Monitoring report form for CDM project activity
(Version 09.0)

Complete this form in accordance with the instructions attached at the end of this form.

MONITORING REPORT			
Title of the project activity	Hunan Zhugaotan Hydropower Project		
UNFCCC reference number of the project activity	4713		
Version number of the PDD applicable to this monitoring report	05		
Version number of this monitoring report	01		
Completion date of this monitoring report	23/09/2021		
Monitoring period number	3rd monitoring period		
Duration of this monitoring period	25/05/2014-31/12/2020		
Monitoring report number for this monitoring period	NA		
Project participants	Huayuan ChunJiang Power Generation Co., Ltd.		
Host Party	P. R. China		
Applied methodologies and standardized baselines	Methodologies Used: ACM0002-Consolidated methodology for grid-connected electricity generation from renewable sources (Version 11)		
Sectoral scopes	Sectoral scopes 1: Energy industries (renewable - / non-renewable sources)		
Amount of GHG emission reductions or net anthropogenic GHG removals achieved by the project activity in this monitoring period	Amount achieved before 1 January 2013	Amount achieved from 1 January 2013 until 31 December 2020	Amount achieved from 1 January 2021
	0	589,604	0
Amount of GHG emission reductions or net anthropogenic GHG removals estimated ex ante for this monitoring period in the PDD	633,080		

SECTION A. Description of project activity

A.1. General description of project activity

>>
Zhugaotan Hydropower Project (hereinafter referred to as "the project") is a newly-built hydropower project, located on the downstream of Youshui River in Huayuan County, Hunan Province, P. R. China. The total installed capacity of the project is 33 MW (3×11MW). The purpose of the project is to generate electricity by using water resources to alleviate electricity shortage in Central China. The project will contribute to the reduction of GHG emission by displacing part of the electricity from the fossil fuel fired power plants of the CCPG (Central China Power Grid), which is dominant with fossil fuel fired power plants.

Relevant dates for the project activity is as below:

Event	Date
Project starting date	08/09/2007
Registration date	11/02/2011
Operation of the 1st generator	08/10/2011
Operation of the 2nd generator	13/01/2012
Operation of the 3rd generator	15/03/2012
3rd monitoring period	25/05/2014-31/12/2020

Total emission reductions achieved in this monitoring period are589,604tCO_2e.

A.2. Location of project activity

>>
The project is located on the downstream of Youshui River within Huayuan County, Hunan Province, which is 1.5 km away from the Huayuan County, and its geographical coordinates are east longitude of 109.4644°and north latitude of 28.5944°.

A.3. Parties and project participants

Parties involved	Project participants	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
The Peoples' Republic of China (Host)	Huayuan ChunJiang Power Generation Co., Ltd.…	No

A.4. References to applied methodologies and standardized baselines

>>
Title of the approved baseline and monitoring methodology: ACM0002-Consolidated methodology for grid-connected electricity generation from renewable sources (Version 11)
Please refer to below link for the methodology:
http://cdm.unfccc.int/methodologies/PAmethodologies/approved.html

Title of the methodology to calculate the emission factor: Tool to calculate the emission factor for an electricity system (version 02)
Please refer to below link for the methodology:
http://cdm.unfccc.int/methodologies/PAmethodologies/approved.html

A.5. Crediting period type and duration

>>

The fixed crediting period is chosen for the project. The start date of the crediting period is 01/06/2011. The fixed crediting period of the project activity is from 01/06/2011 to 31/05/2021.

SECTION B. Implementation of project activity

B.1. Description of implemented project activity

>>

The implementation and operation of project is in strict accordance with the description in the registered PDD. The implementation of the project is as follows:

Event	Time
Project starting date	08/09/2007
Registration date	04/05/2011
Crediting period	01/06/2011-31/05/2021 (fixed)
Operation of the 1st generator	08/10/2011
Operation of the 2nd generator	13/01/2012
Operation of the 3rd generator	15/03/2012
3rd monitoring period	25/05/2014-31/12/2020

The key technical parameters and data of the project equipment are as follows:

Parameters		unit	value
Reservoir	Normal Water Level	m	259
	Area	km^2	3
Hydraulic Turbine	Model	—	ZZ550-LH-265
	Quantity	unit	3
	Rated output	MW	12.95
	Rated rotation	r/min	333.33
	Rated water head	m	26.8
	Rated flow	m^3/s	45
	Efficiency	—	94.0%
Generator	Model	—	SF11-24/4250
	Quantity	unit	3
	Rated Capacity	MW	11
	Rated Voltage	kV	10.5
	Load Factor	—	0.85
	Efficiency	—	98.0%

There was no special events happened during this monitoring period, which may impact the applicability of the methodology. The project was under normal operation during this monitoring period.

B.2. Post-registration changes

B.2.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents

>>

The project operation is in accordance with the monitoring plan (MP), and there was no any deviation to the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents.

B.2.2. Corrections

>>

There was no corrections to the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents.

B.2.3. Changes to the start date of the crediting period

>>
There is no changes to the start date of the crediting period for the project activity.

B.2.4. Inclusion of monitoring plan

>>
Not applicable.

B.2.5. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents

>>
There are no permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents.

B.2.6. Changes to project design

>>
There are no changes to the project design.

B.2.7. Changes specific to afforestation or reforestation project activity

>>
Not applicable.

SECTION C. Description of monitoring system

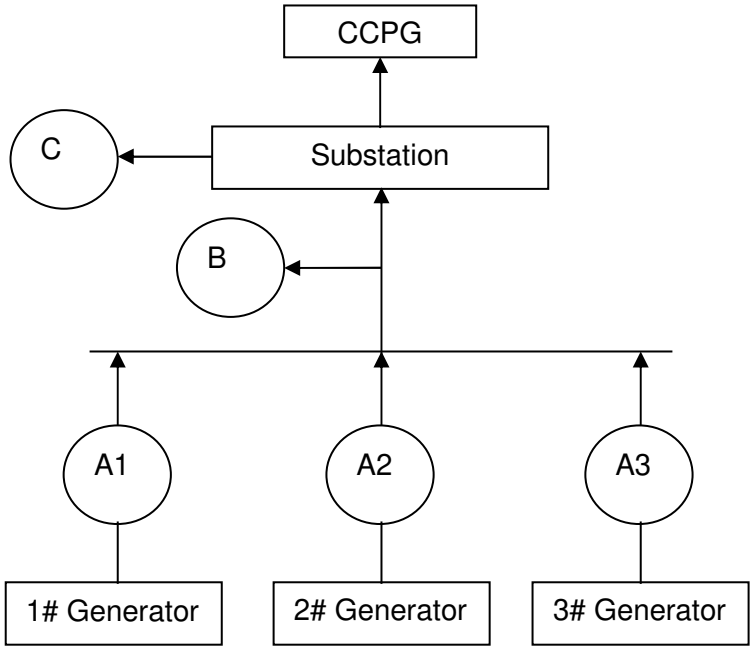
>>

1. Location of meters

The main meter installed is used to monitor the electricity exported to the CCPG and the electricity imported from the CCPG. All data used for CERs calculation are obtained from main meter during this monitoring period.

The main meter and back up meter have been calibrated once per year in accordance with the industry standard and the calibration records show the operation of the meters is in normal situation.

The meters position of the project is shown as follows:



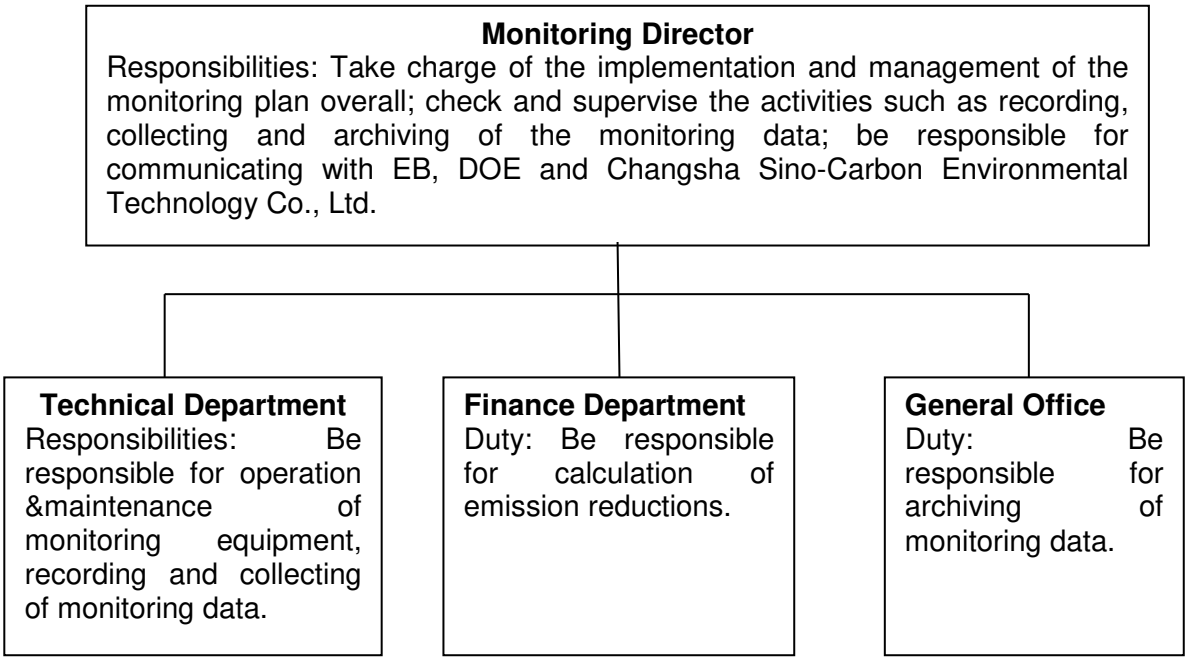
A: monitor meters of electricity generated by generators;
B: main monitor meter of net electricity generation delivered to the grid by the project;
C: back up monitor meter of net electricity generation delivered to the grid by the project.

The calibration information of Main Meter is as follows:

Name of the meter	Serial No.	Accuracy	Calibration date	Valid until	Calibration entity
main meter	43414010000187979	0.2S	13/10/2013 13/10/2014 13/10/2015 13/10/2016 13/10/2017 13/10/2018 13/10/2019 13/10/2020	12/10/2014 12/10/2015 12/10/2016 12/10/2017 12/10/2018 12/10/2019 12/10/2020 12/10/2021	Xiangxi metering center of Hunan Electric Power Co., Ltd
back up meter	43414040000187980	0.2S	13/10/2013 13/10/2014 13/10/2015 13/10/2016 13/10/2017 13/10/2018 13/10/2019 13/10/2020	12/10/2014 12/10/2015 12/10/2016 12/10/2017 12/10/2018 12/10/2019 12/10/2020 12/10/2021	
1# generator meter	11030611780208	0.5S	13/10/2013 13/10/2014 13/10/2015 13/10/2016 13/10/2017 13/10/2018 13/10/2019 13/10/2020	12/10/2014 12/10/2015 12/10/2016 12/10/2017 12/10/2018 12/10/2019 12/10/2020 12/10/2021	
2# generator meter	11030611780205	0.5S			
3# generator meter	11030611780210	0.5S			

2. Monitoring management structure

In order to obtain reliable monitoring data, the project developer will establish a monitoring management structure prior to the starting of the crediting period. Clear responsibilities will be assigned to all staffs involved in the CDM project. A monitoring director will be appointed who has the overall responsibilities for the monitoring of the project, other staffs will be responsible for the data recording, data collecting, data archiving and emission reductions calculation. The detailed structure is as follows:



3. Data collection procedure

The readings of the main meter are used for calculating the emission reductions when the main meter is in normal operation state. The monitoring processes are as follows:
(1) The designated persons from the grid company and the project company record the readings of the meter for the electricity delivered to CCPG and consumed by the project activity from CCPG;
(2) The power grid company provides the project owner with a settling accounts sheet about the net electricity supplied to CCPG monthly;
(3) The project owner provides the power grid company with a sale receipt after the power grid company has confirmed the settling accounts sheet, and preserves the copy of the sale receipt.

4. Emergency measures/procedures

When the main meter or back-up meter have a breakdown, the electricity generation difference will be treated as follows:
(1) When one of the two meters has a breakdown, the readings of another meter will be adopted;
(2) If both of the main meter and back up meter have breakdowns, the net electricity supplied to the grid will be calculated with the readings of other meters such as the meter installed at the exit of the generator deducting the loss after the discussion between the owner and the grid company.

SECTION D. Data and parameters

D.1. Data and parameters fixed ex ante[1]

Data/Parameter	EF_y
Unit	tCO_2e/MWh

[1] As other parameters for ex anti in the registered PDD are not being used in the calculation of ER, thus are not list in the MR table.

Description	Emission factor of CCPG
Source of data	Registered PDD
Value(s) applied	0.9735
Choice of data or measurement methods and procedures	The data is used for baseline emission calculations. The figure is calculated ex-ante and is fixed during the crediting period.
Purpose of data/parameter	EF_{OM} is 1.2783 tCO_2e/MWh, and EF_{BM} is 0.6687 tCO_2e/MWh.
Additional comments	EF_y

Data/Parameter	Cap_{BL}
Unit	W
Description	Installed capacity of the hydro power plant before the implementation of the project activity. The proposed project is a new hydro power plant, this value is zero.
Source of data	Project site
Value(s) applied	0
Choice of data or measurement methods and procedures	Determine the installed capacity based on recognized standards.
Purpose of data/parameter	Used for project emission calculation.
Additional comments	/

Data/Parameter	A_{BL}
Unit	m^2
Description	Area of the reservoir measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m^2) For the project, the reservoir is new, this value is zero.
Source of data	Project site
Value(s) applied	0
Choice of data or measurement methods and procedures	Measured from topographical surveys and maps.
Purpose of data/parameter	Used for project emission calculation.
Additional comments	/

D.2. Data and parameters monitored

Data/Parameter	TEG_y
Unit	MWh
Description	Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year *y*
Measured/calculated/ default	Measured
Source of data	Meters installed on the exit of generators

Value(s) of monitored parameter	649568.81 MWh

<table>
<tr>
<td>Monitoring equipment</td>
<td>
The data was measured by the generator meters.
1# generator meter:
Type: DTSD341
Accuracy class: 0.5S
S/N number: 11030611780208
Calibration frequency: annually
Calibration information:
<table>
<tr><th>Calibration date</th><th>Valid until</th></tr>
<tr><td>13/10/2013
13/10/2014
13/10/2015
13/10/2016
13/10/2017
13/10/2018
13/10/2019
13/10/2020</td><td>12/10/2014
12/10/2015
12/10/2016
12/10/2017
12/10/2018
12/10/2019
12/10/2020
12/10/2021</td></tr>
<tr><td colspan="2">Calibration entity: Xiangxi metering center of Hunan Electric Power Co., Ltd.</td></tr>
</table>
2# generator meter:
Type: DTSD341
Accuracy class: 0.5S
S/N number: 11030611780205
Calibration frequency: annually
Calibration information:
<table>
<tr><th>Calibration date</th><th>Valid until</th></tr>
<tr><td>13/10/2013
13/10/2014
13/10/2015
13/10/2016
13/10/2017
13/10/2018
13/10/2019
13/10/2020</td><td>12/10/2014
12/10/2015
12/10/2016
12/10/2017
12/10/2018
12/10/2019
12/10/2020
12/10/2021</td></tr>
<tr><td colspan="2">Calibration entity: Xiangxi metering center of Hunan Electric Power Co., Ltd.</td></tr>
</table>
3# generator meter:
Type: DTSD341
Accuracy class: 0.5S
S/N number: 11030611780210
Calibration frequency: annually
Calibration information:
<table>
<tr><th>Calibration date</th><th>Valid until</th></tr>
<tr><td>13/10/2013
13/10/2014
13/10/2015
13/10/2016
13/10/2017
13/10/2018
13/10/2019
13/10/2020</td><td>12/10/2014
12/10/2015
12/10/2016
12/10/2017
12/10/2018
12/10/2019
12/10/2020
12/10/2021</td></tr>
<tr><td colspan="2">Calibration entity: Xiangxi metering center of Hunan Electric Power Co., Ltd.</td></tr>
</table>
</td>
</tr>
</table>

Measuring/reading/recording frequency	Continuous measurement by meters installed on the exit of generators daily reading and monthly recording.
Calculation method (if applicable)	The meters will be calibrated once a year.
QA/QC procedures	/
Purpose of data/parameter	To calculate the project emission.
Additional comments	/

Data/Parameter	$EG_{facility,y}$
Unit	MWh
Description	Quantity of net electricity generation supplied by the project plant to CCPG in year y
Measured/calculated/ default	Measured
Source of data	Main meter
Value(s) of monitored parameter	605653.84 MWh

<table>
<tr><td>Monitoring equipment</td><td>The data was measured by the main meter:
Type: DTSD341
Accuracy class: 0.2S
S/N number: 43414010000187979
Calibration frequency: annually
Calibration information:

<table><tr><th>Calibration date</th><th>Valid until</th></tr><tr><td>13/10/2013
13/10/2014
13/10/2015
13/10/2016
13/10/2017
13/10/2018
13/10/2019
13/10/2020</td><td>12/10/2014
12/10/2015
12/10/2016
12/10/2017
12/10/2018
12/10/2019
12/10/2020
12/10/2021</td></tr><tr><td colspan="2">Calibration entity: Xiangxi metering center of Hunan Electric Power Co., Ltd.</td></tr></table>
And the backup meter if the Main meter does not work in normal function:
Type: DTSD341
Accuracy class: 0.2S
S/N number: 43414010000187980
Calibration frequency: annually
Calibration information:

<table><tr><th>Calibration date</th><th>Valid until</th></tr><tr><td>13/10/2013
13/10/2014
13/10/2015
13/10/2016
13/10/2017
13/10/2018
13/10/2019
13/10/2020</td><td>12/10/2014
12/10/2015
12/10/2016
12/10/2017
12/10/2018
12/10/2019
12/10/2020
12/10/2021</td></tr><tr><td colspan="2">Calibration entity: Xiangxi metering center of Hunan Electric Power Co., Ltd.</td></tr></table></td></tr>
<tr><td>Measuring/reading/recording frequency</td><td>Continuous measurement by meter installed at the connection point to the grid, daily reading and monthly recording.</td></tr>
<tr><td>Calculation method
(if applicable)</td><td>The meter will be calibrated once a year.</td></tr>
<tr><td>QA/QC procedures</td><td>When the main meter or back-up meter have a breakdown, the electricity generation difference will be treated as follows:
(1) When one of the two meters has a breakdown, the readings of another meter will be adopted;
(2) If both of the main meter and back up meter have breakdowns, the net electricity supplied to the grid will be calculated with the readings of other meters such as the meter installed at the exit of the generator deducting the loss after the discussion between the owner and the grid company.</td></tr>
<tr><td>Purpose of data/parameter</td><td>To calculate the project emission.</td></tr>
<tr><td>Additional comments</td><td>/</td></tr>
</table>

Data/Parameter	Cap_{PJ}
Unit	W
Description	Installed capacity of the hydro power plant after the implementation of the project activity.
Measured/calculated/ default	Measured
Source of data	Project site
Value(s) of monitored parameter	33,000,000
Monitoring equipment	/
Measuring/reading/recordi ng frequency	Yearly monitored based on recognized standards.
Calculation method (if applicable)	/
QA/QC procedures	/
Purpose of data/parameter	The data are used for the calculation of project emission.
Additional comments	/

Data/Parameter	A_{PJ}
Unit	m^2
Description	Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full.
Measured/calculated/ default	Measured
Source of data	Project site
Value(s) of monitored parameter	3,000,000
Monitoring equipment	/
Measuring/reading/recordi ng frequency	Yearly monitored from topographical surveys, maps, satellite pictures, etc
Calculation method (if applicable)	/
QA/QC procedures	/
Purpose of data/parameter	The data are used for the calculation of project emission.
Additional comments	/

D.3. Implementation of sampling plan

>>
Not applicable.

SECTION E. Calculation of emission reductions or net anthropogenic removals

E.1. Calculation of baseline emissions or baseline net removals

>>

According to ACM0002, the baseline emissions during this monitoring period is calculated as follows:

$BE_y = EG_{facility,y} * EF_y$

Where:
$EG_{facility,y}$ is net electricity supplied by the project activity to the grid in year y, in MWh;
EF_y is baseline emission factor in year y, in tCO_2e/MWh. According to the registered PDD, the EF_y is $0.9735tCO_2e/MWh$, and is fixed during the crediting period.

The monitoring results based on main meter are as follows:

Period	Data from reading records			Data from ETN(for crosscheck)		
	Electricity export (MWh)	Electricity import (MWh)	Net electricity generation (MWh)	Electricity export (MWh)	Electricity import (MWh)	Net electricity generation (MWh)
	A	B	C = A - B	D	E	F=D-E
25/05/2014-30/06/2014	16660.16	0	16660.160	16660.16	0	16660.160
Jul-14	16084.64	0	16084.640	16084.64	0	16084.640
Aug-14	10336.48	0	10336.480	10336.48	0	10336.480
Sep-14	9293.68	0	9293.680	9293.68	0	9293.680
Oct-14	3721.52	0	3721.520	3721.52	0	3721.520
Nov-14	9109.76	0	9109.760	9109.76	0	9109.760
Dec-14	5102.24	0	5102.240	5102.24	0	5102.240
Jan-15	1847.12	0	1847.120	1847.12	0	1847.120
Feb-15	2757.04	0	2757.040	2757.04	0	2757.040
Mar-15	2687.52	0	2687.520	2687.52	0	2687.520
Apr-15	5581.84	0	5581.840	5581.84	0	5581.840
May-15	9322.72	0	9322.720	9322.72	0	9322.720
Jun-15	13897.84	0	13897.840	13897.84	0	13897.840
Jul-15	11832.48	0	11832.480	11832.48	0	11832.480
Aug-15	9252.32	0	9252.320	9252.32	0	9252.320
Sep-15	10778.24	0	10778.240	10778.24	0	10778.240
Oct-15	5567.76	0	5567.760	5567.76	0	5567.760
Nov-15	3421.44	0	3421.440	3421.44	0	3421.440
Dec-15	2776.4	0	2776.400	2776.4	0	2776.400
Jan-16	7934.08	0	7934.080	7934.08	0	7934.080
Feb-16	3439.92	0	3439.920	3439.92	0	3439.920
Mar-16	7384.96	0	7384.960	7384.96	0	7384.960
Apr-16	10856.56	0	10856.560	10856.56	0	10856.560
May-16	15983.44	0	15983.440	15983.44	0	15983.440
Jun-16	14756.72	0	14756.720	14756.72	0	14756.720
Jul-16	17296.4	0	17296.400	17296.4	0	17296.400
Aug-16	11556.16	0	11556.160	11556.16	0	11556.160
Sep-16	4699.2	0	4699.200	4699.2	0	4699.200
Oct-16	2837.12	0	2837.120	2837.12	0	2837.120
Nov-16	9391.36	0	9391.360	9391.36	0	9391.360
Dec-16	3778.72	0	3778.720	3778.72	0	3778.720
Jan-17	3338.72	0	3338.720	3338.72	0	3338.720

Feb-17	4381.52	0	4381.520	4381.52	0	4381.520
Mar-17	4001.36	0	4001.360	4001.36	0	4001.360
Apr-17	4099.92	0	4099.920	4099.92	0	4099.920
May-17	6688	0	6688.000	6688	0	6688.000
Jun-17	11366.08	0	11366.080	11366.08	0	11366.080
Jul-17	10244.08	0	10244.080	10244.08	0	10244.080
Aug-17	7155.28	0	7155.280	7155.28	0	7155.280
Sep-17	9042.88	0	9042.880	9042.88	0	9042.880
Oct-17	10999.12	0	10999.120	10999.12	0	10999.120
Nov-17	3877.28	0	3877.280	3877.28	0	3877.280
Dec-17	2332	0	2332.000	2332	0	2332.000
Jan-18	2721.84	0	2721.840	2721.84	0	2721.840
Feb-18	2475.44	0	2475.440	2475.44	0	2475.440
Mar-18	2178	0	2178.000	2178	0	2178.000
Apr-18	5358.32	0	5358.320	5358.32	0	5358.320
May-18	9576.16	447.92	9128.240	9576.16	447.92	9128.240
Jun-18	11317.68	7.04	11310.640	11317.68	7.04	11310.640
Jul-18	11392.48	5.28	11387.200	11392.48	5.28	11387.200
Aug-18	3766.4	16.72	3749.680	3766.4	16.72	3749.680
Sep-18	3920.4	15.84	3904.560	3920.4	15.84	3904.560
Oct-18	8870.4	6.16	8864.240	8870.4	6.16	8864.240
Nov-18	8976.88	9.68	8967.200	8976.88	9.68	8967.200
Dec-18	4472.16	18.48	4453.680	4472.16	18.48	4453.680
Jan-19	6094	15.84	6078.160	6094	15.84	6078.160
Feb-19	4312	15.84	4296.160	4312	15.84	4296.160
Mar-19	6466.24	9.68	6456.560	6466.24	9.68	6456.560
Apr-19	5895.12	9.68	5885.440	5895.12	9.68	5885.440
May-19	15774.88	2.64	15772.240	15774.88	2.64	15772.240
Jun-19	12569.04	5.28	12563.760	12569.04	5.28	12563.760
Jul-19	10649.76	4.4	10645.360	10649.76	4.4	10645.360
Aug-19	6067.6	12.32	6055.280	6067.6	12.32	6055.280
Sep-19	3335.2	15.84	3319.360	3335.2	15.84	3319.360
Oct-19	3928.32	14.96	3913.360	3928.32	14.96	3913.360
Nov-19	5659.28	13.2	5646.080	5659.28	13.2	5646.080
Dec-19	3226.96	22.88	3204.080	3226.96	22.88	3204.080
Jan-20	3094.96	29.04	3065.920	3094.96	29.04	3065.920
Feb-20	7967.52	10.56	7956.960	7967.52	10.56	7956.960
Mar-20	5627.6	14.08	5613.520	5627.6	14.08	5613.520
Apr-20	1037.52	3.52	1034.000	1037.52	3.52	1034.000
May-20	4334	12.32	4321.680	4334	12.32	4321.680
Jun-20	8035.28	7.04	8028.240	8035.28	7.04	8028.240
Jul-20	16104.88	0.88	16104.000	16104.88	0.88	16104.000
Aug-20	17122.16	0.88	17121.280	17122.16	0.88	17121.280
Sep-20	9774.16	8.8	9765.360	9774.16	8.8	9765.360
Oct-20	16600.32	0.88	16599.440	16600.32	0.88	16599.440
Nov-20	15743.2	2.64	15740.560	15743.2	2.64	15740.560
Dec-20	4512.64	16.72	4495.920	4512.64	16.72	4495.920
Sum	606430.88	777.04	605653.840	606430.88	777.04	605653.840

The monitoring results based on the meter installed at the exit of the generator are as follows, the total electricity generation is the sum of each data from three generators.

Total Electricity generation				
Duration	Electricity generated by 1# Generator(MWh)	Electricity generated by 2# Generator(MWh)	Electricity generated by 3# Generator(MWh)	Total Electricity Generation(MWh)
	A	B	C	D=A+B+C
25/05/2014-30/06/2014	7597.464	6436.248	6022.8	20056.512
Jul-14	5999.28	5821.032	5398.68	17218.992
Aug-14	3967.152	4242	3120.6	11329.752
Sep-14	3306.576	2976.288	2865.408	9148.272
Oct-14	1290.744	1501.92	1744.68	4537.344
Nov-14	3516.408	3725.904	2453.472	9695.784
Dec-14	1932.336	1135.176	1731.912	4799.424
Jan-15	596.064	683.256	486.192	1765.512
Feb-15	1003.8	875.952	1243.2	3122.952
Mar-15	745.248	978.768	1222.704	2946.72
Apr-15	1934.016	2190.048	1469.496	5593.56
May-15	3787.392	2653.392	4088.616	10529.4
Jun-15	5303.256	4534.992	5100.984	14939.232
Jul-15	4312.728	4932.312	3323.712	12568.752
Aug-15	3909.528	3253.992	3095.904	10259.424
Sep-15	2932.608	4781.28	3221.4	10935.288
Oct-15	1913.688	1713.6	1625.232	5252.52
Nov-15	1137.192	1239	1670.088	4046.28
Dec-15	3274.992	1076.712	3053.4	7405.104
Jan-16	1180.368	1404.984	1400.952	3986.304
Feb-16	1291.416	1012.872	1211.112	3515.4
Mar-16	3627.792	2514.288	3091.872	9233.952
Apr-16	4815.552	3826.032	3189.48	11831.064
May-16	6466.32	5699.232	6134.52	18300.072
Jun-16	6845.832	4910.136	4706.856	16462.824
Jul-16	6219.192	4853.016	4481.904	15554.112
Aug-16	5584.152	3662.232	2731.68	11978.064
Sep-16	2784.6	589.176	580.776	3954.552
Oct-16	1935.528	1575.504	1469.496	4980.528
Nov-16	4196.64	2259.096	1863.12	8318.856
Dec-16	1693.104	1192.8	1627.416	4513.32

Jan-17	1506.624	1336.104	1388.352	4231.08
Feb-17	860.328	1123.584	1541.232	3525.144
Mar-17	1603.728	1485.288	1455.216	4544.232
Apr-17	1685.376	1666.728	1641.36	4993.464
May-17	2911.44	2268.168	1949.976	7129.584
Jun-17	6053.88	4047.624	3946.32	14047.824
Jul-17	3165.624	1692.768	3114.048	7972.44
Aug-17	5256.72	915.096	2417.856	8589.672
Sep-17	4444.272	2466.408	3499.608	10410.288
Oct-17	5302.752	2382.408	2606.016	10291.176
Nov-17	1224.384	1021.44	858.816	3104.64
Dec-17	583.968	1455.72	689.472	2729.16
Jan-18	573.216	1639.008	817.656	3029.88
Feb-18	317.016	1191.792	859.32	2368.128
Mar-18	1116.024	928.704	801.36	2846.088
Apr-18	2281.608	1816.08	1686.384	5784.072
May-18	3798.984	4938.36	4777.08	13514.424
Jun-18	3034.248	2607.696	3210.816	8852.76
Jul-18	4392.864	3870.72	3717.168	11980.752
Aug-18	1053.528	1220.856	1193.136	3467.52
Sep-18	2348.472	2182.152	2168.376	6699
Oct-18	1706.208	3011.4	2879.352	7596.96
Nov-18	4051.824	3395.784	2331.168	9778.776
Dec-18	1971.816	1050.672	1507.296	4529.784
Jan-19	1608.096	2200.8	2465.064	6273.96
Feb-19	1964.76	897.792	1758.12	4620.672
Mar-19	2367.96	2397.864	1964.256	6730.08
Apr-19	2795.52	2763.432	2282.784	7841.736
May-19	5919.144	5821.536	5572.392	17313.072
Jun-19	4658.472	4146.744	4100.712	12905.928
Jul-19	3869.376	2836.848	3141.936	9848.16
Aug-19	2046.912	2053.8	1819.104	5919.816
Sep-19	1541.232	759.864	862.344	3163.44
Oct-19	2335.032	1940.568	2248.008	6523.608
Nov-19	1648.248	1344.672	1339.8	4332.72
Dec-19	1231.272	1198.512	750.12	3179.904
Jan-20	1799.112	1432.368	1513.008	4744.488
Feb-20	2398.872	2697.912	2217.6	7314.384
Mar-20	2025.24	1848.672	2080.344	5954.256
Apr-20	1872.528	1371.552	1358.28	4602.36

May-20	2834.16	2690.856	3012.072	8537.088
Jun-20	6255.648	5160.12	5672.184	17087.952
Jul-20	7163.52	6045.816	5979.456	19188.792
Aug-20	3921.288	2808.456	2631.552	9361.296
Sep-20	6191.64	5494.944	5937.624	17624.208
Oct-20	6219.192	5542.152	4954.488	16715.832
Nov-20	2129.568	1417.752	1240.512	4787.832
Dec-20	1193.64	1297.968	1708.896	4200.504
Sum	242336.30	204136.81	203095.70	649568.81

Note: The data sources are from the main meter readings and can be cross checked by electricity transaction notes. There is no malfunction happened to main meter during this monitoring period.

According to above calculation methods, the net electricity generation used for emission reductions calculation is 605653.84 MWh. The baseline emission factor (EF_y) is 0.9735tCO_2/MWh, which is fixed during the first crediting period. Then the baseline emissions (BE_y) are calculated as follows:

$BE_y = EG_{facility,y} * EF_y$ =605653.84MWh*0.9735tCO_2/MWh =589,604 tCO_2

E.2. Calculation of project emissions or actual net removals

>>
According to the registered PDD, the project is a newly built hydropower station, the power density (PD)of the project is calculated as: PD=(33,000,000W-0W)/(3,000,000m^2-0m^2) =11W/m^2, which is greater than 10W/m^2. According to baseline methodology, it is not needed to consider project emissions.

Therefore $PE_y = 0$.

E.3. Calculation of leakage emissions

>>
According to baseline methodology ACM0002, leakage is not to be considered.

E.4. Calculation of emission reductions or net anthropogenic removals

	Baseline GHG emissions or baseline net GHG removals (t CO_2e)	Project GHG emissions or actual net GHG removals (t CO_2e)	Leakage GHG emissions (t CO_2e)	GHG emission reductions or net anthropogenic GHG removals (t CO_2e)			
				Before 01/01/ 2013	From 01/01/ 2013 until 31/12/ 2020	From 01/01/ 2021	Total amount
Total	589,604	0	0	0	589,604	0	589,604

E.5. Comparison of emission reductions or net anthropogenic removals achieved with estimates in the registered PDD

Amount achieved during this monitoring period (t CO_2e)	Amount estimated ex ante for this monitoring period in the PDD (t CO_2e)

Amount achieved during this monitoring period (t CO_2e)	Amount estimated ex ante for this monitoring period in the PDD (t CO_2e)
589,604	633,080* *as the total operation days is 2,412 days from 25/05/2014 to 31/12/2020, thus the total estimated emission reduction can be calculated as: 95802/365*2412=633,080 tCO_2e.

E.5.1. Explanation of calculation of "amount estimated ex ante for this monitoring period in the PDD"

>>
It can be found from E.5 that the actual emission reduction achieved during the monitoring period is lower than the registered PDD. It is due to the availability of water resources during the monitoring period.

E.6. Remarks on increase in achieved emission reductions

>>
The achieved emission reduction is lower than the estimated in the PDD.

E.7. Remarks on scale of small-scale project activity

>>

Not applicable.

- - - - -

Document information

Version	*Date*	*Description*
09.0	8 October 2021	Revision to: • Ensure consistency with version 03.0 of the "CDM project standard for project activities" (CDM-EB93-A04-STAN).
08.0	6 April 2021	Revision to: • Reflect the "Clarification: Regulatory requirements under temporary measures for post-2020 cases" (CDM-EB109-A01-CLAR).
07.0	31 May 2019	Revision to: • Ensure consistency with version 02.0 of the "CDM project standard for project activities" (CDM-EB93-A04-STAN); • Add a section on remarks on the observance of the scale limit of small-scale project activity during the crediting period; • Add "changes specific to afforestation or reforestation project activity" as a possible post-registration changes; • Clarify the reporting of net anthropogenic GHG removals for A/R project activities between two commitment periods; • Make editorial improvements.
06.0	7 June 2017	Revision to: • Ensure consistency with version 01.0 of the "CDM project standard for project activities" (CDM-EB93-A04-STAN); • Make editorial improvements.
05.1	4 May 2015	Editorial revision to correct version numbering.
05.0	1 April 2015	Revisions to: • Include provisions related to delayed submission of a monitoring plan; • Provisions related to the Host Party; • Remove reference to programme of activities; • Overall editorial improvement.
04.0	25 June 2014	Revisions to: • 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 *F-CDM-MR* to *CDM-MR-FORM*; • Editorial improvement.
03.2	5 November 2013	Editorial revision to correct table in page 1.

Version	*Date*	*Description*
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 GHG removals by sinks for the period up to 31 December 2012 and the period from 1 January 2013 onwards (EB 70, 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).
01.0	28 May 2010	EB 54, Annex 34. Initial adoption.

Decision Class: Regulatory
Document Type: Form
Business Function: Issuance
Keywords: monitoring report