

VALIDATION REPORT

GROUPED HYDROPOWER PLANTS IN CHONGQING, YUNNAN, SICHUAN AND GUIZHOU PROVINCES, P.R. CHINA



Document Prepared By China Classification Society Certification Company (CCSC)

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Summary:

China Classification Society Certification Company (CCSC), commissioned by Swiss Carbon Value Ltd., has performed the validation of the request to renew of the crediting period of the Grouped Hydropower Plants in Chongqing, Yunnan, Sichuan and Guizhou Provinces, P.R. China (hereafter referred to as “the Grouped Project”) on the basis of requirements of Verified Carbon Standard (VCS) Version 3.6, VCS Validation and Verification Manual, and the approved Clean Development Mechanism (CDM) methodology AMS-I.D (Version 18.0), as well as criteria given to provide for consistent project operations, monitoring and reporting. The validation report and the validation protocol are summarizing the findings of the validation.

The validation scope is defined as an independent and objective review and ex-ante determination of the estimated GHG emission reductions, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final validation report and opinion. The overall validation, from Contract Review to Validation Report & Opinion, was conducted using CCSC’s internal procedures.

The Grouped Project generate electricity by using renewable hydropower to the grid and replacing equivalent electricity generated by fossil fuel fired power plants connected to the Central China Power Grid (CCPG) and China Southern Power Grid (CSPG). The Grouped Project involves the construction and operation of 88 run-of-river hydropower plants in Chongqing, Sichuan, Guizhou and Yunnan Provinces, People’s Republic of China. The Project is expected to export average annual electricity of 740,884.3 MWh to the grid utilizing renewable hydro resources. The project activity achieves greenhouse gas (GHG) emissions reductions by displacing electricity from existing fossil fuel based power plants and likely capacity additions within the given grid. The annual emission reductions in the second crediting period is 369,699tCO₂.

The first output of the validation process is a list of 3 Clarification Requests, 1 Corrective Actions Request and 0 Forward Action Request (CL, CAR and FAR), presented in APPENDIX D. Taking into account this output, the project proponent revised its project document.

In summary, it is CCSC’s opinion that the Grouped Project correctly applies the VCS approved CDM methodologies AMS-I.D (Version 18.0) and meets the relevant VCS Standard v3.6 requirements and the relevant host country criteria.

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1 INTRODUCTION

1.1 Objective

Swiss Carbon Value Ltd. (hereafter referred to as “the PP”) has commissioned CCSC to conduct the validation of the request to renew of the crediting period of the “Grouped Hydropower Plants in Chongqing, Yunnan, Sichuan and Guizhou Provinces, P.R. China” (here after referred as the Grouped Project), which involves 88 hydropower plants located in Chongqing City, Sichuan Province, Guizhou Province and Yunnan Province, P.R. China. The Grouped Project has an individual project owner for each or a small number of hydropower plants.

CCSC as the validation/verification body (VVB) of the Grouped Project has been accredited as a DOE by UNFCCC and also meets the competence requirements as set out in ISO 14065:2013.

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 baseline. 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. Assessment of validation of baseline is a requirement for all VCS 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 Voluntary Carbon Units (VCUs).

1.2 Scope and Criteria

The validation scope is defined as an independent and objective review of the VCS project description (VCS-PD), the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against VCS version 3.6 requirements, UNFCCC rules and associated interpretations.

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

1.3 Level of Assurance

CCSC has undertaken a reasonable assurance engagement in accordance with VCS Version 3.6. It requires a reasonable level of assurance in validation that GHG assertions are free of material errors, omissions and misrepresentations. The validation conclusion is based on the VCS Project Description (VCS-PD) /5/, supporting evidences made available to the verifier and information collected through performing interviews.

1.4 Summary Description of the Project

The Grouped Project was registered as a VCS project on 08/06/2009 (VCS Project ID: 438). The first 10-year renewable crediting period is from 28/03/2006 to 27/03/2016. As per the registered VCS-PD, the Grouped Project consists of 95 run-of-river hydropower stations in less-developed

rural areas of south-western China. There are four sub-groups (i.e. 9 plants are located in Yunnan Province, 67 in Chongqing City, 13 in Sichuan Province and 6 in Guizhou Province), which are determined by the geographical boundary.

The PP is applying for a second crediting period started from 28/03/2016 to 27/03/2026. And in this crediting period, 7 hydropower plants located in Chongqing City (8_Mayuexi, 14_Lianmeng, 16_Gaodongzi, 20_Dibao, 26_Xiangyang Stage II, 43_Leyuan, 64_Banqiao Stage II) will be excluded from the Grouped Project in accordance with the requirement of VCS¹. /3/

2 VALIDATION PROCESS

2.1 Method and Criteria

The overall validation, from Contract Review to Validation Report & Opinion, was performed using CCSC internal procedures.

CCSC validated the Grouped Project against the requirements set in VCS standard version 3.6.

2.2 Document Review

The VCS-PD for the renewal of the crediting period was submitted by South Pole Carbon Asset Management Ltd. (the consultant) and additional background documents related to the project design and baseline were reviewed.

Furthermore, cross checks were made between information provided in the VCS-PD and information from sources other than those used.

The validation conclusions presented in this report relate to the Grouped Project as described in the VCS-PD version 1.0 dated 10/09/2016 /4/. To address CCSC's corrective action and clarification requests, the VCS-PD was revised to version 3.0 /5/ and resubmitted on 13/09/2017.

Appendix B of this report contains a complete list of all documents and proofs reviewed by the validation team.

2.3 Interviews

The follow-up interview through telephone was held on 24/01/2017 by Mr. YONG Hanlin from CCSC, which is focused on the issues identified during the desk review /8/. The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed Organization	Interview Topics
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¹ As per the VCS Project Review issued by VCS on 11/07/2016, these seven hydropower plants that operated after 2008 have excluded from the grouped project according to the 4th verification review response to VCS on Oct. 16th, 2015.

Swiss Carbon Value Ltd.	↪ Status of the project and any modifications with respect to the registered VCS-PD.
Small Hydropower Association of Wulong Area	↪ Applicability of selected methodology. ↪ National policies and changes ↪ Baseline of the project and its updates ↪ Emission Factors and their updates

2.4 Site Inspections

During the desk review, the relevant documents, including the registered VCS-PD and the relevant Validation Report, the previous monitoring reports and corresponding verification reports for the 1st crediting period, the follow-up interview by telephone and other relevant background documents were provided and assessed /1//2//3//8/. The project description in the VCS-PD for the renewable crediting period was verified from these documents. CCSC validation team can confirm the project design, construction, operation and monitoring plan were not changed. And the baseline scenario information also can be confirmed as it was defined by the applied methodology AMS I.D. Version 18.0 /13/. Hence, CCSC validation team has not concluded a physical site visit as part of validation process of the crediting period renewal for the registered Grouped Project, and it does not change the reasonable assurance of this validation.

2.5 Resolution of Findings

The objective of this phase of the validation is to resolve issues that require further elaboration, research or expansion prior to CCSC's positive conclusion on the project design.

A Corrective Action Request (CAR) is raised, if one of the following situations occurs:

- a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable, verifiable and additional emission reductions;
- b) The applicable VCS requirements have not been met;
- c) There is a risk that emission reductions cannot be monitored or calculated.

A Clarification Request (CL) is raised, if information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met.

A Forward Action Request (FAR) may also be raised during validation, to identify issues related to project implementation that require review during the first validation of the project activity.

To guarantee the transparency of the validation process, the issues raised, the responses provided by the project participants, the means of validation of such responses and references to any resulting changes in the VCS-PD or supporting annexes are documented in the Appendix D.

2.5.1 Forward Action Requests

No Forward Action Requests were raised during this validation.

3 VALIDATION FINDINGS

3.1 Project Details

The project description in the VCS-PD for the crediting period renewal was verified against the relevant documents, including the registered VCS-PD, the previous monitoring reports and corresponding verification reports for the 1st crediting period, Power Purchase Agreement /7/ and other relevant background documents. CCSC validation team can confirm the project design, construction, operation and monitoring plan were not changed except 7 hydropower plants (8_Mayuexi, 14_Lianmeng, 16_Gaodongzi, 20_Dibao, 26_Xiangyang Stage II, 43_Leyuan, 64_Banqiao Stage II) will be excluded from the Grouped Project.

Table 2 The Grouped Project information

Project Title:	Grouped Hydropower Plants in Chongqing, Yunnan, Sichuan and Guizhou Provinces, P.R. China
Project ID:	438
Registration Date:	08/06/2009
1 st Crediting Period:	28/03/2006 to 27/03/2016 (renewable)
Sectoral Scope:	01, "Energy Industries (renewable- /non-renewable resources)"
Methodologies Used	AMS-I.D Version 18.0
Project Start Date:	March 2002
Project Participants:	Swiss Carbon Value Ltd. (Switzerland) Host Party: P.R. China 1 Chongqing Fuling Zengfuyoujiang Hydroelectric Plant 2 Chongqing Fuling Huanglong Hydroelectric Plant 3 Pengshui Runxi Jinxing Hydroelectric Plant of Fuling Chuandong Hydropower Co., Ltd. 4 Pengshui Shengda Hydropower Co., Ltd. 5&6 Wanzhou Yongfa Water Conservancy Development Co., Ltd. 7 Wanzhou Huiyin Hydropower Development Co., Ltd. 9 Wanzhou Xiaolong Hydropower Development Co., Ltd. 10 Wanzhou Fengyu Hydropower Development Co., Ltd. 11 Chongqing Wanzhou Electric Development Co., Ltd. 12&18 Wanzhou Zhende Hydropower Development Co., Ltd. 13 Wanzhou Yanshan Hydropower Development Co., Ltd.

15 Wanzhou Wanlin Hydroelectric Plant
21 Chongqing Wanzhou Xianfeng Hydroelectric Plant
22&31 Wulong Chepanchengmendong Hydroelectric Plant
23 Wulong Yajiang Longbao Hydroelectric Plant
24&40&48 Wulong Runlong Maintenance Company
25 Wulong Guanqiao Hydroelectric Plant
27 Wulong Qingtongxi Hydroelectric Plant
28 Wulong Heping Hydroelectric Plant
29 Wulong Guanziya Hydroelectric Plant
30 Wulong Hongchao Hydropower Development Co., Ltd.
32 Wulong Tukan Shuanglong Hydroelectric Plant
33 Wulong Chushuitang Hydroelectric Plant
34 Wulong Shuangqiao Hydroelectric Plant
35 Wulong Longyuan Science & Technology Development Co., Ltd.
36&37&38&71 Wulong Boneng Electric Power Co., Ltd.
39 Wulong Luchi Hydroelectric Plant
41 Wulong Xiangyun Hydroelectric Plant
42 Wulong Houping Hongshan Hydroelectric Plant
44 Wulong Haiheng Agriculture Co., Ltd.
45 Wulong Suokousi Hydroelectric Plant
46 Wulong Canggou Xinli Hydropower Plant
47 Chongqing Wulong Jiangliu Hydroelectric Plant
49 Wulong Yuanquan Hydropower Co., Ltd.
50 Wulong Lianghekou Hydroelectric Plant
51 Wulong Wuhe Hydroelectric Plant
52 Wulong Sihe Hydroelectric Plant
53 Wulong Pingqiaoshilingyan Hydroelectric Plant
54 Wulong Nanmu Hydroelectric Plant
55 Wulong Canglong Hydropower Co., Ltd.
56 Wulong Dexin Hydropower Development Co., Ltd.
57&59 Wulong Landi Hydropower Co., Ltd.
58 Wulong Longfeng Hydropower Co., Ltd.
60 Wulong Jiayuan Hydropower Development Co., Ltd.
61 Wulong Haolong Hydropower Plant
62 Wulong Shuangchahe Hydroelectric Plant
63 Wulong Tukan Songshigou Hydroelectric Plant
65 Wulong Zili Electric Power Co., Ltd.
66 Wulong Sanyuan Hydroelectric Power Development Co., Ltd.
67&69 Chongqing Wulong Yuxiang Water Resource Development Co., Ltd.

68 Wulong Yongxin Hydropower Development Co., Ltd.
 70 Daozhenxianghe Hydropower Development Co., Ltd.
 72 Chongqing Fengyuanjinhui Hydropower Development Co., Ltd.
 73 Wulong Yuqian Comprehensive Development Co., Ltd.
 74&75 Xingyi City Puti Power Co. Ltd.
 76 Yingjing County Sanhe Township Wumaxi Stage I Hydroelectric Station
 77 Yingjing Sanhe Mozigou Hydroelectric Plant
 78 Yingjing Mayihe Hydropower Station
 79 Yingjing Jinyatan Hydroelectric Plant
 80 Yingjing County Toudaoshui Hydroelectric Station
 81 Sichuan Yingjing Sanhui Electric Power Co., Ltd.
 82 Sichuan Yingjing Yunwushan Hydropower Co., Ltd.
 83 Shimian Zhongxin Electric Power Development Co., Ltd.
 84 Sichuan Yingjing Hengyuan Electric Power Co., Ltd.
 85 Yingjing County Sanhe Daihuanggou Hydroelectric Plant
 86 Sichuan Yingjing Gaoqiaohe Electric Power Co., Ltd.
 87 Sichuan E'bian Heizhugou Hydropower Co., Ltd.
 88 E'bian Longxin Electric Power Co., Ltd.
 90&91&92 Lingcang Runda Hydropower Co., Ltd.
 93 Midu County Taishan Power Co., Ltd.
 94 Zhenyuan Yi, Hani and Lahu Autonomous County Xiaojiehe Hydropower Co., Ltd.
 95 Xishuangbanna Chuangye Hydropower Development Co., Ltd.
 96 Yingjiang County Tianchao Hydropower Co. Ltd.
 97 Jinping Mengqiao Datun Electricity Co. Ltd.
 98 Yunnan Fugong Huatai Electricity Development Co. Ltd.

By checking the VCS-PD, the validation team found there are some typo errors for the provided installed capacity of the power plants in the Grouped Project and CAR-1 was raised. The relevant typo errors were corrected in the revised VCS-PD and the relevant evidences have been provided and verified by the validation team. Hence, CAR-1 was closed out.

Hence, the validation team confirmed the location, technical information etc. of the 88 hydropower plants provided in the revised VCS-PD is same with the registered VCS-PD and the previous verification reports except some corrections on the edit errors of the registered VCS-PD (the detailed information of the 88 hydropower plants refers to VCS-PD).

Furthermore, CCSC validation team raised CL-1 as the latest template of VCS-PD was not applied in the VCS-PD version 1.0. CCSC also confirmed the latest template of VCS-PD ver 3.3 has been applied in the revised VCS-PD. Hence, CL-1 was closed out.

Project crediting period

Renewable crediting period has been chosen by the Grouped Project, the 1st 10 years crediting period is 28/03/2006 to 27/03/2016. Hence, CCSC validation team confirmed that the 2nd 10 years crediting period from 28/03/2016 to 27/03/2026 of the Grouped Project is correctly chosen.

Project scale and estimated GHG emission reductions or removals

According to VCS standard, Projects are categorized by size according to their estimated average annual GHG emission reductions or removals:

1) Projects: Less than or equal to 300,000 tonnes of CO₂e per year.

2) Large projects: Greater than 300,000 tonnes of CO₂e per year.

The estimated annual average GHG emission reductions of the Grouped Project in the second crediting period are 369,699tCO₂e. CCSC validation team confirmed that the Grouped Project is a large project.

Conditions prior to project initiation

Prior to the initiation of the Grouped Project, Electricity delivered to the grid by the Grouped Project would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid, which is in conformity with the approved AMS-I.D Version 18.0. This is also the baseline scenario.

Project compliance with applicable laws, statutes and other regulatory frameworks

As described in the validation report of the registered VCS-PD, the Grouped Project complies with relevant laws and regulations. CCSC validation team also confirmed there has been no significant change in the relevant national and/or sectoral policies since the date of earlier registered VCS-PD till now. The Grouped Project is compliance with applicable laws, statutes and other regulatory frameworks.

Ownership and other programs

- Project ownership

The ownership of the emission reductions will belong to each hydropower plants owner as confirmed through the Power Purchase Agreement, Business licence.

- Emissions trading programs, other binding limits

Net GHG emission reductions or removals generated by the Grouped Project will not be used for compliance with an emissions trading program or for meeting binding limits on GHG emissions.

In October 2011, China government planned to establish 7 pilot regional emissions trading systems (ETSS), including municipalities of Beijing, Shanghai, Tianjin, Shenzhen and Chongqing, Guangdong province and Hubei province. Besides, China National ETS is expected to be launched at the end of year 2017.

However, the grouped project and any of its project activity instances do not reduce GHG emissions from activities that are included in an emission trading program or any other

mechanism that includes GHG allowance trading, because:

1. VCS has already confirmed the exclusion of 7 hydropower plants included in Chongqing ETS since the 4th Verification of the Grouped Project.

Actually 7 hydropower plants (8_Mayuexi, 14_Lianmeng, 16_Gaodongzi, 20_Dibao, 26_Xiangyang Stage II, 43_Leyuan, and 64_Banqiao Stage III) included in Chongqing ETS have already been excluded from the Grouped Project since the 4th Verification during the first crediting period of the project.

Based on the final VCS Project Review Report of the project's 4th verification on 11 July 2016 (covering monitoring period from 26 June 2013 to 25 May 2015), at that time:

i) Chongqing ETS has already established the compliance period from 1 January 2013 to 31 December 2015. As per the Chongqing ETS regulations, emission data from year 2008 to 2012 of fossil fuel power generation plants covering by the ETS have been used for setting the baseline and cap.

ii) For the Grouped Project, originally there were in total 67 hydropower plants out of all 95 plants in Chongqing Province. Most of the 67 hydro plants had started operation before 2008 except the 7 plants mentioned above. The 60 hydro plants ($60 = 67 - 7$) with operation start date before 2008 had already made their impacts on the fossil fuel power generation plants before the year 2008, so no extra allowances would be earned by the fossil fuel power generation plants between 2013 and 2015 due to the operation of those hydropower plants, thus no double counting should be expected.

iii) To be conservative, the 7 plants have already been excluded from emission reduction calculation since the 4th verification of the project. VCS has already confirmed the exclusion.

Moreover, CCSC has already considered this situation, in the current renewed PDD and the corresponding validation report, those 7 hydropower plants have also been excluded from the project, as the total number of hydropower plants have already been changed from 95 to 88 and the total installed capacity have already been changed from 215.71 MW to 210.25 MW.

2. Project hydropower plants in Yunnan, Sichuan and Guizhou Provinces are not included in any emission trading programs or any other mechanisms that include GHG allowance trading.

Since June 2013 China has launched 7 pilot ETSS (Shenzhen, Guangdong, Beijing, Shanghai, Tianjin, Hubei, and Chongqing). Until now, in total 8 ETSS have been in operation, including the just mentioned 7 pilot ones and one non-pilot ETS in Fujian Province.

For the rest 28 hydropower plants in Yunnan, Sichuan and Guizhou Provinces, there has been neither emission trading programs nor other mechanisms that include GHG allowance trading existing.

3. In the upcoming China National ETS, no double counting should be expected from all remaining 88 project hydropower plants.

The China National ETS will be launched at the end of year 2017. As one of the qualified third party carbon auditing entities in the China National ETS, CCSC has confirmed that for power generation industry, emission data of year 2013-2015 have been used by the national DRC (NDRC) to set the cap for allocating the allowances².

As all 88 hydropower plants started operation before 2013, they had already made the fossil fuel power generation plants reduce output before the year 2013. Their impacts on fossil fuel power generation plants happened before the year (2013) that the government bureau used for baseline selection. The baseline value, which is used by the government bureau to set the cap, is an already reduced value that takes into account of emission reductions by those hydro plants, so it

² http://www.ndrc.gov.cn/gzdt/201601/t20160122_772150.html

the cap for the fossil fuel power plants. Therefore, no extra allowances would be earned by the fossil fuel power generation plants during the upcoming China National ETS due to the operation of those hydropower plants, thus no double counting shall be expected.

Since the 4th Verification of the Grouped Project in 2015, 7 hydropower plants out of 67 plants located in Chongqing have been excluded from claiming emission reductions. It was due to the concern that for Chongqing pilot ETS, Chongqing Development and Reform Commission (DRC) used emission value from year 2008 to 2012 for setting the cap and those 7 plants have a start date after the ETS baseline year (2008).

Now the Chongqing pilot ETS (2013 to 2015) is over. As the China National ETS will be launched at the end of year 2017, several industries including power generation industry would be taken out of Chongqing and included in China National ETS. The allowances for those industries for year 2016 and onwards will be allocated via National ETS instead of Chongqing ETS. For National ETS, the emission data of year 2013 to 2015 have been used by national DRC (NDRC) as the baseline value for allocating allowances instead of 2008 to 2012 for Chongqing pilot ETS. It makes all the 67 projects located in Chongqing having start date prior to the ETS baseline year (2013), and their emissions reductions would inherently be taken into account when the volume of allowances to be allocated is determined.

However, to be on the conservative side, the 7 projects, which have been already excluded in the previous verification, would not be considered in the 2nd crediting period either.

With respect to the other 28 projects in other Provinces (Yunnan, Sichuan and Guizhou Provinces), since no regional ETS scheme operated in those provinces, there will be not any impact by those 28 projects. As for the impact on China National ETS, similar to what is mentioned above, since the emission data of year 2013 to 2015 have been used by NDRC as the baseline value, and those 28 projects started operation years before 2013, there would be no impact by those projects.

- Other forms of environmental credit sought or received and eligible to be sought or received

The Grouped Project has not created another form of Environmental Credit.

- Participation under other GHG programs:

The Grouped Project has not been registered or seeking registration under other GHG programs as confirmed through the GS or CDM project activity. PP has also provided a declaration for the same.

- Rejection by other GHG programs

The Grouped Project has not been rejected by other GHG programs as confirmed through the GS, VCS and CDM project data base.

Additional information relevant to the project

- Eligibility criteria for grouped projects

All the 88 hydropower plants were included before the registration of the Grouped Project. There is no inclusion of additional project activity instances in this crediting period. Hence, CCSC validation team confirmed all the hydropower plants meet all eligibility criteria for Grouped Project.

- Leakage management for AFOLU projects

The Grouped Project is not an AFOLU project.

- Commercially sensitive information

N.A.

- Any further information

N.A.

3.2 Application of Methodology

3.2.1 Title and Reference

The VCS-approved methodology applied to the Grouped Project is the approved consolidated CDM baseline and monitoring methodology AMS-I.D Version 18.0 "Grid-connected renewable electricity generation" /13/.

The methodology also refers to:

"Tool to calculate the emission factor for an electricity system" (Version 05.0) /16/, "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) /17/. More information concerning the above methodology and tools can be referred to:

<http://cdm.unfccc.int/methodologies/DB/W3TINZ7KKWCK7L8WTXFQOOFQOH4SBK>

3.2.2 Applicability

At the time of registration, project participant had used the methodology AMS-I.D Version 13 "Grid-connected renewable electricity generation" /12/.

The revised VCS-PD for the renewable crediting period applies the latest available version of the same methodology, viz. AMS-I.D Version 18.0 "Grid-connected renewable electricity generation". Therefore it meets the condition that for renewal of the crediting period, the methodology shall not be changed.

CCSC validation team has checked the definitions of AMS-I.D Version 18.0 of the applicability of this methodology, and confirmed the comparison in the following table, which explains the reason why the methodology applies to the Grouped Project:

Table 3 the project applicability

AMS-I.D Version 18.0	the Group Project
This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass: (a) Supplying electricity to a national or a regional grid; or (b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.	YES. All 88 plants of the Group Project are Greenfield hydropower plants and supplied electricity to CCPG and CSPG.
This methodology is applicable to the project activities that (a) install a Greenfield plant; (b) involve a capacity addition to (an) existing plant(s); (c) involve a retrofit of (an) existing plant(s); (d) involve a rehabilitation of (an) existing plant(s); or (e) involve a replacement of (an) existing plant(s).	YES. All 88 plants of the Group Project are Greenfield hydropower plants.
The methodology is applicable under the following conditions: (a) 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; (b) 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	YES. (a) the project involves the newly built of hydro power plant; (b) no capacity additions, retrofits, rehabilitations and replacements are involved in the project.

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.	
Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology: (a) The project activity is implemented in existing reservoir with no change in the volume of reservoir; or (b) The project activity is implemented in an existing reservoir, where the volume of the reservoir is increased and the power density of the project activity, as per definitions given in the project emissions section, is greater than 4 W/m ² ; or (c) The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m ² .	YES. Among 88 plants of the Group Project, only two plants (74_Puti 1 and 75_Puti 2) involves new reservoirs, and the power densities of the two individual components are 18 W/m ² and 59 W/m ² respectively, greater than 4W/m ² . The other 86 hydropower plants do not involve the reservoir.
If the new unit has both renewable and non-renewable components (e.g. a wind/diesel unit), the eligibility limit of 15MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not be exceed the limit of 15MW.	N.A.
Combined heat and power (co-generation) system are not eligible under this methodology.	N.A.
In the case of project activities that involve the capacity addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct ¹ from the existing units.	N.A.
In the case of retrofit, rehabilitation or replacement, to qualify as a small-scale project, the total output of the retrofitted, rehabilitated or replacement power plant/unit shall not exceed the limit of 15 MW.	N.A.
In the case of landfill gas, waste gas, wastewater treatment and agro-industries projects, recovered methane emissions are eligible under a relevant Type III category. If the recovered methane is used for electricity generation for supply to a grid then the baseline for the	N.A.

electricity component shall be in accordance with procedure prescribed under this methodology. If the recovered methane is used for heat generation or cogeneration other applicable Type-I methodologies such as “AMS-I.C.: Thermal energy production with or without electricity” shall be explored.	
In case biomass is sourced from dedicated plantations, the applicability criteria in the tool “Project emissions from cultivation of biomass” shall apply.	N.A.

It can be concluded from the above analysis that the Grouped Project complies with the applicability requirement of the methodology AMS-I.D Version 18.0.

3.2.3 Project Boundary

According to AMS-I.D Version 18.0, spatial extent of the project boundary includes the project power plants and all power plants connected physically to the electricity systems that the project power plants are connected to, which are Central China Power Grid (CCPG) or China Southern Power Grid (CSPG).

CCSC validation team reviewed the emissions source determination included in the VCS-PD and found the justification accurate and in accordance with the applied methodology.

Overall, the project proponents provided an accurate description of the project boundary.

3.2.4 Baseline Scenario

As demonstrated in the registered VCS-PD, the baseline for the Grouped Project is the kWh produced by the renewable generating unit multiplied by an emission coefficient (measured in kgCO₂e/kWh) calculated in a transparent and conservative manner as a combined margin (CM), consisting of the combination of operation margin (OM) and build margin (BM).

According to the registered VCS-PD and the relevant validation report, all 88 hydropower plants involved in the Grouped Project are greenfield projects. Hence, the baseline scenario, defined by the AMS-I.D Version 18.0, is that electricity delivered to the grid by the project activity would have otherwise been generated by the generation of grid-connected power plants and by the addition of new generation sources into the grid. It is same with that in the registered VCS-PD.

According to the requirement of Section 3.8.5 of the VCS Standard version 3.6, the validity of the original baseline scenario shall be assessed. With reference to Methodological Tool “Assessment of the validity of the current/original baseline and update of the baseline at the renewal of the crediting period”, an assessment of the continued validity of the baseline is performed in steps as follows:

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

As per the requirement of the tool to assess the impact of new relevant national and/or sectoral policies and circumstances on the baseline following sub-steps have been used:

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

The current baseline remains the same with it was in the registered VCS-PD. There has been no significant change in the relevant national and/or sectoral policies since the date of earlier registered VCS-PD till now, although national policies favor the development of renewable energy, electricity generated by fossil fuel based plants dominated the electricity supply /10/. Hence, it can be concluded that the current baseline still complies with all relevant policies.

Step 1.2: Assess the impact of circumstances

As per the requirement of the sub-step, it has been assessed that there were no impact of circumstances existing at the time of requesting renewal of the crediting period on the current baseline scenarios.

Step 1.3: Assess whether the continuation of the use of current baseline equipment(s) is technically possible

It is clear that the grid equipments as a system has longer lifetime and will exceed the next 10-year crediting period. Hence, this sub step is not applicable, as the baseline scenario is electricity provided by the grid and the project proponents or third party (or parties) would not undertake an investment later due.

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

The emission factor that was determined only at the start of the previous crediting period is no more valid on account of change in the grid configuration. As per the requirement of AMS-I.D Version 18.0, new data available should be used to revise the baseline scenario and emissions for updating the baseline at the start of the second and third crediting period. Hence the emission factor needs to be updated accordingly.

Step 2.-Update the current baseline and the data and parameters

Step 2.1: Update the current baseline

As per the requirement of the sub-step, the update for baseline emissions of the second crediting period should be based on the latest approved version of the methodology applicable to the project activity.

As per AMS-I.D Version18.0, the baseline for the Project remains the same as that in the registered VCS-PD as “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 into the grid.

Step 2.2: Update the data and parameters

The baseline emission from the Project has been calculated as per the “Tool to calculate the emission factor for an electricity system” (Version 05) with six separated steps listed below. In addition, the calculation refers to the latest version of “*Notification on Determining Baseline Emission Factor of China’s Grid*” published by China’s DNA on 06/06/2016 (hereafter called “*Notification of China-Grid EF*”), which is the latest valid available data at the time of the validation for the crediting period renewal /9/.

Sub-Step 1.-Identify the relevant electricity systems.

CCPG or CSPG, which the project directly connected, are selected as the project electricity system. In addition, there is net imported power to the CSPG from the CCPG and East China Power Grid (ECPG), and the net imported power to the CCPG from North China Power Grid (NCPG) and Northwest China Power Grid (NWCPG). Therefore, the ECPG, NCPG and NWCPG are considered as the connected electric system. And Option b) the simple operating margin emission rate of the exporting grid is selected for the calculation of the CO₂ emission factors for net electricity from the connected electricity system.

☞ CCSC validation team was able to verify the data sources of “*Notification of China-Grid EF*”, and confirms that the identified electric power systems are appropriate.

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

Option I: Only grid power plants are included in the calculation.

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

For the calculation of the OM emission factor, the simple OM emission factor calculation method is selected because low cost/ must-run projects constitute less than 50% of the total grid generation during the last 5 years. /10/ And the ex-ante option is selected for the calculation of the simple OM emission factor.

☞ CCSC validation team has checked the calculation for low cost/must-run constitution of the total grid generation and confirmed the calculation is correct. Therefore, simple OM emission factor calculation method is selected reasonable. Data from China Electric Power Yearbook 2010-2014 has been applied correctly.

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

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” is selected for the calculation of the simple OM emission factors. The data on electricity generation and auxiliary electricity consumption are obtained from the China Electric Power Yearbook from 2012 to 2014 (published annually) /10/. The data on different fuel consumptions for power generation and the net caloric values of the fuels are obtained from the China Energy Statistical Yearbook from 2012 to 2014 (published annually) /11/. The emission factors of the fuels adopted are obtained from Table 1-2 and Table 1-4 of the “2006 IPCC Guidelines for National Greenhouse Gas Inventories: Workbook”.

The renewable crediting period is adopted for the Grouped Project and the OM will be fixed for the second crediting period as the ex-ante option is selected for the calculation of the simple OM emission factor.

- ✎ The data source are deemed reasonable and CCSC confirms that the calculation is able to be replicated using the data and parameter provided in the VCS PD.

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

Considering data availability, deviation accepted by Clean Development Mechanism Execute Board (CDM-EB) was used in the VCS-PD i.e.

- 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.

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 approach to 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.

- ✎ CCSC validation team hereby confirms that the data source and approaches taken are deemed reliable and the calculation is appropriate.

Sub-Step 6.-Calculate the combined margin (CM) emissions factor.

According to the "Tool to calculate the emission factor for an electricity system" Version 05, the default weights: $\omega_{OM}=0.25$ for Operating Margin and $\omega_{BM}=0.75$ for Build Margin in the second crediting period of hydro power projects are adopted.

CCSC validation team hereby confirmed the original baseline scenario is still valid and the necessary data and parameters updates has been correctly conducted in the VCS-PD.

3.2.5 *Additionality*

According to the requirement of Section 3.8.5 of the VCS Standard Version 3.6, a full reassessment of additionality is not required when renewing the project crediting period. However, regulatory surplus shall be demonstrated in accordance with Section 4.6.3) and the project description shall be updated accordingly. As mentioned above section, there has been no significant change in the relevant national and/or sectoral policies since the date of earlier registered VCS-PD till now, although national policies favour the development of renewable energy, electricity generated by fossil fuel based plants dominated the electricity supply. Hence, the Grouped Project is not mandated by any law, statute or other regulatory framework, or for UNFCCC non-Annex I countries, ant systematically enforced law, statute or other regulatory framework. And the relevant updates, i.e. emission factors of the project electricity system, calculation of ERs have been correctly provided in the VCS-PD for the renewable of crediting period.

3.2.6 Quantification of GHG Emission Reductions and Removals

As per baseline methodology AMS-I.D Version 18.0, the emission reductions are the difference between baseline emissions and project emissions and leakage. These are:

1) Baseline emissions: baseline emissions BE_y (tCO_2) are equal to baseline emission factor $EF_{grid,y}$ (tCO_2/MWh) times the net electricity supplied to the grid $EG_{PJ,y}$ (MWh) (the Grouped Project involves 88 Greenfield hydropower plants, therefore $EG_{PJ,y}$ equals to $EG_{PJ,facility,y}$ that is quantity of net electricity generation supplied by the project plants.

2) Project Emissions: all 88 power plant involved in the Group Project are greenfield hydropower plants, only two of them having reservoirs (74_Puti 1 and 75_Puti 2), and the power densities of the two individual components are shown to be $18 W/m^2$ and $59 W/m^2$, greater than $10W/m^2$. The other projects do not involve the reservoir. Hence, the project emissions are regarded as zero as per methodology AMS-I.D Version 18.0.

3) Leakage: no leakage need to be considered as the Grouped Project only involves hydropower plants according to AMS-I.D Version 18.0.

4) Emission reductions:

$$ER_y = BE_y - PE_y - L_y = EF_{grid,y} \times EG_{PJ,y} - 0 - 0 = EF_{grid,y} \times EG_{PJ,facility,y}$$

$EG_{PJ,y}$ (equals to $EG_{PJ,facility,y}$) is the quantity of net electricity generation supplied by the project plants, which will be monitored during each monitoring period. CCSC validation team reviewed the VCS-PD, and confirmed that this value keeps consistent with the registered VCS-PD after exclude those 7 hydropower plants. According to the baseline methodology AMS-I.D Version 18.0 and Tool to calculate the emission factor for an electricity system Version 05, the baseline emission factor was calculated as six steps (see above section 3.2.4 for details). In addition, the calculation in the VCS-PD refers to the “Notification of China-Grid EF”/9/, which is the most recent information available at the time of VCS-PD submission to CCSC for validation.

CCSC validation team has checked the “Notification of China-Grid EF” and can confirm that the emission factor calculation is in accordance with data in the China Electric Power Yearbook from 2012 to 2014 and China Energy Statistical Yearbook from 2013 to 2014, and also complies with requirement the “Tool-Grid EF”. According to the “Notification of China-Grid EF”, the Simple OM emission factor ($EF_{grid,OM,y}$), build margin emission factor ($EF_{grid,BM,y}$) of each relevant grid are calculated as in following table. According to the “Tool to calculate the emission factor for an electricity system”, the default weights for hydropower generation projects are as follows: $w_{OM} = 0.25$ and $w_{BM} = 0.75$. Therefore the combined margin emission factors is calculated as:

$$EF_{grid,y} = EF_{grid,OM,y} \times w_{OM} + EF_{grid,BM,y} \times w_{BM} = EF_{grid,OM,y} \times 0.25 + EF_{grid,BM,y} \times 0.75$$

Table 4 Emission factor of CCPG and CSPG (Unit: tCO_2e/MWh)

	OM	BM	CM
CCPG	0.9515	0.3500	0.5003

CSPG	0.8959	0.3648	0.4975
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By checking VCS-PD, CCSC validation team found some plants included in the Grouped Project would be ended before the end date of the 2nd crediting period and no VERs would be produced after that. However, it was not presented in the ERs calculation. CL-2 was raised accordingly. CCSC has verified the ERs calculation process and the revised VCS-PD and confirmed the provided ended dates are conservative and the ERs are correctly calculated. Hence, CL-2 was closed out.

Table 5 Emission reductions of the Grouped Project (Unit: tCO₂e)

Year	Estimated baseline emissions or removals	Estimated project emissions or removals	Estimated leakage emissions	Estimated net GHG emission reductions or removals
28/03/2016-27/03/2017	403,101	0	0	403,101 ³
28/03/2017-27/03/2018	403,101	0	0	403,101
28/03/2018-27/03/2019	403,101	0	0	403,101
28/03/2019-27/03/2020	403,101	0	0	403,101
28/03/2020-27/03/2021	403,101	0	0	403,101
28/03/2021-27/03/2022	403,101	0	0	403,101
28/03/2022-27/03/2023	402,271 ⁴	0	0	402,271
28/03/2023-27/03/2024	361,965	0	0	361,965
28/03/2024-27/03/2025	291,634	0	0	291,634
28/03/2025-27/03/2026	222,519	0	0	222,519
Total	3,696,995	0	0	3,696,995

CCSC validation team verified the emission reductions calculation spreadsheet /6/ and confirms that the emission reductions of the project were reasonably estimated and correctly calculated.

3.2.7 Methodology Deviations

³ $ER_y = BE_y - PE_y - L_y$

⁴ Some plants in this and the following years are come to the end of their lifetime and the BE_y after that are not calculated for conservation.

N.A.

3.2.8 Monitoring Plan

The VCS PD applies the approved consolidated monitoring methodology AMS-I.D Version 18.0. CCSC validation team confirmed that the selected monitoring methodology is applicable to the Grouped Project.

Data and Parameters Monitored

The main data that needs to be monitored ex-post is the amount of the electricity delivered to the CCPG and CSPG, which will be continuously monitored through gateway meters specified in the Power Purchase Agreement for each hydropower plants of the Grouped Project.

The project owner of each hydropower plants of the Grouped Project will keep copies of the electricity sales records including the electricity invoices and receipts, which have been verified by onsite assessment of previous verifications in the 1st crediting period. Receipts from electricity sales will be obtained for double checking.

CCSC validation team reviewed the monitoring points of each hydropower plants of the Grouped Project and confirmed the Grouped Project's monitoring point are appropriate.

However, some parameters and the relevant monitoring information were not provided in the VCS-PD version 1.0, i.e. Cap_{BL} , A_{BL} , Cap_{PJ} , A_{PJ} . Hence, CL-3 was raised. And all the necessary parameters have been provide in the revised VCS-PD, i.e. 74_Puti 1 and 75_Puti 2 hydropower plants, nameplates of the turbines and generators at the hydropower plants site will be used to monitor the installed capacity, and the reservoir surface area will be measured from topographical surveys, maps, satellite pictures, etc. Therefore, CL-3 was closed out.

CCSC validation team confirmed the monitoring plan contained in the VCS-PD version 3.0 dated 13/09/2017 is in accordance with the monitoring methodology and the monitoring plan contained in the registered VCS-PD. The monitoring plan will give opportunity for real measurements of achieved emission reductions.

Implementation of the Monitoring Plan

The quality assurance and quality control procedure has been clearly described in the revised VCS-PD. This includes description of the responsibilities, monitoring data, meters precision, meters calibration frequency, data management system, QA/QC procedure, training and emergency procedures. And it is same with the one in the registered VCS-PD.

All the monitoring records, i.e. electronic data and documents, written data and documents will be regularly copied and archived, and kept at least for two years after the end of the crediting period.

The validation team considers that the means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions achieved by/resulting from the Grouped Project can be reported ex post and verified.

CCSC validation team hereby confirms that the monitoring plan complies with the requirements of the methodology including applicable tool(s), the monitoring arrangements described in the monitoring plan are feasible within the initial seven instances design and the project owners are able to implement the described monitoring plan.

3.3 Non-Permanence Risk Analysis

As the Grouped Project is not an AFOLU project, the project activity does not require a non-permanence risk analysis.

4 SAFEGUARDS

4.1 No Net Harm

According to the VCS-PD, there is no potential negative environmental and socio-economic impact of the Grouped Project. CCSC validation team confirmed it by verifying the registered VCS-PD and the relevant validation report and the follow-up interview.

4.2 Environmental Impact

The environmental impacts of the Grouped Project were sufficiently assessed by means of an Environmental Impact Assessment (EIA) Study. All 88 hydropower plants included in the Grouped Project have implemented the EIA and obtained the approval from local governments before VCS registration.

Hence, the validation team is able to confirm that the EIA has been conducted in accordance with the relevant Chinese Environmental Regulations/19/ and the environmental impact of the Grouped Project is insignificant.

4.3 Local Stakeholder Consultation

According to the VCS-PD, local stakeholders were invited to provide comments during environment impact assessment process before the start date of each hydropower plants' construction, which is mandatory according to the Chinese Environment Impact Assessment Law. The processes by which comments from local stakeholders have been invited and compiled, has been described within the VCS-PD as well as EIA report. Furthermore, representatives from the local community were interviewed, the relevant evidences were presented to CCSC for assessment. In general, the interviewees show adequate understanding of the nature of the Grouped Project and agreed that the Grouped Project would benefit the environment, society and economic development. The response is overall supportive.

4.4 Public Comments

No public comment was received.

5 VALIDATION CONCLUSION

CCSC validation team has performed the validation of the renewal of the crediting period of “Grouped Hydropower Plants in Chongqing, Yunnan, Sichuan and Guizhou Provinces, P.R. China”, which applied the methodology AMS-I.D Version 18.0. The validation was performed on the basis of VCS Standard version 3.6 and host country criteria and also on the criteria given to provide for consistent Project operations, monitoring and reporting.

The validation consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) follow-up interview with project stakeholders; iii) the resolution of outstanding issues and the issuance of the final validation report and opinion.

Through detailed analysis of the Grouped Project, it is concluded that the Grouped Project is likely to result in reductions of GHG emissions. The “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)” has been applied to demonstrate that validity of the Grouped Project’s baseline scenario. Emission reductions attributable to the Grouped Project are hence additional to any that would occur in the absence of the Grouped Project.

The validation covered all project components and issues that need to be validated for the renewal of crediting period as a VCS project. In our opinion, CCSC validation team hereby confirms that the Grouped Project correctly applied the baseline and monitoring methodology AMS-I.D Version 18.0 and meets the relevant VCS requirements for the renewal of the crediting period.

CCSC validation team hereby requests the renewal of crediting period of the Grouped Project. Provided that the project is implemented and maintained as designed, the Grouped Project is expected to achieve annual average emission reduction of 369,699tCO₂e within the 2nd crediting period.

APPENDIX A: ABBREVIATIONS

Abbreviations	Full texts
AFOLU	Agriculture, Forestry and Other Land Use
BM	Build Margin
CAR	Corrective Action Request
CCSC	China Classification Society Certification Company
CCPG	China Central Power Grid
CDM	Clean Development Mechanism
CL	Clarification Request
CME	Coordinating/managing entity
CM	Combined Margin
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CSPG	China Southern Power Grid
DOE	Designated Operation Entity
DNA	Designated National Authority
EB	Executive Board
ECPG	Eastern China Power Grid
EF	Emission Factor
EIA	Environmental Impact Assessment
ERPA	Emission Reduction Purchase Agreement
FAR	Forward Action Request
GHG(s)	Greenhouse gas(es)
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
NCPG	Northern China Power Grid

NDRC	National Development and Reform Committee
NGO	Non-governmental Organization
NWCPG	Northwest China Power Grid
OM	Operating Margin
PD	Project Description
PP	Project Participant
PPA	Power Purchase Agreement
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VCU	Voluntary Carbon Unit
VVB	Validation / Verification Body

APPENDIX B: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS



Appendix 9

CERTIFICATE OF COMPETENCE

Date of issue: 16/10/2016

Mr. Yong Hanlin

Has been qualified in accordance with *CDM Personnel Competence Requirements and Professional Competence Evaluation Instructions* (CDMI0301) as

- CDM validator for Technical Area(s): TA1.1/TA1.2/TA8.1/TA10.1
- CDM verifier for Technical Area(s): TA1.1/TA1.2/TA8.1/TA10.1
- ☐ Technical expert for Technical Area(s): _____

Huang ShiYuan
CCSC General Manager



Appendix 9

CERTIFICATE OF COMPETENCE

Date of issue: 16/10/2016

Ms. Zhang Rui

Has been qualified in accordance with *CDM Personnel Competence Requirements and Professional Competence Evaluation Instructions* (CDMI0301) as

- CDM validator for Technical Area(s): TA1.2
- CDM verifier for Technical Area(s): TA1.2
- ☐ Technical expert for Technical Area(s): _____

Huang ShiYuan
CCSC General Manager



Appendix 9

CERTIFICATE OF COMPETENCE

Date of issue: 16/10/2016

Ms. Xie Fengjun

Has been qualified in accordance with *CDM Personnel Competence Requirements and Professional Competence Evaluation Instructions* (CDMI0301) as

- CDM validator for Technical Area(s): TA1.2/TA13.1/TA13.2
- CDM verifier for Technical Area(s): TA1.2/TA13.1/TA13.2
- ☐ Technical expert for Technical Area(s): _____

Huang ShiYuan
CCSC General Manager

APPENDIX C: DOCUMENTS REVISED OR REFERENCED

No.	Author	Title	References to the document	Provider
/1/	South Pole Carbon Management Ltd.	Registered VCS-PD	Dated 13/10/2009	Others
/2/	TUV Rheinland	Validation report of the registered VCS-PD	Version No.03 Dated 05/11/2009	Others
/3/	South Pole Carbon Management Ltd. and Verification DOE	Monitoring reports, corresponding verification reports and VCS Project Review Report for the monitoring periods of the 1st crediting period	http://vcsprojectdatabase.org/#/project_details/438	Others
/4/	South Pole Carbon Management Ltd.	VCS-PD sent to CCSC to request a renewal of crediting period of the Grouped Project	Version 1.0 10/09/2016	Others
/5/	South Pole Carbon Management Ltd.	Final VCS-PD to request a renewal of crediting period of the Grouped Project	Version 3.0 13/09/2017	Others
/6/	South Pole Carbon Management Ltd.	Emission Reductions Calculation Spreadsheet	/	Others
/7/	South Pole Carbon Management Ltd.	Power Purchase Agreement	/	Others
/8/	South Pole Carbon Management Ltd.	Telephone records for PP's interview and the relevant responses	/	Others
/9/	NDRC	2015 Baseline Emission Factors for Regional Power Grids in China	http://cdm.ccchina.gov.cn/archiver/cdmcn/UpFile/Files/Default/20160606120244478242.pdf	Others
/10/	China Yearbook Power Editing Committee	China Electric Power Yearbook 2010, 2011, 2012, 2013 and 2014	N/A	Others
/11/	China Yearbook Energy Editing Committee	China Energy Statistical Yearbook 2012, 2013 and 2014	N/A	Others
/12/	CDM-EB	Methodology AMS-I.D	Version 13.0 Dated 14/12/2007	Others
/13/	CDM-EB	Methodology AMS-I.D	Version 18.0 Dated 28/11/2014	Others
/14/	VCS Board	VCS standard	Version 3.6	Others

			Dated 19/10/2016	
/15/	VCS Board	VCS validation and verification manual	Version 3.2 Dated 19/10/2016	Others
/16/	CDM-EB	Tool to calculate the emission factor for an electricity system	Version 05.0.0 Dated 27/11/2015	Others
/17/	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
/18/	VCS Board	VCS Project Description template	Version 3.3	Others

APPENDIX D: CLARIFICATION REQUESTS, CORRECTIVE ACTION REQUESTS AND FORWARD ACTION REQUESTS

Draft report clarifications and corrective action requests by validation team	Summary of project participant response	Validation team conclusion
CAR-1: There are some typo errors for the provided installed capacity of the power plants in the Grouped Project.	The relevant typo errors were corrected and the relevant evidences have been provided.	CCSC has verified the installed capacity provided in the revised PD comparing with the evidences and confirmed all the typo errors have been corrected. Therefore, CAR-1 was closed out.
CL-1: The latest template of VCS-PD was not applied.	The latest template of VCS-PD ver3.3 has been applied.	The latest template of VCS-PD ver3.3 has been applied. Therefore, CL-1 was closed out.
CL-2: According to the appendix 3 in the VCS-PD version 1.0, some plants included in the Grouped Project would be ended before the end date of the 2 nd crediting period. The relevant description should be provided in Section 1.6 and the estimated ERs calculation should also be updated accordingly.	The ended date of the plants have been provided and ERs calculation has been updated accordingly.	CCSC has verified the ERs sheet and confirmed the provided ended dates are conservative and the ERs are correctly calculated. Therefore, CL-2 was closed out.
CL-3: Some parameters and the relevant monitoring information were not provided in the VCS-PD version 1.0, i.e. Cap _{BL} , A _{BL} , Cap _{PJ} , A _{PJ} .	Cap _{BL} , A _{BL} , Cap _{PJ} , A _{PJ} have been provided in updated VCS-PD.	All the necessary parameters have been provide in the VCS-PD. Therefore, CL-3 was closed out.