



VALIDATION REPORT

Camco International Limited

Beijing Taiyanggong CCGT Trigeneration Project

SGS Climate Change Programme
SGS United Kingdom Ltd
SGS House
217-221 London Road
Camberley Surrey
GU15 3EY
United Kingdom

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<p>Summary:</p> <p>Camco International Limited. has commissioned SGS UK to perform the validation of the project: "Beijing Taiyanggong CCGT Trigenation". The scope of the validation is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. SGS has employed a risk-based approach in the validation, focusing on the identification of significant risk for project implementation and the generation of CERs.</p> <p>The validation is based on the findings of document reviews, the stakeholder consultation process and responses from the project participants to the findings raised in this report.</p> <p>The report and the annexed validation describes a total 13 findings which include:</p> <ul style="list-style-type: none"> · 3 Corrective Action Requests; · 10 New Information Requests; <p>All of above mentioned CARs and NIRs were closed out.</p>	
Subject:	Indexing Terms
CDM validation	
Validation Team Members;	
Elton Chen Wu – Lead Assessor Robin Wang – Local Assessor Sarah Ruan – Local Assessor	
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Sanjeev Kumar	<input type="checkbox"/> Limited Distribution
Authorized Signatory:	<input type="checkbox"/> Unrestricted Distribution
Siddharth Yadav	
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Abbreviations

CAR	Corrective Action Request
CCGT	Combined Cycle Gas Turbine
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
COP/MOP	Conference of Parties / Meeting of Parties
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board of the clean development mechanism
EIA	Environmental Impact Assessment
EPA	Environmental Protection Authority
GHG	Greenhouse gas
IETA	International Emission Trading Association
IPCC	Intergovernmental Panel on Climate Change
LoA	Letter of Approval
MP	Monitoring Plan
MW	Mega Watt
NGO	Non Governmental Organization
NIR	New Information Request
PDD	Project Design Document
UNFCCC	United Nations Framework Convention on Climate Change

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1. Introduction

1.1 Objective

The Camco International Limited has commissioned SGS to perform the validation of the project: “Beijing Taiyanggong CCGT Trigeneraiton” with regard to the relevant requirements for CDM project activities. The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP) and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of Certified Emission Reduction (CER). UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities and related decisions by the COP/MOP and the CDM Executive Board.

1.2 Scope

The scope of the validation is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. SGS has employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

The validation is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3 GHG Project Description

The project activity aims to install and operate a 780MW grid connected natural gas fired combined cycle power plant in Taiyanggong area of Chaoyang District in Beijing. In addition to supply electricity to the Beijing grid (a fully integrated subsidiary of North China Power Grid), the project will supply waste steam for heating and cooling to an area of 40 km² so that existing boilers with low efficiency in this area will be removed. Only emission reductions from electricity generated are claimed. The project started in July 2006 after CDM credits was taken into consideration and is expected to be commissioned in the end of 2007.

Baseline Scenario:

Due to abundant coal reserves in China, coal-fired power is dominating in China's power generating sector in the history and at present. Coal-fired plants dominate not only in current power generating sector but also will dominate in newly installed capacity in a long time in the North China Region.

According to Version 01.1 of AM0029, the economically most attractive baseline scenario alternative with the best financial indicator, i.e. the lowest levelised cost, can be selected as the most plausible scenario. After using the basic levelised cost methodology in the 'Projected Costs of Generation Electricity: 2005 update', which is published by IEA, the 2X600MW sub-critical coal –fired power plants has the lowest levelised cost. Therefore, the baseline selected is the 2X600MW sub-critical coal-fired power plant.

Project Scenario:

In project activity, natural gas is sent to the gas turbine for power generation. The fuel gas is then sent to the heat recovery steam generator to generate steam with a high temperature and pressure. This steam drives the system turbine to generate more electrical power. The two imported gas turbine and a homemade steam turbine give an overall efficiency of 58% for electricity generation. The project activity is expected to result in an average annual emission reduction of 1,516,289 tonnes of CO₂e during the first 7 years in a renewable crediting period.

Leakage:

According to AM0029, Leakage may result from fuel extraction, processing, liquefaction, transportation, re-gasification and distribution of fossil fuels outside of the project boundary. This includes mainly fugitive CH₄

emissions and CO₂ emissions from associated fuel combustion and flaring. For this project, leakage emission source was considered fugitive CH₄ emissions associated with fuel extraction, processing, liquefaction, transportation, re-gasification and distribution of natural gas used in the project plant and fossil fuels used in the grid in the absence of the project activity. No LNG is used in the project plant; therefore no leakage from this source is considered.

The calculated result of total net leakage effects is negative. Thus the leakage can be assumed zero, as is indicated in AM0029.

Environmental & Social Impacts:

An EIA for the project was carried out by Guodian North China Power Engineering (Beijing) Co., Ltd. and was approved by the Beijing Environmental Protection Bureau in June 2005. The project will lead to an improvement in air quality as a clean fuel, i.e., natural gas, will be burned and a dry-type low-nitrogen burner will be installed. It is predicted that SO₂ and NO_x emission concentration will be significantly reduced once the plant is put into operation. Besides, a series of measures to prevent water pollution and noise pollution will be undertaken. Thus the discharge of wastewater and the target noise level from this project will be in full compliance with national and local requirements. The impacts on the environment are not considered significant.

1.4 The Names and Roles of the Validation Team Members

Name	Office	Role
Elton Chen	SGS China	Lead Assessor
Robin Wang	SGS China	Local Assessor
Sarah Ruan	SGS China	Local Assessor

2. Methodology

2.1 Review of CDM-PDD and Additional Documentation

The validation is performed primarily as a document review of the publicly available project documents. The assessment is performed by trained assessors using a validation protocol.

A site visit is usually required to verify assumptions in the baseline. Additional information can be required to complete the validation, which may be obtained from public sources or through telephone and face-to-face interviews with key stakeholders (including the project developers and Government and NGO representatives in the host country). The results of this local assessment are summarized in Annex 1 to this report.

2.2 Use of the Validation Protocol

The validation protocol used for the assessment is partly based on the templates of the IETA / World Bank Validation and Verification Manual and partly on the experience of SGS with the validation of CDM projects. It serves the following purposes:

- it organises, details and clarifies the requirements the project is expected to meet; and
- it documents both how a particular requirement has been validated and the result of the validation.

The validation protocol consists of several tables. The different columns in these tables are described below.

Checklist Question	Means of Verification (MoV)	Comment	Draft and/or Final Conclusion
<i>The various requirements are linked to checklist questions the project should meet.</i>	<i>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.</i>	<i>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.</i>	<i>This is either acceptable based on evidence provided (Y), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). New Information Request (NIR) is used when the validation team has identified a need for further clarification.</i>

The completed validation protocol for this project is attached as Annex 2 to this report

2.3 Findings

As an outcome of the validation process, the team can raise different types of findings

In general, where insufficient or inaccurate information is available and clarification or new information is required the Assessor shall raise a **New Information Request (NIR)** specifying what additional information is required.

Where a non-conformance arises the Assessor shall raise a **Corrective Action Request (CAR)**. A CAR is issued, where:

- I. mistakes have been made with a direct influence on project results;
- II. validation protocol requirements have not been met; or
- III. there is a risk that the project would not be accepted as a CDM project or that emission reductions will not be verified.

The validation process may be halted until this information has been made available to the assessors' satisfaction. Failure to address a NIR may result in a CAR. Information or clarifications provided as a result of an NIR may also lead to a CAR.

Observations may be raised which are for the benefit of future projects and future verification or validation actors. These have no impact upon the completion of the validation or verification activity.

Corrective Action Requests and New Information Requests are raised in the draft validation protocol and detailed in a separate form (Annex 3). In this form, the Project Developer is given the opportunity to “close” outstanding CARs and respond to NIRs and Observations.

2.4 Internal Quality Control

Following the completion of the assessment process and a recommendation by the Assessment team, all documentation will be forwarded to a Technical Reviewer. The task of the Technical Reviewer is to check that all procedures have been followed and all conclusions are justified. The Technical Reviewer will either accept or reject the recommendation made by the assessment team.

3. Determination Findings

3.1 Participation Requirements

The host Party for this project is P.R.China. China ratified the Kyoto protocol on 30th August 2002 and has appointed a DNA. No Letter of Approval was provided and CAR (02) was raised at the beginning of the validation assessment. When the LoA was received afterwards, CAR (02) was closed out.

Macquarie Bank Limited Company and Camco International Limited are identified as project participant from annex I Party UK. UK ratified the Kyoto Protocol on 31st May 2002 and has appointed a DNA. Initially, no Letter of Approval was provided and CAR (01) was raised. When the UK LoA from Macquarie Bank and CAMCO were received in July 2nd and 13th, 2007 respectively afterwards, CAR (01) was closed out.

3.2 Baseline Selection and Additionality

The project employs the approved baseline methodology AM0029 “Grid Connected Electricity Generation Plants using Natural Gas” (version 01.1, dated 19 May 2006).

To identify the baseline scenario, project participant successively followed the two steps prescribed in AM0029, they are, step 1 “Identify plausible baseline scenarios”, and step 2 “Identify the economically most attractive baseline scenario alternative”.

The project participant Identified all realistic and credible alternative scenario(s) to the project activity, and then eliminate those encountering investment barriers, those not compliance with current Chinese laws and regulations, and those limited by technology development and high cost. For example, oil fired power plant was excluded in the baseline, in the initial PDD, the reason of this exclusion is given as “Fuel Oil can not be seen as a part of current or future power plant technology”, NIR 6 was raised to ask for justification of this conclusion. The explanation and data source was given in the revised PDD, therefore NIR 6 was closed out.

According to statistics published by the China DNA, of new thermal power plants built between 2000-2005, 21% of new units were 600MW, 60% of new units were 300MW and above, and the minor remainder had a unit capacity of less than 300MW per unit. Therefore, 2 x 300MW and 2 x 600MW plant is selected for levelized cost analysis. In other words, following scenarios are deemed to be plausible and meet the baseline criteria,

A – New sub-critical coal plant (2 x 300MW);

B – New sub-critical coal plant (2 x 600MW);

C – New super-critical coal plant (2 x 600MW);

D – Project activity (Natural Gas CCGT) not under taken as a CDM project.

Levelised and Investment analysis were performed based on the data and assumptions available in the Feasibility Study Report (FSR) of this project. In China, the FSR must be prepared by an accredited third party, assumptions and data sources for the economic evaluation of a project in the FSR are required to be based on relevant national standards and criteria. The FSR for proposed project was prepared by Beijing Guodian Huabei Power Engineering Co. Ltd., which is an independent third party entity accredited by the relevant national authority to carry out feasibility studies for new projects, including power plants, (Please refer to <http://www.ncpe.com.cn/ncpe/gszz/bjqdzz.htm>). The FSR was approved by the Beijing DRC Committee on 8th Oct 2005 (Nr. JING FA GAI [2005]2129). SGS concluded therefore that assumptions and data from the approved FSR are reliable, accurate and concrete to the concerned project.

Statistics published by Chinese DNA are used in the levelized cost analysis, data there were derived from official statistics “China Energy Year Book 2004/2005/2006” and “China Electrical Power Year Book 2004/2005/2006”. This data has been widely accepted by international communities, and also have been used in determining the emission factor of Chinese Grids in many registered CDM PDDs.

Parameters for the coal fired power stations came from China Institute of Power Planning and Design, Thermal Power Engineering Design Reference Cost Index, 2005 edition, they are official data used for the design of coal fired power plants.

210RMB/metric tonne is taken as the coal price in the levelized cost analysis, this is acceptable because in China, the majority of electricity is generated by coal-fired power plants. To maintain a stable electricity price, the coal price for power plants is regulated by the government. The proposed project connects with the regional NCPG, which covers Beijing, Tianjin, Hebei, Shandong, Shanxi and Inner Mongolia. This is the main coal production area in China, where power plants are situated close to coal mines and coal prices are lower than in other parts of China. According to the approved FSR of a coal-fired plant Shanxi Zhangshan, the price was 210RMB/metric tonne which was considered as a representative price of coal for power plants regulated by government, further, according a notice from the National Development and Reform Commission of China on the operation trends of the coal industry in 2005-2006, the average coal price for power generation was 212.75 RMB/metric tonne¹, therefore, 210RMB/metric tonne was accepted to be used in the levelized cost analysis.

Basic levelised cost methodology in the 'Projected Costs of Generation Electricity: 2005 update', which is published by IEA, is applied to pick out the most attractive baseline scenario alternative. Being economically most attractive, the 2X600MW sub-critical coal –fired power plant is selected as baseline scenario for the project activity, as per methodology AM0029.

The additionality of the project activity has been properly established following the steps stated in AM0029.

Step 1: Benchmark investment analysis

Step 2: Common practice analysis

Step 3: Impact of CDM registration

8% IRR benchmark is used in the Benchmark investment analysis in the FSR as well as in the PDD, this benchmark is set up according to the "*Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects*" issued by the "Department of Power Generation & Transmission Operations of State Power Corporation", who was the former state authority to manage relevant power issues including new constructions of power plants. In turn, the *Interim Rules* states that the benchmark is based on *The Methodology and Parameters for Financial Evaluation of Construction projects* (Chapter 1 General, Section 1.1) which is the national criteria in evaluating new construction projects including fossil fuel fired plants. Therefore, IRR of 8% for total investment of a project is regarded as benchmark for investment in the proposed project.

The negotiated gas price(1.55RMB/M3 inc VAT) and approved load hours (4528Hrs) were used in the IRR analysis, operation period is deemed to be 20 years as per the national criteria "*The Methodology and Parameters for Financial Evaluation of Construction projects*" (Page 62, 2nd Edition). Gas price is believed to be increased in China to pursue the international market; The load hour is not supposed to increase significantly as it is based on the heating and cooling demands of the area which has already been properly considered in the FSR as well as project design.

According to the IRR calculating spreadsheet, the project IRR without CERs is estimated to 6.01%, which shows that the project is not financially attractive in absence of CDM benefits. The project IRR with CDM benefit is 9.77% and is more than the bench mark set for investment.

NIR4 was raised to audit the financial analysis of project in the PDD. The IRR calculation is checked by verifying its assumed parameters, actual data and calculating method. This check is mainly done based on current Chinese auditing, taxation and legislation regulations, the Feasibility Study Report (hereinafter the "FSR"), and some actual documented evidences.

Following requests were made in order to close out NIR4,

Absent material correlative to the real expenditures was required to be presented to prove what has happened since the initial project activities started. Absent Interest Payment calculation and budgetary estimate of Working Capital were required to be supplemented. Some tax rates different from current Chinese taxation regulation, for example, the Value Added Tax (hereinafter the "VAT") rates of natural gas and water expenditure, were suggested to be amended. Several calculated figures, for example, the depreciation, the reserve and the construction tax & education surcharge, were suggested to be modified when they were not in compliance with current Chinese accounting regulation.

¹ http://www.ndrc.gov.cn/jjxsfx/t20060317_126320.htm

CAMCO made responses as follows:

Interest Payment calculation and budgetary estimate of Working Capital were supplemented. VAT rates were amended according to current Chinese taxation regulation. The calculating of the depreciation, the reserve and the construction tax & education surcharge were modified in compliance with current Chinese accounting regulation. Besides, part of electronic copies of invoices and contracts was delivered, as is required by SGS.

All amendment made by CAMCO were accepted. All supporting documents from CAMCO were verified. And the assumed parameters and actual data in IRR calculation were cross-checked against those supporting documents. Thus NIR4 is closed.

We accepted the sensitivity analysis without including the variation in prices of electricity because:

- The proposed project is distinct from other ordinary power generation projects, because sale of heat is another revenue stream besides the sale of electricity, the price of heat is more likely to fluctuate than the price of electricity. The price of heat has been included in the sensitivity analysis.
- In China, the electricity tariff is regulated by government and cannot change without approval by government authority. A power plant operator will negotiate a feed-in tariff with the Grid Company based on the operating costs and expected profit of the plant, once the tariff for a plant is set, it is not possible to change unless the government regulates the change, for instance if the fuel price increases considerably.

A sensitive analysis shows the changes in gas price and load hours have a stronger impact on project financial performance:

- If gas price decline, the IRR can increase to above the benchmark. However, it is unlikely that gas prices will fall over the course of the project, because gas in China are currently rising and this trend is likely to continue as demand for natural gas increases.
- If the load hours increase, the IRR can pass the benchmark, However, it is not possible that the electricity generated by the project will exceed the average annual expectation 3.374.000 MWh, as the power output of the project is dependent on base load heat demand.

Coal-fired power plants dominate the power supply of China and are expected to continue to dominate in the near future.² In 2006, the total capacity of gas-fired power plants in China is 10,627 MW, accounting for 1.7% of China's total installed capacity³. In 2005, the total capacity of NCPG (regional grid to which the proposed project will be connected) was 114,620MW (China Electrical Power Year Book 2006), and the total capacity of all gas-fired power plants in this region till 2006 is 1.426MW. This means in 2006, the share of gas-fired power plants in this region is less than 1.2%. It was of SGS opinion that such a small share of practice should not be seen as common. In addition, the combined heat, power and cooling capacity of the project activity means that project activities of this type constitute an even smaller part of the power mix than ordinary gas-fired power plants.

In the NCPG area, there are three other gas-fired plants of a similar scale to the project: Jingfeng Beijing No.3 plant, Huadian Zhengchangzhuang plant and Sulige plant. These three plants are all also seeking additional finance through CDM registration. This demonstrates that all plants of a comparable size in the Beijing area and indeed the North China Power grid are facing similar financial barriers. .

The above process of verifying the investment analysis indicates that the project is veritably not financially attractive without CDM benefits. And the sensitivity analysis shows that with reasonable variations in critical assumptions, the IRR of the project activity remains lower than the benchmark. That is, the result of investment analysis based on the assumptions is valid with these variations. Besides, the project is an

² For example, see the International Energy Agency's "World Energy Outlook 2007: China" publication, available from http://www.iea.org/Textbase/publications/free_new_Desc.asp?PUBS_ID=1987

³ Chun Chun Ni, China's Natural Gas Industry and Gas to Power Generation, the Institute of Energy Economics, Japan (July 2007). Available at <http://eneken.ieej.or.jp/en/data/pdf/397.pdf>.

uncommon practice without CDM support. Therefore, this project is not included in baseline scenario and is obviously additional.

NIR 5 was raised to ask for the evidence that the incentive from the CDM was seriously considered in the decision to proceed with the project activity. Project proponent presented the FSR for this project where the CDM credit was mentioned and recommended for realizing this project, a decision on seeking CDM credit was made by project owner on 11 Nov 2005 was presented and verified during site visit. Hence NIR 5 was closed.

3.3 Application of Baseline Methodology and Calculation of Emission Factors

The applied baseline methodology is justified as it has been demonstrated that the project activity ensures that:

- The project activity is the construction and operation of a new natural gas fired grid-connected electricity generation plant.
- The geographical / physical boundaries of the baseline grid can be clearly identified and information pertaining to the grid and estimating baseline emission is publicly available.
- Natural gas is sufficiently available in the region or country, e.g. future natural gas based power capacity additions, comparable in size to the project activity, are not constrained by use of natural gas in the project activity.

The project is a newly built Gas-Fired Combined Cycle (CCGT) Power Plant and will supply generated electricity to the Beijing grid (a fully integrated subsidiary of North China Power Grid).

The boundary of the North China Power Grid can be clearly identified in line with ACM0002 Version 06 and estimating baseline emission has been made publicly available by Chinese DNA.

In the initial PDD, project proponent quoted an article published on People's Daily Online to demonstrate that sufficient NG would be available in Beijing, but the PDD did not discuss when the proposed new gas supply ShaanJing Number 2 line will be in place, and the expected volume of natural gas on both demand and supply side, thus NIR 2 was raised, this was clarified in the revision of PDD, the gas supply volume to Beijing from ShaanJing number 1 and number 2 lines is estimated to be 9.1 billion m³ of natural gas each year, demand for natural gas in Beijing is growing and is predicted to reach 5.8 billion m³ in 2008, and 8.5 billion m³ till 2014, the newly built ShaanJing Number 2 line has began operation on 14 Dec 2006, in addition, during site visit, the representative of gas supplier Beijing Gas Group confirmed the sufficient gas supply for the project activity and provided a confirmation letter, hence NIR 2 closed.

According to AM0029 (version 01.1), project participants shall use for $EF_{BL, CO_2, y}$ the lowest emission factor among the following three options:

Option 1. The build margin, calculated according to ACM0002; and

Option 2. The combined margin, calculated according to ACM0002, using a 50/50 OM/BM weight.

Option 3. The emission factor of the technology (and fuel) identified as the most likely baseline scenario under "Identification of the baseline scenario" above.

BM and OM was calculated according to ACM0002 version 6 by using the most recent data and relevant notification of Chinese DNA. Emission factor of a sub-critical coal fired power plant which is identified as most likely baseline is calculated to be 0.8732tCO₂/WMh, and this is the lowest emission factor among these three options. Thus EF_{BL} based on Option 3 is used in this project.

NIR 3 was raised due to data used for determination of parameter η_{BL} was not clear. In the revised PDD, the reliable data source has been provided hence NIR 3 is closed.

3.4 Application of Monitoring methodology and Monitoring Plan

The PDD provides for monitoring of all applicable parameters of project emissions, baseline emissions and leakages in accordance with AM0029 (Version01.1), they are detailed in section B.7.1 of the PDD.

The procedures for training was not mentioned in initial monitoring plan, hence NIR 7 was raised.

The procedures for emergency preparedness for cases where emergencies can caused unintended emissions was not discussed in the initial PDD, hence CAR 3 was raised.

Details of training procedures and emergency procedures have been respectively added into Section 5 and Section 6 of Annex 4 in PDD. Thus NIR 7 and CAR 3 were closed.

The means of monitoring the natural gas and diesel consumption have been added in the revised PDD according to monitoring methodology of AM0029.

3.5 Project Design

The project activity aims to install and operate a 780MW grid connected natural gas fired combined cycle power plant in the Taiyanggong area of Chaoyang District in Beijing. In addition to supply electricity to the Beijing grid (a fully integrated subsidiary of North China Power Grid) with net annual power output 3,266 GWh, the project will supply waste steam for heating and cooling to an area of 40 km² so that existing boilers with a low efficiency will be removed. Only emission reductions from electricity generated are claimed. The project started in July 2006 after CDM credits was taken into consideration and is expected to be commissioned in the end of 2007.

The project's operation lifetime described in PDD Section B4, B5 and C1.2 is different. NIR 10 was raised. As is clarified, the lifetime used in the FSR and levelised costs analysis is based on expert opinion, and made the results of different alternatives comparable. In order to ensure the consistency with financial analysis in the FSR, project lifetime of 20 years is assumed for the financial analysis and levelised costs in PDD section B4 and B5. According to the project owner, the expected project lifetime is 30 years, which is stated in PDD section C1 and is confirmed during site visit. Moreover, actual lifetime of proposed project depends on project operation and maintenance, and will be reviewed prior to new crediting period, hence, NIR10 closed out.

3.6 Environmental Impacts

An Environmental Impact Assessment (EIA) has been conducted according to Chinese laws and regulations. The potential impacts have been identified, corresponding measures to prevent water pollution and control noise pollution have been described in the PDD, related evidences were received during site visit. No significant environmental impacts are expected from the project activity. The EIA has been approved by Beijing Environmental Protection Bureau in June 2005.

3.7 Local Stakeholder Comments

Total 4 meetings for local stakeholder consultation were described in PDD Section E. The project owner collected local stakeholder comments through the first two meetings during the course of writing the EIA. According to the statistics, at initial stage, only about 40.68% out of 119 surveyed stakeholder supported the project, the main reasons for the objections were identified to be the concerns about noise and emissions from flue gases, after detailed explanation to local residents about the characteristics of CCGT and measures to be taken to reduce potential environmental impacts by project owner, in the third meeting, 87.6% out of 100 returned questionnaires supported the establishment of the project and 13.3% expressed objections to it. A further stakeholder meeting was held on Wednesday 18 October 2006 in the meeting room of project, 57 people participated in the meeting including representatives from Beijing City Environment Protection Bureau, Beijing Chaoyang District Environment Protection Bureau, Beijing City Taiyanggong Village Government and local residents; they unanimously support the construction of the project.

NIR 8 was raised to ask relevant supporting documents to sustain above conclusion in the PDD, NIR 9 was raised due to PDD did not specify which media had been used to invite comments from local stakeholders. During site visit, the relevant evidences including means used to invite comments, meeting records, questionnaire and photos during consultation process have been provided to SGS assessor to verify, the measures to control water and noise pollutions have been verified based on EIA, design drawing submitted by project owner, which are in line with relevant description in the revised PDD. NIR 8 and NIR 9 therefore were closed out.

4. Comments by Parties, Stakeholders and NGOs

In accordance with sub-paragraphs 40 (b) and (c) of the CDM modalities and procedures, the project design document of a proposed CDM project activity shall be made publicly available and the DOE shall invite comments on the validation requirements from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available. This chapter describes this process for this project.

4.1 Description of How and When the PDD was Made Publicly Available

The PDD and the monitoring plan for this project were made available on the UNFCCC website <http://cdm.unfccc.int/Projects/Validation/DB/WJUKHZTAMPKD2Q5QLSC7VLLUDAMHD2/view.html>

and were open for comments from 27th January 2007 until 25th February 2007. Comments were invited through the UNFCCC CDM homepage.

4.2 Compilation of All Comments Received

One comment has been received.

From: teresachang@consultant.com [<mailto:teresachang@consultant.com>]

Sent: Friday, February 02, 2007 6:28 PM

PROJECT: Beijing Taiyanggong CCGT Trigenation Project

NAME: Teresa Chang

EMAIL: teresachang@consultant.com

ORGANISATION: Huahe consulting

ORGANISATION TYPE: Other Party: CDM consulting

CITY: Beijing

COUNTRY: China

COMMENT: It's well known that 20% of the surveyed stakeholders objected the project when the environmental impact assessment report was done.

Although they did not take major position in all the surveyed stakeholders and the report was approved by the government (as the project is a governmental request), they should be presented in the PDD with how due account was taken to each of the objectors.

4.3 Explanation of How Comments Have Been Taken into Account

This comment received was forwarded to project proponent to address and covered in NIR 1. In response to this comment as well as NIR1, how the objections received during stakeholder consultation have been taken into account, and the environmental protection measure of noise prevention and nitrogen dioxide emission reduction have been stated and added into section E in PDD by the project owner and CAMCO. This is shortly described as follows,

According to the EIA for the project, from the questionnaires collected in the first 2 meetings, 36 people out of 118 objected to the project (30.51%). In the 3rd meeting, 13.3% of the 84 questionnaires collected objected to the project (i.e. 11 people). An average of those 3 meetings, i.e. (36+11)/ (118+84), indicates 23% of people objecting to the project during the EIA stage. In the final meeting, All 56 respondents agreed with the construction of this project. And there's no indication of received objection to the project after the final meeting. Therefore no other explanation but the 23% of the attendees in the first 3 meetings can answer for the comment received through UNFCCC website.

The EIA states that the main objections received in the first three stakeholder meetings were around air, water and, in particular, noise pollution and exhaust & flue gases. According to the project owner, many of the objections were due to local residents not understanding the characteristics of gas fired power plants (and, for example, how they are different from coal-fired plants) and the measures being adopted by the project owner to reduce noise, air and water pollution, and gas-fired Combined Cycle Cogeneration Unit with its characteristic, techniques and the environmental protection measures has been introduced and explained to the public, particularly about the protection measure of noise prevention and nitrogen dioxide emission reduction. These measures are described in section E3 of the PDD and are summarized below:

- Impact on the local environment - the fuel to be used in this project is natural gas which is a clean source of energy. The use of natural gas has a beneficial influence in reducing emissions of air pollutants, improving the air quality of the local area and increasing energy utilization efficiency.
- Noise pollution – An extra 186 million RMB has been invested in measures to reduce noise levels from the project (as described in table 11 in the PDD) and to ensure that the noise levels of the plant site do not exceed 55db in the daytime and 45db at night, that will meet the national environmental standards on noise control.
- Water resources – Water from the power plant will be discharged into the city’s sewage system and prior to this, treatment at the plant will follow the “Beijing City Water Pollutants Discharge Standard (Trial Version)”.

A full EIA was carried out by Guodian North China Power Engineering (Beijing) Co., Ltd. and the project was found to comply with all relevant standards and regulations. It was approved by the Beijing Environmental Protection Bureau in June 2005.

As is described above, the objection was addressed by the project owner and due accounts was taken of the comment received. NIR1 is closed.

5. Validation Opinion

SGS has performed a validation of the project: “Beijing Taiyanggong CCGT Trigenation”. The validation was performed on the basis of the UNFCCC criteria and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

Using a risk based approach, the review of the project design documentation and the subsequent follow-up interviews have provided SGS with sufficient evidence to determine the fulfilment of the stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria. The project will hence be recommended by SGS for registration with the UNFCCC.

SGS has received confirmation by the host Party that the project activity assists it in achieving sustainable development.

By operating natural gas fired combined cycle power plant, the project results in reductions of greenhouse gas emissions that are real, measurable and give long-term benefits to the mitigation of climate change. A review of the investment analysis and barriers 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. If the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions.

The validation is based on the information made available to SGS and the engagement conditions detailed in the report. The validation has been performed using a risk based approach as described above. The only purpose of this report is its use during the registration process as part of the CDM project cycle. Hence SGS can not be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

6. List of Persons Interviewed

<i>Date</i>	<i>Name</i>	<i>Position</i>	<i>Short Description of Subject Discussed</i>
27/02/ 07	Mr. Li Haibin	Beijing Development & Reform Commission	For opinion on the project activity
27/02/ 07	Ms. Gao Aihua	Chaoyang District Environmental & Protection Bureau of Beijing	For opinion on the project activity
27/02/ 07	Mr. Pan Xin	Beijing Gas Group	On gas source and supply issues
27/02/ 07	Mr. Xu Yanhua	Director of Taiyanggong Village, Beijing	for local residents comments
27/02/ 07	Ms. Lv Ying	Resident of Taiyanggong Village, Beijing	for local residents comments
27/02/ 07	Mr. Ma Jin	Resident of Taiyanggong Village, Beijing	for local residents comments
27/02/ 07	Ms. Chen Yanmei	Resident of Taiyanggong Village, Beijing	for local residents comments
27/02/ 07	Ms. Wang Xiuli	Resident of Taiyanggong Village, Beijing	for local residents comments
27/02/ 07	Mr. Zhang Yandong	Vice President of Beijing Taiyanggong Gas-fired Thermal Power Co.,Ltd	For all project information related to CDM validation
27/02/ 07	Mr, Tang Renzong	Project Manager of Beijing Taiyanggong Gas-fired Thermal Power Co.,Ltd	For all project information related to CDM validation
27/02/ 07	Mr. Wang Jian	Beijing Energy Investment Group	For common practice information in Beijing region
27/02/ 07	Mr. Chen Guoqiang	Sunlight Law Office	
27/02/ 07	Mr. Li Hui	Sunlight Law Office	
27/02/ 07	Ms. Richael Child	Project Manager CAMCO International Co.,Ltd	For all information related to CDM /PDD
27/02/ 07	Mr, Zhang yuzhong	Project Manager CAMCO International Co.,Ltd	
27/02/ 07	Mr. Ren Luyang	Project Manager CAMCO International Co.,Ltd	

7. Document References

Category 1 Documents (documents provided by the Client that relate directly to the GHG components of the project, (i.e. the CDM Project Design Document, confirmation by the host Party on contribution to sustainable development and written approval of voluntary participation from the designated national authority):

- /1/ PDD, the following versions have been reviewed,
 - Rev 0 received on 8 Feb 2007 and made publicly available,
 - Rev 1 received on 16 Mar 2007 and marked as Version 2,
 - Version 4 completed on 28 April 2007, and
 - Version 5 completed on 11 June 2007.
 - Version 6 completed on 19 July 2007
 - Version 7 completed on 18 February 2008 for registration request
- /2/ AM0029 Version01.1
- /3/ Tool for the demonstration and assessment of additionality Version03
- /4/ ACM0002 Version06
- /5/ Letter of Approval from Chinese DNA issued on 22 March 2007
- /6/ Letter of Approval from UK DNA for Macquarie Bank issued on 2 July 2007
- /7/ Letter of Approval from UK DNA for CAMCO issued on 13 July 2007.

Category 2 Documents (background documents used to check project assumptions and confirm the validity of information given in the Category 1 documents and in validation interviews):

- /7/ Ex-ante Emission Reduction Spreadsheet
- /8/ Financial analysis spreadsheets
- /9/ Levelised cost calculation spreadsheet
- /10/ Approval of EIA from Beijing Bureau of Environmental Protection, dated 16 Jun 2005
- /11/ Feasibility Study of the proposed project activity, dated Oct 2005
- /12/ Board Meeting Minutes reflecting consideration of CDM, dated 11 Nov 2005
- /13/ Approval of Beijing Development & Reform Commission 8 Oct 2005
- /14/ Letter of Approval of Sufficient Gas supply for the project from Beijing Gas Group
- /15/ Notification of Gas price increasing issued by Beijing Development & Reform Commission, dated 01 Sep 2006.
- /16/ Investment budget on noise control for the project in EIA
- /17/ Design drawing of waste water treatment for the project activity
- /18/ Statements of local stakeholders consultations

A.1 Annex 1: Local Assessment

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
The current status of natural gas supply in Beijing, the supply source to this project.		Check with project proponent, local NDRC(Planning authority).	By interviewing project owner and local authority during site visit, it is confirmed that natural gas will be supplied by Shaanjing Number 2 line, more detailed data will be provided in revision of PDD.	Pending See NIR2	OK
Please carefully verify all original records of local stakeholder consultation process, identify the reason if there is any objection to this project and if it has been taken into account by project developer.	Comments received during ISC	Interview representative of local residents/community.	Raw records of local stakeholder consultation have been verified, see NIR1	Pending to close of NIR1	OK

A.2 Annex 2: Validation Protocols

This validation protocol is designed to ensure that the project meets the requirements for CDM projects that are detailed in paragraph 37 of the CDM modalities and procedures. Each requirement is covered in a separate table. The following requirements are discussed in this protocol:

Requirement	Description	
Participation requirements	The participation requirements as set out in Decision 17/CP7 need to be satisfied	Covered in table 1
Baseline and monitoring methodology	The baseline and monitoring methodology complies with the requirements pertaining to a methodology previously approved by the Executive Board	Baseline methodology is covered in table 2 Monitoring methodology is covered in table 4
Additionality	The project activity is expected to result in a reduction in anthropogenic emissions by sources of greenhouse gases that are additional to any that would occur in the absence of the proposed project activity	Covered in table 3
Monitoring plan	Provisions for monitoring, verification and reporting are in accordance with relevant decisions of the COP/MOP	Covered in table 5
Environmental impacts	Project participants have submitted to the designated operational entity documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts and, if those impacts are considered significant by the project participants or the host Party, have undertaken an environmental impact assessment in accordance with procedures as required by the host Party;	Covered in table 6
Comments by local stakeholders	Comments by local stakeholders have been invited, a summary of the comments received has been provided, and a report to the designated operational entity on how due account was taken of any comments has been received;	Covered in Table 7
Other requirements	The project activity conforms to all other requirements for CDM project activities in relevant decisions by the COP/MOP and the Executive Board.	Covered in Table 8

MoV = Means of Verification, DR= Document Review, I= Interview

This protocol should be adapted as required. For example, if the project is not a small scale project or an AR project, some tables can be deleted.

Table 1 Participation Requirements for Clean Development Mechanism (CDM) Project Activities (Ref PDD, Letters of Approval and UNFCCC website)

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
1.1 The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3 and be entered into voluntarily.	DR	PDD	Two participants from UK, namely, Macquarie Bank Limited Company and Camco International Limited, are mentioned in PDD. The UK LoA from Macquarie Bank is available but the UK LoA from CAMCO is still absent.	CAR1	OK
1.2 The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof, and be entered into voluntarily	DR	PDD	China is listed as host country. No Letter of Approval has been provided yet. China's LoA has been presented.	CAR 2	OK
1.3 All Parties (listed in Section A3 of the PDD) have ratified the Kyoto protocol and are allowed to participate in CDM projects	DR	Internet	China has ratified the Kyoto Protocol on 30 August 2002 and has appointed a DNA, refer to http://maindb.unfccc.int/public/country.pl?country=CN UK has ratified the Kyoto Protocol on 31 May 2002 and has appointed a DNA. Refer to http://maindb.unfccc.int/public/country.pl?country=GB	OK	OK
1.4 The project results in reductions of GHG emissions or increases in sequestration when compared to the baseline; and the project can be reasonably shown to be different from the baseline scenario	DR	PDD	The project activity is to construct and operation a 780MW NG CCGT (natural gas fired combined cycle) power plant. Electricity to be generated by this project will subsequently displace power generation by coal-fired thermal plants and reduce CO2 emission in Beijing grid, then North China Power Grid (NCPG), which is	OK	OK



REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
			dominated by coal-fired generation technology.		
1.5 Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for minimum 30 days (45 days for AR projects), and the project design document and comments have been made publicly available	I	PDD	PDD has been made publicly available from 27-01-07 until 25-02-07 and comments were invited through the UNFCC website. One comment was received and forwarded to client to address, refer to www.sgsqualitynetwork.com/tradeassurance/ccp/projects/project.php?id=200	NIR1	OK
1.6 The project has correctly completed a Project Design Document, using the current version and exactly following the guidance			Project has used newest version 3 of the PDD template.	OK	OK
1.7 The project shall not make use of Official Development Assistance (ODA), nor result in the diversion of such ODA	DR SV	PDD	There is no indication that the project is using ODA or has led to the diversion of ODA. Need to be confirmed by site visit.	Pending	OK
1.8 For AR projects, the host country shall have issued a communication providing a single definition of minimum tree cover, minimum land area value and minimum tree height. Has such a letter been issued and are the definitions consistently applied throughout the PDD?			NA	NA	
1.9 Does the project meet the additional requirements detailed in: Table 9 for SSC projects Table 10 for AR projects Table 11 for AR SSC projects			NA	NA	
1.10 Is the current version of the PDD complete and does it clearly reflect all the information presented during the validation assessment?	DR	PDD	Pending close out CAR and NIR.	Pending	OK
1.11 Does the PDD use accurate and reliable information that can be verified in an objective manner?			Pending close out CAR and NIR.	Pending	OK

Table 2 Baseline Methodology(ies)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
2.1 Does the project meet all the applicability criteria listed in the methodology	PDD	DR	<p>Applicability:</p> <ul style="list-style-type: none"> •The project activity is the construction and operation of a new natural gas fired grid-connected electricity generation plant. • The geographical/ physical boundaries of the baseline grid can be clearly identified and information pertaining to the grid and estimating baseline emissions is publicly available. • Natural gas is sufficiently available in the region or country, e.g. 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. <p>Project meets first two applicability criteria listed in the methodology.</p> <p>For the last criteria (the 3rd), PDD says sufficient NG will be available in Beijing justified by an article published by People's Daily Online, but it is not clear when the second pipeline will be put in use. And the volume of natural gas at both demand and supply side need to be supported by evidence.</p>	NIR2	OK
2.2 Is the project boundary consistent with the approved methodology	PDD	DR	Yes. Project site and all power plants connected physically to the North China Grid (Regional) have been defined as project boundary which is according to the methodology.	OK	OK
2.3 Are the baseline emissions determined in accordance with the methodology described	PDD	DR	Specified approaches in methodology have been used to determine the baseline emissions in a conservative manner, however,	NIR3	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			calculation $\eta_{BL}=39.01\%$ is not clear.		
2.4 Are the project emissions determined in accordance with the methodology described	PDD	DR	Emissions from NG combustion in the project are determined in accordance with AM0029.	OK	OK
2.5 Is the leakage of the project activity determined in accordance with the methodology described	PDD	DR	Proposed project uses NG, the leakage emissions calculation is in accordance with AM0029.	OK	OK
2.6 Are the emission reductions determined in accordance with the methodology described	PDD	DR	Emission reductions are calculated as the difference between baseline and project emissions + leakage which is in accordance with the methodology.	OK	OK

Table 3 Additionality

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
3.1 Does the PDD follow all the steps required in the methodology to determine the additionality	PDD	DR	Yes. Project follows the required steps in the methodology.	OK	OK
3.2 Is the discussion on the additionality clear and have all assumptions been supported by transparent and documented evidence	PDD	DR	All relevant data /supporting documents such as EIA, FSR, loan contract and official power generation information need to be provided. In addition, please provide supporting documents /evidences for the early consideration of CDM credits.	NIR 4 NIR 5	OK
3.3 Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	PDD	DR	Pending close out NIRs /CARs and by local assessment. In addition: Please provide the justification for the	Pending NIR 6	OK OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			conclusion in the PDD that “fuel oil can not be seen as a part of current or future power plant technology”		
3.4 Is it demonstrated/justified that the project activity itself is not a likely baseline scenario	PDD	DR Internet	Pending closed out CARs/NIRs.	Pending	OK

Table 4 Monitoring Methodology

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
4.1 Does the project meet all the applicability criteria listed in the monitoring methodology	PDD	DR	Pending close out of 2.1 above.	Pending	OK
4.2 Does the PDD provide for the monitoring of the baseline emissions as required in the monitoring methodology	PDD	DR	Methodology specifies that if option 3 is selected for determination of baseline emission, therefore this determination will be made once at the validation stage base on an ex-ante assessment in accordance with AM0029.	OK	OK
4.3 Does the PDD provide for the monitoring of the project emissions as required in the monitoring methodology	PDD	DR	Yes, the monitoring of the project emissions is provided in PDD as required in the methodology.	OK	OK
4.4 Does the PDD provide for the monitoring of the leakage as required in the monitoring methodology	PDD	DR	Yes, it is provided in the PDD in accordance with methodology	OK	OK
4.5 Does the PDD provide for Quality Control (QC) and Quality Assurance (QA) Procedures as required in the monitoring methodology	PDD	DR	Yes, QA/QC procedure for monitoring is provided as per methodology,	OK	OK

Table 5 Monitoring Plan

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
5.1 Monitoring of Sustainable Development Indicators/ Environmental Impacts			Methodology does not request to monitor this and put in plan.		
5.1.1 Does the monitoring plan provide the collection and archiving of relevant data concerning environmental, social and economic impacts?			N/A		
5.1.2 Is the choice of indicators for sustainability development (social, environmental, economic) reasonable?			NA		
5.1.3 Will it be possible to monitor the specified sustainable development indicators?			NA		
5.1.4 Are the sustainable development indicators in line with stated national priorities in the Host Country?			NA		
5.2 Project Management Planning	PDD				
5.2.1 Is the authority and responsibility of project management clearly described?	PDD	DR	Yes, section B7.2 briefly discusses staff available and managers with defining responsibilities	OK	OK
5.2.2 Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD	DR	Yes, section B7.2 discusses staff available and managers with defining responsibilities	OK	OK
5.2.3 Are procedures identified for training of monitoring personnel?	PDD	DR	PDD says that a CDM Monitoring manual will be prepared, it is not clear if training will be conducted.	NIR7	OK
5.2.4 Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	PDD	DR	No procedures detailed or described.	CAR3	OK
5.2.5 Are procedures identified for calibration of monitoring equipment?	PDD	DR	Yes, a manual will be formulated by project owner.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
5.2.6 Are procedures identified for maintenance of monitoring equipment and installations?	PDD	DR	Yes, a manual will be formulated by project owner.	OK	OK
5.2.7 Are procedures identified for monitoring, measurements and reporting?	PDD	DR	Yes, a manual will be formulated by project owner.	OK	OK
5.2.8 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	DR	Yes, a manual will be formulated by project owner.	OK	OK
5.2.9 Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	PDD	DR	Yes, calibration and the manual will deal with this issue.	OK	OK
5.2.10 Are procedures identified for review of reported results/data?	PDD	DR	Yes, a CDM workgroup will be established and procedures are identified.	OK	OK
5.2.11 Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	PDD	DR	Yes, a CDM workgroup will be established and procedures are identified	OK	OK
5.2.12 Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	PDD	DR	Yes, the organization chart and procedure are described in PDD Section B7.2 and annex 4.	OK	OK
5.2.13 Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	PDD	DR	Yes, the organization chart and procedure are described in PDD annex 4.	OK	OK

Table 6 Environmental Impacts

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
6.1 Has an analysis of the environmental impacts of the project activity been sufficiently described?	PDD	DR SV	Yes, copy need to be verified by local assessor.	Pending	OK
6.2 Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	PDD	DR SV	To be confirmed by local assessor.	Pending	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
6.3 Will the project create any adverse environmental effects?	PDD	DR SV	To be confirmed by local assessor.	Pending	OK
6.4 Are transboundary environmental impacts considered in the analysis?	PDD	DR	Impacts are not considered significant.	OK	OK
6.5 Have identified environmental impacts been addressed in the project design?	PDD	DR SV	To be confirmed by local assessor against the EIA.	Pending	OK
6.6 Does the project comply with environmental legislation in the host country?	PDD	DR SV	Letter of approval of project need to be verified by local assessor.	Pending	OK

Table 7 Comments by local stakeholders

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
7.1 Have relevant stakeholders been consulted?	PDD	DR SV	PDD says the stakeholder consultation had been made on 18 th October 2006, the Statistical Report and records need to be provided.	Pending	OK
7.2 Have appropriate media been used to invite comments by local stakeholders?	PDD	DR SV	PDD says the consultation was made in a manner of inviting 57 people at a meeting and with through extending 57 pieces of questionnaires to attendant relevant stakeholders. The supporting evidences need to be provided when local assessment. This issue is verified by local assessor.	Pending	OK
7.3 If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such	PDD	DR SV	Need to be confirmed by local assessment.	Pending	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
regulations/laws?					
7.4 Is a summary of the stakeholder comments received provided?	PDD	DR SV	Statistical report need to be provided when local assessment.	NIR8	OK
7.5 Has due account been taken of any stakeholder comments received?	PDD	DR I	PDD says the comments and questions raised were responded. All relevant supporting evidences need to be provided when local assessment.	NIR9	OK

Table 8 Other Requirements

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
8.1 Project Design Document					
8.1.1 Editorial issues: does the project correctly apply the PDD template and has the document been completed without modifying/adding headings or logo, format or font.	PDD	DR	Yes	OK	OK
8.1.2 Substantive issues: does the PDD address all the specific requirements under each header. If requirements are not applicable / not relevant, this must be stated and justified	PDD	DR	Yes	OK	OK
8.2 Technology to be employed					
8.2.1 Does the project design engineering reflect current good practices?	PDD	DR	Yes, the CCGT is a good practice in China.	OK	OK
8.2.2 Does the project use state of the art technology or would the technology	PDD	DR	Project appears to be a distinctive CCGT technology in urban area in China with a certain amount of technical risk was mentioned.	Pending	OK



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
result in a significantly better performance than any commonly used technologies in the host country?		SV Inter net	The gas turbines are imported GE's PG9351 with energy utilization efficiency only 36.8%. The recovery steam generators are Belgian brand and manufactured in China. The steam turbine is produced by domestic producer with energy utilization efficiency 45%. The technology advantages need to be confirmed when local assessment.		
8.3 Is the project technology likely to be substituted by other or more efficient technologies within the project period?	PDD	DR	Need to be confirmed depend on FSR.	Pending	OK
8.2.4 Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	PDD	DR	Need extensive initial training for safe operation and maintenance.	OK	OK
8.3 Duration of the Project/ Crediting Period					
8.3.1 Are the project's starting date and operational lifetime clearly defined and reasonable?	PDD	DR	Lifetime in FSR is 20 years but in Section C1.2 it is 30 years.	NIR10	OK
8.3.2 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	Renewable crediting period 3X7 years	OK	OK
8.3.3 Does the project's operational lifetime exceed the crediting period	PDD	DR	Pending close out of above 8.3.1	Pending	OK



Table 9	Additional requirements for SSC projects
N/A	
Table 10	Additional requirements for AR projects
N/A	
Table 11	Additional requirements for SSC AR projects
N/A	

A.3 Annex 3: Overview of Findings

Each Table below represents a finding from the validation assessment. The findings are numbered consecutively, approximately in the order that they have been identified.

Description of table:

Type	Findings are either New Information Requests (NIR) or Corrective Action Requests (CAR). CARs are items that must be addressed before a project can receive a recommendation for registration. NIRs may lead to the raising of CARs. Observations are included at the end and may or may not be addressed. They are primarily to act as signposts for the verifying DOE.
Issue	Details the content of the finding
Ref	refers to the item number in the Validation Protocol
Response	Please insert response to finding, starting with the date of entry.

Rows for comments and further response will be appended to the table until the Findings has been addressed to the satisfaction of the Lead Assessor.

Please note that this is an open list and more findings may be added as validation progresses.

Date: Feb 13, 2007

Raised by: Elton CHEN WU /Robin Wang

No.	Type	Issue	Ref
1	CAR1	UK is listed as annex one country. No Letter of Approval for two participants has been provided yet	1.1
Date: 14 March 2007 [Comments] UK LoAs to follow			
Date: 2 July 2007 [Comments] UK LoAs from Macquarie Bank is presented.			
Date: 13 July 2007 [Comments] UK LoAs from CAMCO is presented.			
Date: 13 July 2007 E.Chen [Acceptance and close out] CAR is closed out.			

Date: Feb 13, 2007

Raised by: Elton CHEN WU /Robin Wang

No.	Type	Issue	Ref
2	CAR2	China is listed as host country. No Letter of Approval has been provided yet	1.2.
Date: 14 March 2007 [Comments] China DNA has approved project (see http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File1194.pdf). Hard copy of approval letter not yet received – to follow			
Date:02 April 2007 E. Chen [Acceptance and close out] China's LoA received, CAR closed out.			

Date: Feb 13, 2007

Raised by: Elton CHEN WU/ Robin Wang

No.	Type	Issue	Ref
3	NIR1	One comments have been received during PDD was published for stakeholder comments and then forwarded to PP for addressing, please provide the clarification.	Email 7 Feb 2007
Date: 14 March 2007 [Comments] Additional information about stakeholder consultation carried out during the course of the Environmental Impact Assessment report has been added to section E of the PDD.			
Date: Mar 20,2007 [Acceptance and close out] According to the Environment Impact Assessment (hereinafter the "EIA") provided by the Project Participants (hereinafter the "PP"), three meetings were held to collect stakeholders'			

comments during the course of EIA. Based on records of first two meetings, 36 people out of 118 objected to the project (30.51%). In the 3rd meeting, 13.3% of the 84 questionnaires collected objected to the project (i.e. 11 people). An average of those 3 meetings, i.e. (36+11)/ (118+84), indicates 23% of people objecting to the project. It is believed this is why the comment received through the UNFCC website said 20% of people objected to the project.

Confirmed by PP, after clarifying the characteristic of gas-fired Combined Cycle Cogeneration Unit, techniques and planned environmental protection measures to the public, particularly about the protection measure of noise prevention and nitrogen dioxide emission, one further stakeholder meeting other than those three was held in October 2006 by putting up posters in the vicinity of the power plant inviting interested local residents to attend the meeting. 56 local residents attended this meeting, questionnaires were distributed to capture views on the project. The results are summarised below:

- 55 respondents thought this project was important;
- All 56 respondents agreed with the construction of this project;
- 48 respondents thought that the local environment would be improved by this project;
- 50 respondents thought that the project would have a positive benefit on the local economy.

EIA also indicates that, with the protection measures to be installed by project owners, noise control and exhaust & flue gases emission will reach the national and regional standardized environmental quality. EIA has been approved by local EPA in Jun 2005, project obtained necessary permit from local EPA subsequently.

Therefore, it is concluded that due accounts have been taken of the comments received, in the revision of PDD, additional information has been added in section E. Hence, **NIR is closed.**

Date: Feb 13, 2007

Raised by: Elton CHEN WU/ Robin Wang

No.	Type	Issue	Ref
4	NIR2	Please provide supporting documents and quantitative information that natural gas supply in the region will not be constrained by the use of natural gas in this project.	2.1

Date: 14 March 2007

[Comments] On 14 December 2006, the Shaanjing Number 2 line began operation, supplying additional natural gas to Beijing from Changbei Natural Gas Station (which is part of the Changqing Oilfield Corporation). Total annual gas output is estimated to be 3 billion m³ (see <http://www.cnpc.com.cn/Paper/2006/12/19/Plate1/005.htm>)

A copy of the letter of intent to supply gas for the project has been received by the project owner from the gas supply company and a contract will be signed later this year.

Date: Mar 20, 2007 E Chen

[Acceptance and close out] PDD was revised to further discuss the gas supply, information source was verified, **NIR closed out.**

Date: Feb 13, 2007

Raised by: Elton CHEN WU/ Robin Wang

No.	Type	Issue	Ref
5	NIR3	Please provide the detailed data sources of $\eta_{BL}=39.01\%$.	2.3

Date: 14 March 2007

[Comments] According to the China Institute of Power Planning and Design, Thermal Power Engineering Design Reference Cost Guide (2005 edition), for a typical new sub-critical coal-fired power station $\eta = 315 t_{SCE}/GWh$. This corresponds to an efficiency of 39.01%. See p21 of PDD v2 for full calculation.

Date: Mar 20, 2007

[Acceptance and close out] The calculation and data source have been checked. **NIR is closed.**

Date: Feb 13, 2007

Raised by: Elton CHEN WU/ Robin Wang / Sarah Ruan

No.	Type	Issue	Ref
6	NIR4	All relevant data /supporting documents such as FSR, IRR calculation spreadsheet, purchase agreements, loan contract need to be provided.	3.2

Date: 14 March 2007

[Comments] IRR spreadsheet and FSR provided at site visit.

Date: 10 April, 2007

[Acceptance and close out] In addition to the FSR and IRR spreadsheet, please provide evidences of main costs which will be used to compare with the estimated data in IRR calculation, the evidences can be purchase agreement, invoices, contract, loan contract.

Date: 25 May, 2007

[Acceptance and close out] Some new information was provided following above request, but it is still not totally clear about the projected financial situation of the project at this stage, this is mainly concerned about expenditures that have happened since the initial project activities started, including the constructing.

Any material correlative to the "Real Cost" in the latest IRR calculating spreadsheet, for example, any purchase agreements, invoices, contracts of Equipment & Material, Spare Parts, Construction & Installation, Technical Services, Modifications, Land Fee, Management Fee & Production Preparation, Outstanding Fees, Gap Price, Basic Prep Fee, Water Pipeline, Recycled Water System, Loan Interest, Flow, and Working Capital, etc., are especially encouraged to be presented. The quantity and quality of the presented material will directly impact its availability.

Besides, Calculating method of annual Interest Payment is expected to be supplemented, as well as some correlative evidences.

Moreover, necessary explanation is required before calculating IRR with different data other than the original ones in the Feasibility Study Report. It particularly points to Water Expenditure, Material Expenditure, Other Expenditure, and City Maintenance & Construction Tax.

Finally, necessary explanation is required when,

1. The sum of those being evenly amortized during 15 years is larger than the sum of (25% + 45% + 30%) of Total Fixed Assets in IRR calculating spreadsheet.
2. The unique depreciation period, i.e., 15 years, is employed. As per a notice from the State Administration of Taxation, the shortest depreciation period for building is 20 years. For detail of this notice please refer to: <http://www.chinatax.gov.cn/view.jsp?code=200309241005301224>.

Date: 25 May, 2007

[Comments]

Invoice list from TYG people is available for consideration. Please let me know which invoices you would like to see and I will ask TYG people to provide these.

A new version of the IRR calculation spreadsheet is now available-- some notes:

See attached IRR calculation with interest payments explained.

Some of the numbers in the IRR calculation are amended according to received findings. All numbers used in the version of the IRR attached have been taken from the FSR. Scanned copies of the relevant pages of these documents are also attached.

The calculation is amended so that the sum of those being amortised over the 15 years plus the fixed asset residue is equal to the investment in fixed assets.

The FSR has a 15 year depreciation period (see attached pages).

Date: 4 June, 2007

[Acceptance and close out] The amendment and the supplement to IRR calculation and their effect have been viewed and accepted. Particularly, the 15 year depreciation in FSR period is considered acceptable for the buildings being quite a minor part in total investment. And some new findings are raised,

1. Please explain the absence of VAT on purchase when using the VAT to calculate the Construction tax &

Education Surcharge in “Cash Flow”. Following references may be of help,

About the Construction Tax:

www.chinatax.gov.cn/n480462/n480513/n480919/index.html

About the VAT:

<http://www.chinatax.gov.cn/n480462/n480513/n480919/index.html>. Please pay attention to its Art.8, Art.9 and Art.10.

2. Please supplement correlative provenance when 17% is employed as the VAT Rate of natural gas in “Parameters”.
3. According to the latest Company Law of the People's Republic of China, statutory welfare reserve has been cancelled. So the Reserve in “Parameters” needs to be amended. Otherwise a necessary explanation is required.
4. Please provide budgetary estimate of Working Capital in “Cash Flow”, as well as some correlative material, for example, any purchase agreements, invoices, and contracts that can prove actual expenditures as working capital in the year 1 & 2.

Besides, according to *TYG_contract_list.pdf*, following items is to be viewed as reference materials correlative to Equipment & Material, Construction & Installation, and Technical Services in “Real Costs”,

Source	Sequence Number	Contract Price
<i>TYG_contract_list.pdf</i> , Page 2	1	62,993,600
	2	20,000,000
	4	31,633,660
	5	81,171,640
	40	11,600,000
	50	10,900,000
<i>TYG_contract_list.pdf</i> , Page 3, the upper side of the table	1	11,790,000
	3	505,735,639
	7	115,356,460
<i>TYG_contract_list.pdf</i> , Page 3, the lower side of the table	1	959,299,644
	2	15,000,000
	4	230,000,000
	18	1,721,100
	26	10,900,000
	30	1,483,700
	34	468,000
	35	941,500
	36	980,000
	39	2,795,000
	40	n/a
	41	11,950,798.05
	43	9,069,077
	45	9,730,000
47	5,990,000	
<i>TYG_contract_list.pdf</i> , Page 4	59	36,514,048
	60	660,000
	71	3,993,139
	88	916,000

95	521,000
96	300,930

Date:
[Comments]
1. The calculation of Construction tax & Education Surcharge is change as follow,

[(VAT on sales) – (VAT on purchases)] x 10% = Construction tax & Education Surcharge

2. The VAT rate on the natural gas and water used is changed to 13% as is prescribed by the State Administration of Taxation. See <http://www.chinatax.gov.cn/n480462/n480513/n480919/index.html>

3. Amended in the latest version of the IRR calculation

4. According to TYG people, the estimate of working capital in the cash flow is based on the amount of cash required to cover one months' gas supply plus another 10% back-up (I have added details of this calculation in the updated IRR calculation attached).

Scanned copies of contracts listed to be viewed will be delivered separately.

Date: 11 June, 2007
[Acceptance and close out]
The amendments made about Construction tax & Education Surcharge, VAT rate on the natural gas and water used, and the Reserve are considered acceptable.
Explanation about the Working Capital was accepted.
Digital photos of the contracts listed to be viewed is delivered and verified. **NIR is closed out.**

Date: Feb 13, 2007 Raised by: Elton CHEN WU/ Robin Wang

No.	Type	Issue	Ref
7	NIR5	Please provide supporting documents /evidences for the early consideration of CDM credits.	3.2

Date: 14 March 2007
[Comments] Documentation relating to early consideration of CDM credits for the project provided during the site visit.

Date: Mar 20, 2007
[Acceptance and close out] The FSR prepared in Oct 2005 was presented, it mentioned that project would have financial barrier thus recommended project owner to seek CDM credits by analyzing the projected IRR with CDM credits. Besides, based on a document submitted by project owner, decision to seek CDM credits was made in a directorate meeting on Nov 1, 2005. **NIR is closed.**

Date: Feb 13, 2007 Raised by: Elton CHEN WU/ Robin Wang

No.	Type	Issue	Ref
8	NIR6	Please provide the justification for the conclusion in the PDD that "fuel oil can not be seen as a part of current or future power plant technology"	3.3

Date: 14 March 2007
[Comments] Details of data and sources for fuel oil added to v2 of the PDD (see p11)

Date: Mar 20, 2007
[Acceptance and close out] New PDD elaborated the reason, **NIR is closed.**

Date: Feb 13, 2007 Raised by: Elton CHEN WU/ Robin Wang

No.	Type	Issue	Ref
9	NIR7	Please provide training procedure for monitoring staff.	5.2.3

Date: 14 March 2007
[Comments] Details of training procedures added to section 5 of Annex 4

Date: Mar 20, 2007
[Acceptance and close out] **NIR is closed.**

Date: Feb 13, 2007

Raised by: Elton CHEN WU/ Robin Wang

No.	Type	Issue	Ref
10	CAR3	Please provide procedure for emergency preparedness for cases where emergencies can cause unintended emission.	5.2.4
Date: 14 March 2007 [Comments] Details of emergency procedures added to section 6 of Annex 4			
Date: Mar 20, 2007 [Acceptance and close out] CAR 3 is closed.			

Date: Feb 13, 2007

Raised by: Elton CHEN WU/ Robin Wang

No.	Type	Issue	Ref
11	NIR8	Please provide original meeting record with summary of the stakeholder consultation	7.4
Date: 14 March 2007 [Comments] Copies of questionnaires filled out at the stakeholders and the sign-in sheet for the stakeholder meeting have been provided.			
Date: Mar 20, 2007 [Acceptance and close out] The required documented evidences have been received during site visit. NIR is closed.			

Date: Feb 13, 2007

Raised by: Elton CHEN WU/ Robin Wang

No.	Type	Issue	Ref
12	NIR9	Please provide objective evidences of which kind of media used to invite comments by local stakeholders	7.5
Date: 14 March 2007 [Comments] Local residents were invited to the meeting through posters placed in the vicinity of the site of the plant. Photos of the posters were provided by TYG following the site visit.			
Date: Mar 20, 2007 [Acceptance and close out] Distribution of posters can be considered as an appropriate way to invite local residents. NIR is closed.			

Date: Feb 13, 2007

Raised by: Elton CHEN WU/ Robin Wang

No.	Type	Issue	Ref
13	NIR10	Please explain why the Lifetime of the project in B4. B5. and C1.2. are different	3.2 8.3.1
Date: 14 March 2007 [Comments] According to the project owner, the expected project lifetime is 30 years, as stated in section C1.2. However to ensure consistency with the financial analysis in the FSR, a project lifetime of 20 years is assumed for the financial analysis and levelised costs in section B4 and B5			
Date: Mar 20, 2007 [Acceptance and close out] Lifetime used in the FSR and levelised costs analysis is based on expert opinion, and made the results of different alternatives comparable. Actual lifetime of proposed project depends on project operation and maintenance, and will be reviewed prior to new crediting period, hence, NIR closed out.			



A.4 Annex 4: Statement of Competency of Validation Team

Statement of Competence

Name: Elton Chen Wu

SGS Affiliate: China

Status

- Product Co-ordinator
- Operations Co-ordinator
- Technical Reviewer
- Expert

	Validation	Verification
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- | | | |
|---------------------------------------|-------------------------------------|-------------------------------------|
| - Local Assessor | <input type="checkbox"/> | <input type="checkbox"/> |
| - Lead Assessor | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| - Assessor
/ Trainee Lead Assessor | <input type="checkbox"/> | <input type="checkbox"/> |

Scopes of Expertise

- | | |
|---|-------------------------------------|
| 1. Energy Industries (renewable / non-renewable) | <input checked="" type="checkbox"/> |
| 2. Energy Distribution | <input type="checkbox"/> |
| 3. Energy Demand | <input checked="" type="checkbox"/> |
| 4. Manufacturing | <input type="checkbox"/> |
| 5. Chemical Industry | <input checked="" type="checkbox"/> |
| 6. Construction | <input type="checkbox"/> |
| 7. Transport | <input type="checkbox"/> |
| 8. Mining/Mineral Production | <input type="checkbox"/> |
| 9. Metal Production | <input type="checkbox"/> |
| 10. Fugitive Emissions from Fuels (solid,oil and gas) | <input type="checkbox"/> |
| 11. Fugitive Emissions from Production and
Consumption of Halocarbons and Sulphur Hexafluoride | <input checked="" type="checkbox"/> |
| 12. Solvent Use | <input type="checkbox"/> |
| 13. Waste Handling and Disposal | <input checked="" type="checkbox"/> |
| 14. Afforestation and Reforestation | <input type="checkbox"/> |
| 15. Agriculture | <input type="checkbox"/> |

Approved Member of Staff by Siddharth Yadav Date: 10/06/2007



Statement of Competence

Name: Robin Wang

SGS Affiliate: China

Status

- Product Co-ordinator
- Operations Co-ordinator
- Technical Reviewer
- Expert

	Validation	Verification
--	------------	--------------

- | | | |
|-------------------------|-------------------------------------|-------------------------------------|
| - Local Assessor | <input type="checkbox"/> | <input type="checkbox"/> |
| - Lead Assessor | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| - Assessor | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| / Trainee Lead Assessor | | |

Scopes of Expertise

- | | |
|---|-------------------------------------|
| 1. Energy Industries (renewable / non-renewable) | <input checked="" type="checkbox"/> |
| 2. Energy Distribution | <input checked="" type="checkbox"/> |
| 3. Energy Demand | <input type="checkbox"/> |
| 4. Manufacturing | <input type="checkbox"/> |
| 16. Chemical Industry | <input type="checkbox"/> |
| 17. Construction | <input type="checkbox"/> |
| 18. Transport | <input type="checkbox"/> |
| 19. Mining/Mineral Production | <input type="checkbox"/> |
| 20. Metal Production | <input type="checkbox"/> |
| 21. Fugitive Emissions from Fuels (solid,oil and gas) | <input type="checkbox"/> |
| 22. Fugitive Emissions from Production and
Consumption of Halocarbons and Sulphur Hexafluoride | <input type="checkbox"/> |
| 23. Solvent Use | <input type="checkbox"/> |
| 24. Waste Handling and Disposal | <input type="checkbox"/> |
| 25. Afforestation and Reforestation | <input type="checkbox"/> |
| 26. Agriculture | <input type="checkbox"/> |

Approved Member of Staff by Elton Chen Wu Date: 23/06/2007



Statement of Competence

Name: Sarah Ruan

SGS Affiliate: China

Status

- Product Co-ordinator
- Operations Co-ordinator
- Technical Reviewer
- Expert

	Validation	Verification
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- | | | |
|-------------------------|-------------------------------------|-------------------------------------|
| - Local Assessor | <input type="checkbox"/> | <input type="checkbox"/> |
| - Lead Assessor | <input type="checkbox"/> | <input type="checkbox"/> |
| - Assessor | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| / Trainee Lead Assessor | | |

Scopes of Expertise

- | | |
|---|-------------------------------------|
| 1. Energy Industries (renewable / non-renewable) | <input checked="" type="checkbox"/> |
| 2. Energy Distribution | <input type="checkbox"/> |
| 3. Energy Demand | <input type="checkbox"/> |
| 4. Manufacturing | <input type="checkbox"/> |
| 27. Chemical Industry | <input type="checkbox"/> |
| 28. Construction | <input type="checkbox"/> |
| 29. Transport | <input type="checkbox"/> |
| 30. Mining/Mineral Production | <input type="checkbox"/> |
| 31. Metal Production | <input type="checkbox"/> |
| 32. Fugitive Emissions from Fuels (solid,oil and gas) | <input type="checkbox"/> |
| 33. Fugitive Emissions from Production and
Consumption of Halocarbons and Sulphur Hexafluoride | <input type="checkbox"/> |
| 34. Solvent Use | <input type="checkbox"/> |
| 35. Waste Handling and Disposal | <input type="checkbox"/> |
| 36. Afforestation and Reforestation | <input type="checkbox"/> |
| 37. Agriculture | <input type="checkbox"/> |

Approved Member of Staff by Elton Chen Wu Date: 1 May 2007

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