



VERIFICATION / CERTIFICATION REPORT

“NINGGUO CEMENT PLANT 9100KW WASTE
HEAT RECOVERY AND UTILISATION FOR POWER
GENERATION PROJECT OF ANHUI CONCH
CEMENT CO. LTD”

(CDM Registration Reference No. 0898)

MONITORING AND REPORTING PERIOD:
1 March 2008 to 31 May 2009

REPORT NO. 2009-1133

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DET NORSKE VERITAS



VERIFICATION / CERTIFICATION REPORT

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Summary:

Det Norske Veritas Certification AS (DNV) has performed the verification and certification of emission reductions reported for the “Ningguo Cement Plant 9100KW Waste Heat Recovery and Utilisation for Power Generation Project of Anhui Conch Cement Co. Ltd” (UNFCCC Registration Ref. No. 0898) in China for the period 1 March 2008 to 31 May 2009.

In our opinion, the project’s reported GHG emission reductions for the period from 1 March 2008 to 31 May 2009 as reported in the revised monitoring report of version 5 dated 24 February 2010 are fairly stated.

The GHG emission reductions were calculated correctly on the basis of the approved monitoring methodology AM0024, version 1 and the monitoring plan contained in the registered project design document, version 4, dated 19 January 2007.

Hence DNV is able to certify that the emission reductions from the “Ningguo Cement Plant 9100KW Waste Heat Recovery and Utilisation for Power Generation Project of Anhui Conch Cement Co. Ltd” in China for the period 1 March 2008 to 31 May 2009 amount to 71 857 tCO₂e.

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Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CER	Certified Emission Reduction(s)
CH ₄	Methane
CO ₂	Carbon dioxide
CO _{2e}	Carbon dioxide equivalent
DNA	Designated National Authority
DNV	Det Norske Veritas
DOE	Designated Operational Entity
ECPN	East China Power Network
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
KWh	Kilo Watt hour
MW	Mega Watt
NDRC	National Development and Reform Commission
NGO	Non-governmental Organisation
PDD	Project Design Document
PH	Pre-heater
TPD	Tonnes per day
UNFCCC	United Nations Framework Convention for Climate Change



1 INTRODUCTION

Det Norske Veritas Certification AS (DNV) has been commissioned by CAMCO International Limited to carry out the second verification and certification of emission reductions reported by the “Ningguo Cement Plant 9100KW Waste Heat Recovery and Utilisation for Power Generation Project of Anhui Conch Cement Co. Ltd” (UNFCCC reference no. 0898) for the period 1 March 2008 to 31 May 2009. This report contains the findings from this verification assignment and a certification statement for the certified emission reductions.

1.1 Objective

Verification is the periodic independent review and *ex post* determination by the Designated Operational Entity (DOE) of the monitored reductions in GHG emissions that have occurred as a result of a registered CDM project activity during a defined verification period.

Certification is the written assurance by a DOE that, during a specific period in time, a project activity achieved the emission reductions as verified.

The objective of this verification was to verify emission reductions reported for the periodic verification of “Ningguo Cement Plant 9100KW Waste Heat Recovery and Utilisation for Power Generation Project of Anhui Conch Cement Co. Ltd” for the period of 1 March 2008 to 31 May 2009.

1.2 Scope

The verification scope is:

- To verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.
- To verify that the reported GHG emission reduction data is sufficiently supported by evidence, i.e. monitoring records.

The verification shall ensure that reported emission reductions are complete and accurate in order to be certified.

The verification was based on the recommendations in the Validation and Verification Manual /17/.



1.3 Description of the Project Activity

Project Parties:	<i>China, United Kingdom of Great Britain and Northern Ireland and Switzerland</i>
Title of project activity:	<i>Ningguo Cement Plant 9100KW Waste Heat Recovery and Utilisation for Power Generation Project of Anhui Conch Cement Co. Ltd</i>
UNFCCC registration No:	<i>0898</i>
Baseline and monitoring methodology:	<i>AM0024, version 1</i>
Project's crediting period:	<i>4 May 2007 to 3 May 2017</i>
Verification period:	<i>1 March 2008 to 31 May 2009. This is the second periodic verification of the project</i>
Project Participants:	<i>Anhui Conch Cement Company Limited from China; CAMCO International Limited from The United Kingdom of Great Britain and Northern Ireland and Switzerland Cargill International S.A from Switzerland</i>
Location of the project activity:	<i>The project is located at the site of Ningguo Cement Plant in Ningguo City of Anhui Province of China.</i>

The project activity is a waste heat recovery and utilization for power generation project located at the Ningguo Cement Plant in Ningguo City of Anhui Province, China. The Ningguo Cement Plant is a part of the Conch Cement Group Company Limited. There are 3 clinker production lines with pre-calcination technology.

This project involves waste heat based power generation in the 5000 TPD clinker production line (line no. 3) in the Ningguo Cement Plant. Two sets of heat recovery boilers and one set of mixed-pressure admission condensing turbine-generator unit with the rated power generation capacity of 9.1 MW have been installed. It was verified during the site visit that the boilers and generator were operating on the site.

The production process of this project is an energy conversion process. Feed water recovers the heat energy of low-temperature waste heat exhausted by the 5000 TPD cement clinker production line through a pre-heater (PH) heat recovery boiler and air quench cooling (AQC) heat recovery boiler, to convert it into superheated steam. This steam is fed into the steam turbine coupled to the generator to generate 9.1 MW at a rated voltage of 6.3 kV. The generated power is connected to the power distribution system of Ningguo cement plant.

The Ningguo CDM project was registered on 4 May 2007 with a crediting period starting from 4



May 2007 and ending on 3 May 2017. Total amount of emission reductions generated in the first monitoring period from 4 May 2007 to 29 February 2008 equals 47 130 t CO₂e. The emission reductions being claimed in this second verification for the period 1 March 2008 to 31 May 2009 equals 71 857 t CO₂e

1.4 Methodology for Determining Emission Reductions

According to the methodology AM0024 version 1 /5/:

$$ER_y = BE_y - PE_y$$

1.4.1 Baseline Emissions

The formulae to calculate the avoided baseline emissions are as follows:

$$BE_y = EG_{CP,y} * EF_{grid,y} + EG_{grid,y} * EF_{grid,y}$$

Where

$EG_{CP,y}$ is the metered electricity supplied from the project activity to the cement plant,

$EG_{grid,y}$ is the metered electricity supplied from the project activity to the grid,

$EF_{grid,y}$ is the ex-post estimation of the emission factor of the East China Power Network(ECPN).

In the project, electricity is not exported to the grid, and has been verified by reviewing the electricity purchased from the grid /11/ and the total power consumption record of Ningguo cement plant /22/.

1.4.2 Project Emissions

The formulae to calculate the project emissions are as follows:

PE_y are the project emissions due to fuel consumption changes in the kilns of the cement plant as a result of the project activity and is calculated by the formula:

$$PE_y = (EI_{p,y} - EI_B) \times O_{clinker,y} \times COEF_{fuel,y}$$

The EI_B is the pre-project energy consumption per unit output of clinker expressed as TJ/ton of clinker produced (i.e. measured before the project activity goes into operation). The ex-ante fixed EI_B was arrived at 0.003130 TJ/t clinker based on historical operating data as validated during the registration of the project.

$EI_{p,y}$ is the ex-post energy consumption per unit output of clinker for given year, y, in TJ/ton of clinker produced.

$COEF_{fuel,y}$ is the carbon coefficient (t CO₂/TJ of input fuel) of the fuel used in the cement works in year y to raise the necessary heat for clinker production.

$COEF_{fuel,y}$ is calculated in accordance with the corrections made to equation 5 of AM0024 in October 2007 and in accordance with a request for deviation /18/ submitted in the context of the



verification of another similar project activity concerning the mistake in equation 5 of version 1 of AM0024

$$\text{COEF}_{\text{fuel},y} = \text{EF}_{\text{CO}_2,\text{fuel},y} / \text{NCV}_{\text{fuel},y}$$

$\text{EF}_{\text{CO}_2,\text{fuel},y}$ = Is the CO₂ emission factor per unit of energy of the fuel used in year y, expressed as tCO₂ per unit mass or volume unit. (TCO₂/unit mass or volume).

$\text{NCV}_{\text{fuel},y}$ = is the net calorific value (energy content) per mass or volume unit of a fuel used in clinker making process in year y; (TJ/unit mass or volume)

1.4.3 Leakage Emissions

Leakage can be ignored according to methodology AM0024.

2 METHODOLOGY

The verification of the emission reductions has assessed all factors and issues that constitute the basis for emission reductions from the project. As the CDM Executive Board has not yet formally endorsed the application of any materiality principle for verification of emission reductions from CDM projects - implying that emphasis should be on the significant contributors to emission reductions - DNV has checked all factors and issues with the same emphasis. Despite this, the team has during its preparations identified the key reporting risks and used the assessment to determine to which extent the project operator's control systems were adequate for mitigation of these key reporting risks. In addition, other areas that can have an impact on reported emission reductions have also undergone detailed audit testing.

Verification Team

The verification team consisted of the following personnel:

<i>Role/Qualification</i>	<i>Last Name</i>	<i>First Name</i>	<i>Country</i>	<i>Type of involvement</i>					
				Desk review	Site visit	Reporting	Supervision of work	Technical review	Expert input
GHG auditor	Li	Tao	China	√	√	√			
CDM Verifier	Kakaraparthi	Venkata Raman	India	√		√	√		√
Technical Reviewer	Biswas	Soumik	India					√	

Duration of verification

Preparations: 1 July 2009 to 3 July 2009

On-site verification: 9 July 2009 to 10 July 2009

Reporting and QA/QC: 13 July 2009 to 24 February 2010



2.1 Review of Documentation

Before the site visit, the following documents were reviewed:

- The monitoring report along with spreadsheet for ER calculation /1/ (dated 26 June 2009) for the period from 1 March 2008 to 31 May 2009. The data for ER calculation and information for this project were reviewed /4/.
- The registered PDD /2/ including the monitoring plan which include project information, ER calculation and monitoring system management determined on the validation stage;
- The validation report /3/.
- The approved baseline and monitoring methodology AM0024, version 1 /5/.
- Verification report for the initial monitoring period of 4 May 2007 to 29 February 2008 /20/

The project operator has in addition supplied the verification team with CDM Project Management and Operation Procedure /6/ as well as the data necessary for verification of the required emission factors.

2.2 Site Audits

During the period 9 to 10 July 2009, DNV carried out an on-site audit at the “Ningguo Cement Plant 9100KW Waste Heat Recovery and Utilisation for Power Generation Project of Anhui Conch Cement Co. Ltd” in Ningguo City. During this site visit, DNV interviewed key personnel of the plant and verified that the actual implementation of the project was as described in the registered PDD. This included confirming the operational stages of the project with physical and documented evidence.

Figures quoted in the monitoring report were cross-checked by reviewing relevant operation records. DNV audited in particular the procedures for data recording, processing and reporting and associated QA/QC procedures.

The above assessments were guided by the checklists contained in Appendix B.

Detailed verification of all data contained in the monitoring report was performed. During the site visit, the following personnel were interviewed or assisted the verification team:

<i>Name</i>	<i>Organization</i>	<i>Position</i>
Yang PeiLin	Conch Group Co. Ltd	Vice Director
Wang Xiyong	Ningguo Cement Plant	Vice Plant Manager
Chen Fengyin	Ningguo Cement Plant	Vice Director (Power Generation)
Jin Yuhua	Ningguo Cement Plant	Vice Director (QA)
Zhou Mingke	Ningguo Cement Plant	Vice Director (Power)
Zhou Mingke	Ningguo Cement Plant	Monitoring Management
Zhang Baojun	Ningguo Cement Plant	Vice Director (Production)
Wu Zhili	Ningguo Cement Plant	Plant Manager
Zhang Yuzhong	CAMCO	Operations Director
Liu Peng	CAMCO	Project Manager



These people were also present at the opening and closing meeting of the audit.

2.3 Reporting of Findings

Findings established during the verification may be as follows:

A corrective action request (CAR) is issued, where:

- i. Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- ii. Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
- iii. Issues identified in a FAR during validation to be verified during verification have not been resolved by the project participants.

A clarification request (CL) shall be raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

A forward action request (FAR) is issued for actions if the monitoring and reporting require attention and/or adjustment for the next verification period.

The verification identified one CAR which has been adequately responded to by the project proponent. The CAR raised and the response provided is as attached in Appendix A of this report.

3 VERIFICATION FINDINGS

This section summarises the findings from the verification of the emission reductions reported for the “Ningguo Cement Plant 9100KW Waste Heat Recovery and Utilisation for Power Generation Project of Anhui Conch Cement Co. Ltd” for the period 1 March 2008 to 31 May 2009.

3.1 Remaining Issues, CARs, FARs from Previous Verification

One FAR had been identified during the initial verification on non-implementation of the Appendix 3-5 “Calibration and Failure Record” of the CDM Monitoring and Quality Control Manual, V1.0 Manual. The implementation of the FAR was assessed during this verification. It has been observed that the project participant regularly managed all the monitoring equipments, and recorded the relevant information in a new equipments log sheet of calibration and maintenance records. These new spreadsheets were updated in Appendix 3-5 of the Manual, “Calibration and Failure Record” /6/. The FAR is hence closed.

3.2 Project Implementation

The Ningguo CDM project was registered on 4 May 2007 with the crediting period starting from 4 May 2007 and ending on 3 May 2017. This monitoring period from 1 March 2008 to 31 May 2009 is the second verification period of the project. All equipment as mentioned in the PDD was already operational prior to the beginning of the crediting period. Necessary monitoring arrangements have also been made in line with the PDD. During the previous verification, the accuracy of the auxiliary meter 52H was found to be inconsistent with the PDD. Hence a deviation was requested and approved by the executive. During this verification period, the inconsistent meter has been replaced by a meter of 0.5S accuracy class on 13 August 2008. However this does not impact the CER calculation from the project since the electricity



generated by the project has been monitored from the net power generation meter 52F which was of 0.5S accuracy class.

3.3 Completeness of Monitoring

The monitoring of the project is complete and in accordance with the approved monitoring methodology AM0024, version 1, and the monitoring plan contained in the registered PDD. The monitored parameters for project emission, baseline emission and leakage are as follows:

3.3.1 Monitored data for project emissions

The following essential data as reported in the monitoring report from the project has been assessed in detail.

1. Calorific value of fuel used in clinker production (TJ/ t of coal), NCV_i:

The coal used in the clinker production is measured daily and reported on a monthly basis, tests are made in order to evaluate the carbon content and the caloric value. The tests for calorific value are made in on-site laboratories and all relevant equipment is calibrated according to the requirements of measurement testing system (GB/T19022.1-1994[idt ISO 10012.1-1992]) and the calibration procedure of equipment. Also, the carbon content was tested by third party and had been assessed by the verification team /8/.

2. Annual energy (fuel) consumption of clinker making process after project implementation (TJ), $F_{p,y}$:

$F_{p,y}$ represents the fuel used, coal in this case, during the year for the production of clinker connected to the project activity. The annual energy consumption is determined at 6 982 TJ. It is calculated by the coal consumption which is measured by on-line weighing meter continuously and the NCV. The rotary flow meter to measure the coal consumptions was calibrated once every six months. The monitoring record was deemed to be in order.

3. Annual production of clinker after implementation of project (t_{Clinker}), $O_{\text{clinker}, y}$:

The annual production of clinker during the period from 1 March 2008 to 31 May 2009 was verified to be 2 335 756 T (as stated in the monitoring report) during the on-site verification against clinker output production records.

4. The net quantity of electricity supplied from the project activity during the year y in MWh, EG_y :

According to the registered PDD /2/, to continue with the power purchased from the ECPN is considered the baseline. EG_y is the metered electricity supplied from the project activity to the cement plant. Also according to the power consumption balance status /7/, it is observed that, as stated in the registered PDD, power generated in the project activity does not meet the total power requirement of the production process, and hence there is no power export from the project activity to the grid.

The project activity has three electricity meters for (a) 52F measuring the net power output from the power plant sent to the cement plant, (b) 52G measuring the total power generation in the project activity and (c) 52H measuring the auxiliary power consumption of the project activity.



The accuracy of the meter for monitoring total electricity generated, net power output from the power plant and the auxiliary meter is 0.5, which is in line with the accuracy required in the registered PDD. The data for the emission reductions are based on the energy meter which directly measures the net power sent to the cement plant and which was verified to be 85 240 MWh.

The following parameters are calculated figures.

5. Carbon coefficient for fuel used in clinker production (t CO₂/TJ), COEF_{fuel,y}:

COEF_{fuel} is the carbon coefficient (tCO₂/TJ of input fuel) of the coal used in the cement works in this monitoring period to raise the necessary heat for clinker production. This was calculated using the analysis of the net calorific value analyzed by the lab of Ningguo Cement Plant and carbon content of coal, provided by a third party, Anhui Coal Quality Monitoring and Testing Centre /8/.

6. Energy consumption per unit clinker production prior to project implementation (TJ/ton clinker), EI_B:

The EI_B is the measured baseline energy consumption per unit output of clinker in TJ/t of clinker. The *ex-ante* determined value from the registered PDD is 0.003130 TJ/t clinker. This is based on a year's measured data of 2005 as stated in the registered PDD /2/.

7. Energy (fuel) consumption per unit clinker production after project implementation (TJ/t clinker), EI_{p,y}:

Based on the fuel consumption and clinker production, this is calculated to be 0.002989 TJ/t clinker. Data pertaining to coal purchase records and clinker production records for determining the same have been verified.

Since the energy intensity for the current monitoring period is lower than the baseline value (0.003130 TJ/t clinker), the project emissions have been conservatively estimated as 0 t CO₂e.

8. Oxidation ratio of fuel used in the clinker production (%), OXID_{fuel} :

This has been assumed 100% which is conservative /2/.

3.4 Accuracy of Emission Reductions Calculations

According to the methodology AM0024 version 1 /5/:

$$ER_y = BE_y - PE_y$$

3.4.1 Baseline Emissions

The formulae to calculate the avoided baseline emissions are as follows:

$$BE_y = EG_y * EF_y$$

Where EG_y is the metered electricity supplied from the project activity to the cement plant and, EF_y is the emission factor of the East China Power Grid. As per the registered PDD, EF_y should be calculated ex-post. The ex-post EF_y published by China DNA for East China Power Grid was verified to be 0.905 t CO₂/MWh /21/, while the value used at the time of validation of the project activity was 0.843 t CO₂/MWh /2/. For the calculation of the emission reductions, 0.843 t



CO₂/MWh has been used for EF_y, as this leads to lesser value of the baseline emissions and is thus conservative.

In this monitoring period from 1 March 2008 to 31 May 2009, the metered and verified electricity supplied from the project activity to the cement plant is 85 240 MWh which results in baseline emissions amounting to 71 857 t CO₂e.

3.4.2 Project emission

The formulae to calculate the project emissions are as follows:

PE_y are the project emissions due to fuel consumption changes in the cement kilns of the cement plant as a result of the project activity and can be calculated by using the formula:

$$PE_y = (EI_{p,y} - EI_B) \times O_{clinker,y} \times COEF_{fuel}$$

The EI_B is the ex-ante fixed baseline energy consumption per unit output of clinker in TJ/ton of clinker at 0.003130 TJ /t clinker.

EI_{py} is calculated from the fuel consumption, F_{p,y}, and clinker output, O_{clinker,y}, of the cement kilns connected to the project activity for the verification period. The fuel consumption F_{p,y}, and clinker output, O_{clinker,y}, are monitored in accordance to the methodology and its value is 0.002989 TJ/t clinker.

For the COEF_{fuel} for the clinker kilns, this is calculated using the coal analysis reports monitored over the current monitoring period.

Since the value of PE_y is negative, this is considered as zero.

3.4.3 Leakage Emissions

In line with the registered PDD and AM0024, leakage emissions are deemed negligible and therefore considered to be zero.

Leakage can be ignored according to Methodology.

3.4.4 Emission reduction

The claimed emission reductions during this monitoring period are 71 857 tCO₂e. Totally 85 240 MWh electricity was sent to the cement plant. The capacity factor for this monitoring period is 85.4% (85 240 MWh / (9.1 MW * 457 days * 24 h/day)) which is a little higher than the estimated capacity factor of 81.7% in the registered PDD. DNV has verified the data in spreadsheet against the power production records /11/ on site and can confirm it is correct and transparent.

The emission reductions during the verification period are seen to be 4.69% higher than the estimated CERs in the registered PDD (for the same period). This would be due to the more availability of hot flue gases than estimated.

Period	Registered PDD	Monitoring report
1 March 2008 to 31 May 2009	68 747	71 857
% Deviation		+ 4.5%



3.5 Quality of Evidence to Determine Emission Reductions

DNV compared the data of clinker production, coal consumption and electricity generated reported in the monitoring report with the records kept at the plant. Reported data matched the inventory records kept at the plant.

All necessary documentation is collected, referenced and aggregated and is easily accessible in hard-copy or electronic format per the requirement from the methodology. Measurements are performed by calibrated equipment, and the key data has also be cross-checked via other sources, such as daily workbook records and coal analysis reports as carried out by a third-party /7//8//9/. No assumptions are used that have any material influence on reported emission reductions.

All measuring equipments have been calibrated by qualified third-party: electricity meters were calibrated by the Measurement and Testing Institute of Ningguo City Power Supply Company /9/, coal composition was analysed by Anhui Coal Quality Monitoring and Testing Centre /8/, mass flow meter for clinker production and belt weigher for coal consumption were calibrated by Mechanical Power Department of Ningguo Cement Plant /15/-/16/, as required in the methodology.

3.6 Management System and Quality Assurance

Ningguo Cement Plant has established a CDM manual, “CDM Monitoring and Quality Control Manual, V2.0” /6/, and has applied this management system to the waste heat recovery project.. The suitability of the management system for monitoring and reporting, i.e. organisational structure, responsibilities, competencies, non-conformance handling, internal audits and management review have been assessed and found to be acceptable.



4 CERTIFICATION STATEMENT

Det Norske Veritas Certification AS (DNV) has performed the verification of the emission reductions that have been reported for the “Ningguo Cement Plant 9100KW Waste Heat Recovery and Utilisation for Power Generation Project of Anhui Conch Cement Co. Ltd” (UNFCCC Registration Reference No. 0898) for the period 1 March 2008 to 31 May 2009 amount to 71 857 tCO₂ equivalent.

Ningguo Cement Plant is responsible for the collection of data in accordance with the validated monitoring plan and the reporting of GHG emissions reductions from the project.

It is DNV’s responsibility to express an independent verification statement on the reported GHG emission reductions from the project. DNV does not express any opinion on the selected baseline scenario or on the validated and registered PDD.

DNV conducted the verification on the basis of the monitoring methodology AM0024 (version 1), the monitoring plan, the PDD of the project and the revised monitoring report of version 5 dated 24 February 2010. The verification included i) checking whether the provisions of the monitoring methodology AM0024 and the monitoring plan were consistently and appropriately applied and ii) the collection of evidence supporting the reported data.

DNV’s verification approach draws on an understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. DNV planned and performed the verification by obtaining evidence and other information and explanations that DNV considers necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

In our opinion, the GHG emission reductions from the “Ningguo Cement Plant 9100KW Waste Heat Recovery and Utilisation for Power Generation Project of Anhui Conch Cement Co. Ltd” (UNFCCC Registration Reference No. 0898) for the period from 1 March 2008 to 31 May 2009 are fairly stated in the revised monitoring report of version 5 dated 24 February 2010, the monitoring report is complete as per the EB guidance .

The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology AM0024 (version 1) and the monitoring plan contained in the project’s project design document of 19 January 2007.

Det Norske Veritas Certification AS is able to certify that the reported emission reductions from the “Ningguo Cement Plant 9100KW Waste Heat Recovery and Utilisation for Power Generation Project of Anhui Conch Cement Co. Ltd” during the period from 1 March 2008 to 31 May 2009 amount to 71 857 t CO₂ equivalent.



Beijing, 2010-2-24

A handwritten signature in black ink that reads 'Tao Li'.

Li Tao
GHG Auditor

Oslo, 2010-2-24

A handwritten signature in black ink that reads 'C Kumaraswamy'.

C Kumaraswamy
Regional Manager



5 REFERENCES

Documents provided by the Project Participants that relate directly to the GHG components of the project. These have been used as direct sources of evidence for the periodic verification conclusions, and are usually further checked through interviews with key personnel.

- /1/ Anhui Conch Cement Company Limited, Monitoring Report for “Ningguo Cement Plant 9100KW Waste Heat Recovery and Utilisation for Power Generation Project of Anhui Conch Cement Co. Ltd”, Monitoring Period: 1 March 2008 to 31 May 2009, dated 26 June 2009 and the revised version of version 2 dated 2 September 2009, Version 4 dated 5 November 2009 and version 5 dated 24 February 2010.
- /2/ Anhui Conch Cement Company Limited, Project Design Document for “Ningguo Cement Plant 9100KW Waste Heat Recovery and Utilisation for Power Generation Project of Anhui Conch Cement Co. Ltd”, version 4, 19 January 2007.
- /3/ TUV SUD, Validation Report of “Ningguo Cement Plant 9100KW Waste Heat Recovery and Utilisation for Power Generation Project of Anhui Conch Cement Co. Ltd”, Report No. 871103, 22 January 2007.
- /4/ Anhui Conch Cement Company Limited, CDM Project Spreadsheet

Background documents related to the design and/or methodologies employed in the design or other reference documents.

- /5/ CDM Executive Board: Approved Baseline and Monitoring methodology, AM0024 version 1, September 30, 2005.
- /6/ Anhui Conch Cement Company Limited, “CDM Monitoring and Quality Control Manual, V2.0”.
- /7/ Anhui Conch Cement Company Limited, Electricity Operation Record, March 2008 to May 2009.
- /8/ Anhui Coal Quality Monitoring and Testing Centre, Coal Composition Analysis Record, March 2008 to May 2009.
- /9/ Measurement and Testing Institute of Ningguo City Power Supply Company, Calibration Record and Certificates, 52F: 25 April 2007, 31 March 2008 and 19 March 2009; 52G: 25 April 2007, 31 March 2008, 18 March 2009; 52H: 25 April 2007, 31 March 2008; 52H(replace the old one): 28 July 2008, 29 March 2009, The valid period for each calibration report is one year.
- /10/ Anhui Conch Cement Company Limited, Electricity Record, March 2008 to May 2009.
- /11/ Anhui Ningguo Power Supply Co., Ltd., Electricity purchase invoices for Ningguo Cement Plant, March 2008 to May 2009.
- /12/ Excel sheet for power generation cross-check.
- /13/ Ningguo Cement Plant, clinker output production records, 1 March 2008 to 31 May 2009
- /14/ Ningguo Cement Plant ERs calculation spreadsheet



- /15/ Mechanical Power Department of Ningguo Cement Plant, Calibration Record and Certificates for solid flow meter. Dated 13 October 2007, 10 April 2008, 08 October 2008, and 06 April 2009
- /16/ Mechanical Power Department of Ningguo Cement Plant, Calibration Record and Certificates for Pfister Rotor Scale dated 16 October 2007, 14 April 2008, 12 October 2008, and 10 April 2009.
- /17/ EB 44 Report Annex 3: Validation and Verification Manual, version 1. http://cdm.unfccc.int/EB/044/eb44_repan03.pdf.
- /18/ Request for deviation submitted on 23 March 2009 for the first period (1 March 2008 to 31 May 2009) of Ningguo Cement Plant 9100KW Waste Heat Recovery and Utilisation for Power Generation Project of Anhui Conch Cement Co. Ltd with the title "Corrections for installation of meter with lower accuracy than described in the monitoring plan of the PDD", approved by the CDM Executive Board at EB 47
- /19/ Accepted email for the request for deviation from UNFCCC secretariat on 29 May 2009
- /20/ Previous version of verification report for the monitoring period of 4 May 2007 to 29 February 2008.
- /21/ Chinese DNA's guidance for the determination of grid boundaries and emission factors, NDRC official website:
<http://cdm.ccchina.gov.cn/web/NewsInfo.asp?NewsId=1889>
- /22/ Power consumption records from May 2007 to February 2008

Persons interviewed:

Persons interviewed during the initial verification, or persons contributed with other information that are not included in the documents listed above.

/23/	Name	Organization	Position
	Yang PeiLin	Conch Group Co. Ltd	Vice director
	Wang Xiyong	Ningguo Cement Plant	Vice Plant manager
	Chen Fengyin	Ningguo Cement Plant	Vice Director (Power Generation)
	Jin Yuhua	Ningguo Cement Plant	Vice Director (QA)
	Zhou Mingke	Ningguo Cement Plant	Vice Director (Power)
	Zhou Mingke	Ningguo Cement Plant	Monitoring Management
	Zhang Baojun	Ningguo Cement Plant	Vice Director (Production)
	Wu Zhili	Ningguo Cement Plant	Plant Manager (ShengLi Plant)
	Zhang Yuzhong	CAMCO	Operations director
	Liu Peng	CAMCO	Project Manager

APPENDIX – ACorrective Action Requests, clarification requests and Forward Action Requests**Corrective action requests**

CAR ID	Corrective action request	Response by Project Participants	DNV's assessment of response by Project Participants
CAR 1	The monitoring report is to be revised to incorporate the guidelines of paragraph 10 of Annex 68 of EB49.	The additional requirements have been addressed in the revised monitoring report.	Revised MR now conforms to the EB requirements. The CAR is closed.

Forward action requests from previous verification

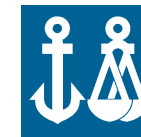
FAR ID	Forward action request	Summary of how FAR has been addressed in this reporting period	Assessment of how FAR has been addressed
FAR 1	Although necessary calibration and/or maintenance for the measurement equipment have been documented in the management system documentation in "CDM Monitoring and Quality Control Manual, V1.0" issued in 2007-04-28, however the Appendix 3-5 of the Manual, "Calibration and Failure Record", was not implemented properly	All the monitoring equipments are recorded in a new equipments log sheet including calibration and maintenance records. The Appendix 3-5 of the Manual is updated.	The implementation of the FAR was assessed during this verification. It has been observed that the project participant regularly managed all the monitoring equipments, and recorded the relevant information in a new equipments log sheet of calibration and maintenance records. These new spreadsheets were updated in Appendix 3-5 of the Manual, "Calibration and Failure Record" The Far is closed.



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APPENDIX - B.

Data / Parameter:(as in monitoring plan of PDD):	Calorific Value of Fuel used in the clinker production	Carbon content of coal	Fuel used during year to create clinker in the product line connected to the project activity	Annual production of Clinker after implementation of the project	Quantity of electricity supplied to cement work.
Measuring frequency:	Sampling and measurement is once per 4 hours and analyzing by the lab of Ningguo Cement Plant	Monthly sampling and tested by Coal quality supervision and test station of Anhui province	Continuously	Continuously	Continuously
Reporting frequency:	Monthly	Monthly	Monthly	Monthly	Monthly
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes	Yes	Yes	Yes	Yes
Type of monitoring equipment:	resistance furnace; loft drier; electronic stopwatch; electronic balance	Not applicable	Pfister Rotor Scale	Solid flow meter	Electricity meter
Is accuracy of the monitoring equipment as stated in the PDD? If the PDD does not specify the accuracy of the monitoring equipment, does the monitoring equipment only analyzes the coal represent good monitoring practise?	The Calorific Value of Fuel was determined by analyzing the coal sample by electronic balance after heating and physical properties, the equipment only analyzes the coal composition. No accuracy is defined for the process	Not applicable	Yes. the accuracy of the monitoring equipment is 0.5%	Yes. the accuracy of the monitoring equipment is 1%	Yes. the accuracy of the monitoring equipment is 0.5 class
Calibration frequency /interval:	Yearly	Not applicable	Half yearly	Half yearly	Yearly



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Is the calibration interval in line with the monitoring plan of the PDD? If the PDD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	Yes, The electronic balance, electronic stopwatch and core components of resistance furnace and dry box, i.e. thermocouple and temperature controller were calibrated annually	Not applicable.	Yes, it is done per half year on: 16 October 2007, 14 April 2008, 12 October 2008, and 10 April 2009 The valid period for each calibration report is one year.	Yes, it is done per half year on: 13 October 2007, 10 April 2008, 8 October 2008, and 6 April 2009 The valid period for each calibration report is one year.	Yes, it is done annually. 52F: 25 April 2007, 31 March 2008 and 19 March 2009; 52G: 25 April 2007, 31 March 2008, 18 March 2009; 52H: 25 April 2007, 31 March 2008; 52H(replace the old one on 13 August 2008): 28 July 2008, 29 March 2009, The valid period for each calibration report is one year.
Company performing the calibration:	Quality and Technology Supervision Bureau of Ningguo City and Anhui Institute of Measurement Science	Coal quality supervision and test station of Anhui province	Mechanical Power Department of Ningguo Cement Plant	Mechanical Power Department of Ningguo Cement Plant	Measurement and Testing Institute of Ningguo City Power Supply Company
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Yes	Not applicable.	Yes	Yes	Yes
Is (are) calibration(s) valid for the whole reporting period?	Yes. Electronic balance: 05 November 2007, 20 October 2008 Electronic stopwatch 26 October 2007, 17 October 2008, 08 May 2009 Thermocouple 07 November 2007, 27 October 2008, 05 June 2009	Not applicable.	Yes. Calibration were performed on 16 October 2007, 14 April 2008, 12 October 2008, and 10 April 2009 The valid period for each calibration report is one year.	Yes Calibration were performed on 13 October 2007, 10 April 2008, 08 October 2008, and 06 April 2009 The valid period for each calibration report is one year.	Yes. Calibration were performed on 52F: 25 April 2007, 31 March 2008 and 19 March 2009; 52G: 25 April 2007, 31 March 2008, 18 March 2009; 52H: 25 April 2007, 31 March 2008; 52H(replace the old one on 13 August 2008): 28 July 2008, 29 March 2009, The valid period for each calibration report is one year.



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	Temperature Controller 29 May 2007, 20 May 2008, 18 May 2009 The valid period for each calibration report is one year.				2008, 29 March 2009, The valid period fro each calibration report is one year.
How were the values in the monitoring report verified?	2 sampling of daily records for each month (first day and last day) were cross checked with the monthly report. No error was found.	Monthly report was verified and no error was found.	2 sampling of daily records for each month (first day and last day) were cross checked with the monthly report. No error was found.	2 sampling of daily records for each month (first day and last day) were cross checked with the monthly report. No error was found.	2 sampling of daily records for each month (first day and last day) were cross checked with the monthly report. No error was found.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, All data from the monthly report was transferred to the monthly and annually report and deemed to be in order.	Yes, All data from the monthly report was transferred to the monthly and annually report and deemed to be in order.	Yes, All data was recorded by the DCS system and the transfer of the data from DCS system to the monthly and annually report deemed to be in order.	Yes, All data was recorded by the DCS system and the transfer of the data from DCS system to the monthly and annually report deemed to be in order.	Yes, All data from the monthly report was transferred to the monthly and annually report and deemed to be in order.



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In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	Not applicable	Not applicable	Not applicable	Not applicable	During the first periodic verification period, a deviation was raised because the accuracy of meter 52H (2.0) is lower than the PDD mentioned,(0.5), the meter of 52H was replaced by a 0.2S class meter on 13 August 2008. The meter 52H was used to monitoring the electricity send to the power plant. Another meter 52F was used to monitoring the net electricity send to cement work. The meter reading of 52F was used for ER calculation, so the deviation will not affect the ER of this period.
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