Comments on the validation Huadian Ningxia Lingwu Phase II 2×1000MW Ultra-Supercritical Power Generation Project, China

4 May 2011

CDM Watch respectfully submits the following comment on the Project Design Document (PDD) for "Huadian Ningxia Lingwu Phase II 2×1000MW Ultra-Supercritical Power Generation Project", China. We highlight the importance of recognizing the integral role of transparency in the CDM validation process, and for taking this comment into consideration.

We believe that this project is not additional and if approved, will lead to excess issuance of Certified Emissions Reductions (CER's) beyond any actual emissions reduction. Using CDM funds to lock-in 20 years of coal mining and combustion and the associated adverse impacts on the land, water, air, climate, and human health and welfare undermines sustainable development and will ultimately make it more difficult for both developed and developing countries to meet GHG emission reduction targets that are necessary to avert the worst impacts of global climate change. We emphasize that according our analysis of the PDD the Project ""Huadian Ningxia Lingwu Phase II 2×1000MW Ultra-Supercritical Power Generation Project" must not receive a positive validation under the ACM0013 ver. 4 methodology for the reasons outlined below:

1. Additionality – Faulty baseline
2. Additionality – Baseline efficiency improvements
3. Environmental impact assessment
4. Public participation of civil society

1. Additionality – Faulty baseline

According to our comprehensive analysis of the PDD, the PDD does not fully comply with the requirements of ACM0013 ver. 4. Apart from a big number of inaccuracies in the PDD such as: non-existing links, documents available only in Chinese, no transparent data or possibility to check the data provided, ignorance of meeting the requirements of the methodology, we have identified specific examples of non-compliance with ACM0013's ver. 4 technical and substantive requirements:

- The project participants must provide documented evidence which demonstrates that they seriously considered the CDM in the decision to implement the project activity. The information provided in the PDD is insufficient to establish that CDM benefits are necessary for project implementation. The decision to go forward with the project was made before 26 December 2008 when the purchasing agreement was signed for the main parts of the plant. The project timing table (PDD, B.5, page 17) indicates that the project already started with EIA approval in August 2007. Only one year later was the project considered to be implemented on the CDM basis. This timing gives a strong indication that project developers are seeking additional revenues streams whenever possible. Though the PDD claims that the CDM was seriously considered prior to the start date of the proposed project, it is very difficult to believe that this 2x1000 MW project was built based on the assumption that it would generate credits from the CDM, and would not have been built without that possibility. Therefore the project is most likely non-additional.

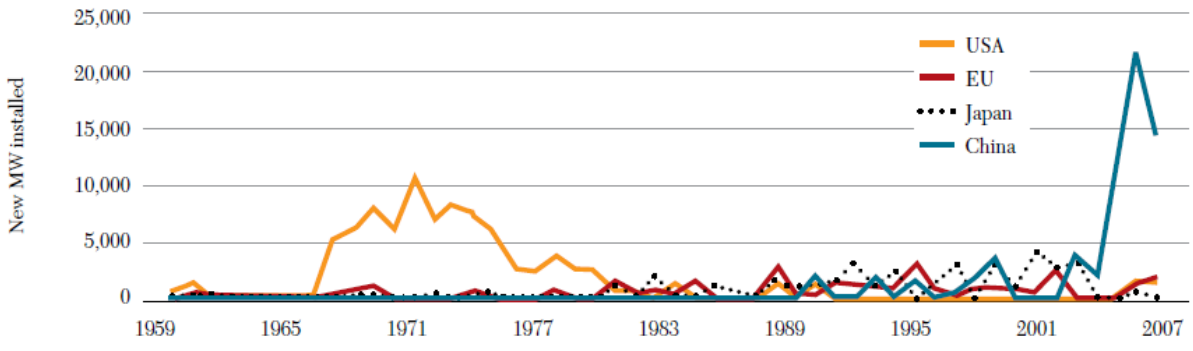
- The PDD fails to show that ACM0013 ver. 4 is applicable to supercritical coal projects in China. The fact that the project is part of the UMPP makes it non-additional because all projects in the UMPP are required to use supercritical technology: the project participants identify an incorrect baseline – subcritical technology – for China and state that the baseline for new coal-fired power plants in China is subcritical technology. Our analysis suggests that the actual baseline in China is more efficient supercritical technology and at least half of China's planned coal-fired generating capacity over the next several years will be supercritical. In the case of China, the fact that sub-critical coal technology is no longer baseline is very clear. The baseline scenario between 2008 and 2015 assumes that 40% of new capacity will use supercritical technology, one gigawatt of ultra-supercritical capacity will be added per year, and the remaining new build

ones will use sub-critical technology. In 2009, five 1000MW ultra-supercritical plants were commissioned in the first three quarters. By 2010 supercritical and ultra-supercritical units are expected to account for over 40% of the total newly built thermal power generating units. From 2010 to 2020, new power plants with unit capacities of 600MW and more will all be required to be supercritical and about half of the newly built power generating units are expected to be ultra-supercritical[1]. Also, ultra-supercritical is becoming business-as-usual (BAU) in China because of China's policies. Due to energy security and air quality concerns the Chinese government is promoting efficient coal and prohibiting inefficient coal. The PDD's analysis does not take into account these factors that influence the decision making about the building of these plants. It also does not take into account the policy and five-year plans of the Chinese government. Concerning the baseline, for the reasons just given, subcritical is not an appropriate baseline and supercritical or ultra-supercritical are more appropriate.

- The PDD fails to respond to the requirements according to the methodology ACM00013 ver. 4. The PDD easily skips the analysis of all plausible baseline scenarios, and the facts, under which project's additionality is determined, are unclear, as well as it is impossible to check their credibility. The PDD does not consider all possible fuel sources (only oil and natural gas) and renewable energy implementation. Secondly, there is no analysis and data provided to prove that the identified baseline fuel is used in more than 50% of total generation of utilities in the geographical area within the host country. The same could be applied to the import of electricity in China as there is any data on that provided. Overall, the identification of alternatives to the project activity is written in few lines with a conclusion without any further analysis. Also, the plant is designed to operate only 5500 hours per year, which means approximately 230 days a year. This seems to claim that the coal power plant, which is intended to run for only 20 years, will not be operating in its full capacity overall.

As Stanford Environmental Law Clinic has pointed out in a submission[2] on the validation of the Shanghai Caojing 2X 1000 MW Ultra-Supercritical Project sub-critical coal plants cannot be considered baseline technology for either China or India where the majority of proposed projects are located. In fact, according to World Resources Institute supercritical and ultra-supercritical coal technology is growing so fast in China that the Chinese fleet is now more efficient than the United States[3].

Figure 6 **New Supercritical and Ultra-Supercritical Coal-Fired Power Plants Installed Annually, by Capacity**



Source: Nalbandian, Hermine. 2008. "Performance and Risks of Advanced Pulverised Coal Plant;" IEA Clean Coal Center.

[1] http://www.circleofblue.org/waternews/wp-content/uploads/2011/02/coal_bohai_report.pdf
[2] http://cdm.unfccc.int/filestorage/E/G/W/EGWBRZLZJPSAY9YSFZSCPR20C19LB9/Comment%20submitted%20by%20Stanford%20Environmental%20Law%20Clinic%20on%20Behalf%20of%20CDM%20Watch.pdf?t=U3Z8MTMwNDUxNTkxMy41OA==|vegwwrIjXbCCmOxQY5i9j8jv2hs=
[3] http://www.wri.org/publication/china-united-states-climate-change-challenge
[4] http://www.nytimes.com/2009/05/11/world/asia/11coal.html
[5] http://www.power-technology.com/projects/yuhuancoal/
[6] http://www.rae.gr/old/K2/CleanCoal/T1.pdf
[7] http://en.sxcoal.com/DBSample.aspx

About 70% of China's total energy consumption comes from coal, and China now uses more coal than the United States, Europe and Japan combined, making it the world's largest emitter of GHG[4]. In 2008, China's coal consumption had increased by 129 percent from the year 2000 to an estimated three billion short tons, which is almost 40 % of the world's total coal consumption. However, in northern China, cities like Beijing and Shenyang have some of the highest readings for total suspended particulates and SO2 in the world, with coal burning being a major source of this. In southern China, large areas have growing acid rain problems[5].

China's strategy to meet its greenhouse gas commitment is to continue full steam ahead converting its coal-fired power plant fleet from a conventional one to an ultra-supercritical one. In 2008, China's National Development and Reform Commission adopted a standard requiring all new coal-fired power plants to be state-of-the-art commercially available or better technology. As a result, today most of the world's most efficient (supercritical and ultra-supercritical) coal-fired power plants are being built in China. In all, China has more than 650GW coalfired power plants, and about 60 percent of the new plants are being built using newer technology and >60GW of supercritical units were ordered in the past 3 years[6].

If there are reasons to doubt the additionality of these projects they should not be deemed as meeting the additionality requirements of the CDM. This renders the project ineligible under the current methodology. We therefore call on the DOE to validate the proposed project on the basis of the new baseline, which is ultra-supercritical and makes subcritical power plants non-additional.

2. Additionality - Baseline efficiency improvements

In addition to the faulty baseline used in the PDD for this project, we believe that also the vintage of data used in the PDD leads to non-additional emission reductions:

- The investment test does not adequately demonstrate that the project is additional. The PDD provides a very weak investment analysis and some of the parts of the justification seem to be ignored or copy-pasted. Even with careful guidance, the financial inputs that go into a financial assessment for most projects are not precise, and can be chosen strategically. For instance, the future price of coal, which has been highly volatile in China in recent years, enabling developers to assume a low price that helps prove additionality of the project.

- The financial indicator data of all alternatives of the proposed project fails to prove the credibility of data and calculations. It is unclear whether the data in the Table (PDD, Table B.2, page 13) is updated as it comes to fuel price. Also, the Table states that 53 more employees are required to operate power plant if it is not implemented as the CDM project but there is no further explanation provided about this difference. Finally, the PDD does not explain why the fuel consumption per unit electricity generated is the highest for sub-critical alternative comparing with other two alternatives.

- The PDD fails to prove the project is additional, which is the core issue to be validated as CDM project activity. The PDD sensitivity analysis is not robust to reasonable variations in the critical assumptions because it only varies coal prices by +/- 10 %. In fact, prices have fluctuated more than 100 % in recent years. The Table (PDD, Table B.2, page 14) indicates the coal price is 300 RMB/tonne, however the actual today's price is much higher and reaches more than 800 RMB/tonne[7]. Common practice analysis lacks coherent data and concludes statements without any trustful data given which could prove that the project is not a common practice: *"Up to now, there is no ultra super-critical coal fired power plants that operate within NWCPG expect the proposed project activity, so there is no activity similar to the proposed project activity"* (PDD, B.5, page 19). However, the fact that numerous other ultra-supercritical power plants are now operating or planned throughout China, indicates that this technology is now common practice in China (e.g., the Guodian Taizhou power plant that went into operation in April 2008; Phases I and II of the Zhejiang Guodian Beilun power plant (2x1000) that went into operation in December 2008 and June 2009; the Shanghai Waigaoqiao (III) Ultra-Supercritical Power Plant; and the Zhejiang Guohua Ninghai Ultra-supercritical Power Project). After a weak and doubtful sensitivity and common practice analysis the PDD states that *"[..] the proposed project activity*

is not the common practice. Therefore, according to the analysis above, it is clearly that the project activity is additional" (PDD, B.5, page 20). This statement needs further information and documentation to be provided by the project proponent in order to confirm that the data is trustful and the project complies with all the requirements for the additionality of project.

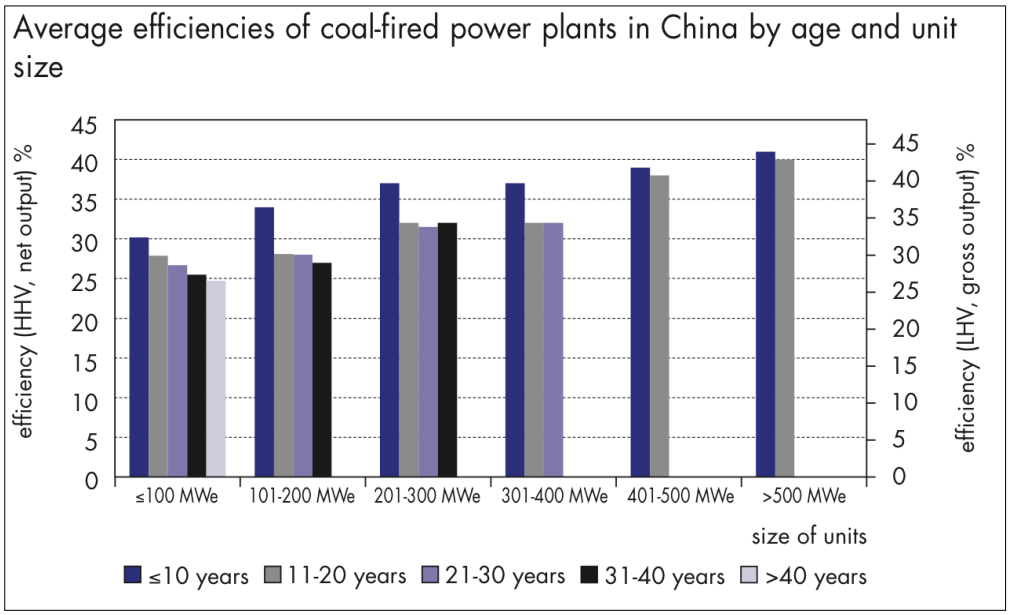
We highlight, that it is important that the baseline efficiency be adjusted in order to take account for the time vintage between the period considered for establishing the benchmark and the start of commercial operation of the project plant. The adjustment is based on the autonomous technological improvements observed in the sector.

In practice the data vintage between the CDM project plant and the reference plants used to establish the emissions benchmark can be considerable, for the following reasons:

Technological innovation in the sector

Over the past decades, the efficiency of new fossil fuel fired power plants has improved considerably. Similarly, energy forecasts also assume that the efficiency of new power plants will continue to improve, due to the development of new materials allowing for higher pressures and temperatures in steam and gas turbines but also due to new processes, such as the gasification of coal (see, for example, IEA 2008a and van den Broek et al. 2009).

The figure below from IEA (2008b, page 51) illustrates the efficiency improvements achieved in coal fired power plants in China. The figure shows that power plants between 100 and 400 MW, constructed in the last 10 years are 5-6% more efficient than power plants constructed in the ten years previously. This results in efficiency gains of 0.5% to 0.6% per year for power plants built in the most recent decade. The figure also shows that the improvements vary with the size of power plants and over time.



Against the above said, project developers must show how the project takes into account the baseline efficiency improvement.

3. Environmental Impact Assessment

According to the CDM rules, all references to support documentation of an Environmental Impact Assessment (EIA) undertaken are required in accordance with the procedures as required by the host Party. The PDD (D.1, page 35) states that EIA of the project was completed in July 2007 and was approved by Ministry of Environmental Protection of the People's Republic of China on 7th August, 2007. However, the PDD does not include adequate documentation of the EIA of the project. In the PDD the environmental impact is described very briefly without providing sufficient data and

calculations of pollutants, water usage and waste water flow, also totally excluding the impact on the local community which is a compulsory part of any EIA. We would like to draw attention to the fact that nearly 4 years have passed, and since then definitely some changes occurred in China's environmental law and restrictions' policy, we urge the DOE to keep in mind that the project's EIA might not be valid under today's environmental law regulations.

In the PDD the information on the impacts of the project is incomplete and cursory. It is important to note that this is a new construction project that has the potential to result in significant adverse environmental impacts including the destruction of significant areas of non-industrial land (e.g., farm land), the displacement of people, water use and water pollution, and significant emissions of particulate matter, SOx, NOx and other hazardous air pollutants that cause severe human health impacts. However, the PDD still claims (D.1, page 35) that *"The project site is flat, so there is little impact to the ecological environment*". According to our research, approximately only 5 km from the project site a world famous river Huang He (Yellow River) passes. Yet, the PDD does not state the exact size of the project's activity. Also it is not possible to know on which type of land the project activity will be constructed, e.g. whether it includes grazing land and agricultural land etc. Our research showed that the area is highly populated and there are agriculture fields surrounding the power plant site. Even with little environmental knowledge, it is obvious that such size coal burning plant has an impact to the soil, water and live species not depending on the fact that the area is flat or not. The impact on noise levels during the power plant construction is not described in details neither there are figures describing noise levels after the power plant starts its functioning. The PDD mentions *"[…] the measures for soil and water conservation and ecological restoration will be implemented"* (D.1, page 36). However, the PDD fails to provide which other methods apart from tree planting in the factory field will be used in order to protect the ecological environment. Furthermore, the statements of the PDD emphasize that *"[…] the project activity is workable; meanwhile it will not bring harm on the local environment"* (D.2, page 36) or "*Reducing other pollutants (e.g. SO2, NOx, dust) compared to a business as usual approach, thereby improving the local environment quality"* (A.2, page 2) which is unlikely to be accurate since the PDD is prepared for the construction of a coal power plant which definitely affects the environment. For the above mentioned reasons the statements included in the PDD are likely to stem from a doubtful and out of date EIA.

To sum up, there is insufficient and out of date information in PDD to allow the DOE or the public to evaluate the environmental, economic, social or human health impacts of the project. The validating of projects that have significant adverse impacts on the environment and contribute significant quantities of greenhouse gases to the environment undermines the purpose of the CDM and the Kyoto Protocol.

4. Public participation of civil society

The PDD does not meet the requirements for disclosure of stakeholder commentaries. Robust stakeholder commentary is one of the CDM's key ways of ensuring sustainable development. Yet the PDD does not clearly describe the stakeholders involved in the project outreach or the information provided to them.

There is insufficient information in the PDD to confirm that the stakeholder consultation process was made in an open and transparent manner, and in a way that facilitated comments as required by the CDM Clarification of Validation Requirements to be checked by the DOE. As a result, the summary of public comments fails to sufficiently illuminate potential sustainability concerns, and the information provided in the PDD rather suggests that the local stakeholder consultation did not occur in adequate way according to the requirements for the following reasons:

- The public consultation process as described in PDD is inadequate. The PDD states *"[…] a stakeholder consultation has been carried out from 12 September to 31 October 2006 in form of questionnaires to collect the comments of the project construction and operation. The questionnaires were sent out to the residents in nearby towns and villages which include government employee, company employee, teacher, hospital, worker, farmer, student and retiree"* (E.1, page 37). From the information provided in the PDD it is not clear in which way - post or email - the questionnaires were sent out to the local stakeholders, what were the criteria for choosing respondents and how the feedback was collected. The PDD mentions that there were 110 questionnaires given out and 105 collected, and provides a list of questions of a questionnaire. However, the PDD does not explain why only 110 questionnaires were given

out. The project site is located in highly populated area and the number of questionnaires provided to local stakeholders is not reasonable according to the general rules of public inquiry, or in this case the PDD should provide information which method and why was used for selecting the respondents. Moreover, the PDD should provide a list of people that responded the questionnaire, but the PDD fails to do so.

- The PDD presents a list of questions provided to local stakeholders (E.1, page 37). We doubt that these questions could provide the full opinion and attitude of stakeholders because the questions sound very abstract and are not relating to any potential impact to the public, quality of their life or environment which the proposed project might have; also it does not describe what actions will be taken to reduce any negative impacts. The PDD's summary of comments (E.2, page 37) does not even summarize half of the questions named in the questionnaire. All the comments are turned to be positive which further contributes to making the feedback sound implausible. The PDD does not provide an example of any filled questionnaire, which leaves open ground for the project proponent to arbitrarily interpret the results and present only any information beneficial to him. Much rather it is likely that the local stakeholder consultation which is claimed to have been carried out through the distribution of questionnaires has actually never happened and affected people did not have a chance to participate and express their opinion.

- The PDD does not provide a fair opportunity for the public to comment. We emphasize that the chosen method for local stakeholder consultation violates the active participation, transparency and democracy principles, and is therefore not an adequate method for a CDM project. There is no information in the PDD about an open stakeholder consultation which implies that the project proponent did not organize any meeting with affected and involved parties. The fact that the stakeholder consultation has been carried out through the sending of questionnaires, furthermore implies (1) that the project proponent had the possibility to choose the consulted local stakeholders arbitrarily and possibly only stakeholders that are in favour of the concerned project's going ahead, (2) just a small group of affected people had the possibility to get involved in the commenting process if they knew about it at all, (3) local stakeholders did not have a possibility to meet representatives of the project proponent directly in order to have access to relevant information. Another important aspect to mention is that this way of consultation most probably did not reach local community group leaders, and other citizens who take active roles in the community's development. Thus, it is highly likely that the local stakeholder consultation process excluded a majority of affected or concerned people and resulted in a one sided communication without any access to expert opinion in order to form a reasoned comment. Such superficial treatment of the stakeholder consultation process is not acceptable and undermines the credibility of the CDM as a whole.

Based on the information provided in the PDD it is not credible that the local stakeholder consultation was carried out in an inclusive manner. The project activity cannot be validated under CDM rules until a credible and independent local stakeholder consultation, involving all directly and indirectly affected people, has been carried out in an effective and transparent manner. The DOE should deny validation of this project because – contrary to the rules and the guidelines – the PDD fails to demonstrate that a public process that satisfies the intent of the Modalities and UNFCCC Article 6 was conducted.

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