

CECIC HKC Gansu Changma Wind Power Project

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1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

CECIC HKC Gansu Changma Wind Power project (hereinafter referred as “the Project”) is located in Yumen Town, Yumen City, Gansu Province, People's Republic of China. The purpose of the Project is to generate electricity using wind power resources in the project region and to deliver to the Northwest China Power Grid (NWPG) which is predominated by connected fossil fuel fired power plants, especially coal fired plants. So the Project can reduce GHG emissions by replacing the electricity generated by fossil fuel fired power plants in NWPG.

The Project involves the installation of 134 wind turbines with 1.5MW capacity per unit, with a total installed capacity of 201MW. Total of 431,949MWh clean electricity generated by the Project are expected to be delivered to the NWPG annually. Accordingly, the estimated annual GHG emission reductions of the Project are 430,588 tCO₂e.

The project has been registered as a CDM project on 24/09/2011 (No. 3670). The project has been registered as a VCS project (No. 717).

The Project started construction on 16/06/2008. The first wind turbine of the Project started commissioning on 21/11/2009. The Project was put into full operation on 15/02/2011. The date of CDM registration date is 24/09/2011, and the CDM crediting period (renewable) is 24/09/2011 – 23/09/2018.

During the monitoring period (from 01/01/2016 to 23/09/2018), the monitoring activities were conducted strictly in accordance with the monitoring plan in the registered PDD. The project has operated without any accidental or emergency events that might impact the accuracy and/or implementation of monitoring activities. The net feed-in electricity during this period is 1,246,920 MWh, and the emission reduction achieved by the project in this monitoring period is 1,242,991 tCO₂e. The emission reductions in the monitoring period will be verified and issued under VCS rules.

1.2 Sectoral Scope and Project Type

This category would fall within sectoral scope 1: energy industries (Renewable sources).

Project type: wind power project.

1.3 Project Proponent

Organization name	CECIC HKC Gansu Wind Power Co., LTD.
Contact person	Lv Xin
Title	Project manager

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1.4 Other Entities Involved in the Project

Organization name	Demeter Venture UK Limited
Contact person	Teng Haipeng
Title	Project manager
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1.5 Project Start Date

21/11/2009. (It is the date when the first turbine was commissioned.)

1.6 Project Crediting Period

Renewable crediting period (7yrs×3) is adopted by the project, so the first 7-year renewable crediting period is from 24/09/2011 to 23/09/2018.

1.7 Project Location

The Project is located 7-10 km southwest of Yumen Town, Yumen City, Gansu Province in the People's Republic of China. It is located at Latitude between +40.1417 and +40.2572, Longitude between +96.8583 and +96.9575.

1.8 Title and Reference of Methodology

Approved consolidated baseline and monitoring methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (Version 12.3.0).

"Tool for the Demonstration and Assessment of Additionality" version 5.2.

"Tool to Calculate the Emission Factor for an Electricity System" version 2.1.0.

Although "Tool to Calculate Project or Leakage CO2 Emissions from Fossil Fuel Combustion" and "Combined tool to identify the baseline scenario and demonstrate additionality" are listed as a tool used for the ACM0002 Ver. 12.3.0, the tool was not applied to the Project, as there is no backup power installed in the Project.

1.9 Other Programs

Emission Trading Programs and Other Binding Limits:

The project has been registered as a CDM project on 24/09/2011, for which a renewable crediting period of 3×7 years will be used under the CDM GHG Program. The project proponent confirmed that, once emission reductions generated from 01/01/2016 to 23/09/2018 are issued under VCS rules, those credits will not be claimed as CERs and will be claimed as zero in the possible future CER monitoring report. And issued VCUs will be sold only once to one particular buyer.

Once the project proponent are included in an emissions trading program or any other mechanism that includes GHG allowance trading, the VCU issuance under VCS rules will be stop immediately since the date of included in an emissions trading program or any other mechanism that includes GHG allowance trading.

Other Forms of Environmental Credit:

The Project is a renewable energy generation project, which discharges no emission during operation period. Thus, the project doesn't fall into categories that creating GHG emissions primarily for the purpose of its subsequent removal or destruction.

The Project has not created another form of environmental credit, which will be verified by DOE. And the Project will not create other environmental credit in the future.

Participation under Other GHG Programs:

The Project has been registered as a VCS project with registration number 717.

The Project has been registered as a CDM project with registration number 3670.

1.10 Sustainable Development

The project is expected to produce various benefits to society as well as the environment. Therefore, the project will significantly contribute to national as well as local sustainable development, including;

Job creation: Implementation of the Project generated employment opportunities for local contractors and suppliers, while operation and maintenance of the plant creates additional long term employment opportunities for skilled professionals within CECIC. For the Project, CECIC directly hired 27 new employees, while 300 more new employment opportunities were created for local people through construction companies for the project.

Reduction in GHG emissions: Currently, most of the electricity in the region is generated through conventional fossil fuel based thermal power plants. Through combustion of fossil fuels, they emit a large volume of Greenhouse gasses (GHG) into the atmosphere, which has a negative effect on global society. Generation of GHG emission free electricity, such as wind, displaces electricity generated by these fossil fuel based thermal plants, therefore reducing GHG emissions.

Reduction of fossil fuel use: The Project Activity reduces reliance on imported fossil fuels, which contributes to increasing China's energy security, and also improves local air quality as it reduces the emissions of SO₂ and NO_x associated with fossil fuel use.

Increase of power supply: Due to rapid economic growth in recent years, China is experiencing a serious shortage of electricity, causing blackouts and brownouts throughout the country¹. Such power outage reduces economical activity, and has a negative effect on daily life. With the new wind farm, the grid improves its supply while contributing to steady and reliable economical growth in the region.

In addition, the Project helps the Chinese government to achieve the goal it set itself under the Renewable Energy Law. The Law states that the country is committed to increase the share of renewable energy use in the country's energy mix to 10% by 2010 and 30% by 2030, in order to realize the sustainable development of the economy and society. It is also consistent with the government's National Renewable Energy Development Strategy and Plan (NREDSP) which sets the goal of increasing the share of renewable energy in primary energy consumption to 10% (total 60GW) by 2010 and 12% (total 121GW) by 2020².

2 IMPLEMENTATION STATUS

2.1 Implementation Status of the Project Activity

The Project started construction on 16/06/2008. The first wind turbine of the Project started commissioning on 21/11/2009. The Project was put into full operation on 15/02/2011. The electricity generated by the Project is delivered to NWPG.

During this monitoring period, the Project is operated and implemented in accordance with the validated and revised PDD version 3.2 dated 20/08/2012, which was approved by EB on 27/11/2012. Neither emergencies (including of overhaul times, downtimes of equipment, exchange of equipment, etc.) happened to the monitoring system in this monitoring period, nor events or situations occurred during the monitoring period, which may impact the applicability of the methodology.

Total 134 units of wind power turbine and generators with 1,500 kW unit capacity each, are installed in the Project, forming 201MW of total capacity. These wind turbines are manufactured by China's Dongfang Steam Turbine Co., Ltd and the model type of these wind turbines is FD77A/1500. The main technology parameter of this type of wind power turbine can be found at Table1.

Table1 Technology parameters

Item	FD77A/1500
1. Data for Unit	
Rated capacity (kW)	1500

¹ http://www.chinaeconomicreview.com/cer/2008_06/Balance_of_power.html

² http://www.sdpc.gov.cn/zcfb/zcfbtz/2007tongzhi/t20070904_157352.htm

Number of unit	134
Capacity control method	Pitch-controlled
Turbine diameter (m)	77
Hub height (m)	70
Cut in wind speed (m/s)	3.0
Rated wind speed (m/s)	12.5
Cut out wind speed (m/s)	20
Wind speed limit (m/s)	53.3
Technical lifetime (y)	20
Material of blade	GRP
Blade tip speed (m/s)	69.6
2. Generator	
Type of generator	Double-fed induction generator
Rated capacity (kW)	1500
Output Voltage (V)	690
Rated speed (rpm)	1000-1800 (+10.0%)

The electricity generated by the Project was exported to the local Yumen town grid via a newly built 35kV/110kV transformer station located within the Project site, which was then exported to the NWPG.

The technical process in the Project can be shown as following diagram:

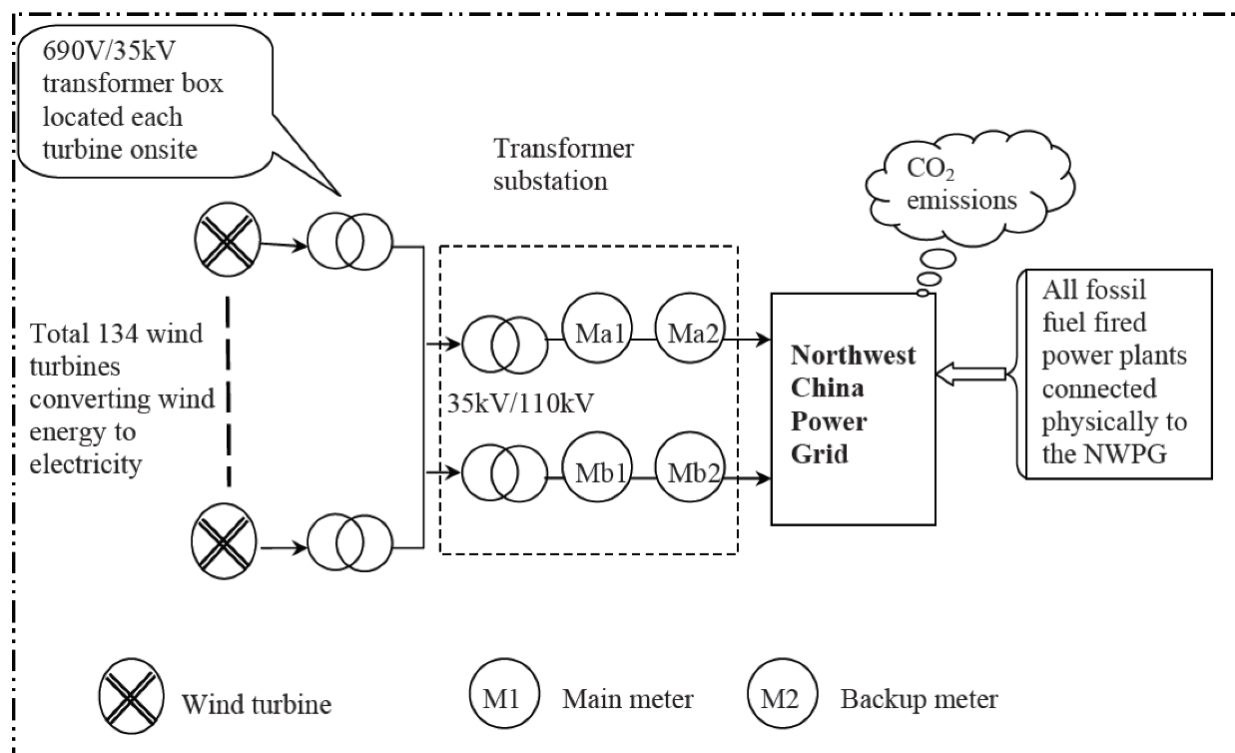


Figure 1. The technology flow diagram of the Project

2.2 Deviations

2.2.1 Methodology Deviations

There is no deviation applied to this monitoring period.

2.2.2 Project Description Deviations

There is no deviation applied to this monitoring period.

2.3 Grouped Project

The Project is not a grouped project.

2.4 Safeguards

2.4.1 No Net Harm

Being a wind power generation project, there are no negative environmental and/or socio-economic impacts due to the project.

2.4.2 Local Stakeholder Consultation

Local Stakeholder Consultation during the project preparation stage:

The local stakeholder's meeting was held in Yumen County on 6 March 2008. 44 participants attended the meeting including local residents, builders and members of the local authorities. The project CECIC introduced the proposed project, and then a survey was arranged through a one-page questionnaire, which was designed to be easily filled in. The opinions expressed by the stakeholders were recorded and are available on request. The survey includes the following sections:

- i) Project introduction;
- ii) Respondents' basic information and education level;
- iii) Questions;
 - Do you consider your current living, studying and working environment to be quiet?
 - Do you think that the project will have a negative impact on the environment, such as air quality, noise, water, etc.?

- Will the project construction have a negative impact on the living, studying and working environment of you and your family?
- Do you think the project implementation will have some positive impact on your life?
- During the project construction which of the following problems concerns you most: noise, air pollution, equipment installation, wastewater discharge, electromagnetic interference, landscape destruction?
- Do you agree with the development and construction of the project?
- Do you have any suggestion regarding the kind of measures which should be applied during the project construction and operation in order to protect the environment?
- Do you have any suggestions/advice for the developer of the proposed project?

iv) Space for the respondents' signature and date.

In the stakeholder meeting, every stakeholder expressed their comments for the proposed project. No negative comments have been received. The summary of stakeholder meeting's comments is as following:

i) Promote the local economic development:

The local government strongly supports the development and construction of the proposed Project. It will increase local financial income and promote technological progress of local building materials, tower tube manufacturing, and other related industries.

ii) Local environment protection

According to the project EIA report, the noise level of the installed turbines is below the national standard. The proposed Project site is located in the Gobi desert area. Moreover, there are no residents or industrial firms near the project site. Furthermore, there are no issues related to noise and communications signal interference, or to bird migration.

iii) Improve the living condition of local residents

The proposed project will create new employment opportunities through the project construction and operation. The project will also purchase the raw materials for construction and other supplies from the local market. Therefore, the local people will benefit from the Project.

In the questionnaire survey, the survey had a 100% response rate with all questionnaires returned. The key findings of the survey and the summary of the consultation are as following:

i) 100% of respondents agree with the development and construction of the project.

- ii) 100% of the respondents believe that the proposed project will have no negative impact on their living, studying and working environments.
- iii) 100% of the respondents believe that the project implementation will have a positive impact on their lives.

The stakeholder meeting and the survey showed that the proposed project receives strong support from the local community. They all believe the proposed project will promote local economic development and agree with the project development and construction.

Local Stakeholder Consultation during the project implementation stage:

Communications with Local stakeholders are being carried out at periodic intervals. There are no negative comments received for the project. In line with VCS requirements all the processes have been implemented to receive comments from local stakeholders as well as communicate with them at periodic intervals.

3 DATA AND PARAMETERS

3.1 Data and Parameters Available at Validation

Data / Parameter	EF _{grid,CM,y}
Data unit	tCO ₂ e/MWh
Description	Baseline emission factor: the combined emission factor of the project grid system in year y. EF _{grid,CM,y} was not directly available at validation but calculated based on other parameters in the PDD available at validation, therefore in the MR, only EF _{grid,CM,y} is included and the rest of the parameters are either used to calculate EF _{CM} or not used in the MR.
Source of data	Registered PDD
Value applied:	0.99685
Justification of choice of data or description of measurement methods and procedures applied	Notification on 2008 baseline emission factors for regional power grids in China, issued by China on July18, 2008 and updated on Dec 30, 2008 and the registered PDD.
Purpose of the data	Baseline emission calculations.
Comments	The emission factor of the Project was ex-ante determined and is fixed during the first crediting period. All data and parameters had been determined at registration.

3.2 Data and Parameters Monitored

Data / Parameter	EG _{facility,y}					
Data unit	MWh					
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y					
Source of data	Meter reading records of onsite main meters.					
Description of measurement methods and procedures to be applied	Both the main meter(s) and backup meter(s) have been installed at high voltage side of 35kV/110KV substation, located within the site, as descried in the section B.3. The main meter(s) will be used to monitor electricity exchanged between the Project and the grid continuously and reported monthly. The data from the electricity meters can be cross-checked with the Electricity Transaction notes or sales receipts for the electricity.					
Frequency of monitoring/recording	Measuring continuously/Reading monthly/Recording monthly					
Value monitored:	The quantity of net electricity generation supplied by the Project plant/unit to the grid during this monitoring period is 1,246,920 MWh. The electricity exported to the grid by the Project is 1,249,304 MWh, and the electricity imported from the grid by the Project is 2,384 MWh.					
Monitoring equipment	Serial No.	Accuracy	Calibration date	Validity of the Calibration	Calibration frequency	
	51000040 Main meter a	0.2s	02/04/2015	23/09/2018	Annually	
			17/03/2016		Annually	
			19/12/2016		Annually	
			24/09/2017		Annually	
	51000042 Backup meter a	0.2s	02/04/2015	23/09/2018	Annually	
			17/03/2016		Annually	
			19/12/2016		Annually	
			24/09/2017		Annually	
	51000044 Main meter b	0.2s	02/04/2015	23/09/2018	Annually	
			17/03/2016		Annually	
			19/12/2016		Annually	
			24/09/2017		Annually	
	51000043 Backup meter b	0.2s	02/04/2015	23/09/2018	Annually	
			17/03/2016		Annually	
			19/12/2016		Annually	
			24/09/2017		Annually	
QA/QC procedures to be	Monitoring data are counter-checked against the sales receipts.					

applied	Based on the standard of DL/T448-2000, the calibrations are done by the Electric Energy Measurement Centre of Gansu Electric Power Corporation which accredited by the Quality and Technical Supervision Bureau of Gansu Province per year for the main meters and backup meters.
Purpose of the data	Baseline emission calculations.
Calculation method	-
Comments	-

3.3 Monitoring Plan

The implementation of monitoring system and Management organization for the Project are fully in consistent with the description in the PDD Monitoring Plan.

The monitoring methodology clearly describes how to identify and collect the necessary data. The following is a summary list of the main items to be monitored:

The operational and management structure to be adopted by CECIC in implementing the monitoring plan for the project activity is outlined in the Figure 2 below.

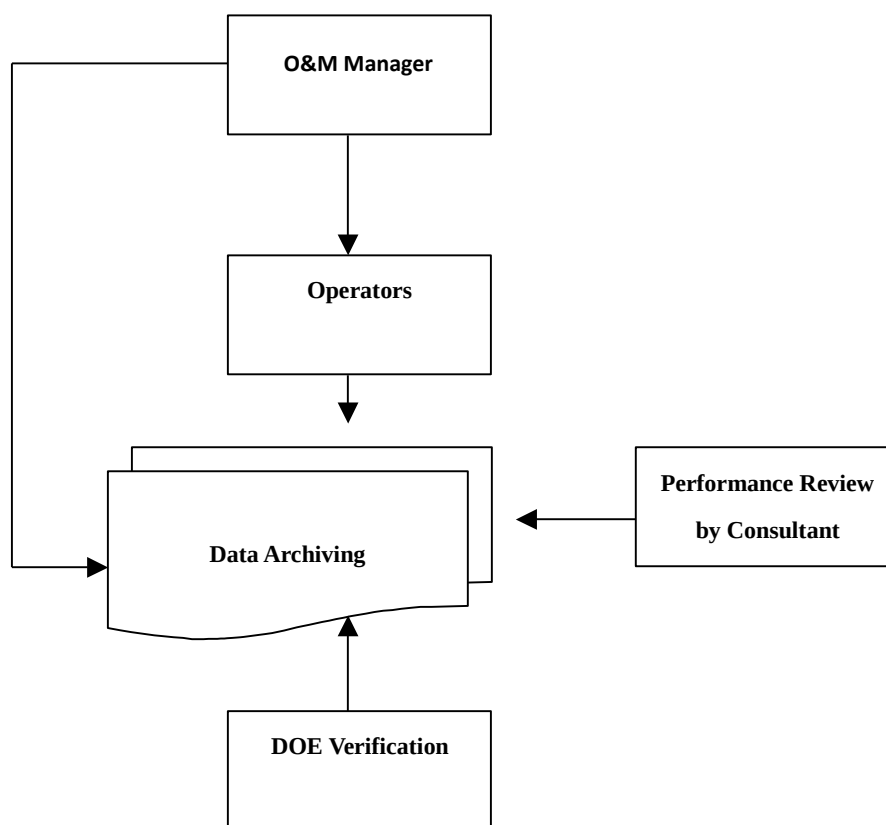


Figure 2 Operational and management structure for monitoring the project activity.

The performance of the Project will be reviewed and analyzed by the consultant on a regular basis.

Metering

The power generated by the Project and supplied to the grid will be monitored at the following points using electricity meters:

Both the main meter(s) and backup meter(s) have been installed at high voltage side of 35kV/110KV substation, located within the site, as described in the section B.3. The main meter(s) will be used to monitor electricity exchanged between the Project and the grid continuously and reported monthly.

The data from the electricity meters can be cross-checked with the Electricity Transaction notes or sales receipts for the electricity.

Calibration

The metering equipment will be calibrated and checked at least once a year by a qualified third party according to an appropriate industry standard or the manufacturer's specifications. The calibration records will be maintained and made available for review by the DOE.

Accuracy

The metering equipment will be calibrated and checked for accuracy according to local industry standards to make sure that any error resulting from such equipment will not exceed 0.5% of full-scale rating. Both meters shall be jointly inspected and sealed on behalf of the parties concerned and shall be only checked in the presence of the other party or its accredited representatives. It will also comply with the national standards Technical Administrative Code of Electric Energy Metering (DL/T 448-2000) and Alternating Current Static Watt-hour Meters for Active Energy, with accuracy of no less than 0.5S (GB/T 17883-1999).

Procedure

When reading error of either meter exceeds the allowable range or any inconsistency occurs, the meter should be repaired and followed by calibration by a third part in accordance with the standard, within 10 days. The grid company must be informed before the calibration and all the record should be kept by the CECIC.

When the main meter detects the error beyond the allowable range or inconsistency, the backup meter, located within the site, will be used. In case that both meters detect errors, CECIC shall repair the meter, recalibrate, or replace, while giving the grid company sufficient notice to allow their representative to attend during any corrective activities. When this happens, the net power generated is calculated by reading the backup meter. In case where both meters fail, CECIC and the grid company should formulate reasonable and conservative estimation based on historical or the

nearest month power generation data. Also, CECIC should provide the evidence to testify the method is reasonable and conservative.

Data

All data collected as part of monitoring should be archived electronically and be kept for at least 2 years after the end of the last crediting period. 100% of data is to be monitored.

4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

According to ACM0002 and the registered PDD of the Project, The baseline emission BE_y during the monitoring period results from:

$$BE_y = EG_{\text{facility},y} \times EF_{\text{grid},CM,y}$$

$$EG_{\text{facility},y} = EG_{\text{to grid},y} - EG_{\text{from grid},y}$$

Where:

BE_y is the baseline emissions of the Project;

$EF_{\text{grid},CM,y}$ is the combined margin baseline emission factor of the NWPG;

$EG_{\text{facility},y}$ is the net electricity supplied to the grid by the Project;

$EG_{\text{to grid},y}$ is the quantity of electricity exported to the grid by the Project;

$EG_{\text{from grid},y}$ is the quantity of electricity imported from the grid by the Project.

The monthly electricity data is listed in following table 2:

Table2. Calculation of the net electricity supplied to the grid by the Project

Electricity exported to the grid by the Project EG _{togrid,y} (MWh)						Electricity imported from the grid by the Project EG _{fromgrid,y} (MWh)						Net electricity supplied to the grid by the Project EG _{facility,y} (MWh)
Period	data from main meter readings			data from the sales receipts	data used to calculate the ER	Period	data from main meter readings			data from the sales receipts	data used to calculate the ER	EG _{togrid,y} minus EG _{fromgrid,y}
	A			B	C=MIN(A,B)		D			E	F=MAX(D,E)	G=C-F
	Main meter a	Main meter b	subtotal				Main meter a	Main meter b	subtotal			
01/01/2016-29/01/2016	18,498.48	18,646.32	37,144.80	39,407.28	37,144.80	01/01/2016-9/01/2016	79.20	44.88	124.08	124.08	124.08	37020.72
30/01/2016-27/02/2016	30,188.40	30,344.16	60,532.56	60,532.56	60,532.56	10/01/2016-09/02/2016	42.24	29.04	71.28	71.28	71.28	60461.28
28/02/2016-29/03/2016	24,024.00	24,237.84	48,261.84	48,261.84	48,261.84	10/02/2016-09/03/2016	39.60	13.20	52.80	52.80	52.80	48209.04
30/03/2016-28/04/2016	17,170.56	17,426.64	34,597.20	34,597.20	34,597.20	10/03/2016-09/04/2016	47.52	13.20	60.72	60.72	60.72	34536.48
29/04/2016-29/05/2016	18,799.44	19,087.20	37,886.64	37,886.64	37,886.64	10/04/2016-09/05/2016	58.08	18.48	76.56	76.56	76.56	37810.08
30/05/2016-28/06/2016	19,250.88	19,483.20	38,734.08	38,734.08	38,734.08	10/05/2016-09/06/2016	34.32	15.84	50.16	50.16	50.16	38683.92
29/06/2016-29/07/2016	17,260.32	17,619.36	34,879.68	34,879.68	34,879.68	10/06/2016-09/07/2016	58.08	15.84	73.92	73.92	73.92	34805.76

30/07/2016-29/08/2016	19,258.80	19,522.80	38,781.60	38,781.60	38,781.60	10/07/2016-09/08/2016	52.80	21.12	73.92	73.92	73.92	38707.68
30/08/2016-28/09/2016	10,684.08	10,921.68	21,605.76	21,605.76	21,605.76	10/08/2016-09/09/2016	55.44	18.48	73.92	73.92	73.92	21531.84
29/09/2016-29/10/2016	12,339.36	12,672.00	25,011.36	25,011.36	25,011.36	10/09/2016-09/10/2016	79.20	18.48	97.68	97.68	97.68	24913.68
30/10/2016-28/11/2016	21,006.48	21,186.00	42,192.48	42,192.48	42,192.48	10/10/2016-09/11/2016	50.16	23.76	73.92	73.92	73.92	42118.56
29/11/2016-29/12/2016	18,419.28	18,472.08	36,891.36	36,890.99	36,890.99	10/11/2016-09/12/2016	71.28	60.72	132.00	132.00	132.00	36758.99
30/12/2016-31/12/2016	1,594.56	1,602.48	3,197.04	3,197.04	3,197.04	10/12/2016-31/12/2016	5.28	5.28	10.56	10.56	10.56	3186.48
Total in 2016					459,716.03	Total in 2016					971.52	458,744.51
30/12/2016-29/01/2017	21,634.80	21,695.52	43,330.32	46,536.89	43,330.32	01/01/2017-09/01/2017	58.08	52.80	110.88	110.88	110.88	43219.44
30/01/2017-26/02/2017	12,112.32	12,159.84	24,272.16	24,266.27	24,266.27	10/01/2017-09/02/2017	63.36	55.44	118.80	118.80	118.80	24147.47
27/02/2017-29/03/2017	18,355.92	18,445.68	36,801.60	36,798.33	36,798.33	10/02/2017-09/03/2017	42.24	36.96	79.20	79.20	79.20	36719.13
30/03/2017-28/04/2017	21,869.76	21,988.56	43,858.32	43,858.32	43,858.32	10/03/2017-09/04/2017	26.40	18.48	44.88	44.88	44.88	43813.44
29/04/2017-29/05/2017	20,246.16	20,494.32	40,740.48	40,740.48	40,740.48	10/04/2017-09/05/2017	34.32	13.20	47.52	47.52	47.52	40692.96
30/05/2017-28/06/2017	16,956.72	17,167.92	34,124.64	34,124.64	34,124.64	10/05/2017-09/06/2017	47.52	18.48	66.00	66.00	66.00	34058.64
29/06/2017-29/07/2017	13,944.48	14,158.32	28,102.80	28,102.80	28,102.80	10/06/2017-09/07/2017	50.16	18.48	68.64	68.64	68.64	28034.16
30/07/2017-29/08/2017	19,417.20	19,594.08	39,011.28	39,013.00	39,011.28	10/07/2017-09/08/2017	39.60	15.84	55.44	55.44	55.44	38955.84
30/08/2017-28/09/2017	11,600.16	11,790.24	23,390.40	23,389.61	23,389.61	10/08/2017-09/09/2017	44.88	18.48	63.36	63.36	63.36	23326.25

29/09/2017-29/10/2017	17,870.16	18,060.24	35,930.40	35,930.80	35,930.40	10/09/2017-09/10/2017	60.72	21.12	81.84	81.84	81.84	35848.56
30/10/2017-28/11/2017	21,011.76	21,112.08	42,123.84	42,138.44	42,123.84	10/10/2017-09/11/2017	58.08	34.32	92.40	92.40	92.40	42031.44
29/11/2017-29/12/2017	25,122.24	25,177.68	50,299.92	50,333.95	50,299.92	10/11/2017-09/12/2017	34.32	29.04	63.36	63.36	63.36	50236.56
30/12/2017-31/12/2017	2,090.88	2,096.16	4,187.04	4,187.04	4,187.04	10/12/2017-31/12/2017	0.00	0.00	0.00	0.00	0.00	4187.04
Total in 2017					446,163.25	Total in 2017					892.32	445,270.93
30/12/2017-29/01/2018	27,141.84	27,162.96	54,304.80	58,442.18	54,255.14	01/01/2018-09/01/2018	23.76	23.76	47.52	47.52	47.52	54207.62
30/01/2018-26/02/2018	18,509.04	18,514.32	37,023.36	37,039.62	37,023.36	10/01/2018-09/02/2018	39.60	36.96	76.56	76.56	76.56	36946.80
27/02/2018-29/03/2018	20,914.08	20,953.68	41,867.76	41,856.86	41,856.86	10/02/2018-09/03/2018	34.32	26.40	60.72	60.72	60.72	41796.14
30/03/2018-28/04/2018	24,625.92	24,639.12	49,265.04	49,288.51	49,265.04	10/03/2018-09/04/2018	15.84	15.84	31.68	31.68	31.68	49233.36
29/04/2018-29/05/2018	18,984.24	19,052.88	38,037.12	38,015.68	38,015.68	10/04/2018-09/05/2018	23.76	15.84	39.60	39.60	39.60	37976.08
30/05/2018-28/06/2018	14,863.20	15,016.32	29,879.52	29,871.71	29,871.71	10/05/2018-09/06/2018	39.60	18.48	58.08	58.08	58.08	29813.63
29/06/2018-29/07/2018	12,402.72	12,547.92	24,950.64	24,968.83	24,950.64	10/06/2018-09/07/2018	73.92	31.68	105.60	105.60	105.60	24845.04
30/07/2018-29/08/2018	20,679.12	20,808.48	41,487.60	41,493.20	41,487.60	10/07/2018-09/08/2018	31.68	15.84	47.52	47.52	47.52	41440.08
30/08/2018-23/09/2018	13,334.64	13,363.68	26,698.32	26,698.32	26,698.32	10/08/2018-23/09/2018	34.32	18.48	52.80	52.80	52.80	26645.52
Total 01/01/2018-23/09/2018					343,424.35	Total 01/01/2018-23/09/2018					520.08	342,904.27

Total					1,249,303.63	Total					2,383.92	1,246,919.71
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Year	EG _{to grid,y} (MWh)	EG _{from grid,y} (MWh)	EG _{facility,y} (MWh)
01/01/2016-31/12/2016	459,716.03	971.52	458,744.51
01/01/2017-31/12/2017	446,163.25	892.32	445,270.93
01/01/2018-23/09/2018	343,424.35	520.08	342,904.27
Total	1,249,303.63	2,383.92	1,246,919.71

Year	EG _{facility,y} (MWh)	EF _{grid,CM,y}	BE _y (tCO ₂ e)
01/01/2016-31/12/2016	458,744.51	0.99685	457,299
01/01/2017-31/12/2017	445,270.93	0.99685	443,868
01/01/2018-23/09/2018	342,904.27	0.99685	341,824
Total	1,246,919.71		1,242,991

4.2 Project Emissions

Project emission (PE_y) is 0 tCO₂e as per the registered PDD.

4.3 Leakage

No leakage emissions are considered as per the applied methodology ACM0002 and the registered PDD.

4.4 Net GHG Emission Reductions and Removals

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
01/01/2016-31/12/2016	457,299	0	0	457,299
01/01/2017-31/12/2017	443,868	0	0	443,868

01/01/2018- 23/09/2018	341,824	0	0	341,824
Total	1,242,991			1,242,991

The estimated annual emission reductions are 430,588tCO₂e as per registered PDD. The monitoring period covers 997 days. The estimated emission reductions during this monitoring period are $430,588/365 \times 997 = 1,176,154$ tCO₂e. The actual emission reductions in this period are, 1,242,991 tCO₂e, which are 5.68% more than the estimated value within the normal variation range.