



# JAPAN CONSULTING INSTITUTE

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CDM Executive Board  
c/o Mr. Daniele Violetti  
Secretary to the CDM Executive Board

Subject : DOE Responses to the Request for review  
for registration request

(Reference No.2565: Sichuan Tiejue 25MW Hydro Power Project)

Dear Sirs,

Please find the attached document which shows JCI's responses to the request for review for the above CDM project (Reference No.2565: Sichuan Tiejue 25MW Hydro Power Project).

If you have any further question or request, please let us know by phone call or E-mail.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'Hideyuki Sato', is written over a horizontal line.

Hideyuki Sato

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***Issue 1: The DOE shall clarify how it has validated the investment decision has been independently considered for the purchase of the project activity only, as it appears the Framework Agreement signed contains the purchase of another hydropower station, the Sela station.***

#### **Response of JCI**

Though purchased together with the Sela station on a package deal, purchase of the Tiejue project was considered and decided independently by the project owner, which is demonstrated below:

As the Tiejue project was on the way of construction, while the Sela station already started operation from August 2001, the project owner requested the Chengdu Hongce Consultant Company to assess only the asset of the Tiejue already invested by the ex-project owner, and estimate the additional cost for the capacity expansion from the original 22MW to 25MW and for completing the construction. By that time, on 27/09/2006 the project owner was advised by the Leshan City Water Conservancy and Power Architecture and Reconnaissance Design Institute (hereafter refer to "Leshan DI") to expand the capacity of the Tiejue project /Appendix-1/.

JCI has checked the asset evaluation report compiled on only the Tiejue project /Appendix-2/ by a chartered consultant, Chengdu Hongce Consultant Company /Appendix-3/ and completed on 18/11/2006. The report advised that:

- Total investment by the ex-project owner was estimated at 94.72 million RMB
- Out of the total, the tangible static investment portion was estimated at 89.15 million RMB
- To expand the capacity and complete the project, additionally required total static investment was estimated at 33.28 million RMB

JCI also checked the minutes of the board meeting on 12/12/2006 again /Appendix-4/, it is can be seen that the project owner decided only the purchase of the Tiejue project based on the provision of a CDM application, though the minutes does not address the capacity expansion, but the outline of the project status at that time. It clearly indicated that the decision was solely made based on the independent evaluation of Tiejue project and had no connection to the Sela station.

Based on the above arguments, JCI concludes that it is sufficiently substantiated that the purchase of the Tiejue project was considered independently by the project owner and then decided independently. The project owner evaluated the asset of the Tiejue project already investment by the ex-project owner by that time with use of the chartered consultant to assess the static investment and additionally required cost to complete the project which is in line with the relevant guidance, and evaluated the project financially with use of the index widely used in the validation of CDM projects.

***Issue 2: The DOE shall further clarify how it has validated the input values of the investment analysis in accordance with VVM 109 guidance, in particular (a) the credibility of the Expand Capacity Report, (b) the basis and the cost implications of changing the capacity of the project from 22MW to 25MW when the main equipment purchase agreement was signed in June 2004.***

#### **Response of JCI**

##### **a) the credibility of the Expand Capacity Report (ECR)**

The Expansion Capacity Report/Appendix-5/ was compiled by the Leshan City Water Conservancy and Power Architecture and Reconnaissance Design Institute (hereafter refer to "Leshan DI"), a certified institute for grade B for both water conservancy and hydropower industries /Appendix-6/, in May 2007, and then approved by the Leshan City DRC on 18/06/2007 /Appendix-7/.



JCI had confirmed that the parameters and analysis in ECR are the basis of decision making of the current project owner to purchase the project. In addition, the key parameters of the ECR, tariff and O&M are cross-checked with comparison of the other 12 CDM projects in Sichuan province, and then evaluated to have been estimated appropriately in a conservative manner, as shown in section 6.3 of the validation report submitted for registration.

Regarding the static investment, the value from the above asset assessment was applied to the IRR calculations as shown in the PDD, since the project owner relied on the value in the project decision.

In conclusion, JCI judges that it is sufficiently substantiated that the ECR is credible and all the input values for the IRR calculations have been appropriately applied in a conservative manner.

**(b) the basis and the cost implications of changing the capacity**

During the feasibility study process to examine the purchase the proposed project from the ex-project owner, through a close assessment of the water resource of Tiejue project with reference to the actual operation data of hydro power stations in Sichuan province, the Leshan DI recommended the project owner to increase the installed capacity of the Tiejue to fully utilize the energy potential of the water resource thus can slightly alleviate the bad financial return of the project /Appendix-1/.

Therefore, the project owner requested the Chengdu consultant to estimate additional cost necessary to upgrade the installed capacity from the original 22MW to 25MW as well as additional cost for completing the project after purchasing.

The report indicated that additional costs for the upgrading was 0.355 million RMB for main equipment, and 1.08 million RMB for relevant civil work, totaling 1.43 million RMB /Appendix-3/.

It was expected that the change order of the main equipment placed by the current owner on 15/01/2007 /Appendix-8/ did not cause serious troubles in the manufacturer. The original order was placed by the ex-project owner in June 2004, but the notice of the suspension of construction work was issued on 10/06/2006 /Appendix-9/, over one year before the scheduled delivery date of the equipment to the site specified on 30/07/2007 in the purchase contract /Appendix-10/.

To ensure that the financial viability of the Tiejue project would not be changed with the capacity expansion from 22MW to 25MW, the two cases' IRRs are calculated and obtained the following results as a comparison /Appendix-11/. The input values used in the calculations are also shown in the below table.

Table1 Comparison of Input Values used for IRR calculation

Item	Unit	22MW	25MW
Static Investment	Million RMB	121	122.43
O&M cost	Million RMB	3.9	3.97
Tariff	RMB/kWh	0.192	0.192
Net power generation	MWh	95,700*	103,830

Remark \*:  $95700 = 22\text{MW} \times 5,000\text{h} \times 0.87$  (0.87 is the coefficient which has been checked in the VR)

Table2 Comparison of IRR between 22 and 25MW Plan

Case	IRR
Original 22MW plan with reduced annual operation hours, 5,000 hours (the max. of the range estimated by Leshan DI.)	7.59 %
Capacity expansion plan to 25MW	8.36 %



As shown the above, the case of capacity expansion to 25MW indicates a higher IRR. Therefore, the selection of the capacity expansion by the project owner is considered appropriate as with only a total of 1.2% investment increase from 121 to 122.43 million, the project can yield 8.5% more net grid-connected power generation or power sales revenue.

On the other hand, both cases cannot be financially attractive since the IRRs of them are lower than benchmark of 10%.

In addition, JCI would like to further point out that, even if remove the additional cost of capacity expansion (1.43 million RMB) form the static investment of the 25MW case, the IRR is calculated to be 8.48% /Appendix-12/ that is still lower than the benchmark of 10%. Therefore, the cost of changing capacity dose not has any significant impact on the additionality of the proposed project.

With the above arguments, JCI concludes that it has been clearly clarified that how JCI validated the credibility of the Expansion Capacity Report and the basis and the cost implications of changing the capacity of the project including the equipment contract issue.

***Issue 3: The DOE shall further clarify how it has validated the baseline alternatives considered to the project activity according to VVM paragraphs 80 & 81 requirements, as the alternatives of (a) investment without capacity expansion, and (b) not investing the project has not been considered.***

#### **Response of JCI**

##### **a) Investment without capacity increase**

The Tiejue project was originally developed with an installed capacity of 22MW; however, due to financial difficulties the ex-project owner suspended the construction and sold the Tiejue to the current project owner.

The current project owner decided the purchase of the project under the conditions of the capacity expansion to 25 MW and application of CDM.

These clearly indicate that the original 22 MW plan could not be developed as business-as-usual and therefore, could not be an alternative for the baseline scenario considerations.

Therefore, it is not considered realistic to include a scenario “a) investment without capacity expansion” as an alternative for the baseline scenario considerations.

As shown in the PDD, the baseline of the project was identified as “Provision of equivalent amount of annual power output by the grid (CCPG) where the proposed project is connected into”, out of the four (4) alternatives to fully comply with the relevant methodology and the VVM.

JCI concludes that it, therefore, is not considered appropriate to include the scenario “Investment without capacity increase” for the baseline scenario considerations of the Tiejue project.

##### **b) not investing the project**

The alternative “not investing the project” has been already assumed in sections B.4. and B.5. of the PDD, as one of four (4) alternatives, “4) Provision of equivalent amount of annual power output by the grid (CCPG) where the proposed project is connected into.”

As the conclusion, JCI judges that descriptions of the baseline scenario section of the PDD



complies with the relevant methodology and VVM, and therefore, does not need to be revised.

#### Appendix list

No.	Title
1	Answer letter from Leshan DI to the project owner for consulting of Tiejue project issued on 27/09/2006
2	Certificate of the Chengdu Hongce Engineering Consulting Co. Ltd.
3	Asset Evaluation Report of the Tiejue Project issued on 18/11/2006
4	Minute of board meeting issued on 12/12/2006
5	The Expansion Capacity Report compiled by Leshan DI and issued in 05/2007
6	Certificate of the Leshan DI
7	LoA of the ECR by Leshan City DRC issued on 18/06/2009
8	Letter from the project owner to the manufacturer regarding the change of the order sent on 15/01/2007
9	Notice of construction work suspension by the ex-project owner issued on 10/06/2006
10	Main equipment purchase contract by the ex-project owner issued in 04/2006
11	IRR calculation sheet for 22 MW plan
12	IRR calculation sheet for 25 MW plan in case without additional investment