



Monitoring report form
(Version 04.0)

MONITORING REPORT

Title of the project activity	5 MW Wind Power Project of Alembic Ltd at Bhavnagar, Gujarat, India
Reference number of the project activity	1456
Version number of the monitoring report	01
Completion date of the monitoring report	07/01/2015
Registration date of the project activity	07/02/2008
Monitoring period number and duration of this monitoring period	Monitoring period Number-03 Monitoring Period: 01/01/2011 – 30/11/2014
Project participant(s)	Alembic Limited Bunge Emissions Fund Limited
Host Party(ies)	India
Sectoral scope and selected methodology(ies), and where applicable, applied standardized baseline(s)	Sectoral Scope 1: Energy Industries (renewable - / non-renewable sources) Methodology: AMS I.D version-11, Grid connected renewable electricity generation
Estimated amount of GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period in the registered PDD	35114 tCO ₂ e
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period	31957 tCO ₂ e
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period up to 31 December 2012(if applicable)	17487 tCO ₂ e
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period from 1 January 2013 onwards (if applicable).	14470 tCO ₂ e

SECTION A. Description of project activity

A.1. Purpose and general description of project activity

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The project activity involves setting up of 4 numbers of 1.25 MW (S64) Wind Turbine Generators (WTGs) by Alembic Limited at Ukharla of Bhavnagar district in Gujarat, India. The total installed capacity of the project activity is 5 MW and Suzlon Energy Limited is the supplier of WTGs for this project activity. The net electricity generated from this project activity is being wheeled Vadodra plant of Alembic to meet its captive requirement through NEWNE grid.

The purpose of the project activity is to generate electricity using wind energy and to wheel the net electricity generated to the Vadodra plant to meet its captive requirement. The project activity contributes in reducing the GHG emission by displacing the equivalent amount of electricity from NEWNE grid, as in absence of the project activity the PP would have continued to import electricity from the Gujarat Urja Vikas Nigam Limited is a part of NEWNE grid, thereby resulting GHG emission to atmosphere as the grid is dominated by fossil fuel based thermal power plants.

The Suzlon Energy Limited make S64/1.25 MW WTGs is based its technology on speed control and variable pitch, while incorporating the latest technologies to extract the maximum amount of energy from the wind and to do it as efficiently as possible. The hub height of WTGs is 65 meter and the rotor diameter is 64 meters. The design lifetime of the project activity is of 25 years.

The details of commissioning is given in table below

Unique ID	Date of commissioning
S 5	30/09/2003
S 6	30/09/2003
S 7	30/09/2003
S 4	02/10/2003

All the WTGs were operational during current monitoring period i.e. from 01/01/2011 to 30/11/2014 the net electricity wheeled during this verification period is 35273.51 MWh, which results to a net emission reduction of **31957tCO₂e**.

A.2. Location of project activity

>> The project site is located at Ukharla Trambak in district Bhavnagar of Gujarat state of India. The details of the WTGs physical location and geo-coordinates are given below

Unique ID	Latitude	Longitude	Physical Location
S4	21° 34' 35.3" N	72° 06' 01.5" E	Ukharla, Tambrak, Bhavnagar, Gujarat, India
S5	21° 36' 31.8" N	72° 06' 07.1" E	
S6	21° 36' 25.3" N	72° 06' 07.0" E	
S7	21° 36' 20.1" N	72° 06' 14.4" E	

A.3. Parties and project participant(s)

Party involved ((host) indicates a host Party)	Private and/or public entity(ies) project participants (as applicable)	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
India (Host)	Private entity-Alembic Limited	No

Party involved (host) indicates a host Party)	Private and/or public entity(ies) project participants (as applicable)	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
Switzerland	Private entity-Bunge Emissions Fund Limited	No

A.4. Reference of applied methodology and standardized baseline

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*The methodology applied:**AMS I.D – Grid connected renewable electricity generation, Version 11*

Methodology AMS.I.D also refers to:

Revision to the approved consolidated baseline methodology ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”

And

Revision to the approved consolidated methodology ACM0002: *Consolidated monitoring methodology for zero- emissions grid-connected electricity generation from renewable sources*”.**A.5. Crediting period of project activity**

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This project activity has considered fixed crediting period of 10 years. The start date of the crediting period is from the date of registration viz 07/02/2008 and crediting period is from 07 February 2008 - 06 February 2018.

A.6. Contact information of responsible persons/ entities

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Alembic Limited, also a project participant; please see the contact details in Appendix-I.

SECTION B. Implementation of project activity**B.1. Description of implemented registered project activity**

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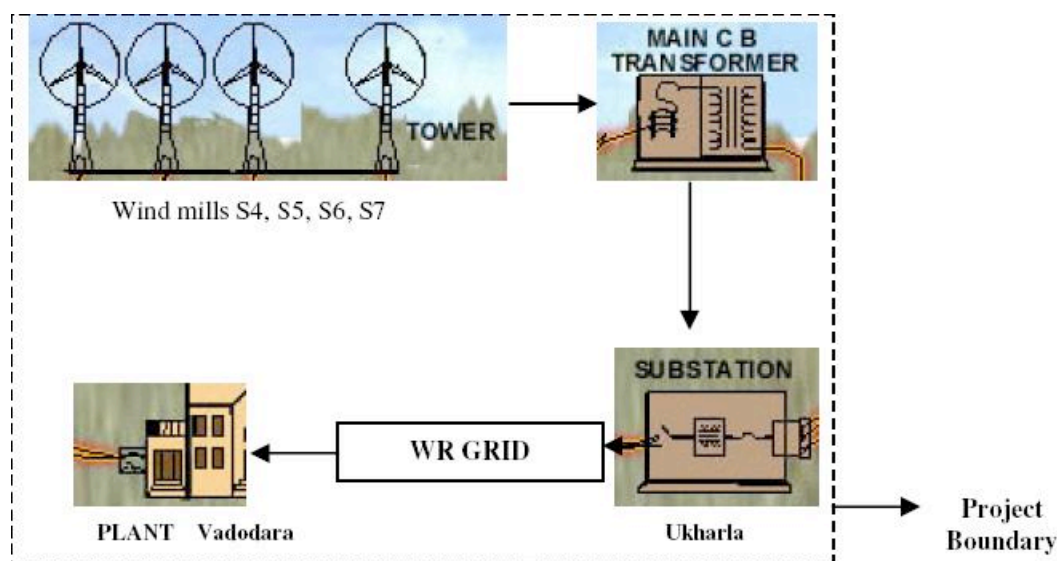
The project activity is implemented and operated as per registered PDD and revised monitoring plan approved by EB on 21/07/2011. The project activity consists of four number WTG's of 1.25 MW capacities totalling to 5MW capacity and wheeling the net generated electricity to Vadodra plant of the Alembic Limited through NEWNE grid. There has been no major downtime of equipments, overhaul times or exchange of equipments in the project activity during the current monitoring period.

Alembic Limited has procured the Wind Energy Generators (WEGs) from Indian company M/S. Suzlon Energy Ltd. The technology is a clean and safe technology since there are no GHG emissions associated with the electricity generation. A direct grid-connected high-speed horizontal axis generator, in combination with the multiple-stage combined spur / planetary gearbox delivers harmonics-free and grid-friendly power. The technical details of the WEG are as follows:

Capacity	1250 kW
Make	Suzlon
Model	S64
Rotor Diameter	64 m
Hub Height	65 m (variable)
Cut-in wind speed	3 m/s

Rated wind speed	12 m/s
Cut-out wind speed	25 m/s
Survival wind speed	67 m/s
Swept area	3217 m ²
Blade type	3 blade horizontal axis
Rotational speed	13.9/20.8 rpm
Generator	Asynchronous 4/6 poles
Rated output	250/1250 kW
Rotational speed	1006/1506 rpm
Frequency	50 Hz
Gearbox	Integrated (1 planetary & 2 helical)
Yaw system	4 electrical driven planetary gear box
Bearings	Polyamide slide bearings
Braking	Aerodynamic brake, 3 independent systems with blade pitching Mechanical brake, Hydraulic fail-safe disc brake system
Control unit	Programmable microprocessor-based; high speed data communication, active multilevel security, sophisticated operating software, advance data collection remote monitoring & control option, UPS back up, Real time operation indication

WTG S-7 was not operational due to breakdown between 11th July -14 to 3rd Sep-14, apart from above all the WTGs were operational with normal O&M during the current monitoring period. There were no situations occurred during current monitoring period, which may impact the applicability of the applied methodology. The layout diagram is given below



B.2. Post registration changes

B.2.1. Temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline

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No temporary deviation taken place from registered monitoring plan or applied approved methodology during current monitoring period.

B.2.2. Corrections

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No correction applied in fixed parameter mentioned in registered PDD during current monitoring period.

B.2.3. Permanent changes from registered monitoring plan, applied methodology or applied standardized baseline

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The monitoring plan has been revised by the PP for improving the accuracy and completeness of the monitoring system. The CDM EB approved the revised monitoring plan on 21/07/2011.

B.2.4. Changes to project design of registered project activity

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There is no change in project design of registered project activity during current monitoring period.

B.2.5. Changes to start date of crediting period

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No change in start date of crediting period.

B.2.6. Types of changes specific to afforestation or reforestation project activity

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Not applicable as the project activity is not an afforestation or reforestation project activity.

SECTION C. Description of monitoring system

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The sole objective of having a monitoring system is to have a constant watch on the emission reductions. Metering of net electricity supplied to grid performed at 66 kV Sub-Station, its aggregation and recording activity is done by GUVNL & its subsidiary companies/GEDA supported by OEM, its calculation activity is done by GEDA and its reporting is done by GEDA/SLDC¹.

Metering equipment has Availability Based Tariff Meter² (ABT meter). The metering equipment (ABT) maintained by GUVNL & its subsidiary companies. The monthly meter readings at the project sites and the receiving station recorded from ABT Meter.

At the conclusion of each meter reading, an appointed representative of GUVNL & its subsidiary companies / GEDA submit it to SLDC – Gujarat and GEDA/SLDC issues certificate for share of electricity generated by wind farm on periodic monthly basis. Each meter shall be jointly tested & calibrated and sealed on behalf of GUVNL & its subsidiary companies / GEDA by its authorised representatives.

Measurement/ Recording Procedure:

- a) The project activity have 2 steps metering at 33 kV S/S & 66 kV S/S.

¹ Reporting authority has changed from GEDA to SLDC. Thus, SLDC is now the reporting authority from April 2010 onwards. Prior to that GEDA was the reporting authority

² Availability Based Tariff Meter (ABT meter) came into use from April 2010 onwards. Prior to that Tri Vector Meters (TVM) was in use.

b) Step -1: OEM facilitates recording of the electricity generated at 33 kV S/S by TVM/ABT meter.

c) Step -2: The WTGs of a single customer (Alembic Ltd in this case) at a particular site are connected to 33kV S/S, which in-turn connected with 33/66 kV S/S, have TVM/ABT meter. The metering equipment (TVM / ABT) maintained by GUVNL & its subsidiary companies. Data monitoring takes place at the 33 kV meter of 33 kV S/S & 66 kV S/S meter of 33/66 kV S/S.

d) The electricity metered at the 66 kV meter is proportionally divided among the customers. The emission reduction calculations are done on the basis of the 66kV meter reading (Net electricity substituted in the grid during the periodic year y) as mentioned in the share certificate issued by GEDA / SLDC on monthly basis. WTGs of various project promoters at the site, are connected with TVM/ ABT energy meter at the pooling sub-station installed by GUVNL & its subsidiary companies at 33/66 kV S/S. Meter reading at 66 kV meter is recorded by GUVNL & its subsidiary companies / GEDA, submit it to SLDC – Gujarat and GEDA/SLDC issues certificate for share of electricity generated by wind farm on periodic monthly basis.

Project Participant has no role in the entire procedure of Measurement / Recording.

The allocation of electricity is executed as per the following procedure:

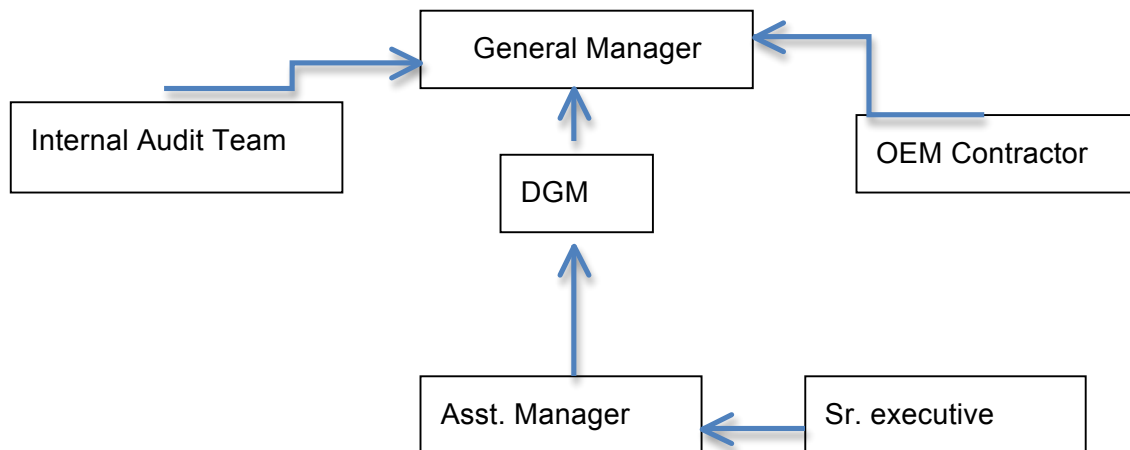
1. Enter the value of electricity received from W/M at 33 KV S/S (kWh).
2. Enter the value of electricity supplied to W/M at 33 KV S/S (kWh).
3. Take the difference of electricity received and supplied to W/F at 33 KV S/S (kWh) [EGmeter A]
4. Take the difference of electricity as per the above steps 1 to 3 for each of the 33 kV S/S meters (i) connected to the 66 kV S/S metering point of Alembic Limited.
[EGmeter,i] and take the total of these differences [EGmeter A + Σ EGmeter,i]
5. Divide individual difference by total calculated as per step 4 and multiply by 100 to find %.
[EGmeter A / (EGmeter A + Σ EGmeter,i) x 100]
6. Enter the value of electricity received from W/M at 66 KV S/S (kWh).
7. Enter the value of electricity supplied to W/M at 66 KV S/S (kWh).
8. Take the difference of electricity received and supply to W/F at 66 KV S/S (kWh) [EGmeter,T]
9. Multiply the value calculated as per step 8 by % allocation calculated as per step 5 to calculate the net electricity export allocated to Alembic Limited.

Roles and responsibilities:

General Manager: In the project management structure General Manager is responsible for the project management. He is responsible to plan and allocate the annual budget for operation, estimation of the likely operating cost, electricity dispatch, organizing third party contractors, revenue collection etc.

General Manager will check the monthly electricity generated and annual emission reduction calculations. He is responsible for any leakage of emissions in the project boundary.

Operation and maintenance of wind generators is being done by O&M and they provide the information to General Manager.



DGM: DGM is assisting to General Manager for completing the task discussed above. He is responsible for the electricity generations at the individual wind turbine installations. He will crosscheck the log book regularly and report to General Manager for any abnormality.

Sr. Executive/Asst. Manager: Sr. Executive/Asst. Manager is responsible for recording the electricity meter reading.

Record Handling: OEM contractors are collecting daily report obtained from hourly monitoring with all the related parameters. All the records are given to General Manager every month. The GM has final responsibility for record keeping.

Internal Audits and performance review

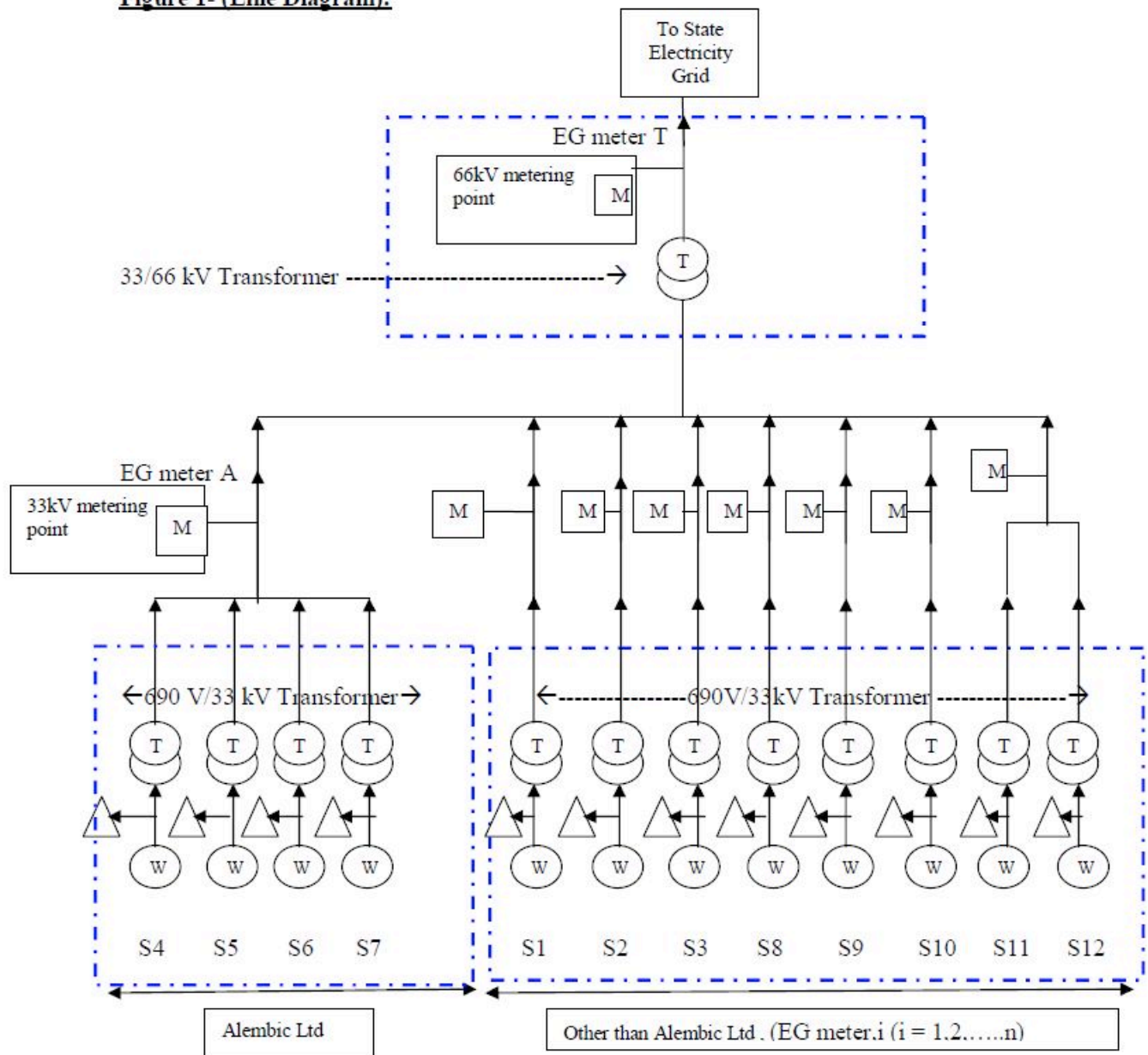
These records are regularly audited and checked by the senior officials from Alembic Limited during their visits to the site. The Alembic Ltd representative have visited the site and audited the records. The Alembic Ltd Representative has crosschecked the emissions reductions claimed in PDD with respect to actual emissions reduction. The audit records will be provided to DOE during verification.

Monitoring and Calibration

Emission reductions from the project are determined by the number of units supplied to the grid, it is mandatory to have a monitoring system in place and ensure that the project activity produces and exports the rated power at the stipulated norms. The sole objective of having monitoring system is to have a constant watch on the emission reductions.

Necessary records of calibration are undertaken by GEDA/SLDC/ GUVNL & its subsidiary companies.

Project Participant has no role in the entire procedure.

Figure 1- (Line Diagram):**ABBREVAITIONS & NOTATIONS**

Sxx – Wind Mill No.(xx = 1,2,3,4,5,6,7,8,9,10,11,12)

T- Transformer

W- Wind Mill

M- Energy Meter

△ --Controller

The total number of CDM and non-CDM project activity WTG connected to 66 kV meter are 8. The list of these WTG along with name and capacity can be checked from sharing certificates issued by GEDA/SLDC.

SECTION D. Data and parameters**D.1. Data and parameters fixed ex ante or at renewal of crediting period***(Copy this table for each piece of data and parameter.)*

Data / Parameter:	EF_{OM}
Unit:	tCO ₂ /MWh
Description:	Operating margin of grid emission factor Western Gird (now part of NEWNE grid)
Source of data:	CEA Reviews, Reference: http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm
Value(s) applied):	0.998
Purpose of data:	The value applied is taken from the CEA reviews of three years. The purpose of data to calculate combined margin emission factor
Additional comment:	This data is fixed ex - ante for the entire crediting period.

Data / Parameter:	EF_{BM}
Unit:	tCO ₂ /MWh
Description:	Build margin of grid emission factor Western Gird (now part of NEWNE grid)
Source of data:	CEA Report, Reference: http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm
Value(s) applied):	0.63
Purpose of data:	The value applied is taken from the CEA reviews. The purpose of data to calculate combined margin emission factor
Additional comment:	This data is fixed ex - ante for the entire crediting period.

Data / Parameter:	EF_{CM}
Unit:	tCO ₂ /MWh
Description:	Combined margin of grid emission factor Western Gird (now part of NEWNE grid)
Source of data:	CEA Reviews
Value(s) applied):	0.906
Purpose of data:	The value applied is taken from the CEA reviews. The weights used for calculating combined margin emission factor are 0.75 and 0.25 for operating margin and built margin respectively The purpose of data to calculate baseline emission.
Additional comment:	The data is fixed for entire crediting period

D.2. Data and parameters monitored*(Copy this table for each piece of data and parameter.)*

Data / Parameter:	EG_y
Unit:	MWh
Description:	Net electricity substituted in the grid during the periodic year y
Measured/ Calculated / Default:	Import and Export values are measured and based on these values GEDA/SLDC/GUVNL and its subsidiary calculates the net electricity exported (EG _y)

Source of data:	CERTIFICATE FOR SHARE OF ELECTRICITY GENERATED BY WIND FARMS ISSUED BY GEDA/SLDC
Value(s) of monitored parameter:	35273.51
Monitoring equipment:	The value is calculated
Measuring/ Reading/ Recording frequency:	Monthly recording
Calculation method (if applicable):	<p>The allocation of electricity is executed as per the following procedure:</p> <ol style="list-style-type: none"> 1. Enter the value of electricity received from W/M at 33 KV S/S (kWh). 2. Enter the value of electricity supplied to W/M at 33 KV S/S (kWh). 3. Take the difference of electricity received and supplied to W/F at 33 KV S/S (kWh) [EGmeter A] 4. Take the difference of electricity as per the above steps 1 to 3 for each of the 33 kV S/S meters (i) connected to the 66 kV S/S metering point of Alembic Limited. [EGmeter,i] and take the total of these differences [EGmeter A + ΣEGmeter,i] 5. Divide individual difference by total calculated as per step 4 and multiply by 100 to find %. [EGmeter A / (EGmeter A + ΣEGmeter,i) x 100] 6. Enter the value of electricity received from W/M at 66 KV S/S (kWh). 7. Enter the value of electricity supplied to W/M at 66 KV S/S (kWh). 8. Take the difference of electricity received and supply to W/F at 66 KV S/S (kWh) [EGmeter,T] 9. Multiply the value calculated as per step 8 by % allocation calculated as per step 5 to calculate the net electricity export allocated to Alembic Limited.
QA/QC procedures:	<p>i) The net electricity supplied to the grid can be cross verified with the monthly bill issued by GUVNL & its subsidiary companies to Alembic Limited.</p> <p>ii) In case of malfunction of both 33 kV & 66 kV meter PP will not claim emission reduction for period of malfunction. In the current monitoring period there is no instant of failure or malfunction of the meters. Hence not applicable.</p>
Purpose of data:	To calculate baseline emission
Additional comment:	Data will be kept for crediting period +2 years

Data / Parameter:	EG_{meter,A}
Unit:	kWh
Description:	Net Electricity Supplied by WTG of Alembic Limited (33 kV S/S to 66 kV S/S point).
Measured/ Calculated / Default:	Measured and calculated
Source of data:	Electricity Bifurcation reading issued by OEM on periodic monthly basis for

	"CERTIFICATE FOR SHARE OF ELECTRICITY GENERATED BY WIND FARMS"
Value(s) of monitored parameter:	92513032
Monitoring equipment:	Tri-vector Meter of accuracy class 0.2s Serial Number GJB03550 Calibration details: 26/11/2010; 15/11/2011; 08/11/2012; 26/10/2013; 16/10/2014 Validity one year
Measuring/ Reading/ Recording frequency:	Monitoring Frequency: Continuous Recording: monthly recording
Calculation method (if applicable):	The allocation of electricity is executed as per the following procedure: 1. Enter the value of electricity received from W/M at 33 kV S/S (kWh). 2. Enter the value of electricity supplied to W/M at 33 kV S/S (kWh). 3. Take the difference of electricity received and supplied to W/F at 33 kV S/S (kWh) [EGmeter A]
QA/QC procedures:	<p>i) In case, 33 kV Meter fails or malfunction, it will be sent for repair / replacement by OEM. (a) In this case readings of Controller, installed on each WTG (All WTG connected with 33 kV & finally to 66 kV Meter) will be considered for calculation of electricity exported by project activity to grid. Calculation will be performed on the highest percentage loss considering the reading of "Generation at Controller" & 33 kV Meter reading from the historical verified values from previous verification (From start of crediting period to most recent JMR available at the start of verification). Furthermore the highest transmission losses between 33 kV and 66 kV S/S point will be considered from 33 kV and 66 kV meter value (From start of crediting period to most recent JMR available at the start of verification). (b) For the electricity import, following method is applicable. The 66 kV meter provides the electricity imported by the WTGs connected to the sub- station meter. Highest historical % allocation (From start of crediting period to most recent JMR available at the start of verification) will be considered while calculating electricity imported by the project activity from grid. (c) The net electricity exported to the grid will be difference of (a) and (b). It is also possible that GUVNL & its subsidiary companies may come up with their approach. Conservative value which will lead to conservative emission reduction will be selected by the PP in that case.</p> <p>ii) Calibration of Controller at WTG: MITA Controller WP 3000 is a micro-processor based intelligent controller which has been specially designed to control the wind turbines, where control functions , data collection & storage , real time grid monitoring, storage & such other functions are integrated. In order to measure Electrical Energy & Grid Parameters, the controller uses an interface card WP 3090. The controller has three current inputs from CT and three voltage inputs from PT. The analog values of current/voltage are converted into digital signal internally using A/D Converters at very high sampling rate. A software program reads these values and displays instantaneous values of parameters such as voltage, current, frequency, power factor, kVA, kVAr and kW.</p> <p>These instantaneous values are then time integrated to display kVAh, kVArh, kWh & stored .</p> <p>WP 3000 being main controller for controlling entire turbine operation & is calculating energy generation with the basic signal of CT & PT connected to through I/O hence , not possible to calibrate.</p> <p>iii) It is also possible that GUVNL & its subsidiary companies may come up with their approach. Conservative value which will lead to conservative emission</p>

	reduction will be selected by the PP in that case. In the current monitoring period there is no instant of failure or malfunction of the meters.Hence not applicable.
Purpose of data:	To calculate baseline emission
Additional comment:	--

Data / Parameter:	$EG_{\text{meter},i}$ (i=1,2,3....n)
Unit:	kWh
Description:	Net electricity supplied WTG of PP other than Alembic Limited (33 kV S/S to 66 kV S/S point).WTG i.
Measured/ Calculated / Default:	Measured & Calculated
Source of data:	Electricity Bifurcation reading issued by OEM on periodic monthly basis for "CERTIFICATE FOR SHARE OF ELECTRICITY GENERATED BY WIND FARMS"
Value(s) of monitored parameter:	56551752
Monitoring equipment:	Trivector Energy meter Manager (OEM) is responsible to undertake regular calibration of the meter by GUVNL and its subsidiary. PP has no control on the calibration of meters of PP other than their own Meter.
Measuring/ Reading/ Recording frequency:	Continuous monitoring, monthly recording
Calculation method (if applicable):	The allocation of electricity is executed as per the following procedure: 1. Enter the value of electricity received from W/M at 33 kV S/S (kWh). 2. Enter the value of electricity supplied to W/M at 33 kV S/S (kWh). 3. Take the difference of electricity received and supplied to W/F at 33 kV S/S (kWh) [$EG_{\text{meter A}}$]. 4. Take the difference of electricity as per the above steps 1 to 3 for each of the 33 kV S/S meters (i) connected to the 66 kV S/S Metering point of Alembic Limited. [$EG_{\text{meter},i}$] and take the total of these differences [$EG_{\text{meter A}} + \Sigma EG_{\text{meter},i}$] 5. Divide individual difference by total calculated as per step 4 and multiply by 100 to find %. [$EG_{\text{meter A}} / (EG_{\text{meter A}} + \Sigma EG_{\text{meter},i}) \times 100$]
QA/QC procedures:	In case, 33 kV Meter fails or malfunction, it will be sent for repair / replacement by OEM.
Purpose of data:	To calculate baseline emission
Additional comment:	--

Data / Parameter:	E_{meter,T}
Unit:	MWh
Description:	Net electricity supplied at 66 kV Meter.
Measured/ Calculated / Default:	Measured and calculated
Source of data:	CERTIFICATE FOR SHARE OF ELECTRICITY GENERATED BY WIND FARMS ISSUED BY GEDA/SLDC/ GUVNL & its subsidiary companies, which ever applicable.
Value(s) of monitored parameter:	90694.58
Monitoring equipment:	Trivector meter (TVM) and ABT meter TVM-Serial number GJB0265 Calibration details: 26/12/2010; 12/12/2011; 30/11/2012; 25/11/2013; 24/11/2014 Validity 1 year ABT Meter: serial number-GJ-2129-A Calibration: 10/07/2008; 05/07/2011; 04/07/2014 Validity 3 years
Measuring/ Reading/ Recording frequency:	Continuous monitoring, monthly recording
Calculation method (if applicable):	<ol style="list-style-type: none"> 1. Enter the value of electricity received from W/M at 66 kV S/S (kWh). 2. Enter the value of electricity supplied to W/M at 66 kV S/S (kWh). 3. Take the difference of electricity received and supply to W/F at 66 kV S/S (kWh[EGmeter,T]).
QA/QC procedures:	<p>i) (a) In case, 66 kV Meter fails or malfunction, it will be sent for repair / replacement by GUVNL & its subsidiary. In this case readings of 33 kV meter installed at 33kV S/S of each PP (All WTG connected with 33 kV & finally to 66 kV Meter) will be considered for calculation. Calculation will be performed on the highest percentage loss considering the reading of transmission loss from 33 kV meter to 66 kV Meter reading from the historical verified values from previous verification (From start of crediting period to most recent JMR available at the start of verification). (b) The 33 kV meter will provide the electricity imported by the WTG's connected to the sub-station meter. Imported electricity will be calculated for 66 kV level with the application of highest historic transmission loss to arrive at electricity imported by WTG from grid at 66 kV level. (c) The net electricity exported to grid will be difference of (a) and (b). It is also possible that GUVNL & its subsidiary companies may come up with their approach. Conservative value, which will lead to conservative emission reduction will be selected by the PP in that case.</p> <p>ii) In the current monitoring period there is no instant of failure or malfunction of the meters. Hence not applicable.</p>
Purpose of data:	To calculate baseline emission
Additional comment:	--

D.3. Implementation of sampling plan

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Not applicable

SECTION E. Calculation of emission reductions or GHG removals by sinks**E.1. Calculation of baseline emissions or baseline net GHG removals by sinks**

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Baseline Emissions:

Formula for Baseline Emissions (BE_y):Baseline emissions (ton CO₂) = EF_y * Net energy exported (MWh)Emission Factor of the western grid = 0.906 (t CO₂/ MWh)

Period	Net Electricity Supplied to grid (in kWh) from 1 st Jan 2011 to 30 th November 2014			
Month/Year	2011	2012	2013	2014
Jan	764331	722720	820167	798244
Feb	523116	725931	529752	509159
Mar	780107	593064	573626	614175
Apr	708452	687057	681580	694847
May	1126519	896938	1125176	764455
June	1383459	1345322	995247	1372081
July	1028709	1316004	1091077	870544
Aug	989009	1193046	908986	698991
Sep	837560	824019	722693	529996
Oct	366235	349443	268113	152303
Nov	356446	497020	497106	181219
Dec	650198	637497	571774	
Total (in KWh)	9514141	9788061	8785297	7186014

Baseline emission from 1st Jan 2011 to 31st Dec 2012:

$$\text{BE}_{y,1} = (9514141 + 9788061) * 0.906 / 1000$$

$$= 17487.80 \text{ tCO}_2\text{e}$$

BE_{y,1} = 17487 tCO₂e (rounded down)Baseline emission from 1st Jan 2013 to 30th Nov 2014:

$$\text{BE}_{y,2} = (8785297 + 7186014) * 0.906 / 1000$$

$$= 14470.01 \text{ tCO}_2\text{e}$$

BE_{y,2} = 14470 tCO₂e (rounded down)

Total baseline emission during current monitoring period

$$\text{BE}_y = \text{BE}_{y,1} + \text{BE}_{y,2}$$

BE_y = 31957 tCO₂e**E.2. Calculation of project emissions or actual net GHG removals by sinks**

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The Project activity does not envisage any fossil fuel consumption. Therefore, the parameter PE_y=0

E.3. Calculation of leakage

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There are no leakage, therefore LE_y=0

E.4. Summary of calculation of emission reductions or net anthropogenic GHG removals by sinks

Item	Baseline emissions or baseline net GHG removals by sinks (t CO ₂ e)	Project emissions or actual net GHG removals by sinks (t CO ₂ e)	Leakage (t CO ₂ e)	Emission reductions or net anthropogenic GHG removals by sinks (t CO ₂ e)
Total	31957	0	0	31957

E.5. Comparison of actual emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

Item	Values estimated in ex-ante calculation of registered PDD	Actual values achieved during this monitoring period
Emission reductions or GHG removals by sinks (t CO ₂ e)	35114	31957

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

>> The actual emission reduction achieved during current monitoring period is 9% lower than the estimated emission reduction in registered PDD for corresponding monitoring period (1429 days), which is due to lower PLF achieved by WTGs and WTG S-7 was not operational for a period from 11th July 14 to 3rd Sep-14 due to break down.

E.7. Actual emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards

Item	Actual values achieved up to 31 December 2012	Actual values achieved from 1 January 2013 onwards
Emission reductions or GHG removals by sinks (t CO ₂ e)	17487	14470

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Appendix 1. Contact information of project participants and responsible persons/ entities

Project participant and/or responsible person/ entity	<input checked="" type="checkbox"/> Project participant <input checked="" type="checkbox"/> Responsible person/ entity for completing the CDM-MR-FORM
Organization name	Alembic Limited
Street/P.O. Box	Alembic Road
Building	--
City	Vadodra
State/Region	Gujarat
Postcode	390003
Country	India
Telephone	0091 – 0265 – 2280550
Fax	0091 – 0265 – 2281508
E-mail	infoal@alembic.co.in
Website	www.alembic.co.in
Contact person	
Title	Director & President
Salutation	Mr
Last name	Baheti
Middle name	K
First name	R
Department	Finance
Mobile	--
Direct fax	0091 –265 – 228 2506
Direct tel.	0091 – 265 – 228 5124
Personal e-mail	Rajkumar_baheti@alembic.co.in

Appendix-A: NET ELECTRICITY SUPPLIED TO GRID DURING MONITORING PERIOD

Billing cycle from first to last day of each month	Net electricity substituted in the grid during the year y (kWh)	Emission Reduction
Month-Year	S4,S5,S7,S6	
Jan-11	764331	692.48
Feb-11	523116	473.94
Mar-11	780107	706.78
Apr-11	708452	641.86
May-11	1126519	1020.63
Jun-11	1383459	1253.41
Jul-11	1028709	932.01
Aug-11	989009	896.04
Sep-11	837560	758.83
Oct-11	366235	331.81
Nov-11	356446	322.94
Dec-11	650198	589.08
Jan-12	722720	654.78
Feb-12	725931	657.69
Mar-12	593064	537.32
Apr-12	687057	622.47
May-12	896938	812.63
Jun-12	1345322	1218.86
Jul-12	1316004	1192.30
Aug-12	1193046	1080.90
Sep-12	824019	746.56
Oct-12	349443	316.60
Nov-12	497020	450.30
Dec-12	637497	577.57
Jan-13	820167	743.07
Feb-13	529752	479.96
Mar-13	573626	519.71
Apr-13	681580	617.51
May-13	1125176	1019.41
Jun-13	995247	901.69
Jul-13	1091077	988.52

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Aug-13	908986	823.54
Sep-13	722693	654.76
Oct-13	268113	242.91
Nov-13	497106	450.38
Dec-13	571774	518.03
Jan-14	798244	723.21
Feb-14	509159	461.30
Mar-14	614175	556.44
Apr-14	694847	629.53
May-14	764455	692.60
Jun-14	1372081	1243.11
Jul-14	870544	788.71
Aug-14	698991	633.29
Sep-14	529996	480.18
Oct-14	152303	137.99
Nov-14	181219	164.18
Total	35273513	31957.80

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
04.0	25 June 2014	Revisions to: <ul style="list-style-type: none"> • Include the Attachment: Instructions for filling out the monitoring report form (these instructions supersede the "Guideline: Completing the monitoring report form" (Version 04.0)); • Include provisions related to standardized baselines; • Add contact information on a responsible person(s)/ entity(ies) for completing the CDM-MR-FORM in A.6 and Appendix 1; • Change the reference number from <i>F-CDM-MR</i> to <i>CDM-MR-FORM</i>; • Editorial improvement.
03.2	5 November 2013	Editorial revision to correct table in page 1.
03.1	2 January 2013	Editorial revision to correct table in section E.5.
03.0	3 December 2012	Revision required to introduce a provision on reporting actual emission reductions or net anthropogenic GHG removals by sinks for the period up to 31 December 2012 and the period from 1 January 2013 onwards (EB70, Annex 11).
02.0	13 March 2012	Revision required to ensure consistency with the "Guidelines for completing the monitoring report form" (EB 66, Annex 20).
01	28 May 2010	EB 54, Annex 34. Initial adoption.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: monitoring report		