Comments on the proposed CDM project: "Huaneng Wuchuan Lihanliang Phase I Wind Farm Project" China

Summary of Project

The proposed CDM project assessed by Noe21 on behalf of CDM Watch is a wind farm located in Inner Mongolia and owned by Huaneng New Energy Industrial Co., Ltd. It involves the installation of 33 turbines, each with a power output of 1500 kW. The combined total power output of the Windfarm will be 49.5 MW and predicted net supplied power to the North China Power Grid is estimated at 115'500 MWh per year. The project participants claim to reduce GHG emissions in the amount of 121'829 tons of CO2e per year by displacing electricity generated by coal-dominated power plants in the business-as-usual scenario. Baseline methodology used for calculating the emission reductions is ACM0002. The project is said to contribute to sustainable development by generating employment and enhancing air quality.

Summary of comments and recommandations

Information provided in the PDD make the **additionality** of the project questionable since both, the investment analysis and the common practice analysis raise serious concerns. The investment analysis does not provide credible data since it is based on outdated IRR benchmark of 2002. It is also questionable that the IRR benchmark was used as a key parameter for the investment decision of the project participants since it is not clear whether the project would reach the benchmark even with CDM finance. The common practice analysis provided in the PDD fails to list similar Inner Mongolian Wind power projects, which are published in "The Wind Power" database[1]. Moreover, the plant load factor which is a key parameter of the investment analysis is not sufficiently justified. The plant load factor used (26%) seems business-as-usual in China and therefore should be discarded form CDM.

The **sustainable development benefits** appear not to be substantial and are not justified. A rough analysis shows the project does not enhance substantially the local employment as it is claimed. The impact on bird wildlife is ignored even though it usually requires mitigation measures in case of wind projects.

The **stakeholder consultation** which is a key issue for ensuring sustainability is poorly documented and provides suspect results.

Given such weaknesses, CDM Watch and Noé21 **recommends** to:

- Require project participants to provide adjusted, specific and justified benchmark for demonstrating additionality with the investment test.
- Provide additional guidance on the common practice for the computation of inflation rates of cost factors like maintenance and operation, inclusion of transaction costs or disclosure of CER prices and collect transparent and comprehensive data about similar projects to CDM projects.
- Carefully assess the proposed load factor and apply an accurate framework on that issue also for other project activities, i.e. hydro power projects.
- Require project participants to provide all important information for assessing the additionality during the public comment period.

[1] http://www.thewindpower.net/country-datasheet-windfarms-9-china.php ("The Wind Power" Database)

- Take action on the issue of the plant load factors and consider the recommendation made by the Methodology Panel how to improve the accuracy of such data.
- Require the demonstration of sustainable development benefit as a critical pre-requisite for registration of CDM projects and require project participants to provide strong justifications.
- Require the project participants to provide sufficient information about the documentation and results of the stakeholder consultation so to ensure an efficient degree of stakeholder participation and sustainability benefits of CDM projects. Enquire an additional stakeholder consultation in case of doubts.

Detailed comments

1) AN ADJUSTED BENCHMARK IN INVESTMENT ANALYSIS IS NEEDED

The IRR benchmark is outdated: To demonstrate the additionality of a CDM project activity, the investment analysis must reflect the prices and all other parameters at the time of the investment decision. Nevertheless the Internal Rate of Return (IRR) benchmark used is based on an analysis made in 2002[2]. Due to the rapid economic growth in China over the past years and the financial crisis in 2008, the economic situation as a basis for the investment decision has changed substantially since 2002. An adjusted, specific and justified benchmark should be developed in order to prove additionality for all renewable projects in China.

The use of the IRR benchmark as a key parameter in the investment decision is questionable: The IRR analysis of the proposed project provided in the PDD (PDD, p.13) shows that the IRR of the project with CDM is just slightly above the 8% benchmark (8,07%). Nevertheless, it is argued that the price of wind turbines taken into account in the analysis was below the price at the time of the investment decision[3] because prices rose which would lower the IRR of the project. This shows that it is very probable that the IRR of the project with CERs at time of investment decision would not reach the benchmark of 8% anymore. The financial logic applied in the CDM additionality demonstration is questionable if the benchmark can not be reached after performing the investment analysis but the project owner would implement the project anyway. This would indicate that the 8% benchmark IRR is not a key parameter in the investment decision but only a marketing data to prove the project as additional.

An adjusted, specific and justified benchmark for wind projects in China is needed to demonstrate additionality of wind projects. In the absence of an updated benchmark, it seems impossible to trust any investment analysis for this project activity in China.

2) THE COMMON PRACTICE ANALYSIS IS NOT SERIOUSLY CARRIED OUT

The common practice analysis is not complete: Under the common practice analysis, the project participants need to discuss any similar options to the project activity. Although most wind power projects in China have applied for carbon finance since 2005 and CDM incentives are acknowledged in some sources to be a major trigger for wind energy in China[4] [5], the crucial impact of the CDM incentives remains open. Internal research by Noé21 reveals that a number of Inner Mongolian Wind power projects, which are published in "The Wind Power" database[6] are not listed in the common practice analysis table 6 (PDD,

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2 "According to the *Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects* issued by former State Power Corporation of China in 2002, the benchmark of total investment financial internal rate of return (IRR) of electric power industry is 8%", PDD p.12

3 As the PDD states on page 14/15: "the financial analysis in this document replicates the data from the Feasibility Study Report", which was approved on September 22, 2008 and "the starting date of the project, the time of the decision to go ahead with the project, was after receiving tender documents for the supply of the turbines from suppliers. Therefore the final price, which was higher than the one expected in the FSR, was known at the start of the project."

4 Han et al. 2009, op.cit.

5 http://www.gwec.net/uploads/media/wind-power-report.pdf (p.49, CREIA et al. 2007, China Wind Power Report 2007)

6 http://www.thewindpower.net/country-datasheet-windfarms-9-china.php ("The Wind Power" Database)

p.16).[7] This demonstrates common practice is not seriously carried out by project participants and creates doubts again on the need of carbon finance.

In view of the lack of confidence in the existing tools for demonstrating aditionality, the EB should provide more guidance on the common practice analysis to DOEs. Until additionality testing is improved, transparent and comprehensive data about similar projects should be collected and data provided by projects developers should be cross-checked.

3) THE PLANT LOAD FACTOR SHOULD BE STRONGLY ASSESSED

The plant load factor is not sufficiently justified: The plant load factor of wind plants is a key parameter for the investment analysis and varies due to "wind parameters and gaps of data". Thus, it is exposed to manipulation "to make projects additional": underestimating the plant load factor induces a lower IRR of the project eventually below the benchmark adopted. The methodology panel acknowledged the importance of the load factor by making recommendations to the EB in its 35th report (para. 37). In the PDD of the project proponents, neither the "scientific approach" (supposedly approved by the Chinese government) for estimating the electricity generation nor the name of the "independent" third party conducting the feasibility study report (FSR) nor further information on the claimed credibility of the involved third party (name of rating agency, methodology etc.) have been disclosed. It is very crucial to underline that the investment test is very sensitive to the plant load factor: with a plant load factor of 30.9% (compared to the 26.6% plant load factor provided in the PDD), the IRR benchmark of 8% would be reached without CDM[8]. In any case, the FSR is dramatically missing and should absolutely be provided to the DOE.

Today, such a plant load factor is business as usual in China and therefore should be discarded from CDM: According to research by Noé21, 9 out of the 10 CDM wind projects in Inner Mongolia at stage of CER issuance effectively export less electricity to the grid than initially predicted in the PDD. The plant load factors of these wind plants were initially estimated at 26 to 30% and the plant load factor of the proposed project activity is estimated at 26.6%.This means that the amount of MWh produced by wind power plants is often overestimated. Nevertheless, with the present technology available and the windy sites available in Inner Mongolia[9], it would be much more financially and environmentally profitable to design a project which could provide a higher load factor. Investment choices made for this project seem therefore very business-as-usual and do not fulfil the type of projects the CDM aims to incentivize, like advanced-technology projects, technology transfer, etc. On technology transfer, project participants state that "the proposed project adopts the turbines manufactured domestically, then there's no technology transfer" (PDD, p.6). This is in contradiction with the basic objectives of the CDM.

EB should carefully assess the proposed load factor for this project and apply an accurate framework for all projects. In particular, all important information for assessing the additionality should be made public during the public comment period. EB should take action to tackle this issue and consider the recommendation made by the Methodology Panel how to improve the accuracy of such data.

4) SUSTAINABLE DEVELOPMENT BENEFITS HAVE TO BE STRONGLY JUSTIFIED

The sustainable development benefits are undocumented: The PDD claims to contribute to sustainable development by enhancing air quality (by reducing CO2, SO2 and NOx emissions, other particulate pollutants resulting from fossil fuel fired power) and by creating local employment opportunities (PDD p.2). Unfortunately, the analysis neither informs about the quantity, nor quality, nor the positive impact of these benefits to local and impoverished people.

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7 Eg. Huitengliang (Guohua), 2007

8 A load factor of 31% would lead to the generation of 134'000 MWh/yr , 16% more than the previoused 115'00 MWh/yr which is said to make the IRR to reach the benchmark of 8% (PDD p.15).

9 http://www.awstruewind.com/files/WP_Asia_2006_Mapping.pdf.pdf (Brower, 2006, New High-Resolution Wind Resource Maps of China)

It seems the project does not enhance substantially the local employment: At a quantitative level, according to Sutter and Parreño[10], a project of such a size (120'000 CER/yr) can only claim a substantial sustainable development contribution if it employs around 100 persons throughout a whole year. Even if the information of the number of employees is missing, it is very doubtful that the project employs such a great amount of people. At the qualitative level, the project participants also fail to inform about the fulfilment of international labour standards during construction and operation of the wind power plant.

The impact on bird wildlife is ignored: Although the Environmental Impact Assessment covers noise, solid waste, dust and wastewater issues, the main concern about wind farms, namely the impact on animal wildlife and particularly birds, is not addressed (PDD p.31). Against the background of the common prejudice towards large bird die-off due to wind farms, the project participants should provide an analysis on the number of animals and bird species around the project site, which could be affected by the project activity. Both residing animals and animals on migratory route should be considered. For a brief overview of the necessary factors to be considered for sustainable impact assessment, project participants and DOE might like to explore Han et al. 2009[11].

As the contribution of sustainable development is a major objective of the CDM, demonstration of sustainable development benefit needs to become critical pre-requisite for registration of CDM projects and has to be strongly justified.

5) STAKEHOLDER CONSULTATION NEEDS TO BE TAKEN SERIOUSLY

The documentation of stakeholder consultation is poor: The acceptance of a project by the local population is very important in terms of sustainability. The proposed project is a negative example in terms of documentation of applied procedures and methods as well as final responses received. Neither detailed procedures nor (original or filled) questionnaires have been added in the Annex. Moreover, the stakeholder analysis (PDD p. 32) should include opinions of local environmental organisations or other institutional stakeholders. Project participants need to demonstrate that procedures and documents were adapted to the knowledge of the people consulted and therefore properly understandable by them.

Moreover, the 100% response rate of the survey conducted is rather suspect than convincing. In empirical social science, 100% response rates are rather unusual[12] and research has shown that high response rates do not "necessarily differentiate reliably between accurate and inaccurate data."[13]

The DOE should require detailed documentation about the public commenting procedure and results of the stakeholder consultation to the project participants.

ADDITIONAL COMMENTS

Claims should be documented and sources disclosed:
The PDD contains many claims, which are not documented or it refers to sources, which are not disclosed. Examples are:

- IRR Calculation not reproducible (p. 12):

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10 http://www.springerlink.com/content/v3443650vg65p127/ (Sutter and Parreno 2007, Does the current Clean Development Mechanism (CDM) deliver its sustainable development claim? An analysis of officially registered CDM projects, in Climate Change 84 (1))

11 http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6V2W-4W68F2M-1&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=9acc9bbef17db630176b146c47fc5e47 (Han et al. 2009, Onshore wind power development in China: Challenges behind a successful story, in Energy Policy, forthcoming)

12 http://www.europeansocialsurvey.org/index.php?Itemid=154&id=75&option=com_content&task=view (European Social Survey)

13 http://www.aapor.org/responseratesanoverview (American Association for Public Opinion Research on Response Rates)

Under Sub-step 2c the "Tool for the demonstration and assessment of additionality" (ver 5.2) clearly states that the project proponents should „present the investment analysis in a transparent manner and provide all the relevant assumptions, preferably in the CDM-PDD, or in separate annexes to the CDM-PDD, so that a reader can reproduce the analysis and obtain the same results." However, the PDD does not contain the IRR calculation spreadsheet. Acknowledging that EB guidance in Annex 45 of EB41 meeting report on conducting investment analyses is not comprehensive, indication of key assumptions such as inflation rates for operation and maintenance cost or feed-in tariff, assumed CER price and transaction costs is also missing. Under these circumstances, CDM Watch was practically unable to replicate and verify the IRR calculation and eventually the additionality of the project by means of the investment analysis.

- Time schedule of the implementation of the project not complete (PDD p. 10):
The time schedule in Table 4 needs to be complemented by the dates of investment decision (see above) and of any commitments to financial means (e.g. letter of credit). If the date of such commitments (without taking into account the incentives from the CDM) was prior to conducting the FSR, the CDM incentives would not have been considered sufficiently.

- Critical information on assessment of load factor missing:
The FSR (Feasibility Study Report) contains a lot of information relevant for assessing the additionality (e.g. load factor of wind plant or investment analysis) and sustainability benefits of the project (see above) but neither the report nor the information have been made public in a satisfying manner.

References:

(1) http://www.awstruewind.com/files/WP_Asia_2006_Mapping.pdf.pdf (Brower 2006, New High-Resolution Wind Resource Maps of China)
(2) http://www.springerlink.com/content/v3443650vg65p127/ (Sutter and Parreno 2007, Does the current Clean Development Mechanism (CDM) deliver its sustainable development claim? An analysis of officially registered CDM projects, in Climate Change 84 (1))
(3) http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6V2W-4W68F2M-1&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=9acc9bbef17db630176b146c47fc5e47 (Han et al. 2009, Onshore wind power development in China: Challenges behind a successful story, in Energy Policy, forthcoming)
(4) http://www.europeansocialsurvey.org/index.php?Itemid=154&id=75&option=com_content&task=view (European Social Survey)
(5) http://www.aapor.org/responseratesanoverview (American Association for Public Opinion Research on Response Rates)
(6) http://www.iea.org/textbase/stats/pdf_graphs/CNELEC.pdf (OECD/IEA statistics 2008, graph showing historical use of Hydro Power in China)
(7) http://www.gwec.net/uploads/media/wind-power-report.pdf (p.49, CREIA et al. 2007, China Wind Power Report 2007)
(8) http://www.thewindpower.net/country-datasheet-windfarms-9-china.php ("The Wind Power" Database)
(9) http://cdmpipeline.org/publications/CDMpipeline.xls (UNEP Risoe, CDM Pipeline, April 2009)
(10) http://china.lbl.gov/files/china.files/china2010options.ppt (p.8, Jiang/Levine 2006, Toward 20% Reduction in Energy intensity by 2010, Presentation)
(11) http://www.3countryee.org/Reports/DraftCountryReportChina.pdf (p.6, World Bank 2006, Developing Financial Intermediation Mechanisms for Energy Efficiency Projects in Brazil, China and India, China Country Report - Draft)