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Comments on the Validation of the Jiangxi Xinchang 2x660MW Ultra-Supercritical Project

Executive Summary

On behalf of CDM Watch, the Stanford Environmental Law Clinic respectfully submits the following comment on the Project Design Document (PDD) for the Jiangxi Xinchang 2x660MW Ultra-Supercritical Project (Project). We thank the CDM Executive Board and Designated Operating Entity (DOE), Bureau Veritas Certification Holding SAS, for recognizing the integral role of transparency in the CDM validation process, and for taking this comment into consideration.

If approved, this Project could lead to excess issuance of Certified Emissions Reductions (CERs) beyond any actual emissions reductions. Our analysis of the PDD indicates that the DOE must not validate the Project under the ACM0013 methodology for the reasons outlined below.

I. **The PDD does not comply with the requirements of ACM0013.** We have identified specific examples of non-compliance with ACM0013's technical and substantive requirements. Any failure to comply with the requirements set forth by the CDM Executive Board in ACM0013, the Additionality Tool, and the PDD Guidelines must result in a negative validation. Given the numerous errors and omissions we identify in this PDD, the DOE must not validate this project.

II. **The DOE must not validate this Project because project participants identify an incorrect baseline—subcritical technology—for the Central China Grid.** Even if project participants were to correct the basic technical deficiencies of their PDD, this Project still would not comply with ACM0013. Project participants incorrectly state that the baseline for new coal-fired power plants in the Central China Grid is subcritical technology. Our analysis suggests that the actual baseline in this grid is more efficient supercritical or even ultra-supercritical technology.

Our comments highlight the following eight reasons why the Project does not comply with ACM0013 and should therefore receive a negative validation:

I. **The PDD fails to show that ACM0013 is applicable to ultra-supercritical coal projects in the Central China Grid.** Project participants failed as a threshold matter to establish that ACM0013 is applicable to the proposed Project. The PDD provides out-of-date data and references documents that do not contain the information required by ACM0013.

II. **The PDD fails to consider all plausible baseline scenarios.** The project participants' selection of alternatives for comparison to the Project is not based on evidence in the PDD but instead relies on unsubstantiated claims about the infeasibility of potentially attractive project alternatives. Specifically, the PDD eliminates several potentially plausible baseline scenarios, including renewable energy projects, based on conclusory statements. In several cases, readily available evidence actually undercuts the PDD's conclusions.

III. **The PDD's investment analysis does not support the selection of subcritical coal-fired power plants as the Project baseline.** The investment analysis is flawed, is not reproducible, and does not justify its assumptions, many of which are questionable. The sensitivity analysis fails to consider the effect of reasonable coal price fluctuations and China's dispatch rules on plant load.

IV. **The PDD fails to prove that the Project would not occur but for CDM financing.** The project timeline indicates that key project activities began before the CDM Executive Board even approved the ACM0013 methodology. This sequencing undermines project participants' claim that the CDM played a determinative role in the selection of ultra-supercritical technology. Further, project participants failed to include documentation necessary to support their claims of prior, serious consideration of the CDM.

V. **The PDD fails to show that the Project is not a common practice.** The PDD does not fulfill the requirements of the common practice analysis, which compares the proposed Project to similar activities occurring without CDM funds in order to check the credibility of additionality claims. The project participants do not substantiate the claim that construction of ultra-supercritical coal plants, or at least supercritical coal plants, is not a common practice in the Central China Grid.

VI. **The PDD fails to support its emissions reduction calculation.** Project participants failed to include all required information about emissions from similar plants in the Project's geographic area. This information is needed to

verify the PDD's emission reduction calculations. Without it, ACM0013 cannot be applied.

VII. **The PDD's environmental impacts disclosure does not adequately document the analysis of the Project's environmental impacts**: The summary of the EIA does not provide sufficient documentation to gauge the Project's full potential environmental impacts.

VIII. **The PDD does not meet requirements for disclosure of stakeholder commentary.** Robust stakeholder commentary is one of the CDM's key ways of ensuring that projects provide sustainable development value. Yet the PDD fails to sufficiently describe the process for identifying stakeholders and the content of stakeholders' comments in a way that would illuminate potential sustainability concerns.

We emphasize that the ultimate consequence of approval of non-additional projects either by the DOE or by the CDM Executive Board is to undermine the caps contained in Annex B of the Kyoto Protocol—the core environmental objective of the Conference of the Parties. Consequently, determination of additionality should always be made using conservative assumptions after careful analysis of all data necessary to test a project applicant's assertions. Here, such assumptions and analysis require that the DOE provide a negative validation to this Project.

TABLE OF CONTENTS

COMMENTS

The PDD for Jiangxi Xinchang 2x660MW Ultra-Supercritical Project (Project) fails to meet ACM0013's technical and substantive requirements for the reasons discussed below. We have included tables that identify specific examples of non-compliance with ACM0013, the Additionality Tool, and the PDD Guidelines.

The Designated Operating Entity (DOE) must not validate the Project unless the DOE confirms that it complies with these documents, and with all requirements for CDM project activities in 17/CP.7 and decisions by the COP/MOP and CDM Executive Board.[1] Accordingly, given the numerous errors and omissions identified below, the DOE must not validate this project.

I. The PDD fails to show that ACM0013 is applicable to ultra-supercritical coal projects in the Central China Grid.

Project participants failed as a threshold matter to establish that ACM0013 is applicable to the proposed Project. The PDD provides out-of-date data and links to documents that do not contain the information required by ACM0013.

B.2. Justification of the choice of methodology and why it is applicable to the project activity[2]

Applicable Rule(s)	Description of Non-Compliance
Application of ACM0013 requires that "Data on fuel consumption and electricity generation of recently constructed power plants is available."[3] This data must be cited in the PDD, because Section B.2. of the PDD must provide "[j]ustification" that ACM0013 applies to the Project.[4]	The PDD cites an inadequate source to show that data is available.[5] The cited document contains only a summary of power plant data as opposed to data on individual plants.[6]
To show that the identified baseline fuel is used	The PDD was completed in 2009 and thus

[1] Conference of the Parties Serving as the Meeting of the Parties to the Kyoto Protocol, Montreal, Can., Nov. 28 – Dec. 10, 2005, Addendum Part Two: Action Taken by the Conference of the Parties Serving as the Meeting of the parties to the Kyoto Protocol at its First Session, ¶ 37 FCCC/KP/CMP/2005/8/Add.1 (Mar. 30, 2006).
[2] PDD, 7-8.
[3] Approved Consolidated Baseline and Monitoring Methodology ACM0013, EB 46 Report, Version 02.1, p. 3 [hereinafter "ACM0013"].
[4] "Guidelines for Completing the Project Design Document (CDM-PDD) and the Proposed New Baseline and Monitoring Methodologies (CDM-NM), EB 41 Report, Version 07, EB 41, 10 [hereinafter PDD Guidelines].
[5] PDD, 7, Table B-1.
[6] http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File1829.pdf.

in more than 50% of total generation by utilities in the area in question, the PDD must use data for the "latest three year [sic]."[7]	should use data from 2006-2008. However, the PDD cites data from 2004-2006.[8]

II. The PDD fails to consider all plausible baseline scenarios.

The project participants' selection of alternatives for comparison to the Project is not based on evidence in the PDD but instead relies on unsubstantiated claims about the infeasibility of potentially attractive project alternatives. Specifically, the PDD eliminates several potentially plausible baseline scenarios, including renewable energy and natural gas projects, based on conclusory statements. In several cases, available evidence actually undercuts the PDD's conclusions.

B.4.	Description of how the baseline scenario is identified and description of the identified baseline scenario Step 1: Identify the Plausible Baseline Scenario[9]

Applicable Rule(s)	Description of Non-Compliance
To identify the baseline scenario, the PDD must compare the proposed project to "realistic and credible alternative(s) available to the project participants or similar project developers that *provide outputs or services comparable with the proposed CDM project activity*."[10] These "need not consist solely of power plants of the same capacity, load factor and operational characteristics (i.e. several smaller plants, or the share of a larger plant may be a reasonable alternative to project activity)."[11] To support the baseline findings, the PDD must "[e]xplain and justify key assumptions and rationales. Provide relevant documentation or references. Illustrate in a transparent manner	Scenarios b-1, b-2, b-3, c-1, and c-2 in the PDD would not provide comparable power generation to the Project.[14] The PDD rejects hydro power alternative as base load provider without sufficient justification. PDD cites the paucity of hydro resources in Jiangxi, but ignores the fact that the Three Gorges Dam is located in the CCG region, and that thus, hydropower in the CCG is a tremendous energy source and can provide base load.[15] The PDD fails to justify why several non-hydro renewables (wind, solar, tide power) would be unable to provide base load.[16] The PDD links to a defunct web page in

[7] ACM0013, 2.
[8] PDD, 8, Table B-2, fn. 4.
[9] PDD, 9-11.
[10] Tool for the Demonstration and Assessment of Additionality, Annex 10, Version 5.2, EB 39, 4 [hereinafter "Additionality Tool"] (emphasis added).
[11] ACM0013, 3.

all data used to determine the baseline scenario (variables, parameters, data sources, etc.)."[12] The decision to exclude scenarios must be supported by "appropriate explanations and documentation."[13]	support of its statement that a government policy bans additional oil-fired power plants.[17] PDD rejects natural gas alternative without sufficient justification, and fails to account for CDM monitoring reports indicating that natural gas is operating at base load levels elsewhere in China.[18] PDD rejects biomass based on financial reasons, which are relevant not to the selection of plausible baseline alternatives, but to the investment analysis.[19] PDD rejects imported electricity without sufficient justification. PDD asserts that because of the seasonality of electricity imports from the Three Gorges Dam, "imported electricity of connected grids should not be too much," but does not (1) address the possibility of importing energy from other sources, (2) define how much is "too much," (3) prove that

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[12] PDD Guidelines, 11.
[13] ACM0013, 3.
[14] PDD, 10.
[15] PDD, 11.
[16] PDD, 11.
[17] PDD, 11, fn. 7
[18] *See, e.g.*, Beijing No.3 Thermal Power Plant Gas-Steam Combined Cycle Project Using Natural Gas, CDM Monitoring Report 1, July 1, 2008, *available at* http://cdm.unfccc.int/UserManagement/FileStorage/1U6UFGCPOX5I30W4LDIEYYH3QMP354 (capacity factor of 0.64 between February 15, 2008, and June 30, 2008, based on 849,743.84 MWh generated by a 406.83 MW project); Beijing No. 3 Thermal Power Plant Gas-Steam Combined Cycle Project Using Natural Gas, CDM Monitoring Report 2, November 14, 2008, *available at* http://cdm.unfccc.int/UserManagement/FileStorage/3768L5FRHBXMCIWEJUG0SONVTKD294 (capacity factor of 0.54 between July 1, 2008, and October 31, 2008, based on 642,925.54 MWh generated by a 406.83 MW project); Beijing No. 3 Thermal Power Plant Gas-Steam Combined Cycle Project Using Natural Gas, CDM Monitoring Report 3, June 22, 2009, *available at* http://cdm.unfccc.int/UserManagement/FileStorage/Z5P1Y4N8QHUEWG32DLIOMB9KJ6S0T7 (capacity factor of 0.84 between November 1, 2008, and March 31, 2009, based on 1,234,843.24 MWh generated by a 406.83 MW project); Qinghai Ge-ermu Gas Turbine Power Plant Project, Monitoring Report (Version 01), Oct. 22, 2009, *available at* http://cdm.unfccc.int/UserManagement/FileStorage/03PE95K2HYWQ4JI6L1DVRUSXN7OTZ8 (capacity factor of 0.58 between July 20, 2008, and December 31, 2008, based on 687,728.98 MWh generated by a 300 MW project).
[19] PDD, 11.
[20] PDD, 11.
[21] PDD, 15.

	than an additional 1320 MW of imported power would threaten grid safety and stability, or (4) provide documentation for these claims.[20] The PDD selects 2x600 MW subcritical and 2x600 MW supercritical power generation units as baseline alternatives,[21] but these alternatives would generate less electricity than the project activity. The PDD must justify why 3-4 subcritical and supercritical units are not the proper baseline scenarios. If the Project's baseline is 2x600 MW subcritical or 2x600 MW supercritical coal plants, then the Project will generate 800 MW more electricity than its baseline (2000 MW vs. 1200 MW). The PDD fails to discuss how *total* emissions from a 2000 MW ultra-supercritical plant would compare to emissions from a 1200 MW subcritical or supercritical plant, and whether the additional 800 MW in electricity generation from the Project could actually increase *total* emissions compared to the baseline of 1200 MW from a less efficient technology. The PDD does not address the potential economies of scale that would be gained by building larger power plants, such as the Project. Such advantages could make ultra-supercritical more cost competitive.

III. The PDD's investment analysis does not support the selection of a subcritical coal-fired power plant as the Project's baseline.

The investment analysis is flawed and does not support the selection of subcritical coal-fired power plants as the Project's baseline. The investment analysis is not reproducible and the PDD does not justify its assumptions, many of which are questionable. The sensitivity analysis is particularly flawed because it does not consider the effect of reasonable fluctuations in coal prices or China's dispatch rules on plant load.

B.4.	Description of how the baseline scenario is identified and description of the identified baseline scenario

Step 2: Identify the economically most attractive baseline scenario[22]	
Applicable Rule(s)	**Description of Non-Compliance**
The investment analysis must be transparent and reproducible, with documentation to support its critical assumptions: "Critical techno-economic parameters and assumptions (such as capital costs, fuel price projections, lifetimes, the load factor of the power plant and discount rate or cost of capital)" must "be clearly presented" in the investment analysis.[23] The project participants must "[j]ustify and/or cite assumptions in a manner that can be validated by the DOE."[24] "The investment analysis should be presented in a transparent manner and all the relevant assumptions should be provided in the CDM-PDD, so that a reader can reproduce the analysis and obtain the same results."[25]	The PDD fails to justify its assumption that operating hours and operating lifetimes between the three coal alternatives can be normalized.[26] In reality, China's dispatch rules give more efficient plants priority access to the grid,[27] and so operating hours would likely differ between the alternatives. The PDD fails to justify any of the inputs for project alternatives, including capital cost estimates and fuel costs. The PDD only cites to the FSR, which is not provided, and a 2006 edition of a reference cost index, which is not available. Further, the PDD does not justify why a 2006 reference cost index should still be considered accurate in 2009.[28] The PDD fails to explain how there is a 5% residual value at the end of plant lifetime (20 years), when depreciation takes place over 15 years.[29] The PDD fails to justify why costs for the ultra-supercritical plant would be higher than other alternatives in the following areas: material cost per electricity generation, limestone quantity, waste disposal fee, denitration cost, number of employees, other costs per electricity.[30] The PDD fails to justify why supercritical is cheaper than sub-critical, but the waste

[22] PDD, 11-15.
[23] ACM0013, 4; Additionality Tool, 5.
[24] ACM0013, 4.
[25] ACM0013, 4.
[26] PDD, 12.
[27] http://www.gov.cn/zwgk/2007-08/07/content_708486.htm.
[28] PDD, 12, Table B-5.
[29] PDD, 12, Table B-5.
[30] PDD, 12-13, Table B-5.

	disposal fee for ultra-supercritical coal is most expensive.[31] The PDD does not include *any* costs for air pollution mitigation (e.g., denitration, desulfurization) despite claiming that the project will include these technologies.[32] The PDD's calculation of levelized electricity generation cost is not clear and is not reproducible. Project participants should include spreadsheets needed to verify and assess their calculations and assumptions.[33]
"A sensitivity analysis shall be performed for all alternatives, to confirm that the conclusion regarding the financial attractiveness is robust to reasonable variations in the critical assumptions…The investment analysis provides a valid argument in selecting the baseline scenario only if it consistently supports (for a range of realistic assumptions) the conclusion that the pre-selected baseline scenario is likely to remain the most economically and/or financially attractive."[34]	The PDD fails to consider a reasonable range of variation in coal costs in its sensitivity analysis.[35] Coal prices in China have varied by much more than the +/- 10% that the PDD considers. Recently, coal prices spiked in China,[36] and observed fluctuations in price have reached at least 60 percent during the last few years.[37] Thus, it would not be unreasonable to require a much broader coal price sensitivity analysis, such as +/- 100% for this critical variable. Figure B-2 should show the fuel price at which the costs of the alternatives converge, in order to provide a more robust sensitivity analysis.[38] The PDD fails to consider reasonable variations in plant load factors. Table B-9 assumes a uniform variation in load factor

[31] PDD, 13, Table B-5.
[32] PDD, 2, 12, 13, Table B-5.
[33] PDD, 14-15.
[34] ACM0013, 4.
[35] PDD, 15.
[36] *See, e.g.*, Coal Rise Set To Hit China Power Producers' Profits, *MarketWatch*, Jan. 18, 2010, *available at* http://www.marketwatch.com/story/coal-rise-set-to-hit-china-power-producers-profit-2010-01-18.
[37] China's power plants forecast profit plunge on higher coal prices, *Business Daily Update (China)*, June 25, 2009, available at http://www.chinadaily.com.cn/bizchina/2009-01/19/content_7410446.htm (coal prices at the Qinhuangdao Port of Hebei province rose and fell by over 60% between May and November 2008).
[38] PDD, 15.

	between plants while China's dispatch policy actually favors more efficient plants.[39] (See further discussion below.)
Investment analysis must "include all relevant costs . . . and revenues (including subsidies/fiscal incentives, ODA, etc. where applicable)."[40]	The PDD only considers levelized electricity generation cost in its investment analysis and fails to consider revenues.[41]

The DOE must scrutinize project participants' investment analysis carefully, especially since project participants report that the differential between levelized electricity generation cost (EGC) under the three coal alternatives would be extremely small, measured in the thousandths of CNY/kWh. It is not possible to verify these numbers because, as described above, the PDD's investment analysis is not reproducible. But based on project participants' own calculations, the cost per kWh for an ultra-supercritical plant would be only 1.1 percent higher than the cost under the subcritical alternative. Electricity generated by a supercritical plant would cost only 0.7 percent more than a subcritical one.[42]

It follows from this small differential in EGC that load factor sensitivity is particularly important. Under China's 2007 energy-saving approach to power dispatching (hereinafter "dispatch rules"), more efficient plants receive priority access to the grid.[43] Thus, depending on grid demands, a supercritical or ultra-supercritical coal-fired power plant may operate for more hours each year than a less efficient, dirtier subcritical plant. Yet project participants have assumed equivalent loads between the three project alternatives (i.e., 5000 hours per year),[44] failing to account for the effects of the dispatch rules. Further, in conducting their sensitivity analysis, project participants assumed a uniform change in load between each of the alternatives.[45] But to account for potentially higher loads at more efficient power plants, the load sensitivity comparison needs to compare loading variability *between* the alternatives, not simply among them.

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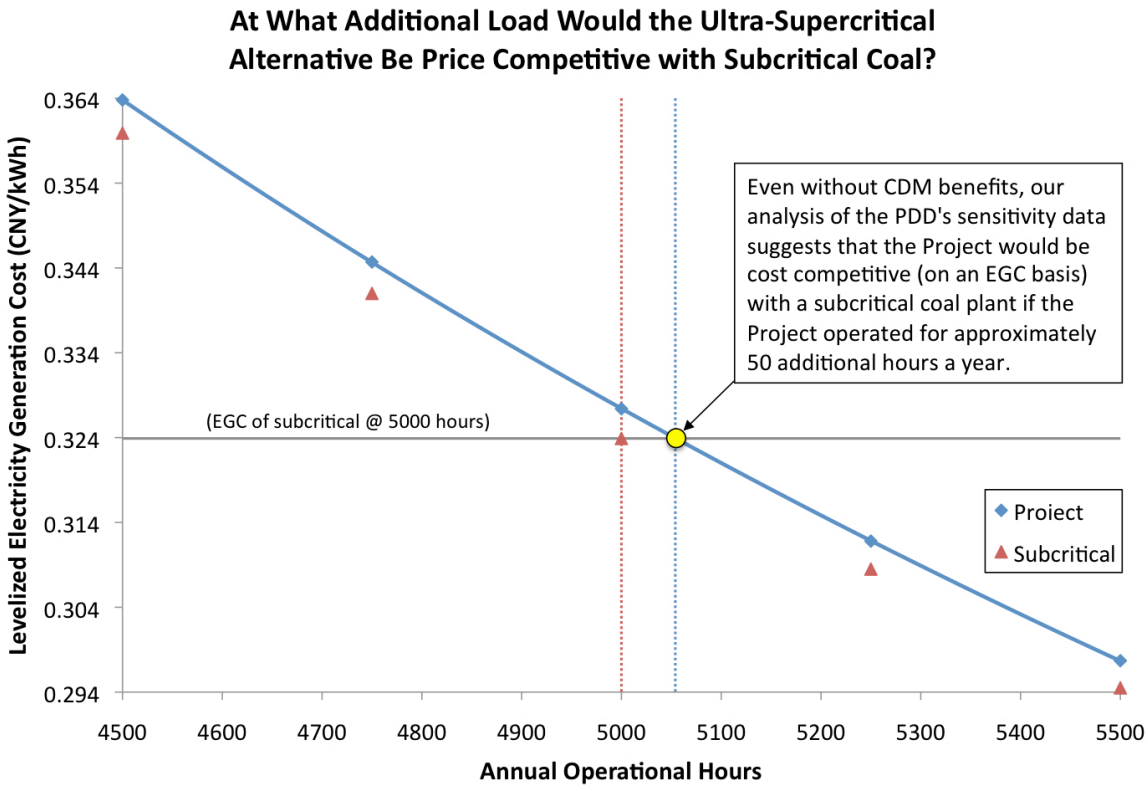
[39] PDD, 14, Table B-8.
[40] ACM0013, 3.
[41] PDD, 18.
[42] Based on the PDD's calculations of 0.3274 CNY/kWh for ultra-supercritical, 0.3262 CNY/kWh for supercritical, and 0.3239 CNY/kWh for subcritical. PDD, 13.
[43] http://www.gov.cn/zwgk/2007-08/07/content_708486.htm. *See also* Regulatory Assistance Project, *China's Power Sector: A Backgrounder for International Regulators and Policy Advisors*, Feb. 2008, *available at* http://www.raponline.org/docs/RAP_ChinaPowerSectorBackground_2008_02.pdf ("The rule modifies the current practice of dispatch based on average total cost (i.e., contract price) to one based on the environmental (primarily emissions) impacts and thermal efficiencies of the units. The dispatch, or loading, order of units calls for the operation of non-emitting resources first, then by low-emissions resources, and, lastly, the highest emitting units.") [hereinafter "Regulatory Assistance Project Backgrounder"].
[44] PDD, 12.
[45] PDD, 14-15.

Looking at project participants' sensitivity analysis, we can see that the ultra-supercritical (Project) alternative would be more financially viable than the subcritical alternative if the ultra-supercritical plant were to operate at a five percent higher load per year.[46] Under China's dispatch rules, a five percent differential in plant loads could be possible. Furthermore, project participants have considered load sensitivity only in five percent increments, so the PDD does not reveal the exact loading differential needed to achieve price competitiveness between the alternatives.

Our further analysis, based on the PDD's sensitivity data, suggests that cost competitiveness could actually be achieved at a load differential of only one percent. As shown in the figure below, the ultra-supercritical plant would only need to operate for about 50 more hours (i.e., one percent of the assumed load of 5000 hours) a year to be cost competitive with the subcritical plant. This differential is possible and perhaps probable under China's dispatch rules. The DOE must challenge project participants' assumptions regarding plant loads.



Given that project participants' own sensitivity analysis reveals reasonably likely situations where the ultra-supercritical alternative would be the most financially

[46] PDD, 14-15.

attractive, project participants cannot conclude that subcritical is the appropriate project baseline. Further, the preceding analysis only considers the differential between subcritical and ultra-supercritical in detail. Since project participants indicate that supercritical EGC is even closer to subcritical EGC at the default assumptions, the change in load needed to make supercritical cost competitive with subcritical would be even smaller. Given that a higher supercritical load is possible, and perhaps probable, under China's dispatch rules, supercritical technology is a more likely baseline than subcritical here.

IV. The PDD fails to prove that the Project would not occur but for CDM financing.

The Project's timeline fails to establish that the Project would not occur but for CDM financing because it indicates that key project activities began before the CDM Executive Board even approved the ACM0013 methodology. The PDD also does not substantiate its claim that the CDM played a determinative role in the selection of ultra-supercritical technology. Project participants failed to include required documentation to support their claims of prior, serious consideration of the CDM.

B.5	Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM project activity (assessment and demonstration of additionality)[47]

Applicable Rule(s)	Description of Non-Compliance
To be eligible for CDM financing, project participants must "demonstrate that the CDM was seriously considered in the decision to implement the project activity."[48] The project participants must prove this by demonstrating: (1) "awareness of the CDM prior to the project activity," (2) "that the benefits of the CDM were a decisive factor in the decision to proceed with the project," and (3) "that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation."[49]	The PDD indicates that key project events occurred *before* AM0013 was adopted, including completion of FSR (May 2007), "Minute to implement the Proposed project as CDM" (May 8, 2007), main equipment contract and project start date (May 19, 2007), and completion of EIA (March, 2007).[50] The PDD fails to present evidence supporting any of the above dates.[51] The PDD fails to mention when CPI Carbon Asset Management was hired as CDM

[47] PDD, 15-16.
[48] Guidelines on the Demonstration and Assessment of Prior Consideration of the CDM, EB 49 Report, Annex 22, Version 03, 1 [hereinafter "Guidelines on Prior Consideration of CDM"].
[49] Guidelines on Prior Consideration of CDM, 1-2.
[50] PDD, 16.
[51] PDD, 16.

Applicable Rule(s)	Description of Non-Compliance
	consultant.[52] Events described in PDD are not clear, such as "[p]articipated in the corresponding association meeting for the development of ultra-supercritical coal-fired methodology" on April 16, 2007.[53] If this event concerned the development of the Project under CDM, the question of how this was possible prior to approval of ACM0013 still remains.

V. The PDD fails to show that the Project is not a common practice.

The PDD does not fulfill the requirements of the common practice analysis, which compares the proposed Project to similar activities occurring without CDM funds in order to check the credibility of additionality claims. The project participants do not substantiate their claim that construction of ultra-supercritical coal plants, or at least supercritical coal plants, is not a common practice in the Central China Grid.

B.5.	Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM project activity (assessment and demonstration of additionality) Step 4: Common practice analysis[54]

Applicable Rule(s)	Description of Non-Compliance
If the Project is similar to other power plants that are operating without CDM funding, then "it is necessary to demonstrate why the existence of these activities does not contradict the claim that the proposed project activity is financially/economically unattractive or subject to barriers."[55] "Registered project activities and project activities which have been published on the UNFCCC website for global stakeholder consultation as part of the validation	The PDD fails to distinguish the Project from other ultra-supercritical plants planned or already operational in the Central China Grid. (See further discussion below.) The PDD fails to address the discrepancy between the fact that it selects subcritical coal as the baseline and yet also recognizes that supercritical coal is commonly used in China: "Ultra-supercritical technology . . . is a more efficient power generation technology than Sub critical coal-fired power generation technology

[52] PDD, 16.
[53] PDD, 16.
[54] PDD, 18-19.
[55] Additionality Tool, 10.

process"—should not be included in common practice analysis.[56] The PDD must provide "documented evidence"[57] to exclude similar projects on the basis of CDM application status. "If the type of power plant identified as the baseline scenario is different from the power plant technologies that have recently been constructed or are under construction or are being planned (e.g. documented in official power expansion plans), the project participants shall provide explanations to this apparent discrepancy between observations and what should be considered as rational economic behavior."[58]	and super critical coal-fired power generation technology what are commonly used in China now . . ."[59]

Project participants' incorrectly assert that all ultra-supercritical plants in the Central China Grid are within the CDM process. In fact, as of February 16, 2010, none of the four ultra-supercritical plants listed below have been proposed as CDM projects.[60] Moreover, planning for all four of these plants began *before* the CDM Executive Board approved ACM0013 on September 14, 2007. At least one of these plants—Huaneng Qinbei—is already operational, and several other ultra-supercritical plants have been proposed in the Central China Grid more recently.[61] To date, the proposed Project is the only ultra-supercritical plant in the China's Central China Grid to be posted on the UNFCCC's CDM website.[62]

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[56] Additionality Tool, 10.
[57] Additionality Tool, 10.
[58] ACM0013, 4.
[59] PDD, 7.
[60] Based on projects listed at http://cdm.unfccc.int as of February 16, 2010.
[61] *See, e.g.*, China Guodian and EDF to develop another 18 CDM projects, *China Energy Newswire*, Nov. 29, 2007 (2000 MW) (LexisNexis Academic); Massive power plant set for Tangshan, *Chinadaily.com.cn*, Nov. 4, 2008 (4000 MW), *available at* http://www.chinadaily.com.cn/cndy/2008-11/04/content_7170368.htm; Huaneng Power's 600-megawatt coal-fired unit approved, *Xinhua Economic News Service*, Dec. 10, 2008. (600 MW) (LexisNexis); Huaneng Power International, Inc. obtains approve for first unit of Yueyang power plant phase III project, *PR News Wire Asia*, Nov. 18, 2009 (600 MW) (LexisNexis Academic).
[62] Based on projects listed at http://cdm.unfccc.int as of February 16, 2010.

**Ultra-Supercritical Coal-Fired Power Plants Planned
In the Central China Grid Before Adoption of ACM0013**

Project Developer(s)	Province / Project	Generating Capacity	Date Planned	Date Operational
Huaneng Power International, Inc.	Henan / Huaneng Qinbei Power Plant	600 MW	August 2004[63]	November 2007[64]
Huaneng Power International Inc.	Jiangxi / Huaneng Ruijin Power Plant	600 MW (2 x 300 MW)	April 2007[65]	*Unknown*
China Power Investment Corp.	Henan / Pingdingshan No. 2 Power Plant	2000 MW (2 x 1000 MW) *(total of 6000 MW planned)*	July 2007[66]	2010[67]
Datang International Power Generation Co.	Jiangxi / Fuzhou Power Plant	2000 MW (2 x 1000 MW)	September 3, 2007[68]	*Unknown*

In failing to address these other ultra-supercritical projects, and in particular the Huaneng Qinbei plant, which has been operational since November 2007, the PDD fails to show—as it asserts—that "[w]ithin the CCG, all the ultra-supercritical power plants are in the process of CDM development."[69] Given what appears to be a relatively early stage of ultra-supercritical technology penetration in the Central China Grid, it is too early to say conclusively whether ultra-supercritical power plants will become a new norm in this area. But the fact that some projects are apparently proceeding without CDM benefits suggests that ultra-supercritical technology may already provide sufficient economic benefits to justify its adoption. Common practice analysis is intended to provide a "credibility check" for a project participant's claim that its project is additional.[70] Here, because project participants fail to explain why other ultra-

[63] China Huaneng Power Intl To Launch Power Projects for $1.62 Bln, *Chinese News Digest*, Aug. 19, 2004 (LexisNexis Academic).
[64] HK-listed Huaneng Power Intl completes trial run of Qinbei power plant unit, *Xinhua Financial News*, Nov. 21, 2007 (LexisNexis Academic).
[65] NDRC oks Huaneng Ruijin plant's new project, *Xinhua Economic News Service*, Apr. 26, 2007 (LexisNexis Academic).
[66] China tender - Pingdingshan No. 2 power generation plan, *Asia Pulse*, July 6, 2007 (LexisNexis Academic).
[67] Emerson To Digitally Automate Vital Power Plant In Central China's Innovative Technologies Now Used In More Than Half Of China's 1,000-Megawatt Power Plants, *Business Wire*, Jan. 27, 2010 (LexisNexis Academic).
[68] Datang Power unveils expansion plans, Inner Mongolia mine, *Platts International Coal Report*, Sep. 3, 2007 (LexisNexis Academic).
[69] PDD, 19.
[70] Additionality Tool, 10.

supercritical plants in the Central China Grid have proceeded without CDM benefits, project participants' claims of additionality are not credible.

Even if ultra-supercritical plants are not yet the norm in the Central China Grid, project participants' claim that subcritical coal-fired power plants are the appropriate baseline lacks credibility. China is rapidly modernizing its power structure. According to China's National Energy Administration, 21 sets (i.e., 42 units) of 1000 MW ultra-supercritical are operational nationwide. Twelve additional sets are under construction.[71] Where ultra-supercritical is not installed, supercritical technology nevertheless has become the "mainstream."[72]

There are a number of non-CDM reasons for China's shift from subcritical to supercritical and ultra-supercritical technology in the Central China Grid and elsewhere. For one, rising coal costs and coal shortages increasingly place a premium on more efficient coal-fired power generation technology.[74] Local pollution from dirtier, less efficient subcritical coal-fired power plants is also a concern.[75] In recent years, China has instituted a policy of closing down smaller, less efficient power plants and replacing them with cleaner plants of higher generating capacity.[76] New plants constructed through this process widely use supercritical and ultra-supercritical technology.[77]

China's dispatch rules also are likely to play a role in cleaner coal-fired power plants. As discussed above, China's dispatch rules provide more efficient plants with

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[71] China's power structure further optimized in 2009, *Xinhua New Agency*, Jan, 25, 2010, *available at* http://www.istockanalyst.com/article/viewiStockNews/articleid/3806305.

[72] China Builds Bigger and Better Power Equipment, *Xinhua Economic News Service*, Oct. 4, 2009 (LexisNexis Academic); Chinese Energy is Greener than Ours, *The Australian*, July 27, 2009, *available at* http://www.theaustralian.com.au/news/chinese-energy-is-greener-than-ours/story-0-1225754917246 ("Since 2005 China has required all new large power plants to use at least high-efficiency, super-critical technology and since 2007 it has shut down smaller, inefficient plants with a capacity of 14,380MW (more generation capacity than in NSW)."); *see also* SDIC Xinji Energy to Set Up Venture with Anhui Wenergy, *SinoCast China Business Daily News*, Dec. 8, 2008 (LexisNexis Academic) ("The venture, 55 to 45 owned by SDIC Xinji Energy and Anhui Wenergy, is planned to build and operate two 600MW supercritical pressure coal-fired power generator sets in the first phase.").

[74] *See, e.g.,* Coal Rise Set To Hit China Power Producers' Profits, *MarketWatch*, Jan. 18, 2010, *available at* http://www.marketwatch.com/story/coal-rise-set-to-hit-china-power-producers-profit-2010-01-18; Could China fall out of love with coal? *Financial Times*, Jan. 14, 2010; China Orders Power-Station Coal Price Caps At Ports, *International Energy*, July 24, 2008, *available at* http://en.in-en.com/article/News/Coal/html/200807248017.html; Coal Prices Smothering Profits of East China Power Plants, *China.org.cn*, July 5, 2008, *available at* http://www.china.org.cn/business/news/2008-07/05/content_15959625.htm.

[75] *See, e.g.*, Coal power; Yuhuan: a Chinese milestone, *Modern Power Systems*, June 27, 2005 (LexisNexis Academic).

[76] Phase out of small power plants at high cost, *Business Daily Update*, Nov. 5, 2007 (LexisNexis Academic).

[77] Being supercritical, *Business Daily Update*, July 2, 2007.

priority access to the grid.[78] Thus, depending on grid demands, a supercritical or ultra-supercritical coal-fired power plant may operate for more hours each year than a less efficient, dirtier subcritical plant. These dispatch rules strongly favor China's transition away from subcritical power plants.

Further, China is pushing for more efficient supercritical and ultra-supercritical plants under its energy development plans. In 2007, China's National Development and Reform Commision (NDRC) issued its five-year plan for the energy industry, which states that new power plants should adopt super-critical or ultra-supercritical power generation units and provide capacities of at least 600 MW.[79] NDRC officials have publicly emphasized this focus.[80]

To the extent that government policies are playing a role in China's transition to supercritical technology, we believe that these policies do not fall within the CDM Executive Board's E+/E- rule. While China's efficiency policies may be linked in part to environmental concerns, including climate change, China also faces acute power shortages and pinched coal supplies that are forcing the country to use coal more efficiently. China's efficiency policies are necessary to maintain the country's energy security and are likely outcomes regardless of climate change. To ignore this reality under an E- argument would lead to perverse, non-additional CDM outcomes. Since the E+/E- rule is designed both to avoid perverse incentives and to ensure additional carbon reductions, application of E+/E- to the Chinese coal sector would undermine both the purposes of the rule and the larger objectives of the Kyoto Protocol. Further, if, as China's latest energy industry plan implies, subcritical plants may be prohibited in some instances in favor of supercritical or ultra-supercritical alternatives, then the E+/E- rule clearly does not apply. ACM0013 requires that project participants "exclude baseline scenarios that are not in compliance with all applicable legal and regulatory requirements."[81]

VI. The PDD fails to support its emission reduction calculation.

Project participants failed to include all required information about similar plants in the Project's geographic area. This information is needed to verify the PDD's emission reduction calculations. Without it, ACM0013 cannot be applied.

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[78] http://www.gov.cn/zwgk/2007-08/07/content_708486.htm. *See also* Regulatory Assistance Project Background, *supra* note 43.
[79] China reveals its five-year plan for the energy industry, *China Energy Weekly*, Apr. 18, 2007 (LexisNexis Academic),
[80] Phase out of small power plants at high cost, *Business Daily Update*, Nov. 5, 2007 (LexisNexis Academic) (citing a senior energy official from NDRC).
[81] ACM0013, Step 1, 3.

Step B.6. Emission reductions B.6.1. Explanation of Methodological Choices II. Calculating the baseline emission Option 2: The average emissions intensity of all power plants *j*, corresponding to the power plants whose performance is among the top 15% of their category B.6.3. Ex-ante calculation of emission reductions[82]

Applicable Rule(s)	Description of Non-Compliance
For Option 2, the PDD must include "Identification of the sample group" of power plants, "Determination of plant efficiencies," and "Identification of the top 15% performer plants *j*."[83] "All steps should be documented transparently, including a list of plants identified in Steps 3 and 5, as well as relevant data on the fuel consumption and electricity generation of all power plants."[84]	The PDD's calculation of baseline emission reductions is not transparent. The PDD cites a Chinese-language document for BEF of the top 15% of plants in the Central China Grid,[85] but the document fails to list required information. Specifically, it does not list: (1) specific comparable coal plants in the Central China Grid, (2) the specific top 15 percent plants in this grid, and (3) fuel consumption and electricity generation for any of these plants. The fact that the EF for the top 15 plants in the geographic area is drastically lower calls into question the validity of the baseline: $EF_{BL,CO2,y}$ = 0.9135 tCO_2/MWh, $EF_{BL,CO2,y}$ = 0.8580 tCO_2e/MWh (top 15%). [86] The PDD fails to meet its transparency and evidentiary burdens for its baseline emissions. Instead it directs the reader to consult with the Chinese DNA ("Please consult with Chinese DNA for the detailed baseline information."),[87] but the PDD must itself include this information.

[82] PDD, 19-28.
[83] ACM0013, 8-9.
[84] ACM0013, 9.
[85] PDD, 7, http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File1829.pdf.
[86] PDD, 27.
[87] PDD, 41, Annex 3: Baseline Information.

VII. The PDD's environmental impacts disclosure does not provide meaningful opportunity for public comment.

The PDD's summary of the Project's environmental impact assessment (EIA) does not contain enough qualitative or quantitative data on specific environmental impacts to afford a meaningful opportunity for substantive public commentary. The PDD fails to disclose the Project's full environmental impacts, and casts doubt on whether this Project would promote sustainable development in China. Propagation of new coal-fired power plants under the CDM invites scrutiny, and skepticism is only increased when environmental impacts are hidden or ignored.

D.1.	Documentation on the analysis of the environmental impacts, including transboundary impacts.[88]

Applicable Rule(s)	Description of Non-Compliance
The PDD must provide documentation of its analysis of environmental impacts.[89]	The PDD provides only limited information on impacts and the effects of mitigation and fails to discuss any remaining impacts *after* mitigation.[90] The PDD lacks a description of the project site pre-construction, and thus fails to illustrate how the project has changed the surrounding environment.[91] PDD fails to discuss the impact of the Project on Gan River, which may be a source of water intake or a recipient of water pollution from the power plant.[92] The river is a tributary to Lake Poyang, which is China's largest freshwater lake, and is the home of the *jiangzhu* (finless porpoise), a species threatened by extinction.[93] The PDD claims that "The project activity belongs to energy conservation project and

[88] PDD, 34-36.
[89] PDD Guidelines, 19.
[90] PDD, 34-35.
[91] PDD, 34-35.
[92] PDD, map, 4.
[93] The finless porpoise (*Neophocaena phocaenoides*) is listed under CITES Appendix I (species threatened with extinction). http://www.cites.org/eng/app/appendices.shtml; The IUCN lists the finless porpoise as a vulnerable species and the Yangtze River subspecies as endangered. http://www.iucnredlist.org/apps/redlist/details/14550/0

	environmental impact of the project activity is considered small according to EIA"[94] but this finding is not credible without more information. The nearly identical EIA summaries between this Project[95] and that in Shanghai Caojing 2x1000 MW Ultra-Supercritical Project,[96] completed by the same CDM consultant, raise serious doubts about the level of consideration given to these issues in either project.

VIII. The PDD does not meet requirements for disclosure of stakeholder commentary.

Robust stakeholder commentary is one of the CDM's key ways of ensuring sustainable development. Yet the PDD does not disclose or describe the process for obtaining stakeholder comments, or the content of those comments, in a way that sufficiently illuminates stakeholders' responses.

E.1.	Brief description of how comments by local stakeholders have been invited and compiled[97]

Applicable Rule(s)	Description of Non-Compliance
Local stakeholders must be invited to comment in an "open and transparent manner, in a way that facilitates comments to be received from local stakeholders, and allows for a reasonable time for comments to be submitted."[98] Project participants must describe the process of eliciting and addressing stakeholder comments, a process which must be completed before the PDD is submitted to the DOE for validation. Project participants must also show that they described the proposed project to stakeholders in a way that allows them to understand the	The PDD fails to adequately explain how project participants selected the 114 persons who were asked to participate.[100] The PDD does not give the impression that public input was open to all affected local stakeholders. Although posters were provided to inform local residents of the project, it appears that the only stakeholders who could comment were those who were in the selected group of 114 persons.[101]

[94] PDD, 36.
[95] PDD, 34-35.
[96] Shanghai Caojing 2×1000MW Ultra-Supercritical Project, Project Design Document, *available at* http://cdm.unfccc.int/UserManagement/FileStorage/7BTLUZ3KGD1I65O9RS0YXCPFE8AVWJ
[97] PDD, 36.
[98] PDD Guidelines, 20.
[99] PDD Guidelines, 20.

project activity.[99]	The PDD fails to describe what information was provided to commentators or the contents of the questionnaire.[102]

E.2. Summary of the comments received[103]

Applicable Rule(s)	Description of Non-Compliance
The PDD must "identify stakeholders that have made comments and provide a summary of these comments."[104]	The PDD fails to identify commentators beyond providing only basic demographic information (i.e., gender, age, education).[105] The PDD's summary of comments is only four sentences long and is inadequate. The summary implies that some negative comments were received, but fails to mention any.[106] The nearly identical summaries between this Project[107] and that in Shanghai Caojing 2x1000 MW Ultra-Supercritical Project,[108] raise serious doubts about the level of consideration given to these issues in each project.

E.3. Report on how due account was taken of any comments received[109]

Applicable Rule(s)	Description of Non-Compliance
The PDD must explain how due account was taken of comments received.[110]	The PDD summarily concludes that no changes to the Project were necessary to respond to the comments, but this is impossible to verify without more information, including a description of negative responses.[111]

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[100] PDD, 36.
[101] PDD, 38.
[102] PDD, 36.
[103] PDD, 36.
[104] PDD Guidelines, 20.
[105] PDD, 38.
[106] PDD, 39.
[107] PDD, 39.
[108] Shanghai Caojing 2×1000MW Ultra-Supercritical Project, Project Design Document, *available at* http://cdm.unfccc.int/UserManagement/FileStorage/7BTLUZ3KGD1I65O9RS0YXCPFE8AVWJ
[109] PDD, 37.
[110] PDD Guidelines, 20.
[111] PDD, 36.

CONCLUSION

The role of the CDM within the Kyoto framework is to assist developing countries in achieving sustainable development and allow developed countries to meet their emission reduction obligations, with the ultimate objective of reducing overall global emissions and averting dangerous interference with the climate system. Unless a project is additional and contributes to sustainable development—not only in terms of technical compliance with methodologies, but in fact—it cannot contribute towards the fundamental goals of the UNFCCC.

The PDD here fails to prove that the project is additional and sustainable. On a purely technical basis, the PDD fails to comply with ACM0013. But even if project participants could correct the PDD's technical deficiencies, this Project would likely not be additional. Our analysis raises serious questions about the PDD's project baseline—subcritical technology—and suggests that this baseline is inappropriate for new coal-fired power plants in the Central China Grid. In fact, China is already rapidly installing supercritical as well as ultra-supercritical plants in the Central China Grid without any help from the CDM. Thus, approving CDM benefits for new supercritical projects in Central China Grid would lead to excess issuance of CERs, beyond any actual emissions reductions, and undermine the objectives of both the Kyoto Protocol and the UNFCCC.

Based on these concerns, we call on Bureau Veritas Certification Holding SAS not to validate the proposed Project.

Respectfully submitted,

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