Beijing Taiyanggong Gas-fired Thermal Power Co., Ltd.

CDM MONITORING REPORT

Beijing Taiyanggong CCGT Trigeneration Project

(UNFCCC project number: 1320)

5th Verification

Monitoring Period:

Start date: 22 September 2009 00:00

End date: 27 January 2010 24:00

Date of Report: 1 Feb 2010

Version 1

CONTENTS

1 Introduction

This Monitoring Report summarizes the operation of Beijing Taiyanggong CCGT Trigeneration Project and calculates the emission reductions achieved by the project activity during the monitoring period covered by this report. This report serves as the basis for the verification of these reductions and issuance of the CERs.

During this monitoring period, the project activity has achieved emission reductions of 516,424t CO_{2e}.

The accumulated emission reductions achieved by this project is summarized in the following table.

Verification	Monitoring Period		Emission reductions by project activity (t CO_{2e})			
	Start date	End date	Baseline emissions	Project emissions	Leakage	Emission Reductions
1	24-Feb-08	24-Jun-08	251,010	125,089	0	125,921
2	25-Jun-08	20-Nov-08	653,072	304,624	0	348,447
3	21-Nov-08	22-Mar-09	659,545	308,362	0	351,183
4	23-Mar-09	21-Sep-09	Issuance request published			
5	22-Sep-09	27-Jan-10	977,204	460,780	0	516,424
6						0
7						0
8						0
9						0
10						0
11						0
12						0
Total			**2,540,831**	**1,198,855**	**0**	**1,341,975**

2 General Project Activity Information

2.1 Title of the Project Activity

Beijing Taiyanggong CCGT Trigeneration Project

2.2 Project Category

Sectoral Scope 1: Energy Industries (non-renewable resources)

2.3 Crediting period

Crediting period: 24 Feb 08 - 23 Feb 15 (Renewable)

2.4 Geographic Location

The project is located in Chaoyang District of Beijing, between the North Third Ring-road and the North Fourth Ring-road. The site is 0.5 km from the Fourth Ring-road in the north and 0.5 km from Laiguangying Road. The site is about 450 m long from north to south and between 120 and 260 m wide, from east to west. The total land area for the project is 76,000 m^2. The geographical co-ordinates are 39.967°N, 116.417°E

Figure 1: Map of China Showing Location of Beijing

Figure 2: Map of the location of the project in Beijing

2.5 Short Description of the Project Activity

The Beijing Taiyanggong CCGT Trigeneration Project (hereinafter referred to as “the project”) installed and operated a 780MW grid connected natural gas fired combined cycle power plant in the Taiyanggong area of Chaoyang District in Beijing.

The project comprises of the following activities:

- Installation of two sets of natural gas-fired combined cycle power generation units (including gas turbines, heat recovery steam generators, a steam turbine and power generators). The total capacity is 780MW;
- Installation of two sets of diesel power generation units to supply electricity to shutdown turbines smoothly and safely;
- Installation of natural gas compressors;
- Installation of a monitoring and control system
- Installation of auxiliary systems to support the gas-steam combined cycle

In this system, natural gas is sent to the gas turbine for power generation. The flue gas is then sent to the heat recovery steam generator to generate steam with a high temperature and pressure. This steam drives the steam turbine to generate more electrical power.

Unit #1 & #2 were installed respectively in December of 2007 and January of 2008.

During the current monitoring period, the designed 220 kV transmission line 1 and

line 2 were put into operation on 17th Nov and 5th Nov 2009 respectively. So far, all the facilities, especially the monitoring system required by PDD, described in the registered PDD have been constructed, commissioned, and put into operation.

2.6 Methodology Applied to the Project Activity

The baseline and monitoring methodology used is AM0029: "Grid Connected Electricity Generation Plants using Natural Gas" (AM0029/ version 01.1, sectoral scope 01, 19 May 2006).

ACM0002: "Consolidated methodology for grid-connected electricity generation from renewable resources" (ACM0002/ version 06, sectoral scope 1, 19 May 2006) is used to calculate the build margin and combined margin.

For more information, see http://cdm.unfccc.int/meth/approved.

3 Monitoring plan and project monitoring

This section describes the implementation of the monitoring plan and the monitored data for this verification period.

3.1 Monitoring Methodology

According to the methodology and PDD, the parameters monitored by this project are listed in the following tables:

Data / Parameter	Description	Data unit	Comment
FC_{gas}	Natural gas consumption	Nm^3	Continuously monitored and recorded daily
FC_{Diesel}	Diesel consumption	t	Continuously monitored and recorded daily
EG_Y	Electricity supplied to the grid net of any on-site of parasitic usage	MWh	Continuously monitored and recorded daily
NCV_{gas}	Net calorific value of natural gas	GJ/Nm^3	Fortnightly

3.2 Monitoring Activities

3.2.1 Monitoring system

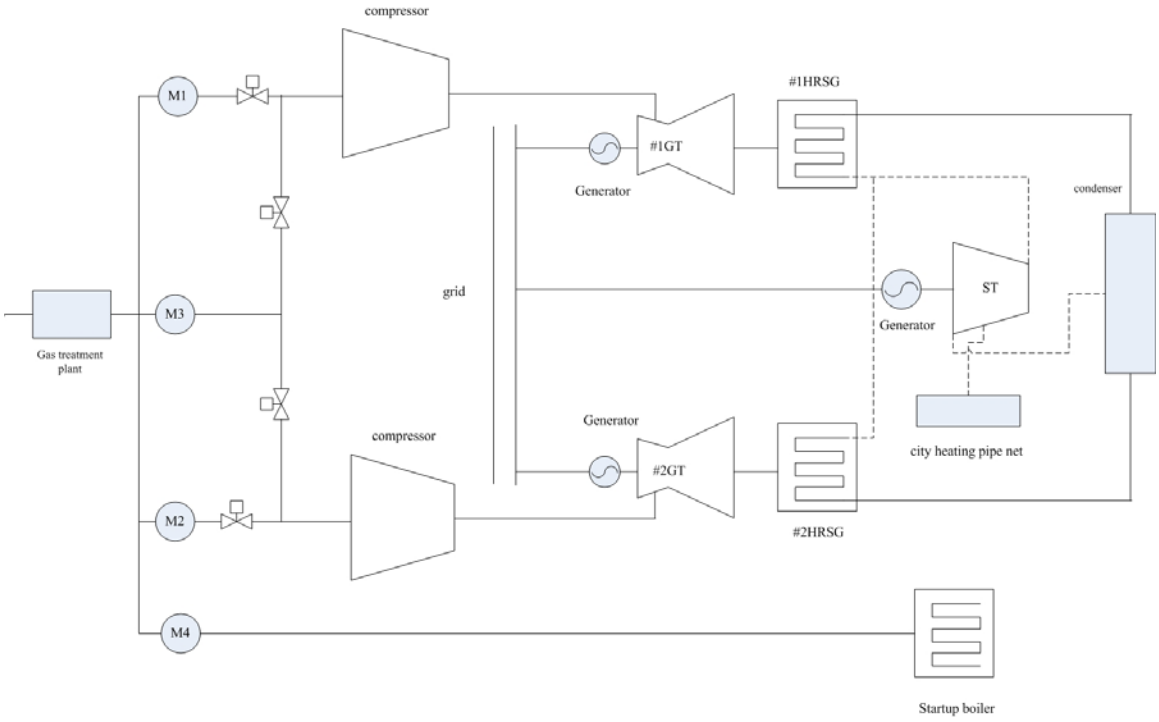
The monitoring system described in PDD has been installed. Refer to the following figures for a pictorial presentation of the monitoring system.

3.2.1.1 Gas consumption monitoring

There are four gas flow meters monitoring gas consumption: meters 1 and 2 measuring gas to each compressor and a third meter as back-up. Meter 4 measures gas to the start-up boiler.

As a further back-up, receipts of gas supplied by the gas company will be used.

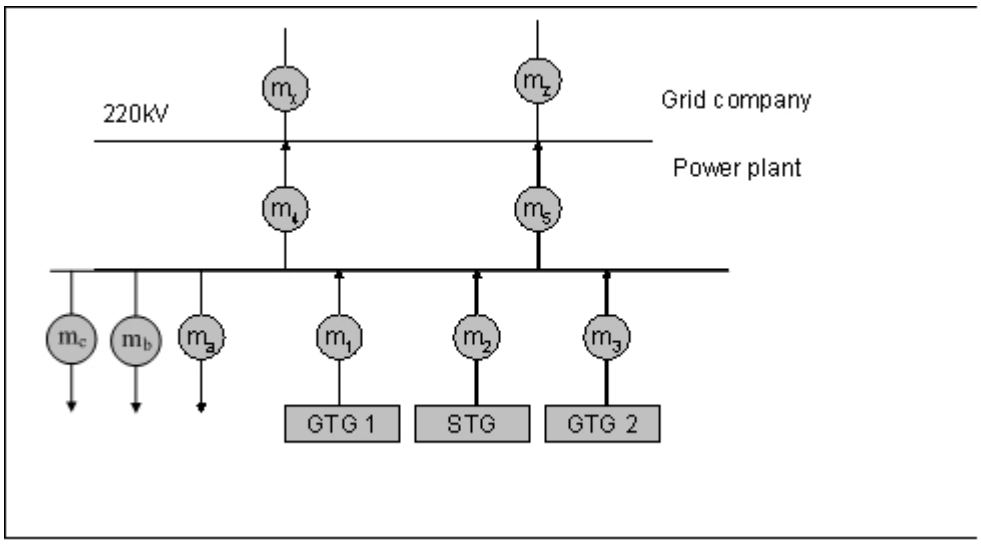
Figure 3: Monitoring System of Natural Gas Consumption



3.2.1.2 Monitoring of Net Electricity Supplied to the Grid

The monitoring system of net electricity supplied to the grid had been installed as required by methodology and PDD before the registration of the project.

Figure 4: Monitoring System of Net Electricity Supplied to the Grid



According to the engineering design of the power plant, the project activity (power plant) will be connected to the 220kV Beijing Power Grid at Sun He Power Distribution Station via two 220 kV transmission lines. On each of the transmission lines, there is a bi-directional meter (m4 and m5) installed. These meters measure the total net electricity supplied to the grid by the project activity.

Each of the 3 electricity producing generators has a meter to monitor the electricity produced and sent to the main internal line (m_1, m_2 and m_3). On-site, auxiliary use of power generated is measured by three separate meters (m_a, m_b, and m_c). Back up readings are taken from these meters.

Finally, there are two meters (m_x and m_z) owned by the Beijing Power grid company measuring the electricity supplied to the grid from the project. Readings from these can be used as a further backup, if necessary.

In summary,

Net electricity supplied to grid = $m_4 + m_5 = (m_1 + m_2 + m_3) – (m_a - m_b - m_c)$

The designed 220 kV transmission lines have been put into operation during the current monitoring period, and therefore both meter 4 and 5 are now used for monitoring.

3.2.1.3 Monitoring of diesel consumption

The diesel generators are used in an emergency only to supply electricity to shutdown turbines smoothly and safely. They also need to be tested periodically.

A volume flow meter is used to measure diesel consumption. The diesel is usually stored in an on-site fuel tank first and then consumed as needed. The meter is installed on the inlet of this diesel storage tank. Any diesel flowed into the storage tank is metered with this meter, and the metered diesel is deemed as diesel consumed by the diesel generators in order to be conservative.

The measured volume of diesel can be converted to mass of diesel consumed using standard density of diesel (0.85 kg/litre).

As a back-up, receipts can be used to monitor diesel consumption.

3.2.1.4 Net Calorific value of natural gas

The natural gas is sampled and analysed fortnightly by the gas supply company.

3.3 Monitoring results

3.3.1 Natural gas consumption

The metered natural gas consumption was crosschecked with gas sales receipts for the current monitoring period, and the monitored data can be verified with the receipts. The monthly data are given in the following table.

Operation Period			**Gas consumption (FC_{gas})**
Month	Start Date	End Date	Nm^3
Oct	22-Sep-09	21-Oct-09	22,595,240.0
Nov	22-Oct-09	21-Nov-09	25,225,790.0
Dec	22-Nov-09	21-Dec-09	79,800,937.0
Jan	22-Dec-09	27-Jan-10	109,662,326.0
Total			237,284,293.0

3.3.2 Diesel oil consumption

The diesel oil is stored in a fuel tank with a capacity of 4.104 m^3. The diesel meter is installed on the fill-in pipe of the diesel tank and measures the diesel flow when the diesel tank is being filled. Any diesel filled into the tank is deemed as consumed

immediately and the project emissions from burning it are then deducted from the calculation of emission reductions for that month.

As the diesel oil consumption is small and there is still enough diesel oil in the storage tank, no diesel oil was filled into the storage tank during current monitoring period. Therefore, the diesel consumption for current period is zero.

Operation Period			Diesel consumption (FC_{Diesel})
Month	Start Date	End Date	t
Oct	22-Sep-09	21-Oct-09	0.00
Nov	22-Oct-09	21-Nov-09	0.00
Dec	22-Nov-09	21-Dec-09	0.00
Jan	22-Dec-09	27-Jan-10	0.00
Total			0.00

3.3.3 **Net electricity supplied to the grid by the project**

As shown in figure 4, m4 and m5 are used as the primary power meters. With the completion of two designed 220 kV transmission lines, both m4 and m5 were used to monitor the net electricity supplied to the grid by the project during current monitoring period.

The metered data are crosschecked with power sales receipts and the data matched with each other.

Operation Period			Electricity supplied to the grid (EGy)
Month	Start Date	End Date	MWh
Oct	22-Sep-09	21-Oct-09	108,553.5
Nov	22-Oct-09	21-Nov-09	114,664.0
Dec	22-Nov-09	21-Dec-09	378,031.5
Jan	22-Dec-09	27-Jan-10	518,105.5
Total			1,119,354.5

3.3.4 Net calorific value of natural gas

The natural gas is analyzed by the gas supply company fortnightly for net calorific value, and the averaged net calorific value within a month is used to calculate the project emissions of that month.

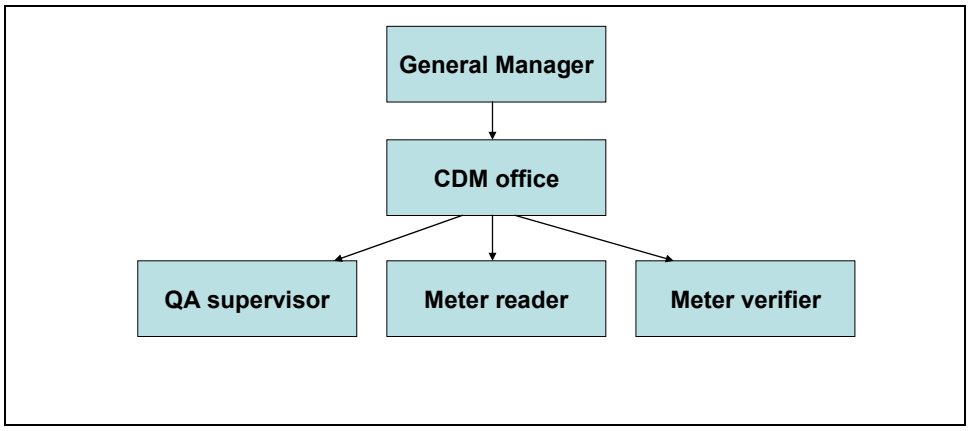
Operation Period			Net calorific value of gas (NCV_{gas})
Month	Start Date	End Date	GJ/Nm^3
Oct	22-Sep-09	21-Oct-09	0.0344208
Nov	22-Oct-09	21-Nov-09	0.0346713
Dec	22-Nov-09	21-Dec-09	0.0346917
Jan	22-Dec-09	27-Jan-10	0.0345858
Total			0.0345924

4 Project Management and QA/QC

4.1 Project Management

The project owner has established a CDM office which will be responsible for monitoring project emissions and other CDM related activities. Refer to the following chart for the management organization.

Figure 5 Organization chart of CDM project management



4.2 Roles and Responsibilities

Roles and their responsibilities are assigned in accordance with the monitoring plan

in the PDD. The responsibilities for the CDM management are outlined in the following table.

CDM Responsibility table

Activity	Responsible Division	Responsible Person	Date & name of responsible person if changed
- Overall Management - IT Systems Resourcing - CER Calculation - Preparation of External Reports	Beijing Taiyanggong Gas-fired Thermal Co., Ltd	Mr. Zhang Yandong Mr. Ma Xiangfeng	
- On site meter maintenance & calibrations - Record keeping of Copies of Meter Calibrations - Maintaining meter logs - Training in meter reading & error recognition	Operations Department	Mr. Tang Renzong	
Data collection and processing - Recording of metered data - Process electronic data by algorithm on rolling basis - Send electronically recorded data (gas & power) and to CDM Manager monthly	Operations Department	Mr. Guo Chun	
Filing and cross reference data	Finance Department	Ms. Song Hui	

4.3 Training

Before the operation of the project, the CDM project manager and all relevant staff attended training on CDM awareness and monitoring requirements. The training covered the followings:

- The CDM process and its broad aims

- The project management structure
- The project activity
- The principles of quality management applied to Emission Reductions
- Understanding and using the monitoring equipment
- Undertaking the procedures as described in the CDM quality manual

Besides, all the operators have also obtained the relevant technical training.

In February of 2009, the CDM project manager organized a training on the Validation and Verification manual to all relevant staff.

4.4 Quality Assurance (QA)/Quality Control (QC)

Quality Assurance (QA)/Quality Control (QC) procedures as described in PDD have been followed during the current period. Those procedures are included here for reference.

4.4.1 QA/QC Procedures

4.4.1.1 Error Handling Procedure

- In the event that a meter has lost calibration over the allowable error limit then this shall be corrected at the earliest opportunity and re-calibrated and the data recorded from this meter since the last successful calibration shall be ignored.

- In the event that there is uncertainty over the accuracy of the data set for net electricity generated from the main meters (e.g. the meter has lost calibration over the acceptable error limit) then the data from the back-up meters shall be used. In the event that there is uncertainty over the accuracy of the data set from the main and from the back-up meters, then power generated and delivered to the grid as evidenced by invoices and/or sales receipts shall then be used to evaluate the power generation.

- Similarly for gas consumption, if there is uncertainty over the accuracy of the data set for gas consumed from the main meter, then data from the back-up meters will be used. If there is uncertainty over the accuracy of both data sets, then invoices and/ or sales receipts shall be used.

4.4.1.2 External Reporting Procedure

After signing by the CDM Project Officer, the report is sent to the 3rd party verifier who is contracted to verify the emission reductions during the crediting period of the project.

4.4.1.3 Procedure for corrective actions arising

The CDM Project Officer is responsible for identifying corrective actions arising from the above procedures and for liaising with the purchaser, the 3rd party verifiers and other stakeholders to take necessary steps to implement the corrective actions.

4.4.1.4 Emergency procedures

In the unlikely event of an emergency, set procedures will be followed to prevent unintended emissions of methane. Details of the procedures to be followed are described in the relevant Operation Manuals. The key points include:

- The Distributed Control System (DCS) will automatically shut off gas supply to areas where a leak could occur upon detecting an emergency.
- The operators can also remotely shut off the gas supply if they find an emergency situation has occurred.

Quality assurance and controlling measures were taken according to the above procedures and no errors happened during this monitoring period.

4.4.2 **Calibration of Monitoring Meters**

All the measurement equipment has been calibrated and checked for accuracy following industry standards and procedures.

Calibrations of the meters during the current monitoring period have been made on schedule. The calibration results show that all measurement equipment is within the accuracy specified in PDD or relevant industrial standards, and qualified to monitor the power generation, natural gas flow, diesel consumption and on-site power consumption.

All the certificates of calibration are available to the DOE for verification.

Please refer to the Annex for detail.

5 Emission Reductions Calculation for the Project

5.1 Fixed values for calculating emission reductions

In calculating the emission reductions achieved by the project activities, the following fixed data and parameters as validated in PDD are adopted.

Parameters	Description	Unit	Value applied	Source	Comments
Fixed parameters for calculating project emission					
$EF_{CO2,gas}$	Emission of Gas	t CO_2/GJ	0.0561	IPCC	
$OXID_{gas}$	Oxidation Factor of Gas	%	100%	IPCC	
NCV_{Diesel}	Net calorific value of Diesel	TJ/Gg	43.00	IPCC	
$EF_{CO2,Diesel}$	Emission of Diesel	t CO_2/GJ	0.0741	IPCC	
$OXID_{Diesel}$	Oxidation Factor of Diesel	%	100%	IPCC	
ρ_{Diesel}	Density of Diesel	t/m^3	0.85	PDD	
Fixed parameters for calculating baseline emission					
NCV_{coal}	Net calorific value of coal	GJ/t_{SCE}	29.3	National Standard	
$OXID_{coal}$	Oxidation Factor of Coal	%	100%	IPCC	
$COEF_{BL}$	Emission co-efficient of coal	t CO_2/GJ	0.0946	IPCC	
η_{BL}	Baseline efficiency of power generation	%	39.01%	Notional data	
Fixed parameters for calculating leakage emission					
$EF_{k,upstream,CH4}$	Emission factor for upstream CH4 emissions due to mining	t CH_4/kt	13.4	IPCC	
$EF_{BL,upstream,CH4}$	Upstream CH4 emissions due to mining in terms of per MWh	t CH_4/MWh	0.0042	PDD	
$EF_{NG,upstream,CH4}$	Emission factor for upstream CH4 emissions of natural gas production	t CH_4/PJ	296	IPCC	
GWP_{CH4}	Global warming potential for CH_4	tCO_{2e}/tCH_4	21	UNFCCC	

5.2 Baseline Emissions

Baseline emissions are calculated by the following formula:

$$BEy = EGy \times (\frac{COEF_{BL}}{\eta_{BL}} \times 3.6) = EG_Y \times (\frac{0.0946}{39.01\%} \times 3.6) \quad (1)$$

Where,

BEy	Baseline emissions in year y (t CO_{2e})
EGy	Electricity supplied to grid by project in year y (MWh)
$COEF_{BL}$	Fuel emission-coefficient for coal, $COEF_{BL}$ = 0.0946 t CO_2/GJ
η_{BL}	Baseline efficiency of power generation, η_{BL} = 39.01%
3.6	Conversion factor from MWh to GJ

For the current monitoring period, the baseline emissions are calculated as follows:

A			B	C	D	E
Operation Period			**Baseline Emissions Calculation BE =EGy*($COEF_{BL}$/η_{BL}*3.6)**			
Month	Start Date	End Date	EG_y	$COEF_{BL}$	η_{BL}	**BE**
			MWh	t CO_{2e}/GJ	%	(tCO_{2e})
			Measured	Fixed	Fixed	Calculated
Oct	22-Sep-09	21-Oct-09	108,553.5	0.0946	39.01%	94,768
Nov	22-Oct-09	21-Nov-09	114,664.0	0.0946	39.01%	100,102
Dec	22-Nov-09	21-Dec-09	378,031.5	0.0946	39.01%	330,024
Jan	22-Dec-09	27-Jan-10	518,105.5	0.0946	39.01%	452,310
Total						977,204

5.3 Project Emissions

5.3.1 Project emission from combustion of natural gas

$$PE_{gas} = FC_{gas} \times NCV_{gas} \times EF_{CO2,gas} \times OXID_{gas} = FC_{gas} \times NCV_{gas} \times 0.0561 \times 100\% \quad (2)$$

Where,

PE_{gas}	project emission from combustion of natural gas in t CO_{2e}
FC_{gas}	the total volume of natural gas combusted in the power plant in Nm^3
NCV_{gas}	net calorific value of natural gas in GJ/Nm^3
$EF_{CO2,gas}$	the CO_2 emission coefficient of natural gas in t CO_2/GJ, $EF_{CO2,gas}$ = 0.0561 t CO_2/GJ
$OXID_{gas}$	Oxidation factor of natural gas, $OXID_{gas}$=100%

5.3.2 Project emission from combustion of diesel

$$PE_{Diesel} = FC_{Diesel} \times NCV_{Diesel} \times EF_{CO2,Diesel} \times OXID_{Diesel} = FC_{Diesel} \times 43.00 \times 0.0741 \times 100\% \quad (3)$$

Where,

PE_{Diesel}	project emission from combustion of Diesel in t CO_{2e}
FC_{Diesel}	the total volume of natural gas combusted in the power plant in Nm^3
NCV_{Diesel}	net calorific value of Diesel in TJ/Gg, NCV_{Diesel} = 43.00 TJ/Gg
$EF_{CO2, Diesel}$	the CO_2 emission coefficient of Diesel in t CO_2/GJ, $EF_{CO2, Diesel}$ = 0.0741 t CO_2/GJ
$OXID_{Diesel}$	Oxidation factor of natural gas, $OXID_{Diesel}$=100%

5.3.3 Total Project Emissions

$$PE_y = PE_{Diesel} + PE_{gas} \quad (4)$$

The total project emissions for the project during this monitoring period are detailed in the following table.

A			B	C	D	E	F
Operation Period			**Project Emissions Calculation ($PE = PE_{Gas} + PE_{Diesel}$)**				
Month	Start Date	End Date	FC_{Gas}	PE_{Gas}	FC_{Diesel}	PE_{Diesel}	**PE**
			Nm^3	t CO_{2e}	t	t CO_{2e}	(tCO_{2e})
			Monitored	Formula (2)	Measured	Formula (3)	=C+E
Oct	22-Sep-09	21-Oct-09	22,595,240	43,632	0.00	0.00	43,632
Nov	22-Oct-09	21-Nov-09	25,225,790	49,066	0.00	0.00	49,066
Dec	22-Nov-09	21-Dec-09	79,800,937	155,309	0.00	0.00	155,309
Jan	22-Dec-09	27-Jan-10	109,662,326	212,774	0.00	0.00	212,774
Total							460,780

5.4 Leakage Emissions

According to the methodology and PDD, the leakage for this project is calculated using the following formula,

$$L_Y = (FC_{gas} \times NCV_{gas} \times EF_{NG,upstream,CH4} - EG_Y * EF_{BL,upstream,CH4}) \times GWP_{CH4} \quad (5)$$

Where,

L_Y	Leakage emissions during the year y in t CO_{2e}
FC_{gas}	Quantity of natural gas combusted in the project plant in Nm^3
NCV_{gas}	Net calorific value of the natural gas combusted in the project plant in GJ/Nm^3
$EF_{NG,upstream,CH4}$	Emission factor for upstream fugitive methane emissions of natural gas from production, transportation, distribution, $EF_{NG,upstream,CH}$ = 296 t CH_4/PJ
EG_Y	Electricity supplied to the grid by the project plant in MWh
$EF_{BL,upstream,CH4}$	Emission factor for upstream fugitive methane emissions occurring in the absence of the project activity, $EF_{BL,upstream,CH4}$ = 0.0042 t CH4 per MWh electricity generation in the project plant
GWP_{CH4}	Global warming potential of methane, GWP_{CH4} = 21 t CO_2/t CH_4

$$L_Y = (FC_{gas} \times NCV_{gas} \times 296 - EG_Y * 0.0042) \times 21 \quad (6)$$

According to methodology, if **L_y < 0,** then **L_y = 0.**

For the current monitoring period, the leakage is calculated as follows:

A			B	C	D	E
Operation Period			**Leakage Ly=(FCy*NCV$_{gas}$*EF$_{NG,upstream,CH4}$ - EGy*EF$_{BL,upstream,CH4}$)*GWP$_{CH4}$**			
Month	Start Date	End Date	FC_{Gas}	EGy	**Ly**	
			Nm^3	MWh	(tCO_{2e})	
			Monitored	Monitored	Formular	if Ly<0, Ly=0
Oct	22-Sep-09	21-Oct-09	22,595,240	108,554	-4,740	0
Nov	22-Oct-09	21-Nov-09	25,225,790	114,664	-4,716	0
Dec	22-Nov-09	21-Dec-09	79,800,937	378,032	-16,268	0
Jan	22-Dec-09	27-Jan-10	109,662,326	518,106	-22,234	0
Total						0

5.5 Emission Reductions

According to the methodology, the formula for calculating emission reductions is as follow:

$$ER_Y = BE_Y - PE_Y - L_Y \quad \textbf{(7)}$$

Where,

ER$_y$: are the total emissions reductions during the monitoring period in tonnes of CO_2

BE$_y$: are the baseline emissions for the project activity during the monitoring period in tonnes of CO_2

PE$_y$: are the emissions from the project activity during the monitoring period in tonnes of CO_2

L $_y$: are the missions due to leakage during the monitoring period in tonnes of CO_2

Thus, for the current monitoring period, the emission reductions are calculated as follows:

A			B	C	D	E
Operation Period			**Baseline Emissions**	**Project Emissions**	**Leakage**	**Emission Reductions**
Month	Start Date	End Date	(tCO_{2e})	(tCO_{2e})	(tCO_{2e})	(tCO_{2e})
			From BEs	From PEs	From LEs	=B-C-D
Oct	22-Sep-09	21-Oct-09	94,768	43,632	0	51,136
Nov	22-Oct-09	21-Nov-09	100,102	49,066	0	51,037
Dec	22-Nov-09	21-Dec-09	330,024	155,309	0	174,715
Jan	22-Dec-09	27-Jan-10	452,310	212,774	0	239,536
Total			977,204	460,780	0	516,424

In conclusion, the project activity has achieved **516,424 t CO_{2e}** of emission reductions during this monitoring period.

A comparison of the project activity performance between actual situation and PDD is summarized in the following table.

Description	Unit	Performance according to PDD		Actual performance	Change in percentage
		Annual data	Equivalent to current monitoring period		
Emission reductions	tCO2e	1,516,289	531,740	516,424	-2.88%

As shown in the above table, the actual emission reductions are slight less than the estimated emission reductions in the PDD

`

Following person with signature below confirms the Monitoring Report of Beijing Taiyanggong CCGT Trigeneration Project

Signed: _____ (CDM Manager)

Beijing Taiyanggong Gas-fired Thermal Power Co., Ltd.

Date:1 Feb 2010

Annex Meter information and calibration

Calibration and Error Log					
Flow Meter Log					
Meter	**gm1**	**gm2**	**gm3**	**gm4**	**dm1**
Meter No.	10508652-2007	10508648-2007	10508647-2007	80075926/2007	9089
Accuracy	1.0%	1.0%	1.0%	1.5%	1.0%
Certiricate No.	GM20070342	GM20070340	GM20070339	M507J-A0110	LLyb-080773
Calibrated on	30-Jun-07	30-Jun-07	30-Jun-07	2-Jul-07	8-Apr-08
Valid until	29-Jun-09	29-Jun-09	29-Jun-09	1-Jul-09	7-Apr-09
Certiricate No.	GM20090463	GM20090465	GM20090464	GM20090826	LLyb090987
Calibrated on	4-Jun-09	4-Jun-09	4-Jun-09	2-Jun-09	8-Apr-09
Valid until	3-Jun-11	3-Jun-11	3-Jun-11	1-Jun-10	7-Apr-10
Electricity Meter Log					
Meter	**pm4**	**pm5**			
Meter No.	38027067	38027065			
Accuracy	0.2%	0.2%			
Certiricate No.	DC/Power meter-466-2007	DC/Power meter-464-2007			
Calibrated on	4-Sep-07	4-Sep-07			
Valid until	3-Sep-12	3-Sep-12			