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Att: CDM Executive Board

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Response to request for review "Zhejiang Provincial Energy Group Zhenhai Natural Gas Power Generation Co., Ltd..s NG Power Generation Project" (1344)

Dear Members of the CDM Executive Board,

We refer to the requests for review raised by three Board members concerning DNV's request for registration of the project "**Zhejiang Provincial Energy Group Zhenhai Natural Gas Power Generation Co., Ltd.'s NG Power Generation Project**" (1344) and would like to provide the following initial response to the issues raised by the requests for review.

Comment 1: *Further information is required on the steps taken by the DOE to validate the evidence of prior consideration of the CDM to undertake the project activity and how that evidence was cross checked and validated.*

DNV Response:

At the decision stage, the project feasibility study report (FSR) was carried out by Zhejiang Power Design Institute in 2004. This FSR indicated that the project will face a low IRR which significantly decreased the confidence of the developer and the banks to invest in the project. After considering CDM incentives, the Industrial and Commercial Bank of China, Ningbo City Branch decided to grant a loan to the project on 18 September 2004. DNV was able to verify the above through a letter from the Industrial and Commercial Bank of China, Ningbo City Branch. Then the final FSR was approved by NDRC in 2005, and the developer could proceed with the project. In our opinion, this indicates that the CDM incentives were seriously considered before the project started construction on 9 May 2005**.**
The key evidence for considering the incentive from CDM revenue before project implementation is the letter from the Industrial and Commercial Bank of China, Ningbo City Branch. This letter is an official document from a third party. Furthermore, the evidence can be cross checked through the public available news article published on the web[1] in May 2005 in which it was also indicated that before starting the project starting, incentive from CDM were considered.

Comment 2:*Further clarification is required on the nature of incentives availed of by a multinational corporation that invested in a project similar to the project activity without CDM.*

DNV Response:

[1] http://iptv.zjol.com.cn/05iptv/system/2005/08/12/006268645.shtml

Only one similar project, the Fujian Xiamendongbu CCGT power project, is identified to proceed without CDM incentive. This is a foreign enterprise in Xiamen City, Special Economic Zone that it is enjoying the local policy[2] of no income tax for the first two years and half income tax for the next three years with the income tax rate of only 15% [3] and thus much lower than that of the Yuyao project (33%). This policy is applied from the year, at which the project has an income.

Furthermore, as a project invested by a multinational corporation in China, it can get preferential tariff for importation of some foreign equipment.
DNV was able to verify the relevant documents mentioned above and confirmed that the analysis is reasonable.

Comment 3:*Further clarification is required as to whether and how all relevant power plant technologies that have recently been constructed or are under construction or are being planned, including those of other investors, were considered as additional baseline scenario candidates.*

DNV Response:

The project applies the approved consolidated baseline methodology AM0029 *"Baseline methodology for grid-connected electricity generating plants using natural gas" (version 01).*

The PDD and the response from PP has identified plausible baseline scenarios in compliance with the baseline methodology AM0029, including:

(1) The project activity not implemented as a CDM project;
(2) Power generation using natural gas, but technologies other than the project activity;
(3) Power generation technologies using energy sources other than natural gas;
(4) Import of electricity from connected grids, including the possibility of new interconnections.

The alternative (1), (3) and (4) have been clearly justified not to be plausible baseline scenario in the PDD and the PP's response.

For natural gas to power generation project, at present the other technology is simple cycle gas power generation technology. However, DNV was able to verify that simple cycle gas power generation technology was rarely used[4]. DNV also checked the Zhejiang Provincial 11th electric power 5-year expansion plan and was able to verify that all other natural gas projects that have recently been constructed or are under construction or are being planned in east China power grid, which can deliver the similar service as the proposed project, apply or will apply the same technology - large-scale gas-steam combined cycle for power generation as the proposed project.

Furthermore, compared with the gas-steam combined cycle for power generation technology, simple cycle gas power generation technology has a relatively lower power generation efficiency and unit installed capacity that will make such projects less financial attractive. This makes the project with this technology unlikely baseline scenario compared to the proposed project.

Comment 4: *According to the applicability condition of the AM0029/ver.01 (19 May 2006), condition 2 establishes that "and information pertaining to the grid and estimating baseline emissions is publicly available". As far as plant specific fuel consumption and electricity generation data are not publicly available in China, the PP/DOE shall further substantiate the application of this methodology beyond the explanation given by the PPs/DOE referring to the deviation accepted by the EB with regard to the application of methodology AM0005 later replaced by ACM0002. Accordingly the statement on page 8 (top) of PDD that "…the information*

[2] http://www.xm-n-tax.gov.cn/LlfxServlet?nwbz=2&lmbh=008&errpage=/jsp/internet/index/errPage.jsp&url=/publish/internet/bszn/FB0000000008.shtml
[3] http://www.xm.gov.cn/ts/zcfg/yhzc/200709/t20070901_176664.htm
[4] http://www.hdrqw.com/news/20060505-31.htm

pertaining to the East China Power Grid and estimating baseline emissions is publicly available" is not adequate.

DNV Response:
This concern was also raised in the requests for review of the projects "Saihanba East 45.05 MW Windfarm Project" (0561) and "Saihanba North 45.05 MW Windfarm Project" (0576) in China on 26 October 2006. The Board accepted the explanations by DNV and accepted to register the above projects as CDM projects on 15 December 2006. Detailed history information can be found at http://cdm.unfccc.int/Projects/DB/DNV-CUK1155680126.47/history.
The Chinese DNA publishes all the power grid emission factors for different region power grid in order to make all the power grid emission factors in China public available. So the statement of "*the information pertaining to the East China Power grid and estimating baseline emissions is publicly available*" is adequate.

Comment 5: *Third condition of applicability of methodology requires demonstration that natural gas is sufficiently available in the region, country, etc. Table B1 (on page 8 of PDD) is submitted as an evidence of availability trying to prove this requirement. According to this table supply of NG to this region in 2005 was $8.78*10^8$ Nm^3/a, while the project feasibility study expects $5.3354*10^8$ Nm^3 annual consumption (60.7% of supplied to the region NG) of NG. Figure for 2010 is ten times more, but the first crediting period will start after the project registration and therefore the current (2006-2007) situation should clearly show the real perspective of increase in natural gas supply. Statement in Validation Report (page 13) that the project annual consumption is very small comparing the NG available in the region thus is not directly deducted from table B1. Future plans on perspective constructions should be also analyzed with regard to the NG consumption.*

DNV Response:
DNV was able to verify that the natural gas supply and distribution is under the responsibility and operation by Zhejiang Provincial Natural Gas Development Co., Ltd. (ZPNGD)[5]. DNV also checked the *Natural Gas Pipeline Net Planning of Zhejiang Province* (Gui-497, September of 2005), which has been approved by Zhejiang Provincial Government, and was able to verify that the natural gas supply of Zhejiang Province comes from three sources: natural gas transferred from west, East China Sea gas field and imported LNG.
After checking an official explanation letter by Zhejiang Provincial Natural Gas Development Co., Ltd., DNV was able to verify the correctness of the annual natural gas quantity stated in the response from project participants to the requests for review.
Therefore, sufficient availability of natural gas in the region has been demonstrated, and the third condition of applicability of methodology is satisfied.

Comment 6: *When identifying plausible alternatives, among others, the "import of electricity from connected grids, including the possibility of new interconnections" is mentioned and excluded. The argument provided in the PDD is that "interconnected Central China Power Grid (CCPG) usually provides base load power to the East China Power Grid (ECPG) which is in project boundary. Further clarification is required as the CCPG could supply peak electricity to the ECPG in future. Moreover the project activity might provide both base and peak load electricity and not only peak load electricity. Even more, there is not information in the PDD what is the share of peak load electricity and what is the base load electricity share from annual 3,500 hours.*

DNV Response:

[5] Approval Letter of the Establishing of Zhejiang Provincial Natural Gas Development Co., Ltd., By Zhejiang Provincial Development and Plan Commission, [2001]758

DNV checked the feasibility study report for the project and was able to verify that the project is designed to mainly provide peak load electricity, which has been approved by National Development & Reform Commission (NDRC).
DNV also checked the project PPA and an official explanation from the power purchaser of Zhejiang Province Power Company and was able to verify that the power from the project is mainly for peak load electricity.
Hence, importing of electricity from connected grid can be excluded due to the fact that CCPG does provide base load power to the ECPG[6]. Furthermore, to the much higher cost if providing the peak load and the technical barriers of long distance electricity transmission, it is unlikely that this situation will change.

Comment 7: *For the calculation of the baseline emission factor of baseline (calculation and selection of BM of ECPG when capacity addition is not publicly available in China) the PPs introduced alternative formulae for calculation of BM. Further clarification is required. In addition, the DOE shall further clarify how they substantiate that the new formula applied can be considered a follow up (or application) of deviation accepted for AM0005.*

DNV Response:
This is a related concern of issues 4 of the request for review, please refer to below web site to see more information. http://cdm.unfccc.int/Projects/DB/DNV-CUK1155680126.47/history.

Regarding the BM emission factor calculation, as we explained in Issue 4 of the request for review, the Board accepted the following deviation for the calculation of the BM in China:
- Use of capacity additions during last 1 - 3 years for estimating the build margin emission factor for grid electricity;
- Use the efficiency level of the best technology commercially available in the provincial/regional or national grid of China, as a conservative proxy, for each fuel type in estimating the fuel consumption to estimate the build margin (BM).

Therefore, the formula of calculating $EF_{BM,Y}$ is:

$$EF_{BM,y} = \left[EF_{BTCA\_fire,y} \times CAP_{fire,y-n,y}\right] / \left[\sum_j CAP_{j,y-n,y}\right]$$

Where $CAP_{fire,y-n,y}$ is the incremental installed capacity of fuel-fired power (MW) in *y* year compared to that of *y-n* year;

$\sum_j CAP_{j,y-n,y}$ is the total incremental installed capacity of various power sources in the grid during the years from y to y-n year;

$\left[CAP_{fire,y-n,y}\right] / \left[\sum_j CAP_{j,y-n,y}\right]$ represents the share of incremental installed capacity of fuel-fired power in the whole incremental installed capacity.

where, *n* is fixed by:

Starting from *y* year, the differences of installed capacity between *y* year and *y-1* year, y year and *y-2* year,…*y* year and *y-n* year, *y* year and *y-n-1* year, …are calculated respectively, and then divided

[6] http://engine.cqvip.com/content/tv/95255x/1998/016/003/gc23_tv1_3203139.pdf

by the installed capacity of *y* year. The year that can make the left-hand side of the following formula greater than 20% will be regarded as *n*. The formula is as follows:

$$\frac{\sum_j CAP_{j,y-n}}{\sum_j CAP_{j,y}} \geq 20\% \qquad (10)$$

$EF_{BTCA\_fire,y}$ is the emission factor of fuel-fired power with best technology commercially available (BTCA). It represents the trend of increased efficiency in coal consumption in the fuel-fired power generation brought by technology advancement

DNV was able to verify that the calculation in the PDD is according to this deviation approved by the Board, which can be cross checked to be reasonable by the calculation from Chinese DNA[7].

Comment 8: *Data for calculation of OM for the years 2002, 2003, 2004 is provided in Annex 3 to the PDD. Quantity of imported electricity is in relevant tables, but EF of imports is not clear. Further clarification is required.*

DNV Response:
DNV checked the EF_{OM} calculation spreadsheet provided by the project participants and was able to verify that the emission factor for the imported electricity has been chosen as 0 tCO_2/MWh, which is in line with ACM0002 and conservative.

Comment 9: *The validation report (page 8) states that "The IPCC default values used for OM&BM calculation have been changed from IPCC 1996 to IPCC 2006". However, there is no reference to which one is more conservative and why they changed only these default values and leave the IPCC 1996 value for GWP of methane (21). Further clarification is required.*

DNV Response:
At its 26th meeting "The Board further clarified that the '2006 IPCC Guidelines for National Greenhouse Gas Inventories' will be published on the IPCC website on 24 October 2006 after which this version shall be considered as the latest version." Hence, the use of the 2006 IPCC Guidelines is appropriate and no evaluation of which version of the guidelines results in more conservative emission reduction estimates is required.
The Conference of the Parties decided (decision 2/CP.3) that the values of GWP calculated for the IPCC Second Assessment Report are to be used for converting the various greenhouse gas emissions into comparable CO_2 equivalents for the Kyoto Protocol commitment period. Hence, the GWP of methane of 21 is correct.

Comment 10: *According to the monitoring methodology ACM0002 and parameter EGy described on page 34 the net electricity is used for calculation of ER. It is not explained in monitoring plan how the net electricity will be calculated, how the self consumption will be assessed, even if it is insignificant. Further clarification is required.*

DNV Response:
DNV checked the section B.7 in the PDD and the feasibility study report and was able to verify that the net electricity delivered to the grid by the project activity is monitored directly by electricity meters reading located at project boundary (gateway meters). The self consumption has already been deducted from the total electricity generated by the project activity while measuring the net electricity supply to the grid through the gateway meters. The readings of the gateway

[7] http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File1051.pdf

meters are also used as the amount of electricity sales/purchase between the project owner and the grid company. Thus the net electricity supplied to the grid can also be double checked by receipt of sales.

Comment 11: *Letter of Confirmation and Reply to the Submission of Supplementary Loan Evaluation Materials by Industrial and Commercial Bank of China, Ningbo City Branch (reference # 14) confirming that CDM has been taken into consideration before project starting date is not submitted. The DOE shall further clarify whether they have assessed and validated the pertinent information.*

DNV Response:
After seriously considering the CDM incentive, the Industrial and Commercial Bank of China, Ningbo City Branch, decided to grant a loan to the project on **18 September 2004**. As stated earlier, DNV has assessed and validated this letter from the Industrial and Commercial Bank of China, Ningbo City Branch.

Comment 12: *The electricity import for 2003 mentioned on page 11 and in Annex 3 is different. Further clarification is required.*

DNV Response:
The electricity import for 2003 in the Annex is correct. The PDD needs to be corrected. Nonetheless, the OM emission coefficient stated in the report is correct.

Comment 13: *In table B.6.2 the data unit for parameter Fi,j,y should be t or m3 , otherwise it could be read as mass divided by volume.*

DNV Response:
PDD was updated.

Comment 14: *All the relevant information should be made available.*

DNV Response:
DNV validated all the relevant information including the web links and was able to verify the information.

Comment 15: *The DOE should clearly state how the applicability condition that "no fuel switch is done in the process" has been validated.*

DNV Response:
There is no such requirement of "no fuel switch is done in the process" in the methodology AM0029 version 01. This issue is not relevant for the proposed project.

Comment 16: *The methodology requires that "among the alternatives that do not face any prohibitive barriers, the most economically attractive alternative should be considered as the baseline scenario". No such comparison has been conducted in the determination of the baseline.*

DNV Response:
There is no such requirement of in the methodology AM0029 version 01. This issue is not relevant for the proposed project.
In the PDD submitted for registration the determination of baseline scenario has been carried our in accordance with the steps required in AM0029 version 01.

We sincerely hope that the Board accepts our aforementioned explanations.

Yours faithfully
for DET NORSKE VERITAS CERTIFICATION AS

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