**CLEAN DEVELOPMENT MECHANISM**
**PROJECT DESIGN DOCUMENT FORM (CDM-SSC-PDD)**
**Version 03 - in effect as of: 22 December 2006**

## CONTENTS

**Revision history of this document**

| Version Number | Date | Description and reason of revision |
|---|---|---|
| 01 | 21 January 2003 | Initial adoption |
| 02 | 8 July 2005 | • The Board agreed to revise the CDM SSC PDD to reflect guidance and clarifications provided by the Board since version 01 of this document.<br>• As a consequence, the guidelines for completing CDM SSC PDD have been revised accordingly to version 2. The latest version can be found at <http://cdm.unfccc.int/Reference/Documents>. |
| 03 | 22 December 2006 | • The Board agreed to revise the CDM project design document for small-scale activities (CDM-SSC-PDD), taking into account CDM-PDD and CDM-NM. |

## SECTION A. General description of small-scale project activity

### A.1 Title of the small-scale project activity:

Title of the project activity: DEWA Chiller Station L
Current version: 1
Date of completing version 1 of this document: 11/11/2011

### A.2. Description of the small-scale project activity:

The purpose of the project activity is to improve the efficiency of the three gas turbines (GTs) L 11 – L 13 installed at Station L Phase 1 of Dubai Electricity and Water Authority (DEWA) (DEWA being the project proponent) by implementing an inlet air chilling system called Thermal Energy Storage and Turbine Inlet Air Cooling (TESTIAC).

The project activity will cool the inlet air of 3 gas turbines, each a model GE PG9351(FA+e) installed at Station L Phase 1, down to 20 degrees Celsius . The TESTIAC system will operate in continuous mode for 8 hours per day, 7 days per week; the thermal energy storage system will re-charge during the 16 hours/day when it is not in operation. The TESTIAC system will be operated during 7 months of the year, between April – October, when ambient temperatures in Dubai are at their highest.

The effect of cooling the ambient air is to increase the efficiency of the gas turbine by increasing the density of inlet air, thereby increasing the air mass flow rate into the (constant volumetric flow) gas turbine

The project activity reduces greenhouse gas emissions because less fossil fuel input is required to generate the same output of electricity during operation of the TESTIAC system.

In the view of the project participants, the project activity contributes to sustainable development by

- generating electrical energy with less fossil fuel consumption, thereby reducing greenhouse gas emissions.

- transferring new technology to the host country, as this will be the first project activity installing a Thermal Energy Storage and Turbine Inlet Air Cooling system in a power plant located in the host country.

### A.3. Project participants:

| Name of Party involved ((host) indicates a host Party): | Private and/or public entity(ies) project participants(*) (as applicable) | Kindly indicate if the Party involved wishes to be considered as project participant (Yes/No) |
|---|---|---|
| Government of United Arab Emirates (host) | Dubai Electricity & Water Authority<br>Dubai Carbon Center of | No |

| | | |
|---|---|---|
| | Excellence | |

## A.4. Technical description of the small-scale project activity:

### A.4.1. Location of the small-scale project activity:

#### A.4.1.1. Host Party(ies):

United Arab Emirates

#### A.4.1.2. Region/State/Province etc.:

Emirate of Dubai

#### A.4.1.3. City/Town/Community etc:

Jebel Ali area in Jumeirah, south west of Dubai

#### A.4.1.4. Details of physical location, including information allowing the unique identification of this small-scale project activity :

Longitude 55°11'13''
Latitude 25°05'21''

### A.4.2. Type and category(ies) and technology/measure of the small-scale project activity:

According to the *appendix B of the simplified modalities and procedures (M & P) for small-scale CDM project activities*[1], the proposed project falls under the following type and category.

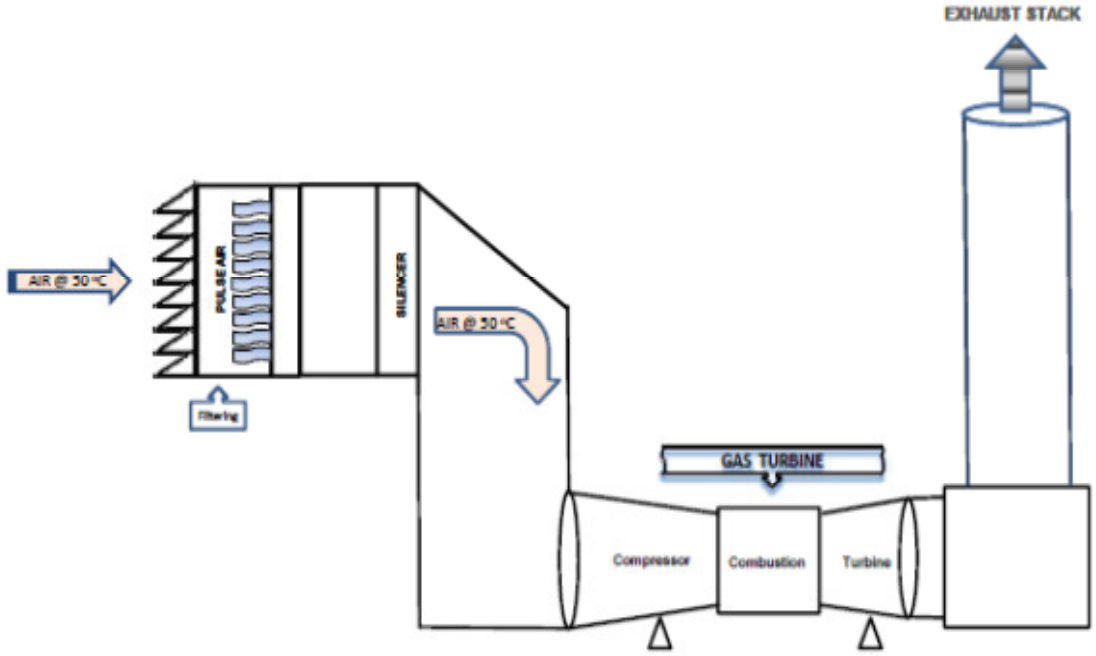
| | |
|---|---|
| Project type: | Type II project activities: energy efficiency improvement projects |
| Category | II.B - Supply side energy efficiency improvements – generation |
| Reference | AMS II.B, Version 09 |

By implementing the state of the art TESTIAC system for the first time in the host country, environmentally safe and sound technology and know-how are being applied in this CDM project activity in the host country.

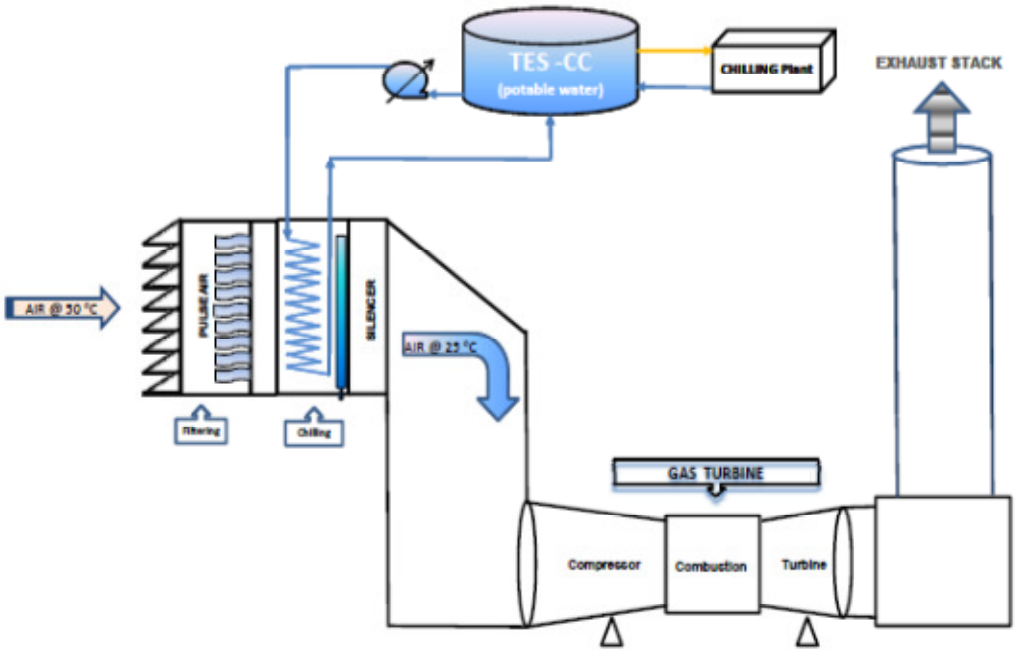
The project proponent has even been contacted by a renowned gas turbine manufacturer, expressing its interest in learning about the experiences from the project proponent with the new technology.

The following sketches illustrate first (1) the current GT system at Station L without and second (2) with chilling:

[1] http://cdm.unfccc.int/Reference/COPMOP/08a01.pdf




Without the chilling system, the ambient air passes through the filter section to the gas turbine and then to the exhaust stack. In this case, the temperature of the ambient air is equal to the temperature of the inlet air.




With chilling, the ambient air will be cooled after the filter section by cooling coils. The purpose of the air cooling coils is to produce indirect cooling of the air going to the turbine compressor, by means of cold water. These coils will use cooling water coming from the Thermal Storage Tank. The water is cooled in an ammonia-based refrigeration plant.

### A.4.3 Estimated amount of emission reductions over the chosen crediting period:

The chosen crediting period for the project activity is 10 years. Annual estimates of emission reductions by the project activity during the above crediting period are furnished below:

| Years | Estimate of annual emission reductions in tonnes of $CO_2e$ |
|---|---|
| 1 | 28,163 |
| 2 | 28,163 |
| 3 | 28,163 |
| 4 | 28,163 |
| 5 | 28,163 |
| 6 | 28,163 |
| 7 | 28,163 |
| 8 | 28,163 |
| 9 | 28,163 |
| 10 | 28,163 |
| **Total estimated reductions (tonne of $CO_2e$)** | **281,630** |
| **Total number of crediting years** | **10** |
| **Annual average of the estimated reductions over the crediting period. ($tCO_2e$)** | **28,163** |

### A.4.4. Public funding of the small-scale project activity:

There is no public funding from Annex I Parties for the proposed project activity.

### A.4.5. Confirmation that the small-scale project activity is not a debundled component of a large scale project activity:

The project proponent hereby confirms that the project activity is not a debundled component of another larger project activity.

The project proponent further confirms that they have not registered any small scale CDM activity or applied to register another small scale CDM project activity within 1km of the project boundary, in the same project category and technology/measure in the previous two years.

## SECTION B. Application of a baseline and monitoring methodology

### B.1. Title and reference of the approved baseline and monitoring methodology applied to the small-scale project activity:

Title : Type II project activities: energy efficiency improvement projects
Reference : II.B - Supply side energy efficiency improvements – generation
Version : 09

### B.2 Justification of the choice of the project category:

| Applicability conditions in Version 09 of AMS.II.B | Characteristics of the project activity | Applicability criterion met? |
|---|---|---|
| *This category comprises technologies or* | The proposed project activity | Yes |

| | | |
|---|---|---|
| *measures to improve efficiency of fossil fuel generating units that supply an electricity or thermal system…* | involves the implementation of a Thermal Energy Storage and Turbine Inlet Air Cooling system to improve the efficiency of three gas turbines (GTs) installed at Station L Phase 1 of Dubai Electricity and Water Authority (DEWA). | |
| *…by reducing energy or fuel consumption by up to the equivalent of 60 GWhe per year…. A total saving of 60 GWhe is equivalent to maximal saving of 180 $GW_{hth}$ in the fuel input to the generation unit.* | The proposed project activity will result in reductions of fuel consumption by up to the maximum equivalent of 180 $GWh_{th}$ | Yes |

## B.3. Description of the project boundary:

According to Version 09 of AMS.II.B[2], the project boundary *is the physical, geographical site of the fuel fired power station unit affected by the efficiency measures*.

Therefore the project boundary is the Station L Phase 1 plant including 3 gas turbines L11-L13 manufactured by GE Power Systems, model PG9351(FA+e) with serial numbers GEK 110689 (298398 to 298400), located at Jebel Ali, Dubai, United Arab Emirates.

## B.4. Description of baseline and its development:

According to Version 09 of AMS.II.B, the baseline *is the technical losses of energy within the project boundary. In the case of retrofit measures the energy baseline is calculated as the monitored performance of the existing generating unit*.

Since the proposed project activity is a retrofit measure, the baseline emissions are to be calculated as the monitored performance of the 3 existing gas turbines L11-L13 in Station L: model PG9351(FA+e), serial numbers GEK 110689 (298398 to 298400).

In order to calculate *ex post* baseline emissions, the following parameters are required:

- Operating hours of the TESTIAC system
- Electricity generated during operating hours of the TESTIAC system
- Ambient air temperature during operating hours
- Efficiency of GT without TESTIAC system
- Emission factor of natural gas used as input fuel

[2] http://cdm.unfccc.int/methodologies/SSCmethodologies/approved

For the explanation and justification of key assumptions and rationale, as well as for illustration of data used to determine the baseline emissions (variables, parameters, data sources etc.), please see Sections B 6.1-6.3.

**B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered small-scale CDM project activity:**

Since the starting date of the project activity was before the date of validation, evidence is provided that the incentive from the CDM was seriously considered in the decision to proceed with the project activity.

| | |
|---|---|
| 29/04/2010 | Letter of Acceptance of order for project activity equipment (start date of the proposed project activity) |
| 27/05/2010 | Receipt of prior consideration form at UNFCCC (DNA of the host country 22/09/2010) |

As such notification was made within six months of the project activity start date, it can be concluded that CDM benefits were considered necessary in the decision to undertake the project as a CDM project activity.

According to *attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities*[3], project participants have the following options to demonstrate additionality:

*(a) Investment barrier*
*(b) Technological barrier*
*(c) Barrier due to prevailing practice*
*(d) Other barriers*

According to *EB 35, Annex 34: Non-binding best practice examples to demonstrate additionality for SSC project activities*[4], best practice examples for demonstration of additionality of small scale activities inter alia are:

*(d)* ***Barrier due to prevailing practice****: …; Best practice examples include but are not limited to, the demonstration that project is among the first of its kind in terms of technology, geography, sector, type of investment and investor, market etc.*

The implementation of the TESTIAC system is not prevailing practice. The use of the TESTIAC system is below the 10% usage threshold in the host country (threshold as set out in EB 50 Annex 13 *Guidelines for Objective Demonstration and Assessment of Barriers*[5]). This demonstrates that the technology faces a barrier due to prevailing practice in the host country and can therefore be classified as additional.

**B.6. Emission reductions:**

**B.6.1. Explanation of methodological choices:**

>>

$$ER_y = BE_y - PE_y - LE_y \quad (1)$$

[3] https://cdm.unfccc.int/Reference/Guidclarif/ssc/methSSC_guid05.pdf
[4] http://cdm.unfccc.int/Reference/Guidclarif/ssc/methSSC_guid15_v01.pdf
[5] http://cdm.unfccc.int/Reference/Guidclarif/meth/meth_guid38.pdf

where

| | |
|---|---|
| $ER_y$ | Emission reductions in year *y* [$tCO_2$] |
| $BE_y$ | Baseline emissions in year *y* [$tCO_2$] |
| $PE_y$ | Project emissions in year *y* [$tCO_2$] |
| $LE_y$ | Leakage emissions in year *y* [$tCO_2$] |

**Baseline Emissions, $BE_y$**

$$BE_y = \sum_m \sum_{y\_oph} \frac{EG_{p,m,y\_oph}}{\eta_{m,y\_oph}} \times 3.6 \times EF_{CO2,NG,y} \quad (1)$$

where:

| | |
|---|---|
| $BE_y$ | Baseline emissions in year *y* [$tCO_2$] |
| $EG_{p,m,y\_oph}$ | Electricity generation after implementation of the project activity of GT *m* (L11-L13) in each of the operating hours of the TESTIAC system in year *y* [MWh] |
| $\eta_{m,y\_oph}$ | Efficiency of GT *m* (L11-L13) in the baseline (without chilling system) in each of the operating hours of the TESTIAC system in year *y* [number] |
| 3.6 | Conversion factor from MWh into GJ |
| $EF_{CO2,NG,y}$ | Emission factor of natural gas in year *y* [$tCO_2$/GJ] |

Explanation of <u>parameters and key assumptions:</u>

$EG_{p,m,y\_oph}$:

- For <u>ex post</u> baseline emissions determination, this parameter is monitored.
- For <u>ex ante</u> determination, the estimated operating hours of the TESTIAC system are conservatively assumed to be 8 hours per day for 184 days (April-October) per year *y* (i.e. a total of 1,472 operating hours per year); 1,472 assumed operating hours multiplied by a capacity of 248.52 MW (design capacity per GT at target inlet air temperature of 20 degrees Celsius) = $EG_{p,m,y\_oph}$ = 365,821 MWh (rounded).

$\eta_{m,y\_oph}$:

- For <u>ex post</u> baseline emissions determination, this parameter will be specified for any operating hour of the TESTIAC system based on the monitored ambient air temperature and GT design efficiency for such temperature (inlet air temperature = ambient air temperature).
- For <u>ex ante</u> determination, $\eta_{m,y\_oph}$ is set conservatively at 34.24%, the design efficiency of the gas turbines associated with 45 degrees Celsius inlet air temperature.

$EF_{CO2,NG,y}$:

- The IPCC default value for natural gas at the lower limit of the uncertainty at a 95% confidence interval, as provided in Table 1.4 of Chapter 1 of Vol. 2 (Energy) of the *2006 IPCC Guidelines on National GHG Inventories*, has been selected: 0.0543 $tCO_2$/GJ.

**Project Emissions, $PE_y$**

$$PE_y = \sum_m \sum_{y\_oph} FC_{NG,m,y\_oph} \times NCV_{NG,y} \times EF_{CO2,NG,y} \quad (2)$$

where:

| | |
|---|---|
| $PE_y$ | Project emissions in year *y* [$tCO_2$] |
| $FC_{NG,m,y\_oph}$ | Fuel consumption (natural gas) of GT *m* (L11-L13) in each of the operating hours of the TESTIAC system in year *y* [$m^3$] |
| $NCV_{NG,y}$ | Net calorific value of natural gas in year *y* [$GJ/m^3$] |
| $EF_{CO2,NG,y}$ | Emission factor of natural gas in year *y* [$tCO_2/GJ$] |

$FC_{NG,m,y\_oph}$ and $NCV_{NG,y}$ (and thereby energy input):

- For ex post determination of project emissions, these parameters will be monitored during operating hours of the TESTIAC system (FC) and over the year *y* (NCV). Applying total fuel input, the formula automatically captures any energy input required for the operation of the TESTIAC system.
- For ex ante determination, the following assumptions are made:
  - Efficiency of GTs during operation of the TESTIAC system is 36.63% (= GT design efficiency at 20 degrees Celsius inlet air temperature).
  - Parasitic power demand to operate the TESTIAC system = 5.33 MW (design cooling power demand at 45 degrees Celsius ambient air temperature).
  - Operating hours of the TESTIAC system = 1,472 hours.

$EF_{CO2,NG,y}$:

- The IPCC default value for natural gas at the lower limit of the uncertainty at a 95% confidence interval, as provided in Table 1.4 of Chapter1 of Vol. 2 (Energy) of the *2006 IPCC Guidelines on National GHG Inventories*, has been selected: 0.0543 $tCO_2/GJ$.

**Leakage emissions, $LE_y$**

Since the energy efficiency technology is not equipment transferred from another activity, no leakage emissions are to be considered

Values have been deliberately selected to be conservative (in this context to maximise fuel savings) in respect of demonstrating that the small scale threshold of fuel savings of 180 $GWh_{th}$ will not be exceeded by the project activity.

### B.6.2. Data and parameters that are available at validation:

*(Copy this table for each data and parameter)*

| **Data / Parameter:** | $EF_{CO2,NG,y}$ |
|---|---|
| Data unit: | $tCO_2/GJ$ |
| Description: | Emission factor of fuel type natural gas |
| Source of data to be used: | IPCC default value of the fuel type used in the project plant at the lower limit of the uncertainty at a 95% confidence interval as provided in Table 1.4 of Chapter 1 of Vol. 2 (Energy) of the *2006 IPCC Guidelines on National GHG Inventories*.[6] |

[6] http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol2.html

| | |
|---|---|
| Value applied | 0.054 |
| Justification of the choice of data or description of measurement methods and procedures actually applied | -- |
| Any comment: | Any future revision of the IPCC Guidelines should be taken into account |

### B.6.3 Ex-ante calculation of emission reductions:

**Baseline emissions:**
Applying formula 1 using values as outlined under B.6.1 gives the following ex ante baseline emissions:

$$BE_y = 3 \times \frac{365{,}821}{0.3424} \times 3.6 \times 0.054$$

$BE_y$ = 623,093

**Project emissions:**
Applying formula 2 using assumptions and values as outlined under B.6.1 gives the following ex ante project emissions:

$$PEy = 3 \times (\frac{365{,}821}{36.63} \times 3.6 + \frac{5.33 \times 1472}{36.63} \times 3.6) \times 0.054$$

$PE_y$ = 594,930

**Leakage emissions:**

$LEy$ = 0

**Emission reductions:**

$ER_y$ = 623,093 - 594,930 = 28,163

### B.6.4 Summary of the ex-ante estimation of emission reductions:

| Year | Estimation of baseline emissions | Estimation of project emissions | Estimation of leakage | Estimation of overall emission reductions |
|---|---|---|---|---|
| | $BE_y$ | $PE_y$ | $LE_y$ | $ER_y$ |
| | [$tCO_{2eq}$] | [$tCO_{2eq}$] | [$tCO_{2eq}$] | [$tCO_{2eq}$] |
| 1 | 623,092 | 594,929 | 0 | 28,163 |
| 2 | 623,092 | 594,929 | 0 | 28,163 |
| 3 | 623,092 | 594,929 | 0 | 28,163 |
| 4 | 623,092 | 594,929 | 0 | 28,163 |

| | | | | |
|---|---|---|---|---|
| 5 | 623,092 | 594,929 | 0 | 28,163 |
| 6 | 623,092 | 594,929 | 0 | 28,163 |
| 7 | 623,092 | 594,929 | 0 | 28,163 |
| 8 | 623,092 | 594,929 | 0 | 28,163 |
| 9 | 623,092 | 594,929 | 0 | 28,163 |
| 10 | 623,092 | 594,929 | 0 | 28,163 |
| **Total** (t $CO_{2eq}$) | **6,230,920** | **5,949,290** | **0** | **281,630** |

## B.7 Application of a monitoring methodology and description of the monitoring plan:

### B.7.1 Data and parameters monitored:

| | $EG_{p,m,y\_oph}$ |
|---|---|
| Data unit: | MWh/y |
| Description: | Electricity generated in GT *m* (L11-L13) in year *y* during operating hours of the TESTIAC system |
| Source of data to be used: | Measurements by electricity meter(s) of the project proponent |
| Value of data | Ex ante: 365,821 |
| Description of measurement methods and procedures to be applied: | The monitoring will be continuous, with hourly recording. The data will be archived electronically and as paper print-outs for 2 years following the end of the crediting period. |
| QA/QC procedures to be applied: | The metering equipment will be calibrated according to the instructions (schedules, procedures) for quality assurance from the technology provider.. |
| Any comment: | - |

| | **Ambient Air Temperature** |
|---|---|
| Data unit: | Degrees Celsius |
| Description: | Hourly ambient air temperature during operating hours of the TESTIAC system in order to identify the efficiency of the gas turbines in the baseline |
| Source of data to be used: | Meteorological Climate Office of Dubai Airport |
| Value of data | Ex ante: 45 degrees Celsius |
| Description of measurement methods and procedures to be applied: | The data will be archived electronically and as paper print-outs for 2 years following the end of the last crediting period. |
| QA/QC procedures to be applied: | -- |
| Any comment: | - |

| **Data / Parameter:** | $FC_{NG,m,y\_oph}$ |
|---|---|
| Data unit: | $m^3$ |
| Description: | Quantity of fuel type natural gas combusted by GT *m* (L11-L13) in year *y* during operating hours of the TESTIAC system |

| | |
|---|---|
| Source of data to be used: | On-site measurements by gas flow meters of the project proponent |
| Value of data | -- |
| Description of measurement methods and procedures to be applied: | The monitoring will be continuous, with hourly recording. The data will be archived electronically and as paper print-outs for 2 years following the end of the last crediting period. |
| QA/QC procedures to be applied: | The metering equipment will be calibrated according to the instructions (schedules, procedures) for quality assurance from the technology provider. |
| Any comment: | -- |

| **Data / Parameter:** | ***$NCV_{NG,y}$ (Natural Gas)*** |
|---|---|
| Data unit: | $GJ/m^3$ |
| Description: | Net calorific of fuel type natural gas in year *y* |
| Source of data to be used: | One of the following data sources will be used, depending on their availability: |

| **Data source** | **Conditions for using the data source** |
|---|---|
| (a) Values provided by the fuel supplier in invoices | This is the preferred source |
| (b) Measurements by the project participant | If (a) is not available |
| (c) IPCC default values at the upper limit of the uncertainty at a 95% confidence interval as provided in table 1.2 of Chapter1 of Vol. 2 (Energy) of the *2006 IPCC Guidelines on National GHG Inventories* | If (a) is not available |

| | |
|---|---|
| Value of data | -- |
| Description of measurement methods and procedures to be applied: | Measurements will be undertaken in line with national or international fuel standards. |
| QA/QC procedures to be applied: | Values will be verified if they are within the uncertainty range of the IPCC default values as provided in Table 1.2, Vol. 2 of the 2006 IPCC Guidelines. If the values fall below this range, additional information from the testing laboratory shall be collected to justify the outcome or additional measurements shall be conducted. The testing laboratory will have ISO17025 accreditation or will be able to justify that it can comply with similar quality standards. |
| Any comment: | The data shall be archived for 2 years following the end of the crediting period. |

### B.7.2 Description of the monitoring plan:

>>

**Management structure and responsibility**

Overall responsibility for daily operating and reporting lies with the project proponent. A staff member will be specified within the company, and provided with training, to carry out the monitoring work (data

recording and archiving, quality assurance and quality control of the data, equipment calibration, scheduled and unscheduled maintenance, and adoption of corrective actions if needed).

Management structure
The manager of the proposed project activity will assume overall responsibility for the monitoring process, including the follow-up of daily operations, definition of personnel involved with the monitoring work, review of the monitored results/data, and quality assurance of measurements and the process of training new staff.

Responsibility of the personnel directly involved
The personnel involved with monitoring will be given appropriate training. They will be responsible for carrying out the following tasks:

- Supervise and verify metering and recording: the staff will coordinate internally with other departments to ensure and verify adequate metering and recording of data, including hourly recording of TESTIAC system operation, hourly fuel consumption and electricity generation;

- Collection of additional data, sales/invoices: the staff will collect sales receipts and relevant data for monitoring of the proposed project activity;

- Calibration: the staff will coordinate with the responsible organizations to ensure that calibration of the metering instruments is carried out in accordance with instructions (schedules, procedures) for quality assurance from the technology provider;

- Data archives: the staff will be responsible for storing all monitoring data and making it available to the DOE for the verification of emission reductions.

Support and third party participation
The staff will receive support from CDM experts (internal and/or external) in their responsibilities through the following actions:

- Provide the staff with a calculation template in electronic form for calculation of annual emission reductions;
- Provide specific CDM monitoring instructions to the personnel involved in the project activity's operation;
- Follow-up of the monitoring plan and continuous on-demand advice to the staff;
- Compilation of the monitored data and preparation of the monitoring report;
- Coordination with DOEs for the preparation of periodic verifications.

**Monitoring equipment and installation:**
All equipment will be in compliance with national standards.
The gas consumption of the gas turbines will be monitored by flow meters and totalizer installed prior to each GT. Generated electricity will be monitored by electricity meters. Readings will be taken every hour and recorded in a log book.

**Data monitoring management and recording**
All monitoring data and records will be archived in electronic form and as paper print-outs. Electronic documents will be backed up on compact disc or hard disc. The project proponent will also keep copies of

additional relevant documents and prepare a periodic monitoring report, which includes the monitoring parameter data and data summary, the calibration records and the emission reductions calculation. The recorded data will be kept for at least two years after the end of the crediting period or issuance of CERs, whichever occurs later.

**Quality control and Quality assurance**
The metering equipment will be properly calibrated in accordance with the instructions (schedules, procedures) for quality assurance from the technology provider.

## B.8 Date of completion of the application of the baseline and monitoring methodology and the name of the responsible person(s)/entity(ies)

Date of Completion 11/11/2011

**Person/entity determining the baseline and monitoring methodology :**
**Clemens Plöchl, Wolfgang Wetzer;**
Energy Changes Projektentwicklung GmbH
Zip code + city postal address: Obere Donaustraße 12/28, 1020 Vienna
Country: Austria
Telephone number: Wolfgang Wetzer +43 (0) 19684529; Clemens Ploechl +43 699 10403690
Fax number: +43 (0) 19684529
Email: clemens.ploechl@energy-changes.com; wolfgang.wetzer@energy-changes.com

Energy Changes Projektentwicklung GmbH is not a project participant.

# SECTION C. Duration of the project activity / crediting period

## C.1 Duration of the project activity:

### C.1.1. Starting date of the project activity:

The CDM Glossary of Terms, Version 05 defines the start date as follows:

*…..In light of the above definition, the start date shall be considered to be the date on which the project participant has committed to expenditures related to the implementation or related to the construction of the project activity. This, for example, can be the date on which contracts have been signed for equipment or construction/operation services required for the project activity. Minor pre-project expenses, e.g. the contracting of services /payment of fees for feasibility studies or preliminary surveys, should not be considered in the determination of the start date as they do not necessarily indicate the commencement of implementation of the project.*

29/04/2010 Letter of Acceptance of order for project activity equipment.

### C.1.2. Expected operational lifetime of the project activity:

This is determined according to EB 50 Annex 15 *Tool to determine the remaining lifetime of equipment*

Date of first firing of the GTs of Station L where the TESTIAC is being implemented:

| | |
|---|---|
| GT L 11 | 22/02/2006 |
| GT L 12 | 19/04/2006 |
| GT L 13 | 24/08/2006 |

The technical lifetime of the gas turbines according to the manufacturer´s design specifications is 30 years and 0 months (30y-0m). Therefore the remaining lifetime is above 10 years (proposed crediting period).

The technical lifetime of TESTIAC system (project activity) according to the manufacturer's design specifications is 30y-0m.

## C.2 Choice of the crediting period and related information:

### C.2.1. Renewable crediting period

#### C.2.1.1. Starting date of the first crediting period:

N.A

#### C.2.1.2. Length of the first crediting period:

N.A

### C.2.2. Fixed crediting period:

#### C.2.2.1. Starting date:

01/07/2012 or the date of registration, whichever is later

#### C.2.2.2. Length:

10y-0m

## SECTION D. Environmental impacts

### D.1. If required by the host Party, documentation on the analysis of the environmental impacts of the project activity:

Not required by the host Party for the proposed project activity, therefore not applicable.

**D.2. If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party:**

Not Applicable

## SECTION E. Stakeholders' comments

**E.1. Brief description how comments by local stakeholders have been invited and compiled:**

On May 17th 2011, a stakeholder event was organized in Amwaj Rotana Hotel, Jumeirah Beach Residence, Dubai, UAE.

The local stakeholders had been invited to the event through a public announcement in the newspaper *Gulf News* on May 3rd 2011.

The project proponent presented the proposed project activity and an introduction to the Clean Development Mechanism to local stakeholders.

Stakeholders had the opportunity to make oral comments during the event and additionally by sending an e-mail to the Dubai Carbon Center of Excellence at cdm@dcce.com until 30th May 2011.

**E.2. Summary of the comments received:**

During the stakeholder event, some general questions of a technical nature were discussed. However, no concerns with regard to the project activity were raised during the event or through e-mail.

**E.3. Report on how due account was taken of any comments received:**

Not applicable since no concerns were raised.

## Annex 1

## CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY

| | |
|---|---|
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| | |
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| Represented by: | Ivano Iannelli |
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## Annex 2

## INFORMATION REGARDING PUBLIC FUNDING

N.A.

## Annex 3

## BASELINE INFORMATION

The baseline details for the project activity have been specified in Section B.4-6 of this PDD.

## Annex 4

## MONITORING INFORMATION

The monitoring details for the project activity have been specified in Section B.7 of this PDD.

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