TÜV Rheinland Japan Ltd.
TÜV Rheinland Group

VALIDATION REPORT

HENAN ZHENGZHOU GRID CONNECTED NATURAL GAS COMBINED CYCLE POWER PLANT

P.R. CHINA

REPORT NO. 01 997 9105040709
REVISION NO. 03

CDM Validation Report Template
Version 3.0, December 2003

VALIDATION REPORT

Date of first issue: 2007-04-27	Project No.: 01 997 9105040709	*TÜV Rheinland Japan Ltd.* Shin Yokohama Daini Center Bldg., 3-19-5, Shin Yokohama Kohoku-ku, Yokohama 222-0033
Approved by: Dr Manfred Brinkmann	Organisational unit: System Certification Group, Industrial Engineering Services	
Client: Green Capital Consulting Company	Client ref.: C/o Mrs. Victoria Q. Wang, CEO	Certificate Number: 01 997 9105040709

Executive Summary:

The DOE TÜV Rheinland Japan Ltd. (TÜV Rheinland) has carried out the validation of the planned "Henan Zhengzhou Grid Connected Natural Gas Combined Cycle Power Plant " in the P.R. China on the basis of UNFCCC criteria for CDM projects according to Article 12 of the Kyoto Protocol and subsequent decisions of the CDM Executive Board with regard to CDM modalities and procedures and the application of approved methodologies. The validation report and the validation protocol are summarizing the findings of the validation.
The validation was executed in the following steps so far:

- Desk review of preliminary PDD (version 1 of November, 2006)
- Public stakeholder comment process (February 23, 2007 to March 24, 2007)
- On-site visit with stakeholder interviews (April 5–7, 2006)
- Issue of checklist with corrective action requests (CARs) and clarification requests (CLs) and the draft validation report & protocol
- Desk review of revised PDD (version 4 of 26 December 2007)
- Review of proposed corrections and clarifications
- Issue of the final validation report & protocol

The Approval Letter of voluntary participation, including confirmation by China's DNA and United Kingdom's DNA, that the project assists them in achieving sustainable development, has been received.

In the opinion of TÜV Rheinland the project meets all relevant UNFCCC requirements of the CDM and is able to fulfil all relevant host country criteria, and correctly applies the baseline and monitoring methodology AM0029. The DOE thus requests the registration of the project as a CDM project activity.

Report No.: 01 997 9105040709	Subject Group: Environment & Energy
Report title: Henan Zhengzhou Grid Connected Natural Gas Combined Cycle Power Plant	
Work carried out by: • Roy Fan • Waikwok Wong	
Work verified by: • Dr. Manfred Brinkmann	
Date of this revision: 2007-12-31	Rev. No.: 03 / Number pages 66

Indexing terms

Climate Change
Kyoto Protocol
Large Scale Project Validation
Clean Development Mechanism
Grid Connected Renewable Energy Project

☐ No distribution without permission from the Client or responsible organisational unit

☐ Limited distribution

☒ Unrestricted distribution

Abbreviations

Explain any abbreviations that have been used in the report here.

AF	Adjustment Factor
AM	Approved Methodology
ACM	Approved Consolidated Methodology
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CHP	Combined Heat and Power Generation
CL	Clarification Request
CO2	Carbon Dioxide
CO2e	Carbon Dioxide Equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EA	Economic Analysis
EB	Executive Board
EIA	Environmental Impact Assessment
ER	Emission Reduction
ERPA	Emission Reduction Purchase Agreement
FAR	Forward Action Request
FSR	Feasibility Study Report
GHG	Greenhouse Gas
GWh	Giga Watt Hours
GWP	Global Warming Potential
I	Interview
IETA	International Emissions Trading Organisation
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
kW	Kilo Watt
kWh	Kilo Watt Hours
LoA	Letter of Approval
LoI	Letter of Intent
LSTHC	Local Stakeholder Consultation
MoV	Means of Verification
MW	Mega Watt
MWh	Mega Watt Hours
NGO	Non Government Organisation
NPV	Net Present Value
ODA	Official Development Assistance
OSV	On Site Visit
PDD	Project Design Document
QC	Quality Control
QA	Quality Assurance
SItC	Supplier Information to Client
t	Tonne
UNFCCC	United Nations Framework Convention on Climate Change

Formatted: German (Germany)

Deleted: VALIDATION REPORT

Conversion Factors and Definitions

Insert and describe any conversion factors used in the report here. In addition, define any specific terminology used in the report.

ACM	Approved Consolidated Methodology

Table of Contents *Page*

Formatted: German (Germany)
Deleted: VALIDATION REPORT
Deleted: 11
Deleted: 12
Deleted: 12
Deleted: 12
Deleted: 13
Deleted: 13
Deleted: 13
Deleted: 14
Deleted: 14
Deleted: 14
Deleted: 14
Deleted: 15
Deleted: 15
Deleted: 15

Formatted: German (Germany)
Deleted: VALIDATION REPORT

Deleted: 15
Deleted: 17

Appendix A: Validation Protocol

1 INTRODUCTION

Green Capital Consulting Company has commissioned the audit team of the DOE – TÜV Rheinland, to validate the "Henan Zhengzhou Grid Connected Natural Gas Combined Cycle Power Plant" (hereafter called "the Project") in the People's Republic of China. The following sections and protocols summarized the findings of the validation of the project. The validation was performed on the basis of the UNFCCC criteria for CDM projects and the criteria for the consistent operation of the project activity including correct execution of the monitoring and reporting works. The validation team consists of the following personnel:

Team Member	Role in the Project	Office	Title / Qualifications
Mr. Roy Fan	Team Leader	Industrial Services – Environment and Energy, TUV Rheinland Hong Kong Ltd.	CDM Project Manager, BSc, MSc
Mr. Wai Kwok, Wong	CDM Auditor	Industrial Services – Environment and Energy, TUV Rheinland Hong Kong Ltd.	CDM Project Engineer, BEng, MSc
Dr Manfred Brinkmann	Internal Reviewer	TUV Rheinland Japan Ltd.	CDM Programme Manager, PhD

1.1 Objective

The purpose of the validation is to provide an independent, third party assessment, based on evidences provided by the project proponents and other relevant stakeholders, to confirm that the project meets the relevant criteria as CDM project.

This Validation Report is representing the findings of the validation exercise along with the methodology applied for validation, compliance of the project with the requirements of

- Kyoto Protocol
- Modalities and procedures for a clean development mechanism (COP Decision 17/CP.7)
- Guidelines issued by UNFCCC for validation of the project
- IETA/PCF Validation and Verification Manual v 4.0

It has checked

- Format of the documents as required by UNFCCC
- Additionality of the project
- Criteria for sustainable development by the host country (China)
- Baseline of the project
- GHG Emission accounting practice

Deleted: 2

- The criteria of the CDM eligibility by the host country (China)
- Project Feasibility Study Report (FSR)
- Stakeholder Survey (STHS)
- Environmental Impact Assessment (EIA) Report

The audit team of TÜV Rheinland Group has applied the above criteria and the applied approved baseline and monitoring methodologies.

1.2 Scope

The validation scope has been defined as an independent and objective review of PDD, which is detailed as follows:

- Review of the PDD for purpose of publishing the PDD exclusive of confidential data
- Publication of the PDD without confidential data
- Collection of comments of global stakeholders
- Evaluation of global and local stakeholders comments received
- Desk review of relevant project information
- On site visit
- On visit project documents review and inspection
- Validation of the proposed CDM project activity prior to submission of the validation report to the Executive Board as part of the registration process

The Validation Report referred to the Validation and Verification Manual in preparation and has been prepared as per the CDM report template version, December 03 published by IETA. TÜV employed a risk-based approach to validation, focusing on the identification of significant risks for project implementation and reduction in greenhouse gases, used as a basis for assessing the project baseline scenario and the claimed emission reductions from the project.

To ensure transparency in arriving at its Clarification and Corrective Action Requests, TÜV Rheinland has performed background research on the applied technology, alternate calculations based on the data procurement and/or availability of the accountable and key parameters of validation as referenced in the project PDD. These considerations are the emission factors in the baseline scenario and demonstration of additionality of the proposed CDM project.

1.3 GHG Project Description

The Henan Zhengzhou Grid Connected Natural Gas Combined Cycle Power Plant is to be implemented in Xiangying village of Zhengzhou City in Henan province at People's Republic of China. The project is built as a grid-connected electricity generation plant serving as a peak load balancing power plant.

The natural gas going to be used for the project is extracted from the gas fields in the Chadamu basin of Qinghai, Tarim basin of Xinjiang, and Shanganning region in the

Deleted: 2

western areas of China. The proposed project has an installed capacity of 780 MW by means of 2 X 390 MW gas/steam turbines to supply electricity for the Henan Grid, which would otherwise be generated from existing thermal power plants. Thus this project activity would reduce a quantity of 691,502 tonnes of CO_2e annually over a chosen renewable crediting period of 7 x 3 years.

2 METHODOLOGY

The validation consists of the following three phases:

i. A desk review of the project design documentation

ii. Follow-up interviews with project stakeholders including an on-site assessment

iii. The resolution of outstanding issues and the issuance of the validation report and opinion

In order to ensure transparency, the validation protocol of the Validation and Verification Manual was applied and customized for CDM projects of Sectoral Scope 1.

The protocol shows, in a transparent manner first of all the specific requirements, how to verify them, means of verification, and finally the concluding results from the validation of the identified requirements.

The validation protocol therefore has the following functions:

- It organises, details and clarifies the requirements, which the CDM project is expected to meet;
- It ensures a transparent validation process where the verifier will document how he has validated a particular requirement, and finally it shows the concluding result of the validation.

The validation protocol consists of three tables. The different columns in these tables are described in Figure 1. The completed validation protocol for the "Henan Zhengzhou Grid Connected Natural Gas Combined Cycle Power Plant" is enclosed in Appendix A to this report.

Figure 1 Validation protocol tables

Validation Protocol Table 1: Mandatory Requirements			
Requirement	***Reference***	***Conclusion***	***Cross reference***
The requirements the project must meet.	*Gives reference to the legislation or agreement where the requirement is found.*	*This is either acceptable based on evidence provided (**OK**), or a **Corrective Action Request (CAR)** of risk or non-compliance with stated requirements. The corrective action requests are numbered and presented to the client in the Validation report.*	*Used to refer to the relevant checklist questions in Table 2 to show how the specific requirement is validated. This is to ensure a transparent Validation process.*

Deleted: 2

Validation Protocol Table 2: Requirement checklist				
Checklist Question	***Reference***	***Means of verification (MoV)***	***Comment***	***Draft and/or Final Conclusion***
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organised in seven different sections. Each section is then further sub-divided. The lowest level constitutes a checklist question.	*Gives reference to documents where the answer to the checklist question or item is found.*	*Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.*	*The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.*	*This is either acceptable based on evidence provided (**OK**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question (See below). **Clarification** is used when the validation team has identified a need for further clarification.*

Validation Protocol Table 3: Resolution of Corrective Action and Clarification Requests			
Draft report clarifications and corrective action requests	***Ref. to checklist question in table 2***	***Summary of project owner response***	***Validation conclusion***
If the conclusions from the draft Validation are either a Corrective Action Request or a Clarification Request, these should be listed in this section.	*Reference to the checklist question number in Table 2 where the Corrective Action Request or Clarification Request is explained.*	*The responses given by the Client or other project participants during the communications with the validation team should be summarised in this section.*	*This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".*

2.1 Review of Documents

The published Project Design Document (PDD), Version 1 of November 2006 and the revised PDD, up to Version 4 of 26 December 2007 submitted by Green Capital Consulting Company on behalf of the project owner was assessed by the audit team. Further assessment and evaluation are carried out by reviewing complimentary calculation sheets, and relevant project supporting documentation. A summary of this information has been listed in Section 5 of the Validation Report.

Deleted: 5

Deleted: October

2.2 Follow-up Interviews

From April 5th till April 7th, 2006, TÜV Rheinland has performed personal and telephone interviews with representatives of the project developer, CDM consultant and local stakeholders at the project site of the power plant at Zhengzhou in order to confirm and to resolve issues identified in the document review. The main topics of the interviews were

(1) local stakeholder consultation process, (2) permits and approvals, (3) status of project implementation and (4) status of preparation of the training for the local staff and the monitoring plan. Details of the topics are listed in Table 1 below:

Table 1 Interview topics

Interviewed organisation	Interview topics
Zhengzhou Combined Cycle Power Co., Ltd	➢ Project design ➢ Project related legal issues ➢ Technical equipment ➢ Sustainable development issues ➢ Additionality ➢ Crediting period ➢ Monitoring plan ➢ Training history ➢ Management system ➢ Environmental impacts ➢ Stakeholder process ➢ Approval by the host country
Green Capital Consulting Company	➢ Project design ➢ Technical equipment ➢ Sustainable development issues ➢ Baseline determination ➢ Additionality ➢ Crediting period ➢ Monitoring plan ➢ Management system ➢ Environmental impacts ➢ Stakeholder process ➢ Approval by the host country
Henan Zhengzhou Municipality & Local Community	➢ Project design ➢ Project related legal issues ➢ Project status ➢ Sustainable development issues ➢ Environmental impacts ➢ Stakeholder process ➢ Issues affecting the local community ➢ Approval by the local EPB

2.3 Clarification and Corrective Action Requests

The objective of this phase of the validation will be to resolve any requests for corrective actions and clarification and any other outstanding issues, identified during the validation, which needed to be clarified prior to TÜV Rheinland's positive conclusion on the project design.

To guarantee the transparency of the validation process, the concerns raised are documented as summary in table 3 of the validation protocol (Annex A to this validation report). The above Corrective Action Requests (CARs) and Clarification Requests (CLs) were identified and presented to the project proponent. This will result besides of an action plan of the project developer for the further project preparation also in a revision of the

Deleted: 2

previous PDD, version 1 of November 2006, which was made public for the global stakeholder process.

A revised version of the PDD, Version 4 of 26 December 2007, has been submitted to the audit team for final validation, which is based on the first validation report and the issued corrective action requests and clarification requests.

Deleted: 5

Deleted: October

3 VALIDATION FINDINGS

The findings of the validation, related to the revised PDD (Version 4 of PDD of 26 December 2007) are summarized in the following sections. The requirements, the means of verification and the concluding results are documented in more detail in the validation protocol in Appendix A.

Deleted: 5

Deleted: October

3.1 Project Design

3.1.1 Discussion

Due to the increasing electricity demand and the need to meet peak load in the Henan Grid, a sub-grid of an independent regional grid - Central China Grid (CCG), Zhengzhou Combined Cycle Power Co., Ltd. proceeded to set up a new grid connected power plant. The plant is based on efficient combined cycle technology and can use natural gas as fuel. The natural gas (NG) is exploited from the gas fields in the Chadamu basin of Qinghai, Tarim basin of Xinjiang, and Shanganning region in the western areas of China by means of pipelines, and has been commonly referred to as the national WEST to EAST natural gas program. According to the Feasibility Study Report (FSR), the expected consumption of natural gas by the proposed project is about 525Mm^3 / annum.

The proposed project activity has an has an annual installation capacity of 780 MW by 2×390 MW gas / steam turbines using combined cycle technology and will serve principally as an electricity peak regulation plant with an estimated operating hours of 3,500 hours per year. The estimated net electricity generation to be exported to the grid is about 2,598 GWh per year.

Besides of this main function the project will also contribute to sustainable development of the host country and the region by means of creation of employment, reduction of GHG emissions and other pollutants, improving living conditions and economic development.

The project design engineering reflects current good practice and will be a good prime example for co-operation and technology transfer between an Annex I country (Germany via Siemens) and the host country (Zhengzhou Combined Cycle Power Co., Ltd. on behalf of China). The DNA of China has confirmed that the project assists in achieving sustainable development by issuing the Letter of Approval (LoA) on 22 May 2007. Also the LoA from the Annex I participating country (UK) is received on 7 June 2007).

A crediting period of 7 x 3 years is selected, starting in 2007 after the registration of the

Deleted: 2

project activity. According to the PDD, The expected operational lifetime of the project is 20 years. The remaining lifetime of the power plant's main equipments (steam turbines, gas turbines, heat recovery steam generators, and generators) is longer than the crediting period.

Formal consideration and determination of application of CDM revenues as an integral part of the project activity has been demonstrated via minutes of shareholder meeting of Zhengzhou Combined Cycle Power Co., Ltd., as early as 10th June 2005 during the 2nd Shareholder Meeting Resolution.

The validation team did not reveal any information that indicates that the project can be seen as a diversion of ODA funding towards China and confirmed by a letter from the NDRC on 10 December 2005 that project funding were raised from shareholder (20%) with the remaining from bank loans (80%).

A Power Purchase Agreement (PPA) has been entered into between Henan Province Power Company and Zhengzhou Combined Cycle Power Co., Ltd., in November 2006.

Zhengzhou Combined Cycle Power Co., Ltd is responsible for organising the necessary training for the operation, maintenance and monitoring. Zhengzhou Combined Cycle Power Co., Ltd has organized the necessary training before the project commissioning. The operating staff has been trained in Germany for approximately 3 months, and also on-site training by specialists from Siemens was provided. The Operation and Maintenance Manual was available for inspection during the site visit. Also the technical staff members of the major facilities have obtained relevant qualifications issued by the General Administration of Quality Supervision Inspection and Quarantine of the People's Republic of China. It is understood that the maintenance contract is still being negotiated with Siemens and hasn't been finalised.

The starting date of the project activity is 3 July 2005 which is known as the start date of project construction of the power plant. The crediting period can only start after the project is registered and after the project activity is fully implemented with all facilities including measurement and monitoring equipment.

3.1.2 Findings

CAR1: The LoA from DNA of P.R.China is not available for inspection.

The project proponent has to obtain a written approval for the project from the DNA of the P.R. China in English language, which shall contain all required CDM elements in the letter as defined by UNFCCC (see Table 3 of the Validation Protocol).

Response: The LoA from the Chinese DNA was issued in May 2007 and already submitted to the Validation team. The CAR is therefore resolved and closed.

CAR2: Annex 4 of the PDD have to be provided according to the relevant PDD guidelines issued by UNFCCC, which includes in Annex 4 copy of worksheets used by the operator based on aggregation of monthly / weekly / daily worksheets and calculated from the formulas given in methodology AM0029 respectively ACM0002 are required.
Response: The primary parameters to be monitored during the crediting period of the project activity were provided in Annex 4 in the PDD-v4. The CAR is therefore resolved

Deleted: PDD-v2

Deleted: 2

and closed.

CAR3: The description of the project activity should contain more technical specifications, parameters. The results from the performance guarantee tests have to be presented. This section should include a description of how environmentally safe and sound technology and know-how to be used is transferred to the host Party(ies). Systems plans and responsibilities with regard to initial training (capacity building) and maintenance efforts during the project period should be outlined in this section. This is relevant when new technology is implemented such as a new boiler type, new gas turbine type, new waste heat recovery and steam turbine, etc.

Response: The technical parameter of the Project was described in section A.4.3. The project owner has been working with the various related professional institutions and consultants to provide a series of professional training programs and expected that such training programs will provide the project a highly skilled technician team needed to ensure the desirable results. More detailed information were provided in section A.4.3 and B.7.2 of the PDD-v4. In addition, the Form of Performance Guarantee Test is provided to the DOE.

Deleted: PDD-v2

The CAR is therefore resolved and closed.

CL1: Please clarify the expected operational lifetime of the project activity (20 years in the PDD) as it is written in the PDD that a 7x3 years of crediting period has been chosen.
Response: The operational lifetime of the Project is 20 years as stated in the Section C.1.2. , and therefore the CERs will not be claimed after the 20ys. The CL is therefore resolved and closed.

CL2: Please clarify in the PDD which steps the training is planned (before commissioning, during operation) and how the responsibilities and tasks of power plant operator, project developer, technology supplier including monitoring equipment and CDM consultant are allocated.

Response: The training programs have been planned by the Project owner, which were provided in the Section A.4.3 and the Section B.7.2. The CL is therefore resolved and closed.

CL3: Evidences of starting date of project activity shall be provided. The confirmed start date of the project activity has to be clarified in the PDD, so as the amount of emission reductions for the year 2007.

Response: It is clarified that the confirmed starting date of the Project is 3 July 2007 in the Section C.1.1, which is the date of construction of the project activity. The relevant evidence is the signed agreement for the date to start pouring the concretes to the construction site of the proposed project, which was provided to the DOE.
The CAR is therefore resolved and closed.

3.2 Baseline and Additionality

3.2.1 Discussion

The project applies the approved baseline methodology AM0029 "*Baseline Methodology for Grid Connected Electricity Generation Plants using Natural Gas*" (Version 1), which uses also the build margin and operational margin approach from ACM0002"*Consolidated methodology for grid-connected electricity generation from renewable sources*" (Version 6).

The mentioned methodologies are applicable to such project activities as described in the PDD, which reduce greenhouse gas emissions through construction and operation of a new natural gas fired grid-connected electricity generation plant.

The other requirements for the application of AM0029 are also fulfilled and justified, which are:

- The project activity is a new facility.
- The geographical / physical boundaries of the baseline grid can be clearly identified as the Central China Grid and information pertaining to the grid and estimating baseline emissions is published by the DNA of P.R. China which is publicly available.
- The supply of natural gas to the project activity, will be sufficiently available in Zhengzhou with the supply of natural gas as stated in the PDD, which would not hinder the development of further natural gas fired power plants in the region and would not lead to leakage.
  Being the nation's 1st city to have natural gas supply from the "West to East Gas" pipeline, the gas supply station is also located in Zhengzhou as confirmed by the audit team during the site audit. The audit team has inspected and confirmed that a Natural Gas Supply Agreement has been entered into between PetroChina Natural Gas Co., Ltd and Zhengzhou Combined Cycle Power Co., Ltd. on 30th September 2006 for a stable gas supply of natural gas of 20 years, and has set the natural gas selling price for a price of RMB 1.18 per m^3, which will be subject to review on a yearly basis. The natural gas supply and consumption figures presented in the PDD have demonstrated that the natural gas supply in the Henan Province is sufficiently available. The Audit team has also verified that the sources of natural gas supply to the city of Henan and Zhengzhou as quoted in the PDD are valid.
  Furthermore, based on the "*Introduction to the Development Status of Gas Turbine Power Generation Project and Follow-Up Services and Spare Parts Procurement issued by China National Technical Ex-Im. Corp. in 2006",* it is shown that there are other natural gas fired power plants under development in Henan Province, which shows that the development of other natural gas power plants are not constrained by the supply of natural gas in the region.

Identification of baseline scenario

The validation team had reviewed the relevant power plant technologies that have recently been constructed or are under construction or are being planned, and wishes to report the results in more detail as follows:

a) Relevant power plant technologies that have recently been constructed

Deleted: 2

According to the China Electric Power Yearbooks 2004-2006*, the increases in relevant plant technologies in the Central China Grid during 2002 to 2005 are presented under Tables 2 to 5 and Figure 1. This is used as indications of relevant power plant technologies that have recently been constructed, and include increases in capacities in thermal power, hydropower, nuclear power, wind power and others. It is also found that the increase in the thermal power capacity has substantially out-weighted other types of power during the mentioned period. The validation team confirms that these reported power plant technologies have been appropriately considered during the selection of baseline and presented in the PDD.

Table 1: Installed Capacity of Central China Grid in year 2002

Installed Capacity	**Unit**	**Jiangxi**	**Henan**	**Hubei**	**Hunan**	**Chongqing**	**Sichuan**	**Total**
Thermal power	MW	5,128.8	15,904.5	8,147.8	4,975.6	3,004.5	6,142.0	43,303.2
Hydropower	MW	2,197.4	2,438.0	7,213.9	6,135.3	1,195.5	11,854.6	31,034.7
Nuclear power	MW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wind power and others	MW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	MW	7,326.2	18,342.5	15,361.7	11,110.9	4,200.0	17,996.6	74,337.9

Table 2: Installed Capacity of Central China Grid in year 2003

Installed Capacity	**Unit**	**Jiangxi**	**Henan**	**Hubei**	**Hunan**	**Chongqing**	**Sichuan**	**Total**
Thermal power	MW	5,407.8	17,635.5	8,173.3	6,446.7	3,126.2	6,104.0	46,893.5
Hydropower	MW	2,307.4	2,438.0	7,337.2	6,603.1	1,329.8	12,341.5	32,357.0
Nuclear power	MW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wind power and others	MW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	MW	7,715.2	20,073.5	15,510.5	13,049.8	4,456.0	18,445.5	79,250.5

Table 3: Installed Capacity of Central China Grid in year 2005

Installed Capacity	**Unit**	**Jiangxi**	**Henan**	**Hubei**	**Hunan**	**Chongqing**	**Sichuan**	**Total**
Thermal power	MW	5,906.0	26,267.8	9,526.3	7,211.6	3,759.5	7,496.0	60,167.2
Hydropower	MW	3,019.0	2,539.9	8,088.9	7,905.1	1,892.7	14,959.6	38,405.2
Nuclear power	MW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wind power and others	MW	0.0	0.0	0.0	0.0	24.0	0.0	24.0
Total	MW	8,925.0	28,807.7	17,615.2	15,116.7	5,676.2	22,455.6	98,596.4

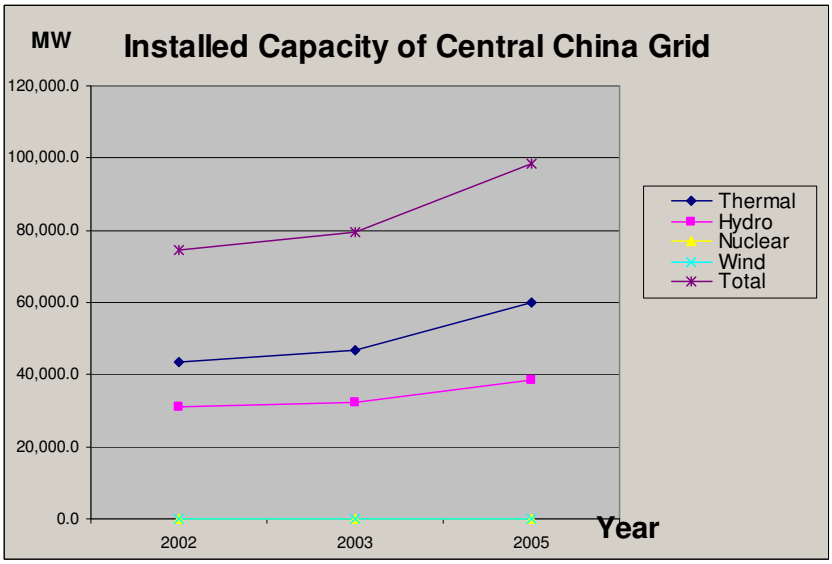
* China Energy Statistical Yearbook 2004, 2005, 2006, China Statistics Press.

Deleted: 2

Table 4: Change in Installed Capacity of the Central China Grid (2002 – 2005)

Installed Capacity (IC)	Unit	IC of year 2002	IC of year 2003	IC of year 2005	Increased IC	Weight of Increased IC
		A	B	C	D = C - A	
Thermal power	MW	43,303.2	46,893.5	60,167.2	16,864.0	69.52%
Hydropower	MW	31,034.7	32,357.0	38,405.2	7,370.5	30.38%
Nuclear power	MW	0.0	0.0	0.0	0.0	0.00%
Wind power and others	MW	0.0	0.0	24.0	24.0	0.10%
Total	MW	74,337.9	79,250.5	98,596.4	24,258.5	100.00%
Weight of IC of year 2005	MW	75.40%	80.38%	100.00%		

Figure 1: Change in Installed Capacity of the Central China Grid (2002 – 2005)



b) Relevant power plant technologies that are under construction or are being planned

Regarding those power plant technologies that are under construction or are being planned within Henan, the validation team has reviewed the "Eleventh Five-Year Plan"* of China, which provides framework guidance for the development of energy industry for 2007-2012. That document mentions that thermal power plants, wind power, nuclear power, hydro power, solar power plants and biomass power plants will be continuously developed. The validation team confirms that all of these reported power plant technologies have been considered in the PDD.

Based on the information presented above, the validation team has been able to confirm that "all relevant power plant technologies that have recently been constructed or are under construction or are being planned, including those of other investors, were considered as additional baseline scenarios" and accept that the consideration of alternatives in the PDD be conducted in the present form, where four potential alternatives have been identified and evaluated in the PDD, namely:

* http://www.ha.xinhuanet.com/add/zfzx/2006-12/08/content_8734248.html

Deleted: 2

1. The project activity not implemented as a CDM project;
2. Power generation using natural gas, but technologies other than the project activity;
3. Other energies for power generation including coal, hydropower, wind power, solar resource, biomass and nuclear power;
4. Import of electricity from connected grids, including the possibility of new interconnections.

Alternative 1 has been identified and investigated as a potential baseline scenario. A benchmark investment analysis has been carried out and presented in the PDD as described in "Step 1" of the Additionality assessment presented in the PDD. The benchmark analysis has resulted a project IRR of 6.26% and therefore shown that the project would not be financially attractive without the incentives from CDM.

Alternative 2: As reported in the Validation Report, the validation team confirms that other technologies using natural gas such as the single cycle technology would typically not render the same type of service and prove even less economical due to inferior energy efficiencies (up to 38%-39.5% efficiency as compared to 54.5-58% efficiency with combined cycle technology). Such technology can therefore not be considered as alternative baseline,).

Based on the fact that the project will be used as (seasonal) peak regulation plant, it is considered that all identified alternative baseline scenarios in alternative 3, except the sub-critical or super-critical coal-fired power plants, would not be suitable to achieve similar energy efficiency or provide similar peak load balancing ability as the proposed CDM project activity. This is in line with the "Tool for the demonstration and assessment of additionality", which has stated that the project proponent should "Identify realistic and credible alternative(s) available to the project participants or similar project developers that provide outputs or services comparable with the proposed CDM project activity". The validation team hence accepts that hydropower, wind power, solar power and biomass power plants technologies are not further considered plausible baseline scenarios in the PDD.

Finally, the sub-critical or super-critical coal-fired power plants have been evaluated by the validation team and have been accepted as usable for similar peak-regulating function in China[*]. The selection of the sub-critical or super-critical coal-fired power plants has been further supported by the results of survey on the newly built thermal power projects during the Tenth Five-Year Plan of China (i.e. 2000-2005). Under the survey conducted by China's DNA[†],the 600 MW sub-critical coal-fired power unit has been considered as having the best efficiency, alongside the 200 MW oil/gas based combined cycle power generators. However, according to *China Energy Savings Technology Policy Commitments* which is issued by *Chinese National Development and Reform Commission* and *Ministry of Science and Technology,* newly-built oil-fired power plants are strictly prohibited, and hence not further considered.

The validation team therefore concluded and accepted that only Scenario 3 - the 600MW sub-critical or super-critical coal-fired power plant can be selected as a valid and plausible

[*] *Data source: "Assessment the Efficiency Issues for China's Power Industry", http://www.21360.cn/Html/cygc/200608/22097.html*
[†] Notification on Determining Baseline Emission Factor of China's Grid http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File138.pdf

Deleted: 2

baseline scenario, since other technological alternatives cannot provide services comparable with the project activity.

A comparison using levelized electricity generation cost (EGC) as financial indicator has subsequently been carried in accordance with the methodology, and found that the project activity has a significant higher EGC (0.3261 RMB/kWh) than the 600MW sub-critical or super-critical coal-fired power plant (0.2880 and 0.3004 RMB/kWh), even with reasonable variations of the fuel expenditure and load factors of +/- 5%. The results show that the 600MW sub-critical coal-fired power plant is a suitable baseline scenario, and that the development of the project activity is not financially attractive compare with the selected alternative power plant. These calculations are assessed by the audit team and confirmed to be valid.

Additionality

Required by AM0029 the project has assessed the additionality in the following steps:

Step 1: Benchmark investment analysis

Based on the findings from the site interview, the quantity of the electricity to be sold, the period and the price is initiated by Henan Province Power Company. There does not appear to be a "peak price" as most of the electricity output will be generated during the "peak load" period around summer time. The current figures for IRR calculations are based on the Feasibility Study Report.

The "benchmark analysis" (*Option III*) is adopted in the PDD according to the methodology. The results show that without the revenue from CDM, the project IRR would have a value of 6.26 %, which is below the benchmark of 8 % as defined within the Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects in P.R. China. Hence the project cannot be considered as financially viable.

The validation team has reviewed the source of the 8% benchmark - *Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects*, which is deemed an appropriate benchmark reference for the retrofit power projects and new power projects investment in China because of the high degree of relevance to the power industry. It has been commonly adopted for financial evaluation of power projects for the approved renewable power CDM projects in China. As highlighted in section 1.11, the *Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects* clearly indicate that the economic benchmarks are regulated for the entire power industry.

The validation team has also identified and validated the regulative document for the benchmarks, titled "*The Economic Assessment Method and Parameters for Capital Construction Project – version 3*", which provides the financial benchmark to the capital construction projects including the power industry in China. According to this reference, a benchmark of 10% (after tax) is quoted, which is higher than the 8% benchmark assumed in the *Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects.* The project's FSR also refers to that same document for the application of the financial rules for IRR calculations. The FSR was prepared by Henan Province Power Research and Design Institute, an accredited entity in China for developing FSR by the Chinese Government. The FSR being approved by the National Development and Reform Committee in 2005, it can be concluded that the parameters applied are valid and plausible.

Based on the above reasons, the validation team hence accepts the 8% benchmark for the

Deleted: Apart from the proposed CDM project activity, four potential alternatives have been identified and evaluated in the PDD, namely:¶
<#>1. The project activity not implemented as a CDM project;¶
<#>2. Power generation using natural gas, but technologies other than the project activity;¶
<#>3. Power generation technologies using energy sources other than natural gas;¶
<#>4. Import of electricity from connected grids, including the possibility of new interconnections.¶
It is demonstrated in the PDD that the proposed project activity is not the only alternative amongst the ones considered that are in compliance with all current laws and regulations. ¶
Alternative 1 has been selected as a plausible baseline scenario. A benchmark investment analysis has been carried out and presented in the PDD as discussed in "Step 1" of the Additionality assessment presented below.¶
For alternatives 2 and 4, the PDD has sufficiently demonstrated that other power generation technologies using natural gas, or the continue import of electricity from the connected power grids, would have difficulties in achieving similar energy efficiency or provide similar peak load balancing ability as the proposed CDM project activity.¶
Finally for alternative 3 the PDD selects the 600MW sub-critical or super-critical coal-fired power plant as the other plausible alternative, which is reasonable according to the performance of the quoted power plant. The PDD has also provided evidence to support that other energy sources such as wind, nuclear, and hydro power cannot provide similar peak load balancing ability as the proposed CDM project activity. These supporting information are reviewed by the audit team and are confirmed to be valid. Furthermore, during the site visit, it is confirmed with during local stakeholder interview that apart from a rich supply of coal, Zhengzhou does not have other energy resources other than natural gas.

Deleted: 2

power industry as a generally accepted and conservative parameter.

The validation team has reviewed the income tax and depreciation stipulations in China during validation, and confirms that they are in line with the Chinese taxation laws*, which have also been properly applied in the FSR†, as follows.

- The relevant income tax stipulations in China are contained in Item 3 of "Interim Regulations on Chinese Enterprise Income Tax", which was issued by the State Council of China on 01 January, 1994. The income tax of the Enterprise is calculated on the taxable income, and the income tax rate is 33%. The taxable income is equal to the total amount of annual income of the enterprise minus allowed deductions (i.e., the income-related cost, expense, losses, interest, employee payroll etc.). It was confirmed that this regulation has been applied correctly in the IRR calculations submitted with the request for registration. These parameters have been clearly presented under the IRR worksheets titled "Total Cost and Expense" and "Cash Flow (Total Investment) and their correctness has been confirmed by the validation team.

- The stipulations of depreciation in China are defined in the "Deduction Guideline (Before Tax) For Income Tax in P.R.China in 2000". According to this document, the net residual value rate of the fixed assets is 5%, and depreciation period for a period of at least 10 years for generation facilities such as the power plant. The PDD has applied a net residual value of 5% and the depreciation period of 15 years, as also adopted in the FSR. The Validation team also confirms this stipulation to be applied correctly.

The tax and depreciation parameters applied in the PDD (and in the FSR as approved by the National Development and Reform Committee) are thus confirmed to meet the relevant taxation laws. The validation team has reviewed the IRR calculations presented in the PDD and confirms their correctness.

The validation team has examined the PDD, and considered that the PDD has given due consideration to the parameters that are having a significant impact to the project finance, as explained below.

Factors determining the project income include:

- Annual electricity generation (which in turn depends on the annual operation hours);
- Electricity tariff

Factors that will affect the expenses include:

- Fixed investment costs
- Annual operating costs, with major components of fuel and maintenance costs
- Income tax (in accordance with relevant taxation law)
- City construction and educational taxes (in accordance with relevant taxation law)

For the sensitivity analysis, those financial parameters having a degree of uncertainty (i.e. total investment, annual operating hours and annual O&M cost) have been selected and subjected to variations of +/-10%; the results are presented in the PDD. The calculation has been reviewed by the validation team during validation and confirmed that the sensitivity analysis has been carried out in accordance with the approved FSR. The independent variation of the selected financial parameters in the sensitivity analysis has

* http://www.chinatax.gov.cn/viewlaw.jsp?code=200309241005301224
† Data source: Economic Analysis of the Feasibility Study Report

Deleted: 2

indicated that, even with a 10% increase in annual operating hours, or a 10% reduction in total investment and O&M cost, the IRR of the project is still below the benchmark IRR of 8%. The validation team hence confirms that the IRR calculation performed is sound and reasonable, and would not likely be subject to large fluctuations and variations.

The impact of other financial parameters such as electricity tariff and the natural gas price are described in Table 1 below:

Table 5. IRR Sensitivity to Financial Parameters of the Project (Tariff and natural gas price)

IRR	**-10%**	**-5%**	**0%**	**5%**	**10%**
Tariff (without VAT)	1.34%	3.96%	6.26%	8.35%	10.29%
Natural gas price	8.71%	7.50%	6.26%	4.83%	3.33%

Table 5 shows that the project IRR is sensitive to the electricity tariff (with a 5% increasing in tariff the Project IRR would reach 8%). However, the tariff is strictly regulated by the Government and is therefore unlikely to be subject to significant variation.
Background information:
The process for setting the tariff is as follows: the project owner has to negotiate with the grid company and agree on a tariff. The Central government will then decide and approve the agreed tariff. Once the feed-in-tariff is defined, it will strictly be regulated by the government and can not be changed by the project owner or the grid company without a new approval by the state authority. The feed-in-tariff is therefore not considered in the sensitivity analysis.
Likewise, with a 10% reduction in natural gas price, the Project IRR could reach 8%. However, while the FSR and IRR calculations assumed the cost for natural gas to be 0.9123 RMB/Nm^3 (before tax), the actual gas supply agreement stipulated costs of 1.18 RMB/Nm^3 (subject to renegotiations every year). The Natural Gas Price is commonly expected to increase further in future, rather than to decrease. This development is substantiated by the recent "Notice of Adjustment of Natural Gas Prices", issued by the Chinese NDRC, according to which the price of natural gas used for power generation has recently been further increased by 0.4 RMB/Nm^3. The project IRR will thus remain below the benchmark of 8% .
Consequently, even if these additional two parameters are considered in the sensitivity analysis, the prospective range of variation does not suggest that the benchmark IRR could be achieved without consideration of CDM revenues. The claim that the proposed project activity is financially unattractive is thus confirmed.

Step 2: Common practice analysis

According to the FSR, combined cycle power technology using natural gas (9F grade) is an advanced technology and domestically developed core equipment is not available in China. As a result, the implementation of NGCC plants has to rely on imported equipment and expertise from countries such as Germany, USA or Japan. This has resulted in increased investment costs and hence slow development in China.

Based on the result of literature review on a paper titled *China's Natural Gas Industry and*

Deleted: A sensitivity analysis is carried out and presented in the PDD which demonstrates that the project activity is unlikely to be financially viable under reasonable variations in the critical assumptions.¶
The audit team has checked and verified the sources of data for the parameters used for the IRR calculation, and the method of calculations. These include checking the FSR, the natural gas supply contract, the PPA, and relevant local adopted figures such as taxes and references. It is confirmed that the IRR calculations are transparent and valid.

Deleted: 2

Gas to Power Generation[*], it is reported that the total capacity of gas-fired power plants has reached 10,627MW in 2006, and accounts for 1.7% of China's total installed capacity and 2.2% of total installed thermal capacity. This clearly shows that gas fired power generation is not a common practice in China.

According to the China Energy Statistical Yearbook 2006 edition (Energy balance of Henan Province, P.186-189), the validation team confirms that until 2005, natural gas power plant is not yet in operation as no natural gas has been used for power generation purpose in the Henan Province of China.

The validation team has further confirmed during site interview with relevant government representative (Mr Zhang, Head of Zhengzhou City Development and Reform Committee) that the project activity is the "first of its kind" in Henan, using natural gas as energy source to tackle growing power demand in peak consumption times.

Further Evidence that the project activity is the first of its kind in Henan Province from a news report from the State Power Information Network released on 4 September 2006[†]. Based on the above information, the validation team hence confirms that the project activity is not a common practice.

The reported other similar project, the Zhumadian Zhongyuan Gas-Steam Combined Cycle Power Plant in Henan, is currently under CDM validation and can be found at the UNFCCC website at: http://cdm.unfccc.int/Projects/Validation/DB/21665CW6SB89XZXCC790S8AMQCR16N/view.html

According to the "Overview of CDM Pipeline" as of 4 December released by the United Nations Environment Programme (UNEP)'s Capacity Development for the Clean Development Mechanism (http://cdmpipeline.org/publications/CDMpipeline.xls), it is found that an additional 16 NGCC projects in China are also undergoing CDM development, which demonstrates that incentives from CDM have been considered as an essential factor for NGCC development in China.

Deleted: The PDD cited another NGCC project with Henan Province which is also in the process of CDM validation. This is confirmed during site interviews with relevant government representatives and the fact that in China only single cycle power generation is relatively more common. The project activity will be among the "first of its kind" in Henan, using natural gas as energy source to tackle growing power demand in peak consumption times.

Step 3: Impact of CDM registration

The PDD has explained revenues generated from the sale of CER's is the main driver and will enable the project participants to go ahead with the project implementation in case of a successful registration of the project activity at UNFCCC and hedge currency exchange risks as well as risks with fatigue, damage and unplanned shutdowns caused by the high load variations of the main equipment throughout supply of preventive maintenance and if necessary emergency repair and delivery of spare parts.

In summary, all of the above described steps were convincingly followed and demonstrated within the documentation and the interviews, and has proven that the proposed project activity is additional and is not likely the baseline scenario, and has illustrated the project's necessity for CDM in order to proceed further.

[*] China's Natural Gas Industry and Gas to Power Generation. Chun Chun Ni, Electric Power & Gas Industry Group, Strategy and Industry Research Unit. The Institute of Energy Economics, Japan. IEEJ: July 2007.

[†] Evidence for 1st NGCC project in Henan. State Power Information Network: http://www.sp.com.cn/ggzl/ggdt/200609150060.htm

Deleted: 2

3.2.2 Findings

CL4: It has to be evidenced with updated information that the application criteria for the approved baseline methodology AM0029 can be fulfilled with regard to the availability of natural gas, that *"future natural gas based power capacity additions, comparable in size to the project activity, are not constrained by the use of natural gas in the project activity "*, and that the project activity would not leading to possible leakage.

Response: Future natural gas based power capacity additions, comparable in size to the project activity, are not constrained by the use of natural gas in the Project activity, and that the Project activity would not leading to possible leakage, which is clarified with more detailed information and evidences in the Section B.2.

The supporting information – a letter from Henan Development and Reform Commission (DRC) to PetroChina about Natural Gas Supply is inspected by the audit team (Ref. Henan DRC Energy Department <2005> No. 77). The letter has mentioned 3 other new natural gas based power plants are to be developed in Henan province. The CL is therefore resolved and closed.

CL5: Please provide more information to support that the 600MW sub-critical coal-fired power plant can perform similar peak load balancing function as of the project activity.

Response: Coal-fired power plants can function not only as basic load power plant but also as peak load balancing power plant in China.
(http://bbs.zidonghua.com.cn/simple/index.php?t11146.html). The CL is therefore resolved and closed.

CL6: Please provide supporting information, if any, to show that there is no existing NGCC power plant around the project site, within Henan province - except the Zhumadian NGCC Project which is reported to be also being validated as a CDM project.

Response: There are only two NGCC projects (including the proposed project) in Henan province currently under constructions according to *Introduction to the Development Status of Gas Turbine Power Generation Project and Follow-Up Services and Spare Parts Procurement issued by China National Technical Ex-Im. Corp. in 2006.* Such document as evidence was provided to DOE. The CL is therefore resolved and closed.

3.3 Monitoring Plan

3.3.1 Discussion

The project is using the approved consolidated monitoring methodology AM0029 "*Grid Connected Electricity Generation Plants using Non-Renewable and Less GHG Intensive Fuel*" (Version 1), which is applicable to project activities under the same conditions as the associated baseline methodology. The PDD has adequately listed the required monitoring parameters, and has provided the required information for the collection and archiving of the listed monitoring data for estimation or measuring the greenhouse gas emissions within the project boundary during the crediting period.

The PDD has outlined the project management and responsibility for the monitoring and calibration procedures, as well as data management will be implemented as part of the commissioning of the full scale implementation of the project activity under supervision of

Deleted: 2

Zhengzhou Combined Cycle Power Co., Ltd., supported by the CDM Consultant – Green Capital Consulting Company.

Monitoring of relevant data concerning environmental, social and economic impacts are not required by the applied monitoring methodologies of AM0029. Also the DNA has no additional monitoring requirements for the project in these aspects. A detailed Environmental Monitoring Plan for monitoring of environmental impacts during the construction and operational phases of the project are contained in the approved EIA Report, which is conforming to the requirements of the local Environmental Protection Bureau.

The implementation of the Monitoring Plan stated in Section B.7 and Annex 4 of the PDD, by means of a CDM Manual, which contains the methods and procedures as well as the assigned responsibilities for collection of all essential monitoring data during the crediting period, is available for inspection by the audit team during the on site visit. The final numbers of CERs delivered will be depended on the annual electricity generation and net supply into Central China Grid, which will be measured according to the CDM Manual.

3.3.2 Findings

Nil

3.4 Calculation of GHG Emissions

3.4.1 Discussion

The boundaries and the location of the project are clearly described and are part of the PDD. The used technology is also specified in detail.

A conservative approach has been adopted, both for the prediction of the baseline emissions and the project emissions.

For the determination of the applicable emission factors for the baseline emission of the project, relevant calculations for the build margin emission factor (i.e. Option 1), operating margin emission factor, and hence the combined margin emission factor (i.e. Option 2) according to ACM0002 have been carried out by adopting the approved methodology deviation by the EB (as detailed in the PDD), and for using relevant emission data recently published by the DNA of P.R. China on 15 December 2006.

Finally the emission factor of the technology identified as the most likely baseline scenario (i.e. Option 3) was calculated in the PDD. By comparing the values of these Options, Option 1 was selected as it has the lowest value – 0.6494 tCO2e/MWh.

The *ex-ante* estimation of emission reductions is based on the estimated net electricity generation and the relevant baseline emissions and project emissions of the project, which is reasonable and transparently carried out.

The calculation of leakage has been transparently presented in the Annex 3 of the PDD. The calculation has been checked by the audit team and has sufficiently demonstrated that the total leakage effect from the project is negative, and hence can be assumed as zero.

3.4.2 Findings

CL7: Please clarify the application status of the set of emission factors published by NDRC (i.e. File 1053).

Response: In the PDD–v2, the project applies the basic value of China's Regional Grid published by DNA to calculate $EF_{OM,y}$ and $EF_{BM,y}$ of the ECG, instead of using emission factors published by NDRC directly, and this issue was addressed in section B.6 and the Annex 3 of the PDD –v2. The CL is therefore resolved and closed.

CL8: Please clarify whether other auxiliary fuel is used for plant start-up or under emergency situations such as shortage of natural gas supply, and whether there emissions have been accounted for in the project emission calculations.

Response: It is clarified that no auxiliary fuel used during the operation of the Project in the Section B.2. The CL is therefore resolved and closed.

CL9: Please clarify in the PDD which of the following option for calculation of the emission factor, according to approved methodology ACM0002, the project proponent intends to use:

- *Ex-ante* determination 100 % according to the applied methodology
- *Ex-post* determination annually 100 % according to the applied methodology in the first crediting period; estimation of the emission factor *ex-ante* in a conservative manner
- Requesting deviation to the approved methodology prior to submission of registration

Response: It is clarified that the Project proponent intends to use Ex-ante determination 100% according to the applied methodology in the Section B.6. The CL is therefore resolved and closed.

CL10: Please note that the IPCC guidelines has been updated in 2006. Please adopt relevant data and stated clearly in the PDD.

Response: IPCC 2006 was adopted and stated in the Section B.6 and the Annex 3. The CL is therefore resolved and closed.

3.5 Environmental Impacts

3.5.1 Discussion

The environmental impacts of the project has been have been reported in the PDD, Section D. The environmental impacts of the project were sufficiently assessed by means of an Environmental Impact Assessment (EIA) Study. The project activity is reported to be not having any significant environmental impacts. The EIA has been presented and approved

Deleted: 2

by the State Environmental Protection Administration (SEPA) on 17 January 2004.

In addition, no significant environmental impacts were identified during the on site assessment. This is further confirmed by the Head of local Environmental Protection Bureau during the site interview, and that that no environmental complaint was received since the project commences its construction.

3.5.2 Findings

Nil

3.6 Comments by Local Stakeholders

3.6.1 Discussion

Although it is not a formal requirement by the current legislation of the host country, a stakeholder consultation process has been carried out. The project developer has used posters and a workshop to collect the local stakeholder comment and feedback. The processes by which comments from local stakeholders have been invited and compiled, has been described within Section E of the PDD. The actual completed questionnaires with personal details are available for review by the audit team during the site visit. Furthermore, during the on site visit, representatives from the local community were interviewed. In general, the interviewees show adequate understanding of the nature of the project and agreed that the project would benefit the environment, society and economic development. The response is overall supportive.

3.6.2 Findings

CL11: What is the demography of the region? Please detail how the local stakeholders are invited and selected.

Response: It is clarified with more detailed information in the Section D.1. The CL is therefore resolved and closed.

3.7 Comments by Parties, Stakeholders and NGOs

The PDD, version 1 of November 2006 was made publicly available directly on UNFCCC website. Parties, stakeholders and NGO's were invited to provide comments during the period from February 22 to March 23, 2007. No comment was received.

3.7.1 Findings

Nil

Deleted: 2

4 VALIDATION OPINION

The audit team of the DOE TÜV Rheinland Japan Ltd. (TÜV Rheinland) has carried out the validation of the planned "Henan Zhengzhou Grid Connected Natural Gas Combined Cycle Power Plant " in the P.R. China on the basis of UNFCCC criteria for CDM projects according to Article 12 of the Kyoto Protocol and subsequent decisions of the CDM Executive Board with regard to CDM modalities and procedures and the application of approved methodologies. The validation report and the validation protocol are summarizing the findings of the validation.

The validation was executed in the following steps:

- Desk review of preliminary PDD (version 1 of November, 2006)
- Public stakeholder comment process (February 23, 2007 to March 24, 2007)
- On-site visit with stakeholder interviews (April 5–7, 2006)
- Issue of checklist with corrective action requests (CARs) and clarification requests (CLs) and the draft validation report & protocol
- Desk review of revised PDD (new version)
- Review of proposed corrections and clarifications
- Issue of the final validation report & protocol

By displacing fossil fuel-based electricity with electricity generated from the natural gas, the project results in reduction of CO2 emissions that are real, measurable and give long-term benefits to the mitigation of climate change. An analysis of the additionality demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented as designed, the project is likely to achieve the revised estimated amount of emission reductions of 691,502 tCO2e annually. This subject shall be closely monitored during project verification.

The Approval Letter of voluntary participation, including confirmation by China's DNA, that the project assists them in achieving sustainable development, has been received. Also the Approval Letter from United Kingdom's DNA, that the project assists them in achieving sustainable development has been received.

In the opinion of TÜV Rheinland the project meets all relevant UNFCCC requirements of the CDM and is able to fulfil all relevant host country criteria, and correctly applies the baseline and monitoring methodology AM0029. TUV Rheinland thus requests the registration of the project as a CDM project activity.

Deleted: 2

5 REFERENCES

Category 1 Documents:

Documents provided by the Client that relate directly to the GHG components of the project

1 Project Design Document (PDD)

2 IRR and CER calculation worksheets

3 Questionnaires from Public Comment Survey

4 Zhengzhou Natural Gas Power Station Project Environmental Impact Assessment Report. Henan Environmental Protection Research Institute. December 2003.

5 The Letter of Approval (LoA) from DNA of China. The National Development and Reform Commission of the People's Republic Of China. No.38, Yuetan Nanjie, Beijing 100824. 22 May 2007.

6 Zhengzhou Natural Gas Power Station Project Feasibility Study Report. Henan Province Power Research and Design Institute. November 2003.

Category 2 Documents:

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

List	Book Title
1	International Emission Trading Association (IETA): VVM – Validation and Verification Manual
2	*Approved Baseline Methodology ACM0029* (Sectoral Scope 01, 19 May 2006) – "Baseline Methodology for Grid Connected Electricity Generation Plants using Natural Gas.".
3	*Approved Monitoring Methodology ACM0029* (Sectoral Scope 01, 19 May 2006) – "Grid Connected Electricity Generation Plants using Non-Renewable and Less GHG Intensive Fuel."
4	Zhengzhou Combined Cycle Power Co., Ltd, 10 June 2005, 2nd Shareholder Meeting Resolution Zhengzhou Combined Cycle Power Co., Ltd, 20 April 2006, Third Shareholder Meeting Conference Resolution Zhengzhou Combined Cycle Power Co., Ltd, 1Oct. 2006, 1st Board Meeting, 4th Resolution ,
5	Electric Power of Henan Company and Zhengzhou Combined Cycle Power Co., Ltd, 6th, Sep, 2006, High Voltage Power Supply Agreement
6	Electric Power of Henan Company and Zhengzhou Combined Cycle Power Co., Ltd, Nov., 2006, Power Purchase Agreement

Deleted: 2

7	Zhengzhou Combined Cycle Power Co., Ltd, 10th June 2005, 2nd Shareholder Meeting Resolution and 20th April, 2006, 3rd Shareholder Meeting Resolution, About the Intention to Develop Zhengzhou NGCC Project as CDM Project Activity.
8	PetroChina Natural Gas Co., Ltd, and Zhengzhou Combined Cycle Power Co., Ltd., 30th Sep. 2006, Natural Gas Supply Agreement
9	Henan Huayuan Certified Public Accountants Co., Ltd. , Henan Huayuan yan Zi [2004] Number05, Audit Report Henan Huayuan Certified Public Accountants Co., Ltd. , Henan Huayuan shen Zi [2005] Number1001, Audit Report China Rightson certified Public Accountants Henan. , Zhong Rui Hua Heng Xin Yu shen Zi [2006] Number1005, Audit Report China Rightson Certified Public Accountants Henan. , Zhong Rui Hua Heng Xin Yu Shen Zi [2007] Number012, Audit Report
10	National Development Reform Committee, 7th March 2005, Fa Gai Neng Yuan [2005] Number334, Feedback About Approval
11	Report on 2007 Annual Conference of Zhengzhou Combined Cycle Power Co., Ltd, 15 February 2007
12	Letter of Intent, Industrial Bank Co., Ltd., Zhengzhou Branch
13	Henan Province Power Company and Zhengzhou Combined Cycle Power Co., Ltd, October 2006, Power Purchase Agreement
14	Economical Parameter Data Sheet, 1 April 2007
15	Zhengzhou Combined Cycle Power Co., Ltd. - Organization Chart
16	Project Construction Layout Plan
17	Letter of Authorization from Zhengzhou Combined Cycle Power Co., Ltd. to appoint Green Capital Consulting Company for Business Related to CDM. 12th September 2006.
18	China Electric Power Yearbook 2004
19	China Electric Power Yearbook 2005
20	China Electric Power Yearbook 2006
21	China Energy Statistical Yearbook 2004. China Statistics Press
22	China Energy Statistical Yearbook 2005. China Statistics Press
23	China Energy Statistical Yearbook 2006. China Statistics Press
24	Interim Regulations on Chinese Enterprise Income Tax", State Council of China on 01 January, 1994

Deleted: 2

25 Deduction Guideline (Before Tax) For Income Tax in P.R.China in 2000.

26 Notice for NG Pricing Reform, and appropriately Increasing the Natural Gas Price in the Near Future", issued by Chinese NDRC (http://www.sdpc.gov.cn/zcfb/zcfbtz/zcfbtz2005/t20051227_54876.htm)

27 China's Natural Gas Industry and Gas to Power Generation. Chun Chun Ni, Electric Power & Gas Industry Group, Strategy and Industry Research Unit. The Institute of Energy Economics, Japan. IEEJ: July 2007.

28 "Assessment the Efficiency Issues for China's Power Industry", http://www.21360.cn/Html/cygc/200608/22097.html

29 Notification on Determining Baseline Emission Factor of China's Grid *http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File1365.pdf*

30 "The 11th Five -Year Plan" for the Energy Development Planning of China. National Development and Reform Commission. April 2007 http://www.ccchina.gov.cn/WebSite/CCChina/UpFile/File186.pdf

Persons interviewed:

List persons interviewed during the validation, or persons contributed with other information that are not included in the documents listed above.

No.	Name	Company Name	Title
1	Wang Li	China Power Investment Corporation - Zhengzhou Gas Power Generation Co., Ltd	Vice General Manager
2	Li Xiao	China Power Investment Corporation - Zhengzhou Gas Power Generation Co., Ltd	Deputy Manager of Market Dept.
3	Du Wei	China Power Investment Corporation - Zhengzhou Gas Power Generation Co., Ltd	Officer of Marketing Department
4	Huang Yu	China Power Investment Corporation - Zhengzhou Gas Power Generation Co., Ltd	Manager of Power Generation & Operation Department Engineer
5	Zhang Jianing	China Power Investment Corporation - Zhengzhou Gas Power Generation Co., Ltd	Vice-Chief Engineer Senior Engineer
6	Zhao Yuanqing	China Power Investment Corporation - Zhengzhou Gas Power Generation Co., Ltd	General Manager, Office Manager, Senior Economist

Deleted: 2

7	Liu Jianmin	Not applicable	Local Resident
8	Zhao Guoliang	Not applicable	Local Resident
9	Liu Yong	Henan Province Environmental Protection Bureau, Development Department	Department Manager
10	Li Xinwei	Henan Province Power Company Power Exchange Centre	Department Manager
11	Zhang Hongxun	Zhengzhou Development Reform Commission	Department Manager
12	Han Yanjun	PetroChina Company Limited West-East Gas Pipeline Company, Zhengzhou Station	Station Manager

Deleted: 2

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

APPENDIX A

CDM VALIDATION PROTOCOL

Introduction

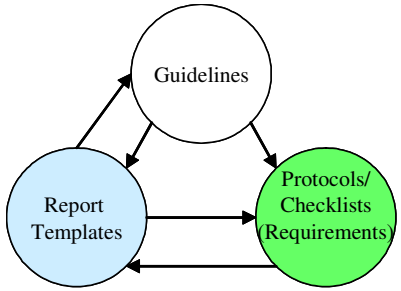
This document contains a generic Validation Protocol for CDM projects, which must be seen in conjunction with the *Validation and Verification Guidelines* and the *Validation Report Template*.

This validation protocol serves the following purposes:

- It organises, 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;

This protocol contains two tables with generic requirements for validation projects. Table 1 shows the requirements that the GHG emission reduction project will be validated against. Table 2 consists of a checklist with validation questions related to one or more of the requirements in Table 1. The checklist questions may not be applicable for all investors, and should not be viewed as mandatory for all projects. Where a finding is issued, a corrective action request or clarification request are stated. The resolution and final conclusions of these requests should be described in Table 3 of this protocol.

Before this generic validation protocol can be applied to validate a specific project, the validator must review and adjust/amend the protocol to make it applicable to individual project characteristics and circumstances as well as individual investor criteria. The application of the validator's professional judgement and technical expertise should ensure that checklist amendments cover all necessary specific project requirements that have impact on project performance and acceptance of the project. Given the above, the checklist part of the protocol is neither exhaustive nor prescriptive.



Formatted: English (U.S.)
Deleted: VALIDATION REPORT

Table 1 Mandatory Requirements for Clean Development Mechanism (CDM) Project Activities

REQUIREMENT	Reference	CONCLUSION	Cross Reference / Comment
1. Assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3	Kyoto Protocol Art.12.2	OK	Table 2, Section E.4. United Kingdom as Annex I Party is identified.
2. Assist non-Annex I Parties in achieving sustainable development and the project has obtained confirmation by the host country that the project assists in achieving sustainable development	Kyoto Protocol Art. 12.2, Marrakesh Accords, CDM Modalities §40a	~~**CAR 1**~~	Table 2, Section A.3, Table 3, Confirmation of Chinese national authority for CDM, that project assists China in achieving sustainable development has not been received yet (Letter of Approval).
3. Assist non-Annex I Parties in contributing to the ultimate objective of the UNFCCC	Kyoto Protocol Art.12.2.	OK	Table 2, Section E.4.1. The project assists the P.R. China in contributing to the ultimate objective of the UNFCCC.
4. The project has the written approval of voluntary participation from the designated national authorities of each party involved	Kyoto Protocol Art. 12.5a, Marrakesh Accords, CDM Modalities §40a	~~**CAR 1**~~	Table 2, Section A.3. Table 3. The project has been proposed as a bilateral project. Approval of voluntary participation from the Chinese Designated National Authority for CDM is not yet in place. United Kingdom as Annex I Party is identified. **CAR1:** The letter of approval from each party involved have to be provided prior to the registration request procedure to the validation team.
5. The emission reductions shall be real, measurable and give long-term benefits related to the mitigation of climate change	Kyoto Protocol Art. 12.5b	OK	Table 2, Section E

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

REQUIREMENT	Reference	CONCLUSION	Cross Reference / Comment
6. Reduction in GHG emissions shall be additional to any that would occur in absence of the project activity, i.e. a CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity	Kyoto Protocol Art. 12.5c, Marrakesh Accords, CDM Modalities §43	OK	Table 2, Section B.2.
7. Potential public funding for the project from Parties in Annex I is not a diversion of official development assistance	Marrakech Accords	OK	The review of documents did not reveal any information indicating that ODA is used for the project financing of the natural gas supplied power project. No diversion of ODA occurs.
8. Parties participating in the CDM shall designate a national authority for the CDM	Marrakech Accords, CDM Modalities §29	OK	The host country, the P.R. China has a DNA, namely the National Development and Reform Commission of the People's Republic of China. No participating Annex I Party is yet identified.
9. The host country is a Party to the Kyoto Protocol	Marrakech Accords, CDM Modalities §30	OK	The host country of the project P.R. China has ratified the Kyoto Protocol on August 30, 2002.
10. Comments by local stakeholders are invited, a summary of these provided and how due account was taken of any comments received	Marrakech Accords, CDM Modalities §37b	OK	Table 2, Section G.1.4.
11. Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, has been submitted, and, if those impacts are considered	Marrakech Accords, CDM Modalities §37c	OK	Table 2, Section A.2.2., F.1.1. An EIA study has been carried out and approved by the State Environmental Protection Administration of China in 2004.

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

REQUIREMENT	Reference	CONCLUSION	Cross Reference / Comment
significant by the project participants or the Host Party, an environmental impact assessment in accordance with procedures as required by the Host Party has been carried out.			
12. Baseline and monitoring methodology is previously approved by the CDM Methodology Panel	Marrakech Accords, CDM Modalities §37e	OK	Table 2, Section B.1.1. and D. 1.1.
13. Provisions for monitoring, verification and reporting are in accordance with the modalities described in the Marrakech Accords and relevant decisions of the COP/MOP	Marrakech Accords, CDM Modalities §37f	OK	Table 2, Section D
14. Parties, stakeholders and UNFCCC accredited NGOs have been invited to comment on the validation requirements for minimum 30 days, and the project design document and comments have been made publicly available	Marrakech Accords, CDM Modalities, §40	OK	The PDD has been published directly on the UNFCCC website for a period of 30 days, from February 23, 2007 to March 24, 2007. No comments were received.
15. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances	Marrakech Accords, CDM Modalities, §45c,d	OK	Table 2, Section B.2.
16. The baseline methodology shall exclude to earn CERs for decreases in activity levels outside the project activity or due to force majeure	Marrakech Accords, CDM Modalities, §47	OK	Table 2, Section B.2.
17. The project design document is in conformance with the UNFCCC CDM-PDD	Marrakech Accords, CDM Modalities, Appendix B, EB	~~CAR2~~	The PDD is in conformance with version 03.1. of the CDM PDD (in affect as of: 28

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

REQUIREMENT	Reference	CONCLUSION	Cross Reference / Comment
format. Has all required information been provided?	Decisions		July 2006). **CAR2:** Annex 4 of the PDD have to be provided according to the relevant PDD guidelines issued by UNFCCC, which includes in Annex 4 copy of worksheets used by the operator based on aggregation of monthly / weekly / daily worksheets and calculated from the formulas given in methodology AM0029 respectively ACM0002 are required.

Table 2 Requirements Checklist

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
A. General Description of Project Activity *The project design is assessed.*					
A.1. Project Boundaries *Project Boundaries are the limits and borders defining the GHG emission reduction project.*					
A.1.1. Are the project's spatial (geographical) boundaries clearly defined?	PDD	DR I	The project spatial boundaries have been defined and are described in chapter A.2 & A.4 (incl. a map) of the PDD.	OK	OK
A.1.2. Are the project's system (components and facilities used to mitigate GHGs) boundaries clearly defined?	PDD	DR I	The project boundaries are defined in the PDD. The project system's boundaries are limited to the main equipments of the power plant: heat recovery steam generators, steam turbines, gas	OK	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
			turbines, generators, natural gas supply and the power grid connected to the power plant.		
A.1.3. Is the project category suitably defined?	PDD	DR	The project belongs to sectoral scope 1 – energy industries.	OK	OK
A.2. Technology to be employed *Validation of project technology focuses on the project engineering, choice of technology and competence/ maintenance needs. The validator should ensure that environmentally safe and sound technology and know-how is used.*					
A.2.1. Does the project design engineering reflect current good practices?	PDD OSV	DR I	The project design engineering reflects basically good practices through the use of a combined cycle system of Siemens based on natural gas, as described in the PDD. This practice and technology is new and advanced in China. **CAR3:** The description of the project activity should contain more technical specifications, parameters. The results from the performance guarantee tests have to be presented. This section should include a description of how environmentally safe and sound technology and know-how to be used is transferred to the host Party(ies). Systems plans and responsibilities with regard to initial training (capacity building) and maintenance efforts during the project period should be outlined in this section. This is relevant when new technology is implemented such as a new boiler type, new gas turbine type,	~~**CAR3**~~	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
			new waste heat recovery and steam turbine, etc.		
A.2.2. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	PDD OSV	DR I	Yes. The combination of gas and steam turbine cycles allow highest efficiency power generation. The combined cycle plant is an integration of two prime movers; the gas turbine and the steam turbine combining many of the advantages of the both. The selected configuration is uni-axial gas and steam combined cycle turbine. It can provide large amounts of power on short notice with its quick start-up time. It has a short delivery time, a low heat rate, and its capital cost is an effective compromise between pure gas and steam turbines. The combined cycle power plant uses a combination of gas turbine and steam turbine equipment to generate electricity from a single fuel. By recovering the energy in the gas turbine exhaust and using it to generate steam, the cycle leverages the conversion of the fuel energy at a very attractive efficiency, which represents an almost doubling of efficiency compared to older conventional power plants, with a very significant reduction in fuel use and a reduction of emissions in relation to the power output.	OK	OK
A.2.3. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	PDD	DR I	The project is unlikely to be replaced by other more efficient technologies within the project period.	OK	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
A.2.4. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	PDD OSV	DR I	Yes, the project requires initial training for operation and maintenance by Siemens. These capabilities will be transferred to the project developer and power plant operator gradually through the technology supplier, with expertise and references of similar energy projects in other countries. The project owner, Zhengzhou Combined Cycle Power Co., Ltd. is responsible for organising the necessary training for the operation, maintenance and monitoring. It is understood that a maintenance agreement is under negotiation with Siemens. **CL2:** Please clarify in the PDD which steps the training is planned (before commissioning, during operation) and how the responsibilities and tasks of power plant operator, project developer, technology supplier including monitoring equipment and CDM consultant are allocated.	~~CL2~~	OK
A.2.5. Does the project make provisions for meeting training and maintenance needs?	PDD OSV	DR I	Yes. During the site visit it is confirmed that training and maintenance needs arranged by sending of key staff members to Germany for training, also a team of specialists have been stationed on-site for provision of on-the-job training. Training and Maintenance Manuals are available on site for inspection.	OK	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
A.3. Contribution to Sustainable Development *The project's contribution to sustainable development is assessed.*					
A.3.1. Is the project in line with relevant legislation and plans in the host country?	PDD OSV	DR I	Yes, the project has received relevant approvals from various government departments and bureaux with approval letters available for inspection.	OK	OK
A.3.2. Is the project in line with host-country specific CDM requirements?	PDD	DR	Host country approval of the DNA of China has been provided via it's official website although the LoA is still not available. So far the project can be seen to be in line with the host country specific requirements and priorities for CDM.	OK	OK
A.3.3. Is the project in line with sustainable development policies of the host country?	PDD	DR	Ditto. By using an environmentally friendly fuel, the project is in line with current sustainable development priorities in China.	OK	OK
A.3.4. Will the project create other environmental or social benefits than GHG emission reductions?	PDD OSV	DR I	The project activity will also improve environmental and health related conditions by reducing GHG emissions and other pollutions through the use of natural gas. During the construction and operation of the project activity local human resources or companies will be employed respectively subcontracted. The project's containing technology transfer and improvement in technology and the training of the operational staff will enhance the capacity of people in Zhengzhou and China to apply environmentally sound technologies.	OK	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
B. Project Baseline *The validation of the project baseline establishes whether the selected baseline methodology is appropriate and whether the selected baseline represents a likely baseline scenario.*					
B.1. Baseline Methodology *It is assessed whether the project applies an appropriate baseline methodology.*					
B1.1. Is the baseline methodology previously approved by the CDM Methodology Panel?	PDD	DR	Yes. The project is applying the approved baseline methodology AM0029 "Baseline Methodology for Grid Connected Electricity Generation Plants using Natural Gas", which uses also the build margin and operational margin approach from ACM0002"Consolidated methodology for grid-connected electricity generation from renewable sources".	OK	OK
B1.2. Is the baseline methodology the one deemed most applicable for this project and is the appropriateness justified? .	PDD	DR	Yes. The use of the approved baseline methodologies are considered to be, out of the existing approved baseline methodologies, most applicable for this project, that is a construction and operation of a new natural gas fired grid-connected electricity generation plant.	OK	OK
B.2. Baseline Determination *The choice of baseline will be validated with focus on whether the baseline is a likely scenario, whether the project itself is not a likely baseline scenario, and whether the baseline is complete and transparent.*					
B.2.1. Is the application of the methodology and the discussion	PDD	DR	Yes. The application of the chosen baseline methodology could be demonstrated in a	~~CL4~~	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
and determination of the chosen baseline transparent?		I	transparent manner. The baseline scenario is the atmospheric release of CO2 emissions from fossil fuel combustion in power plants. **CL4:** It has to be evidenced with updated information that the application criteria for the approved baseline methodology AM0029 can be fulfilled with regard to the availability of natural gas, that *"future natural gas based power capacity additions, comparable in size to the project activity, are not constrained by the use of natural gas in the project activity "*, and that the project activity would not leading to possible leakage.		
B.2.2. Has the baseline been determined using conservative assumptions where possible?	PDD	DR I	The emission reductions of the project will be achieved by using natural gas, a fuel with lower carbon emission factor. The baseline scenario assumes, that the energy mix emission factor of the build margin, which is the lowest one of three options given by AM0029 would otherwise continuously be used during the crediting period. The methodology AM0029/ACM0002 requests also the deduction of the project emissions from the emission reductions caused by own electricity consumption respectively other start up – fuels. **CL8:** Please clarify whether other auxiliary fuel is used for plant start-up or under emergency situations such as shortage of natural gas supply, and whether there	~~**CL8**~~	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
			emissions have been accounted for in the project emission calculations.		
B.2.3. Has the baseline been established on a project-specific basis?	PDD	DR	Yes, the baseline methodology is applied taking into account project specific circumstances. This approach could be used also for other similar projects in East China with similar characteristics.	OK	OK
B.2.4. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	PDD	DR	Yes. All the current relevant national and/or sectoral policies in China were considered. Throughout the annually ex post re-calculation of the emission reduction on the really measured emission reductions future trends can be easily incorporated in the baseline scenario.	OK	OK
B.2.5. Is the baseline determination compatible with the available data?	PDD	DR I	Yes. The baseline scenario is supported by available data.	OK	OK
B.2.6. Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	PDD	DR I	Yes, see B.2.1. In the absence of the proposed project activity, four other alternatives have been identified: • The project activity not implemented as a CDM project • Power generation using natural gas, but technologies other than the project activity • Power generation technologies using energy sources other than natural gas • BAU: Import of electricity from	~~CL5~~	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
			connected grids, including the possibility of new interconnections **CL5:** Please provide more information to support that the 600MW sub-critical coal-fired power plant can perform similar peak load balancing function as of the project activity.		
B.2.7. Is it demonstrated/justified that the project activity itself is not a likely baseline scenario (e.g. through demonstrating investment barriers, technology barriers, barriers to prevailing practices, and/or other barriers or through quantitative evidence that the project would otherwise not be implemented)?	PDD EA	DR I	The project proponents have applied the comprehensive additionality tool for large-scale projects with its components for identification of alternatives, investment analysis, barriers analysis and common practice analysis. Finally it can be stated, that the revenues generated from the sale of CERs is the main driver and will enable the project participants to go ahead with the project implementation in case of a successful registration of the project activity at UNFCCC. **CL6:** Please provide supporting information, if any, to show that there is no existing NGCC power plant around the project site, within Henan province - except the Zhumadian NGCC Project which is reported to be also being validated as a CDM project.	~~CL6~~	OK
B.2.8. Have the major risks to the baseline been identified?	PDD OSV	DR I	The baseline is based on statistical data, which are transparent. No major baseline risks are foreseen.	OK	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
B.2.9. Is all literature and sources clearly referenced?	PDD	DR I	Yes	OK	OK
C. Duration of the Project/ Crediting Period *It is assessed whether the temporary boundaries of the project are clearly defined.*					
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	PDD	DR I	The starting date is expected in the second half of 2007 and the full operation of the power plant will be possible in the second half of 2007. The crediting period can only start after the project is registered and after the project activity is fully implemented with all facilities including measurement and monitoring equipment. **CL3:** Evidences of starting date of project activity shall be provided. The confirmed start date of the project activity has to be clarified in the PDD, so as the amount of emission reductions for the year 2007.	~~**CL3**~~	OK
C.1.2. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max. two x 7 years or fixed crediting period of max. 10 years)?	PDD	DR	Yes. The chosen crediting period is a renewable crediting period of 7x3 years. **CL1:** Please clarify the expected operational lifetime of the project activity (20 years in the PDD) as it is written in the PDD that a 7x3 years of crediting period has been chosen.	~~**CL1**~~	OK
D. Monitoring Plan *The monitoring plan review aims to establish whether all relevant project aspects deemed necessary to monitor and report reliable*					

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
emission reductions are properly addressed ((Blue text contains requirements to be assessed for optional review of monitoring methodology prior to submission and approval by CDM EB).					
D.1. Monitoring Methodology *It is assessed whether the project applies an appropriate baseline methodology.*					
D.1.1. Is the monitoring methodology previously approved by the CDM Methodology Panel?	PDD	DR I	Yes, approved monitoring methodology AM0029, which is an integral part of the applied baseline methodology AM0029, that has been used in the project in connection with the large-scale baseline and monitoring methodology ACM0002 is applied.	OK	OK
D.1.2. Is the monitoring methodology applicable for this project and is the appropriateness justified?	PDD	DR I	The above mentioned monitoring methodologies are the most applicable for this project, see PDD. The GHG emission reductions will be obtained through direct measurement according to the approved monitoring methodologies.	OK	OK
D.1.3. Does the monitoring methodology reflect good monitoring and reporting practices?	PDD	DR I	Yes, see also B 2.1. and D 4.1., detailed monitoring arrangements and procedures according to the used monitoring plan will be applied during the periodic verification process. Given the nature of the project, the updated description of the monitoring and reporting in the PDD is deemed sufficient. The requested procedure and documentation and responsibilities assignation is in preparation and will be ensured by the project owner, supported by Green Capital Consulting Company as CDM consultant, according to a CDM manual.	OK	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
D.1.4. Is the discussion and selection of the monitoring methodology transparent?	PDD	DR I	Yes	OK	OK
D.2. Monitoring of Project Emissions *It is established whether the monitoring plan provides for reliable and complete project emission data over time.*					
D.2.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions within the project boundary during the crediting period?	PDD	DR	The monitoring methodology provides a detailed description pf the primary parameters to be monitored during the crediting period. The methodology ACM0029/ACM0002 requests also the deduction of the project emissions from the emission reductions caused by own electricity consumption respectively other start up – fuels. **CL8:** Please clarify whether other auxiliary fuel is used for plant start-up or under emergency situations such as shortage of natural gas supply, and whether there emissions have been accounted for in the project emission calculations.	~~CL8~~	OK
D.2.2. Are the choices of project GHG indicators reasonable?	PDD	DR	Fuel consumption provides an accurate mechanism for measuring project emissions and GHG reductions, based on recognised formulas.	OK	OK
D.2.3. Will it be possible to monitor / measure the specified project GHG indicators?	PDD	DR	Yes. All emissions data will be based on direct measurement of natural gas consumption of the	OK	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
			project.		
D.2.4. Will the indicators give opportunity for real measurements of achieved emission reductions?	PDD	DR	The parameters to be monitored are measurable (project emissions) respectively will be calculated (baseline emissions) based on accurate data sets.	OK	OK
D.2.5. Will the indicators enable comparison of project data and performance over time?	PDD	DR	Idem	OK	OK
D.3. Monitoring of Leakage *It is assessed whether the monitoring plan provides for reliable and complete leakage data over time.*					
D.3.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	PDD	DR	As for AM0029, leakage calculation due to fugitive upstream CH4 emissions results in a negative amount, the leakage was therefore assumed to be zero (= 0). No leakage of CH4 is likely to occur at the project site because of safety requirements.	OK	OK
D.3.2. Have relevant indicators for GHG leakage been included?	PDD	DR	Yes, according to IPPC guidelines.	OK	OK
D.3.3. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	PDD	DR	Idem	OK	OK
D.3.4. Will it be possible to monitor the specified GHG leakage indicators?	PDD	DR	Idem	OK	OK
D.4. Monitoring of Baseline Emissions *It is established whether the monitoring plan provides for reliable and complete project emission data over time.*					
D.4.1. Does the monitoring plan provide for the collection and	PDD	DR	The enclosed tables are in compliance with the	OK	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
archiving of all relevant data necessary for determining baseline emissions during the crediting period?		I	latest versions of the applied monitoring methodologies. QA/QC measures are described sufficiently. The monitoring plan and further related documentation will be the basis and guideline for the practical procedures of the collection and archiving of the requested data. The final numbers of CERs will depend on the annual combusted natural gas in the new power plant, which will be measured. The appropriate procedures and measures for review of reported results / data according to the applied methodology will be part of the monitoring management. A CDM manual has been prepared, as described in the PDD.		
D.4.2. Is the choice of baseline indicators, in particular for baseline emissions, reasonable?	PDD	DR	Yes, the choice made is reasonable and state of the art for the monitoring of the quantity and quality of natural gas and electricity.	OK	OK
D.4.3. Will it be possible to monitor the specified baseline indicators?	PDD	DR	Yes, on a regular basis according to the monitoring plan and the procedures defined.	OK	OK
D.5. Monitoring of Sustainable Development Indicators/ Environmental Impacts *It is checked that choices of indicators are reasonable and complete to monitor sustainable performance over time.*					
D.5.1. Does the monitoring plan provide the collection and archiving of relevant data concerning environmental, social and	PDD	DR	No, as a monitoring of such data is not requested by the applied monitoring methodologies of AM	OK	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
economic impacts?			0029 and ACM0002. Additional environmental monitoring of the project implementation will be carried out through the local state environmental protection department, which is not part of the monitoring plan for GHG emission reduction evaluation.		
D.5.2. Is the choice of indicators for sustainability development (social, environmental, economic) reasonable?	PDD	DR	Idem	OK	OK
D.5.3. Will it be possible to monitor the specified sustainable development indicators?	PDD	DR	Idem	OK	OK
D.5.4. Are the sustainable development indicators in line with stated national priorities in the Host Country?	PDD	DR	Idem	OK	OK
D.6. Project Management Planning *It is checked that project implementation is properly prepared for and that critical arrangements are addressed.*					
D.6.1. Is the authority and responsibility of project management clearly described?	PDD OSV	DR I	The project developer, Zhengzhou Combined Cycle Power Co., Ltd., supported by Green Capital Consulting Company as CDM consultant and the technology suppliers are responsible for the whole project management and supervision with regard to project operation, monitoring and reporting, which includes the implementation of the details of the monitoring plan according to above monitoring methodologies. Given the nature of the project, the description of the monitoring and reporting in the PDD is deemed sufficient.	OK	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
D.6.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD OSV	DR	Zhengzhou Combined Cycle Power Co., Ltd., with assistance of Green Capital Consulting Company as CDM consultant has also the responsibility for the tasks related to monitoring.	OK	OK
D.6.3. Are procedures identified for training of monitoring personnel?	PDD OSV	DR I	As confirmed during the site visit, training has been will be provided to the local employees as necessary.	OK	OK
D.6.4. Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	PDD OSV	DR I	According to the project design such emissions are not expected to occur.	OK	OK
D.6.5. Are procedures identified for calibration of monitoring equipment?	PDD OSV	DR I	Yes, such procedures will be developed and adopted to the planned project according to the monitoring plan under guidance of the technology suppliers and the CDM consultant Green Capital Consulting Company and will be also an integral part of the monitoring management.	OK	OK
D.6.6. Are procedures identified for maintenance of monitoring equipment and installations?	PDD OSV	DR I	Idem. The specific training for predictive maintenance will be also adopted to the planned project.	OK	OK
D.6.7. Are procedures identified for monitoring, measurements and reporting?	PDD OSV	DR I	Yes. Procedures are identified. The implementation of the measures will be part of the monitoring management.	OK	OK
D.6.8. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	PDD OSV	DR I	Idem, according to applied monitoring methodology and monitoring management.	OK	OK
D.6.9. Are procedures identified for dealing with possible	PDD	DR	This issue was identified as well as counter	OK	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
monitoring data adjustments and uncertainties?	OSV	I	measures to be implemented as part of the monitoring management.		
D.6.10. Are procedures identified for review of reported results/data?	PDD OSV	DR I	The appropriate procedures and measures for review of reported results/data according to the applied methodology will be part of the monitoring management. A CDM manual has been prepared, as described in the PDD.	OK	OK
D.6.11. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	PDD OSV	DR I	Idem	OK	OK
D.6.12. Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	PDD OSV	DR I	Idem	OK	OK
D.6.13. Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	PDD OSV	DR I	Idem	OK	OK
E. Calculation of GHG Emissions by Source *It is assessed whether all material GHG emission sources are addressed and how sensitivities and data uncertainties have been addressed to arrive at conservative estimates of projected emission reductions.*					
E.1. Predicted Project GHG Emissions *The validation of predicted project GHG emissions focuses on transparency and completeness of calculations.*					

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
E.1.1. Are all aspects related to direct and indirect GHG emissions captured in the project design?	PDD	DR	The project itself does not generate any significant emissions other than the combustion of the main fuel natural gas. During construction there will be additional emissions resulting from transportation of equipments, etc., which are negligible. **CL7:** Please clarify the application status of the set of emission factors published by NDRC (i.e. File 1053). **CL9:** Please clarify in the PDD which of the following option for calculation of the emission factor, according to approved methodology ACM0002, the project proponent intends to use: • Ex-ante determination 100 % according to the applied methodology • Ex-post determination annually 100 % according to the applied methodology in the first crediting period; estimation of the emission factor ex-ante in a conservative manner • Requesting deviation to the approved methodology prior to submission of registration **CL10:** Please note that the IPCC guidelines has been updated in 2006. Please adopt relevant data and stated clearly in the PDD.	~~CL7~~ ~~CL9~~ ~~CL10~~	OK
E.1.2. Are the GHG calculations documented in a complete and transparent manner?	PDD	DR	Calculations and their derivative formulas are referenced to IPPC standards.	OK	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
E.1.3. Have conservative assumptions been used to calculate project GHG emissions?	PDD	DR	Idem	OK	OK
E.1.4. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	PDD	DR	No major uncertainties are foreseen.	OK	OK
E.1.5. Have all relevant greenhouse gases and source categories listed in Kyoto Protocol Annex A been evaluated?	PDD	DR	Yes, according to the applied methodologies.	OK	OK
E.2. Leakage *It is assessed whether there leakage effects, i.e. change of emissions which occurs outside the project boundary and which are measurable and attributable to the project, have been properly assessed.*					
E.2.1. Are potential leakage effects beyond the chosen project boundaries properly identified?	PDD	DR	As for AM0029, leakage calculation due to fugitive upstream CH4 emissions results in a negative amount, the leakage was therefore assumed to be zero (= 0), which means: Leakage does not need to be considered outside the project boundaries No leakage of CH4 is likely to occur at the project site because of safety requirements. Moreover, no used energy generating equipment from another project activity and also no natural gas from other users is transferred to the project activity, which could be also interpreted as leakage.	OK	OK
E.2.2. Have these leakage effects been properly accounted for in	PDD	DR	Idem	OK	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
calculations?					
E.2.3. Does the methodology for calculating leakage comply with existing good practice?	PDD	DR	The leakage calculation is according to AM0029.	OK	OK
E.2.4. Are the calculations documented in a complete and transparent manner?	PDD	DR	Idem	OK	OK
E.2.5. Have conservative assumptions been used when calculating leakage?	PDD	DR	Idem	OK	OK
E.2.6. Are uncertainties in the leakage estimates properly addressed?	PDD	DR	Idem	OK	OK
E.3. Baseline Emissions *The validation of predicted baseline GHG emissions focuses on transparency and completeness of calculations.*					
E.3.1. Have the most relevant and likely operational characteristics and baseline indicators been chosen as reference for baseline emissions?	PDD	DR I	Yes. The baseline indicators selected are relevant and transparent. The ex-ante estimation of emission reductions is based on the calculations of the planned electricity generation and relevant natural gas consumption from the feasibility study report based on conservative assumptions for the emission factor of the electricity grid. Besides of this already conservative estimation, the actual emission reductions will be directly measured, resulting in the actual CERs, that have to be annually verified by another DOE.	OK	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
E.3.2. Are the baseline boundaries clearly defined and do they sufficiently cover sources and sinks for baseline emissions?	PDD	DR I	Yes, the baseline boundaries are with the power plant and the equipments. All possible sources of emission have been taken into account.	OK	OK
E.3.3. Are the GHG calculations documented in a complete and transparent manner?	PDD	DR I	Yes. The calculations are transparently documented. All formulas are described and derivative inputs appropriately referenced.	OK	OK
E.3.4. Have conservative assumptions been used when calculating baseline emissions?	PDD	DR I	Yes. The calculations assumptions have been done in a conservative manner, with using accepted international sources.	OK	OK
E.3.5. Are uncertainties in the GHG emission estimates properly addressed in the documentation?	PDD	DR I	Yes	OK	OK
E.3.6. Have the project baseline(s) and the project emissions been determined using the same appropriate methodology and conservative assumptions?	PDD	DR I	Yes. The baseline emissions and project emissions were calculated according to AM 0029 and ACM0002. No significant additional project emissions are foreseen (control equipment, electric drives, etc.) to occur, but will be separately measured, which is in line with applied methodologies.	OK	OK
E.4. Emission Reductions Validation of baseline GHG emissions will focus on methodology transparency and completeness in emission estimations.					
E.4.1. Will the project result in fewer GHG emissions than the baseline scenario?	PDD	DR I	Yes. The calculation results in annual emission reductions of a revised amount of 691,502 tCO_2	OK	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
			equivalent on the average. The project applies conservative and sound assumptions. The final emission reductions will be the result from the ex-post measurements, which will be annually verified by a DOE.		
F. Environmental Impacts *Documentation on the analysis of the environmental impacts will be assessed, and if deemed significant, an EIA should be provided to the validator.*					
F.1.1. Has an analysis of the environmental impacts of the project activity been sufficiently described?	PDD OSV	DR I	Yes. The environmental impacts have been assessed by means of an EIA Study and key results summarised and presented in the PDD, Section D. The EIA, with major environmental impacts sufficiently described and assessed, is available for inspection and approved by the State Environmental Protection Administration of China in 2004.	OK	OK
F.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	PDD OSV	DR I	See F.1.1.	OK	OK
F.1.3. Will the project create any adverse environmental effects?	PDD OSV	DR I	No significant negative impacts are anticipated from the project. Positive effects are predominating like reduction of GHG emissions, reduction of pollutants, production of environmentally friendly electricity, generation of local added value, local employment during construction and operation, city development,	OK	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
			peak load balancing.		
F.1.4. Are transboundary environmental impacts considered in the analysis?	PDD OSV	DR I	No transboundary environmental impacts to other regions or countries have been identified.	OK	OK
F.1.5. Have identified environmental impacts been addressed in the project design?	PDD OSV	DR I	Environmental impacts have been identified and addressed in the project design by means of the EIA study, with mitigation measures suggested and implemented for the project to minimise impacts.	OK	OK
F.1.6. Does the project comply with environmental legislation in the host country?	PDD OSV	DR I	The project activity which will be implemented on an already approved site for power plant construction, has been received an environmental impact assessment, which was approved by the State Environmental Protection Administration of China.	OK	OK
G. Stakeholder Comments *The validator should ensure that a stakeholder comments have been invited and that due account has been taken of any comments received.*					
G.1.1. Have relevant stakeholders been consulted?	PDD STH C	DR I	The process by which comments by local stakeholders have been invited and compiled, has been described within section E of the PDD. **CL11:** What is the demography of the region? Please detail how the local stakeholders are invited and selected.	~~CL11~~	OK
G.1.2. Have appropriate media been used to invite comments by local stakeholders?	PDD STH C	DR I	See G.1.1.	~~CL11~~	OK
G.1.3. If a stakeholder consultation process is required by	PDD	DR	Yes, it is described in the PDD under chapter E	OK	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl.	Final Concl.
regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	STH C	I	and in Appendix 1.		
G.1.4. Is a summary of the stakeholder comments received provided?	PDD STH C	DR I	See G.1.3.	OK	OK
G.1.5. Has due account been taken of any stakeholder comments received?	PDD STH C	DR I	The PDD has been published directly on the UNFCCC website for a period of 30 days, from February 23 to March 24, 2007. No comment was received.	OK	OK

Table 3 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
CAR1: The LoA from DNA of P.R.China is not available for inspection. The project proponent has to obtain a written approval for the project from the DNA of the P.R. China in English language, which shall contain all required CDM elements in the letter as defined by UNFCCC (see Table 3 of the Validation Protocol).	Table 1, No.2	The LoA from the Chinese DNA was issued in May 2007 and already submitted to the Validation team.	OK
CAR2: Annex 4 of the PDD have to be provided according to the relevant PDD guidelines issued by UNFCCC, which includes in Annex 4 copy of worksheets used by the operator based on aggregation of monthly / weekly / daily worksheets and calculated from the formulas given in methodology AM0029 respectively ACM0002 are required.	Table 1, No.17	The primary parameters to be monitored during the crediting period of the project activity were provided in Annex 4 in the PDD-v4.	OK
CAR3: The description of the project activity should contain more technical specifications, parameters. The results from the performance guarantee tests have to be presented. This section should include a description of how environmentally safe and sound technology and	Table 2, A.2.1	The technical parameter of the Project was described in section A.4.3. The project owner has been working with the various related professional institutions and consultants to provide a series of	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

know-how to be used is transferred to the host Party(ies). Systems plans and responsibilities with regard to initial training (capacity building) and maintenance efforts during the project period should be outlined in this section. This is relevant when new technology is implemented such as a new boiler type, new gas turbine type, new waste heat recovery and steam turbine, etc.		professional training programs and expected that such training programs will provide the project a highly skilled technician team needed to ensure the desirable results. More detailed information were provided in section A.4.3 and B.7.2 of the PDD-v4. In addition, the Form of Performance Guarantee Test is provided to the DOE.	
CL1: Please clarify the expected operational lifetime of the project activity (20 years in the PDD) as it is written in the PDD that a 7x3 years of crediting period has been chosen.	Table 2, C.1.2	The operational lifetime of the Project is 20 years as stated in the Section C.1.2. , and therefore the CERs will not be claimed after the 20ys.	OK
CL2: Please clarify in the PDD which steps the training is planned (before commissioning, during operation) and how the responsibilities and tasks of power plant operator, project developer, technology supplier including monitoring equipment and CDM consultant are allocated.	Table 2, A.2.4.	The training programs have been planned by the Project owner, which were provided in the Section A.4.3 and the Section B.7.2.	OK
CL3: Evidences of starting date of project activity shall be provided. The confirmed start date of the project activity has to be clarified in the PDD, so as the amount of emission reductions for the year 2007.	Table 2, C.1.1.	It is clarified that the confirmed starting date of the Project is 3 July 2007 in the Section C.1.1, which is the date of construction of the project activity. The relevant evidence is the signed agreement for the date to start	OK.

Deleted: PDD-v2

		pouring the concretes to the construction site of the proposed project, which was provided to the DOE.	
CL4: It has to be evidenced with updated information that the application criteria for the approved baseline methodology AM0029 can be fulfilled with regard to the availability of natural gas, that *"future natural gas based power capacity additions, comparable in size to the project activity, are not constrained by the use of natural gas in the project activity "*, and that the project activity would not leading to possible leakage.	Table 2, B.2.1.	Future natural gas based power capacity additions, comparable in size to the project activity, are not constrained by the use of natural gas in the Project activity, and that the Project activity would not leading to possible leakage, which is clarified with more detailed information and evidences in the Section B.2.	The supporting information – a letter from Henan Development and Reform Commission (DRC) to PetroChina about Natural Gas Supply is inspected by the audit team (Ref. Henan DRC Energy Department <2005> No. 77). The letter has mentioned 3 other new natural gas based power plants are to be developed in Henan province. The CL is therefore resolved and closed.
CL5: Please provide more information to support that the 600MW sub-critical coal-fired power plant can perform similar peak load balancing function as of the project activity.	Table 2, B.2.6.	Coal-fired power plants can function not only as basic load power plant but also as peak load balancing power plant in China. (http://bbs.zidonghua.com.cn/simple/index.php?t11146.html)	OK
CL6: Please provide supporting information, if any, to show that there is no existing NGCC power plant around the project site, within Henan province - except the Zhumadian NGCC Project which is reported to be also being validated as a CDM project.	Table 2, B.2.7.	There is only two NGCC projects (including the proposed project) in Henan province currently under constructions according to *Introduction to the Development Status of Gas Turbine Power Generation Project and Follow-*	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

		Up Services and Spare Parts Procurement issued by China National Technical Ex-Im. Corp. in 2006. Such document as evidence was provided to DOE	
CL7: Please clarify the application status of the set of emission factors published by NDRC (i.e. File 1053).	Table 2, E.1.1	In the PDD–v2, the project applies the basic value of China's Regional Grid published by DNA to calculate $EF_{OM,y}$ and $EF_{BM,y}$ of the ECG, instead of using emission factors published by NDRC directly, and this issue was addressed in section B.6 and the Annex 3 of the PDD –v2.	OK
CL8: Please clarify whether other auxiliary fuel is used for plant start-up or under emergency situations such as shortage of natural gas supply, and whether there emissions have been accounted for in the project emission calculations.	Table 2, B2.2, D.2.1.	It is clarified that no auxiliary fuel used during the operation of the Project in the Section B.2.	OK
CL9: Please clarify in the PDD which of the following option for calculation of the emission factor, according to approved methodology ACM0002, the project proponent intends to use: • *Ex-ante* determination 100 % according to the applied methodology • *Ex-post* determination annually 100 %	Table 2, E.1.1	It is clarified that the Project proponent intends to use Ex-ante determination 100% according to the applied methodology in the Section B.6.	OK

Formatted: English (U.S.)
Deleted: VALIDATION REPORT

according to the applied methodology in the first crediting period; estimation of the emission factor *ex-ante* in a conservative manner • Requesting deviation to the approved methodology prior to submission of registration			
CL10: Please note that the IPCC guidelines has been updated in 2006. Please adopt relevant data and stated clearly in the PDD.	Table 2, E.1.1	IPCC 2006 was adopted and stated in the Section B.6 and the Annex 3.	OK
CL11: What is the demography of the region? Please detail how the local stakeholders are invited and selected.	Table 2, G.1.1 & 1.2	It is clarified with more detailed information in the Section D.1.	OK

Formatted: English (U.S.)

Deleted: VALIDATION REPORT

Formatted: English (U.S.)

Deleted: VALIDATION REPORT