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CDM Executive Board
c/o Mr. Kai-Uwe Barani Schmit
Manager CDM Section

Subject : Project Participants and DOE's Response to the Request for Review
(Reference No.1938: Guangxi Youjiang Naji Navigation and Power Generation Project)

Dear Sirs,

Please find the attached document which shows the Project Participants and JCI's response to the request for review for the CDM project with the reference number1938.

In case you have any further question or request, please let us know by phone call or Email.

Yours sincerely,

Hideyuki Sato

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Response of Project Participants and DOE to Requests for Review

Project title:	Guangxi Youjiang Naji Navigation and Power Generation Project
Reference No.:	No. 1938
Project Participants:	Guangxi Xijiang Navigation Construction Development Co., Ltd. Mitsubishi Corporation (CDM consultant: Azure International Technology Development (Beijing) Co., Ltd.)
DOE:	Japan Consulting Institute, JCI

***Issue 1**: The DOE is requested to further clarify and provide evidence on the suitability of the input values to the investment analysis as per the guidance of EB 38 paragraph 54 (c).*

Response of Project Participant:

Paragraph 54 (c) of EB 38 demands that "On the basis of its specific local and sectoral expertise, confirmation is provided, by cross-checking or other appropriate manner, that the input values from the FSR are valid and applicable at the time of the investment decision"

Further explanation and information are provided below so that the input values to the investment analysis are verified and cross checked and is proved to be valid and applicable at the time of the investment decision.

Parameters	Explanation
Static total investment is RMB 533.2095 million in accordance with the FSR.	The Static total investment of the Project is derived from the FSR[1]. The FSR was completed by the independent and certified Design Institute which obtained "Grade A" certificated by the Ministry of Construction of the People's Republic of China[2]. The FSR is thus considered to be a reliable resource to reflect the actual economic situation of the Naji Project at the time of investment decision. According to the financial audit report of the Naji Project "Statement of Total Static Investment of Guangxi Youjiang Naji Navigation and Power Generation Project"[3] conducted by the Xianghao Accounting firm[4] certified by Guangxi Provincial Department of Finance, the static total investment spent is RMB 542.3786 million, exceeding the estimated static total investment of RMB 533.2095 million in the

[1] Attachment 1: Feasibility Study Report of Guangxi Youjiang Naji Navigation and Power Generation Project.
[2] Attachment 2: Engineering Design Certificate of Guangxi Water Conservancy and Electric Power Design Institute.
[3] Attachment 3: Statement of Total Static Investment of Guangxi Youjiang Naji Navigation and Power Generation Project.
[4] Attachment 4: Registered qualification certificate of Xianghao Accounting Firm, issued by Guangxi Provincial Department of Finance.

Parameters	Explanation
	FSR. Since the actual investment is higher than the estimated investment in the FSR, and the value of FSR was used in IRR calculation, it can be said that the PDD is more conservative.
Expected tariff is RMB 350/MWh (including VAT) in accordance with the FSR.	According to "Letter about Tariff of Guangxi Youjiang Naji Navigation and Power Generation Project"[5] issued by Guangxi Power Grid on 11/05/2005, the Guangxi Power Grid had originally accepted the tariff of RMB 350/MWh (including VAT) subject to the approval from Provincial Administration of Commodity price in Guangxi), so the Design Institute had expected the tariff to be RMB 350/MWh (including VAT) in the FSR. But Provincial Administration of Commodity price in Guangxi had disapprove this tariff (RMB 350/MWh, including VAT), and finally the actual tariff of the Naji Project had been determined as RMB 290/MWh (including VAT), based on the "Notification on Tariff of Guangxi Youjiang Naji Navigation and Power Generation Project [2007]565"[6] issued by the Provincial Administration of Commodity Prices on 17/12/2007. Therefore, the actual tariff is lower than the expected tariff RMB 350/MWh (Including VAT) in the FSR, it can be said that the investment analysis of PDD is more conservative.
Annual O&M cost is RMB 13.753 million in accordance with the FSR.	According to the "Statement of Annual O&M Cost of Guangxi Youjiang Naji Navigation and Power Generation Project" issued by the Design Institute on 28/10/2008, the estimated O&M cost is RMB 14.2617 million[7]. The main difference with the input value of FSR is the increase of Salary of the staff. According to the China Statics Year Book[8], the salary of the employees has been increased after 2004. The average salary of the employees is RMB 23.933 thousand /year in 2004[9] (Source: China Statics Year Book 2005), the average salary of the employees is RMB 28.170 thousand /year in 2005[10] (Source: China Statics Year

[5] Attachment 5: Letter about Tariff of Guangxi Youjiang Naji Navigation and Power Generation Project.
[6] Attachment 6: Notification on Tariff of Guangxi Youjiang Naji Navigation and Power Generation Project [2007]565.
[7] Attachment 7: Statement of Annual O&M cost of Guangxi Youjiang Naji Navigation and Power Generation Project issued by the Design Institute on 10/28/2008.
[8] http://www.stats.gov.cn/english/statisticaldata/yearlydata/
[9] http://www.stats.gov.cn/tjsj/ndsj/2005/html/E0526e.htm
[10] http://www.stats.gov.cn/tjsj/ndsj/2006/html/E0520e.htm

Parameters	Explanation
	Book 2006) and the average salary of the employees is RMB 30.729 thousand /year in 2006[11] (Source: China Statics Year Book 2007). Thus it can be concluded that it's impossible for the annual O&M cost to be decrease and the values of PDD is conservative.

In a summary, the actual total static investment is higher than the total static investment amount of FSR, the actual tariff is lower to the tariff used in the FSR and the O&M costs is higher than the value of FSR. Therefore, we can conclude that the input values to the investment analysis is valid and applicable at the time of the investment decision.

Response of JCI:
JCI validated the suitability of the input data to the investment analysis according to the guidance of EB 38 paragraph 54 (c).

JCI did cross check the input values as follows.

1) JCI confirmed the input values of the four large scale hydropower CDM projects that were all of the CDM projects in Guangxi Zhuang Autonomous Region of China in the UNFCCC web site[1)]. Two projects have been registered and two projects are under register requesting stage of CDM. The input values of those projects are in the following ranges. The values in parenthesis are of the proposed project.

Installed Capacity;	25.2 – 90 MW	(66 MW)
Tariff including VAT;	0.257 – 0.276 Yuan/kWh	(0.35Yuan/kWh)
Investment cost / capacity;	5,813 – 7,851Yuan/kW	(8,079Yuan/kW)
O&M cost /Investment;	1.82 – 2.91 %	(2.58%)

The installed capacity and O&M cost of the proposed project are in the range of other projects of the relevant region. The range of investment cost / capacity is 7,370 - 7,851Yuan/kW excepting the lowest case of 5,813 Yuan/kW and then that of proposal project was appraised slightly higher but almost same level in the relevant region.
The tariff is higher than other projects and it is validated in below.

[1)] Four large scale hydropower CDM projects in the UNFCCC web site are as follows.

Ref. 1596	Guangxi Bajiangkou Hydropower Project
Ref. 1604	Guangxi Xiafu Hydro Power Project
Ref. 1849	Guangxi Youjiang Naji Navigation and Power Generation Project
Ref. 2087	25.5MW Xinnali Hydropower Project

2) After receiving the request for review JCI requested the PP submitting the actual value regarding static total investment at present, tariff and O&M cost. The PP reported as the

[11] http://www.stats.gov.cn/tjsj/ndsj/2007/html/E0525e.htm

response above.

Total static investment;

The construction of the proposed project has been completed already. Till 09/06/2008, the actual expense of this project was RMB 542.3786 Million that was slightly higher than RMB 533.2095 Million of expected value in the PDD. Then the total static investment in the PDD was conservative value. The actual expenditure was audited by the Xianghao Accounting Firm who was certificated by the Guangxi Provincial Department of Finance[12].

Expected tariff;

The Project Participant has not contracted Power Purchase Agreement with the local grid company yet. It is expected in early next year. The tariff in the Power Purchase Agreement will be decided in accordance with the decision of the provincial administration of commodity prices. The provincial administration of commodity prices issued the Notification on Tariff of this project that the tariff was fixed provisionally as RMB 0.290/MWh (including VAT)[13]. This value was lower than the expected tariff in the PDD and the Project Participants reported the reason for tariff deference in above PP's response. This value will not be changed to higher value in the PPA contract since the tariff of hydropower station in the relevant area is 0.257 – 0.276 Yuan/kW as shown in above cross check.

JCI judges the expected tariff in the PDD was conservative value.

O&M cost

The design institute has investigated the present estimation for O&M cost based on recent price and salary levels. The statement of annual O&M cost of the proposed project[14] shows that the estimated O&M cost at present is RMB 14.2617million/year and also its detail. A salary portion is about 18.5 % and others is about 81.5 %. The salary potion increases 20 % and the other portion increases 0% from the estimated value at the feasibility study report issued in 2004.

JCI confirmed the China Statistical Yearbook issued by National Bureau of Statistics of China which reported the salary and price indexes as follows.

	2004	2005	2006
Increase rate of average wage	+14.1%	+14.6%	+14.3%
Increase rate of consumer price	+3.9%	+1.8%	+1.5%

JCI judges that the present O&M cost estimation by design institute are reasonable and appropriate and the O&M cost in the PDD was conservative.

JCI considers that all input values used in the PDD were reasonable and appropriate.

[12] Attachment 4: Registered Qualification Certificate of Xianghao Accounting Firm
[13] Attachment 6: Notification on Tariff of Guangxi Youjiang Naji Navigation and Power Generation Project [2007]565.
[14] Attachment 7: Statement of Annual O&M cost of Guangxi Youjiang Naji Navigation and Power Generation Project

***Issue 2**: Further clarification is required on: (i) why the common practice analysis has been limited to projects: a) with capacity above 33 MW, and b) commissioned within last five years; and (ii) how the project activity and similar projects have been differentiated.*

Response of Project Participant:
The following information and evidences are provided to further clarify the common practice analysis. Regarding (i) why the common practice analysis has been limited to projects:

(1) With capacity above 33MW:
In order to conduct common practice analysis, the Naji project took the range of 50%-150% of the rated capacity of the plant, 33MW-99MW as described in the PDD for request for registration.
In accordance with the step 4 of "Tool for the demonstration and assessment addtionality", the hydropower projects of similar scale in the same region could have been appropriately involved in the Table 6 of the above PDD with the range of 50%-150% capacity. Furthermore, to take a conservative manner for appropriate common practice analysis, the project participants revises and extends the range of the capacity for similar projects to 15MW-99MW.

(2) Commissioned within the last five years:
The Global Stakeholders' Consultation of the Naji project on UNFCCC web was held in 2007, and the similar projects commission within the last five years, which started from 2002, were selected because major reforms in the Chinese Power sector have been proceeded since 2002.

Since the reforms in 2002, the electricity generation industry is moving towards a more market oriented system from a state-controlled system, putting many power companies in the more competitive environment. On 10/02/2002, the National Council of P. R. China issued the "Notice of National Council Issued about the Power System of Organization Reform Program" [2002 No.5]. According to this Notice, the general objectives of reform are: breaking up monopoly, introducing competition, increasing efficiency and decreasing costs in power system. In order to realize the these objectives, the China State Power Corporation was diversified into two grid companies (State Grid and Southern Grid) and five power companies (Huaneng, Guodian, Datang, Huadian, and China Power Investment).

Based on the situation described above, the projects which commissioned after 10th February 2002 were selected as the similar projects for common practice analysis in the PDD.

In summary, the revised criteria of selection for similar projects are defined as the range of 15MW-99MW, commissioned after 2002 in Guangxi Zhuang Autonomous Region.
Revised criteria:

Capacity Range: 15-99MW
Region : Guangxi Zhuang Autonomous Region
Operating year : After 2002

Based on the revised criteria, the similar projects are listed in the Table 2 “Hydro power plants with capacity between 15MW and 99MW in Guangxi”. All the projects are sourced from “Hydropower Resources Programming of Guangxi Zhuang Autonomous Region”[15].

Table 2 “Hydro power plants with capacity between 15MW and 99MW in Guangxi”:

No.	Project Name	Capacity MW	Operation year	CDM application
1	Dapu Hydropower Plant	90	2004	No
2	Longjiang Xiaqiao Power Plant[16]	50	2005	Yes
3	Luocheng Baotan Power Plant[17]	37.66	2007	Yes
4	Jinniuping Power Plant[18]	60	2007	Yes
5	Jinjitan Power Plant[19]	72	2006	Yes
6	Guding Power Plant[20]	80	2006	Yes
7	Wangcun Power Plant[21]	60	2007	Yes
8	Xiafu Power Plant[22]	49.5	2006	Yes
9	Bajiangkou Power Plant[23]	90	2005	Yes
10	Liangwan Power Plant[24]	25.5	2006	Yes
11	Longxing Power Plant[25]	24	2006	Yes
12	Sancha Power Plant[26]	25.5	Under Construction	Yes
13	Xinnali Power Plant[27]	25.5	Under Construction	Yes
14	Bailehe Power Plant[28]	21	Under Construction	Yes
15	Jinji Power Plant[29]	25.2	2008	Yes
16	Shuijingtang Power Plant	18.9	2005	No
17	Xialiujia Power Plant	18	2005	No

Regarding (ii) how the project activity and similar projects have been differentiated:
According to the Table2 “Hydro power plants with capacity between 15MW and 99MW in Guangxi”

[15] Attachment 8: Hydropower Resources Programming of Guangxi Zhuang Autonomous Region published by Guangxi Water Conservancy and Hydropower Bureau.
[16] http://cdm.unfccc.int/Projects/Validation/DB/VLA9MU8IVOQLFBWBSVP44OZ5KG925D/view.html
[17] http://cdm.unfccc.int/Projects/Validation/DB/1AX8W2IB7TQCV0ACISZ7VQ568DMFVB/view.html
[18] http://cdm.unfccc.int/Projects/Validation/DB/GQWEI5NXRBQIDRH6Y7M5KL4BDOARFF/view.html
[19] http://cdm.unfccc.int/Projects/Validation/DB/23GT8G3LQRYC5C5VOZ7G0X59ZKLKBE/view.html
[20] http://cdm.unfccc.int/Projects/Validation/DB/K88H1N1IHYG05GH0KNADAB6FJ2LPFG/view.html
[21] http://cdm.unfccc.int/Projects/Validation/DB/P9F5Y5BIMNHKV7LK8050NO1GXZ4WN6/view.html
[22] http://cdm.unfccc.int/Projects/Validation/DB/MOXXRA9Y27GA3A2W69QLIDGV5B8WMK/view.html
[23] http://cdm.unfccc.int/Projects/DB/JCI1201674164.55/view
[24] http://cdm.unfccc.int/Projects/DB/DNV-CUK1218611345.0/view
[25] http://cdm.unfccc.int/Projects/Validation/DB/X5YLDWFQRD7Y1APVOOJVY47FRNXV18/view.html
[26] http://cdm.ccchina.gov.cn/website/cdm/pdf/Item/Item2728.pdf
[27] http://cdm.unfccc.int/Projects/Validation/DB/GAXRDAH3LQL7112KWSTYXE268NC74M/view.html
[28] http://cdm.unfccc.int/Projects/Validation/DB/V2QV2QCV8PNY7VZQLDDES07QILS86R/view.html
[29] http://cdm.unfccc.int/Projects/DB/JCI1211534392.91/view

above, the distinction between the Naji project activity and three similar projects which are not developed as CDM project are described as follows:

(1)Regarding Dapu Hydropower Plant:
The owner of Dapu Hydropower Plant, Guangdong Meiyan Hydropower Co., Ltd. (the Meiyan), is the large listed company in Shanghai.

The construction of Dapu Hydropower Plant had started in year 2000[30] when the tariff for each power plant was determined with the principle of full cost recovery (Full cost recovery : each new-constructed power plant would get different on-grid tariff), so each developer could obtain sufficient profit during the certain period.
On the other hand, the construction of Naji Hydropower Plant had started in year 2005 when the tariff for each power plant was not determined with the principle of full cost recovery but determined with a more market oriented system putting into more competitive environment based on the Major reforms in the Chinese Power Sector on 10/02/2002.

Moreover, the annual operation hour of the Dapu Hydropower Plant is 5,679h[31].
On the other hand, the operation hour of the Naji project is 3,837h[32] from the FSR in comparison. This favorable condition will bring more revenue and no financial difficulties will face barriers for investment for the Dapu Hdydropower Plant.

(2)Regarding Shuijingtang Power Plant:
This project site is located in Hezhou City, Guangxi Zhuang Autonomous Region.
Hezhou City is the only city in the Guangxi Zhuang Autonomous Region was awarded the title “the first hydro powered city of China” by the Ministry of State Water Conservancy[33].

Situated in an acclaimed city in the hydro power industry, the Shuijingtang Power Plant enjoys many favorable policies from the local authorities. As one of such policies, the Hezhou City Government authorized the electricity generated from the Shuijingtang Hydropowr Plant to be sold to the adjacent Guangdong Power Grid[34]. According to the “Notification on tariff of Hydropower Projects” issued by the Guangdong Provincial Administration of Commodity Prices, the minimum tariff of hydropower projects is fixed as RMB 395.4/MWh (excluding VAT)[35], equals to RMB 462.6/MWh (including VAT), which is almost 59% higher than the tariff of the Naji Project, RMB 247.9/MWh (excluding VAT), equals to RMB 290/MWh (including VAT).

[30] Attachment 9: Construction starting year of Dapu Hydropower Plant.
[31] http://www.sinocp.com/project/project1.asp?xmbh=709
[32] Attachment 10: Annual operation hour of the Naji Project according to the FSR completed on 22/06/2005. data source: Feasibility Study Report completed by Guangxi Water Conservancy and Electric Power Design Institute on 22/06/2005.
[33] http://gb.cri.cn/1321/2006/08/09/661@1167903.htm
[34] Attachment 11: Favorable policy published by the local government of Hezhou city, data source: http://www.gx.xinhuanet.com/dtzx/2006-05/08/content_6922454.htm
[35] Attachment 12: Notification on tariff of Hydropower Projects issued by Guangdong Provincial Administration of Commodities Prices on 2007-7-30.

It is concluded that the owner of Shuijingtang Power Plant enjoys a significantly higher tariff compared to the Naji Project, and is in a much more favorable financial environment, which does not require support of CDM revenue.

(3)Regarding Xialiujia Power Plant:
The Xialijia Power Plant is located in Jinxiu County, Guangxi Zhuang Autonomous Region, which offers many favorable policies[36] to attract the investment on hydropower projects from other areas.

According to "the small hydropower development policy"[37] published by the Jinxiu County Government in July, 2003, a preferential tariff will be offered to the hydropower investments and only the minimum level of Administrative and Institutional Fees would be levied.

Benefiting from the favorable local policy, the Xialiujia Power Plant has an IRR[38] of 11.81%, higher than the 10% benchmark for the small hydropower project, faces no difficulty in terms of investment environment,, and does not need the support of CDM revenue.

Response of JCI:
In accordance with the "Tools for the demonstration and assessment of additionality (version3)", the similar project activities were selected.

(1) In order to have a fair and reasonable comparison with the Project, similar hydropower projects were chosen that (i) were commissioned after 2002, (ii) are in the Guangxi Zhuang Autonomous Region, (iii) have similar installed capacity to the Project and (iv)selected from official hydropower project list.
(2) The 17similar projects commissioned after 2002 were selected as shown in Table 2. Because major reforms in the Chinese power sector have been proceeded since 2002.
As explained in the PDD, since the reform in 2002, the electricity generation industry is moving towards a more market oriented system from a state-controlled system, putting many power companies in the more competitive environment. On 10/02/2002, the National Council of P.R.China issued the "Notice of National Council Issued about the Power System of Organization Reform Program" [2002 No.5]. According to this Notice, the general objectives of reform are: breaking up monopoly, introducing competition, increasing efficiency and decreasing costs in power system. In order to realize the these objectives, the China State Power Corporation was diversified into two grid companies (State Grid and Southern Grid) and five power companies (Huaneng, Guodian, Datang, Huadian, and China Power Investment).
Despite the introduction of the reforms in 2002, the government involvement remains strong. Though the transmission and distribution sector was diversified, it was still controlled by the State,

36 http://www.cnhydro.com/info/news/showContent.asp?id=1245

37 Attachment 13: "The small hydropower development policy" published by the local government of Jinxiu County, Guangxi Zhuang Autonomous Region, data source: http://www.gxcounty.com/e/DoPrint/?classid=20&id=14866

38 Attachment 14: IRR of Xialiujia Power Plant of Jinxiu County,
data source: http://www.chinaccm.com/40/4011/401105/news/20030512/154616.asp

which resulted in no real changes and competition among state-own companies. The private companies face unfair competition from state-own companies due to the lack of internal link with state-own grid companies. Furthermore, state-own companies have great advantage in access to financing. They have very large capital reserves and operational capacity and easy access to financing from government.

On the contrary, private companies face more problem concerning financing channels due to their weak capital reserves and operational capacity. Especially in China, power companies must sell the electricity to grid companies directly and selling to other users is not allowed. To sum up, the reforms in 2002 could have brought developer's reluctance especially for private companies like this Project in investing to the hydropower plants due to the unfair competition and high risk remained after reform explained in above.

(3) In a huge country like China where the geographical, institutional, economic and investment environment varies among provinces, it is fair to look for similar projects in the same province. This is also the common practice in CDM projects in China.

(4) Regarding capacity of project there are various consideration points. One of the points is the definition of CDM project that is small scale or large scale over 15MW. In the PDD the Project Participants originally searched for projects which have installed capacity of 33-99MW. Furthermore 15 to 33 MW projects were also deemed to have similar characteristics. And the revised common practice analysis selected appropriately the similar size project.

(5) Originally there are eight projects with installed capacity between 33MW and 99MW appeared in the Yearbook, and all of them had been developed as CDM project activities or under much preferential conditions. At the revised version in this response, there are seventeen projects (9 projects in addition to the above) with installed capacity between 15MW and 99MW appeared in the Yearbook, and fourteen of these projects in Table 1 have applied for CDM, and three of these projects had been developed under much preferential conditions

(6) In light of the above, hydropower plants for the common practice analysis and the related parameters are sourced from Yearbook of Hydropower Resources Programming 2006[39], which is an official statistics, issued by the Guangxi Water Conservancy and Hydropower Bureau. There are 17 projects with installed capacity between 15MW and 99MW appeared in the Yearbook, and 14 projects have applied to CDM registration and 3 projects had been developed under much preferential conditions comparing with the Project.

The Project Participant discussed the differences between the three similar projects and the proposed projects regarding support by local policy, tariff and operation hour.

JCI confirmed that selection of similar projects was done appropriately. The discussion showed that all of the comparable projects listed as similar project were developed as CDM project activities or under much preferential conditions comparing with this Naji Project, exemplifying the fact that all similar projects and the proposed project without preferential conditions required the additional CDM revenue to compensate the poor financial returns and market risks.

[39] Attachment 8: Hydropower Resources Programming of Guangxi Zhuang Autonomous Region published by Guangxi Water Conservancy and Hydropower Bureau