MONITORING REPORT FORM (CDM-MR) *
Version 01 - in effect as of: 28/09/2010

CONTENTS

* as contained within the document entitled "Guidelines for completing the monitoring report form (CDM-MR)" (EB 54 meeting report, annex 34).

MONITORING REPORT
Version Number 1
07/07/2011
Adavikanda, Kuruwita Division Mini Hydro Power Project
Reference Number 3531
Monitoring Period 1 (24/08/2010 - 31/03/2011)

SECTION A. General description of the project activity

A.1. Brief description of the project activity:

Alternate Power Systems (Pvt.) Ltd. constructed and operates a run-of-river 6.5 MW mini hydro power plant in Sri Lanka. The project activity involves generation of electricity from the small-scale hydropower plant and supply of the power generated to the Sri Lankan national utility grid, the Ceylon Electricity Board. The project exported 12.63 GWh of electricity to the National grid during the monitoring period.

The project is run of the river; hence minimal storage is required at the weir. The weir is 25 meters long with a maximum height of 2.0 meters and is designed as a concrete gravity structure with dowels provided for added safety against sliding. The Full Supply Level (FSL) of the pond is 370 m. MSL. The intake is a closed reinforced concrete conduit with a flow area of 3.6 meters width and 1.5 meters height. The intake has been designed for a maximum flow of 6.0 cubic meters per second.

The start date of the project activity (the signing date for the penstock clearing, transportation and painting) was 21/01/2008. Project operation began on 06/10/2009(commercial production start date). The project was registered on 24/08/2010.

The total emission reductions achieved in this monitoring period (24/08/2010 - 31/03/2011) are 8,587 tCO_2e.

A.2. 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 participants (Yes/ No)
Sri Lanka (host)	Alternative Power Systems (Pvt.) Ltd.	No
Japan	Mitsubishi UFJ Morgan Stanley Securities Co., Ltd	No

A.3. Location of the project activity:

The Project site is located along the Kuru Ganga River. This site can be accessed by proceeding approximately 15 km from Kuruwita along the trail road to Sri Pada through the Kuruwita Division of District Ratnapura in Sri Lanka.

The coordinates for the plant site are: N 6^o 49’ 56”, E 80^o 25’ 27”.

A.4. Technical description of the project

The project is a run-of-river type hydropower project constructed along the Kuru Ganga River. A small weir of 25 m length with a maximum height of 2 m has been constructed across the river to divert water to the intake. The weir is a concrete gravity structure with dowels for added safety against sliding. Water is taken through the closed reinforced concrete intake conduit (10 m x 3.6 m x 1.5 m) to a headrace channel of 280 m. The initial 10 m of the channel is a closed conduit. From the headrace channel, water is led to a fore bay. A silt settling tank is provided to settle any silt and sand. The water from the fore bay is taken through a penstock for a distance of 2,250 m across very difficult terrain. Water flows at a total head of 153 m through the penstock to three Francis-type turbines in the Powerhouse. Each turbine is connected to a Synchronous Generator. Electricity is generated at 690 V then stepped up to 33 kV through three 3 MVA Transformers. The stepped-up electricity is connected to the Ceylon Electric Board (CEB) grid. The exported energy is transmitted via a 33 kV line for a distance of 25 km to the Ratnapura Grid Sub-Station.

The electricity required for auxiliary consumption of the project activity will be consumed by the stepping down part of the generated electricity through a 100 kVA transformer. Regardless of the amount of the auxiliary consumption, the electricity meter installed by CEB records the net energy exported to the CEB grid. During non-operational time auxiliary consumption is met by supply from the CEB grid and such import is also recorded in the CEB meter installed at the meter hut. Auxiliary consumption is met through supply from the CEB and documented in a separate bill every month.

The net electricity generated by the project activity is exported to the CEB grid. A standby diesel generator of 40 kVA will supply electricity for lighting and other domestic uses of the project activity when the main electricity supply from the CEB is not available, however the generator is yet to be installed. The standby generator would be used very rarely because the non-availability of electricity, either from the project activity or the grid, is a rare occurrence.

Technical Specifications:

Hydrology

Catchments Area at Intake Site	:	19.5 km^2
Catchments rainfall	:	4,900 mm
Design Discharge	:	6m^3/sec (3x2.0 m^3/sec)
Design Flood Discharge	:	170 m^3/sec (once in 100 years)

Waterways

Total Length	:	300 m
Structures	:	Channel – Boxed
Intake – (near outfall of Erathna Project)		
Type of Intake	:	Side Intake
Size of Intake Opening	:	3.6 m wide and …1.5 m high with Open channel, supported on columns
Type	:	Rectangular – Box
Length	:	310 m
Size	:	3.1 m wide and 1.5 high, internally

Fore bay / Sedimentation Tank

Capacity of fore bay	:	1000 m^3
Length excluding transition	:	18 m
Width	:	6 m
Depth	:	3.8 m

Penstock

Material	:	Steel Penstock
Length of Main Pipe	:	2100 m
Size of main pipe (dia/thickness):		1.65 m @ 10 mm 1.55 m @ 12 mm 1.45 m @ 12 mm 1.35 m @ 14 mm 1.25 m @ 14mm 0.90 m @ 14 mm
Length of Branched triple Pipes :		149 m
Size of triple pipes (dia/thickness):		0.90 m @ 14 mm
Design Discharge	:	6 m^3/sec
Design Net Head	:	141m

Turbine

Manufacturer	:	Gilbert Gilkes & Gordon Ltd.
Country of Origin	:	United Kingdom
Model	:	550G150
No. of Units	:	3 (Three)
Mean Diameter of Runner	:	550 mm
Rated Speed	:	1000 RPM
Over speed	:	1,960 rpm
Inlet Pipe Nominal Diameter	:	800 mm
Shaft Attitude	:	Horizontal
Altitude	:	302 m.a.s.l.
Turbine Power Output	:	2,418 kW

Generator

Item	:	1
No. of Units	:	3
Input Power	:	2,418 kW
Type	:	NIR6375A-6
Apparent Output	:	2,920 kVA
Maximum Power Output*	:	2,336 kW
Power Factor	:	0.8
Tension	:	660 V
Frequency	:	50 Hz
Speed	:	1,000 rpm
Runaway speed	:	1,960 rpm
Runaway Speed Period	:	60 min every 24 hours
Protection	:	IP-23
Service	:	S1

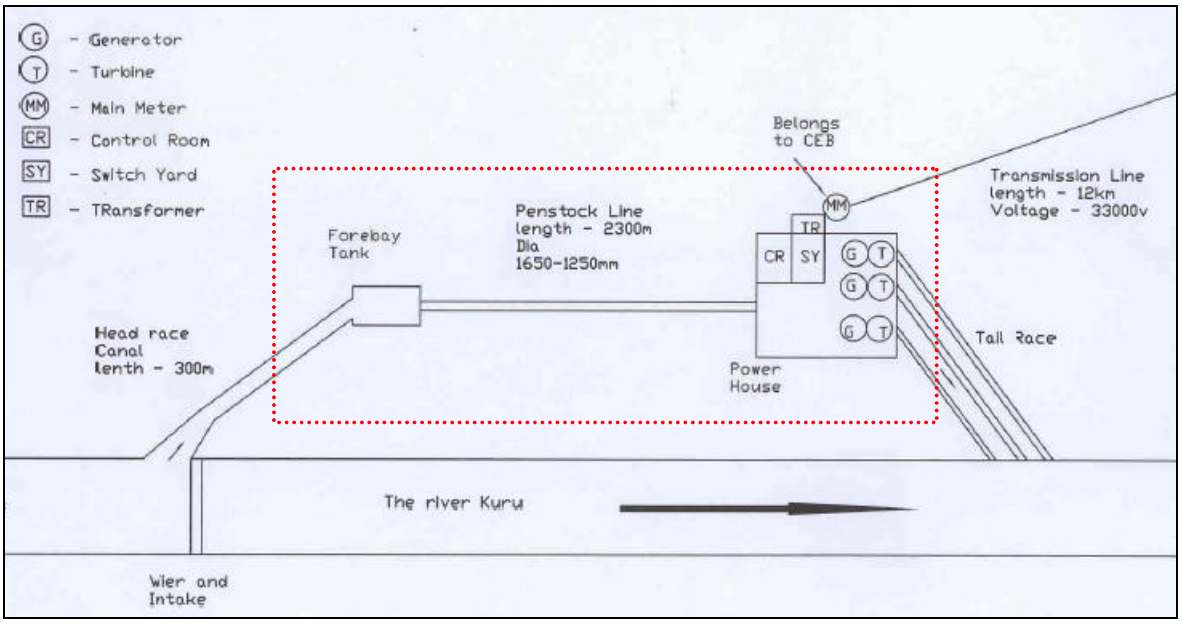
*As per the feasibility study, the proposed maximum power output of each generator of the three generator configuration is 2,166 kW. However, as documented in the PDD, when the project proponent approached the equipment supplier, the supplier offered generators at a slightly higher power output of 2,336 kW which could be made available within the shortest possible time. Due to the expected delay in the implementation and cost escalation the project proponent agreed to purchase the slightly higher capacity generators for the Project.

From the standpoint of the civil engineering design, the hydrological data, and the power purchase agreement, the project will remain to all practical purposes a hydro power project of maximum installed capacity of 6.5 MW. Additionally, the Project is capable of producing a maximum of 6.5 MW

regardless of the generator capacity due to the civil design allowing a maximum of 6.0 cubic meters of water flow per second, as certified by the project's structural engineer.

The turbine manufacturer, Gilbert Gilkes & Gordon Ltd., has certified that the maximum rating from the turbine-generator units supplied to the project will not exceed a maximum value of 6.5 MW

Further, the Ceylon Electricity Board has certified the grid connection of the project as 6.5 MW.



---- Project Boundary

Figure 1. Adavikanda mini hydropower plant

A.5. Title, reference and version of the baseline and monitoring methodology applied to the project activity:

In accordance with Appendix B of the simplified modalities and procedures for small-scale clean development mechanism project activities ("SSC M&P"), the project falls under the following type and category:

Type I: Renewable Energy Projects
Category D: Grid connected renewable electricity generation (Version 13)
Sectoral Scope: 1 – Energy industries (renewable / non-renewable sources)

A.6. Registration date of the project activity:

24/08/2010

A.7. Crediting period of the project activity and related information (start date and choice of crediting period):

The chosen crediting period is: 7 years (renewable)
The start date of the crediting period is: 24/08/2010

A.8. Name of responsible person(s)/entity(ies):

Clean Energy Finance Committee
Mitsubishi UFJ Morgan Stanley Securities Co., Ltd.
2nd Floor, KR Toyosu Building,
5-4-9 Toyosu, Koto-ku,
Tokyo, 135-0061, Japan
Tel: +81-3-6213-6860 Fax: +81-3-6213-6175
Email: watanabe-hajime@sc.mufg.jp

SECTION B. Implementation of the project activity

B.1. Implementation status of the project activity

1. The starting date of the project activity was 21/01/2008 and commercial operation started on 06/10/2009 following successful testing of the plant.
2. The first monitoring period is from 24/08/2010 to 31/03/2011 (220 days).
3. During the monitoring period, the plant was offline (Machine 1: 141 days; Machine 2: 86 days; Machine 3: 80 days) due to non availability of water, grid failure and machine failure.

There was no event during the monitoring period that had an impact on the applicability of the methodology.

B.2. Revision of the monitoring plan

There has been no revision to the monitoring plan.

B.3. Request for deviation applied to this monitoring period

No deviation has been applied to the monitoring period.

B.4. Notification or request of approval of changes

There is no notification or request of approval of changes from the project activity as described in the registered CDM-PDD.

SECTION C. Description of the monitoring system

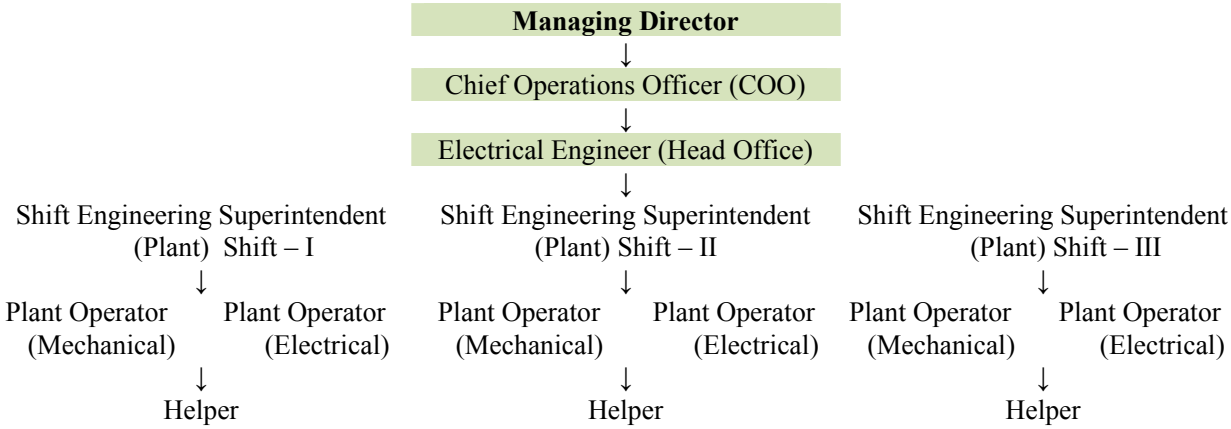
Monitoring Organisation

The authority and responsibility for registration, monitoring, measurement, reporting and reviewing of the data rests with the COO of the Company. A team of experienced personnel in various disciplines assists the Shift Engineering Superintendents in plant operation, measurements and management. The primary responsibility of the team is to measure, monitor, record and report the information on various data items to the Engineer-in-Charge, in accordance with the applicable standards.

The responsibility of review, storage and archiving of information in good condition lies with the COO. The COO undertakes periodic verifications and onsite inspections to ensure the quality of the data collected by the team and initiate steps in case of any abnormal conditions. An internal verification report is prepared for review by the COO followed by submission for verification by an independent entity (DOE).

The team including the Engineer-in-Charge is appointed by the COO in advance before the start of project operations. The Engineer-in-Charge reports to the COO and seeks guidance in case of conflicts or difficulties in order to maintain the monitoring organisation in good spirit.

Organizational Chart



Parameters Requiring Monitoring

This monitoring plan requires monitoring of all parameters indicated in section B7 of the PDD. The necessary documents required for verification of the data are maintained for later archiving. Using the power exported to the grid, the emission reductions are calculated as illustrated in Section B6.3 of the PDD. Emission reductions generated by the project are monitored at regular intervals and are reported to the Managing Director.

Procedures for training of monitoring personnel

The project employs qualified and experienced persons for plant operation. Basic personnel to deal with monitoring of parameters are Shift Engineering Superintendents. The project maintains standard log sheets and formats to record the monitoring parameters. The personnel are given proper training to maintain the plant records. The Engineer-in-charge of the Plant verifies, compiles and archives all the monitored data. The parameters to be monitored during the crediting period are provided in a tabular format. The Shift Engineering Superintendents and the Engineer-in-charge of the Plant are provided with necessary training with respect to maintenance of the relevant monitoring records to enable them to deal with the monitoring independently. Training is provided to the monitoring personnel for monitoring of the following parameters:

- Electricity Export
- Electricity Import
- Gross electricity generated
- Periodical calibration of monitoring equipment
- Diesel consumption

Procedures for documentation and storage:

Operations of the hydro power project are overseen by the Shift Engineering Superintendent (ES) of the company. The company has three Shift Engineering Superintendent (ES) for each of the three shifts. The Shift Engineering Superintendent (ES)'s position is occupied by qualified electrical engineers who have obtained necessary training in plant operations, data monitoring, report generation etc. To maintain the smooth operations of the plant, the company will has two Plant Operators (Mechanical and Electrical) and one helper for each of the three shifts to help the shift Engineering Superintendent.

The Shift Engineering Superintendents record the required parameters every day during the operation of the plant. Since the project is a hydro power project, only the following energy related data are to be monitored:

- Gross electricity generation;

- Energy export and import; and
- Diesel consumption for the diesel generator set

The Energy meter readings are taken at the end of each shift at a designated time every day to ensure a constant recording frequency of parameter. The recorded parameters are documented every day in the standard log books maintained at the plant. The day to day records are verified, compiled and documented for preparation of internal verification reports by the Engineer-in-charge.

The net electricity exported to the grid is recorded from the export meter installed within the premises, jointly with the representatives of Ceylon Electricity Board in the last week of each month. This reading is taken as the basis for raising invoices from the CEB for the payment against net electricity exported to the grid.

The energy imported from the CEB grid is recorded in the import meter installed by the CEB for billing the project activity.

These records are maintained by the project proponent at the project site as well as at their head office.

Internal audits
The company has introduced an internal verification system for documentation and safe storage of data. Internal verification is carried out as per the monitoring plan and whenever necessary. An internal verification report is prepared for review by the Chief Operating Officer (COO). The COO verifies the records independently with reference to the power exported and imported. Internal verification reports are the basic documents for the monitoring and storage of plant operational data.

The Managing Director of the company visits the plant once a month and conducts an internal audit of the various monitoring parameters of the project. The Managing Director reviews all safety installations, operating procedures, monitoring records, etc. and discusses any corrective actions to be taken for the smooth functioning of the plant.

Procedures for Corrective actions
The parameters to be monitored during a crediting period are compiled in an internal verification report in every quarter of each crediting year and submitted to the Managing Director for review. The parameters include the gross generation, auxiliary consumption, energy export and import and diesel consumption for the diesel generator set. Based on the verification reports submitted by the Shift Engineering Superintendents the Engineer-in-Charge assesses the performance of plant. The COO discusses and recommends necessary mechanisms to improve the operational efficiency of the plant and directs the respective personnel to rectify any problems.

QA & QC Procedures
The projects employ such equipment or instruments to measure, record, report, monitor and control the various key parameters of the plant. These monitoring and controls are part of the Control Systems of hydroelectric plant.

For measuring the energy exported / imported a main meter and a check meter have been installed as required. The check meter reading is used to measure electricity export/import in case of failure of the main meter. The CEB officials are able to replace the main meter immediately on request of the PP. Both the meters are calibrated and sealed at least once every year, as per the standards of the CEB. Delivery records are used and kept for checking the consistency of the recorded data.

Data Storage & Archiving
All the data items monitored under the monitoring plan are kept for two years after the end of crediting period or the last issuance of CERs, for this project activity, whichever occurs later. The Methodology adopted for determining the base line emission factor is the combined margin of the generation mix in the CEB grid system, which represents the intensity of carbon emissions of the grid system. The

baseline emission factor is adopted from the CEB published generation data for the latest available year for the CEB grid at the time of project validation and the same figure is used for future projections and is reviewed each year based on data published by the CEB. The monitored data is presented to an independent verification agency or DOE to whom verification of emission reductions is assigned.

Maintenance of Equipment

All the equipment used in the project activity undergoes scheduled maintenance as specified in the operational manual of the equipment supplier. The Chief Operations Officer is responsible to oversee maintenance activity on a periodic basis.

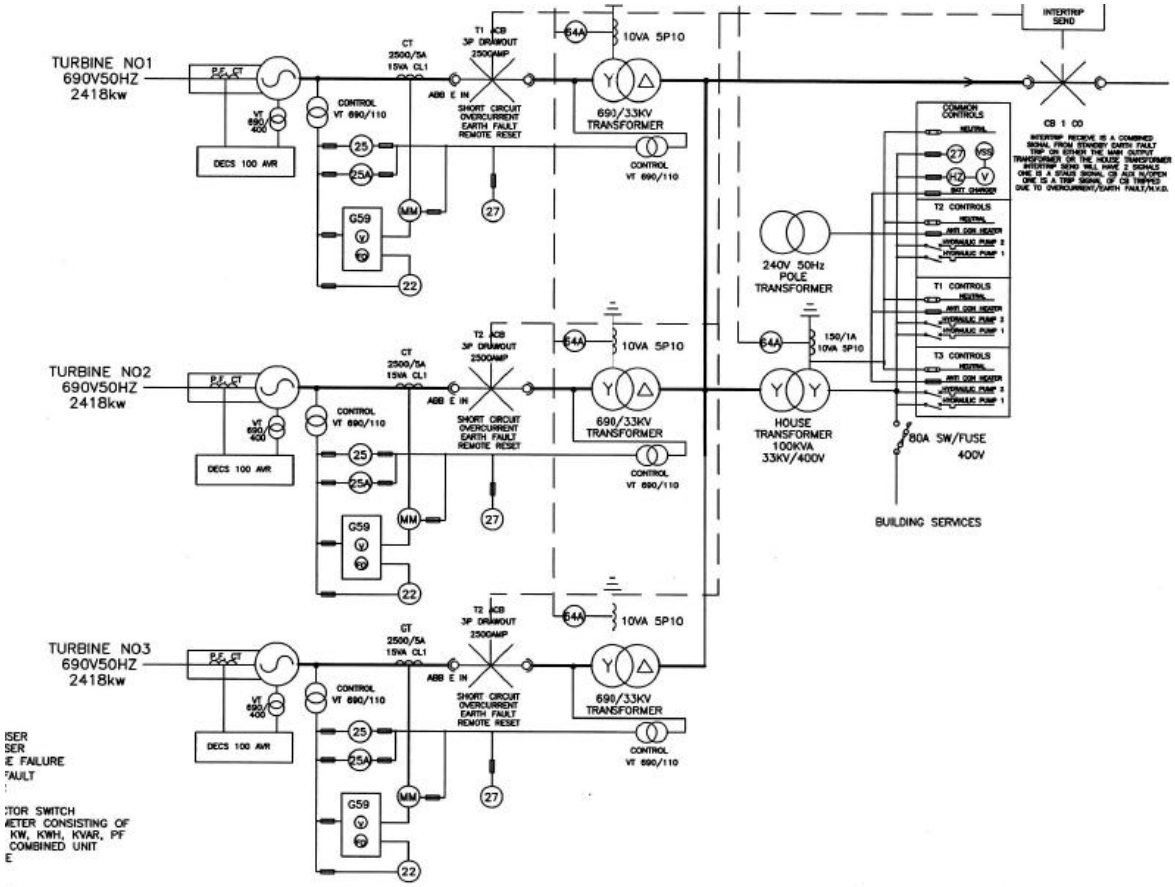


Figure 2. Single Line Diagram with all relevant project monitoring points

SECTION D. Data and parameters

D.1. Data and parameters determined at registration and not monitored during the monitoring period, including default values and factors

Data / Parameter:	**Density of HSD**
Data unit:	Kg/Liter
Description:	Density of diesel used in project activity
Source of data used:	Sri Lanka Sustainable Energy Authority
Value(s) :	0.8460
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Project emission calculations

Additional comment:	The national default value for Auto Diesel is used. The value is publicly available on the Sri Lanka Sustainable Energy Authority's website at: http://www.energy.gov.lk/spec/fual.php

Data / Parameter:	$NCV_{Diesel,y}$
Data unit:	GJ/kg
Description:	Weighted average Net Calorific Value of diesel
Source of data used:	IPCC 2006 default values
Value(s) :	$43.3 * 10^{-3}$
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Project emission calculations
Additional comment:	IPCC default value at the upper limit of the uncertainty at a 95% confidence interval as provided in Table 1.2, Chapter 1, Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories.

Data / Parameter:	$EF_{CO2,Diesel,y}$
Data unit:	tCO_2/GJ
Description:	Weighted average CO_2 emission factor of diesel
Source of data used:	IPCC 2006 default values
Value(s) :	$74.8 * 10^{-3}$
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Project emission calculations
Additional comment:	IPCC default value at the upper limit of the uncertainty at a 95% confidence interval as provided in Table 1.4, Chapter 1, Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories.

Data / Parameter:	$EF_{elec,i,j,y}$
Data unit:	tCO_2/MWh
Description:	CO_2 emission factor for the electricity source i (i = grid), displaced due to the project activity during year, y
Source of data used:	Calculated
Value(s) :	0.6766
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Baseline emission calculations
Additional comment:	Calculated as per "Tool to calculate the emission factor for an electricity system(Version 01.1)" This parameter will be calculated once for each crediting period

Data / Parameter:	$EF_{OM\,y}$
Data unit:	tCO_2/MWh
Description:	Simple Operating Margin for the CEB grid
Source of data used:	Calculated based on official data provided by the Ceylon Electricity Board
Value(s) :	0.7073
Indicate what the data are	Baseline emission calculations

used for (Baseline/ Project/ Leakage emission calculations)	
Additional comment:	Calculated according to procedure prescribed in the "Tool to calculate the emission factor for an electricity system (Version 01.1)" This parameter will be calculated once for each crediting period

Data / Parameter:	$EF_{BM,y}$
Data unit:	tCO_2/MWh
Description:	Build Margin for the Western Grid
Source of data used:	Calculated based on official data provided by the Ceylon Electricity Board
Value(s) :	0.6459
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Baseline emission calculations
Additional comment:	Calculated according to procedure prescribed in the "Tool to calculate the emission factor for an electricity system (Version 01.1)" This parameter will be calculated once for each crediting period

Data / Parameter:	$EF_{CO2,m,i,y}$
Data unit:	tCO_2/GJ
Description:	CO_2 emission factor of fossil fuel type, *i* in year, *y*
Source of data used:	IPCC 2006 Default Values
Value(s) :	Naphtha: 69.3 Diesel oil: 72.6 Furnace oil: 75.5
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Baseline emission calculations
Additional comment:	This parameter is monitored once for each crediting period using the most recent three historical years for which data is available at the time of submission of the CDM-PDD to the DOE for validation (ex-ante option)

Data / Parameter:	$\eta_{m,y}$
Data unit:	-
Description:	Average net energy conversion efficiency of power unit, *m* in year, *y*
Source of data used:	The default values provided in Annex I of "Tool to calculate the emission factor for an electricity system (Version 01.1)"
Value(s) :	Oil, Open Cycle: 39.5 %; Oil, Combined Cycle: 46 %
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Baseline emission calculations
Additional comment:	The default values provided in the Annex I of "Tool to calculate the emission factor for an electricity system (Version 01.1)" is used for the calculation This parameter is monitored once for each crediting period

D.2. Data and parameters monitored

Data / Parameter:	EG_Y
Data unit:	MWh
Description:	Net electricity exported to the grid
Measured /Calculated /Default:	Calculated
Source of data:	Monthly Invoice
Value(s) of monitored parameter:	12,692.27 MWh *Gross Electricity Exported - EI_y* = 12,693,444 kWh – 1,174 kWh = 12,692,270 kWh
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Baseline emission calculations
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	Type: 3 phase 4 wire Accuracy Class: 1.0 Serial Number: 208196328 (main meter)/ 205017629(check meter) Calibration frequency: Once Every Year Date of last calibration: 21st April 2011 Validity: 1 year
Measuring/ Reading/ Recording frequency:	Continuous
Calculation method (if applicable):	N/A
QA/QC procedures applied:	Measured by the import/export meter (EI_y /EG_y) installed at the project boundary. The net electricity exported is jointly recorded and certified by CEB and the project developer. The data is archived electronically for the entire crediting period. Meter is calibrated as per CEB standards. A check meter is also installed near the main meter to cross check the electricity exported to the CEB grid. The check meter reading is used in case of failure of the main meter.

Data / Parameter:	EI_Y
Data unit:	MWh
Description:	Electricity imported from the grid
Measured /Calculated /Default:	Measured
Source of data:	Monthly bill from CEB
Value(s) of monitored parameter:	1,174 kWh
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Project emission calculations

Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	<table><tr><td>Type</td><td>3 phase 4 wire</td></tr><tr><td>Accuracy Class</td><td>1.0</td></tr><tr><td>Serial Number</td><td>208196328 (main meter)/ 205017629(check meter)</td></tr><tr><td>Calibration frequency</td><td>Once Every Year</td></tr><tr><td>Date of last calibration</td><td>21st April 2011</td></tr><tr><td>Validity</td><td>1 year</td></tr></table>
Measuring/ Reading/ Recording frequency:	Continuously
Calculation method (if applicable):	N/A
QA/QC procedures applied:	Measured by the import/export meter (EI_y /EG_y) installed by the CEB at the project site for billing the project activity. This CEB bill is used to calculate the project emission. The data will be archived electronically for the entire crediting period. The meter is calibrated as per CEB standards. A check meter is also installed near the main meter to cross check the electricity imported from the CEB grid. The check meter reading is also used in case of failure of the main meter.

Data / Parameter:	$FC_{Diesel,y}$
Data unit:	Liter
Description:	Quantity of diesel used in the diesel generator sets during the year
Measured /Calculated /Default:	Measured
Source of data:	Stores Record / On-site measurement
Value(s) of monitored parameter:	0 (There is no diesel generator installed at the site)
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Project emission calculations
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	N/A (There is no diesel generator installed at the site)
Measuring/ Reading/ Recording frequency:	N/A (There is no diesel generator installed at the site)
Calculation method (if applicable):	N/A (There is no diesel generator installed at the site)
QA/QC procedures applied:	N/A (There is no diesel generator installed at the site)

SECTION E. Emission reductions calculation

E.1. Baseline emissions calculation

Baseline emissions

As per AMS-I.D, the baseline emissions are calculated as the net electricity generated by the project activity, multiplied by the baseline emission factor for the project grid.

The baseline emissions are calculated below:

BE_y = $EG_y \times EF_y$

= 12,692 MWh x 0.6766 tCO_2/MWh

= 8,587 tCO_2e

Where:

BE_y = Baseline emissions in the year, y (tCO_2e)

EG_y = Net electricity exported to the grid system during the year y (MWh)

EF_y = Emission factor of the grid to which the project exports electricity (tCO_2/MWh)

E.2. Project emissions calculation

Project emissions

The quantity of diesel consumed in the project activity was monitored during the first monitoring period. No diesel generator set has been installed yet at the project site so the quantity of diesel consumed for emergency situations is zero.

$PE_{Diesel,y}$ = $FC_{Diesel,y} \times Density \times NCV_{Diesel,y} \times EF_{CO2,Diesel,y}$

= 0 liter x 0.8460 kg/liter x 74.8 GJ/kg x 43.3 x 10^{-6} tCO_2/GJ

= 0 tCO_2e

Where:

$PE_{Diesel,y}$ = Project emissions due to combustion of diesel for the project activity (tCO_2)

$FC_{Diesel,y}$ = Quantity of diesel combusted during the year (liter)

$COEF_{Diesel,y}$ = CO_2 emission coefficient of Diesel (tCO_2/ liter)

The CO_2 emission coefficient, $COEF_{Diesel,y}$, is calculated based on net calorific value and CO_2 emission factor of diesel, as follows:

$COEF_{Diesel,y}$ = $Density \times NCV_{Diesel,y} \times EF_{CO2,Diesel,y}$

Where:

Density = Density of diesel (kg/liter) (http://www.energy.gov.lk/spec/fual.php)

$NCV_{Diesel,y}$ = Weighted average net calorific value of the fuel type i in year y (GJ/kg)

$EF_{CO2,Diesel,y}$ = Weighted average CO_2 emission factor of fuel type i in year y (tCO_2/GJ)

E.3. Leakage calculation

As described in AMS-I.D, no leakage calculations are applicable.

E.4. Emission reductions calculation / table

The emission reduction calculation of the first monitoring period (24/08/2010 – 31/03/2011) is calculated as follows:

$$ER_y = BE_y - PE_y$$
$$= 8{,}587\ tCO_2e - 0\ tCO_2e$$
$$= 8{,}587\ tCO_2e$$

Where:

ER_y	Total emissions reductions of the project activity during the year, y (tCO_2e)
BE_y	Total baseline emissions during the year, y (tCO_2e)
PE_y	Total project emissions during the year, y (tCO_2e)

E.5. Comparison of actual emission reductions with estimates in the CDM-PDD

A comparison of actual emission reductions during the monitoring period with the estimates in the registered CDM-PDD is shown below:

Item	Values applied in ex-ante calculation of the registered CDM-PDD	Actual values reached during the monitoring period
Emission reductions (tCO_2e) (annual: 365 days)	**13,483**	**14,246* (calculated: 8,587 x 365/220)**
Emission reductions (tCO_2e) (monitored: 220 days)	**8,127* (calculated: 13,483 x 220/365)**	**8,587**

*calculated figures based on number of days in monitoring period

E.6. Remarks on difference from estimated value in the PDD

The actual emission reductions reached during the monitoring period has increased only slightly (approximately 5.7 %) from the value estimated in the registered PDD and is considered in line with the *ex-ante* estimation.

In the actual project scenario, the monitoring period (24/08/2010 – 31/03/2011) covers 220 days. The monitoring period covers mostly the wet season and emissions are expected to be slightly higher than average.

In this period the plant was offline (Machine 1: 141 days; Machine 2: 86 days; Machine 3: 80 days)[1] due to non availability of water, grid failure and machine failure, giving a plant load factor (PLF) of approximately 36 %. This corresponds to the PLF as estimated in the project hydrology study (35 %).

[1] Details of individual machine outages will be provided to the DoE in excel format for reference.

ANNEXURE I

Generation Data obtained according to the Monitoring Plan

For the Project, the following parameters were monitored on a continuous basis:
Monthly summary of monitored data:

Month	As per CEB Invoice	As per CEB Invoice	Net Electricity Export to Grid
	KWh Export	KWh Import	
	kWh	kWh	kWh
Sep-10	1,986,609	39	**1,986,570**
Oct-10	3,243,645	130	**3,243,515**
Nov-10	1,856,899	119	**1,856,780**
Dec-10	3,231,450	73	**3,231,377**
Jan-11	816,844	196	**816,648**
Feb-11	824,892	144	**824,748**
Mar-11	733,105	473	**732,632**
TOTAL	**12,693,444**	**1,174**	**12,692,270**

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History of the document

Version	Date	Nature of revision
01	EB 54, Annex 34 28 May 2010	Initial adoption.
Decision Class: Regulatory **Document Type**: Guideline, Form **Business Function**: Issuance		