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**Comments on the Validation of the Shanghai Caojing
2x1000MW 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 Shanghai Caojing 2x1000MW 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 cannot validate this Project because project participants identify an incorrect baseline—subcritical technology—for the East 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 East 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 East 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 The PDD provides out-of-date data and references documents that do not contain the information required by ACM0013.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's 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 eastern China.
- 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.

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COMMENTS

The PDD for Shanghai Caojing 2x1000MW 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 East 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. ⁵	The PDD cites an inadequate source to show that data is available. ⁶ The cited document contains only a summary of power plant data as opposed to data on individual plants. ⁷
The PDD must demonstrate that “[t]he	The PDD calculates percentage of the baseline

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, 8-9.

³ Approved Consolidated Baseline and Monitoring Methodology ACM0013, EB 46 Report, Version 02.1, p. 3 [hereinafter “ACM0013”].

⁵ “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].

⁶ PDD, 8, Table B-1.

⁷ <http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File1829.pdf>.

<p>identified baseline fuel is used in more than 50% of total generation by utilities in the geographical area within the country, as defined later in the methodology, or in the country.”⁸</p>	<p>fuel—coal—using a mix of data from two different sources. This raises questions about the accuracy of the 50% calculation.⁹</p>
<p>To show that the identified baseline fuel is used 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].”¹⁰</p>	<p>The PDD was completed in 2009 and thus should use data from 2006-2008. However, the PDD cites data from 2004-2006.¹¹</p>

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.

<p>B.4. Description of how the baseline scenario is identified and description of the identified baseline scenario</p> <p>Step 1: Identify the Plausible Baseline Scenario¹²</p>

Applicable Rule(s)	Description of Non-Compliance
<p>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 <i>provide outputs or services comparable with the proposed CDM project activity.</i>”¹³</p> <p>These “need not consist solely of power plants of the same capacity, load factor and operational characteristics (i.e. several smaller</p>	<p>Scenarios b-1, b-2, b-3, c-1, and c-2 in the PDD do not provide comparable power generation to the Project. Project participants must consider combinations of alternative power sources that are comparable (~2000 MW) to the Project.¹⁷</p> <p>The PDD rejects hydro power as an alternative without providing sufficient justification.¹⁸</p> <p>The PDD links to a defunct web page in</p>

⁸ ACM0013, 2.

⁹ PDD, 8, Table B-2, fn. 3,4.

¹⁰ ACM0013, 2.

¹¹ PDD, 9, Table B-2, fn. 4.

¹² PDD, 10-13.

¹³ Tool for the Demonstration and Assessment of Additionality, Annex 10, Version 5.2, EB 39, 4 [hereinafter “Additionality Tool”] (emphasis added).

<p>plants, or the share of a larger plant may be a reasonable alternative to project activity).”¹⁴</p> <p>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 all data used to determine the baseline scenario (variables, parameters, data sources, etc.).”¹⁵</p> <p>The decision to exclude scenarios must be supported by “appropriate explanations and documentation.”¹⁶</p>	<p>support of its statement that a government policy bans additional oil-fired power plants.¹⁹</p> <p>The PDD rejects natural gas as an alternative without providing sufficient justification, and fails to account for CDM monitoring reports that indicate that natural gas is operating at base load levels in East China Grid.²⁰</p> <p>The PDD rejects biomass based on financial reasons, which are relevant not to the selection of plausible baseline alternatives, but to the investment analysis.²¹</p> <p>The PDD does not provide an intelligible discussion of imported electricity and fails to explain why hydro power is the only source of potential imported electricity that should be considered.²²</p> <p>The PDD selects 2x600 MW subcritical and 2x600 MW supercritical power generation units as baseline alternatives,²³ but these</p>
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¹⁴ ACM0013, 3.

¹⁵ PDD Guidelines, 11.

¹⁶ ACM0013, 3.

¹⁷ PDD, 10.

¹⁸ PDD, 11.

¹⁹ PDD, 11, fn. 7

²⁰ 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).

²¹ PDD, 12.

²² PDD, 12.

²³ PDD, 12.

	<p>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.</p> <p>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 <i>total</i> 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 <i>total</i> emissions compared to the baseline of 1200 MW from a less efficient technology.</p> <p>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.</p>
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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 ²⁴

Applicable Rule(s)	Description of Non-Compliance
The investment analysis must be transparent and reproducible, with documentation to	The PDD fails to justify its assumption that operating hours and operating lifetimes

²⁴ PDD, 13-17.

<p>support its critical assumptions:</p> <p>“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.²⁵</p> <p>The project participants must “[j]ustify and/or cite assumptions in a manner that can be validated by the DOE.”²⁶</p> <p>“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.”²⁷</p>	<p>between the three coal alternatives can be normalized.²⁸ In reality, China’s dispatch rules give more efficient plants priority access to grid,³⁰ and so operating hours would likely differ between the alternatives.</p> <p>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, PDD does not justify why a 2006 reference cost index should still be considered accurate in 2009.³¹</p> <p>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.³²</p> <p>The PDD provides annual maintenance fees and annual insurance fees as percentages, yet fails to specify base numbers from which these percentages should be calculated.³³</p> <p>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.³⁴</p> <p>The PDD fails to justify why costs for</p>
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²⁵ ACM0013, 4; Additionality Tool, 5.

²⁶ ACM0013, 4.

²⁷ ACM0013, 4.

²⁸ PDD, 14, Table B-6.

³⁰ http://www.gov.cn/zwgk/2007-08/07/content_708486.htm.

³¹ PDD, 14, Table B-6.

³² PDD, 14, Table B-6.

³³ PDD, 14, Table B-6.

³⁴ PDD, 14, Table B-6.

³⁵ PDD, 14, Table B-6.

³⁶ PDD, 2, 14, Table B-6.

³⁷ PDD, 14-15.

	<p>supercritical is would be than sub-critical, but ultra-supercritical would still be the most expensive in the following areas: limestone quantity, waste disposal fee, denitration cost.³⁵</p> <p>The PDD does not include <i>any</i> costs for smoke desulfurization despite claiming that the project will include these technologies.³⁶</p> <p>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.³⁷</p>
<p>“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.”³⁸</p>	<p>The PDD fails to consider a reasonable range of variation in coal costs in its sensitivity analysis.³⁹ Coal prices in China have varied by much more than the +/- 10% that the PDD considers. Recently, coal prices spiked in China,⁴⁰ and observed fluctuations in price have reached at least 60 percent during the last few years.⁴¹ Thus, it would not be unreasonable to require a much broader coal price sensitivity analysis, such as +/- 100% for this critical variable.</p> <p>Figure B-2 should show the fuel price at which the costs of the alternatives converge to provide a more robust analysis of fuel cost sensitivity.⁴³</p> <p>The PDD fails to consider reasonable variations in plant load factors. Table B-9 assumes a uniform variation in load factor</p>

³⁸ ACM0013, 4.

³⁹ PDD, 15, Table B-8.

⁴⁰ 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>.

⁴¹ 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).

⁴³ PDD, 15.

	between plants while China's dispatch policy actually favors more efficient plants. ⁴⁴ (See further discussion below.)
Investment analysis must "include all relevant costs . . . and revenues (including subsidies/fiscal incentives, ODA, etc. where applicable)." ⁴⁵	The PDD only considers leveled electricity generation cost in its investment analysis and fails to consider revenues. ⁴⁶

The DOE must scrutinize project participants' investment analysis carefully especially since project participants report that the differential between leveled 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.⁴⁷

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.⁴⁸ 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),⁴⁹ 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.⁵⁰ 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.

⁴⁴ PDD, 16.

⁴⁵ ACM0013, 3.

⁴⁶ PDD, 13, 20.

⁴⁷ Based on the PDD's calculations of 0.3381 CNY/kWh for ultra-supercritical, 0.3367 CNY/kWh for supercritical, and 0.3343 CNY/kWh for subcritical. PDD, 15.

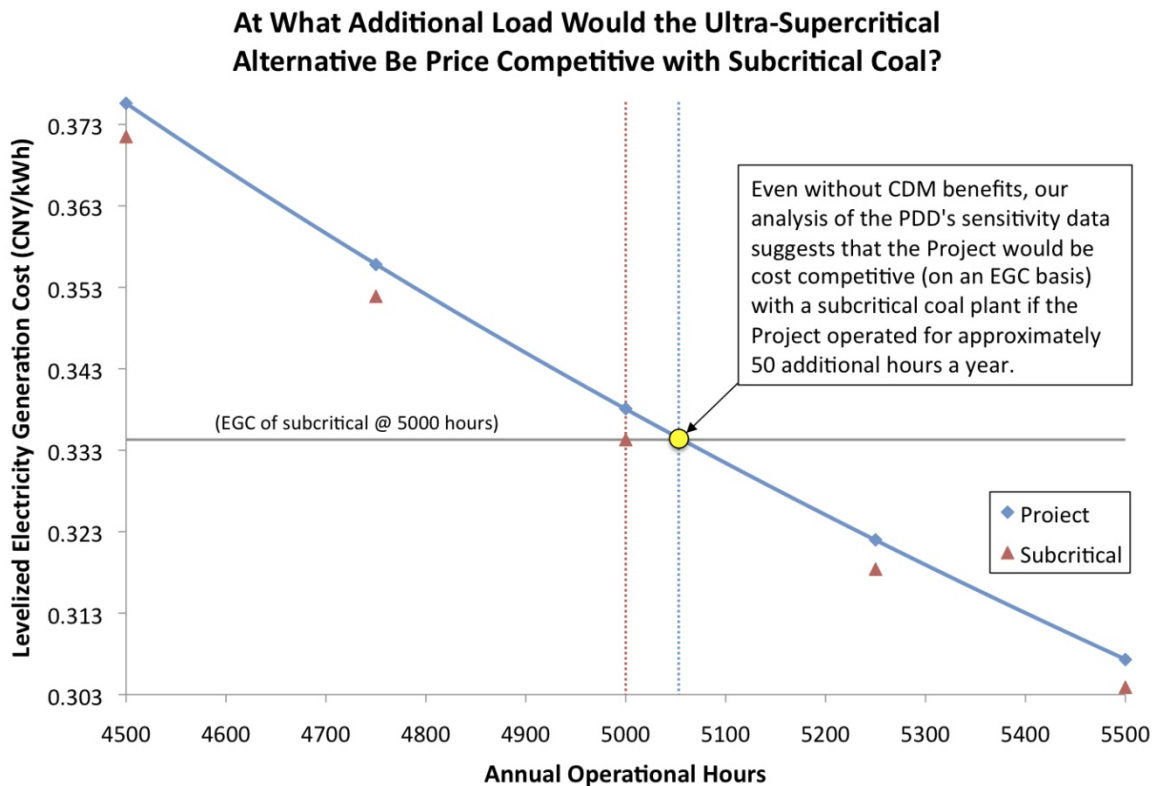
⁴⁸ http://www.gov.cn/zwgk/2007-08/07/content_708486.htm. See also Regulatory Assistance Project, *China's Power Sector: A Backgrounder for International Regulators and Policy Advisors*, Feb. 2008, available at http://www.raponline.org/docs/RAP_ChinaPowerSectorBackground_2008_02.pdf ("The rule modifies 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"].

⁴⁹ PDD, 14.

⁵⁰ PDD, 16.

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.⁵¹ 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

⁵¹ PDD, 16.

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)⁵²

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.” ⁵³ 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.” ⁵⁴	The PDD’s timeline suggests that CDM benefits were not the driving factor in the project decision. According to the timeline, key project events occurred <i>before</i> the CDM Executive Board even adopted ACM0013 (e.g., completion of the FSR (April 2007), a meeting where project participants “decided” to implement the Project as a CDM project (April 16, 2007), signing of the Project’s main equipment contract/project start date (April 23, 2007), and completion of the EIA (July 2007)). ⁵⁵

⁵² PDD, 17-18.

⁵³ 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”].

⁵⁴ Guidelines on Prior Consideration of CDM, 1-2.

⁵⁵ PDD, 17-18.

Applicable Rule(s)	Description of Non-Compliance
	<p>The PDD fails to present evidence supporting any of the listed project dates.⁵⁶</p> <p>The PDD fails to mention when project participants hired CPI Carbon Asset Management as their CDM consultant.⁵⁷</p> <p>The PDD's descriptions of various event are unclear. For example, it is unclear what participation "in the corresponding associate for the development of ultra-supercritical coal-fired methodology" means or what the "participation" entailed.⁵⁸</p>

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 eastern China.

<p>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)</p> <p>Step 4: Common practice analysis⁵⁹</p>

Applicable Rule(s)	Description of Non-Compliance
<p>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."⁶⁰</p>	<p>The PDD fails to accurately describe other ultra-supercritical plants in the East China Grid. It further fails to explain why this Project is different from ultra-supercritical plants in this grid that have not required CDM benefits. (See further discussion below.)</p>

⁵⁶ PDD, 17-18.

⁵⁷ PDD, 17-18.

⁵⁸ PDD, 17.

⁵⁹ PDD, 20-21.

⁶⁰ Additionality Tool, 10.

<p>“Registered project activities and project activities which have been published on the UNFCCC website for global stakeholder consultation as part of the validation process”—should not be included in common practice analysis.⁶¹ The PDD must provide “documented evidence”⁶² to exclude similar projects on the basis of CDM application status.</p> <p>“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.”⁶³</p>	<p>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 and super critical coal-fired power generation technology what are commonly used in China now . . .”⁶⁶</p>
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Project participants’ incorrectly assert that all ultra-supercritical plants in the East China Grid are within the CDM process. In fact, as the table below shows, there are at least three operational ultra-supercritical power plants in the East China Grid that have not applied for CDM benefits. Each of these plants began construction before the CDM Executive Board approved ACM0013 on September 14, 2007. Two additional plants also started construction at least 18 months prior to ACM0013’s adoption, and have applied for CDM benefits. But these projects have yet to be validated, and the timing of project activities strongly militates against a finding of additionality in either case.

Ultra-Supercritical Coal-Fired Power Plants That Started Construction in the East China Grid Before Adoption of ACM0013

Project Developer(s)	Province / Project	Generating Capacity	Construction Start Date	Operational Start Date
Huaneng Power International Inc.	Zhejiang / Huaneng Yuhuan Power Plant	4000 MW (4 x 1000 MW)	July 2004 ⁶⁷	November 2006 ⁶⁸

⁶¹ Additionality Tool, 10.

⁶² Additionality Tool, 10.

⁶³ ACM0013, 4.

⁶⁶ PDD, 8.

⁶⁷ China Huaneng Power Starts Building 4,000 MW Power Plant in Zhejiang, *China News Digest*, July 7, 2004 (LexisNexis Academic).

Project Developer(s)	Province / Project	Generating Capacity	Construction Start Date	Operational Start Date
China Power Investment Corp	Jiangsu / Kanshan Power Plant	1200 MW (2 x 600 MW)	<i>Unknown</i> ⁶⁹	2006 ⁷⁰
**Guodian (Group) Corp. ⁷¹	Jiangsu / Taizhou Power Plant	1000 MW	December 2005 ⁷²	December 2007 ⁷³
Huadian Group	Anhui / Wuhu Power Plant	1320 MW (2 x 660 MW)	August 2006 ⁷⁴	<i>Unknown</i>
**Shanghai Electric Power Co. ⁷⁵	Shanghai / Shanghai Waigaoqiao No.3	2000 MW (2 x 1000 MW)	February 2006 ⁷⁶	April 2008 ⁷⁷

** Denotes projects proposed under ACM0013, as listed on <http://cdm.unfccc.int> as of February 16, 2010.

In failing to address these other ultra-supercritical projects, the PDD fails to show that construction of new ultra-supercritical plants in eastern China is not a common practice. Common practice analysis is intended to provide a “credibility check” for a project participant’s claim that its project is additional.⁷⁸ Here, because project participants fail to explain why other ultra-supercritical plants in the East China Grid have proceeded without CDM benefits, project participants’ claims of additionality are not credible.

⁶⁸ China Huaneng launches 1,000 MW coal-fired generating unit, *Asia Pulse*, Nov. 29, 2006 (LexisNexis Academic).

⁶⁹ *Kanshan Power Plant De-NOx Project Contract Signature Ceremony*, China Environmental Protection Co., Ltd, (Dec. 30, 2005), <http://www.cepe.cn/en/News/ShowInfo.aspx?ID=1> (showing that plans to develop this plant existed at least as early as 2005).

⁷⁰ Coal-fired power plants in China-Jiangsu, *Power Plants Around The World*, available at <http://www.industcards.com/st-coal-china-jiangsu.htm>

⁷¹ Jiangsu Guodian Taizhou Ultra-supercritical Power Project, Project Design Document, <http://cdm.unfccc.int/UserManagement/FileStorage/LB72VCQDUA5YGTRNHP4FEKI18O603X> (Project construction began on December 12, 2005).

⁷² *Id.*

⁷³ China Guodian Corporation's Installed Capacity Surpasses 60,000 Megawatts, *Market Wire*, Jan. 16, 2008 (LexisNexis Academic).

⁷⁴ Wuhu thermal power plant starts construction in Anhui Province, *China Business News On-Line*, Aug. 28, 2006 (LexisNexis Academic).

⁷⁵ Shanghai Waigaoqiao coal-fired power project using a less GHG intensive, Project Design Document, <http://cdm.unfccc.int/Projects/Validation/DB/YJEI7E0ZDE5RAV9OAYC80LNLGHPABU/view.html>.

⁷⁶ Waigaoqiao Power Plant Kicks off Phase III Construction, *SinoCast*, Feb. 20, 2006 (LexisNexis Academic).

⁷⁷ Shanghai Electric says another 1000MW generator set operates, *SinoCast*, Apr. 30, 2008 (LexisNexis Academic).

⁷⁸ *Additionality Tool*, 10.

Even if ultra-supercritical plants are not yet the norm in the East 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.⁷⁹ Where ultra-supercritical is not installed, supercritical technology nevertheless has become the "mainstream."⁸⁰ Confirming this trend within the East China Grid, recently approved coal-fired power plants are using supercritical or ultra-supercritical technology.⁸¹

There are a number of non-CDM reasons for China's shift from subcritical to supercritical and ultra-supercritical technology in the East China Grid and elsewhere. For one, rising coal costs and coal shortages increasingly place a premium on more efficient coal-fired power generation technology.⁸² Local pollution from dirtier, less efficient subcritical coal-fired power plants is also a concern.⁸³ 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.⁸⁴ New plants constructed through this process widely use supercritical and ultra-supercritical technology.⁸⁵

⁷⁹ China's power structure further optimized in 2009, *Xinhua New Agency*, Jan. 25, 2010, available at <http://www.istockanalyst.com/article/viewiStockNews/articleid/3806305>.

⁸⁰ 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.").

⁸¹ See, e.g., NDRC Sanctions 12 Coal-fired Power Stations in Three Months in China, *Energy Business Review*, May 4, 2009, available at http://coal.energy-business-review.com/news/ndrc_sanctions_12_coalfired_power_stations_in_three_months_in_china_090504/.

⁸² 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.

⁸³ See, e.g., Coal power; Yuhuan: a Chinese milestone, *Modern Power Systems*, June 27, 2005 (LexisNexis Academic).

⁸⁴ Phase out of small power plants at high cost, *Business Daily Update*, Nov. 5, 2007 (LexisNexis Academic).

⁸⁵ Being supercritical, *Business Daily Update*, July 2, 2007.

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 priority access to the grid.⁸⁶ 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 Commission (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.⁸⁷ NDRC officials have publicly emphasized this focus.⁸⁸

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."⁸⁹

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.

⁸⁶ http://www.gov.cn/zwgk/2007-08/07/content_708486.htm. See also Regulatory Assistance Project Background, *supra* note 48.

⁸⁷ China reveals its five-year plan for the energy industry, *China Energy Weekly*, Apr. 18, 2007 (LexisNexis Academic),

⁸⁸ Phase out of small power plants at high cost, *Business Daily Update*, Nov. 5, 2007 (LexisNexis Academic) (citing a senior energy official from NDRC).

⁸⁹ 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 reductions⁹⁰

Applicable Rule(s)	Description of Non-Compliance
<p>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.”⁹¹</p> <p>“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.”⁹²</p>	<p>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 East China Grid,⁹³ but the document fails to list required information. Specifically, it does not list: (1) specific comparable coal plants in the East China Grid, (2) the specific top 15 percent plants in this grid, and (3) fuel consumption and electricity generation for any of these plants.</p> <p>The PDD’s baseline is further called into question by the fact that the emissions factor for the top 15 plants in the East China Grid is drastically lower than the emissions factor for subcritical plants: 0.9135 tCO₂/MWh for subcritical versus 0.8580 tCO₂e/MWh for the top 15%.⁹⁴</p> <p>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.”),⁹⁵ but the PDD must itself include this information.</p>

⁹⁰ PDD, 21-30.

⁹¹ ACM0013, 8-9.

⁹² ACM0013, 9.

⁹³ <http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File1829.pdf>.

⁹⁴ PDD, 29.

⁹⁵ PDD, 43, 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.⁹⁶

Applicable Rule(s)	Description of Non-Compliance
<p>The PDD must provide documentation of its analysis of environmental impacts.⁹⁷</p>	<p>The PDD provides only limited information on impacts and the effects of mitigation and fails to discuss any remaining impacts <i>after</i> mitigation.⁹⁹</p> <p>The PDD lacks a description of the project site pre-construction, and thus fails to illustrate how the project has changed the surrounding environment.¹⁰⁰</p> <p>The PDD fails to discuss its potential use of water from or water pollution discharges to Hangzhou Bay.¹⁰¹</p> <p>The PDD claims that “The project activity belongs to energy conservation project and environmental impact of the project activity is considered small according to EIA”¹⁰² but this finding is not credible without more information.</p>

⁹⁶ PDD, 36-38.

⁹⁷ PDD Guidelines, 19.

⁹⁹ PDD, 37-38.

¹⁰⁰ PDD, 37-38.

¹⁰¹ PDD, map, 4

¹⁰² PDD, 38.

	<p>The nearly identical EIA summaries between this Project¹⁰³ and that in the Jiangxi Xinchang project, completed by the same CDM consultant,¹⁰⁴ raise serious doubts about the level of consideration given to these issues in either project.</p>
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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 ¹⁰⁵

Applicable Rule(s)	Description of Non-Compliance
<p>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.”¹⁰⁶ 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.¹⁰⁷ Project participants must also show that they described the proposed project to stakeholders in a way that allows them to understand the project activity.¹⁰⁸</p>	<p>The PDD fails to adequately explain how project participants selected the 114 persons who were asked to participate.¹⁰⁹</p> <p>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.¹¹⁰</p> <p>The PDD fails to describe what information</p>

¹⁰³ PDD, 36-38.

¹⁰⁴ Jiangxi Xinchang 2x660MW Ultra-Supercritical Project, Project Design Document, <http://cdm.unfccc.int/UserManagement/FileStorage/BYW9PDG0HKILV4URNQAF6CM58SJETO>.

¹⁰⁵ PDD, 38.

¹⁰⁶ PDD Guidelines, 20.

¹⁰⁷ PDD, 35-36.

¹⁰⁸ PDD Guidelines, 20.

¹⁰⁹ PDD, 38.

¹¹⁰ PDD, 38.

	was provided to commentators or the contents of the questionnaire. ¹¹¹
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E.2. Summary of the comments received ¹¹²

Applicable Rule(s)	Description of Non-Compliance
The PDD must “identify stakeholders that have made comments and provide a summary of these comments.” ¹¹³	<p>The PDD fails to identify commentators beyond providing only basic demographic information (i.e., gender, age, education).¹¹⁴</p> <p>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.¹¹⁵</p> <p>The nearly identical summaries between this Project¹¹⁶ and that in the Jiangxi Xinchang project, completed by the same CDM consultant,¹¹⁷ raise serious doubts about the level of consideration given to these issues in each project.</p>

E.3. Report on how due account was taken of any comments received ¹¹⁸

Applicable Rule(s)	Description of Non-Compliance
The PDD must explain how due account was taken of comments received. ¹¹⁹	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. ¹²⁰

¹¹¹ PDD, 38.

¹¹² PDD, 38-39.

¹¹³ PDD Guidelines, 20.

¹¹⁴ PDD, 38.

¹¹⁵ PDD, 39.

¹¹⁶ PDD, 39.

¹¹⁷ Jiangxi Xinchang 2x660MW Ultra-Supercritical Project, Project Design Document, <http://cdm.unfccc.int/UserManagement/FileStorage/BYW9PDG0HKILV4URNQAF6CM58SJETO>.

¹¹⁸ PDD, 39.

¹¹⁹ PDD Guidelines, 20.

¹²⁰ PDD, 39.

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 East China Grid. In fact, China is already rapidly installing supercritical as well as ultra-supercritical plants in east China without any help from the CDM. Thus, approving CDM benefits for new supercritical projects in eastern China 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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