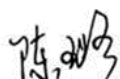



Validation report form for renewal of crediting period for CDM project activities
(Version 01.0)

Complete this form in accordance with the "Attachment: Instructions for filling out the validation report form for renewal of crediting period for CDM project activities" at the end of this form.

VALIDATION REPORT FOR RENEWAL OF CREDITING PERIOD (RCP)

Title of the project activity	Shandong Gaotang 30MW Biomass Power Generation Project
Reference number of the project activity	1375
Number and duration of the next crediting period	2 nd , 20/03/2015 to 19/03/2022
Version number of the validation report for RCP	01
Completion date of the validation report for RCP	24/08/2015
Version number of PDD to which this report applies	10
Project participant(s)	National Bio Energy Co., Ltd. EDF Trading Limited
Host Party	P.R.China
Sectoral scope(s), selected methodology(ies), and where applicable, selected standardized baseline(s)	Scope: 1 Energy industries (renewable- / non-renewable sources) ACM0018 Version 03.0, Electricity generation from biomass residues in power-only plants
Estimated annual average GHG emission reductions or net anthropogenic GHG removals in the next crediting period	123,527 tCO ₂ e
Name of DOE	China Building Material Test & Certification Group Co., Ltd.
Name, position and signature of the approver of the validation report for RCP	Chen Lu, Deputy General Manager of CTC 

SECTION A. Executive summary

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The project activity “Shandong Gaotang 30MW Biomass Power Generation Project” installed a total capacity of 30MW, including one set of Straw Direct Burning boiler of 130t/h with high temperature and high pressure and one set of N30-8.83/535 turbine and QF-30-2 generator for biomass power generation using biomass residuals including cotton stalk, wood residues and wheat bran. The project is located in Gaotang Economic Development Zone, which is 5 kilometers to the northwest of Gaotang county seat, Shandong Province, China. The geographic coordinates of the project site is 36°54'36"N, 116°10'39"E. The Project will achieve emission reductions via avoiding CO₂ emissions from the same amount of electricity generation from North China Power Grid, which is mainly composed of traditional fossil fuel fired power plants. Moreover, the project used biomass residues (cotton stalk, wood residues and wheat bran) for energy purpose in high efficiency, which will reduce CH₄ emissions because the biomass is dumped or left to decay mainly under aerobic conditions in the absence of the Project. Annual electricity generation of 187,626 MWh is expected for the second crediting period of the project activity, the same as it in the first crediting period of the project activity, as described in the Accept Revised PDD for post registration changes within the 1st crediting period /3//4//5/¹. The electricity generated by the project is supplied to the North China Power Grid /1//9/.

China Building Material Test & Certification Group Co., Ltd. (CTC) was commissioned by National Bio Energy Co., Ltd. to perform a validation of the request to renew the crediting period of CDM project activity ref. 1375 “Shandong Gaotang 30MW Biomass Power Generation Project” in China.

The validation scope is defined as an independent and objective review of the project design document (PDD). The PDD is reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords and the relevant decisions by the CDM Executive Board, including the approved baseline and monitoring methodology ACM0018 Version 03.0, Electricity generation from biomass residues in power-only plants /13/. The validation was performed in accordance with CDM Project Standard version 09.0 /14/ and the Validation and Verification Standard version 09.0 /15/ and included an assessment of:

- (a) An impact of new relevant national and/or sectoral policies and circumstances on the baseline taking into account relevant EB guidance with regard to renewal of the crediting period at the time of requesting renewal of crediting period;
- (b) The correctness of the application of an approved baseline methodology for the determination of the continued validity of the baseline or its update, and the estimation of emission reductions for the applicable crediting period.

The validation of renewal of crediting period serves as assessment of validity of the baseline of project that has opted for a renewal of the crediting period. The validation is an independent third party assessment of the project's compliance with relevant UNFCCC criteria. In particular, the project's baseline and the monitoring plan (MP) are validated in order to confirm that the project baseline, as documented, is sound and reasonable, and meet the stated requirements and identified criteria. Validation is a requirement for all CDM projects seeking renewal of the crediting period and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

The validation is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project design.

The overall validation, from Contract Review to Validation Report & Opinion, was conducted using CTC internal procedures. The validation consisted of following three phases:

- i) A desk review of the project design and the baseline and monitoring plan;
- ii) Follow-up interviews with project stakeholders;

¹ The Project has been registered as a CDM project on 20/03/2008, and information in the registered PDD version 05 /1/ has been changed, and the revised PDD version 07/4/ has been accepted by the CDM EB on 02/03/2012.

- iii) The resolution of outstanding issues and the issuance of the final validation report and opinion.

The first output of the validation process is a list of Clarification and Corrective Actions Requests (CLs and CARs), presented in the report. Taking into account this output, the project proponent revised its project design document.

In summary, it is CTC's opinion that the project activity "Shandong Gaotang 30MW Biomass Power Generation Project" in China, as described in the updated PDD version 10 dated 30/07/2015 meets the relevant UNFCCC requirements for the renewal of the crediting period. Hence CTC requests the renewal of the crediting period of the project activity.

SECTION B. Validation team, technical reviewer and approver

B.1. Validation team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk review	On-site inspection	Interview(s)	Validation findings
1.	Team Leader	IR	Tan	Ernesto	CTC Beijing	✓		✓	✓
2.	Team Member	IR	Zhang	Nancy	CTC Beijing	✓		✓	✓

B.2. Technical reviewer and approver of the validation report for RCP

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	IR	Dou	Lucas	CTC Beijing
2.	Technical Expert	IR	Wang	Lingxiu	CTC Beijing
3.	Approver	IR	Chen	Lu	CTC Beijing

SECTION C. Means of validation

C.1. Desk review

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The updated PDD version 09 dated 20/07/2015 was sent to the secretariat by the project participant for notification of intention to renew the crediting period of the project activity /6/. In addition to the updated PDD submitted to request a renewal of the crediting period of the project activity /7/, CTC reviewed:

- the registered PDD and the corresponding validation report /1//2/
- verification reports and monitoring reports in the first crediting period /3/
- Accept Revised PDD for post registration changes within the 1st crediting period and the corresponding validation opinion /4//5/
- Power Purchase Agreement /9/
- Instructions for filling out the project design document for CDM project activities, CDM PDD Form, version 06.0 /19/
- Methodology ACM0018 Version 03.0 applied by the project /13/
- Relevant decisions, clarifications and guidance from the CMP and the CDM EB
- Relevant national and sectoral policies

During the desk review, CTC has applied standard auditing techniques to assess the quality of information provided. The following activities were performed:

- A review of the data and information presented to verify their completeness;
- Cross checks between information provided in the updated PDD and information from sources other than other used, paying particular attention to project baseline, emission reduction calculation and monitoring plan.

C.2. On-site inspection

Duration of on-site inspection: N/A				
No.	Activity performed on-site	Site location	Date	Team member
1.	N/A	N/A	N/A	N/A

The project information provided in the updated PDD for the renewal of crediting period has been verified /6/7/. CTC was able to confirm information transferred to the updated PDD is materially the same as that in the Accept Revised PDD for post registration changes within the 1st crediting period /4/. The project design, construction, operation and monitoring practice of the project activity were not changed. The baseline scenario information can also be confirmed as it was defined by the applied methodology ACM0018 Version 03.0 /13/. Based on above mentioned reasons and all relevant documents available, CTC did not deem necessary to conduct a physical site visit as part of validation process of the crediting period renewal for the registered project activity, which is in conformity with the paragraphs 71-76 of CDM Validation and Verification Standard version 09.0 /15/.

C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Lee	Julia	National Bio Energy Co., Ltd.	24/07/2015	<ul style="list-style-type: none"> - status of the project; - any changes with respect to the registered PDD; - applicability of the selected methodology; - national and sectoral policies/circumstances and changes; - baseline of the project and updates; - monitoring plan; 	Ernesto Tan Nancy Zhang

C.4. Clarification requests, corrective action requests and forward action requests raised

Area of validation findings	No. of CL	No. of CAR	No. of FAR
Compliance with PDD form	0	0	0
Application of baseline and monitoring methodology and standardized baseline	0	0	0
Validity of original baseline or its update	0	0	0
Estimated GHG emission reductions or net anthropogenic GHG removals	0	1	0
Validity of monitoring plan	0	0	0
Crediting period	0	0	0
Project participants	0	0	0
Others (please specify)	0	0	0
Total	0	1	0

SECTION D. Validation findings**D.1. Compliance with PDD form**

Means of validation	The updated PDD provided by the project participant has been verified against the instructions for filling out the PDD form /19/ and the Accept Revised PDD for post registration changes within the 1 st crediting period /4/.
Findings	N/A
Conclusion	The PDD form used by the project activity for its crediting period renewal is version 6.0, which is valid at the time of submission of the request for the renewal of the crediting period. Information transferred to the updated PDD is materially the same as that in the Accept Revised PDD for post registration changes within the 1 st crediting period /4/. It is in line with the Project Standard version 09.0.

D.2. Application of baseline and monitoring methodology and standardized baseline

Means of validation	<p>The updated PDD applies the methodology, “Electricity generation from biomass residues in power-only plants” ACM0018 Version 03.0 that was the latest version when the project was submitted for crediting period renewal.</p> <p>CTC noticed that the methodology applied in the registered PDD for the 1st crediting period, ACM0006, was restricted to power and heat projects due to the approval of a new consolidated methodology ACM0018 for power-only projects. CTC considers that this is appropriate by correctly applying the methodology ACM0018 Version 03.0.</p> <p>The applicability of the methodology was re-assessed based on the knowledge of the project from the initial validation for registration, subsequent verifications, and documents provided by the PPs as well as the confirmation from the project participants in the follow-up interviews.</p> <p>The application of the selected methodology is justified as below:</p> <ul style="list-style-type: none"> - The Project will only use biomass residues comprising cotton stalk, wood residues and wheat bran. - The Project will not co-fire fossil fuels. - The cotton stalk used by the Project is by-products of agriculture crops, not from a production process. - Regulations on the storage of the fuel in the plant storage site will be made to guarantee that the storage time of the biomass residues will be no more than half year. - No chemical process is involved in the Project prior to biomass residues combustion. The biomass residues however will be processed physically such as drying and shredding prior to combustion. - No power and heat plant is operating at the project site now or during the second crediting period. - There is no heat generated by on site or off-site heat generation equipment connected to the project and used for purposes other than power generation. Also, there will be no heat generated during the second crediting period and used for purpose other than power generation - The Project is not a fuel switch project activity. - The baseline scenario for power generation is scenario P5, and for biomass use the baseline scenario is scenario B1, either of which is one of the applicability condition for applying the methodology for the Project.
Findings	N/A
Conclusion	CTC was able to confirm that, for crediting period renewal, the project activity correctly applied the selected baseline and monitoring methodology.

D.3. Validity of original baseline or its update

Means of validation	The following steps stipulated in the methodological tool “Assessment of the validity
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of the original/current baseline and update of the baseline at the renewal of the crediting period", version 03.0.1, were applied by the project activity, which is in line with the Project Standard version 09.0.

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

As demonstrated in the registered PDD, the baseline scenario for electric power of the project activity is the generation of power in the grid, while the baseline scenarios for the use of each biomass residues categories are dumped (B1) and burnt (B3).

The validity of the current baseline is assessed using the following sub-steps:

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

In China, the Renewable Energy Law has been put into effect since 2006, which encourages the development of renewable energy projects². However, although renewable energy projects have been developed rapidly in recently years, grid connected power generation in China is still dominated by fossil-fuel power plants³.

A Notice about Prohibiting to Burn Agricultural Straw in an Uncontrolled Manner was issued by Ministry of Agriculture of the People's Republic of China on 14/06/2007⁴, and it is not eligible to burn biomass residues in an uncontrolled manner without any energy purpose. Therefore, the baseline scenario B3 is excluded.

Since the above sectoral policy has come into effect after the submission of the project activity for validation, the current baseline scenarios needs to be updated in the second crediting period to exclude the baseline scenario B3.

Step 1.2: Assess the impact of circumstances

There are no new relevant national and/or sectoral policies and/or circumstances in the biomass power generating sector applicable to the Project Activity, in comparison to the time of the submission of the project activity for validation, which could impact the validity of the current baseline for the next crediting period. The scenario has been updated in above step1.1.

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

The project activity consists of the implementation of biomass residues fired power plant where no electricity was generated prior to its implementation. In the absence of the CDM project activity, the project owner would not have constructed the plant and electricity would have been generated by other power plants connected to the grid, and biomass residues used in the Project would have been dumped or left to decay mainly under aerobic conditions.

Therefore, this sub-step is not applicable since the identified baseline scenario at the validation of the project activity did not correspond to 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.

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

The emission factors $EF_{grid,OM,y}$ and $EF_{grid,BM,y}$ and the global warming potential GWP_{CH4} have been updated by the project participants for the second crediting

² http://www.gov.cn/ziliao/flfg/2005-06/21/content_8275.htm

³ China Electric Power Yearbook 2013

⁴ http://www.gov.cn/zwggk/2007-06/14/content_648934.htm

	<p>period of the project activity accordingly.</p> <p>Step 2.-Update the current baseline and the data and parameters</p> <p>Step 2.1: Update the current baseline</p> <p>As per the requirement of the sub-step, the update for baseline emissions of the second crediting period is based on ACM0018 Version 03.0 that is the latest approved version of the methodology applicable to the project activity at the time of request for renewal of the crediting period.</p> <p>Step 2.2: Update the data and parameters</p> <p>The emission factors for have been updated and determined ex-ante as a combined margin consisting of combination of the operating margin and build margin for the second crediting period by the project participants as per the “Tool to calculate the emission factor for an electricity system”, version 04.0.</p> <p>CTC was able to confirm that values applied in the calculation of the updated emission factors were in line with the “2014 Baseline Emission Factors for Regional Power Grids in China” published by the DNA of China /10/.</p> <p>The updated PDD version 10 date 30/07/2015 was submitted for crediting period renewal of the project activity. The data used in the EF calculation has been verified to be in accordance with data in the China Electric Power Yearbook 2011-2013 (published annually), the Compilation of Statistical Data for Power Industry 2010-2012, the Statistical System for Public Institution 2011, the China Energy Statistical Yearbook 2011-2013, and IPCC 2006. Those data sources were the most available at that moment.</p> <p>Aggregated generation and fuel consumption data are used due to the fact that more disaggregated data are not available in the North China Power Grid; the total electricity delivered to the North China Power Grid has been used which are obtained from the Compilation of Statistical Data for Power Industry 2010-2012. Country specific data for net calorific value of each type of fossil fuel are obtained from the China Energy Statistical Yearbook from 2013 and the IPCC 2006 default values for the emission factors of each type of fossil fuel are deemed reasonable.</p> <p>Operating Margin: Simple OM was chosen and this is justified since the low cost /must run resources constitute less than 50% of total grid generation.</p> <p>Build Margin: Considering data availability, deviation accepted by EB was used in the PDD i.e.</p> <ol style="list-style-type: none"> 1) Use of capacity additions during the last 1~3 years for estimating the build margin emission factor for grid electricity. 2) Use of weights estimated using installed capacity in place of annual electricity generation. <p>The BM emission factor of the power grid is calculated by multiplying the emission factor of the thermal power with the share of the thermal power in the most recently added no less than 20% of total installed capacity. The emission factor for thermal power is determined based on the most advanced and commercially available technology endorsed by China's DNA.</p> <p>With reference to the “Tool to calculate the emission factor for an electricity system”, the Simple OM emission factor ($EF_{grid,OM,y}$) of North China Power Grid is calculated as 1.0580 tCO₂e/MWh. Similarly, the build margin emission factor ($EF_{grid,BM,y}$) of the North China Power Grid is calculated ex-ante as 0.5410 tCO₂e/MWh.</p> <p>Therefore the combined baseline emission factor is determined ex-ante and will remain fixed during the second crediting period, viz.</p> $EF_{grid,CM,y} = 1.0580 \times 0.25 + 0.5410 \times 0.75 = 0.6702 \text{ tCO}_2\text{e/MWh}$ <p>Besides, the global warming potential GWP_{CH_4} is updated to be 25 tCO₂e/tCH₄ for the second commitment period according to the decision 4/CMP.7.</p>
Findings	N/A

Conclusion	The stepwise procedure provided in the methodological tool was correctly applied by the project activity for assessing validity of original baseline and its update. Validity of original baseline and its update was therefore confirmed.
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D.4. Estimated GHG emission reductions or net anthropogenic GHG removals

Means of validation	CTC has verified the spreadsheet for the calculation of the emission reductions provided by the PP and was able to confirm the estimated emission reductions are correctly calculated /8/. All assumptions and data used by the project participants are listed in the updated PDD and/or supporting documents, including their references and sources. All documentation used by the project participants as the basis for assumptions and source of data was correctly quoted and interpreted in the updated PDD. All values used in the updated PDD are considered reasonable in the context of the CDM project activity. The baseline methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions. All estimates of the baseline, project and leakage emissions can be replicated using the data and parameter values provided in the updated PDD.
Findings	One CAR related to assessment estimated GHG emission reductions or net anthropogenic GHG removals was raised (refer to Appendix 4 of the report). The findings have been closed by the project participant by revising of the parameter GWP_{CH_4} and calculation results of the grid emission factor and the emission reductions.
Conclusion	The estimated amount of GHG emission reductions of the project activity is 864,689 tCO ₂ e for the second crediting period (7 years) from 20/03/2015 to 19/03/2022, resulting in estimated average annual emission reductions of 123,527 tCO ₂ e.

D.5. Validity of monitoring plan

Means of validation	The Project uses the approved consolidated monitoring methodology ACM0018 Version 03.0 for grid-connected electricity generation from renewable sources. The monitoring plan contained in the PDD version 10 /7/ does not impact the accuracy of the monitoring plan. All relevant parameters listed in Section B 7.1 of the PDD version 10 /7/ will be monitored according to the methodology requirements and description of measurement methods and procedures to be applied. The results and data will be recorded and well documented. The data and meter reading will be readily accessible for DOE. Calibration tests records will be maintained for verification. All meters and instruments will be maintained and calibrated regularly as per industry practices. Maintenance and calibration of meters will be implemented according to national standards and rules. And all the records will be documented and maintained by the project owner. The quality assurance and quality control procedures for recording, maintaining and archiving data shall be improved as part of this CDM project activity. This is in line with the monitoring plan included in the accepted revised PDD /4/.
Findings	N/A
Conclusion	The monitoring plan contained in the PDD version 10 dated 30/07/2015 is in accordance with the monitoring methodology and the monitoring plan contained in the registered PDD. The monitoring plan will give opportunity for real measurements of achieved emission reductions.

D.6. Crediting period

Means of validation	The first crediting period is from 20/03/2008 to 19/03/2015. As per the Project Cycle Procedure version 09.0, the new crediting period will be from 20/03/2015 to 19/03/2022.
Findings	N/A
Conclusion	The PP notified the UNFCCC Secretariat that the selected DOE to request the crediting period renewal in advance. CTC has checked the notification email to the UNFCCC Secretariat and the corresponding PDD. The new crediting period will be from 20/03/2015 to 19/03/2022 starting on the day immediately after the expiration of the current crediting period.

D.7. Project participants

Means of validation	The names of the project participants included in the updated PDD have been checked against the names of the project participants with the information on the UNFCCC website: https://cdm.unfccc.int/Projects/DB/TUEV-SUED1191857086.36/view . It is concluded that the same project participants involved in the project activity: National Bio Energy Co., Ltd. EDF Trading Limited
Findings	N/A
Conclusion	As per the VVS, CTC confirmed that the name of the project participants included in the updated PDD is consistent with the name of the project participant on the UNFCCC website.

D.8. Post-registration changes

Type of post-registration changes (PRCs)	Confirmation (Y/N)	Validation report for PRCs	
		Version	Completion date
Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline	N	N/A	N/A
Corrections	N	N/A	N/A
Inclusion of a monitoring plan to a registered project activity	N	N/A	N/A
Permanent changes from registered monitoring plan, monitoring methodology or standardized baseline	N	N/A	N/A
Changes to the project design of a registered project activity	N	N/A	N/A
Types of changes specific to afforestation and reforestation project activities	N	N/A	N/A

SECTION E. Internal quality control

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The validation report underwent an Internal Technical Review (ITR) before requesting for renewal of crediting period of the registered CDM project activity.

The ITR is an independent process, performed by an internal technical review team (a qualified technical reviewer, with assistance from specialists where necessary), to examine thoroughly that the process of validation has been carried out in conformance with the requirements of the validation scheme as well as CTC's internal procedures.

The Team Leader provides a copy of the validation report to the technical reviewer, including any necessary validation documentation. The technical reviewer reviews the documentation for conformance with the validation scheme and CTC's internal procedures. This is a comprehensive review of all documentation generated during the validation process.

When performing an Internal Technical Review, the technical reviewer ensures that:

- The validation activities have been performed by the validation team by exercising utmost diligence and complete adherence to the CDM rules and requirements.
- The review encompasses all aspects related to the project activity which includes project design, baseline, monitoring plans and emission reduction calculations, internal quality assurance as well as the closure of CARs and CLs during the validation process, review of sample documents.

The technical reviewer may raise Clarification Requests to the validation team and discuss with the Team Leader.

After the agreement of the responses to the Clarification Requests from the validation team as well as the PP(s), the finalized validation report is accepted for further processing such as reporting approval of report uploading via the UNFCCC interface.

SECTION F. Validation opinion

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China Building Material Test & Certification Group Co., Ltd. (CTC) has performed an validation of the request by National Bio Energy Co., Ltd. to renew the crediting period for the registered CDM project activity “Shandong Gaotang 30MW Biomass Power Generation Project” in China (UNFCCC registration Ref. No. 1375). The assessment was performed in accordance with the Validation and Verification Standard (Version 09.0) /15/ and the CDM Project Standard (Version 09.0) /14/ and included an assessment of:

- (a) An impact of new relevant national and/or sectoral policies and circumstances on the baseline taking into account relevant EB guidance with regard to renewal of the crediting period at the time of requesting renewal of crediting period;
- (b) The correctness of the application of an approved baseline methodology for the determination of the continued validity of the baseline or its update, and the estimation of emission reductions for the applicable crediting period.

The review of the project design documentation and the subsequent follow-up interviews have provided CTC with sufficient evidence to determine the validity of the original baseline scenario and the update of the baseline through an assessment. The project correctly applies the baseline and monitoring methodology ACM0018 Version 03.0 “Electricity generation from biomass residues in power-only plants”.

The total emission reductions from the project are estimated to be on the average 123,527 tCO₂e per year over the 2nd renewable crediting period. The emission reduction forecast has been checked, and it is deemed likely that the stated amount is achieved given that the underlying assumptions do not change.

The monitoring plan provides for the monitoring of the project’s emission reductions. The monitoring arrangements described in the monitoring plan are feasible within the project design, and it is CTC’s opinion that the project participants are able to implement the monitoring plan.

In summary, it is CTC’s opinion that the CDM project activity ref. 1375 “Shandong Gaotang 30MW Biomass Power Generation Project” in China meets all relevant UNFCCC requirements for the renewal of the crediting period. Hence CTC requests the renewal of the crediting period of the project.

Appendix 1. Abbreviations

Abbreviations	Full texts
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction(s)
CL	Clarification Request
CM	Combined Margin
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNA	Designate National Authority
DOE	Designated Operational Entity
EB	Executive Board
EF	Emission Factor
ER	Emission Reduction
FAR	Forward Action Request
FSR	Feasibility Study Report
GHG	Greenhouse Gas(es)
IPCC	Intergovernmental Panel on Climate Change
LoA	Letter of Approval
NDRC	National Development and Reform Commission
OM	Operating Margin
PCP	Project Cycle Procedure

PDD	Project Design Document
PS	Project Standard
tCO ₂ e	Tonnes of CO ₂ equivalent
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard

Appendix 2. Competence of team members and technical reviewers

Mr. Lucas Dou holds a bachelor degree in Polymer and a master degree in Material Science. He gained more than 7 years' experience in Clean Development Mechanism in P. R. China. He obtained the certificate of CDM Lead Verifier, Lead Auditor for ISO 14001 and Certified Measurement & Verification Professional (CMVP), and has successfully completed the course assessment for ISO 14064:2006.

He has experience in CDM validation and verification for more than 100 projects that applied technologies of renewable energy, waste heat/gas recovery, biomass residues power generation, landfill gas power generation, natural gas power generation, etc. His qualification, industrial experience and experience in CDM demonstrate his sufficient sectoral competence in "Manufacturing industries (Cement and lime production)" and "Energy industries (Renewables)".

Ms. Wang Lingxiu holds a Bachelor Degree in Thermal Power Engineering, a PhD Degree in Material Science and has an overall experience of around 10 years. She has 5 years experience in thermal power industry with main responsibilities of plant equipment operation monitoring, which gave her knowledge and experience in the process and operation parameters of power and heat generation from thermal energy sources and plant retrofitting, energy efficiency, etc.

Also, she have experience in certification Energy Efficiency Evaluation for the enterprises of glass, cement and ceramic industry, CCC certification for several cement enterprises, and involved into some scientific research and standard drafting. Her qualification, industrial experience and experience demonstrate her sufficient sectoral competence in TA 1.1 "Thermal energy generation".

Mr. Ernesto Tan holds a bachelor degree in Geology and a master degree in Structural Geology. He gained more than 2 years' technical experience in Petroleum Exploitation and Storage & Transportation sector and more than 7 years experience in Clean Development Mechanism in P.R China. He obtained the certificate of Climate Change Lead Verifier and Auditor for ISO 14001.

He has experience in CDM validation and verification for more than 200 projects that applied technologies of renewable energy, waste heat/gas recovery, energy distribution, energy demand, N₂O abatement, oil and gas industry, coal mine methane recovery and use, SF₆ capture and destruction, etc. His qualification, industrial experience and experience in CDM demonstrate his sufficient sectoral competence in "Energy industries (Renewables)".

Ms. Nancy Zhang holds a bachelor degree in Thermal Power Engineering. She gained more than 3 years' technical experience in thermal equipment sector and more than 7 years experience in Clean Development Mechanism in P.R China. She obtained the certificate of GHG emission Lead Verifier and Auditor for ISO 14001. She has experience in CDM validation and verification for hundreds of projects that applied technologies of renewable energy, waste heat/gas recovery, and thermal power projects, etc. Her qualification, industrial experience and experience in CDM demonstrate her adequate competence in "Energy industries (Thermal energy generation)" and "Energy industries (Renewables)".

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	National Bio Energy Co., Ltd.	Registered PDD	Version 05, dated 24/09/2007	Others
2	TUV SUD	Validation report of the project activity	Version 2, dated 27/05/2007	Others
3	Verification DOE	Monitoring reports and corresponding verification reports for the monitoring periods of the 1st crediting period	https://cdm.unfccc.int/Projects/DB/TUEV-SUED1191857086.36/view	Others
4	National Bio Energy Co., Ltd.	Updated PDD sent to the secretariat for notification	Version 09, dated 20/07/2015	PP
5	National Bio Energy Co., Ltd.	Updated PDD to request a renewal of crediting period of the project	Version 10, dated 30/07/2015	PP
6	National Bio Energy Co., Ltd.	Emission Factor Calculation Spreadsheet	Version 10, dated 30/07/2015	PP
7	National Bio Energy Co., Ltd.	Power Purchase Agreement and Grid Connection Agreement	Dated in 2009	PP
8	NDRC	2014 Baseline Emission Factors for Regional Power Grids in China	http://cdm.ccchina.gov.cn/Detail.aspx?newsId=51651&TId=3	Others
9	China Power Yearbook Editing Committee	China Electric Power Yearbook 2009,2010,2011,2012 and 2013	N/A	Others
10	China Energy Yearbook Editing Committee	China Energy Statistical Yearbook 2011, 2012 and 2013	N/A	Others
11	CDM-EB	Methodology ACM0018 Version 03.0	Dated 08/11/2013	Others
12	CDM-EB	Clean development mechanism project standard	Version 09.0, dated 20/02/2015	Others
13	CDM-EB	Clean development mechanism validation and verification standard	Version 09.0, dated 20/02/2015	Others
14	CDM-EB	Clean development mechanism project cycle procedure version	Version 09.0, dated 20/02/2015	Others
15	CDM-EB	Tool to calculate the emission factor for an electricity system	Version 04.0, dated 04/10/2013	Others
16	CDM-EB	Assessment of the validity of the current/original baseline and update of the baseline at the renewal of the crediting period	Version 03.0.1, dated 02/03/2012	Others
17	CDM-EB	Project design document for CDM project activities	version 06.0, dated 09/03/2015	Others

Appendix 4. Clarification requests, corrective action requests and forward action requests

Table 1. CL from this validation

CL ID	N/A	Section no.	N/A	Date: N/A
Description of CL				
N/A				
Project participant response				Date: N/A
N/A				
Documentation provided by project participant				

N/A	
DOE assessment	Date: N/A
N/A	

Table 2. CAR from this validation

CAR ID	01	Section no.	D.4	Date: 27/07/2015
Description of CAR				
The PDD uses 21 tCO ₂ e/tCH ₄ as the GWP _{CH₄} for the 1 st commitment period, which is inappropriate and shall be updated according to any future COP/MOP decisions. PDD shall be revised.				
Project participant response				Date:
25 tCO ₂ e/tCH ₄ for the second commitment period according to the decision 4/CMP.7 is applied. Ex-ante calculated emission reductions has been recalculated accordingly.				
Documentation provided by project participant				
Revised PDD and emission reductions calculation spreadsheet.				
DOE assessment				Date:
The PP applies the 25 CO ₂ e/tCH ₄ for the second commitment period according to the decision 4/CMP.7 as the GWP _{CH₄} , which complies with the methodology. The recalculated emissions reductions are corrected. This CAR is closed.				

Table 3. FAR from this validation

FAR ID	N/A	Section no.	N/A	Date: N/A
Description of FAR				
N/A				
Project participant response				Date: N/A
N/A				
Documentation provided by project participant				
N/A				
DOE assessment				Date: N/A
N/A				