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Response to Request for Review

Dear Sirs,

Please find below the response to the request for review formulated for the CDM project "Jinping Ladeng River Hydropower Station" with the registration number 2849. In case you have any further inquiries please let us know as we kindly assist you.

Yours sincerely,

Cuiyun Zhang
Carbon Management Service

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Response to the CDM Executive Board

Issue 1:

The DOE shall explain how it has validated the investment analysis in line with VVM para. 111(c), in particular the validation on the suitability of tariff and the annual O&M costs. With the application of the highest tariff issued for similar projects in the province, the IRR crosses the benchmark.

Response by TÜV SÜD to Issue 1:

In order to validate the investment analysis in the context of VVM para. 111 (c), the DOE has considered each of the most relevant input values as sourced from Financial Analysis Report (FAR) (IRL 10¹) issued in January 2006. In particular, the information regarding the tariff and annual O&M costs has been assessed as follows.

Annual O&M costs

The different parameters behind the O&M costs have been crosschecked on the basis of the information and guidance presented in the Economic Evaluation Code for Small Hydropower Projects (SL 16-95) (IRL 32) and of other more specific sources when available and applicable (details on these “other sources” follow with description hereafter presented). The local auditor, through its local and sectoral expertise performed an evaluation of the assumptions done by the “Research & Design Institute of Sinohydro Engineering Bureau 14” in preparing the FAR considering the most relevant parameters influencing the O&M costs:

Number of employees: in FAR (and in PDD) a total of 16 employees has been used for calculation of O&M. This data has been considered appropriate and conservative in the context of investment analysis, on the basis of the indicated in SL16-95 which is 48 for hydropower stations with installed capacity higher than 6MW. The DOE has checked if the SL16-95, issued on 1995 by the Ministry of Water Resources of the People’s Republic of China (MWR), was still valid in early 2006; it has been clarified that both in 2007 and 2008 the validity of the code has been re-confirmed, as could be evidenced by:

- 1) the answer to the Request for Review of project 996 - Zhoubai Hydroelectric Project, dated 04/06/2007;
- 2) the statements of the Research and Design Institute of No.14 China Hydro Engineering Bureau and the National Research Institute for Rural Electrification, accredited by the Chinese Government, which clarified that SL 16-95 is still used by the institutes when assessing the financial feasibility of small hydropower projects, dated respectively 26/11/2008 and 01/12/2008.

This allow the DOE to confirm that in 2006, and thus at the time of the investment decision, the SL16-95 was an applicable and valid reference, as further confirmed by the sectoral and local expertise of the auditor.

¹ IRL numbers refers to Information Reference List as included in Validation Report n° 1134168, October 8th 2009, rev.4, submitted with the request for registration.

Annual salary and welfare: in FAR (and in PDD) an annual average payroll of 9.667 Yuan has been used in investment analysis for calculation of O&M; welfare fund, has been assumed to be 14% of the annual payroll consistently with SL16-95. The result in terms of annual salary and welfare is 241,800 Yuan RMB/year, which has been crosschecked with the salary bills during the validation process (see IRL 95 in Validation Report and response to CAR 6 in Annex 1 to Validation Report), allowed the DOE to confirm that the assumptions done led to conservative results as the actual figure for salaries (excluding welfare costs) as per salary bills (reference period October 2008) is 325,944 Yuan RMB/year. It should be noted that the DOE considered as appropriate to compare the level of salaries as estimated in FAR in 2006 and the actual figures incurred in October 2008 to demonstrate the conservativeness of the value applied, as no significant increase in salaries occurred within the mentioned period, according to the local sectoral expertise of the auditor.

Costs of overhaul, materials and other expenses: the costs of overhaul (1.5% of total static investment), the cost of materials (5 Yuan/kW) and the other expenses (24 Yuan/kW, including general expenses such as office costs, travel costs, research, etc.) have been confirmed as valid and common reference in the Chinese context and as can be further confirmed checking the "Interim Regulations of Hydropower Construction Project Financial Evaluation". In particular, the total amount of these costs as used in O&M calculation results accordingly 1,739,300 Yuan RMB/year which is lower, and thus conservative, than the actual operation and maintenance expenses resulting from the Agreement of Commission Management (IRL 89 in Validation Report) which, applying a factor of 0,026 Yuan RMB/kWh, lead to an actual amount of 1,985,360 Yuan RMB/year.

Water charge and reservoir maintenance fee: the water charge of 0,0040 Yuan RMB/kWh has been verified as in line with specific local Provincial regulation (Yunnan DRC – Yuncai-shui[2004]52, 27th September 2004). In addition, the local auditor confirms that a similar value is appropriate in the local context. Reservoir maintenance fees has been considered appropriate as commonly assumed as 0,0010 Yuan RMB/kWh, based on the "Interim Regulations of Hydropower Construction Project Financial Evaluation".

Insurance for fixed asset: the parameter (240,000 Yuan/year) was assumed in FAR and IRR calculation; the DOE confirmed the value as valid according to its local and sectoral expertise as similar values were found in many hydropower stations in China which has been validated as CDM project. However it should be noted that the actual figure results in a lower value than the applied one, (i.e.:190,682 Yuan RMB). Nevertheless, it can be confirmed that a similar variation does not change the additionality of the project as if ex post parameters are considered in evaluating the actual O&M costs, the latter still remains higher than the value used in PDD – Investment analysis as presented in the next lines.

It should be noted that the total O&M costs as resulting in IRR calculation are 2,550,100 Yuan RMB, value which, besides the fact that the Insurance for fixed asset decreased, is remarkably lower than the actual costs incurred according to the above presented assessment which results 2,765,186 Yuan RMB; this value, being higher than the figure used in investment analysis, allows the DOE to further confirm the conservativeness of the estimated figure. The validity of the O&M costs assumed in IRR calculation have been also confirmed by the DOE by checking the level of this figure in terms of costs per power production and per installed capacity in China, making use of third party references and local sectoral expertise. In particular, a study of the consulting company the "Beijing Hualing Sifang Investment" (see footnote 3 in PPs' response) mentions a range of 0.04 – 0.09 Yuan RMB/kWh; the proposed project, with an O&M cost of 0.0334 Yuan RMB/kWh, has been thus considered appropriate and conservative.

Tariff

The appropriateness of the tariff applied in PDD – Investment analysis of 0.18 Yuan RMB/kWh has been assumed according to the FAR issued on January 20th, 2006. The DOE has verified the validity and appropriateness of this value in the context of the investment decision based on a series of crosschecks and the local sectoral expertise of the auditor. In particular, besides the grid price agreement (IRL 25) and power sales invoices (IRL 36) mentioned in the Validation Report, the following documents allows to further confirm the validity of the tariff:

- Official Tariff Regulation of Yunnan Provincial Development and Reform Commission, August 30th, 2005 (doc. Yunfagaijiage[2005]792): the document, issued less than five months before the completion of the FAR, clearly set the tariffs throughout the different periods of the year (normal season: May and November 0.18 Yuan RMB/kWh – flood season: June to October 0.13 YuanRMB/kWh – dry season: December to April 0.23 Yuan RMB/kWh) resulting in an average of 0.18 Yuan RMB/kWh (VAT incl.), for hydropower stations transmitting electricity to the Yunnan Power Grid passing through local sub-provincial grids. The applicability of this regulation to the proposed project, at the time of the investment decision, has been confirmed as the proposed project connects to the Yunnan Power Grid through the Honghe Prefecture Grid, as evidenced on site and confirmed by the Power Connection Agreement.
- Official Tariff Regulation of Yunnan Provincial Development and Reform Commission, January 6th, 2006 (doc. Yunfagaijiage[2006]28): the document, issued at about the same time of the FAR, set he tariff as average tariff 0.215 Yan RMB/kWh (VAT incl.) for hydropower stations transmitting electricity directly to the Yunnan Power Grid. Accordingly, the DOE confirms that a similar price, which is the basis for the many hydropower stations in Yunnan, was not an applicable reference for the proposed project which does not directly connect to the Yunnan Power Grid (as above discussed), in order to correctly set the grid tariff to be used in FAR and IRR calculation.

Through its local and sectoral expertise the DOE can confirm that the different power sales prices in the region are mostly related to the application of the above mentioned regulations on tariffs. In particular the analysis of 69 hydropower stations registered (see also PPs' response, Tabel 1) as CDM projects in Yunnan, lead to further confirm that the assumption made is valid as an average price of 0.1725 YuanRMB/kWh (VAT incl.) was found.

It can be thus further confirmed that the price of 0.18 Yuan RMB/kWh (VAT incl.) indicated in FAR and accordingly used in PDD was valid and applicable at the time of the investment decision (early 2006), when the above mentioned regulations were enforced and followed in compiling the Feasibility Study Report of several projects in the region.

Response by the Project Participants to Issue 1:

All input value, including the tariff and annual operation cost come from the Financial Analysis Report (FAR), which was completed by the "Research & Design Institute of Sinohydro Engineering Bureau 14". The "Research & Design Institute of Sinohydro Engineering Bureau 14" is an independent organization which is qualified to compile design reports for hydropower projects (it has obtained B grade in water conservancy industry, electricity industry (hydro power), issued by the Construction Ministry of People's Republic of China and a B grade in engineering investigation industry, issued by the Construction Bureau of Yunnan Province. And then the FAR was approved by local Development and Reform Commission.

In addition, the FAR was completed in January 2006, and the investment decision was on March 14, 2006, the time period between the finalization of the FAR and the investment decision is sufficiently short, it is unlikely in the context of the underlying project activity that the input values would have materially changed.

Therefore, the tariff and annual operation cost used by the project in the PDD requesting for registration are credible and reasonable at the time of investment decision.

And then, the tariff and annual operation cost will be detailed as below:

The annual operation cost

Firstly, according to the approved FAR, the annual operation cost include annual salary and welfare of the staff, operation and maintenance cost, annual insurance of fixed assets, water charge.

Based on the Economic Evaluation Code for Small Hydropower Project (SL16-95) (hereinafter referred "the document (SL16-95)")², regarding to a hydropower project with an installed capacity greater than 6MW, the minimum employees is 48 persons, which is higher than the number of employee of 16 in the approved FAR used for IRR calculation. Thus the staff number in IRR calculation spreadsheet is conservative.

The value of annual salary and welfare of the staff is 241,800 Yuan RMB in the IRR calculation spreadsheet, but based on the salary bill, the actual value is 325,944 Yuan RMB (exclude welfare), which is already higher than the designed value. Therefore, the value used in the PDD is more conservative.

According to Agreement of Commission Management, the operation and maintenance cost is 0.026 Yuan RMB/kWh, and therefore the actual operation and maintenance cost is 1,985,360 Yuan RMB, which is higher than the estimated operation and maintenance cost of 1,805,100 Yuan RMB in IRR calculation spreadsheet. Therefore, the lower value used in the IRR calculation is conservative.

Water charge of 0.004 Yuan RMB/kWh is from the approved FAR, which can be cross-checked by the governmental regulation Yuncaishui[2004]52 issued by Yunnan DRC on September 27, 2004.

According to the insurance trade invoice, the actual insurance of fixed assets is 190,682 Yuan RMB, which is a little lower than the designed annual insurance cost of 240,000 Yuan RMB in the IRR calculation spreadsheet

It can be concluded, except the insurance of fixed assets, other cost for calculating operation cost are all increased. And the small decrease (49,318Yuan RMB) due to the insurance of fixed assets can be counteracted by the increase (264,404Yuan RMB) of the salary of the staff and the operation and maintenance cost. Namely, the annual operation cost is increased 215,086 Yuan RMB than the designed value in the IRR calculation. Therefore, the annual operation cost used in the PDD is reasonable and conservative.

² The document (SL16-95) belongs to the Professional Standards of People's Republic of China which was approved and published by the Ministry of Water Resources of the People's Republic of China on June 2, 1995 and began to take effect on July 1, 1995. According to the hydropower No [2002]07 documents, Currently Effective Hydrotechnics Standards Announcement, by the Ministry of Water Resources of the People's Republic of China, the document (SL16-95) is still effective and enforceable. Moreover, the document was confirmed to be still valid by Water Resources and Hydropower Planning and Design General Institute of the Ministry of Water Resources of the People's Republic of China in 2008 in the content of Searching System for Water Conservancy and Hydropower Technique Standard.

In addition, the unit operation cost 0.0334Yuan RMB/kWh of the project has been confirmed to be a reasonable and conservative value according to the average range of 0.04-0.09 Yuan/kWh for hydropower stations in China³.

Therefore, the annual operation cost used in the PDD is conservative, reasonable and credible.

The tariff

Firstly, as explained above, the tariff of 0.18 Yuan RMB/kWh (with VAT) used by the PDD requesting for registration come from the approved FAR, which is completed by a third qualified party. Therefore, the tariff used by the project is credible and reasonable.

And the tariff of 0.18 Yuan RMB/kWh (with VAT) can be confirmed by the official tariff document Yunfagaijiage[2005]792, which is issued by Yunnan Provincial Development and Reform Commission on August 30, 2005. Based on the official tariff document Yunfagaijiage[2005]792, the tariff is 0.18 Yuan RMB/kWh (with VAT), however, which is only applicable to the hydropower stations that un-unified managed by the Yunnan Province Grid. That is, if the electricity generated by the hydropower stations is transmitted to the Yunnan Province Grid through the local grid company, the tariff of these hydropower stations is 0.18 Yuan RMB/kWh and the official tariff document Yunfagaijiage[2005]792 is applicable. If the electricity generated by the hydropower stations is transmitted to the Yunnan Province Grid directly, the official tariff document Yunfagaijiage[2005]792 is not applicable.

Based on the Power Connection Agreement signed between the project owner and Honghe Prefecture Grid Company, the electricity generated by the project will be transmitted to Honghe Prefecture Grid, then to the Yunnan Grid. Therefore the official tariff document Yunfagaijiage[2005]792 is applicable to the project. And thus the tariff of 0.18 Yuan RMB/kWh (with VAT) was employed by the project at the time of investment decision.

In fact, in the official tariff document Yunfagaijiage[2005]792, it regulates the tariff in different period. In normal season (May and November), the tariff is 0.18 Yuan RMB/kWh with VAT; in flood season (from June to October), the tariff is 0.13 Yuan RMB/kWh with VAT; in dry season (December and January to April), the tariff is 0.23 Yuan RMB/kWh with VAT. For simple purpose, the average tariff of 0.18 Yuan RMB/kWh with VAT is employed by the project and some projects listed in Table 1 below. However, due to the difference of the power generation in dry season and flood season, the tariff should be lower than the average tariff of 0.18 Yuan RMB/kWh with VAT. So the tariff of 0.18Yuan RMB/kWh used by the project is conservative. That is the first reason why the projects in Table 1 have different tariff.

According to the "Guidance on Assessment of Investment Analysis: 6. Guidance: Input values used in all investment analysis should be valid and applicable at the time of the investment decision taken by the project participant. The DOE is therefore expected to validate the timing of the investment decision and the consistency and appropriateness of the input values with this timing. The DOE should also validate that the listed input values have been consistently applied in all calculations." Thus at the time of the investment decision taken by the project owner, the proposed tariff of 0.18 Yuan RMB/kWh (with VAT) is valid, applicable, credible and conservative.

³ Published by Beijing Hualing Sifang Investment Consultant Company in 2006 on the website: http://www.badassets.com/bp/hydro_power_bp.htm and the Beijing Hualing Sifang Investment Consultant Company is a third party.



Secondly, in order to demonstrate the tariff of 0.18 Yuan RMB/kWh with VAT used by the project is reasonable and appropriate at the time of investment decision; the tariff of all registered similar projects will be compared. The project locates in Yunnan Province and its installed capacity is 16MW. According to the document (SL16-95), a “small hydropower project” is a hydropower station with installed capacity up to 50MW. Thus, similar projects to the proposed one are those with installed capacity up to 50MW located in Yunnan Province.

Table 1 the tariffs applied in the similar registered projects in Yunnan Province

Number	Ref No.	Installed Capacity	Tariff (with VAT)	Number	Ref No.	Installed Capacity	Tariff (with VAT)
1	0791	32	0.1581	36	2016	21	0.152
2	1388	49.8	0.215	37	2236	12.6	0.215
3	1408	7.5	0.18	38	2050	21.6	0.14
4	1430	10	0.18	39	2052	15	0.18
5	1439	12.6	0.18	40	2054	22.5	0.14
6	2048	36	0.215	41	2055	18	0.14
7	1485	6.4	0.18	42	2057	24	0.14
8	1489	8	0.18	43	2063	20	0.17
9	1496	9.6	0.18	44	2064	17	0.215
10	1504	10	0.18	45	2075	32	0.1382
11	1507	10.5	0.17	46	2080	35	0.1379
12	1508	4	0.173	47	1779	8.2	0.18
13	1510	12.5	0.18	48	2106	20	0.158
14	1511	15	0.177	49	2111	8	0.18
15	1523	9.6	0.18	50	2114	32	0.166
16	1533	9.6	0.18	51	2116	24.9	0.161
17	1743	10	0.15	52	1982	5	0.18
18	1769	12.6	0.155	53	2150	45	0.137
19	1775	12.6	0.155	54	1995	20	0.2
20	1862	25	0.1413	55	2167	10	0.16
21	1879	12.6	0.16	56	2199	48	0.1513
22	1978	10	0.18	57	2208	12.6	0.2
23	1983	20	0.17	58	2238	12.6	0.161
24	1988	14	0.164	59	2376	24	0.205
25	1997	10.5	0.165	60	2624	40	0.2016
26	2000	12.6	0.17	61	2688	24	0.18
27	2003	20	0.172	62	2690	8	0.155
28	2010	50	0.178	63	2903	7.5	0.1885
29	2015	20	0.215	64	2905	15	0.18
30	2020	12.6	0.16	65	2059	18	0.14
31	2030	31.5	0.18	66	1759	15	0.21
32	2033	8	0.165	67	1777	12.6	0.153
33	2034	8	0.2	68	1994	9.6	0.18
34	2044	8	0.16	69	2146	12.6	0.18
35	2045	18.9	0.18	Average			0.1725

From the above table, it can be concluded that the tariff of the project is in the range of the tariffs of all registered similar projects, and the tariff 0.18 Yuan RMB/kWh (with VAT) of the project is higher than the average tariff 0.1725Yuan RMB/kWh (with VAT) of similar projects in Yunnan Province. Therefore, the tariff used by the project is reasonable and conservative at the time of investment decision.

Thirdly, the highest tariff of 0.215 Yuan RMB/kWh with VAT in the Table 1 above is from the official tariff document Yunfagaijiage[2006]28, which is issued by Yunnan Provincial Development and Reform Commission on January 6, 2006. This official tariff document Yunfagaijiage[2006] 28 regulate tariff of hydropower stations that deliver electricity to the Yunnan Prov-

ince Grid directly. Namely, if the hydropower stations deliver electricity to the Yunnan Province Grid directly (i.e. the project owners of the hydropower stations sign Power Purchase Agreement with Yunnan Province Grid Company not the local Grid Company), then the tariff is 0.215 Yuan RMB/kWh and the official tariff document Yunfagaijiage[2006]28 is applicable. If the hydropower stations deliver electricity to the Yunnan Province Grid through the local grid company, then the official tariff document Yunfagaijiage[2006]28 is not applicable (as explained above, this kind hydropower stations are applicable to the official tariff document Yunfagaijiage[2005]792 above). That is the second reason why the projects in Table 1 have different tariff.

In the official tariff document Yunfagaijiage[2006]28, it regulates the tariff in different period. In normal season (May and November), the tariff is 0.215 Yuan RMB/kWh with VAT; in flood season (from June to October), the tariff is 0.19 Yuan RMB/kWh with VAT; in dry season (December and January to April), the tariff is 0.24 Yuan RMB/kWh with VAT. For simple purpose, the average tariff of 0.215 Yuan RMB/kWh with VAT is employed by some projects listed in Table 1 above. However, due to the difference of the power generation in dry season and flood season, the tariff should be lower than the average tariff of 0.215 Yuan RMB/kWh with VAT. So the tariff of 0.215Yuan RMB/kWh employed by some similar projects listed in the Table 1 above is conservative. That is the third reason why the projects in Table 1 have different tariff.

For the project, when the project just started to operate, the project is permitted that electricity generated by the project can be delivered to the Yunnan Grid Company directly, which can be demonstrated by the Power Purchase Agreement (PPA) signed between the project owner and the Yunnan Grid Company, namely, the project will deliver electricity to the Yunnan Province Grid directly. Therefore, the official tariff document Yunfagaijiage[2005]792 above was not applicable to the project, however, the official tariff document Yunfagaijiage [2006]28 is applicable to the project.

As regulated in the official tariff document Yunfagaijiage[2006]28, the PPA also stipulated, the tariff in rainy, normal and dry season is different. The tariff in rainy season (from June to October) is 0.19 Yuan RMB/kWh (with VAT), in normal season (include May and November) is 0.215 Yuan RMB/kWh (with VAT), and in dry season (December and January to April) is 0.24 Yuan RMB/kWh (with VAT). According to the FAR, the multi-year average annual generation power in rainy season is 55,848MWh, in normal season is 10,990MWh, and in dry season is 9,522MWh. Therefore, the weighted average tariff is 0.20 Yuan RMB/kWh with VAT.

Therefore, the actual tariff 0.20 Yuan RMB/kWh with VAT of the project is calculated in weighted average based on the PPA and official tariff document Yunfagaijiage[2006]28, which is also the data source of the highest tariff of 0.215 Yuan RMB/kWh (with VAT) in the Table 1 above. The gap between the two tariffs is caused by the different power generation in rainy, normal and dry season. And even with the average tariff of 0.20 Yuan RMB/kWh (with VAT) the IRR of the project is 9.35%, still lower than the benchmark.

As described above, the tariff of 0.18 Yuan RMB/kWh (with VAT) calculated in PDD is valid, applicable and credible at the time of investment decision. And even with the tariff in the official tariff document Yunfagaijiage[2006]28 (the data source for the tariff of 0.215 Yuan RMB/kWh), the IRR is still lower than the benchmark.

Issue 2:

The DOE shall further explain how it has validated the common practice analysis in accordance with VVM 118 requirements, including the essential distinctions between the project activity and the 6 hydropower power plants identified in the monitoring plan.

Response by TÜV SÜD to Issue 2:

Six hydro power plants are part of the connection diagram including the proposed project. In particular, from upstream to downstream these are Wayao River Hydropower Station, Jinping Sitaishan Hydropower Station, Ladenghe River Hydropower Station (the project), Jinping Maguo River Hydropower Station, Jinping Maocaoping Hydropower Station and Maocaoping Weishui Hydropower Station.

It should be noted that three of these projects, namely Jinping Sitaishan⁴, Jinping Maguo⁵ and Jinping Maocaoping⁶ are currently under validation as CDM projects; for this reason they should not be considered in the context of the common practice analysis.

The remaining two projects, namely Maocaoping Weishui Hydropower Station and Wayao River Hydropower Station have been found different in terms of final IRR (13.97% and 10.4% respectively), which in both cases is remarkably higher than that of the proposed project (IRR=7.67%). It has been clarified that Maocaoping Weishui Power plant is not comparable to the proposed project due to the fact that it's a mini hydro 3MW project; it's confirmed that similar sized projects face different conditions in terms of investment and O&M costs as clearly reflected in the high IRR.

Differences between the proposed project and Wayao River Hydropower Station (8MW) consist in a combination of factors (favorable O&M costs and investments costs) which led the latter to slightly cross the benchmark. It's opinion of the DOE that this fact is itself an essential difference in the context of the additionality assessment for the proposed project at common practice level. In fact, the additionality of the proposed project strongly relies on the demonstration of an IRR which is far from the benchmark due to the combination of various reasons (deeply assessed during the validation process and further confirmed in this document), making the project not comparable to Wayao River Hydropower Station.

Response by the Project Participants to Issue 2:

Including the proposed project, there are 6 projects identified in the monitoring plan listed in Table 2.

Table 2 Six projects identified in the monitoring plan

Project Name	Status
Sitaishan Hydropower Station	applying CDM ⁷
Maguo River Hydropower Station	applying CDM ⁸
Maocaoping Hydropower Station	applying CDM ⁹
Ladeng River Hydropower Station	applying CDM (the proposed project)
Maocaoping Weishui Hydropower Station	IRR is 13.97% ¹⁰ higher than the benchmark
Wayao River Hydropower Station	IRR is 10.4% ¹¹ higher than the benchmark

⁴ http://www.netinform.de/KE/Wegweiser/Guide2_1.aspx?ID=4408&Ebene1_ID=26&Ebene2_ID=1359&mode=1

⁵ http://www.netinform.de/KE/Wegweiser/Guide2_1.aspx?ID=4413&Ebene1_ID=26&Ebene2_ID=1360&mode=1

⁶ http://www.netinform.de/KE/Wegweiser/Guide2_1.aspx?ID=4406&Ebene1_ID=26&Ebene2_ID=1358&mode=1

⁷ <http://cdm.unfccc.int/Projects/Validation/DB/J4NYPUGVTCTV3LOPCQUZ9D58G3RFJ1/view.html>

⁸ <http://cdm.unfccc.int/Projects/Validation/DB/AH9ZDBLT1V5BIH3B9HSRQBQFG5KB6T/view.html>

⁹ <http://cdm.unfccc.int/Projects/Validation/DB/A9I9QKALKD9H3N0COSN7EVCV8RA22N/view.html>

¹⁰ FSR of Maocaoping Weishui Hydropower Station.

¹¹ FSR of Wayao River Hydropower Station.



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It can be found out that, Sitaishan Hydropower Station, Maguo River Hydropower Station and Maocaoping Hydropower Station are applying CDM for overcoming barriers. The Post-tax project IRR of Maocaoping Weishui Hydropower Station and Wayao Hydropower Station are 13.97% and 10.4% respectively, which are higher than the benchmark and much financially attractive than the proposed project activity.

It can be concluded that the project is essential distinction with the other similar projects and is not common practice.

Issue 3:

The DOE shall provide a direct confirmation on the correctness of the values of the emission factors applied in the PDD.

Response by TÜV SÜD to Issue 3:

The PPs calculated the baseline emission factor as a combined margin by calculating the operating margin (OM) and build margin (BM) emission factors, as per “*Tool to calculate the emission factor for an electricity system (Version 1.1)*”.

In particular the project participants calculated the Operating Margin as Simple OM using ex-ante option for this calculation. The Build Margin has been calculated on the basis of the modified method agreed by the EB, because plant specific data are not available in China.

The calculation of OM and BM emission factors finds its basis in the following sources:

- China Electric Power Yearbook (2002-2006);
- China Energy Statistical Yearbook (2004-2006);
- 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

It's confirmed that the above mentioned data sources, were the last available sources at the commencement of the validation in March 2008 (data up to 2006 as issued in 2007). Result of the calculation based on the above mentioned sources is an $EF_{OM} = 1.06106 \text{ tCO}_2\text{e/MWh}$ and $EF_{BM} = 0.6816 \text{ tCO}_2\text{e/MWh}$. DOE confirms that the sources used are applicable in the context of baseline calculation for the proposed project and that calculation has been correctly done. According to the default weights applicable (0.5), the combined margin as calculated by PPs should thus result $EF_{CM} = 0.87133 \text{ tCO}_2\text{e/MWh}$, which is slightly different from the value indicated in PDD which is $0.8712 \text{ tCO}_2\text{e/MWh}$.

However, this mistake which will require an amendment of the PDD, does not impact the final result as the project participant correctly chosen to apply the more conservative emission factors as indicated in the *Bulletin on Baseline Emission Factors of China Grid* renewed by the National Development and Reform Commission (Chinese DNA) on 9th August 2007 instead of those calculated as above presented; accordingly the following values have been used in calculating the combined margin emission factors used in PDD: $EF_{OM} = 1.0119 \text{ tCO}_2\text{e/MWh}$ and $EF_{BM} = 0.6748 \text{ tCO}_2\text{e/MWh}$; It's confirmed that the resultant combined margin $EF_{CM} = 0.84335 \text{ tCO}_2\text{e/MWh}$ is correctly applied in baseline calculation as the most conservative emission factor based on information and data available at the commencement of the validation (March 2008).

Within the validation process, the project participants also calculated, as reference, the value that can be obtained by using the latest available value as per updated *Bulletin on Baseline Emission Factors of China's Regional Grid* issued on 18th July 2008. However, an incorrect result ($0.8712 \text{ tCO}_2\text{e/MWh}$ instead of $0.8801 \text{ tCO}_2\text{e/MWh}$) has been reported in PDD due to incorrect assumptions for OM and BM which are not consistent with the mentioned Bulletin.

The DOE clarify that the incorrect values referenced from the updated *Bulletin on Baseline Emission Factors of China's Regional Grid* issued on 18th July 2008, does not have any relevance in assessing the correctness of the assumptions made as this document, issued on July 2008 and thus after the commencement of the validation, has not been consequently considered at all in the context of assessing the most conservative figures available when the validation activities started with the GSP.

Response by the Project Participants to Issue 3:

According to “*Tool to calculate the emission factor for an electricity system (Version 02)*” approved by EB50, for ex-ante option, emission factor should be calculated based on the most



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recent data available at the time of submission of the CDM-PDD to the DOE for validation, without requirement to monitor and recalculate the emissions factor during the crediting period. According to the Bulletin on Baseline Emission Factors of China Grid renewed by the Director Office of National Climate Change Coordination of NDRC (Chinese DNA) on August 9, 2007, the OM Emission Factor is 1.0119 tCO_{2e}/MWh, and the BM Emission Factor of 0.6748tCO_{2e}/MWh. Therefore, the Combined Baseline Emission Factor of the China Southern Power Grid corresponds to 0.84335 tCO_{2e}/MWh.

The proposed project was GSP on February 28, 2008, the CM of 0.84335 tCO_{2e}/MWh was the latest Emission Factor before GSP. Therefore, the Emission Factor 0.84335 tCO_{2e}/MWh is valid, applicable and credible.