Project design document form
(Version 11.0)

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

BASIC INFORMATION	
Title of the project activity	Hubei Lichuan Qiyueshan Wind Power Project
Scale of the project activity	☒ Large-scale ☐ Small-scale
Version number of the PDD	Version 03.1
Completion date of the PDD	14/08/2019
Project participants	Hubei Energy Group Qiyueshan Wind Power Co., Ltd. (The project owner)
Host Party	P.R.China
Applied methodologies and standardized baselines	ACM0002 “Grid-connected electricity generation from renewable sources” (Version 19.0)
Sectoral scopes	Sectoral scope 1: Energy industries (renewable / non-renewable sources)
Estimated amount of annual average GHG emission reductions	65,557 tCO_2e

SECTION A. Description of project activity

A.1. Purpose and general description of project activity

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The purpose of the project is to utilize the wind power for generating electricity, which will be delivered to the Centre China Power Grid (CCPG). The total installed capacity of the project is 49.3 MW with 58 sets of turbines. The estimated on-grid electricity supply is 86,969 MWh per year, and the annual operation hour is 1764 h with a load factor of 0.2014.

The project scenario is the installation of 49.3MW of renewable energy power generation capacity, and the supply to CCPG of 86,969MWh of electricity generated from renewable energy. The baseline scenario is the same as the scenario existing prior to the implementation of the proposed project activity, is comparable capacity or electricity generation addition provided by the CCPG. The project activity will generate greenhouse gas (GHG) emission reductions by avoiding CO_2 emissions from electricity generation by fossil fuel power plants of the CCPG and will contribute to sustainable development of the local community and the host country by reducing greenhouse gases (GHG) emissions of 65,557 tCO_2e per year.

The project clearly fits into the development priority of China. It will not only supply renewable electricity to the grid, but also contribute to sustainable development of the local community, the host country and the world by means of:

- Reducing greenhouse gas emissions compared to a business-as-usual scenario;
- Stimulating the growth of the wind power industry in China;
- Providing 86,969 MWh green electricity annually to CCPG;
- Reduce other pollutants resulting from the power generation industry, compared to a business-as-usual approach, such as SO_2, NO_x and dust emission;
- Creating more than 30 local employment opportunities during the project construction and operation period;
- Promoting the development of local tourism industry.

A.2. Location of project activity

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Hubei Lichuan Qiyueshan Wind Power Project (hereafter referred to as the project) is located in the Qiyueshan Mountain, Lichuan City, Hubei Province, P.R.China. The project is located at the region of ABCD, where:

Position	Latitude	Longitude
D	30.5147	108.8611
C	30.5278	108.8517
B	30.4231	108.7428
A	30.4156	108.7553

The altitude of the project site is 1580m~1750m. It is 530km west of Wuhan City. Figure A.1 shows the location of the project.

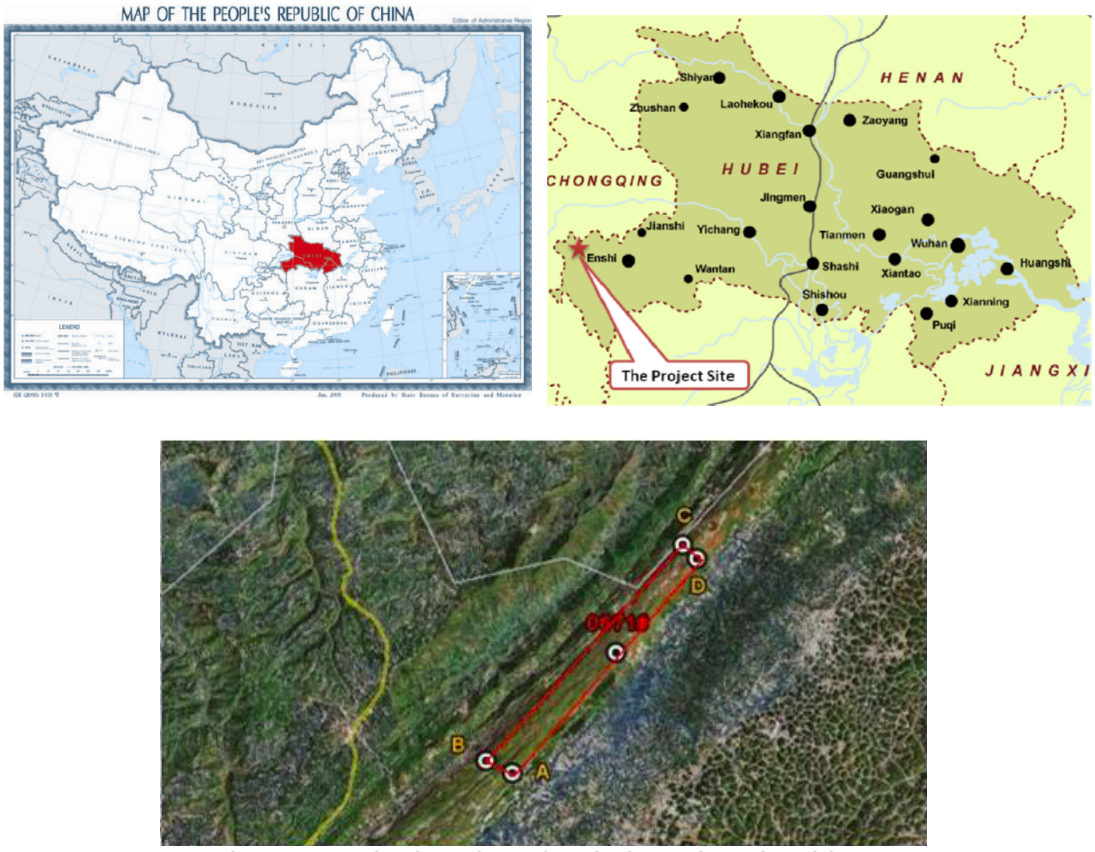

Figure A.1 The location of Hubei province in China,
the location of the Project

A.3. Technologies/measures

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The baseline scenario is the same as the scenario existing prior to the implementation of the proposed project activity, is comparable capacity or electricity generation by the CCPG. While for the project scenario, it will use 58 wind turbines with unit capacity of 850kW, totals up an installation capacity of 49.3MW. The annual average wind speed and annual average wind power density are 6.2m/s, 270.9W/m^2 respectively at the 60m high at the project site. The annual on-grid electricity supplied to the CCPG is 86,969MWh. The wind turbine was manufactured by Gamesa Wind (Tianjin) Co., Ltd. The main parameters of wind turbine are described as follows:

Table A-1 The technical parameters of wind turbine

Item	Unit	Value
Turbine type		Gamesa G58-850 KW
Blade No.		3
Diameter	m	58
Swept area	m^2	2624
Hub height	m	44
Rated rotational speed	rpm	14.6~30.8
Cut-in speed	m/s	3
Cut-out speed	m/s	21
Rated speed	m/s	16
Save speed	m/s	52.5
Rated power	kW	850
Rated Voltage of generator	V	690

Lifetime	Year	20

Foreign technology is adopted by the proposed project, and there is no technology transfer.

One substation has been built. The power generation from the proposed project is sent to the grid through the Nanping substation by 110 kV voltage-rise transforming station of the wind farm. The net electricity supplied by the proposed project activity to the grid is monitored through the main meter installed in substation, recording exports to the grid (supply) and imports from the grid (consumption). There will be also electric meters in the substation of the wind farm as backup.

The project scenario is the installation of 58 wind turbines with an aggregate capacity of 49.3 MW. The wind turbines are estimated to generate on average 86,969 MWh of electricity annually once fully operational, with an average load factor of 0.2014. The expected load factor is determined in the FSR, by an independent qualified design institute with the highest grade, using scientific methods as applied internationally, based on detailed information available, including long-term local wind speeds, in accordance with EB guidance on plant load factors (EB48 Annex 11).

Prior to the implementation of the project activity, the electricity was generated by grid-connected power plants. Without the implementation of the project, this scenario would have continued and is considered the baseline scenario.

As the CCPG is dominated by thermal power generation, the establishment of the proposed project activity will lead to greenhouse gas emission reductions of 65,557 tCO_2e per year, which is estimated by the baseline methodology below.

A.4. Parties and project participants

Parties involved	Project participants	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
P.R.China (Host Party)	Hubei Energy Group Qiyueshan Wind Power Co., Ltd. (project owner)	No

A.5. Public funding of project activity

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

A.6. History of project activity

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The actual implementation of the project is in compliance with that described in the PDD. The implementation of the project is in compliance with the registered PDD (reference No. 5204). The key milestone of the project is indicated in the below table.

Table A-2 The milestone of the Project

Milestone	Time
Operation of the power plant	08/06/2012
CDM Registration Date	23/09/2011
1st Monitoring Period	23/09/2011~27/06/2012(issued)

Total emission reductions achieved during the 1st monitoring period (23/09/2011~27/06/2012) were 58,389 tCO_2e.

The PDD is for the renewal of crediting period. It is confirmed that:

(a) The proposed CDM project activity is not included as a component project activity (CPA) in a registered CDM programme of activities (PoA);
(b) The proposed CDM project activity is not a project activity that has been deregistered.

And confirmed that:

(a) The proposed CDM project activity was not a CPA that has been excluded from a registered CDM PoA;
(b) The proposed project is not a registered CDM project activity or a CPA under a registered CDM PoA whose crediting period has or has not expired (hereinafter referred to as former project) exists in the same geographical location as the proposed CDM project activity.

A.7. Debundling

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No appliance.

SECTION B. Application of methodologies and standardized baselines

B.1. References to methodologies and standardized baselines

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The baseline methodology applied to the proposed project includes:
The approved consolidated baseline methodology ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, Version 19.0
Tool to calculate the emission factor for an electricity system, Version 07.0.0
“Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period” (Version 03.0.1)
For more information on these methodologies, please refer to
https://cdm.unfccc.int/methodologies/DB/VJI9AX539D9MLOPXN2AY9UR1N4IYGD
https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf
https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf

B.2. Applicability of methodologies and standardized baselines

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The Methodology ACM0002 (Version 19.0) is chosen and applicable to the project due to the following reasons:

No.	Applicability	Explain
1	This methodology is applicable to grid-connected renewable energy power generation project activities that (a) install a Greenfield power plant; (b) involve a capacity addition to (an) existing plant(s); (c) involve a retrofit of (an) existing operating plants/units; (d) involve a rehabilitation of (an) existing plant(s)/unit(s); or (e) involve a replacement of (an) existing plant(s) /unit(s).	The Project belongs to grid-connected renewable energy power generation project activities that (a) install a Greenfield power plant.
2	The project activity may include renewable energy power plant/unit of one of the following types: hydro power plant/unit with or without reservoir, wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit;	The Project is the installation of a new grid connected wind power plant.
3	In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.	The Project is the installation of a new grid connected wind power plant. So this applicability condition does not need to be considered.
4	In case of hydro power plants, one of the following conditions must apply: (a) The project activity is implemented in existing single or multiple reservoirs, with no change in the volume of any of the reservoirs; or (b) The project activity is implemented in existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density calculated using equation (3), is greater than 4 W/m^2; or (c) The project activity results in new single or multiple reservoirs and the power density, calculated using equation	The Project is a wind power plant, so this applicability condition does not need to be considered.

	(3), is greater than 4 W/m^2; or (d) The project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated using equation (3), is lower than or equal to 4 W/m^2, all of the following conditions shall apply: (i) The power density calculated using the total installed capacity of the integrated project, as per equation (4), is greater than 4 W/m^2; (ii) Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity; (iii) Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m^2 shall be: a. Lower than or equal to 15 MW; and b. Less than 10 per cent of the total installed capacity of integrated hydro power project.	
5	In the case of integrated hydro power projects, project proponent shall: Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project; or Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum five years prior to implementation of CDM project activity.	The Project is a wind power plant. So this applicability condition does not need to be considered.
6	The methodology is not applicable to the following: (a) Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site; (b) Biomass fired power plants/units.	The Project is a newly built wind power plant, therefore: (e)The Project does not involve switching from fossil fuels to renewable energy sources at the site of the project activity; (f) The Project is not a biomass fired power plant.
7	In the case of retrofits, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is the continuation of the current situation, i.e. to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance.	The Project is the installation of a new grid connected wind power plant, so this applicability condition does not need to be considered.

The applicability criteria stated in methodology ACM0002 (Version 19.0) are met on the basis of the reasons above.

B.3. Project boundary, sources and greenhouse gases (GHGs)

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Based on the methodology ACM0002, the Project boundary encompasses the physical, geographical site of the renewable generation source. The electricity displaced by the Project is the electricity generated by the CCPG. Therefore, the boundary when calculating the baseline Operating Margin emission factor and the Build Margin emission factor is set within the CCPG and the Project. The spatial scope of the Project boundary covers those fossil fuel-fired power plants physically connected into the CCPG.

With reference to "2017 Baseline Emission Factors for Regional Power Grids in China" issued by China DNA on 20/12/2018, the CCPG is composed of Henan Power Grid, Hubei Power Grid, Hunan Power Grid, Jiangxi Power Grid, Sichuan Power Grid and Chongqing Power Grid.

The greenhouse gases and emission sources included in or excluded from the project boundary are shown in the following table:

Source		GHG	Included?	Justification / Explanation
Baseline	Grid electricity generation	CO_2	Yes	Main emission source
		CH_4	No	Excluded for simplification. This is conservative.
		N_2O	No	Excluded for simplification. This is conservative.
Project Activity	Project Emission	CO_2	No	Excluded by the methodology.
		CH_4	No	Excluded by the methodology.
		N_2O	No	Excluded by the methodology.

The following flow diagram shows the project boundary:

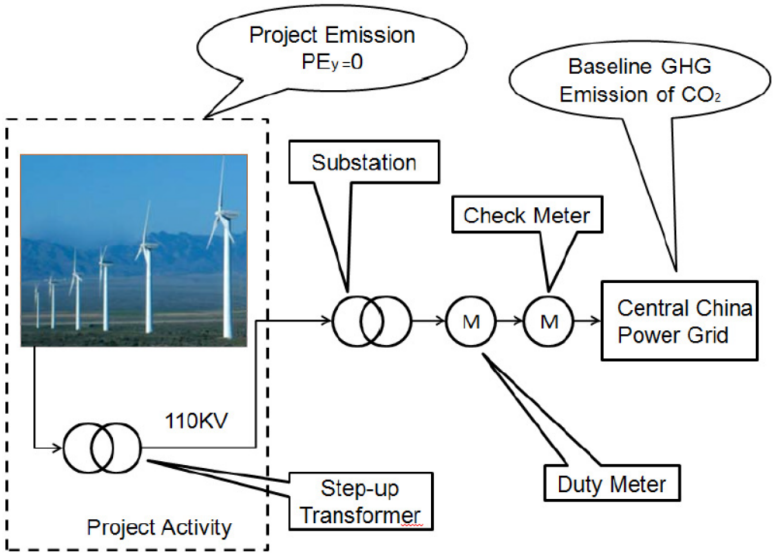

Figure B.1 Flow diagram of the project boundary

B.4. Establishment and description of baseline scenario

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The Project Activity is the installation of a new Greenfield power plant, and is not a capacity addition, retrofit, rehabilitation or replacement of existing grid-connected renewable power plant/unit. Therefore, the baseline scenario is prescribed in the methodology:

Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system".

The selected methodology prescribes the baseline scenario, thus no further analysis is required.

The combined margin is calculated in Section B.6 below.

According to the ACM0002 (version 19.0), the methodological tool "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period" (version 03.0.1) is adopted to assess the continued validity of the baseline and to update the baseline. This tool provides a stepwise procedure to assess the continued validity of the baseline and to update the baseline at the renewal of a crediting period, as required by paragraph 49(a) of the modalities and procedures of the clean development mechanism.

Step 1: Assess the validity of the current baseline for the next crediting period

Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies

If the current baseline complies with all relevant mandatory national and/or sectoral policies which have come into effect after the submission of the project activity for validation or the submission of the previous request for renewal of the crediting period and are applicable at the time of requesting renewal of the crediting period, go to Step 1.2.

- There are no new national and/or sectoral policies that could affect the baseline scenario at the time of requesting renewal of the crediting period. The current baseline complies with all relevant mandatory national and/or sectoral policies. Hence in the absence of the project the electricity would still have been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "*Tool to calculate the emission factor for an electricity system*".

Step 1.2: Assess the impact of circumstances

Assess the impact of circumstances existing at the time of requesting renewal of the crediting period on the current baseline emissions, without reassessing the baseline scenario.

In the situation where the baseline scenario identified at the validation of the project activity was the continuation of the current practice without any investment, an assessment of the changes in market characteristics is required for the renewal of the crediting period.

- The baseline scenario identified at the validation of the project was the continuation of the current practice without any investment. Baseline emissions are primarily derived from the fossil fuel power plants in the CCPG. The total generation produced by fossil fuel power plants accounts for more than 70% of total electricity generation in CCPG; and this percentage has not been changed significantly in recent 5 years. Therefore, market characteristics do not have impact on the baseline emissions.

Evaluate whether the conditions used to determine the baseline emissions in the previous crediting period are still valid. Assess the availability of new fuels or raw materials and the impact of electricity or fuel prices in the identification of the current practice for the baseline emissions.

- The conditions used to determine the baseline emissions in the previous crediting period are still valid. The availability of new fuels or raw materials or the level of fuel prices has no impact on the identification of the current practice for the baseline emissions. Presently the CCPG is dominated by the fossil fuel power plants. The availability of new fuels or raw materials or the level of fuel prices has no impact on the baseline emissions.

If the new circumstances make a continued validity of the current baseline not plausible, then the current baseline needs to be updated for the subsequent crediting period.

As there are no new circumstances that make a continued validity of the current baseline not plausible, the current baseline does not need to be updated for the second crediting period.

Step 1.3: Assess whether the continuation of use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested

This sub-step should only be applied if the baseline scenario identified at the validation of the project activity was the continuation of use of the current equipment(s) without any investment and, the projects proponents or third party (or parties) would undertake an investment later due, for example, to the end of the technical lifetime of the equipment(s) before the end of the crediting period or the availability of a new technology.

Assess whether the remaining technical lifetime of the equipment that would have continued to be used in the absence of the project, as determined in the renewal CDM-PDD, exceeds the crediting period for which renewal is requested.

Take into consideration the market penetration of different technologies. Evaluate the penetration rate of different technologies that are available in the market and evaluate how they could affect the baseline.

- As determined in the renewal CDM-PDD, the baseline scenario is that the electricity delivered to the grid by the project would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources in CCPG, as reflected in the combined margin (CM) calculations described in the "*Tool to calculate the emission factor for an electricity system*". The projects proponents or third party (or parties) would not undertake an investment later due. The combined margin calculation automatically takes account of any issues regarding remaining technical lifetime or market penetration.

If the baseline scenario of the project activity is the continuation of use of the current equipment(s) without any investment and the projects proponents or third party(ies) will undertake an investment later, but before the end of a crediting period, then the current baseline needs to be updated for that crediting period or the crediting of emission reductions should be limited to the period before the baseline equipment would cease its operation.

Therefore, the current baseline does not need to be updated for the second crediting period.

Step 1.4: Assessment of the validity of the data and parameters

Assess whether data and parameters that were only determined at the start of the crediting period and not monitored during the crediting period are still valid or whether they should be updated. Updates should be undertaken in the following cases:

- Where IPCC default values are used, the values should be updated if any new default values have been adopted and published by the IPCC, for example, in guidelines for national GHG inventories, IPCC assessment report or special reports by the IPCC;
- Where emission factors, values or emission benchmarks are used and determined only once for the crediting period, they should be updated, except if the emission factors, values or emission benchmarks are based on the historical situation at the site of the project prior to the implementation of the project and cannot be updated because the historical situation does not exist anymore as a result of the CDM project activity.

If any of the data and parameters that were only determined at the start of the crediting period and not monitored during the crediting period are not valid anymore, the current baseline needs to be updated for the subsequent crediting period.

In accordance with the methodology, the grid emission factor and all the values in its calculation are updated in section B.6.

If the application of Steps 1.1, 1.2, 1.3 and 1.4 confirmed that the current baseline as well as data and parameters are still valid for the subsequent crediting period, then this baseline, data and parameters can be used for the renewed crediting period. Otherwise, proceed to Step 2.

The original baseline scenario needs to be updated to incorporate the latest grid emission factor in accordance with the methodology.

Step 2: Update the current baseline and the data and parameters

This step is only applicable if any of the Steps 1.1, 1.2, 1.3 and/or 1.4 showed that the current baseline needs to be updated.

Step 2.1: Update the current baseline

Update the current baseline emissions for the subsequent crediting period, without reassessing the baseline scenario, based on the latest approved version of the methodology applicable to the project activity. The procedure should be applied in the context of the sectoral policies and circumstances that are applicable at the time of request for renewal of the crediting period.

As shown in step 1.1 above, in accordance with the procedures for renewal of the crediting period of a registered CDM project activity, the original baseline, as updated, remains valid taking new relevant national and/or sectoral policies and circumstances into account.

Step 2.2: Update the data and parameters

If the application of Step 1.4 showed that the data and/or parameter(s) that were only determined at the start of the crediting period and not monitored during the crediting period are not valid anymore, project participants should update all applicable data and parameters, following the guidance in Step 1.4.

As discussed above in step 1.4, the grid emission factor and all the values in its calculation are updated in section B.6.

Conclusion regarding the assessment of the validity of the original baseline scenario

In accordance with the procedures for renewal of the crediting period of a registered CDM project activity, the original baseline, as updated in accordance with step 2.2 in section B.6, remains valid taking new relevant national and/or sectoral policies and circumstances into account..

B.5. Demonstration of additionality

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Not applicable for the second crediting period.

In accordance with the procedures for renewal of the crediting period of a registered CDM project activity and the applied methodology, it does not require a reassessment of the baseline scenario or additionality, it is only required to assess whether the original project baseline is still valid or has been updated taking account of new data where applicable.

B.6. Estimation of emission reductions

B.6.1. Explanation of methodological choices

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Project emissions

As per the approved consolidated Methodology ACM0002 (Version 19) para 34:

"For most renewable energy power generation project activities, $PE_y = 0$. However, some project activities may involve project emissions that can be significant. These emissions shall be accounted for as project emissions by using the following equation:

$PE_y = PE_{FF,y} + PE_{GP,y} + PE_{HP,y}$ (1)

Where:

PE_y *= Project emissions in year y (t CO_2e/yr)*

$PE_{FF,y}$ *= Project emissions from fossil fuel consumption in year y (t CO_2/yr)*

$PE_{GP,y}$ *= Project emissions from the operation of dry, flash steam or binary geothermal power plants in year y (t CO_2e/yr)*

$PE_{HP,y}$ *= Project emissions from water reservoirs of hydro power plants in year y (tCO_2e/yr)"*

As the project activity is the installation of a new grid-connected Wind power plant/ unit and does not involve any project emissions from fossil fuel, operation of dry, flash steam or binary geothermal power plants, and from water reservoirs of hydro power plants. Therefore $PE_{FF,y}$, $PE_{GP,y}$, $PE_{HP,y}$ are equal to zero and thus, $PE_y = 0$.

Baseline emissions

According to the methodology, the baseline emissions include only CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are calculated as follows:

$$BE_y = EG_{PJ,y} \times EF_{grid,CM,y} \quad (2)$$

Where:

BE_y is the baseline emissions in year y (tCO_2/yr).

$EG_{PJ,y}$ is the quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr).

$EF_{grid,CM,y}$ is the combined margin CO_2 emission factor for grid connected power generation in year y calculated (tCO_2/MWh).

Calculation of $EG_{PJ,y}$

The calculation of $EG_{PJ,y}$ is different for:
(a) Greenfield plants,
(b) retrofits and replacements; and
(c) capacity additions. The Project Activity is a Greenfield plant.
(a) Greenfield renewable energy power plants

As the Project Activity is the installation of a new grid-connected renewable power plant/unit at a site where no renewable power plant was operated prior to the implementation of the project activity, the following applies:

$$EG_{PJ,y} = EG_{facility,y} \quad (3)$$

Where:

$EG_{PJ,y}$ is the quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr).

$EG_{facility,y}$ is the quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr).

Calculation of $EF_{grid,CM,y}$

In line with the methodology, the baseline emission factor is calculated as a combined margin ($EF_{grid,CM,y}$), consisting of the combination of operating margin ($EF_{grid,OM,y}$) and build margin ($EF_{grid,BM,y}$) factors according to the following steps defined in "Tool to calculate the emission factor for an electricity system" .

Details of the calculations and data follow the published data from the Chinese DNA[1], which uses official national statistics, and are presented in the enclosed EF calculation spreadsheet.

Step 1. Identify the relevant electricity systems

For determining the electricity emission factors, identify the relevant project electricity system. Similarly, identify any connected electricity system. If a connected electricity system is located partially or totally in Annex-I countries, then the emission factor of that connected electricity system should be considered zero. If the DNA of the host country has published a delineation of the project electricity system and connected electricity systems, these delineations should be used.

The DNA has published a delineation of the project electricity system and connected electricity systems, therefore these delineations are used in accordance with the Tool:

The project electricity system is the Central China Power Grid ("CCPG"). The grid consists of independent province-level electricity systems including Jiangxi, Henan, Hubei, Hunan, Chongqing and Sichuan province that are physically connected through transmission and distribution lines.

For the purpose of this tool, the reference system is the project electricity system. Hence electricity transfers from a connected electricity system to the project electricity system are defined as electricity imports while electricity transfers from the project electricity system to connected electricity systems are defined as electricity exports.

For the purpose of determining the build margin emission factor, the spatial extent is limited to the project electricity system, except where recent or likely future additions to the transmission capacity enable significant increases in imported electricity. In such cases, the transmission capacity may be considered a build margin source.

- There are no recent or likely future additions to transmission capacity that would enable significant increases in imported electricity; the data in the enclosed EF calculation spreadsheet shows that imports are relatively small and have not changed significantly in the period covered. Therefore, the transmission capacity is not considered a build margin source.

For the purpose of determining the operating margin emission factor, use one of the following options to determine the CO_2 emission factor(s) for net electricity imports from a connected electricity system:

(a) 0 tCO_2/MWh; or
(b) The simple operating margin emission rate of the exporting grid, determined as described in Step 4 section 6.4.1 of the Tool, if the conditions for this method, as described in Step 3 of the Tool, apply to the exporting grid; or
(c) The simple adjusted operating margin emission rate of the exporting grid, determined as described in Step 4 section 6.4.2 of the Tool; or
(d) The weighted average operating margin (OM) emission rate of the exporting grid, determined as described in Step 4 section 6.4.4 of the Tool.

- Following the calculations of the DNA, the simple operating margin option (b) is used to calculate the CO_2 emission factors for net electricity imports ($EF_{grid,import,y}$).

[1] http://qhs.mee.gov.cn/kzwsqtpf/201812/P020181220579925103092.pdf

For imports from connected electricity systems located in Annex-I country(ies), the emission factor is 0 tones CO_2 per MWh.

- There are no imports from Annex-I country(ies).

Electricity exports should not be subtracted from electricity generation data used for calculating and monitoring the electricity emission factors.

- Electricity exports from the project electricity system to the connected electricity system are not subtracted from electricity generation data used for calculating and monitoring the electricity emission factors.

Step 2. Choose whether to include off-grid power plants in the project electricity system (optional)

Project participants may choose between the following two options to calculate the operating margin and build margin emission factor:

Option I: Only grid power plants are included in the calculation.
Option II: Both grid power plants and off-grid power plants are included in the calculation.

The Option I is chosen, because only grid power plants would be considered in the project electricity system.

Step 3. Select a method to determine the operating margin (OM)

The calculation of the operating margin emission factor ($EF_{grid,OM,y}$) is based on one of the following methods:

(a) Simple OM; or
(b) Simple Adjusted OM; or
(c) Dispatch data analysis OM; or
(d) Average OM

The simple OM method (Option a) can only be used if any one of the following requirements is satisfied:

(a) Low-cost/must-run resources[2] constitute less than 50% of total grid generation (excluding electricity generated by off-grid power plants) in: 1) average of the five most recent years, and the average of the five most recent years shall be determined by using one of the approaches described below; or 2) based on long-term averages for hydroelectricity production.

a) Approach 1

$$share_{LCMR} = average\left[\frac{EG_{LCMRy-4}}{total_{y-4}},...,\frac{EG_{LCMRy}}{total_{y}}\right]$$

b) Approach 2

$$share_{LCMR} = \frac{average(EG_{LCMRy-4},...,EG_{LCMRy})}{average(total_{y-4},...,total_{y})}$$

Where:

$share_{LCMR}$ = The share of the low cost/must run resources (%)

[2] Low-cost/must-run resources are defined as power plants with low marginal generation costs or dispatched independently of the daily or seasonal load of the grid. They include hydro, geothermal, wind, low-cost biomass, nuclear and solar generation. If a fossil fuel plant is dispatched independently of the daily or seasonal load of the grid and if this can be demonstrated based on the publicly available data, it should be considered as a low-cost/must-run.

EG_{LCMRy} = The electricity generation supplied to the project electricity system by the low cost/must run resources in year *y* (MWh)

$total_y$ = The total electricity generation supplied to the project electricity system in year *y* (MWh)

y = The most recent year for which data is available

(b) The average amount of load (MW) supplied by low-cost/must-run resources in a grid in the most recent three years is less than the average of the lowest annual system loads (LASL) in the grid of the same three years.

- The approach 1 is chosen for calculation and low-cost/must-run resources constitute less than 50% of total grid generation in average of the five most recent years[3]. Therefore, the project participants chose to use the simple OM method (option (a)).

The simple OM emissions factor can be calculated using either ex-ante or ex-post data vintages. The project participants have chosen to use the ex-ante option, and $EF_{grid,OM,y}$ is fixed for the duration of the second crediting period.

Ex ante option: If the ex-ante option is chosen, the emission factor is determined once at the validation stage, thus no monitoring and recalculation of the emissions factor during the crediting period is required. For grid power plants, use a 3-year generation-weighted average, based on the most recent data available at the time of submission of the CDM-PDD to the DOE for validation.

The date of the publication of the most recent official data for the calculation of the emission factor prior to the start of validation was 20/12/2018[4].

Power plants registered as CDM project activities should be included in the sample group that is used to calculate the operating margin if the criteria for including the power source in the sample group apply.

- Details of the calculations and data follow the published data from the Chinese DNA, which uses official national statistics. This data does not exclude CDM projects.

Step 4. Calculate the operating margin emission factor according to the selected method

The Simple OM method (Option a) was chosen in Step 3 above.

(a) Simple OM

The simple OM emission factor is calculated as the generation-weighted average CO_2 emissions per unit net electricity generation (tCO_2/MWh) of all generating sources serving the system, not including low-cost/must-run power plants/units.

The simple OM may be calculated by one of the following options:

Option A: Based on the net electricity generation and a CO_2 emission factor of each power unit; or
Option B: Based on the total net electricity generation of all power plants serving the system and the fuel types and total fuel consumption of the project electricity system.

Option B can only be used if:
a) The necessary data for Option A is not available; and

[3] http://qhs.mee.gov.cn/kzwsqtpf/201812/P020181220579925103092.pdf

[4] Department of Climate Change, Ministry of Ecology and Environment, 20/12/2018. http://qhs.mee.gov.cn/kzwsqtpf/201812/P020181220579925103092.pdf

b) Only nuclear and renewable power generation are considered as low-cost/must-run power sources and the quantity of electricity supplied to the grid by these sources is known; and
c) Off-grid power plants are not included in the calculation (i.e. if Option I has been chosen in Step 2).

Following the calculations of the DNA, Option B is chosen. The criteria for Option B are met:
a) The necessary data for Option A is not available, as indicated in the calculations of the DNA; and
b) Only nuclear and renewable power generation are considered as low-cost/must-run power sources, and the quantity of electricity supplied to the grid by these sources is known; and
c) Option I is chosen in Step 2.

Option B: Calculation based on total fuel consumption and electricity generation of the system

The simple OM emission factor is calculated based on the net electricity supplied to the grid by all power plants serving the system, not including low-cost/must-run power plants/units, and based on the fuel type(s) and total fuel consumption of the project electricity system, as follows:

$$EF_{grid,OMsimple,y} = \sum_i (FC_{i,y} \times NCV_{i,y} \times EF_{co_2,i,y}) / EG_y \quad (4)$$

Where:

$EF_{grid,OMsimple,y}$ = The simple operating margin CO_2 emission factor in year *y* (tCO_2/MWh)

$FC_{i,y}$ = The amount of fuel type *i* consumed in the project electricity system in year *y* (mass or volume unit)

$NCV_{i,y}$ = The net calorific value (energy content) of fuel type *i* in year *y* (GJ/mass or volume unit)

$EF_{co_2,i,y}$ = The CO_2 emission factor of fuel type *i* in year *y* (tCO_2/GJ)

EG_y = The net electricity generated and delivered to the grid by all power sources serving the system, not including low-cost/must-run power plants/units, in year *y* (MWh)

i = All fuel types combusted in power sources in the project electricity system in year *y*

y = The relevant year as per the data vintage chosen in Step 3

For this approach (simple OM) to calculate the operating margin, the subscript m refers to the power plants/units delivering electricity to the grid, not including low-cost/must-run power plants/units, and including electricity imports to the grid. Electricity imports should be treated as one power plant.

Based on the data available, the three-year average operating margin emission factor is calculated as a full-generation-weighted average of the emission factors. Details of the calculations and data follow the published data from the Chinese DNA[5], which uses official national statistics.

$EF_{grid,OMsimple,y}$ = 0.9014 tCO_2/MWh

Step 5. Calculate the build margin (BM) emission factor

In terms of vintage of data, the project participants chose Option 1, ex-ante, and $EF_{grid,BM,y}$ is fixed for the duration of the second crediting period:

Option 1: For the first crediting period, calculate the Build Margin emission factor ex-ante based on the most recent information available on units already built for sample group m at the time of CDMPDD submission to the DOE for validation. For the second crediting period, the Build Margin

[5] http://qhs.mee.gov.cn/kzwsqtpf/

emission factor should be updated based on the most recent information available on units already built at the time of submission of the request for renewal of the crediting period to the DOE. For the third crediting period, the Build Margin emission factor calculated for the second crediting period should be used. This option does not require monitoring the emission factor during the crediting period.

The build margin emissions factor is the generation-weighted average emission factor (tCO_2/MWh) of all power units m during the most recent year y for which electricity generation data is available, calculated as follows:

$$EF_{grid,BM,y} = \sum_m (EG_{m,y} \times EF_{EL,m,y}) / \sum_m EF_{m,y} \quad (5)$$

Where:

$EF_{grid,BM,y}$ = The build margin CO_2 emission factor in year *y* (tCO_2/MWh)

$EG_{m,y}$ = The net quantity of electricity generated and delivered to the grid by power unit m in year *y* (MWh)

$EF_{EL,m,y}$ = The CO_2 emission factor of power unit m in year *y* (tCO_2/MWh)

m = The power units included in the build margin

y = The most recent historical year for which electricity generation data is available

Due to the limited availability of data on individual power units, the published grid emission factor calculations from the Chinese DNA[6] uses the approved deviation[7] to calculate the build margin emission factor. The deviation is applied as follows:

- Generation *capacity* is used in formula (5) above, instead of generation.
- The newly added generation capacity that has been added to the grid most recently, and that comprises 20 percent of total installed capacity in the latest year for which data is available is used as the sample group of power units m to calculate the build margin. This option comprises a larger sample than the five units built most recently.
- The efficiency level of the best technology commercially available in the provincial/regional or national grid of China is used, as a conservative proxy, to determine the CO_2 emission factor of thermal power plants using each fuel type.

Using this deviation, formula (5) can be re-written as follows:

$$EF_{grid,BM,y} = \sum_m (CAP_{m,y} \times EF_{EL,m,y}) / \sum_m CAP_{m,y} = \sum_m Share_{CAP,m,y} \times EF_{EL,m,y} \quad (6)$$

Where:

$EF_{grid,BM,y}$ = The build margin CO_2 emission factor in year *y* (tCO_2/MWh)

$CAP_{m,y}$ = The added generation capacity by plant type m in year *y* (MW)

$EF_{EL,m,y}$ = The CO_2 emission factor of plant type m in year *y* (tCO_2/MWh)

$Share_{CAP,m,y}$ = The share of added generation capacity by plant type m in year *y* (%)

m = The plant type included in the build margin (thermal, hydro, nuclear, other)

y = The most recent historical year for which data is available

The CO_2 emission factor of all plant types other than thermal power plants is taken as zero.

The CO_2 emission factor of thermal power plants is weighted on the basis of the emissions from each of the fuel types in the latest year for which data is available, and using the average net energy conversion efficiency of the best technologies commercially available (advanced) power plants in China for each fuel type.

[6] Department of Climate Change, Ministry of Ecology and Environment, 20/12/2018. http://qhs.mee.gov.cn/kzwsqtpf/201812/P020181220579925103092.pdf

[7] M-DEV0004, DNV (07/10/2005), see http://cdm.unfccc.int/Projects/deviations/87512.

$$EF_{thermal,y} = \sum_m (EF_{m,Adv,y} \times \lambda_{m,y}) \quad (7)$$

Where:

$EF_{thermal,y}$ = The CO_2 emission factor of the best technologies commercially available thermal power plants in year *y* (tCO_2/MWh)

$EF_{m,Adv,y}$ = The CO_2 emission factor of the best technologies commercially available power plants using fuel type m in year *y* (tCO_2/MWh)

$\lambda_{m,y}$ = The share of emissions of fuel type m in year *y* (%)

m = The fuel type of thermal plant (coal/solid, oil/liquid, gas)

y = The most recent historical year for which data is available

Using the equation of option A2 from guidance in Step 4 section 6.4.1 of the Tool, the CO_2 emission factor of advanced power plants using fuel type m can be calculated as follows:

$$EF_{m,Adv,y} = EF_{CO_2,m,y} \times 3.6 / \eta_{m,y} \quad (8)$$

Where:

$EF_{m,Adv,y}$ = The CO_2 emission factor of the best technology commercially available power plants using fuel m in year *y* (tCO_2/MWh)

$EF_{CO_2,m,y}$ = The average CO_2 emission factor of fuel type m in year *y* (tCO_2/GJ)

$\eta_{m,y}$ = The average net energy conversion efficiency of the best technologies commercially available power plants using fuel type m in year *y* (%)

m = The fuel type of thermal plant (coal/solid, oil/liquid, gas)

y = The relevant year as per the data vintage chosen

The build margin emission factor is calculated using this methodology in the enclosed EF calculation spreadsheet:
$EF_{grid,BM,y}$ = 0.3112 tCO_2/MWh

Step 6. Calculate the combined margin emission factor

The calculation of the combined margin (CM) emission factor ($EF_{grid,CM,y}$) is based on one of the following methods:

(a) Weighted average CM; or
(b) Simplified CM.

Option (a) is the preferred option. Option (b) cannot be used as the proposed project activity does not take place in an LDC or in a country with less than 10 registered projects. Therefore, Option (a) is chosen.

(a) Weighted average CM

The combined margin emissions factor is calculated as follows:

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times w_{OM} + EF_{grid,BM,y} \times w_{BM} \quad (8)$$

Where:

$EF_{grid,OM,y}$ = The operating margin CO_2 emission factor in year *y* (tCO_2/MWh)

w_{OM} = The weighting of operating margin emissions factor (%)

$EF_{grid,BM,y}$ = The build margin CO_2 emission factor in year *y* (tCO_2/MWh)

w_{BM} = The weighting of build margin emissions factor (%)

According to the Tool, the default values for w_{OM} and w_{BM} for wind power projects in the second crediting periods should be used, which are: w_{OM} = 0.75 and w_{BM} = 0.25 (owing to their intermittent and non-dispatchable nature).

Based on these weights for the second crediting period, the combined margin emission factor is calculated, and fixed ex-ante for the duration of the second crediting period (conservatively rounded down to the fourth digit) as given below.

	CO_2 emission factor (tCO_2/MWh)	Weighting (%)
Operating margin (see step 4)	0.9014	75%
Build margin (see step 5)	0.3112	25%
Combined margin	0.7538	-

These parameters will be recalculated at any renewal of the crediting period.

Baseline emissions (BE_y) now can be calculated as the annual net generation of the Proposed Project Activity (EG_y) multiplied by the combined margin CO_2 emission factor ($EF_{grid,CM,y}$).

3. Leakage

No leakage emissions are considered in the methodology. The main emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing, and transport). These emissions sources are neglected.

4. Emission reductions

Emission reductions are calculated as follows:

$$\boldsymbol{ER}_y = \boldsymbol{BE}_y - \boldsymbol{PE}_y \quad (9)$$

Where:

$\boldsymbol{ER}_y$ = The emission reductions in year *y* (tCO_2e/yr)

$\boldsymbol{BE}_y$ = The baseline emissions in year *y* (tCO_2/yr)

$\boldsymbol{PE}_y$ = The project emissions in year *y* (tCO_2e/yr)

B.6.2. Data and parameters fixed ex ante

(Copy this table for each piece of data or parameter.)

Data/Parameter	**$EF_{grid,OMsimple,y}$**
Data unit	tCO_2/MWh
Description	Simple operating margin CO_2 emission factor in year *y*
Source of data	"2017 Baseline Emission Factors for Regional Power Grids in China" issued by China DNA[8]
Value(s) applied	0.9014
Choice of data or measurement methods and procedures	Calculated follow the "Tool to calculate the emission factor for an electricity system" (Version 07.0)
Purpose of data	Calculation of baseline emissions
Additional comment	N/A

[8] http://qhs.mee.gov.cn/kzwsqtpf/201812/P020181220579925103092.pdf

Data/Parameter	$EF_{grid,BM,y}$
Data unit	tCO_2/MWh
Description	Build margin CO_2 emission factor in year *y*
Source of data	"2017 Baseline Emission Factors for Regional Power Grids in China" issued by China DNA[9]
Value(s) applied	0.3112
Choice of data or measurement methods and procedures	Calculated follow the "Tool to calculate the emission factor for an electricity system" (Version 07.0)
Purpose of data	To calculate the power delivered to the grid
Additional comment	N/A

Data/Parameter	W_{OM}
Data unit	%
Description	Weighting of operating margin emissions factor
Source of data	"Tool to calculate the emission factor for an electricity system" (Version 07.0)
Value(s) applied	75
Choice of data or measurement methods and procedures	Follow the "Tool to calculate the emission factor for an electricity system" (Version 07.0)
Purpose of data	Calculation of baseline emissions
Additional comment	N/A

Data/Parameter	W_{BM}
Data unit	%
Description	Weighting of build margin emissions factor
Source of data	"Tool to calculate the emission factor for an electricity system" (Version 07.0)
Value(s) applied	25
Choice of data or measurement methods and procedures	Follow the "Tool to calculate the emission factor for an electricity system" (Version 07.0)
Purpose of data	Calculation of baseline emissions
Additional comment	N/A

B.6.3. Ex ante calculation of emission reductions

>>

The Baseline Emissions (BE_y, in tCO_2), for each year y, are calculated by multiplying the baseline emissions factor (EF_y, in tCO_2/MWh) by the net supplied power of the project ($EG_{PJ,y}$, in MWh), as follows:

$BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$ = 86,969 MWh ×0.7538 tCO_2/MWh = 65,557 tCO_2e
$ER_y = BE_y - PE_y$ = 65,557 tCO_2e

The values obtained are presented in the table in section B.6.4.

[9] http://qhs.mee.gov.cn/kzwsqtpf/201812/P020181220579925103092.pdf

B.6.4. Summary of ex ante estimates of emission reductions

Year	Baseline emissions (t CO_2e)	Project emissions (t CO_2e)	Leakage (t CO_2e)	Emission reductions (t CO_2e)
23/09/2018-31/12/2018	17,961	0	0	17,961
01/01/2019-31/12/2019	65,557	0	0	65,557
01/01/2020-31/12/2020	65,557	0	0	65,557
01/01/2021-31/12/2021	65,557	0	0	65,557
01/01/2022-31/12/2022	65,557	0	0	65,557
01/01/2023-31/12/2023	65,557	0	0	65,557
01/01/2024-31/12/2024	65,557	0	0	65,557
01/01/2025-22/09/2025	47,596	0	0	47,596
Total	458,899	0	0	458,899
Total number of crediting years	7			
Annual average over the crediting period	65,557	0	0	65,557

B.7. Monitoring plan

B.7.1. Data and parameters to be monitored

(Copy this table for each piece of data or parameter.)

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	Data used in the PDD is obtained from the Feasibility Study Report of the Project. Actual data will be read from meters.
Value(s) applied	86,969 MWh
Measurement methods and procedures	Net electricity generated by the proposed project activity will be monitored continuously through two bi-directional meters (Meter M1 and M2) installed at the 110kV substation. The accuracy of both meters are 0.2S. Meter M1 is duty meter and meter M2 is check meter.
Monitoring frequency	Measured continuously and recorded on a monthly basis
QA/QC procedures	The metering equipment is calibrated and checked annually for accuracy by the qualified third party in accordance with relevant industry standards.
Purpose of data	Calculation of baseline emissions
Additional comment	Purchase receipts/records to the grid are used to ensure the consistency.

B.7.2. Sampling plan

>>
Not applicable.

B.7.3. Other elements of monitoring plan

>>
1. Purpose

Baseline emission factor of the Project is determined ex ante. Therefore the electricity delivered by the Project to the CCPG is defined as the key data to be monitored.

2. Monitoring Structure

The Project owner assigns the person in charge of CDM operation with assistance of the technological departments and financial department. The structure was shown as the following Figure B.2.

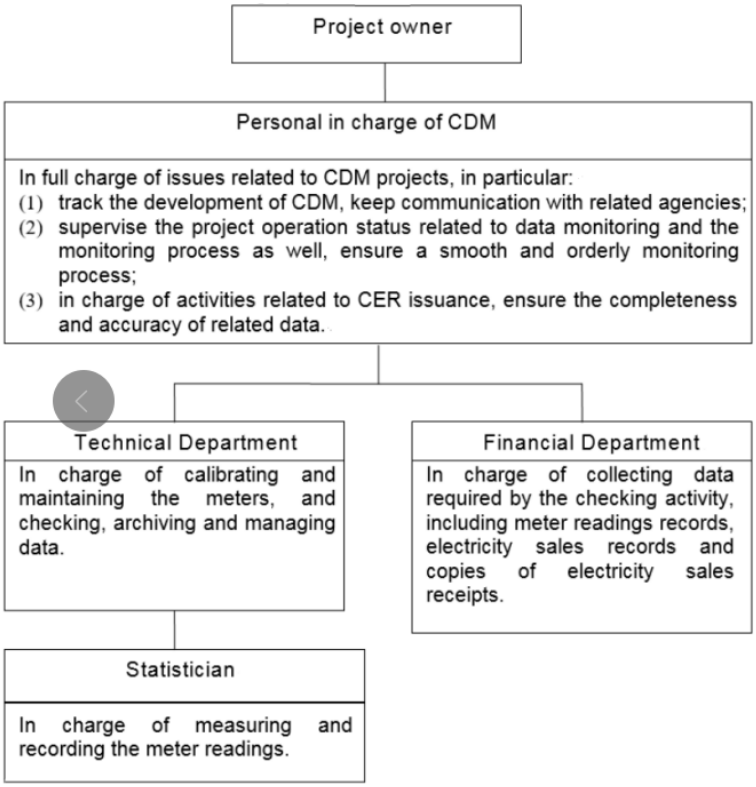

Figure B.2. Management Structure of Monitoring Plan

3. Equipment and Installation of Monitoring

Distribution and calibration of electric meter should be implemented according to the technical requirements of “Technical administrative code of electric energy metering” (DL/T448-2016).

The electricity generated by the Project is connected to the power grid via 110kV outlet circuit. Two meters (bi-directional measuring) with accuracy of 0.2S are installed at the 110kV substation to measure both electricity supplied to the Grid and imported from the Grid. Meter M1 is duty meter and meter M2 is check meter. The line diagram of the project was shown as the following Figure B.3.

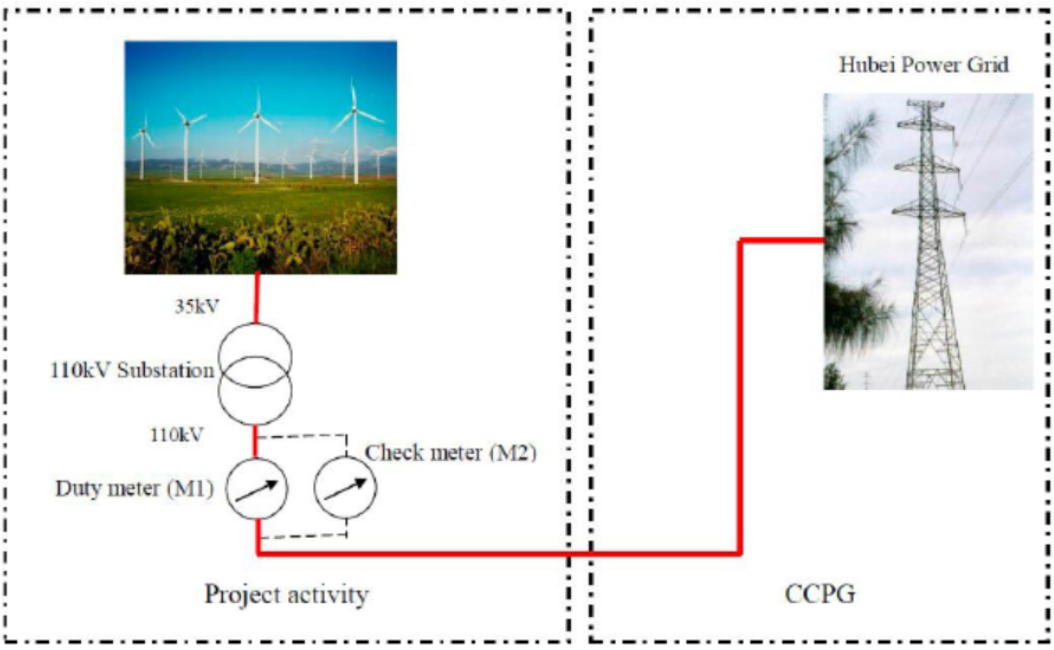

Figure B.3. Line Diagram of the Project

4. Data Collection

The electricity delivered to the grid should be monitored according to the electricity of the measuring spot, and the measuring spot should be the switch of the substation. If the measuring equipment goes wrong, the electricity delivered should be determined by the measuring value opposite to the measuring spot or the records of the units output.

5. QA/QC

The financial department keeps all relevant purchase evidences for double-checking.

The monitoring equipments will be calibrated according to relevant standards and regulars before operation. The certificated staffs are in charge of operation and maintenance monitoring equipments. Damaged equipment will be displaced immediately, in order to keep conservativeness, if data are not available during displacement, the values lead less emission reductions will be adopted.

The specification and technical documents of all equipments are kept for any emergency.

The CDM director makes training of CDM knowledge and monitoring plan within monitoring team before project operation.

6. Data Management

The monitoring data should be saved at the end of each month; the regular summary should be made and reported to technology department by statistician periodically; all the data should be saved up to 2 years after the end of the crediting period.

7. Verification

It is expected that the verification of emission reductions generated from the Project will be done annually. The monitoring team should cooperate with DOE. The documents will be prepared for verification including, but not limited to:

- PDD, including the electronic spreadsheets and supporting documentation (assumptions, estimations, measurement, etc);
- Report on maintenance and calibration of meters;
- Monitoring Report.

8. Person Training

All staffs working within monitoring team should be trained. Through the training, staffs will know the necessary knowledge about CDM and monitoring requirement, familiar with the equipment operating principle and basic structure, master the cause and solution of common problem.

During the operating period, project owner will hold irregularly scheduled training to improve the professional level of worker.

SECTION C. Start date, crediting period type and duration

C.1. Start date of project activity

>>
06/08/2009 (The date of Transformer Station Construction Contract signed)

C.2. Expected operational lifetime of project activity

>>
20 years

C.3. Crediting period of project activity

C.3.1. Type of crediting period

>>
Renewable crediting period, this is the second crediting period.

C.3.2. Start date of crediting period

>>
The starting date of the second crediting period: 23/09/2018

C.3.3. Duration of crediting period

>>
7 years

SECTION D. Environmental impacts

D.1. Analysis of environmental impacts

>>

All the EIA report of the Projects were completed by Environmental Science Research Institute of Hubei Province and approved by the Environmental Protection Bureau of Hubei Province. And the approved date of the project is on 14/08/2009. According to the EIA report of the Projects, environmental impacts possibly caused by the Project and corresponding measures adopted by the project owner are analyzed as follows:

Noise

The noise of the project in construction phase is from vehicles and machines on-site. There are 7 residents of the Zhongcao Village from the wind farm construction site within 200m. During the operation period of the proposed project, the noise level will be lower than 45dB at the distance to noise source of 150m, which will meet the class I of China Environmental Noise Standard in Urban Area (GB/T15190-94). Therefore, the noise of the project will not have impact on nearby residents.

Waste water

The total amount of waste water from daily life and industry will be very small. Before waste water are discharged, they will be processed by using sedimentation pond and septic tank to reach Chinese environmental standard, which shows no impact on the surrounding environment.

Dust and Air Quality

The sources of air pollution are mainly due to the construction activities including the transportation of construction material, road construction and improvement and cadre construction etc. The impacts on air environment are temporal that will be ended when the construction is completed. It is suggested that several measures shall be taken into account, such as reducing as much as possible the area of construction, spraying water as undertake construction, and reducing the speed of vehicles in the field. Hence, the air quality of the proposed project site is relatively well, which meets the Class II of China Ambient Air Quality Standard (GB 3095-96).

In conclusion, the project activity does not have any major adverse impacts on environment during its construction and operational phase. The project is definitely in more an environmentally friendly way of providing power than the other power plants.

D.2. Environmental impact assessment

>>

Not applicable, since the construction and operation of the proposed project have no significant environmental impacts.

SECTION E. Local stakeholder consultation

E.1. Modalities for local stakeholder consultation

>>

In Jun 2009, the staff from Hubei Energy Group Qiyueshan Wind Power Co., Ltd. carried out a survey of the local villagers and residents in the area. Before the survey, the staff introduced the project information to the villagers with the loudspeaker and then 1-page questionnaires were distributed to the households at home. Furthermore, the workers of the Project and the government officials were invited to participate a stakeholders meeting in May 2010 for making suggestions on the Project, they also were asked to complete the questionnaires. The content of these two surveys is same, and it is summarized in Section E.2 below.

Project introduction

Respondent's basic information and education level

Questions on:

1. Do you agree with the development of the project?
2. Will the project have a negative impact on your environment of living, studying and working?
3. Will the project have a negative impact on the environment, such as noise, water and electromagnetism?
4. Will the project have a negative impact on the ecosystem?
5. Do you think the proposed project will have promotion in local economic development?
6. Do you have some suggestion about the project?
7. Do you have any suggestion about construction and operation of the project?

The questionnaires were sent to 50 households and the survey had a 100% response rate. The result of the survey indicated the support to the project. The survey is summarized in Section E.2 below.

E.2. Summary of comments received

>>

The survey had a 100% response rate with the following key findings:

- 100% of respondents agreed with the development of the project.
- 100% respondents believed that the project construction will not do harm to the environment.
- 100% believed that the project construction will do no harm to the ecosystem.
- 100% believed that the project construction will have positive impact on local economic development.
- 100% believed that the project construction will have no impact to the environment of living, studying and working.
- No further suggestions were given.

The survey shows that the proposed project has strong local support among the people.

E.3. Consideration of comments received

>>

The villagers are all supportive of the proposed project and to date there has been no need to modify the project design according to the comments received. The project owner has an overall environment- friendly plan to guarantee that the project has the minimum negative impact on the environment during the project construction and operation.

SECTION F. Approval and authorization

>>

The Letters of Approval for the project activity are available and has been uploaded with the registration.

Appendix 1. Contact information of project participants

Organization name	Hubei Energy Group Qiyueshan Wind Power Co., Ltd.
Country	China
Address	No.5, 1st Lane, Jinlongxiaoqu, Lichuan, Hubei Province
Telephone	0718-7262986
Fax	0718-7261096
E-mail	qysfdcw@tom.com
Website	-
Contact person	Yong Hu

Appendix 2. Affirmation regarding public funding

There is not affirmation regarding public funding.

Appendix 3. Applicability of methodologies and standardized baselines

The applicability of the selected methodology is described in B.2.

Appendix 4. Further background information on ex ante calculation of emission reductions

All the details on ex ante calculation of Emission reductions are described in B.6.

Appendix 5. Further background information on monitoring plan

All the details on monitoring plan are described in B.7.

Appendix 6. Summary report of comments received from local stakeholders

All the details on comments received from local stakeholders are described in Section E.

Appendix 7. Summary of post-registration changes

The crediting period was changed from 01/10/2011 - 30/09/2018 to 23/09/2011 - 22/09/2018. And the PDD was revised due to the correction of turbine type and was approved by EB on 16/01/2013.

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Document information

Version	*Date*	*Description*
11.0	31 May 2019	Revision to: • Ensure consistency with version 02.0 of the "CDM project standard for project activities" (CDM-EB93-A04-STAN); • Make editorial improvements.
10.1	28 June 2017	Revision to make editorial improvement.
10.0	7 June 2017	Revision to: • Improve consistency with the "CDM project standard for project activities" and with the PoA-DD and CPA-DD forms; • Make editorial improvement.
09.0	24 May 2017	Revision to: • Ensure consistency with the "CDM project standard for project activities" (CDM-EB93-A04-STAN) (version 01.0); • Incorporate the "Project design document form for small-scale CDM project activities" (CDM-SSC-PDD-FORM); • Make editorial improvement.
08.0	22 July 2016	EB 90, Annex 1 Revision to include provisions related to automatically additional project activities.
07.0	15 April 2016	Revision to ensure consistency with the "Standard: Applicability of sectoral scopes" (CDM-EB88-A04-STAN) (version 01.0).
06.0	9 March 2015	Revision to: • Include provisions related to statement on erroneous inclusion of a CPA; • Include provisions related to delayed submission of a monitoring plan; • Provisions related to local stakeholder consultation; • Provisions related to the Host Party; • Make editorial improvement.
05.0	25 June 2014	Revision to: • Include the Attachment: Instructions for filling out the project design document form for CDM project activities (these instructions supersede the "Guidelines for completing the project design document form" (Version 01.0)); • Include provisions related to standardized baselines; • Add contact information on a responsible person(s)/ entity(ies) for the application of the methodology (ies) to the project activity in B.7.4 and Appendix 1; • Change the reference number from F-CDM-PDD to CDM-PDD-FORM; • Make editorial improvement.
04.1	11 April 2012	Editorial revision to change version 02 line in history box from Annex 06 to Annex 06b.

Version	*Date*	*Description*
04.0	13 March 2012	Revision required to ensure consistency with the "Guidelines for completing the project design document form for CDM project activities" (EB 66, Annex 8).
03.0	26 July 2006	EB 25, Annex 15
02.0	14 June 2004	EB 14, Annex 06b
01.0	03 August 2002	EB 05, Paragraph 12 Initial adoption.

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