) Physical

The project site (Huizhou Longmen Cement Plant)

### c) Organizational

- Guangdong Tapai Group Co., Ltd.

## 1.3 Validation Team

The validation team was assigned on 10 March 2008 based on the JQA CDM Quality Manual.

Team Leader:	Itaru Watanabe	JQA Certified CDM Lead Assessor
		(Certified sectoral scopes: 1,2,3,4,5,8,10,11,12,13)
Member:	Hiroshi Motokawa	Under Observation (Trainee)

The role and responsibility of the team leader is mainly to prepare the validation plan including the Desk Review, the Site-visit and related documentation and to manage the validation activities of the team. And the leader is responsible for stating the validation opinion and conclusion in the validation report.

The role and responsibility of the member is to implement the Desk Review and the Site-visit including the investigation and collection of background information and interviews with the project participants and related stakeholders, and also to indicate potential CARs and/or CLs through the validation activities.

A trainee, who is under observation, is not a team member formally. However, he/she may be required to assist the team activities under the instruction of the team leader.

JQA's CDM Quality Manual allows to assign only one assessor as a validation team, if the assessor is competent to the sectoral scope of the given project activity and has enough time to conduct the validation with the assistance of a trainee.

Itaru Watanabe, who is a team leader of the validation team, is a chemical engineer and qualified as a lead assessor of CDM. He worked as a lead assessor for environmental management systems (ISO 14001) in JQA and has been engaged in validation of CDM projects. He validated the Nubarashen LFG project in Yerevan, Armenia (Ref. No. 69) as a team leader, through which the sectoral scopes of (1) and (13) were accredited to JQA. He has participated in several validations of the CDM projects of LFG/methane gas recovery and power generation, factory energy efficiency improvement and HFC23 decomposition.

## **2 VALIDATION PROCESS**

The validation process of JQA consists of the following phases:

- 1) Desk Review of the PDD
- 2) Background Investigations including the Site-visit and interviews with governmental officials and stakeholders
- 3) Resolution of clarification requests (CLs) and corrective action requests (CARs), if any
- 4) Preparation of the Validation Report

The PDD shall be submitted to the EB for inviting the public stakeholders' comments immediately after the check for the completeness of the PDD received. If JQA receives any public comments, the comments are informed to the project participants and the CDM secretariat for uploading them on the UNFCCC website.

In the validation, the CDM Validation Checklist (Appendix A) is utilized as a tool of the validation. The checklist serves the following purposes:

- It organizes, details and clarifies the requirements a CDM project is expected to meet; and
- It ensures a transparent validation process by inducing the validator to document how a particular requirement has been validated and which conclusions have been reached;

Problems or findings identified in the process are indicated under the titles "CAR" (Corrective Action Request) and "CL" (Clarification Request) in the checklists.

CAR requires the project participants to take some corrective actions or others without fail, while CL indicates that it is desirable that the project participants take some corrective actions or others though not mandatory. The validation process does not provide the project participants with any consulting service, but if they take justifiable and appropriate corrective action for CAR and CL items included in this report, such action will clearly contribute to substantial improvement of PDD. Criteria for judging problems as CAR or CL are as follows:

The criteria for CL and CAR are as follows:

<CAR (Corrective Action Request)>

- a) Non-compliance with laws and regulations of the host country;



b) Non-conformance with requirements defined by the UNFCCC, COP/MOP, Kyoto Protocol, Decision 3/CMP.1, EB; or

c) Items, which would affect CER calculation significantly.

<CL (Clarification Request)>

a) Insufficient description from the view of accuracy, reliability, completeness and /or consistency;

b) Vague expressions

Finally, all the CARs and CLs are resolved through the project participant's correspondences to those. Such correspondences are commented in italics in the checklist.

## 2.1 Schedule

The process was implemented as follows:

- 11 April 2008: Start of GSP on the UNFCCC website (PDD Version 01)
- 02 May 2008: Preparation of the Checklist
- 07 - 08 May 2008: Site-visit to the Project site
- 10 May 2008: End of GSP (No comment received)
- 16 May 2008: Desk Review Report
- 06 June 2008: Site-visit Report
- 14 November 2008: Revised Checklist, taking into account EB 41 decisions
- 18 November 2008: Revised PDD (Version 02)
- 26 February 2009: Revised PDD (Version 03)
- 10 March 2009: Draft Validation Report
- 18 March 2009: Certification Committee

## 2.2 Desk Review of Documents

The Desk Review is conducted using by the CDM Validation Checklist (Appendix A), which is prepared for a CDM project activity originally by JQA.

The main purposes of the Desk Review are as follows:

- Confirm the completeness of the PDD in accordance with the “Guidelines for Completing the PDD (CDM-PDD), Version 7” including “Glossary of CDM terms (Version 04)”
- Review the PDD in order to judge the conformity of the project activity against the requirements
- Collect information regarding the project activity from an independent source for verification, if necessary
- Identify the issues at the Site-visit

And also, it focuses on:

- Justification and appropriateness of the baseline and monitoring methodologies for the proposed project
- Transparency and conservativeness of the assumptions for the baseline
- Technological, political, socio-demographic and environmental and legal aspects and trends relevant to the proposed project
- Additionality of the proposed project
- Appropriateness of the calculation of GHG emission reductions

- Responsibility and authority for monitoring, measurement and recording activities in the monitoring plan including quality control and quality assurance

## **2.3 Background Investigations**

The background investigations include the Site-visit to the project site and the interviews mainly with the key persons in the host country including local project participants and governmental officials.

On this process, the followings are investigated:

- SD policy in the host country including Environmental Impact Assessment
- CDM approval and authorization procedures by DNA
- Technologies related to the project activity in the host country

## **2.4 Resolution of Clarifications and Corrective Action Requests**

The project participants are requested to respond how to resolve the CLs and CARs pointed out in the Desk Review Report and the Site-visit Report.

Though resolving the CLs and CARs, the project participants revise the PDD and submit it to JQA.

## **2.5 Internal Quality Control**

The manager of CDM/JI Assessment Division organizes the validation team after considering the expertise of the project, the assessor qualification suitable for the technical and regional aspects of the project, and the knowledge of environmental laws and regulations in the host country. Through the validation process, the validation team establishes the draft validation report including draft conclusion. The team leader of the validation team submits the documents including the outline of the validation result and the conclusion of the team to the Certification Committee of JQA, as a function to ensure that the validation is appropriately carried out. The Certification Committee, upon receipt of the draft validation report from the team, deliberates appropriateness of the validation and its procedures, and reports the result of judgment to the Senior Executive of JQA. Finally the Senior Executive decides the validity of the project activity as DOE.

## **3 VALIDATION FINDINGS**

As mentioned in the section 2: Validation Process, the validation findings are normally summarised as the result of Desk Review of the PDD and the background investigation including the site-visit (1st stage).

For this project activity, the validation team issued an additional/revised checklist, taking into account the key Guidance documents issued at EB 41 and EB44 (2nd stage).

- \* Guidelines for Completing the CDM-PDD, Version 07
- \* Guidance on the Assessment of Investment Analysis: (Version 02)
- \* GUIDANCE ON THE DEMONSTRATION AND ASSESSMENT OF PRIOR CONSIDERATION OF THE CDM
- \* CLEAN DEVELOPMENT MECHANISM VALIDATION AND VERIFICATION MANUAL (Version 01)

**(a) Findings at the 1st stage**

**1) Desk review for the PDD Version 01**

➤ **CAR**

There is one CAR raised:

- The values of EFs are not consistent with the requirement of the “Tool to calculate project emissions from electricity grid”.
  - This issue was resolved as follows:  
*JQA received the comment on “Baseline Emission Factors for Regional Power Grids in China” from NDRC on 09/02/2009. The EFs in the PDD is in line with the comment.*

➤ **CLs**

There are several CLs found. The details are provided in Table 2 of the CDM Validation Checklist (Appendix A). The followings are key issues among CLs:

- Technological barriers (Checklist B.5)  
How and why the CDM incentives alleviate the technological barriers identified should be explained..
  - *The description was added in the revised PDD (Version 03).*
- Editorial errors  
There are some inconsistency in the values of  $Q_{WG,y}$  section by section.
  - *These issues were corrected in the revised PDD (Version 03).*

**2) Site- visit**

There were a lot of N/A issues at Desk Review and they were checked and confirmed at Site-visit as followings:

➤ **Meeting with local governmental officials**

- An official of Economic & Trade Bureau, Longmen County demonstrated that this project is strongly supported by the government, while there is no financial incentive provided. And this is the “first its kind” in Huizhou City and a lot of cement manufacturers visited here for their studies of energy saving activities.
- An official of Environmental Protection Bureau, Longmen County expressed the project activity has no negative environmental impact on surrounding area including local residents and supports the activities relating to the project.
- An official of Electric Power Bureau, Longmen County said the Electric Power Bureau, Longmen County accepted the connection of the electric power generated by Tapai cement with the grid after checking its quality. In China, the agreement with power producers and grid operators must be required even if the producers do not export to the grid in case there is the import from the grid.

➤ **Meeting with PPs and observation of the project site**

- The clinker production line No. 1 was not in operation due to the regular maintenance and the No. 2 is under installation for the Waste Heat Plant

(WHR) as a part of CDM project activity.

- At present, there is no flow meter for direct measurements of waste heat, while the meters are to be set in a few months.
- DCS for each WHR has been installed and the trial operation for No. 1 line had been done.
- All necessary operation data and information is to be obtained through the DCS.
- The recording system is established and every data is to be archived for three months at least. For more long time, those data are to be archived on CD-ROM and/or hard disks.
- The validation team was not able to observe the release of waste heat into atmosphere from the existing facility (No. 1 line) due to the regular maintenance. In order to meet one of applicability conditions regarding the utilization of waste heat at present, any other evidence shown in ACM0012 shall be provided. PPs agreed to provide such evidence. (CL)
  - *The following documents were provided and CL was resolved:*
    - *Feasibility Study for 2 x 4500 t/d Cement Clinker Production Lines (Longmen Site) of Guangdong Tapai Cement Co., Ltd (Engineering No: N269, August 2005)*
    - *Acceptance Monitoring Report of Environmental Protection for Completion of Project for 2 x 4500 t/d Dry Rotary Kilns Cement Production Lines (Line Number 1) (Environmental Monitoring Center, Guangdong Province, February 2008)*
    - *Flow diagram of the kiln and its operation data dated on 28 & 29 May, 2008*
- Regarding the investment barriers, no additional document was provided, while PPs demonstrated that to show any evidence about lack of financial channels, knowledge and experiences is very difficult. PPs promised to find such a kind of evidence and provide it to JQA. (CL)
  - *The following document was provided and CL was resolved:*
    - *Response letter of Bank loan application of China Construction Bank Meizhou City Branch (20/03/2006)*
- The description of the monitoring plan section is confirmed to be correct.

**(b) Findings at the 2nd stage**

The validation team added additional comments to the Checklist at Desk Review, taking into account the Guideline Version 07 as follows:

- PDD section A.2
  - More explanation about the scenarios
    - *This issue was followed by the PDD Version 03*
- PDD section A.4.3.
  - More explanation about the scenarios
    - *This issue was followed by the PDD Version 03*

- PDD section B.3
  - Flow diagram of the project activity
    - *This issue was followed by the PDD Version 03*

### 3.1 Approval by the Parties involved

Letter of Approval (13/02/2009) of voluntary participation from the DNA of China including confirmation by the host Party that the project activity assists it in achieving SD was provided. China has ratified the Kyoto Protocol on 30 August 2002.

The Letter of Approval of Japan (27/03/2009) was provided. The accession date of Japan is 04 June 2002.

Both letters were provided by the PPs and there is no doubt of authenticity each.

### 3.2 Participation

At the GSP, the project participants were Mitsubishi Heavy Industries (MHI) and Guangdong Tapai Group. However, MHI has withdrawn as PP. Letter of withdrawal has been obtained (see Ref. No. 27). Mitsubishi UFJ Securities replace MHI as PP.

The voluntary participation of the PPs are approved by the Parties' involved.

### 3.3 Project Design Document

The PDD (Version 03, 26/02/2009) uses the latest template and guidance.

### 3.4 Project Description

The Project Activity involves the construction of two 7MW waste heat recovery electricity generators. The Project Activity will recover and use the waste heat from the rotating kilns of the cement clinker lines and lead to the mitigation of greenhouse gas emissions through the generation of electricity which will be used to displace electricity imported to the cement plant from the Southern China Power Grid.

The outline of technologies is as follows:

- Waste Heat Utilization System
  - Kiln rear waste heat boiler (SP boiler): 2 sets
    - ⇒ Inlet waste gas amount: 340,000 Nm<sup>3</sup>/h
    - ⇒ Temperature for inlet waste gas: 330°C
    - ⇒ Temperature for outlet waste gas: 230 °C
  - Kiln entry waste heat boiler (AQC boiler) 2 sets
    - ⇒ Inlet waste gas amount: 180,000 Nm<sup>3</sup>/h
    - ⇒ Temperature for inlet waste gas: 350°C
    - ⇒ Temperature for outlet waste gas: 100 °C or lower
- Steam Turbine and Generator System
  - Condensing steam turbine engine: 2 sets
    - ⇒ Rated power: 7 MW
  - Generator: 2 sets
    - ⇒ Rated power: 7,000 kVA
- Others
  - Chemical water treatment system
  - Circulating Cooling Water system

- Kiln Rear Ash Transferring System
- Kiln Entry Settling Chamber and Ash Transferring System
- Electrical Equipment
- Thermodynamic control equipment
- Steam water pipelines

The equipment to be installed will be provided by a Chinese manufacturer and there will be no technology transfer from Annex I countries. According to a report (Financing of Energy Efficiency Improvement for Cement Industry in China, January 2005), the reliability of the domestic technique is dubious. However, it may be expected to introduce the latest technology progress since the Chinese government will promote active adoption of using low temperature heat for power generation at cement industry.

And other issues are as follows:

- a) Project Participants: Guangdong Tapai Group Co., Ltd. (China)  
Mitsubishi UFJ Securities Co., Ltd. (Japan)
- b) Non-Annex 1 Party: China
- c) Annex 1 Party: Japan
- d) Project Site: Longmen County, Guangdong Province, China
- e) Location: 23°38'N and 114°20'E
- f) Starting date of the project activity: 18/03/2006 ( Date of the contract between Tapai Cement and the construction company)
- g) Expected operation lifetime of the project activity: 25 years
- h) Starting date of the first crediting period: 01/07/2009(based on the estimated earliest possible date of registration).  
To be updated accordingly by the secretariat should registration occur after this date.
- i) Length of the first crediting period: 7 years
- j) Technology: Waste heat recovery facilities with boilers
- k) The estimate of anticipated reductions in tons of CO<sub>2</sub>: 67,040 t-CO<sub>2</sub>e/year

### 3.5 Baseline and monitoring methodology

#### a) Applicability of the selected methodology to the project activity

- The project activity utilizes waste heat as an energy source for Generation of electricity.
- The electricity generated in the project activity is to be used to displace electricity imports from the grid.
- Regulations do not constrain the industrial facility generating waste gas from using the fossil fuels being used prior to the implementation of the project activity.
- The waste gas utilized in the project activity was released into the atmosphere in the absence of the project activity at existing facility. This was proven by Process plant manufacturer's original specification/information as well as schemes and diagrams from the construction of the facility. Those could be used as an estimate of quantity and energy content of waste gas/heat produced for rated plant capacity/per unit of product produced.

## **b) Project boundary**

The project boundary is clearly provided in the section B.3.

## **c) Baseline identification**

The Project Activity involves the construction of two 7MW waste heat recovery electricity generators, while one of two new 4500t/day dry process clinker production lines was already under construction.

Through the Site-visit including the interviews with local governmental officials and representatives of the factory to the project site, the validation team confirmed that the baseline identification process including the description in the PDD is appropriate for the requirements of the methodology, including national policies and local circumstances.

For use of waste heat, all three alternatives in the methodology were considered and then, the most likely alternative is identified as “Waste heat is released into the atmosphere”, taking into account current legal situations for cement plants and local circumstances of waste heat use at the factory and its vicinity.

For power generation, all six alternatives in the methodology were considered and then, the most likely alternative for power generation is identified as “Source Grid-connected power plants”. The explanation for each alternative is appropriate for the current situation at the factory.

Finally, the following alternatives are appropriately identified as the baseline in accordance with the steps of the methodology

- \* Waste heat is released into the atmosphere, and
- \* Power is sourced from grid-connected power plants.

## **d) Algorithms and/or formulae used to determine emission reductions**

### **1) Baseline emissions**

For the calculation of the baseline emission, the CEF of the grid was calculated using the “Tool to calculate the emission factor in an electricity system”. The simple OM was selected based on the data/information in the past five years from the South China Power Grid. The simple OM for ex-ante calculation was calculated using the recent 3-years data (2003- 2005). In the calculation of BM, “above 20%” option was selected. CM (CEF) was calculated as  $(OM + BM)/2$  in accordance with the Tool.

The calculation procedure is appropriate for the methodology and tools. However, “CO<sub>2</sub> emission factor of fossil fuel type” applied is not appropriate for the “Tool to calculate the emission factor in an electricity system”. The tool requires applying the lower value in the table 1.4 of “2006 IPCC Guidelines for National Greenhouse Gas Inventories” in the baseline calculation as the third option, although the PDD uses the medium value of the Guideline (CAR). This issue shall be resolved.

- *JQA received the comment on “Baseline Emission Factors for Regional Power Grids in China” from NDRC on 09/02/2009. The EFs in the PDD is in line with the comment. And CAR was resolved.*

For the calculation of the cap, method 2 was selected, due to the implementation of the project activity in a new facility.

## 2) Capping of baseline emissions

Method 2 was applied.

There was no historical data of waste gas generated prior to the start of the project activity because the Dry Rotary Kiln Cement Production (Line No. 1) was to be newly installed.

“ $f_{cap}$ ” was estimated using the data based on the design documents as follows:

- Design, Installation and operating instruction (05659SM, October 2005)
  - Amount of waste gas (Top): 180,000 Nm<sup>3</sup>/h
- Design, Installation and operating instruction (05660SM, October 2005)
  - Amount of waste gas (Tail): 340,000 Nm<sup>3</sup>/h

## 3) Project emissions

The following items are in accordance with the methodology and the equations and values applied for ex-ante calculation in all items are appropriate for the methodology:

- \* Project emissions due to auxiliary fuel
  - The project activity does not use any additional combustion of fossil fuel.
- \* Project emissions due to electricity consumption of gas cleaning equipment
  - The project activity uses the same gas cleaning equipment as is used in the baseline.

## 4) Leakage

No leakage is applicable under this methodology.

## 5) Emission reductions

The equation used and the values applied are appropriate for the methodology.

## 6) The calculations of the baseline, project and leakage emissions are calculated in accordance with the methodologies. And also, the emission reductions are calculated ex-ante according to the methodology.

As mentioned above 1), in the calculation of the emission factor of Southern China Power Grid, the value of each emission factor of fuel is not in accordance with the requirement of the “Tool to calculate the emission factor for an electricity system (version 01)” (CAR)..

- *JQA received the comment on “Baseline Emission Factors for Regional Power Grids in China” from NDRC on 09/02/2009. The EFs in the PDD is in line with the comment. And CAR was resolved.*
- *The grid data used for the calculation of emission reductions was available at the commencement of the validation. The data for grid emission factors published by the Chinese DNA in August 2007.*

## 3.6 Additionality of the project activity

### a) Prior consideration of the CDM



- \* Starting date of the project activity: 18/03/2006, the date of the construction contract between Tapai Cement and the construction company
- \* Board resolution:
  - The Board decided at the meeting on 17/01/2006:
    - To start up the project activity ASAP and Longmen branch was authorized the all CDM-related work;
    - To commission Guangzhou Yulian Mechanism and Electron Co., Ltd. (Consulting Company) the CDM-related work, and to authorize Longmen branch to start the negotiation with Guangzhou Yulian Mechanism and Electron Co., Ltd. regarding the project development as CDM ASAP.
- \* Agreement between Tapai Cement and the consulting company: 18/06/2006

**b) Identification of alternatives**

- \* The PP listed all realistic and credible alternatives for the use of waste heat and power generation in accordance with the methodology.
- \* Those are in compliance with the Chinese laws and regulations.
- \* For the use of waste heat, it is clear that the alternative “waste heat is released into the atmosphere”.
- \* For power generation, the alternative “sourced grid-connected power plants” is identified as the most plausible scenario, taking into account current Chinese regulations and the technological situations of renewable energy generation in the area of the project site.

**c) Investment analysis**

- \* This step is skipped in accordance with the Additionality Tool.

**d) Barrier analysis**

- \* Investment barriers
 

The cement company needed to obtain a big loan from banks to proceed with the project activity. Regarding this barrier, “Response letter of Bank loan application of China Construction Bank Meizhou City Branch” was provided as evidence.
- \* Technological barriers
 

It was well known that the equipment cost was high for imported one and the technical reliability was low for domestic one, because the Chinese equipment had a lower efficiency and has higher operating costs on those days, when the PPs decided to start the project activity. And the project activity was identified as the first low-temperature WHR project for its region.

**e) Common practice analysis**

At present, there are a number of WHR projects in China which have been developed or are under development, although these still do not represent a significant proportion of the country’s total number of cement plants. However, even in the latest survey (“Overview of waste-heat utilization projects at cement plants in China as of 2007) in the PDD, there is no cement plant using waste-

heat in Guangdong Province, China (First-of-its-kind in the region), while there are three similar projects in the South China Grid region according to “Report of The Third Cement Power Generation by Waste Heat Seminar in 2007”.

### 3.7 Monitoring Plan

#### a) Compliance of the monitoring plan with the approved methodology

- (i) Identification of the list of parameters in the methodology
  - \* ACM0012 Version 02
    - Baseline emissions
      - Baseline emissions from generation of energy displaced by the project activity ( $EF_{grid,y}$ ,  $EG_{y}$ ,  $Q_{wG,BL}$ )
    - Project emissions
      - No parameter to be monitored
    - Leakage emissions
      - No parameter to be monitored
  - \* Tool to calculate the emission factor of an electricity system (OM and BM are calculated ex-ante based on the most recent information available at the time of the PDD submission)
- (ii) Confirmation of all necessary parameters
  - \* The monitoring plan includes all parameters to be monitored in the section B.7.1
  - \* The measures of monitoring are clearly provided.

#### b) Implementation of the plan

- (i) Feasibility of the monitoring plan
  - \* As described in the section B.7.2, the project will be implemented and managed by staff at TAPAI group.
  - \* The monitoring plan includes several key issues such as Monitoring framework, Monitoring equipment and installation, Data collection, Calibration, Data management and Monitoring report.
  - \* This monitoring plan is practical and has no technological barrier to be overcome for an average experienced company in this field.
  - \* The validation team considers the monitoring plan is feasible.
- (ii) Sufficiency of data management and QA/QC procedures
  - \* In the monitoring plan, the data management and QA/QC procedures are clearly explained.
  - \* The details (e.g. names of relevant standards and regulations) are to be defined prior to the start of the first crediting period.

### 3.8 Sustainable development

The PDD describes the project will contribute to sustainable development in the following ways:

- Job creation
- Reduction in GHG emissions
- Reduction of fossil fuel use
- Pollution reduction

The issue is supported by the LoA of the host country.

### **3.9 Local Stakeholder Consultation**

The local stakeholder consultation meeting by the PP was held on 01/+09/2007. and the summary was provided in the PDD.

The validation team had a meeting with local governmental officials at the TAPAI office on 07 May 2008. All of them expressed their positive comments on the project activity.

And the documents provided for the stakeholder consultation process show there is no negative impacts on any villagers lived in the vicinities.

### **3.10 Environmental Impacts**

Through the interviews with local governmental officials and the documents provided, the validation team confirmed that the EIA for the project activity was approved by the Environmental Protection Bureau of Guangdong Province (24/07/2006) and the project activity reduces the overall environmental impact on the surrounding area of the site.

## **4 GLOBAL STAKEHOLDER PROCESS**

### **1. Description of how and when the PDD was made publicly available:**

The comments by Parties, stakeholders and NGOs were invited from 11/04/2008 to 10/05/2008 on the UNFCCC website.

### **2. Description of how comments were received and made publicly available:**

There was no comment received.

### **3. Explanation of how due account has been taken of comments received:**

Not applicable

### **4. Compilation of all comments received:**

Not applicable

## 5 VALIDATION OPINION

1. JQA performed the validation of the project activity “Pure-low Temperature Waste Heat Recovery for Power Generation (2x7MW) in Guangdong Tapai Cement Co., Ltd.” by conducting Desk Review of the PDD (Ver. 01, 02 and 03) provided by Mitsubishi UFJ Securities Co., Ltd., in view of the UNFCCC, the Kyoto Protocol, Decision 3/CMP.1, relevant decisions of COP/MOP and the CDM EB and Chinese environmental laws and regulations, and also by making follow-up interviews with local stakeholders and Site-visit in China.
2. The baseline scenario is appropriately established according to ACM0012 (Version 02), taking into account related Tools.
3. The additionality of the project is successfully demonstrated in accordance with Additionality Tool, especially taking into account “Barrier analysis” and Common practice analysis”.
4. The calculation procedure is appropriate for the methodology. Regarding “CO2 emission factor of fossil fuel type” applied in the PDD, confirmation from the NDRC confirmed that the IPCC defaults are considered by the government to the applicable values to use for China.
5. The project activity has no negative environmental impacts, based on the EIA approval by the Environmental Protection Bureau of Guangdong Province.
6. The local stakeholders have positive comment on this project activity.

## 6 CONCLUSION

1. The validation team confirmed that the project activity meets all relevant UNFCCC and Host Party criteria. It is stated in the PDD that the proposed CDM project aims to contribute to the sustainable development in China due to several reasons, and this was confirmed through the LoA issued by the DNA of China. The total estimate of GHGs emission reduction by the project activity will amount to 67,040 t-CO2e/years 469,280 t-CO2e/7 years).
2. Through the Certification Committee deliberation, JQA determined the project activity to be valid as a CDM project activity.

## 7 REFERENCES

### Category 1 Documents:

- 1 PDD (Version 01 and 03)
- 2 Letter of Approval of Japan (dated on 27/03/2009)
- 3 Letter of Approval of China (dated on 13/02/2009)
- 4 Modalities of Communication (dated on 12/03/2009)

### Category 2 Documents:

- 5 Feasibility Study for 2x4500t/d Cement Clinker Production Lines (Longmen Site) of Guangdong Tapai Cement Co., Ltd.(Engineering No: N269, August 2005)
- 6 Installation and Operating Instruction for Steam Turbine of BN6.5-1.5/0.35 (LuoYang Power generation Equipment Co., Ltd., January 2005)
- 7 Design, Installation and Operating Instruction for AQC (Hangzhou Boiler Co., Ltd., October 2005)
- 8 Acceptance Monitoring Report of Environmental Protection for Completion of Project for 2x4500t/d Dry Rotary Kilns Cement Production Lines (Line Number 1) (Environmental Monitoring Center, Guangdong Province, February 2008)
- 9 Monitoring Report [(Longmen) Environmental Monitoring(waster gas)(2007) No.B070)]
- 10 Agreement on the development of Pure-low Temperature Waste Heat Power Generation (2 x 7MW) CDM Project (18 June 2006)
- 11 Record of Technology Improvement Investment Project of Guangdong Province(Project name: Technology Improvement Project for Pure-low Temperature Waste Heat Power Generation of New Dry Process of Cement Production lines)
- 12 Approval Letter for EIA of Pure-low Temperature Waste Heat Power Generation Project of Longmen Branch of Guangdong Tapai Co., Ltd [(Guangdong Environmental Letter(2006) No.1093]
- 13 Minutes of Stakeholders' Meeting
- 14 Distributed Materials in Stakeholders' Meeting
- 15 Speech to Stakeholders for CDM Project of Pure-low Temperature Waste Heat Power Generation
- 16 Survey to Stakeholders about the Project
- 17 Name lists for Stakeholder's Meeting
- 18 Report of [www.ccement.com](http://www.ccement.com) – Report of The Third Cement Power Generation by Waste Heat Seminar in 2007
- 19 Construction Starting Report of Pure-low Temperature Waste Heat Power Generation Project
- 20 Response letter of Bank loan application of China Construction Bank Meizhou City Branch (20/03/2006)
- 21 Regarding the additionality explanation of pure-low temperature power generation
- 22 Flow diagram of the kiln and its operation data dated on 28 & 29 May, 2008
- 23 Board meeting minutes (17 January 2006)
- 24 Phase I Construction Contract (18 March 2006)
- 25 Phase II Construction Contract (15 September 2007)
- 26 Financing of Energy Efficiency Improvement for Cement Industry in China, January 2005
- 27 MHI Withdrawn letter to JQA (3 February 2009)

## 8 LIST OF INTERVIEWED PERSONS

- 1 Mr. Huang Zhicheng, Assistant Manager , Economic & Trade Bureau, Longmen County
- 2 Mr. Wang Fangshen, Deputy Director, Environmental Protection Bureau, Longmen County
- 3 Mr. Dong Youming, Assistant Manager, Electric Power Bureau, Longmen County
- 4 Mr. Li Bin, Vice General Manager, Longmen Branch of Guangdong Tapai Co., Ltd.
- 5 Mr. Deng Liyong, Vice General Manager, Longmen Branch of Guangdong Tapai Cement Co., Ltd.
- 6 Mr. Qiu Changhua, Longmen Branch of Guangdong Tapai Cement Co., Ltd.
- 7 Mr. Deng Shengrong, Longmen Branch of Guangdong Tapai Cement Co., Ltd.
- 8 Ms. Shen Hemei, Longmen Branch of Guangdong Tapai Cement Co., Ltd.
- 9 Mr. Hong Shengtao, Mitsubishi UFJ Securities Co., Ltd.
- 10 Mr. Joseph Cairnes, Mitsubishi UFJ Securities Co., Ltd.
- 11 Mr. Zhang Yun, Mitsubishi UFJ Securities Co., Ltd.
- 12 Mr. Liu Shangyu, Guangzhou Institute of Energy Conversion, Chinese Academy of Sciences
- 13 Ms. Wei Fanghua, Guangzhou Institute of Energy Conversion, Chinese Academy of Sciences
- 14 Mr. Xiang Kaixin, Guangzhou Yulian Mechanism & Electron Co., Ltd.

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# CDM VALIDATION CHECKLIST

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## Mitsubishi UFJ Securities

“Pure-low Temperature Waste Heat Recovery for Power Generation (2 x 7MW) in Guangdong Tapai Cement Co., Ltd.”

Project No. JQA-C-0080  
(1812000091)  
9 April 2009



**Japan Quality Assurance Organization**

**Table 1 Comprehensive Checklist for CDM Project Activities**

Requirements	Reference	Conclusion	Evidence
<b>1. The purpose of the CDM</b>	Kyoto Protocol Article 12.2		
1.1. The project activity shall assist the host country in achieving sustainable development		OK	LoA of China dated on 13/02/2009
1.2. The project activity shall assist the host country in contributing to the ultimate objective of the Convention.		OK	ditto
1.3. The project activity shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3.		OK	LoA of Japan dated on 27/03/2009
<b>2. Emission reductions resulting from the project activity shall be certified by DOE on the basis of:</b>	Kyoto Protocol Article 12.5		
2.1. Voluntary participation approved by each Party involved ( and Authorization of a private and/or public entity )	(a)	OK	LoA of China: 13/02/2009 LoA of Japan: 27/03/2009
2.2. Real, measurable and long-term benefits related to the mitigation of climate change	(b)	OK	
2.3. Reductions in emissions that are additional to any that would occur in absence of the project activity	(c)	OK	
<b>3. CDM Modalities and Procedures (Decision 17/CP. 7)</b>	Paragraph 37		
3.1. Participation requirements	(a)		
3.1.1. Participation in a CDM project activity is voluntary.	Paragraph 28	OK	LoA of China: 13/02/2009 LoA of Japan: 27/03/2009
3.2. The authorization of a private and/or public entity, to participate in a CDM project activity referred to in paragraph 33 of the modalities and procedures, is provided in writing by the DNA of the Party pursuant to the laws of which the private and/or public entity is constituted as a legal entity. The authorization:	CDM Guideline Version 07 Glossary of terms, version 04	OK	LoA of China: 13/02/2009 LoA of Japan: 27/03/2009



## Appendix A

<ul style="list-style-type: none"> <li>➤ May be included in the written approval referred to in paragraph 1.1 above</li> <li>➤ Can pertain to a specific project activity or be of general character.</li> </ul>			
3.2.1. Parties participated in the CDM shall designate a national authority for the CDM.	Paragraph 29	OK	<a href="http://cdm.unfccc.int/DNA/view.html?CID=46">http://cdm.unfccc.int/DNA/view.html?CID=46</a>
3.2.2. A host country may participate in a CDM project activity if it is a Party to the Kyoto Protocol.	Paragraph 30	OK	<a href="http://maindb.unfccc.int/public/country.pl?country=CN">http://maindb.unfccc.int/public/country.pl?country=CN</a>
3.3. Comments by local stakeholders	37 (b)	OK	Table 2 of this report: Section E
3.4. Analysis of the environmental impacts of the project activity	37 (c)	OK	Table 2 of this report: Section D
3.5. Additionality	37 (d)	OK	Table 2 of this report: Section B
3.6. Use of the approved baseline and monitoring methodologies	37 (e)	OK	ACM0012/Version 02 Tool to calculate the emission factor for an electricity system Tool for the demonstration and assessment of additionality
3.7. Provisions for monitoring, verification and reporting	37 (f)	OK	Table 2 of this report: Section B
3.8. Other requirements including relevant decisions by the COP/MOP and the executive board	37 (g)	OK	Table 2 of this report: Section A, C
3.9. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for 30 days, and the project design document and comments have been made publicly available.	40 (c)	OK	No comment received. Start date: 11/04/2008 Close date: 10/05/2008
<b>4. PDD Format</b>	CDM Guidelines (Version 07)		
4.1. If project participants wish to submit a project activity for validation and registration, they shall submit a fully completed CDM-PDD.	PART I Paragraph 3	OK	
4.2. The CDM-PDD shall be completed and submitted in English language to the Executive Board.	PART I	OK	

## Appendix A

	Paragraph 12		
4.3. The CDM-PDD template shall not be altered, that is, shall be completed using the same font without modifying its format, font, headings or logo.	PART I Paragraph 13	OK	
4.4. Tables and their columns shall not be modified or deleted. Rows may be added, as needed.	PART I Paragraph 14	OK	
4.5. The CDM-PDD shall include in A.1 the version number and the date of the document.	PART I Paragraph 15	OK	
4.6. If section of the PDD is not applicable, it shall be explicitly stated that section is left blank on purpose.	PART I Paragraph 16	OK	
<b>5. Modalities of communication</b>	CDM Glossary (Version 04)		
5.1 The modalities of communication between project participants and the Executive Board are indicated at the time of registration by submitting a statement signed by all project participants.		OK	12/03/2009

Table 2 PDD Requirements

Section	Requirements	MoV	Comments	Draft Conc.	Final Conc.
Section A	General description of the project activity				
A.1	Title of the project activity				
	Title of the project activity Version number and date of the doc.	DR DR	Version 01, 12/2/2008 Version 03, 18/11/2008	OK OK	
A.2	Description of the project activity				
	<p>The purpose of the project activity</p> <ul style="list-style-type: none"> <li>* <i>Scenario existing prior to the start of the implementation of the project activity</i></li> <li>* <i>Project scenario</i></li> <li>* <i>Baseline scenario</i></li> </ul> <p>What type of technology is being employed</p> <p>What exact measures are undertaken</p> <p>The view of the PPs on Contribution to SD</p>	DR	<p><i>More explanation of the scenarios was provided.</i></p> <ul style="list-style-type: none"> <li>– Pure-low temperature waste heat recovery for power generation</li> <li>– Job creation</li> <li>– Reduction in GHG emissions</li> <li>– Reduction of fossil fuel use</li> <li>– Pollution reduction</li> </ul>	OK <b>CL</b>  OK  OK	<b>OK</b>
A.3	Project participants				
	List of PPs and Parties involved Provide contact information in Annex 1	DR		OK OK	
A.4	Technical description of the project activity				
A.4.1	Location of the project activity				
A.4.1.1	Host Party	DR		OK	
A.4.1.2	Region/State/Province, etc.	DR		OK	
A.4.1.3	City/Town/Community, etc.	DR		OK	

# Appendix A

A.4.1.4	Detail of physical location				
	Fill in the field and do not exceed one page.	DR		OK	
A.4.2	Type and category(ies) and technology				
	Specify the category into which this project activity falls.	DR	Energy industries (Sectoral scope: 1) Manufacturing industries (Sectoral scope: 4)	OK	
A.4.3	Technology to be employed by the project activity				
	What kinds of technologies are employed?	DR	<ul style="list-style-type: none"> <li>– Waste heat utilization</li> <li>– Steam turbine and generator system</li> <li>– Chemical water treatment system, etc.,</li> </ul> Details are to be confirmed at Site-visit.	OK	
	<i>Description of the project activity (Note)</i> <ul style="list-style-type: none"> <li>* Scenario existing prior to the start of the implementation of the project activity</li> <li>* Scope of activities/measures</li> <li>*</li> <li>* Baseline scenario</li> </ul>		<ul style="list-style-type: none"> <li>* FS report (Engineering No. 269, August 2005) and related documents are provided.</li> <li>* Venting the waste heat from the kiln into the atmosphere.</li> <li>* Waste heat recovery facilities to be installed under the project activity</li> <li>* Venting the waste heat from the kiln into the atmosphere</li> </ul>	CL	OK
	<i>Description of the scenarios</i> <ul style="list-style-type: none"> <li>* A list and the arrangement of the main manufacturing/production technologies, systems and equipment involved.</li> </ul>		<ul style="list-style-type: none"> <li>* The list of equipment with its specifications of the waste heat plant is provided and the arrangement is also provided. An effective operational lifetime expected is 25 years.</li> <li>* Emission sources and GHGs involved in the project activity are shown in the</li> </ul>	CL	OK
	* Emission sources and GHGs			CL	OK

## Appendix A

	<p><i>involved in the project activity</i></p> <p><i>* Types and levels of services provided by the systems and equipments</i></p> <p>How environmentally safe and sound technology, and know-how to be used, is transferred to the host Party.</p>		<p><i>section B.3.</i></p> <p><i>* Reduction of reliance on the grid-connected power (installed capacity of generators: 2x 7MW)</i></p> <p>– Reduction of thermal energy release into the local environment and the discharge of dust into the local atmosphere</p> <p>– Reduction of reliance on grid-connected power plants, of which a large number are fossil fuel-based generation plants</p>	<p><b>CL</b></p> <p>OK</p>	<p><b>OK</b></p>
A.4.4	Estimated amount of emission reductions				
	<p>Indicate the chosen crediting period</p> <p>Provide the total estimation of emission reductions as well as annual estimates.</p> <p>Information on the emission reduction shall be indicated using the format.</p>	DR	<p>– 7 years renewable</p> <p>– 7 years total: 444,857 tonnes CO<sub>2</sub>e</p> <p>– 63,551 tonnes CO<sub>2</sub>e/year</p>	<p>OK</p> <p>OK</p> <p>OK</p>	
A.4.5	Public funding of the SS project activity				
	In case public funding from Annex 1 Parties, provide information in Annex 2.	DR	No public funding	OK	
Section B	Application of a baseline and monitoring methodology				
B.1	Title and reference of the approved baseline and monitoring methodology applied				
	<p>Refer to the UNFCCC CDM web site</p> <ul style="list-style-type: none"> <li>- Approved methodology(ies) and version(s)</li> <li>- Tools and their versions</li> </ul>	DR	<p>– ACM0012, Version 02</p> <p>– Tool to calculate the emission factor for an electricity system (version 01)</p> <p>– Tool for the demonstration and assessment</p>	OK	

			of additionality (version 05)		
B.2	Justification of the choice of the methodology and why it is applicable to the project activity				
	<p>Justify the choice of methodology by showing that the proposed project activity meets each of the applicability conditions. (Applicability condition)</p> <ul style="list-style-type: none"> <li>Waste gas as an energy source</li> <li>Prove of the release of the waste gas into atmosphere</li> <li>Others</li> </ul> <p>Explain documentation has been used and provide the references to the document or include the documentation in Annex 3.</p>	<p>DR</p> <p>SV</p> <p>DR</p> <p>SV</p>	<p>– Generation of electricity</p> <p>– To be confirmed at Site-visit</p> <p>➤ <i>Process plant manufacturer's specification/information was provided.</i></p> <p>– Process plant manufacturer's specification is to be provided at Site-visit</p> <p>➤ <i>Process plant manufacturer's specification/information was provided.</i></p>	<p>OK N/A</p> <p>OK N/A</p>	<p><b>OK</b></p> <p><b>OK</b></p>
B.3	Description of the sources and gases included in the project boundary				
	<p>Describe which emission sources and gases are included in the project boundary for the purpose of calculation project emissions and baseline emissions, using the table.</p> <p><i>Present a flow diagram of the project activity</i></p> <p>In cases where the methodology allows project participants to choose whether a source or gas is to be included in the project boundary,</p>	<p>DR</p>	<p>– Cement production facility</p> <p>– Electricity generation equipment</p> <p>– No recipient plant and/or grid</p> <p>– Southern China power grid</p> <p> * <i>The flow diagram is appropriately described.</i></p> <p>– The justification of the choice regarding emission sources is appropriately made.</p>	<p>OK</p> <p><b>CL</b></p> <p>OK</p>	<p><b>OK</b></p>

# Appendix A

	explain and, where necessary, justify the choice.				
B.4	Description of how the baseline scenario is identified and description of the identified baseline scenario.				
	<p>Explain how the most plausible baseline scenario is identified. Where the procedure involves several steps, describe how each step is applied and transparently document the outcome of each step.</p> <p>Explain and justify key assumptions and rationales.</p> <p>Provide a transparent and detailed description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed project activity, taking into account relevant national and/or sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the project sector.</p>	<p>DR</p> <p>SV</p> <p>SV</p> <p>SV</p>	<p>In accordance with the procedures (Step 1 and Step 2) defined in ACM0012, all realistic and credible alternatives are listed and then, “the waste heat is released into the atmosphere and the electricity needs of the plant are met fully by the grid” is identified as the most likely alternative, while the followings are to be confirmed at Site-visit:</p> <ul style="list-style-type: none"> <li>– “There are no other major heat users in the vicinity” <ul style="list-style-type: none"> <li>➤ <i>No other major heat users in the vicinity are confirmed at Site-visit.</i></li> </ul> </li> <li>– “Current Chinese regulations for areas connected to large grids” <ul style="list-style-type: none"> <li>➤ <i>The project site is in Southern China grid</i></li> </ul> </li> <li>– Others, if necessary <ul style="list-style-type: none"> <li>➤ <i>Confirmation of the process flow sheet of the project activity</i></li> <li>➤ <i>Observation of 4500 t/day dry process clinker production lines</i></li> </ul> </li> </ul>	<p>OK</p> <p>N/A</p>	<p><b>OK</b></p> <p><b>OK</b></p> <p><b>OK</b></p> <p><b>OK</b></p>
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 CDM project activity (assessment and demonstration of				

	additionality)				
	<p>Explanation of how and why this project activity is additional and therefore not the baseline scenario in accordance with the selected baseline methodology.</p> <p>Where the procedure involves several steps, describe how each step is applied and transparently document the outcome of each step. Where the barriers are involved in demonstrating additionality, only select the (most) relevant barriers.</p> <p>Explain and justify key assumptions and rationales, including contractual requirements, mandatory regulations, or other requirements.</p> <p>Provide relevant documentation or references.</p>	<p>DR</p> <p>SV</p> <p>DR</p>	<p>In accordance with the Additionality Tool, the explanation is made.</p> <p>– Investment barriers: Key issues (current cement production market, cost constraints, financial channels, lack of knowledge and experience) are explicitly explained, while more detail financial information on Tapai group should be provided to JQA for confirmation at Site-visit.</p> <p>➤ <i>Confirmed by the documents provided (FS report dated on August 2008, Approval for the project by Guangdong province, Response letter of Bank loan application of China Construction Bank Meizhou City Branch)</i></p> <p>– Technological barriers: How and why the CDM incentives alleviate the technological barriers are identified.</p> <p>“Common practice analysis” is done, while how to collect the data and information on “Table: Overview of waste-heat utilization projects at cement plants in China as of 2006” should be provided.</p> <p>➤ <i>The table in the PDD was</i></p>	<p>OK</p> <p>N/A</p> <p>N/A</p>	<p><b>OK</b></p>



	<p>If the starting date of the project activity is before the date of validation, provide evidence that the incentive from the CDM was seriously considered in the decision to proceed with the project activity. This evidence shall be based on (preferably official, legal and/or other corporate) documentation that was available at, or prior to, the start of the project activity.</p> <p>In such cases project proponents shall provide an implementation timeline of the proposed CDM project activity. The timeline should include, where applicable, the date when the investment decision was made, the date when construction works started, the date when commissioning started and the date of start-up (e.g. the date when commercial production started).</p> <p>In addition to this implementation timeline project participants shall provide a timeline of events and</p>	SV	<p><i>changed to the latest version as of 2007. Even in the latest survey, there is no cement plant using waste-heat in Guangdong province, China (First-of-its-kind in the region).</i></p>	N/A	<b>OK</b>
		SV	<p>The evidence for the date of the project activity is to be provided at Site-visit.</p> <ul style="list-style-type: none"> <li>➤ <i>The document, which shows the date of the contract between Tapai Cement and the local CDM consultant, was provided.</i></li> <li>➤ <i>The document regarding the decision making (17 January 2006) by the Board of Tapai cement was provided.</i></li> </ul>		<b>OK</b>
		DR	<p>The timelines are to be provided in the PDD.</p> <p>Two timelines are provided and the following are listed in the PDD.</p> <ul style="list-style-type: none"> <li>• Project timeline (the implementation timeline of the proposed CDM project activity) <ul style="list-style-type: none"> <li>• Feasibility Study: October 2005</li> <li>• Bank loan application: Mar 6th, 2006</li> <li>• Bank loan Rejection letter: Mar 20th, 2006</li> <li>• Signing of construction contract for CDM Phase I (Project start date): Mar 18th 2006</li> <li>• Start date of Phase I: Apr 1st, 2007</li> <li>• Signing of construction contract for CDM</li> </ul> </li> </ul>		<b>OK</b>

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	actions which have been taken to achieve CDM registration, with description of the evidence used to support these actions. These timelines will allow the DOE to assess the serious consideration of the CDM in the project decision making process and project implementation.		<p>Phase II: Sep 15th, 2007</p> <ul style="list-style-type: none"> <li>Start date of Phase II: Nov 1st, 2008</li> <li>CDM timeline (the timeline of events and actions which have been taken to achieve CDM registration)</li> <li>Board decision to apply for CDM: Jan 17th, 2006</li> <li>Hiring of Guangzhou Institute of Energy Engineering (GIEC): Jun 18th, 2006</li> <li>Publication of PIN by GIEC: Apr 4, 2007</li> <li>Hiring of Mitsubishi UFJ Securities as CDM consultant: Aug 1st, 2007</li> <li>Stakeholders' consultation: Sep 1st 2007</li> <li>Hiring of DOE: Mar 1st, 2008</li> <li>PDD published for public comments: Apr 11th, 2008</li> <li>Site visit by DOE: May 7-8, 2008</li> <li>Application for China DNA approval, first review meeting: Oct 30th, 2008</li> <li>Application for China DNA approval, second review meeting: Dec 30th, 2008</li> </ul>		
B.6	Emission reductions				
B.6.1.	Explanation of methodological choices:				
	Explain how the procedures, in the approved methodology to calculate project emissions, baseline emissions, leakage emissions and emission reductions are applied to the proposed project activity.	DR	The calculation procedure is in accordance with the methodology.	OK	

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	Clearly state which equations will be used in calculating emission reductions.				
B.6.2	Data and parameters that are available at validation				
	<p>This section shall include a compilation of information on the data and parameters that are not monitored throughout the crediting period but that are determined only once and thus remains fixed throughout the crediting period AND that are available when validation is undertaken.</p> <p>Data that becomes available only after validation of the project activity (e.g. measurements after the implementation of the project activity) should not need to be included here but in the table in section B.7.1. This may includes data that is measured or sampled, and data that is collected from other sources (e.g. official statistics, expert judgment, proprietary data, IPCC, commercial and scientific literature, etc.).</p> <p>Data that is calculated with equations provided in the methodology or default values specified in the methodology should not be included in the compilation.</p>	DR		OK	
				OK	
				OK	

	<p>Provide for each data or parameter the chosen value or, where relevant, the qualitative information, using the table provided below. Particularly:</p> <ul style="list-style-type: none"> <li>- Provide the actual value applied. Where time series of data is used, where several measurements are undertaken or where surveys have been conducted, provide detailed information in Annex 3.</li> <li>- Explain and justify the choice for the source of data.</li> </ul> <p>Provide clear and transparent references or additional documentation in Annex 3.</p> <ul style="list-style-type: none"> <li>- Where values have been measured, include a description of the measurement methods and procedures (e.g. which standards have been used), indicate the responsible person / entity having undertaken the measurement, the date of measurement(s) and the measurement results.</li> <li>- More detailed information can be provided in Annex 3.</li> </ul>	<p>DR</p> <p>DR</p> <p>DR</p>	<p>➤ <i>The values of EFs are not consistent with the requirement of the “Tool to calculate project emissions from electricity grid”.</i></p> <ul style="list-style-type: none"> <li>- <i>JQA received the comment on “Baseline Emission Factors for Regional Power Grids in China” from NDRC on 09/02/2009. The EFs in the PDD is in line with the comment.</i></li> </ul> <p>And the value of <math>Q_{WG,BL}</math> applied is not consistent with the one in the section A.4.3. And “4,500 tonnes of clinker/hour” as well.</p> <p>➤ <i>The description was corrected.</i></p> <p>The data units of <math>W_{OM}</math> and <math>W_{BM}</math> are not correct.</p> <p>➤ <i>Corrected.</i></p>	<p>CAR</p> <p>OK</p>	<p><b>OK</b></p> <p><b>OK</b></p> <p><b>OK</b></p>
B.6.3.	Ex-ante calculation of emission reductions				
	Provide a transparent ex-ante calculation of project emissions, baseline emissions (or, where	DR	Ex-ante calculation is transparent and appropriate.	OK	

	<p>applicable, direct calculation of emission reductions) and leakage emissions expected during the crediting period, applying all relevant equations provided in the approved methodology.</p> <p>Use estimations for parameters that are not available when validation is undertaken or that are monitored during the crediting period.</p> <p>Document how each equation is applied, in a manner that enables the reader to reproduce the calculation.</p> <p>Where relevant, provide additional background information and/or data in Annex 3, including relevant electronic files (i.e. spreadsheets).</p>				
B.6.4.	Summary of the ex-ante estimation of emission reductions				
	Summarize the results of the ex-ante estimation of emission reductions for all years of the crediting period, using the table	DR	The summary is provided, using the table, while the values should be checked again..	OK	
B.7.	Application of the monitoring methodology and description of the monitoring plan				
B.7.1	Data and parameters monitored				
	This section shall include specific information on how the data and parameters that need to be monitored would actually be collected during monitoring for the project activity. Data that is determined only	DR		OK	

<p>once for the crediting period but that becomes available only after validation of the project activity (e.g. measurements after the implementation of the project activity) should be included here.</p> <p>Provide for each parameter the following information, using the table provided:</p> <ul style="list-style-type: none"> <li>- The source(s) of data that will be actually used for the proposed project activity (e.g. which exact national statistics).</li> <li>- Where several sources may be used, explain and justify which data sources should be preferred.</li> <li>- Where data or parameters are supposed to be measured, specify the measurement methods and procedures, including a specification which accepted industry standards or national or international standards will be applied, which measurement equipment is used, how the measurement is undertaken, which calibration procedures are applied, what is the accuracy of the measurement method, who is the responsible person / entity</li> </ul>	<p>DR</p>	<p>The value of <math>Q_{WG,y}</math> applied is not consistent with the one in the section A.4.3. ➤ <i>Corrected.</i></p>	<p>CL</p>	<p><b>OK</b></p>
	<p>DR</p>	<p>The several descriptions such as “To be confirmed” are not appropriate for requirement “Value of data applied for the purpose of calculating expected emission reductions in section B.5” ➤ <i>Corrected.</i></p>	<p>CL</p>	<p><b>OK</b></p>

	<p>that should undertake the measurements and what is the measurement interval.</p> <ul style="list-style-type: none"> <li>- A description of the QA/QC procedures (if any) that should be applied.</li> <li>- Where relevant: any further comment.</li> </ul> <p>Provide any relevant further background documentation in Annex 4.</p>				
B.7.2.	Description of the monitoring plan				
	<p>Provide a detailed description of the monitoring plan. Describe the operational and management structure that the project operator will implement in order to monitor emission reductions and any leakage effects generated by the project activity.</p> <p>Clearly indicate the responsibilities for and institutional arrangements for data collection and archiving. The monitoring plan should reflect good monitoring practice appropriate to the type of project activity.</p>	<p>DR</p> <p>SV</p>	<p>The description is to be confirmed at Site-visit, e.g O&amp;M structure for monitoring, certificate of calibration, quality assurance, etc.,</p> <ul style="list-style-type: none"> <li>➤ <i>Confirmed through interviews with staff and review of relevant technical documents at the Site-visit. To be checked again at verification.</i></li> </ul>	N/A	<b>OK</b>
B.8.	Date of completion of the application of the baseline and monitoring methodology and the name of responsible person(s)/entity(ies):				

# Appendix A

	Provide date of completion of the application of the methodology to the project activity study in DD/MM/YYYY. Provide contact information of the persons(s)/entity(ies) responsible for the application of the baseline and monitoring methodology to the project activity and indicate if the person/entity is also a project participant listed in Annex 1.	DR	Date o completion: 03/04/2008  Contact information was provided.	OK  OK	
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				
	The starting date of a CDM project activity is the date on which the implementation or construction or real action of a project activity begins.	DR SV	01/04/2007: To be confirmed at Site-visit. ➤ <i>Changed to 18/03/2006, the date of the construction contract between Tapai Cement and the construction company.</i>	N/A	<b>OK</b>
C.1.2	Expected operational lifetime				
	State the expected operational lifetime in years and months	DR	25 years	OK	
C.2	Choice of crediting period and related information				
C.2.1	Renewable crediting period				
	Each crediting period shall be at most 7 years	DR	7 years	OK	
C.2.1.1	Starting date of the first crediting period				
	State the dates in DD/MM/YYYY	DR	01/10/2008 ➤ <i>Changed to 01/07/2009, taking into account progress of the validation process.</i>	OK	<b>OK</b>



# Appendix A

C.2.1.2	Length of the first crediting period				
	State the length of the first crediting period in years and months	DR		N/A	<b>N/A</b>
C.2.2	Fixed crediting period				
	Fixed crediting period shall be at most 10 years.	DR		N/A	<b>N/A</b>
C.2.2.1	Starting date of the first crediting period				
	State the dates in DD/MM/YYYY	DR		N/A	<b>N/A</b>
C.2.2.2	Length				
	State the length in years and months	DR		N/A	<b>N/A</b>
Section D	Environmental impacts				
D.1	Documentation on the analysis of the environmental impacts, including transboundary impacts:				
	Attach the documentation to the CDM-PDD.	DR SV	The approval by the Environmental Protection Bureau of Guangdong Province should be provided at Site-visit. ➤ <i>EIA approval was provided.</i>	N/A	<b>OK</b>
D.2.	If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party.				
		DR SV	The description is to be confirmed at Site-visit. ➤ <i>Confirmed by the interviews with local governmental officials and observation of the project site.</i>	N/A	<b>OK</b>
Section E	Stakeholders' comments				

# Appendix A

E.1	How comments by local stakeholders have been invited and compiled				
	Describe the process by which comments by local stakeholders have been invited and compiled. An invitation for comments by local stakeholders shall be made in an open and transparent manner, in a way that facilitates comments to be received from local stakeholders and allows for a reasonable time for comments to be submitted. In this regard, project participants shall describe a project activity in a manner which allows the local stakeholders to understand the project activity, taking into account confidentiality provisions of the CDM modalities and procedures. The local stakeholder process shall be completed before submitting the proposed project activity to a DOE for validation.	DR SV	To be confirmed at Site-visit. ➤ <i>Confirmed by the interviews with local governmental officials and the review of the documents provided.</i>	N/A	<b>OK</b>
E.2	Summary of the comments received				
	Identify stakeholders that have made comments and provide a summary of these comments	DR SV	To be confirmed at Site-visit. ➤ <i>Confirmed</i>	N/A	<b>OK</b>
E.3	Report on how due account was taken of any comments received				
	Explain how due account have been taken of comments received.	DR SV	To be confirmed at Site-visit. ➤ <i>confirmed</i>	N/A	<b>OK</b>
Annex 1	Contact information on PPs				
	Copy and paste table as needed.	DR		OK	

## Appendix A

	Fill for each organization listed in section A.3 the following mandatory fields: Organization, Name of contact person, Street, City, Postfix/ZIP, Country, Telephone and Fax or e-mail.				
<b>Annex 2</b>	<b>Information regarding public funding</b>				
	Provide information from Parties included in Annex I on sources of public funding for the project activity which shall provide an affirmation that such funding does not result in a diversion of official development assistance and is separate from and is not counted towards the financial obligations of those Parties	DR		OK	
<b>Annex 3</b>	<b>Baseline information</b>				
	Provide any further background information used in the application of the baseline methodology. This may include tables with time series data, documentation of measurement results and data sources, etc.	DR	The values of EFs are not consistent with the data provided by Office of Climate Change under the NDRC of China on August in 2007. <ul style="list-style-type: none"> <li>➤ <i>The values of EFs in the PDD are in line with the requirement of the "Tool to calculate project emissions from electricity grid".</i></li> <li>➤ <i>The values of EFs in the PDD (Version 03) have been corrected in line with the publication of the NDRC.</i></li> </ul>	CL	<b>OK</b>  <b>OK</b>
<b>Annex 4</b>	<b>Monitoring information</b>				
	Provide any further background information used in the application of the monitoring methodology.	DR		OK	

## Appendix A

	This may include tables with time series data, additional documentation of measurement equipment, procedures, etc.				
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Remarks: MoV: Means of Validation (DR: Desk Review, SV: Site-visit and Interview)

CAR: Corrective Action Request

CL: Clarification Request

OK

N/A: Not Applicable

*Note: “CL”s in the column “Draft Conclusion” were added based on Guideline Version 07.*

# Certificate

Mr. Itaru WATANABE

Grade: Lead Assessor

Assessor No.: CDM - LA002

Assigned Date: 2003.08.11

This is to certify that Mr. Itaru WATANABE is assigned as  
CDM Lead Assessor by the Japan Quality Assurance Organization.

Date: February 26. 2007

Japan Quality Assurance Organization

*M. Ueda*

President Matahiro UEDA

## Grant of sectoral scope to CDM/JI assessor

Assessor Name: Mr. Itaru WATANABE  
Grade: Lead Assessor  
Assessor No.: CDM-LA002 / JI-LA002

Sectoral Scope	Granted date
1. Energy industries (renewable - / non-renewable sources)	1 Jun. 2003
2. Energy distribution	1 Jun. 2003
3. Energy demand	17 Sep. 2004
4. Manufacturing industries	1 Jun. 2003
5. Chemical industry	1 Jun. 2003
6. Construction	-
7. Transport	-
8. Mining/Mineral production	1 Jun. 2003
9. Metal production	-
10. Fugitive emissions from fuels (solid, oil and gas)	1 Jun. 2003
11. Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	1 Jun. 2003
12. Solvents use	1 Jun. 2003
13. Waste handling and disposal	17 Sep. 2004
14. Afforestation and reforestation/Land use, land-use change and forestry	-
15. Agriculture	-

This is to certify that Mr. Itaru WATANABE is granted by the Japan Quality Assurance Organization.

Date: 18/APR/2007

Director of the Global Environment Department  
Japan Quality Assurance Organization

  
Masaki MAEGAITO