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	IS-CMS-MUC/RZ Rachel Zhang	+49 89 5791-3038 rachel.zhang@tuev-sued.de	+49 89 5791-2756	2008-12-30	1 of 13

Dear Sirs,

Please find below the response to the review formulated for the CDM project with the title
"Yaoping 10 MW Small Hydropower Project in Shaanxi Province, China" with the registration
number 2090. In case you have any further inquiries please let us know as we kindly assist
you.

Best regards

Rachel Zhang
Carbon Management Service

Annexes:

- Annex1: Public Notice on Effective Technical Standard in Hydro & Water Industry
- Annex2: PDR approval from Shangluo City Water resource Bureau
- Annex3: Report on the Completed Investment of Yaoping Hydropower Project
- Annex4: The minutes of the 10th Board meeting to consider CDM

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Response to the CDM Executive Board

Request 1:

The DOE is requested to justify the suitability of the 10% benchmark, in particular, the appropriateness of a benchmark of year 1995 when assessing the additionality with investment decision made in 2006.

Response from PP:

Economic Evaluation Code for Small Hydropower Projects (SL16-95) issued by the Ministry of Water Resources in 1995 is the water conservancy industry standard of PRC for economic evaluation of small hydropower projects with the capacity lower or equal to 25MW, it was shown that the benchmark IRR for small hydropower projects was 10% in this code.

According to *Public Notice by Ministry of Water Resource of People's Republic of China* (Number 5 in year 2006) issued on 9th September 2006 (IRL No.1), *Economic Evaluation Code for Small Hydropower Projects (SL16-95)* had been the effective code for economic evaluation of small hydropower projects since year 1995. The investment decision for the proposed project was made in 2006, so the benchmark of 10% from SL16-95 was applicable at the time of investment decision of the project.

Response from DOE:

The applied benchmark for the proposed project referred to the "Economic evaluation code for small hydropower projects" (Document No.SL16-95) issued in 1995, in which it mentions "This evaluation code is applied for small hydropower projects with installed capacity no more than 25MW (all newly-built, expansion, modification or retrofit projects).

In 2006, the Ministry of Water Resources issued a Bulletin (IRL No.1, pls. see the last table of this response) on Effective Technical Standard in Hydro & Water Industry. The "Economic evaluation code for small hydropower projects" (Document No.SL16-95) issued in 1995 is still indicated as valid.

Furthermore, TÜV SÜD can confirm, based on its local and sectoral expertise, that this benchmark is pretty common and widely applied in China for this type of project.

As a result, TÜV SÜD is quite confident that the 10% benchmark is appropriately applied and can be considered as suitable for the proposed project activity.

Request 2:

The DOE is requested to further clarify how it has validated the key input values applied in the investment analysis according to the requirements of EB38, para.54 guidance, especially when the preliminary Design Report was approved nine (9) months after the starting date of the project activity.

Response from PP:

“54. The Board clarified that in cases where project participants rely on values from Feasibility Study Reports (FSR) that are approved by national authorities for proposed project activities, DOEs are required to ensure that:

“(a)The FSR has been the basis of the decision to proceed with the investment in the project, i.e. that the period of time between the finalization of the FSR and the investment decision is sufficiently short for the DOE to confirm that it is unlikely in the context of the underlying project activity that the input values would have materially changed”.

The Preliminary Design Report (PDR) completed by Hubei Province Shiyan City Water Resource Survey and Design Institute as an independent third party entity was finished in September 2005 and the project owner's serious consideration of CDM on the 10th Director Board meeting was on 26/08/2006. So the period of time between the finalization of the PDR and the investment decision was only Eleven months, which was less than one year and considered to be sufficiently so short that the input values couldn't have materially changed .

Why the preliminary Design Report was approved nine (9) months after the starting date of the project activity:

The PDR completed in September 2005 was reviewed by the local governments and experts in year 2006 and then approved by Shangluo City Water resource Bureau on 02/01/2007(IRL No 2).

The EIA report was completed in May 2006 and it was approved by Environment Protection Bureau of Shaanxi Province on 14/07/2006.

Based on the approval letter for the PDR by Shangluo City Water resource Bureau, the approval letter for EIA report by Environment Protection Bureau of Shaanxi Province, and also with meeting other requirements of starting construction, the project owner applied to start construction for Shangluo City Development and Reform Commission, and finally Shangluo City Development and Reform Commission agreed and issued the Notification of approval for commencement of construction of the project on 10/01/2007. After the Notification of approval for commencement of construction by Shangluo City Development and Reform Commission, the 11th Director Board meeting was held to arrange the related issues for starting construction on 12/01/2007(IRL No.3). Finally, the project formally started the construction on 16/01/2007.

On 02/01/2007 Shangluo City Water resource Bureau submitted the PDR to Shaanxi Province Water Resource Office for registration records and the PDR was approved by Shaanxi Province Water Resource Bureau in September 2007.

“(b) The values used in the PDD and associated annexes are fully consistent with the FSR, and where inconsistencies occur the DOE should validate the appropriateness of the values.”

Parameters	The value in PDR	The value in PDD	Remarks
Installed capacity(MW)	10	10	No Inconsistency
Estimated grid-connected electricity (MWh)	35,655	35,655	No Inconsistency
Total static investment (million Yuan)	88.1852	88.1852	No Inconsistency
Annual O&M cost (million Yuan)	0.6891	0.6891	No Inconsistency
Tariff on grid (yuan/kWh, excluding VAT)	0.30	0.30	No Inconsistency
Value added tax	6%	6%	No Inconsistency
City Construction tax rate	1%	1%	No Inconsistency
Education tax rate	3%	3%	No Inconsistency
Income tax rate	33%	33%	No Inconsistency
Project operation lifetime (year)	25	25	No Inconsistency

“(c) On the basis of its specific local and sectoral expertise, confirmation is provided, by cross-checking or other appropriate manner, that the input values from the FSR are valid and applicable at the time of the investment decision.”

The basic financial parameters used in the investment analysis for the Project was confirmed and/or cross-checked as follows:

(1) Installed Capacity (10MW)

The installed capacity (5MW x 2 Units = 10 MW) was confirmed by the purchase agreement of water turbines/generators signed by Shanyang County Yaoping Hydropower Development Co.Ltd and Henan Ruifa Hydropower Equipments Co.Ltd.

(2) Estimated grid-connected electricity (35,655 MWh)

According to the Hydrological Analysis of the project in the PDR, the electricity was estimated based on the 39 years series hydrology data from 1965 to 2003 measured by Nankuanping hydrometric station.

(3) Total static investment (88.1852 Million Yuan)

Firstly, the PDR of the project was completed by Hubei Province Shiyan City Water Resource Survey and Design Institute which is an independent third party with the qualification of engineering design in Water Sector, and the PDR was reviewed and approved by the local government s. So the total static investment in the PDR was credible and appropriate.

Furthermore, the investment in the PDR was based on the price level in the second season of year 2005. During the actual construction years, the price level was increased greatly and the main material price was much higher than the budget price in the PDR.

For example:

- The budget price for the cements was 300yuan/t in the PDR, but according to the purchase invoice(Annex 4), the actual purchase price for the cements was 420yuan/t which was higher by 40% compared with the budget price;
- The budget price for the steel was 3793.5yuan/t in the PDR, but according to the purchase invoice(Annex 4), the actual purchase price for the steel was 5600yuan/t which was higher by 47.6% compared with the budget price;
- The budget price for the diesel oil was 5149.66yuan/t, but according to the purchase invoice (Annex 4), the actual purchase price for the diesel oil was 8100yuan/t which was higher by 57.3% compared with the budget price.

Thirdly, according to the "Report on the completed Investment of Yaoping Hydropower Project"(Annex 5)issued by Shaanxi Zhongda Building Installation Engineering Co., Ltd which was the supervision entity of the project, from Jan. 2007 to the end of Nov. 2008, the cumulatively completed investment was 66,672,400RMB and because the price of the mainly raw materials such as steel, cement and diesel was much higher than the budgetary estimate level in the PDR, the estimated total cost of this project when the construction of the project was completely finished will reach 98,500,000RMB.

Based on the increased price level and the actual purchase invoice for mainly raw materials and the "Report on the completed Investment of Yaoping Hydropower Project", the total cost of the project will exceed the estimated total static investment in the PDR.

(4) Annual O&M cost (0.6891 Million Yuan)

The rates of the parameters for Annual O&M cost calculation were basically decided as per Annex B of *Economic Evaluation Code for Small Hydropower Projects* issued by the Ministry of Water Resources (MWR) (SL 16-95).

Response from DOE:

The input data in the investment analysis is taken from the Preliminary Design Report (PDR), which was completed in September 2005.

Shangluo City Water resource Bureau held two meetings with hydro experts to evaluate Yaoping hydro project on Oct 28th, 2006 and Dec 26th, 2006 (IRL No.2), respectively. And then the PDR got a confirmation from Shangluo City Water resource Bureau on Jan.2nd 2007 (IRL No.2) in which the content of PDR was approved by Shangluo City Water resource Bureau. This confirmation could be recognized as the official approval of PDR, so the project owner had the board meeting to decide to start the construction (IRL No.3). In the meantime the confirmation report needs to be submitted to higher level government for approval. On Sept. 22nd 2007, Shaanxi Province Water Resource Office issued an approval to Yaoping project based on the content of confirmation from Shangluo City Water resource Bureau. That is why the preliminary Design Report was approved nine months by Shaanxi Province Water Resource Office after the starting date of the project activity.

According to the content of PDR, project owner had a board meeting to consider to apply for CDM revenue on Aug.26th 2006. Although the PDR had not been approved by official government yet, the project owner can make the financial decision based on the relevant chapter in PDR.

The time table of relevant events are listed as following:

Date	Milestones	Evidence/Remarks
September 2005	The Preliminary Design Report(PDR) was completed by Hubei Province Shiyan City Water Resource Survey and Design Institute	The Preliminary Design Report(PDR) According to the PDR, the IRR of the project is much lower than the benchmark. The project is not financial attractive.
Aug.26th 2006	The 10 th Board meeting was held to consider CDM by the directors	The minutes of the 10 th Board meeting (IRL No. 6) The project owner decided to launch the project only with the additional sales revenue from CDM.
Oct.28th 2006	The first meeting with hydro experts organized by Shangluo City Water resource Bureau	PDR approval from Shangluo City Water resource Bureau
Dec 26th, 2006	The second meeting with hydro experts organized by Shangluo City Water resource Bureau	PDR approval from Shangluo City Water resource Bureau
Jan.2nd 2007	The PDR confirmation from Shangluo City Water resource Bureau	The PDR got the confirmation from Shangluo City Water resource Bureau (IRL No. 2)

Jan.12th 2007	Minutes of the 11th Board meeting of Yaoping Hydropower project on arranging the related issues for starting construction	Shanyang County Yaoping Hydropower Development Co.,Ltd.(IRL No. 3)
Jan.16th 2007	Permission of starting the construction of the proposed project activity	Construction started which is considered as the starting date of project activity
Sept.22nd 2007	PDR approved by the Office of Water Resource of Shaanxi Province	The PDR approved by the Office of Water Resource of Shaanxi Province(IRL No. 9)

In accordance with EB38, §54, the DOE can confirm that the time between the completion of the PDR and commencement of the project activity is sufficiently short to confirm that it is unlikely in the context of the underlying project activity that the input values would have materially changed. The time between completion of the PDR (September 2005) and the projects start date – which is the permission for starting the construction of the proposed project activity on Jan.16th 2007, as this date is before the signing of the main equipment purchase agreement (i.e. Nov.11th 2007).

Further, according to the discussion meeting with government representatives to resolve the low IRR for the project with CDM mentioned on Aug.25th 2006. and internal board meeting on the next day, the CDM was seriously considered as was discussed in the timeline table(see the response of question 3). Therefore, TÜV SÜD can confirm that the results of PDR were the basis of the decision to proceed with the investment in the project and that the requirements of part (a) of the EB38, §54 are fulfilled.

As mentioned above, the input values in PDD were consistently derived from the PDR. Thus TÜV SÜD confirms that the applied input parameters are appropriate and valid at the time of the investment decision, hence the requirements of part (b) of the EB38, §54 are also completely fulfilled for this project.

In addition, TÜV SÜD performed a thorough evaluation and review of the values of the input parameters applied for the investment analysis for this project. As part of this evaluation, TÜV SÜD checked the actual credibility and plausibility of the input data by comparing the applied values with PDR. Further we crosschecked the values were possible with a supervision report and invoices(IRL No. 4 and IRL No. 5).

Because the project will be put into fully operation in the July or August 2009(TÜV SÜD has already interviewed project supervisor), now according to "Report on the Completed Investment of Yaoping Hydropower Project" issued by Shaanxi Zhongda Building Installation Engineering Co., Ltd (IRL No. 5), the **Investment costs---66.6724** million RMB just took up approximately 60% of total cost. We compare to the some parameters in PDR, most of them are near or more when there is 1/3 work load left. For example: In the PDR, the construction will be cost 32.3313 million RMB. However, according to the actual situation, the cost is 32.0477 million RMB now. Therefore, it is demonstrated that actual costs incurred have exceeded the estimate as of PDR.

Annual **O&M costs** is 0.0689 Mio.RMB/MW which is consistent with China hydro standard--- 0.04 Mio.RMB/MW ~0.09 Mio.RMB/MW(The evidence of O&M range in China--- IRL No. 8). Therefore, the O&M costs considered as also appropriate and realistic.

The **power supply** of the plant is derived from nearly 40 years statistical flow measurement data (in PDR). The plant is estimated to operate about 3675 hours per year. The operational hours does typically depend on the hydrological flow pattern of the river and the design of the hydropower plant. The annual power supply was calculated based on long-term flow data, which is taken from "Nankuanping Hydrological Station" flow measurements (1965-2003).

Both the long term flow data and the 3rd party design institute, the Hubei Shiyan hydropower design institute, are considered to be reliable sources for the power project. We would further like to stress that the PDR and respective IRR input values, comprising investment costs, O&M costs and power supply, was officially approved by Shangluo City Water resource Bureau and Shaanxi Province Water Resource Bureau.

In summary, TÜV SÜD checked the applied values thoroughly and based on its local and sectoral expertise, TÜV SÜD confirms that these values are realistic and plausible and appear to be valid at the time the investment decision was made. Hence, criteria (c) of EB38, §54 is also fulfilled successfully.

Request 3:

The DOE is requested to clarify how it has validated that CDM was considered prior to the project start date according to EB 41, Annex 46, paragraph 5(a) guidance., since the meeting minutes of 25 August 2006 only refer to discussions with government representatives to resolve the low IRR for the project with CDM mentioned, and no written evidence is provided on a Corporate meeting with the final decision to go ahead with CDM.

Response from PP:

"C. Existing project activities

5. Proposed project activities with a start date before 2 August 2008, for which the start date is prior to the date of publication of the PDD for global stakeholder consultation, are required to demonstrate that the CDM was seriously considered in the decision to implement the project activity. Such demonstration requires the following elements to be satisfied:

(a) The project participant must indicate awareness of the CDM prior to the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project. Evidence to support this would include, inter alia, minutes and/or notes related to the consideration of the decision by the Board of Directors, or equivalent, of the project participant, to undertake the project as a CDM project activity.

(b) The project participant must indicate, by means of reliable evidence, that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation.

Evidence to support this should include, inter alia, contracts with consultants for CDM/PDD/methodology services, Emission Reduction Purchase Agreements or other documentation related to the sale of the potential CERs (including correspondence with multilateral financial institutions or carbon funds), evidence of agreements or negotiations with a DOE for validation services, submission of a new methodology to the CDM Executive Board, publication in newspaper, interviews with DNA, earlier correspondence on the project with the DNA or the UNFCCC secretariat.”

(1)According to the above guidelines for “C. Existing project activities”, the CDM was considered prior to the project start date as follows:

Based on the PDR result and the primary contact and study of CDM from September 2005 to August 2006, on the 10th board meeting on 26/08/2006(IRL No. 6) which was a Corporate meeting participated by the directors, the benefits of the CDM were considered by the project owner. After acquiring the Notification of approval for commencement of construction by Shangluo City Development and Reform Commission, the 11th Director Board meeting was held to arrange the related issues for starting construction on 12/01/2007. Finally, the project formally started the construction on 16/01/2007.

(2)In parallel with the implementation of the project, the continuing and real actions taken to secure CDM status for the project was also going: After formal CDM consideration on 26/08/2006, the sign of CDM consultation agreement was done on 28/08/2006. After seeking for the CERs buyers since August 2006, ERPA (IRL No. 7) was finally signed with Carbon Resource Management Ltd on 15/12/2006. Based on preparation of the PDD and other documents, the application documents were submitted to China DNA in August 2007. Then the review meeting by China DNA was held on 16/10/2007 for this project. Then the GSP for this project was started from 09/11/2007, and the onsite visit was on 27/11/2007. The LOA approval letter from China DNA was acquired on 18/01/2008.

(3)The detailed timetable for CDM consideration and continuing real actions for CDM development was submitted as follows:

Date	Milestones	Evidence/Remarks
September 2005	The Preliminary Design Report(PDR) was completed by Hubei Province Shiyan City Water Resource Survey and Design Institute	The Preliminary Design Report(PDR)
May 2006	The EIA report was completed	The EIA report
14 th July 2006	EIA report was approved by Environment Protection Bureau of Shaanxi Province	The EIA approved document
25 th August 2006	Based on the primary contact and study of CDM from September 2005 to August 2006 to conquer the financial	The minutes of this meeting



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	barriers, the meeting held for serious consideration of CDM by the related Governments in Shanyang County and the related entities	
26 th August 2006	The 10 th Board meeting was held to consider CDM by the directors	The minutes of the 10 th Board meeting(IRL No. 6)
28 th August 2006	The CDM consultation agreement was signed between the project owner and the CDM consult company	See the agreement
15/12/2006	Since August 2006, seeking for the CERs buyers and finally agreed on the CERs purchase terms with Carbon Resource Management Ltd and signed the ERPA.	ERPA(IRL No. 7)
02/01/2007	The PDR was approved by Shangluo City Water Resource Bureau	The approval letter for the PDR by Shangluo City Water Resource Bureau(IRL No. 2)
10/01/2007	Shangluo City Development and Reform Commission approved the construction of the project	Notification of approval for commencement of construction of the project by Shangluo City Development and Reform Commission
12/01/2007	The 11th Board meeting of Yaoping Hydropower project was held to arrange the related issues for starting construction	Minutes of 11th Board meeting of Yaoping Hydropower project (IRL No. 3)
16 th January 2007	Permission of starting the construction of the proposed project activity	The commence letter



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August 2007	Based on preparation of the PDD and other documents, the application documents were submitted to China DNA	Application letter to China DNA
22 nd September 2007	PDR approved by the Office of Water Resource of Shaanxi Province	The PDR approved by the Office of Water Resource of Shaanxi Province
16 th October 2007	The review meeting notice by China DNA	http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File1429.pdf
09/11/2007	Starting of GSP	VR report
11 th November 2007	The Purchase Agreement for the Water Turbines and Generators signed by Shanyang County Yaoping Hydropower Development Co.Ltd. and Henan Ruifa Hydropower Equipments Co.Ltd.	The Purchase Agreement for the Water Turbines and Generators
27 th November 2007	The on-site audit	VR report
18 th January 2008	LOA from China	LOA

Response from DOE:

TUV-SUD has performed a thorough review of the timeline of CDM consideration to demonstrate the additionality of Yaoping Small Hydropower Project in Shaanxi Province.

The PDR was designed by Hubei Province Shiyan City Water Resource Survey and Design Institute, in September, 2005. As above mentioned, the PDR approval was issued by Shangluo City Water Resource Bureau and Office of Water Resource of Shaanxi Province on Jan.2nd 2007 and September 22nd 2007, respectively. According to the response of second question mentioned, the IRR in PDR is lower than the benchmark of 10%, the project owner held a discussion meeting with government representatives to resolve the low IRR for the project with CDM mentioned on Aug.25th 2006. One day after, the project owner held the board meeting to

make final decision to apply CDM(IRL No.6). When the project owner got the construction approval from Shangluo City Development and Reform Commission on Jan.10th 2007, the project was started on Jan.16th 2007, and project owner signed CDM development agreement, CERs sales agreement with consultant and the buyer respectively

Main evidence(s) to proof that CDM was a decisive factor to implement the project (EB41, Annex 46, para 5 a):

CDM resolution document, issued by Shanyang County Yaoping Hydropower Development Co.,Ltd. dated 26th, Aug. 2006.(IRL No. 6)

The information reference list has listed all of documents which was used for the response. All documents has been verified and approved by TUV-SUD.

Ref. No.	Issuance and/or submission date(dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer	Additional Information (Relevance in CDM Context)
1	09/09/2006	Public Notice on Effective Technical Standard in Hydro & Water Industry	Ministry of Water Resource of People's Republic of China	
2	02/01/2007	PDR approval	Shangluo City Water resource Bureau	
3	12/01/2007	Minutes of the 11th Board meeting of Yaoping Hydropower project on arranging the related issues for starting construction	Shanyang County Yaoping Hydropower Development Co.,Ltd.	
4	28/11/2008	The budget price for the cements, the steel and the diesel oil and the actual purchase invoices	Shaanxi Zhongda Building Installation Engineering Co., Ltd	
5	Dec.2008	Report on the Completed Investment of Yaoping Hydropower Project	Shaanxi Zhongda Building Installation Engineering Co., Ltd	
6	26/08/2006	The minutes of the 10th Board meeting to consider CDM by the directors	Shanyang County Yaoping Hydropower Development Co.,Ltd.	The key evidence of CDM consideration.
7	15/12/2006	ERPA	the project owner and Carbon Resource Management Ltd	
8	2006	The evidence to prove operational cost range of hydropower plant is 0.04 to 0.09	China investment consulting website	



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		in China		
9	22/09/2007	PDR approved by the Office of Water Resource of Shaanxi Province	The PDR approved by the Office of Water Resource of Shaanxi Province	