TÜV SÜD Industrie Service GmbH · Westendstrasse 199 · 80686 Munich · Germany

Industrie Service

Choose certainty.
Add value.

CDM Team

DAP-PL-2885.99
DAP-IS-2886.00
DAP-PL-3089.00
DAP-PL-2722
DAP-IS-3516.01
DPT-ZE-3510.02
ZLS-ZE-219/99
ZLS-ZE-246/99

Your reference/letter of	Our reference/name	Tel. extension/E-mail	Fax extension	Date/Document	Page
	IS-CMS-MUC/Bb	+49 89 5791-2170	+49 89 5791-2756	2008-02-05	1 of 5
	Werner Betzenbichler	Werner.Betzenbichler@tuev-sued.de			

Request for Review

Dear Sirs,

Please find below the response to the request for review formulated for the CDM project with the registration number 1388. In case you have any further inquiries please let us know as we kindly assist you.

Yours sincerely,

Werner Betzenbichler
Carbon Management Service

Industrie Service

Response to the CDM Executive Board

Issue 1:

The PP in the PDD states that "According to Economic Evaluation Code for Small Hydropower Projects issued by the Ministry of Water Resources (Document No. SL16-95), the benchmark IRR of small hydropower project is 10%. Accordingly, if the IRR of total investment of the Project is lower than 10%, the project is not an economically attractive course of action and fulfils the requirement of additionality". However, the PDD also confirms that "During construction, the restricted lowest water level of Erhai Lake, one of the main water resources of the Project, increased 1.5m, and it resulted that the Project cannot operate normally in dry seasons". And so the Project owner had to adjust the generation units to 3 smaller one (2*24.9MW to 3*16.6MW). Calculated with electricity tariff 0.215 RMB/kWh and new electricity output, the IRR reduced to 6.09%. Accordingly, the IRR with CER revenues reduced to 9.46%, a slightly lower than benchmark IRR 10%. It's not possible to give up a constructing project with an acceptable IRR, and so the construction continued."

Further clarification is required regarding the astringency of the application of the benchmark.

Response by PP:
According to the "Economic Evaluation Code for Small Hydropower Projects issued by the Ministry of Water Resources (Document No. SL16-95)" the benchmark IRR of small hydropower projects is 10%. This Code applies to hydropower project with an installed capacity lower or equal to 50 MW and obviously is applicable to the Yang_er Project.

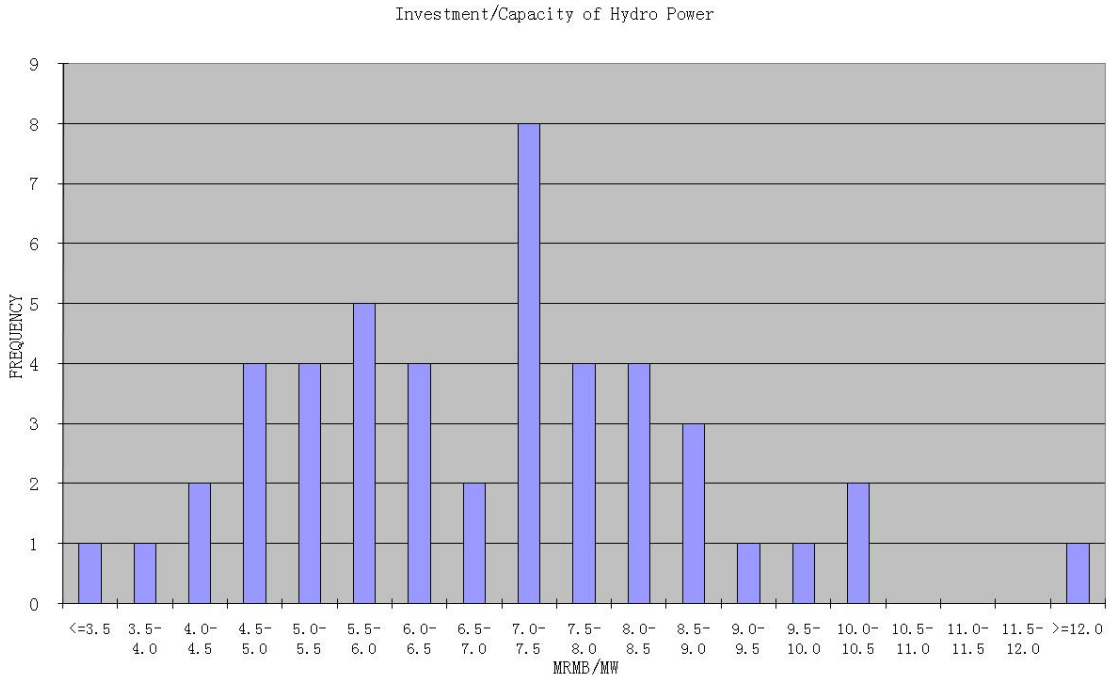
As per Yang_er Project, the CDM is the crucial incentive for the investor making investment decision, starting real action and continuing the implementation. Before starting the real action, we found the IRR of the Project with carbon revenues is 11.7%. The CDM is crucial incentive for us to make the investment decision.
When having put the project into real action for several months, the IRR became lower due to external circumstances change which is mentioned in the PDD. However, CDM revenues is still crucial incentive for us to continue the project, because CDM can help alleviate the barrier significantly (from 6.09% to 9.46%). Meanwhile, we have an optimistic estimation for the future carbon market (future CERs price would be much higher), so the construction continued.

Response by TÜV SÜD:
The explanation of the project participant is reasonable and can be evidenced by the interim IRR calculation. Even if the benchmark will not be met with CER included the project has to be considered additional at the time of the decision making. According to the additionality tool version 3 it is not required to prove that the project will overcome the benchmark with CDM revenues. If the IRR without CER is below the benchmark the project is additional (see additionality tool vers. 3, step 2c paragraph 8(b)).

Issue 2:
Further details are required regarding how the DOE has undertaken an independent assessment of the input values used in the investment analysis.

Industrie Service

Response by TÜV SÜD:
The IRR calculation has been reviewed and verified by cross checking with the Feasibility Study Report (ref. 6 of annex 2 of the validation report). The Feasibility Study Report has been approved by the regional Chinese authorities, the Yunnan Development and Reform Commission (ref. 7 of annex 2 of the validation report). Regarding the changes the "Installed Capacity Adjustment Report" (ref.31 of annex 2) and the "Approval of Installed Capacity Adjustment Report" (ref.8 of annex 2) have been used for verification. For sake of conservativeness the higher investment costs due to the change of the turbines have not been integrated into the IRR calculation.
In addition to the FSR, the real electricity price has been verified by checking with *Notice on Electricity Price, Development and Reform Commission of Yunnan Province, dated on Jan. 6, 2006, file number: No.28, Yun Fa Gai Jia Ge [2006]*(ref. 18 of annex 2 of the validation report).
For the independent validation TÜV SÜD has made an assessment of the main parameters influencing the IRR of 55 Hydro Power Projects in China applying for CDM. We compared the specific investments of the project activity (7.55 Million RMB / MW) with these assessment results and can conclude an average investment per capacity (7.063 Million RMB / MW). Hence, the investment assumptions can be considered reasonable in the context of CDM. The same has been verified for the electricity generation and the tariff and they have been found to be above the average and in the range of the average respectively.



Issue 3:
Further details are required regarding how the DOE has undertaken an independent assessment of the range of fluctuations in the sensitivity analysis.

Response by TÜV SÜD:
It is reasonable and common sense that the investment costs and operational costs will not fluctuate in a larger interval. Rather than decreasing the costs have increased during construction. The costs have been compared with statistics from 55 other CDM projects under validation

Industrie Service

and already registered. The data of this project is not unreasonably different. The electricity tariff is fixed by the authorities and the probability of fluctuating seems to be low. The source of the validation is the approval of the capacity adjustment by the regional authorities (ref. 8 of the annex 2). In the sensitivity analysis part of the Feasibility Study Report, the fluctuation range of 10% was adopted as well.

Issue 4:
Further clarifications are required regarding the essential distinctions between this and the 24 similar project activities in Yunnan Province.

Response by PP:
In China's electric power sector, electricity had been a crucial component of the centrally planned economy[1]. Before 2002, the electric power sector in China is a monopoly market dominated by state-own companies[2]. In order to break the monopoly, the central government launched power market reform in 2002 aiming at introducing competition, attracting multi-level investors, constructing fair power market and weakening government's involvement[3]. However, despite the introduction of power market reform, the government involvement remains strong[4]. Though the transmission and distribution sector was divided into two regional companies, it was still controlled by state[5]. The result of this reform turned out to be regional reorganization, and the form of monopoly changed from national level to regional level, which resulted in no real changes and competition among state-own enterprises[6].
However, private investors must face unfair competition from state-own companies, which have overwhelming capital and government background. Especially in China, the power generation company must sell the power to grid company directly and selling to other users is not allowed. Due to the lack of internal link with state-own grid company, private-own small projects can not acquire equal treatment as state-own company, and it lead to great uncertainty in power sales[7]. As described by Chen Huizhou, officer from Ministry of Water Resources, P.R. China, *some projects can generate but are not allowed to do so, some are allowed to generate but is not*

[1] Emily T. Yeh, Joanna I. Lewis, State power and the logic of reform in China's electricity sector, Pacific Affairs, Vol.77 ,2004

[2] http://www.cecs.gov.cn/index.php?option=com_content&task=view&id=1932&Itemid=94&PHPSESSID=41bef7bfad905fab760ba8ce9d3761c8

[3] http://www.cecs.gov.cn/index.php?option=com_content&task=view&id=1932&Itemid=94&PHPSESSID=41bef7bfad905fab760ba8ce9d3761c8

[4] Emily T. Yeh, Joanna I. Lewis, State power and the logic of reform in China's electricity sector, Pacific Affairs, Vol.77 ,2004

[5] China Southern Power Grid Corporation takes in charge of five provinces: Guangdong, Guangxi, Yunnan, Guizhou and Hainan. State Grid Corporation takes in charge of all the rest provinces. "Scheme for Electric Power System Reform", China's State Council

[6] Xue yabo, The reform of China's monopoly Industries: take electric sector for example. Meizhong Jingji Pinglun, No.2 Vol.5, 2005

[7] Xue yabo, The reform of China's monopoly Industries: take electric sector for example. Meizhong Jingji Pinglun, No.2 Vol.5, 2005

Industrie Service

accepted by grid[8]. So, compared with state-own projects, private projects were not developed in a comparable environment with respect to investment climate in China's power sector.
Furthermore, compared with private investors, state-own companies have great advantages in access to financing. They have very large capital reserves and operational capacity and they can easily access to financing through various channels, such as commercial loans, stock market[9] and direct funds from government. On the contrary, private investors in China usually face the awkward situation of lack of financing channels[10]. For private hydro developer like Dali Yang_er company, commercial loans is the only financing channel, but usually very difficult due to small capital reserves and power sale uncertainty.
To sum up, with respect to investment climate and access to financing, state-own projects cannot be considered similar.

The first of remaining three exceptions, Menggahe Hydro Project is also in the process of CDM application[11]

The second exception, Ximaxingyun Hydro Project is a captive plant and supplies its produced electricity to the project owner's aluminium plant directly[12]. Not like our project supply electricity directly to Grid. What's more, the electricity tariff for aluminium plant is 0.394RMB/kWh[13] in Yunnan province, which means Ximaxingyun Hydro Project gets an income equal to 0.394RMB/kWh, obviously higher than 0.215 RMB/kWh. So, the Yang_er project has essential distinctions with Ximaxingyun Hydro Project.
The Third exception, Mengdianhe Hydro Project (Second Phase), the annual operation hours and unit investment are 6000h and 3800RMB/kW[14]. In contrast, the operation hours and unit investment of the Yang_er project are 4058h and 7534RMB/kW[15] respectively. In conclusion, the Yang_er project can be considered essentially distinct to Mengdianhe Hydro Project (Second Phase).

Response by TÜV SÜD:
The common practise analysis has been verified independently by official Chinese statistics such as Almanac of China's Water Power, (Volume 10) and China Water Resources Year Book 2006 and the legal status of the companies can be confirmed.
State owned power plants have significantly better opportunities regarding financing, risk taking capacities and grid access. Private owned companies have to negotiate their grid access and can go bankrupt if the revenues are below a certain range. Hence, the state-owned companies can use their advantages to install renewable power plants even with lower revenue.
The respective references (see footnotes) have been checked and verified by the local auditor of TÜV SÜD.

---

[8] Chen Huizhou, Director of the Bureau of Rural Hydropower and Electrification, Ministry of Water Resources, P.R. China. Several Issues Regarding Development Rural Hydropower in China.

[9] State-own company in table such as China Guodian Corporation, Dianneng Group, Wenshan Power Company, Baoshan Power Company and etc, are all listed companies. http://www.cnlist.com/

[10] Private economy, China's economic development and market-oriented reform. Tian Guoqiang, Economics Department of Texas A&M University. Cuiwei, Development Research Center of China's State Council.

[11] http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File1346.pdf

[12] http://0871.und.cn/small/cpybase.do?companyid=D658A7E06D9B41318F44FBF1B0E6C0E7

[13] http://www.yn.gov.cn/yunnan,china/79381449580478464/20070927/1157455.html

[14] http://www.dhtjb.com/Html/20041230111017-1.html

[15] *Feasibility Study report of Yang_er Project*