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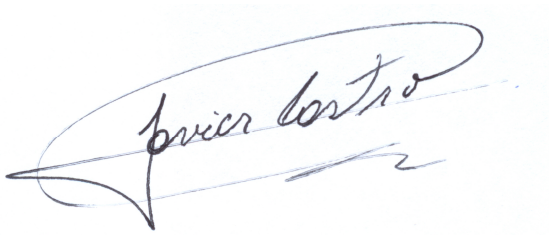
Request for Review

Dear Sir or Madam,

Please find below the response to the review formulated for the CDM project with the title “China Shaibeitan Hydropower Project” with the registration number 2011. In case you have any further inquiries please let us know as we kindly assist you.

Yours sincerely,



Javier Castro
Carbon Management Service

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Response to the CDM Executive Board

Request 1:

The DOE is requested to clarify how it has validated the investment analysis including the suitability of the input values as per the requirements of EB 38 guidance, paragraph 54, and also the appropriateness of the benchmark applied.

Response from PP:

(a) Argumentations regarding input values used in the investment analysis as per the requirements of EB 38 guidance, paragraph 54:

All the input parameters except value added tax (VAT) and electricity tariff used in the financial analysis are derived from the Preliminary Design Report (PDR) of the project. The PDR was developed by Hunan Hydro & Power Design Institute in September 2003. Hunan Hydro & Power Design Institute , which is an independent party authorized by Ministry of Construction of the People's Republic of China in 2002 (Grade A, No.180105). The PDR was approved by Water Resources Bureau of Hunan Province on 20 February 2004. The project owner decided to apply for CDM for the project in board meeting on 2 November 2004. In between, the design institute re-assessed the PDR in September 2004 and confirmed the data stated in PDR are still valid except VAT and electricity tariff. For VAT and electricity tariff, they are derived from official source before investment decision thus they are authoritative and credible (see below table for details). The requirement in the guidance provided in EB 38 paragraph 54 is fully met.

The project is still under construction now[1] thus the final assessment on the actual investment analysis cannot be conducted. However, the input data in the investment analysis can be verified and cross checked through the following table:

Parameters	Values	Data source	Cross check
Total investment (million RMB)	283.82	PDR	The total investment of the project is derived from PDR of Shaibeitan Hydropower Project. According to investment statement from China Construction Bank Yongzhou Branch on 22 July 2008, the actual fixed assets investment (interests during construction period is not included) spent on the project is 287 million RMB up to July 2008 in accordance with actual payments made already. The final investment will keep increasing since the project is still under construction now. Thus the estimated total investment for the project in PDR is credible. The unexpected increased investment is due to inflation and delayed construction period.
Net electric-	109,000	PDR	According to PDR, the data is calculated through 36

[1] According to Construction Progress of Shaibeitan Project provided by Yongzhou Hydropower & Water Resources Engineering Construction Supervision Consulting Company, Engineering Supervision Department for Shaibeitan Hydropower Plant, the first generator of the project will be operational in the end of March 2009 at earliest.

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ity generation (MWh)			years of water flow data (1967-2002) measured by the third party Jindong Hydrology Station. The project is a newly built power plant with reservoir thus the power generation is stable and will not fluctuate too much through the whole year.
Electricity tariff (RMB/kWh)	0.315	Xiangjiachong [2004] No.114	The data is derived from <Notice of the Electricity Tariff of Power Grid of Hunan Province> (Xiangjiachong [2004] No.114), which is issued by Hunan Price Bureau on 4 August 4 2004 (Xiangjiachong (2004) No.114) before the investment decision of the project. The project is still under construction, thus the Power Purchase Agreement and electricity sales receipts are not available. However, according to Notice of the Hunan Yongzhou Price Bureau in November 2008, the electricity tariff for the project will be 0.316 RMB/kWh. The increasing rate of electricity tariff from investment decision (2004) to until now (2008) is only 0.32%. The tariff will not fluctuate too much and is credible and reasonable throughout the investment period. The analysis is as below: 1. It is common practice to adopt the fixed electricity tariff and fixed costs when conducting the investment analysis in Feasibility Study Report (FSR) or PDR in China. According to *Economic Assessment Method and Parameters for Construction Projects (Version 3)*, the fixed price should be used in the investment analysis. According to Interim Rules on *Economic Assessment of Electrical Engineering Retrofit Project* published by China Electric Power Press in September 2002, the price used for investment analysis should be based on the current price system. The *Economic Assessment of Electrical Engineering Retrofit Project* is also the benchmark reference for the project. Thus it is reasonable to adopt fixed electricity tariff and costs to conduct investment analysis since *Economic Assessment of Electrical Engineering Retrofit Project* is chosen as the benchmark for the project. 3. In China, the electricity tariff is strictly controlled by the central government. The electricity tariff will not be significantly changed without permission by the central government. In order to ensure the stability of the price for the whole country, the central government has very strict control for the basic price such as the tariff and commodity

			price. It is impossible for power generation enterprises to forecast the electricity tariff variation in the future. The adjustment of electricity tariff needs to be realized by negotiation of several government departments or even needs to be approved by the CPC Central Committee, which could not be forecasted or controlled by one specific power generation enterprise. So electricity tariff used for financial analysis of projects could not be forecasted. Thus only fixed electricity tariff derived from relevant electricity guiding price could be adopted. According to the *Notification of Electric Power Tariff Reform by the Office of National Council* (Guobanfa (2003) No.62)[2] issued on 9 July 2003, the related policies for the electricity tariff management in China are as follows: *Item 33: The electricity tariff is controlled and managed by the price responsible department of government. For crucial price decision, it is required to consult power supervision department, power electric association and related marketing entities for opinions. The power electric supervision and management department recommends the electricity tariff adjustment methods to price responsible department of government in accordance with situation of market.* *Item 34: The principles of electricity tariff management, the electricity transmission tariff and capacity tariff of power electric market should be decided and issued by price responsible department of State Council.* *Item 35: The price responsible department of government and power electric supervision department should supervise and check the implementation of electricity tariff for participants in power electric market.* 4. In Hunan Province, the electricity generated by utilization of renewable resource got a higher tariff in the past several years, but it was decreased because of the competition principle for electricity tariff delivered to the grid. It can be indicated that: according to the document form Hunan Price Bureau, the electricity tariff has decreased from 0.348 RMB •/kWh[3] in 2000 to 0.327 RMB •/kWh[4] in 2002 and then 0.315

[2] http://www.chinabaike.com/law/zy/xz/bgt/1336813_3.html
[3] Hunan Price Bureau , Notice of the Electricity Price of Power Grid of Hunan Province, March 6, 2000 (Xiangjiachong (2000) No.49)
[4] Hunan Price Bureau , Notice of the Electricity Price of Power Plants of Hunan Province, December 31, 2001 (Xiangjiachong (2001) No.327)

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			RMB •/kWh in 2004[5] which indicated a decreasing trend. And from 2006, the electricity tariff of similar power plants in locality is stable at 0.316 RMB •/kWh[6]. The increasing rate of electricity tariff from 2004 to 2008 is 0.32%, which can be ignored comparing the electricity decreasing trend from 2000 until now and compared to the **minimum** increase of salary costs of 12.4% between 2005 and 2007 (see below). **However, it can be found that the increasing rate of electricity tariff from 2004 to 2008 is 0.32%, then we'd like to assess the impact on the IRR calculation of applying the realistic and reasonable tariff and O&M increments in CONSERVATIVE approach below:** 1. We take 0.32% as annual increased rate for electricity tariff although 0.32% is actually increased rate for electricity tariff from 2004 until now. 2. The increase of O&M costs is ignored due to it leads to a higher IRR. 3. The increased investment for the project is ignored due to it leads to a higher IRR. **It can be found that the IRR result (Please see attached separate IRR excel spreadsheets) of applying the realistic and reasonable tariff is 6.81%. The project IRR is still far below the benchmark (8%).**
O&M cost (million RMB)	4.377	PDR	The O & M costs include salary, repair fee, water resource fee, reservoir region maintenance fee, material fee and other costs. All these parameters are derived from PDR of the project. The cross check of these parameters are as follows: The repair fee is 1% according to PDR; the data can also be cross checked by *Provisional Regulation of Financial Assessment for Hydroelectric Construction Project* published which was published by National Water Resource Ministry. The materials fee is 5 RMB yuan/KW, which is from PDR. The data can also be cross checked by *Provisional Regulation of Financial Assessment for Hydroelectric Construction Project* published which was

[5] Hunan Price Bureau , Notice of the Electricity Price of Power Grid of Hunan Province, August 4, 2004 (Xiangjiachong (2004) No.114)
[6] Hunan Price Bureau , Notice of the Electricity Price of Power Grid of Hunan Province, July 28, 2006 (Xiangjiachong (2006) No.111)

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			published by National Water Resource Ministry. The reservoir region maintenance fee is 0.001RMB/kWh, which is from PDR. The rate can be cross checked by *Reservoir Region Maintenance Fee for Hydropower Plants* (Diancaizi (1981) No.56)[7] issued by Ministry of Finance and Ministry of Power Electric Industry. The other costs fee is 24 RMB/kW, which is from PDR. The data can also be cross checked by *Provisional Regulation of Financial Assessment for Hydroelectric Construction Project* issued by National Water Resource Ministry. Salary: The average salary for the project is 14000 RMB, which is from PDR. According to the notices published by the Statistical Information of Hunan, the average laborage in Yongzhou City is 19705 RMB in 2007 with the increase rate of 12.4%[8], 14%[9] and 20.6%[10], respectively from 2005 to 2007, and which shows an increasing trend. The above analysis indicates that the salary standard for the workers is reasonable and credible. Therefore, the O & M costs show a stable increasing tendency through historical data. In other words, a general price index increase (called inflation) affects all relevant cash flows of a baseline and project scenario and is included in the so-called discount rate of a nominal IRR analysis, by definition. The project's cash outflows are faced by a bigger inflation than the cash inflows and thus, if at all, the electricity tariff would have to be adjusted downwards over the assessment period, in a nominal IRR analysis. Thus, even if the grid tariff is not fixed, it is highly unlikely that the additionality of the project is affected.
VAT	17%	Document from Taxation Bureau of	According to *Provisional Regulation of Financial Assessment for Hydroelectric Construction Project* published by National Water Resource Ministry, the VAT

[7] http://www.hbym.gov.cn/Article/policy/200611/3572.html
[8] Statistical Information of Hunan, the Statistical Information of the laborage of each city in Hunan Province in 2005, March 27, 2006
http://www.hntj.gov.cn/fxbg/2006fxbg/2006tjxx/200603270064.htm
[9] Statistical Information of Hunan, the Statistical Information of the laborage of each city in Hunan Province in 2006, March 21, 2007
http://www.hntj.gov.cn/fxbg/2007fxbg/2007tjxx/200703210067.htm
[10] Statistical Information of Hunan, the Statistical Information of the laborage of each city in Hunan Province in 2007, March 27, 2008
http://www.hntj.gov.cn/fxbg/2008fxbg/2008tjxx/200803260040.htm

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		Qiyang County	of the project is fixed by 17%. The data is also consistent with national taxation regulation. The document provided by local taxation bureau before investment decision can be used as cross-check. So the data is credible and reasonable during the investment period.
City maintenance & construction tax	5%	PDR	According to *Provisional Regulation of Financial Assessment for Hydroelectric Construction Project* published by National Water Resource Ministry, the city maintenance & construction tax is 5%. The data is also consistent with national taxation regulation.
Education surtax	3%	PDR	According to *Provisional Regulation of Financial Assessment for Hydroelectric Construction Project* published by National Water Resource Ministry, the education surtax is 3%. The data is also consistent with national taxation regulation.
Income tax	33%	PDR	The value is derived from Corporate Income tax Temporary Terms of People's Republic of China published on 23/12/1993 which is valid until end of year 2007[11].

(b) Argumentations regarding the appropriateness of the benchmark applied.

The benchmark of 8% used for the project is quoted from the Preliminary Design Report. This benchmark is selected in line with the *Interim Rules on Economic Assessment of Electrical Engineering Retrofit Project*, which is applicable to newly built power plants as well as retrofit power plants.
Another commonly used guidance for benchmark selection for small hydro projects is *Economic Evaluation Code for Small Hydropower Projects* (SL 16-95). It states that the benchmark is 10% for small scale hydropower projects with installed capacity below 25 MW and for small scale hydropower projects with installed capacity below 50 MW in the rural region. This specific project has the installed capacity above 25 MW and it is not located in the rural region. Thus this guidance is not applicable to the Shaibeitan project.
In the course of validation DOE raised a Corrective Action Request (CAR) No.9 for the benchmark applied and after clarifications provided concluded that this benchmark is appropriate and widely accepted in the power sector.

Response from DOE:

The input values used in the calculation of the IRR are based on documentation that was available to the project entity at the time of the investment decision.
The majority of the input values used for the IRR calculation are derived from the Preliminary Study Report (investment, annual power supply, O&M costs) only the electricity tariff and VAT have been derived from other documents:

- The electricity tariff (Xiangjiazhong[2004] No.114) policy was issued by Hunan Price Bureau on August 4, 2004 (IRL 43)

[11] http://www.lawtime.cn/zhishi/sszsglf/xiangguanfagui/20070426/63781.html

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- Certificate of VAT of China Shaibeitan Hydropower Project, Baishui Branch of Qiyang National Taxation Bureau, dated June 18, 2004 (IRL 44)

The PDR has been prepared by a certified company with an A-rated technical qualification (IRL 10).
It was issued in September 2003 (IRL 10) and was approved by the Water Resources Department of Hunan Province on 20th Feb 2004.
The proposed project fell under the benchmark of 8 % and was not financial attractive. For that reason the project owner decided to develop the project under CDM in November 2004 (Board Meeting Minutes, IRL no 23).
The Design Institute re-assessed the PDR in September 2004 and confirmed that the data stated in the PDR are still valid except VAT and electricity tariff. For that reason the documents named above have been taken into account by conducting the investment analysis.

Since the time between the starting date of the project activity and the re-assessment report (which includes nearly the same estimations as mentioned in the PDR), TÜV SÜD can confirm that the result of the PDR were the basis to proceed with the investment in the project. The requirements of part (a) of the EB 38 §54 are fulfilled successfully.

As mentioned above, the majority of the input values were derived from the PDR (i.e. O&M costs; IRL 10) that was issued on the basis of comments by government appointed experts on how to apply more feasible and realistic values. The only deviating key input parameters are the tariff that was derived from a notice of Hunan Price Bureau on August 4, 2004 (IRL 43) and the VAT that was derived from the Baishui Branch of Qiyang National Taxation Bureau (IRL 44).
TÜV SÜD confirm that the applied tariff and taxation are appropriate and valid and was also well known at the time of the investment decision, hence the requirements of part (b) of the EB38, §54 are also completely fulfilled for this project.

Based on documents reviewed, TÜV SÜD confirms that the input values are in a reasonable range respectively correct.

1. Notice of the Electricity Tariff of Power Grid of Hunan Province> (Xiangjiachong [2004] No.114), is the evidence of the electricity tariff.
2. The investment statement from China Construction Bank Yongzhou Branch, dated on 22 July 2008,has been provided to TÜV SÜD. The total investment from the FSR deemed to be reasonable in comparison to the data of the report. The report reflects the total investment assumed in the PDR.
3. The taxes have been checked with legal requirements of the host country. Based on our local and sectoral experience TÜV SÜD confirms that they are reasonable.
4. As the project has not been commissioning until now, no receipts of the electricity generation have been issued yet. The electricity generation was calculated taking into account 36 years of water flow data measured by a third party, Jindong Hydrology Station. Based on our local and sectoral experiences, TÜV SÜD can confirm that the assumptions are reasonable.
5. As the project is has not been commissioned until now, no receipts of the costs are available. For that reason the O&M costs have been cross-checked with the legal requirements in the host country, “The interim regulations of hydropower construction project financial evaluation”. Based on our local and sectoral experience TÜV SÜD confirms that they are reasonable.

The input values used for this investment analysis were valid and applicable at the time of the investment decision. In addition, as per further explanation in the guidance, no information from a later point should be the basis for the investment decision. However, the application of non-fixed, fluctuating input values would not be in line with this guidance, because at that time, any information on the variation of these input values over the following 33years was simply not available. TÜV SÜD also considers it as highly impossible to reasonably forecast the values of these figures for the next 33 years, based on the information given at the time of the investment decision.
As also stated in the Validation Report, TÜV SÜD checked the credibility and plausibility of the input data by comparing the applied values with TÜV's internal statistical results of the evaluation of 250 hydropower projects in China that are either already registered or under validation. The investment costs were calculated at approximately 8.1 Mio RMB/MW, about 1.3 Mio RMB/MW higher than the average cost of 6.8 Mio RMB/MW, but still within the standard deviation. Given the relatively elevated height of the dam (i.e. 90 m), this investment can be considered as realistic.
At the end of July 2008, almost 287 Mio RMB were spent on investment costs already as indicated by a statement of the bank (IRL 69), hence the estimated value of 284 Mio RMB appears to be credible, realistic and also plausible.
The O&M costs equal about 1.2% of the total investment costs, and are thus lower than the average ratio of 2.5%, hence can be considered as conservative in the CDM/additionality context. The plant is estimated to operate 3345 hours per year, resulting in a load factor of 38% compared to the average of 44%, but still within the standard deviation.
The price of the tariff was derived from the officially approved tariff document issued by the Hunan Province Price Bureau in August 2004 (IRL 43). The applied tariff of 0.269 RMB/kWh (net tariff) is well within the typical average tariff of 0.24 RMB/kWh (net tariff).
In summary, TÜV SÜD checked the applied values thoroughly and based on local and sectoral expertise, TÜV SÜD confirms that these values are realistic and credible and appear to be valid at the time the investment decision was made.

The benchmark applied for this project is derived from a Chinese national industry standard document (*Interim Rules on Economic Assessment of Electrical Engineering Retrofit Project*). This document clearly indicates that the "current price system", i.e. a constant value should be applied for the financial evaluation of a project. This further demonstrates that the application of fluctuating input values for the IRR calculation would not be in line with the applied guidelines and national standards.
Based on local and sectoral expertise, TÜV SÜD can confirm that this document is widely applied in China, and that all feasibility studies and preliminary design reports in this sector are based on fixed input values.
The application of fixed O&M costs can be considered as a conservative approach, since overall statistics and trends observed in the past indicate that any change in these costs would be associated with an increase rather than a decrease (e.g salary statistics in Hunan province from 2005 – 2007).

Nevertheless, the project participant conducted an investment analysis, taking into account the increased tariff rate of Hunan province from 2004~2008. This approach is actually very conservative as the tariff decrease in the years before (2000~2004; Notice of the Electricity Price of Power Grid of Hunan Province).
The input values of the additional investment analysis are the same as above, only the tariff increases by 0.32% each year.

Taking these changes into account, the IRR increases to 6.81%, which is still below the benchmark of 8%.

The benchmark of 8% is chosen. This is in line with the *Interim Rules on Economic Assessment of Electrical Engineering Retrofit Project*, which is applicable to newly built power plants as well as retrofit power plants. This document is widely used in China and was also used in the PDR.
The DOE confirms that this benchmark is appropriate, as the project has a capacity over 25 MW and is not located in a rural area.

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Request 2:

The DOE should explain how it has validated the common practice analysis, in particular the essential distinction between the project activity and the eight similar projects as the latter were developed with better natural conditions and have lower investment costs per kWh.

Response from PP:

Firstly, we'd like to point out that there are only 7 other than 8 similar projects listed in common practice.

Additionality tool step 4 common practice analysis is described in the PDD.

The other activities similar to the proposed project activity are hydropower projects in the same region (Hunan Province), rely on a broadly similar technology (hydropower plants), are of a similar scale(15MW~50MW), and take place in a comparable environment with respect to regulatory framework, investment climate, access to technology, access to financing.

The common practice analysis is limited to the provincial level as the investment environment for each province differs (e.g. with regards to taxes, loan policy and electricity tariffs). The selected geographical area for the project, i.e. Hunan Province, is relatively large. Hunan Province is considerably larger than several countries. The policies and regulations in Chinese provinces are different with each other.

According to Classification & Design Safety Standard of Hydropower Projects (DL5180-2003), hydropower plants with capacity below 50 MW are classified as small size projects. According to EB guidelines, the hydropower plants below 15 MW do not have to conduct common practice. Thus the similar scale is defined between 15~50 MW.

The significant reform to Chinese electric power sector was taken place in 2002. The reform involved establishing State Grid Corporation of China and China Southern Power Grid Corporation. The former State Power Corporation was restructured and separated into 5 national power generation companies. Before the power industry restructure in year 2002, the hydropower plants are mainly developed by state-owned companies, provincial governments ensured that project entity of power plants can obtain sufficient return by providing guarantee electricity tariff. The national policy changed after 2002, the electricity tariff will be determined on the basis of average costs of power generators using the same advanced technology and built within the same period under the provincial power grid. Thus projects operated after 2002 are considered as similar projects to the proposed project since they were operated under a same policy scheme.

There is no hydropower plants with installed capacity between 15 MW~50 MW operated after 2002 is listed in publicly available Yearbook of China Water Resources 2006 and Yearbook of China Water Resources 2007. In order for the completeness of common practice, the Investiga-

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tion Report on Hydropower Plants with Installed capacity above 15 MW Operational since 2002 in Hunan Province, which is compiled by Grade A provincial design institute, Hunan Hydro & Power Design Institute, is used in common practice for the proposed project. There are total 7 similar projects operated after 2002 are listed in the table 7 of PDD.

In order to demonstrate and argue the difference between the proposed project and other 7 similar projects, we would like to list the 7 similar projects again:

No.	Project title	Installed capacity (MW)	Operation time (year)	Investment per kWh (RMB yuan/kWh)	Essential distinction with Shaibeitan	IRR[12]	Type of the project owner
1	Ruoshui	15.0	2006	1.85	No reservoir construction required	Above 10%	Private company
2	Mulongtan	15.0	2003	1.75	Reservoir construction invested by government	Above 10%	State owned enterprise
3	Yongxing II	20.0	2005	1.85	No reservoir construction required	Above 10%	State owned enterprise
4	Chengjiangkou	25.0	2006	1.96	No reservoir construction required	Above 10%	Private company
5	Yangmingshan II	25.0	2004	1.21	No reservoir construction required	Above 10%	State owned enterprise
6	Ouyanghai Expanded Project	30.0	2006	1.62[13]	No reservoir construction required	Above 10%	State owned enterprise
7	Leizhong	40.5	2004	1.80	No reservoir construction required	Above 10%	State owned enterprise

All the data and information described below are derived from *Investigation Report on Hydropower Plants with Installed Capacity above 15 MW Operational since 2002 in Hunan Province* unless otherwise stated expressly.

In general, investors will develop the hydropower plants with good technical and economic indicators, the hydropower plants in above table were developed earlier with excellent natural conditions such as high water head and low construction costs, so these plants had excellent technical and economic indicators, the investment per unit power generation (equal to total investment divided by power generation) of these projects is 1.21~1.96 RMB yuan/kWh which is 19%~50% less than that of the proposed project (2.42 RMB yuan/kWh). The IRR for all these projects are above 10%. Thus these projects listed in Table above were financially attractive and had no investment risks. But the proposed project has poorer financial indicators and is not financially attractive; it would be very difficult for the developer of the proposed project to obtain a bank's loan without CDM support.

[12] The exact IRRs are not disclosed as it is confidential information. The evidence – Investigation Report on Hydropower Plants with Installed Capacity of over 15MW in Operation since 2002 in Hunan Province prepared by Grade A Hunan Hydro & Power Design Institute- was verified by DOE.
[13] http://www.shp.com.cn/news/info/2007/8/6/1410011621.html.

The detailed description of the distinctions of the identified similar projects:

1. Ruoshui hydropower plant: There is a Baiyun reservoir with multi-year pondage capacity in the upriver of the project. Baiyun reservoir is Chinese biggest earth-rock dam . Ruoshui project leads to few submergence of lands due to Baiyun reservoir thus the investment for Ruoshui project is much less than Shaibeitan project. Furthermore, the annual operation period of the project is much higher than Shaibeitan project.

2. Mulongtan hydropower plant: The reservoir of the project is invested by local government, and part of investment is included in the city flooding engineering. The investment of the project is much lower than Shaibeitan project while the annual operation period of the project is much higher than Shaibeitan project. Furthermore, Mulongtan project is owned by state-owned enterprise while Shaibeitan project is owned by private company. The financing difficulty for private company is much higher than state-owned enterprise since state-owned enterprise has more assets can be used as mortgage in bank.

3. Yongxing II hydropower plant: There is a Dongjiang reservoir with multi-year pondage capacity in the upriver of the project. Dongjiang reservoir is with the largest storage capacity, the best regulation performance and the highest concrete dam at present in Hunan Province . Yongxing II project leads to few submergence of lands due to Dongjiang reservoir thus the investment for Yongxing II project is much less than Shaibeitan project. Furthermore, the annual operation period of the project is much higher than Shaibeitan project. Yongxing II project is owned by state-owned enterprise while Shaibeitan project is owned by private company. The financing difficulty for private company is much higher than state-owned enterprise since state-owned enterprise has more assets can be used as mortgage in bank.

4. Chengjiangkou hydropower plant: There is a Dongjiang reservoir with multi-year pondage capacity in the upriver of the project. Dongjiang reservoir is with the largest storage capacity, the best regulation performance and the highest concrete dam at present in Hunan Province. Chengjiangkou project leads to few submergence of lands due to Dongjiang reservoir thus the investment for Chengjiangkou project is much less than Shaibeitan project. Furthermore, the annual operation period of the project is much higher than Shaibeitan project.

5. Yangmingshan II hydropower plant: The annual operation period (3300 hours) for the project is a little less than Shaibeitan project (3345 hours). However, due to few submergence of lands of Yangmingshan II project, the investment for the project is nearly half of Shaibeitan project since Yangmingshan II was constructed much earlier than Shaibeitan. Furthermore, Yangmingshan II project is owned by state-owned enterprise while Shaibeitan project is owned by private company. The financing difficulty for private company is much higher than state-owned enterprise since state-owned enterprise has more assets can be used as mortgage in bank.

6. Ouyanghai expanded project: The project is an installed capacity expansion project. There is no submergence of lands and people involved for the project thus the investment for the project is much less than Shaibeitan project. Furthermore, Ouyanghai expanded project is owned by

state-owned enterprise while Shaibeitan project is owned by private company. The financing difficulty for private company is much higher than state-owned enterprise since state-owned enterprise has more assets can be used as mortgage in bank.

7. Leizhong hydropower plant: There is a Dongjiang reservoir with multi-year pondage capacity in the upriver of the project. Dongjiang reservoir is with the largest storage capacity, the best regulation performance and the highest concrete dam at present in Hunan Province. Leizhong project leads to few submergence of lands due to Dongjiang reservoir thus the investment for Leizhong project is much less than Shaibeitan project. Furthermore, the annual operation period of the project is much higher than Shaibeitan project. Furthermore, Leizhong project is owned by state-owned enterprise while Shaibeitan project is owned by private company. The financing difficulty for private company is much higher than state-owned enterprise since state-owned enterprise has more assets can be used as mortgage in bank.

In conclusion, the submergences of above 7 similar projects are much less than Shaibeitan project thus the investment for these 7 similar projects are much less than Shaibeitan project. Most of above projects are using the big reservoir in upriver or the existing reservoir. These 7 similar projects were constructed earlier than Shaibeitan project. There is a reservoir with annual pondage capacity involved in the construction of Shaibeitan project thus the reservoir causes the high investment due to submergence of lands and resettlers.

Response from DOE:

There are three different criteria, which can be used as a filter for common practice analysis.

First to name is the **Geographical Boundary.**
The investment climate and the environment in China differ from province to province. The general requirements of the Chinese government are the same, but local differences (e.g. electricity tariffs; taxes) influence local investment decisions.
The regulations of different provinces have been checked and compared by the DOE. The Hunan province can be considered as a place in a comparable environment. The geographical boundary can be considered to be applicable.

The second criteria is the **Capacity boundary**.
The " China Shaibeitan Hydropower Project " will have a Capacity of 35 MW. According to the "Classification
& Design Safety Standard of Hydropower Projects"(DL5180-2003) hydropowerplants with capacity below 50 MW are clarified as small size projects. According to EB guidelines, the hydropower plants below 15 MW do not have to conduct common practice. Thus the similar scale is defined between 15~50 MW.

In 2002 the Chinese electric power sector was reformed. The former State Grid Corporation was restructed and separated into 5 national power generation companies. Before that provincial governments ensured that project entity of power plants can obtain sufficient return by providing guarantee electricity tariff.
After 2002 the electricity tariff will be determined on the basis of average costs of power generators using the same advanced technology and built within the same period under the provin-

cial power grid. The risk for a hydropower operater is higher than before 2002. For that reason projects implemented after 2002 can be considered as similar.

Searching the " *Investigation Report on Hydropower Plants with Installed capacity above 15 MW Operational since 2002 in Hunan Province "*, which is compiled by Grade A provincial design institute, Hunan Hydro & Power Design Institute, and excluding all projects according to the above mentioned, seven similar projects remain.

1. **Ruoshui hydropower plant:**
   The annual operation period is higher than Shaibaitan project. Hence the revenues from the project are also higher.
   No reservoir construction is required for this project and only few submerge costs need to be spent. Hence the total investment costs are lower than for the Shaibeitan project.
2. **Mulongtan hydropower plant:**
   The annual operation period is higher than Shaibaitan project. Hence the revenues from the project are also higher.
   The reservoir of the project is invested by local government, and part of investment is included in the city flooding engineering., hence the risks for the project participant are lower than for the Shaibaitan project, which is a private owned company.
3. **Yongxing II hydropower plant:**
   The annual operation period is higher than Shaibaitan project. Hence the revenues from the project are also higher.
   The project is owned by the Chinese state, hence the risks for the project participant are lower than for the Shaibaitan project, which is a private owned company.
4. No reservoir construction is required for this project and only few submerge costs need to be spent. Hence the total investment costs are lower than for the Shaibeitan project.**Chengjiangkou hydropower plant:**
   The annual operation period is higher than Shaibaitan project. Hence the revenues from the project are also higher.
5. No reservoir construction is required for this project and only few submerge costs need to be spent. Hence the total investment costs are lower than for the Shaibeitan project.**Yangmingshan II hydropower plant:**
   The project is owned by the Chinese state, hence the risks for the project participant are lower than for the Shaibaitan project, which is a private owned company.
   No reservoir construction is required for this project and only few submerge costs need to be spent. Hence the total investment costs are lower than for the Shaibeitan project..
6. **Ouyanghai expanded project:**
   No reservoir construction is required for this project and only few submerge costs need to be spent. Hence the total investment costs are lower than for the Shaibeitan project..
   The project is owned by the Chinese state, hence the risks for the project participant are lower than for the Shaibaitan project, which is a private owned company.
7. **Leizhong hydropower plant:**
   The annual operation period is higher than Shaibaitan project. Hence the revenues from the project are also higher.
   The project is owned by the Chinese state, hence the risks for the project participant are lower than for the Shaibaitan project, which is a private owned company.

No reservoir construction is required for this project and only few submerge costs need to be spent. Hence the total investment costs are lower than for the Shaibeitan project.
The IRR of the listed projects have been checked by the audit team. They are all above 10%, which is higher than the required benchmark. Hence these projects can be considered as financial attractive.

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This proofs that they are significantly different to the proposed project activity.

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Request 3:

The PP/DOE are requested to further clarify that continuing and real actions were taken to secure the CDM status for the project activity in parallel with its implementation.

Response from PP:

a. The timeline of the project is as follow:

Date(dd/mm/yyyy)	Schedule
09/2003	PDR was completed
01/2004	Environmental Impact Assessment (EIA) was completed
20/02/2004	PDR was approved
20/02/2004	EIA was approved
18/06/2004	Explanation document of VAT of China Shaibeitan Hydropower Project
04/08/2004	Document of Hunan Province Price Bureau(Electricity tariff of 0.315 RMB •/kWh which is applicable for China Shaibeitan Hydropower Project)[14]
10/09/2004	The re-assessment of the data in PDR[15]
02/11/2004	Decision of the project owner to apply for CDM support[16]
10/11/2004	The project owner entrusted Hunan Science & Technology Information Research Institute (HNSTI) to take charge of the application for CDM support[17]
26/12/2004	Intention agreement of the loan was signed due to CDM[18].
08/01/2005	The tunnel construction agreement was signed[19]
13/01/2005	The powerhouse construction agreement was signed[20]

[14] The electricity tariff (Xiangjiachong [2004] No. 114) policy was issued by Hunan Price Bureau on August 4, 2004.
[15] With request from project owner, Hunan Investigation, Design & Research Institute of Water Resources and Hydropower Plant re-assessed the data in PDR on September 10, 2004, which was to explian the data in PDR except VAT and electricity tariff were valid and applicable for the project.
[16] Eighth Meeting Minutes of the first board of directors of Qiyang Yangguang Hydroelectric Co., Ltd. about decision of applying for CDM support, November 2, 2004.
[17] Letter of Intention of Development Cooperation of Shaibeitan CDM Project between Qiyang Yangguang Hydroelectric Co., Ltd. and Hunan Science & Technology Information Research Institute, November 10, 2004.
[18] Intention agreement of the loan between Qiyang Yangguang Hydroelectric Co., Ltd. and Yongzhou Branch of China Construction Bank, December 26, 2004.
[19] The Tunnel Construction Agreement between Qiyang Yangguang Hydroelectric Co., Ltd. and Yongzhou Construction of Water Resources and Hydropower Co., Ltd., dated on January 8, 2005.
[20] The Powerhouse Construction Agreement between Qiyang Yangguang Hydroelectric Co., Ltd. and Hunan Provincial Construction Engineering Co., Ltd., dated on January 13, 2005.

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31/01/2005	The dam construction agreement was signed[21]
16/03/2005	The project owner decided to establish a CDM working group and try their best to make the project registered[22]
14/04/2005	The dam construction was started[23]
22/04/2005	The tunnel construction was started[24]
26/05/2005	The powerhouse construction was started[25]
05/07/2005	HNSTI submitted the application to establish CDM center[26]
29/08/2005	The project owner signed Water-turbine Generator Units Purchase Agreement[27]
09/11/2005	Establishment of Hunan Province CDM Project Service Center (HNCDM)[28].
23/06/2006	Letter of Intent (LoI) of Emission Reductions Purchase was signed with Carbon Asset Management Sweden AB.
March 2007	Emission Reductions Purchase Agreement (ERPA) negotiation with HNCDM.
28/05/2007	CDM application to National Development & Reform Commission (NDRC).
28/06/2007	ERPA was signed with Carbon Asset Management Sweden AB.
26/07/2007	The project PDD was published for validation.
01/10/2007	Draft validation report (DVR) was completed.
March 2008	Hard copy of Chinese Letter of Approval (LoA) for CDM was issued.
15/05/2008	Hard copy of Netherlands LoA for CDM was issued.

[21] The dam construction agreement between Qiyang Yangguang Hydroelectric Co., Ltd. and Sixth Enginerring Co., Ltd. of Gezhouba Group, January 31, 2005.
[22] Twelfth Meeting Minutes of the first board of directors of Qiyang Yangguang Hydroelectric Co., Ltd. about accelerating the application for CDM project, March16, 2005.
[23] Starting Construction Order of the Dam Issued by Engineering Supervision Department, April 14, 2005.
[24] Starting Construction Order of Tunnel Issued by Engineering Supervision Department, April 22, 2005.
[25] Starting Construction Order of Powerhouse Issued by Engineering Supervision Department, May 26, 2005.
[26] Xianigkexin [2005] No.15
[27] Water-turbine and Generator Units Purchase Agreement of China Shaibeitan Hydropower Project between Qiyang Yangguang Hydroelectric Co., Ltd and Nanning Electricity Generation Equipment Factory, August 29, 2005.
[28] http://www.most.gov.cn/dfkjgznew/200512/t20051208_26678.htm

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04/08/2008	Final validation report (FVR) was completed.
01/04/2009	Expected operation date of the 1st generator.

The project PDR was approved on 20 February 2004 by Water Resources Bureau of Hunan Province (Ref No.11 in FVR). Due to the changed VAT and electricity tariff (Ref No.43 and Ref No44. in FVR), the financial indicator of the project was decreased below the benchmark. Then the project owner decided to implement CDM application to overcome the financial barrier and lower investment risks in the board meeting on 2 November 2004 (Ref No.23 in FVR).

On 10 November 2004, the project owner signed the LoI of CDM Project Development (Ref No. 53 in FVR) for CDM development and application with Hunan Science & Technology Information Research Institute (HNSTI), which is a public service unit belonged to Science & Technology Bureau of Hunan Province. Science & Technology Bureau is one of two CDM administration authority in China, another authority is Development & Reform Commission.

On 26 December 2004, the Intention agreement of bank loan (Ref No. 54 in FVR) was signed between China Construction Bank Yongzhou Branch due to CDM since CDM can improve the financial indicators for the project.

The tunnel construction agreement was signed on 8 January 2005, which is marked as the project starting date.
From the milestones and key events above, it can be concluded that CDM incentives were essential for project owner to go ahead with the implementation of the project activity.

a. Reasons for the delay in the CDM development

The CDM development of the project was entrusted to HNSTI, including PDD development, buyer search and so on. The responsible department for CDM in HNSTI was Science Policy & Strategy Research Department. However, the focus of job duty of Science Policy & Strategy Research Department is on soft science research and CDM research rather than CDM development. The Science Policy & Strategy Research Department lacked of English professionals and PDD writers. The job responsibility regarding CDM for Science Policy & Strategy Research Department was to visit the project sites and identify projects. Due to the huge pressure from project owners and urgent demand of special CDM development team, the HNSTI submitted the "Application Regarding Organizing Hunan Province CDM Project Service Center (HNCDM)" to Science & Technology Bureau of Hunan Province on 5 July 2005 and the application was approved by the Head officer of Science & Technology Bureau of Hunan Province on 20 July 200529. The HNCDM was officially established on 9 November 200530.

The HNCDM were mainly depended on professors from universities to develop PDD at early stage due to it took a little long time to recruit capable people for PDD development. The

[29] Xiangkexin [2005] No.15
[30] http://www.most.gov.cn/dfkjgznew/200512/t20051208_26678.htm

HNCDM sent first batch of PINs to Ministry of Science & Technology and Tsinghua University for buyer seeking at the end of 2005 and then sent first 4 PDDs to them for assessing. During 2005 and first half year of 2006, the staffs from HNSTI and HNCDM attended many CDM Training Courses held in China. One of the training programs is the "Sino-Canada CDM cooperation program", which started from October 2005 and concluded in April 2006, the capacity building program systematically trained the invited developers of HNCDM to own the capacity of developing CDM projects31.

On 23 June 2006, the project owner signed the LoI of Emission Reductions Purchase with Carbon Asset Management Sweden AB after efforts from HNCDM.

However, due to the project involves large of resettlers, it took long time for negotiation between project owner and buyer. Due to time is limited, it is hard to find all the written communication about ERPA negotiation. We present email regarding CERs price negotiation in March 2007 to prove continuing and real actions were taken to secure the CDM status for the project activity in parallel with its implementation during this period.

Finally, the project owner and buyer made the agreement after several rounds of negotiations. The project was submitted to NDRC for CDM application on 28 May 2007 and ERPA was signed on 28 June 2007 between project owner and Carbon Asset Management Sweden AB. The NDRC LoA was finally received on March 2008 since there are some mistakes in CDM application materials. The re-submission of the materials caused some delay in whole progress.

On 27 July 2007, the project PDD was published for validation. After that, the main communication is between project owner, PDD developer and DOE.

The project is still under construction, the 1st generator of the project is expected to be operational in the end of March 2009 at earliest. Thus the delay of CDM development will not cause lost of CERs. The given explanation on delay of PDD development is suitable and not unusual for the host country environment. It can be found from UNFCCC validation webpage, there are totally only around 80 projects submitted for validation and 68 projects approved by NDRC32 until end of June 2006, by when the project signed LoI of Emission Reductions Purchase with Carbon Asset Management Sweden AB. The figure shows the PDD development is a bottleneck at that time.

Therefore, it can be concluded that continuing and real actions were taken to secure the CDM status for the project activity in parallel with its implementation.

Response from DOE:

The chronological listing of the major events associated with the proposed project activity clearly indicates that CDM was seriously considered before the starting date. The project started with the signing of the tunnel construction contract in January 2005 (IRL 55). Prior to that date, CDM was seriously taken into consideration which was demonstrated by several events and actions described as following.

[31] http://www.most.gov.cn/dfkjgznew/200604/t20060410_30365.htm
[32] http://cdm.ccchina.gov.cn/web/NewsInfo.asp?NewsId=1024

- Preliminary design report September 2003 (IRL 6)
- Approval of PDR , February 2004 (IRL 10)
- Decision of project owner to apply for CDM support, November 2004 (IRL 23)
- Letter of intention with CDM support company (Hunan Science & Technology Information Research Institute (HNSTI)) (IRL 53), November 2004
- Construction agreements were signed in January 2005 (IRL 55, 56,57)
- Constructions started in April 2005 (IRL 26, 27, 28)
- HNSTI submitted the application to establish CDM Center, July 2005
- Establishment of Hunan Province CDM Project Service Center, November 2005
- Letter of Intent of Emission Reductions Purchase was signed with Carbon Asset Management Sweden AB, June 2006 (IRL 74)
- Emission Reductions Purchase Agreement (ERPA) negotiation with HNCDM, March 2007 (IRL 72)
- CDM application to National Development& Reform Commission (NDRC), May 2007 (IRL 70)
- ERPA was signed with Carbon Asset Management Sweden AB, June 2007 (IRL 73)
- The project PDD was published for validation, July 2007
- Hard copy of Chinese Letter of Approval (LoA) for CDM was issued, March 2008 (IRL 66)
- Hard copy of Netherlands LoA for CDM was issued, May 2008 (IRL 67)
- Final validation report (FVR) was completed, August 2008

In summary, TÜV SÜD can confirm that CDM was seriously taken into consideration in order to proceed and implement the proposed hydropower project. Continue and real actions were taken to secure the CDM status for the project activity in parallel with its implementation.

Request 4:
The DOE is requested to explain the discrepancy in the grid emission factor between the PDD submitted with the request for registration and the PDD submitted for validation.
Response from Project Participant:

The approaches used for the power grid baseline emission factor calculation are the same between the PDD submitted with the request for registration and the PDD submitted for validation. The calculation methods are derived from *Chinese Designated National Authority (DNA)'s Guideline of emission factors of Chinese grids* (hereinafter referred to "the Guideline"). The DNA published the baseline emission factor on 15 December 2006 with the data source of <China Energy Statistical Yearbook 2005>, <China Electric Power Yearbook 2001-2005>, IPCC 1996 and the statistical documents from National Electrical Surveillance Committee.

At the time of the PDD submitted for validation, the latest version of <China Energy Statistical Yearbook 2006>, <China Electric Power Yearbook 2006> have been published. The baseline emission factor is calculated in the validation PDD by using the <China Energy Statistical Yearbook 2006>, <China Electric Power Yearbook 2006> and IPCC 2006 by PDD developer. However, the latest standard coal consumption of coal/oil/gas fired power plants power supply data for the most advanced commercialized technologies in China have not been published by Chinese DNA yet. So the $EF_{Gas,Adv}$ and $EF_{Oil,Adv}$ are excluded from the calculation of $EF_{Thermal}$ for conservative principle, i.e. $EF_{Thermal} = EF_{Coal,\ Adv} * (1 \bullet \lambda_{Oil} \bullet \lambda_{Gas})$. Meanwhile, due to lack of the

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data of latest standard coal consumption for the most advanced commercialized coal fired power plant, PDD developer has to use the standard coal consumption of power generation for the calculation of $EF_{Coal, Adv}$. It is conservative for standard coal to adopt the value 320g/kWh since the best available technologies in China are sub-critical power plants in 2004 with the standard coal consumption of power generation of 336.66g/kWh in accordance with the data from National Electrical Surveillance Committee published on 15 December 2006 by NDRC. It also can be found from <China Electric Power Yearbook 2005> that the standard coal consumption of power generation is 371kg/kWh in Central China Power Grid. Thus, the value 320g/kWh is very conservative to calculation BM.

NDRC published the baseline emission factor on 9 August 2007, which is after the validation of the project. PDD developer updated the power grid emission factor by referring to the data published on 9 August 2007, which is the one in the PDD submitted for requesting registration.

Based on the ACM0002 (Version 06), the data are available at the time of PDD submission should be used for emission factor calculation. Thus the baseline emission factor is revised back into the one in the PDD submitted for validation, which is also more conservative.

We hope above clarifications are sufficient.

Response from DOE:

The values for the emission factors for the operating margin and build margin applied in the various PDDs are listed below:

GSP PDD: EF_{OM}= 1.28956 tCO_2/MWh EF_{BM} = 0.61277 tCO_2/MWh

Sub for Reg PDD: EF_{OM}= 1.2899 tCO2/MWh EF_{BM} = 0.61592 tCO2/MWh

The emission factors have been revised during the validation process and were updated to be in line with that published by the DNA of China in 2007. This revision was performed for this and other similar projects based on recent EB decisions as indicated in the EB Meeting Report 41, §55q(iv), where it was indicated that NDRC values should be applied and were also accepted later on.

However, in order to be conservative, the emission factors have been revised again to the old values with a combined margin emission factor of 0.95116 tCO_{2e}/MWh, i.e. 0.02 tCO_2e/MWh lower than the value published by the China DNA in 2007, and even 0.04 tCO_2e/MWh lower than the value published by the China DNA in 2008.

TÜV SÜD considers the applied values as conservative and based on former EB guidance on this issue, accepted these values for the calculation of the combined margin emission factor.

Reference No.	Document or Type of Information
1	Project Design Document for CDM project "China Shaibeitan Hydropower Project", version 2 dated July 20, 2007 (GSP Version), version 3 dated Dec.2, 2007, version 4 dated Apr. 22, 2008, version 5, dated August 3, 2008.
2	Consolidated baseline methodology for grid-connected electricity generation from renewable sources, version 06.
3	Tool for the demonstration and assessment of additionality, version 05.
4	Participant list of on-site interview, signed on Sep. 20, 2007
5	On-site interviews and inspection conducted on Sep. 20, 2007 by validator of TUV-SUD. Validation team: Mr. Tom Xiong Jiangsu TÜV Product Service, Shenzhen Branch Interviewed persons: Mr. Zhang Junming Qiyang Yangguang Hydroelectric Co. Ltd. Mr. Zhang Shunhui Qiyang Yangguang Hydroelectric Co. Ltd. Mr. Ling Yubiao Hunan CDM project service centre. Mr. Yuang Haiwei Hunan CDM project service centre.
6	Approval of Feasibility Study Report, dated on Feb. 3, 2004, Development and Reform Commission of Hunan Province, file number: No.52 Xiang Ji Ji Chou [2004].
7	Feasibility Study Report, dated in Dec. 1998.
8	EIA, dated in Jan. 2004.
9	Approval of EIA, dated on Feb. 20, 2004, Environmental Protection Bureau of Hunan Province, file number: No.018 Xiang Huan Pin [2004].
10	Preliminary Design Report, dated in Sep.2003.
11	Approval of Preliminary Design Report, dated on Feb.20, 2004, Water Resources Department of Hunan Province, file number: No.3 Xiang Shui Long Dian [2004]
12	Water & Soil Conservation Program, dated in April, 2002

Reference No.	Document or Type of Information
13	Approval of Water & Soil Conservation Program, dated on April 15, 2002, Water Resources Department of Hunan Province, file number: No.18, Xiang Shui Bao [2002].
14	Approval of Usage of Forest Land, dated on July 1, 2004, Forestry Management Department of Hunan Province, file number: No.484 Xiang Ling Di Shen Zi [2004]
15	Certificate of Land Usage for Powerhouse, dated in Jan., 2005, Yongzhou Municipal Government, file number: No. 051 Yong Jing Guo Yong [2005]
16	Certificate of Land Usage for dam, dated in Jan., 2005, Yongzhou Municipal Government, file number: No. 052 Yong Jing Guo Yong [2005]
17	Loan Contract, dated on Apr.29, 2006, signed with Qiyang Branch of China Construction Bank.
18	Agreement on Land Lease, dated on Dec.30, 2005 signed with Shaibeitan village, Shijiaping village and Xiangshixia village respectively.
19	Agreement on Compensation for Land Expropriation and Resettlement, dated on Jun.22, 2005, signed with Jindong Forestry Centre of Yongzhou City.
20	Local Compensation Standard for Land Expropriation and resettlement, dated on Jun. 3, 2003, Yongzhou Municipal Government, file number: No.9 Yong Zhen Fa[2003]
21	Land Expropriation and Resettlement Plan Report, dated in Nov. 2003.
22	Water-turbine and Generator Units Purchase Agreement of China Shaibeitan Hydropower Project between Qiyang Yangguang Hydroelectric Co., Ltd and Nanning Electricity Generation Eequipment Factory, dated on August 29, 2005.
23	Eighth Meeting Minutes of the first board of directors of Qiyang Yangguang Hydroelectric Co., Ltd., dated on November 2, 2004.
24	Twelfth Meeting Minutes of the first board of directors of Qiyang Yangguang Hydroelectric Co., Ltd., dated on March16, 2005.
25	Geographical Fatalness Assessment Report, dated in Apr., 2004.
26	Starting Dam Construction Order issued by Engineering Supervision Department, dated on April 14, 2005.
27	Starting Tunnel Construction Order issued by Engineering Supervision Department, dated on April 22, 2005
28	Starting Powerhouse Construction Order issued by Engineering Supervision Department, dated on May 26, 2005.
29	Mine Source Assessment Report, dated in Apr., 2004.

Reference No.	Document or Type of Information
30	Emergency Plan for Inundation and Fire dated in January, 2007.
31	Supporting Policy for Large and Middle Reservoir Resettlement at Later Stage, dated on May 17, 2006, the State Department of China, file number: No.17 Guo Fa [2006].
32	Meeting Minute of Colloquia with Stakeholders, dated on Apr. 27, 2006.
33	Stakeholders Questionnaires.
34	IRR calculation sheet
35	The Management Provisional Regulation on the Construction of Small Fuel-fired Generators issued in Aug. 1997.
36	Notice on Strictly Prohibiting the Construction of Fuel-fired Power Plants with installed Capacity of 135MW or below, General Office of the State Council, April 15, 2002.
37	The Interim Measures on the Economic Evaluation of Technical Transformation Projects of Electric Power Engineering, 2003.
38	China Water Resources Yearbook(2006)
39	China Energy Statistical Yearbook (2002/2003/2004/2005/2006)
40	China Electric Power Yearbook(2002/2003/2004/2005/2006)
41	Chinese DNA's Guideline of Emission Factors of Chinese Grids, Aug. 9, 2007
42	National Statistics Bulletin of Power Industry in 2007, China Electricity Council.
43	The electricity tariff (Xiangjiazhong[2004] No.114) policy was issued by Hunan Price Bureau on August 4, 2004.
44	Certificate of VAT of China Shaibeitan Hydropower Project, Baishui Branch of Qiyang National Taxation Bureau, dated June 18, 2004.
45	The electricity tariff (Xiangjiazhong[2000] No.49) policy was issued by Hunan Price Bureau in March, 2000.
46	The electricity tariff (Xiangjiazhong[2001] No.327) policy was issued by Hunan Price Bureau in December, 2001.
47	Almanac of China's Water Power(2006).
48	Notice of the State Council on Printing and Distributing the Plans Regarding the Restructuring of the Power Industry (No.5[2002]) of the State Council).
49	Ministry of Water Resources and Electric Power, State Economic Committee and State Price Bureau, Notice on Implement Methods of

Reference No.	Document or Type of Information
	Various Power Tariff (No.101 Shuidiancaizi[1987]).
50	Notice of Relative Matters about Regulation of Electricity Tariff Management (No. 701 Jijiage [2001])
51	Investigation Report on Hydropower Plants with Installed Capacity of over 15MW since 2002 in Hunan Province, Hunan Hydro & Power Design Institute, published in Mar. 2008.
52	The re-assessment report on the data in PDR, dated on Sep.10, 2004.
53	Letter of Intention of Development Cooperation of Shaibeitan CDM Project between Qiyang Yangguang Hydroelectric Co., Ltd. and Hunan Science & Technology Information Institute, dated on November 10, 2004
54	Intention Agreement of the Loan between Qiyang Yangguang Hydroelectric Co., Ltd. and Yongzhou Branch of China Construction Bank, dated on December 26, 2004
55	The Tunnel Construction Agreement between Qiyang Yangguang Hydroelectric Co., Ltd. and Yongzhou Construction of Water Resources and Hydropower Co., Ltd., dated on January 8, 2005
56	The Powerhouse Construction Agreement between Qiyang Yangguang Hydroelectric Co., Ltd. and Hunan Provincial Construction Engineering Co., Ltd., dated on January 13, 2005
57	The Dam Construction Agreement between Qiyang Yangguang Hydroelectric Co., Ltd. and Sixth Enginerring Co., Ltd. of Gezhouba Group, dated on January 31, 2005
58	Bullet of Determining Baseline Emission Factor of China Grid, dated on Aug. 9, 2007, Chinese DNA,
59	http://www.shp.com.cn/news/info/2007/8/6/1410011621.html
60	http://www.newenergy.org.cn/html/2003-9/2003991.html
61	http://www.shp.com.cn/news/info/2007/8/6/1410011621.html
62	http://cdm.unfccc.int/User/Management/FileStorage/AM_CLAR_QEJWJEF3CFBP1OZAK6V5YXPQKK7WYJ.
63	http://www.stats.gov.cn/tjsj/ndsj/2006/html/i0913c.htm
64	CERs Sales Termsheet signed on 23 June 2006
65	CERs Sales Agreement signed on 28 July 2007
66	LoA_China

Reference No.	Document or Type of Information
67	LoA_Netherlands
68	MOC
69	Investment Clarification, Construction Bank of China Yongzhou Branch; 22 July 2008.
70	Shaibeitan CDM LoA application to NDRC, dated 28th May 2007
71	Shaibeitan Construction progress, dated 30th November 2008
72	Shaibeitan ERPA negotioation with HNCDM, dated 15th March 2007
73	Sheibeitan ERPA considerarion with Carbon Asset Management Sweden AB, dated 28th June 2007
74	Letter of Intent, TS for Shaibeitan, dated 23rd June 2006
75	Notification of Electric Power Tariff Reform by the office of national council
76	Salary statistics in Hunan Province from 2005-2007
77	Electricity tariff documents for Hunan Province