UNFCCC Secretariat
Martin-Luther-King-Strasse 8
53153 Bonn
Germany

Att: CDM Executive Board

DET NORSKE VERITAS
CERTIFICATION ASS
Climate Change Services
Veritasveien 1
NO-1322 Høvik
Norway
Tel: +47-6757 9900
Fax: +47-6757 9911
http://www.dnv.com
NO 945 748 931 MVA

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Response to request for review
Sichuan Guohe 20MW Hydropower Project, China (2085)

Dear Members of the CDM Executive Board,

We refer to the requests for review raised by three Board members concerning DNV's request for registration of project activity 2085 "Sichuan Guohe 20MW Hydropower Project" and would like to provide the below initial response to the issues raised by the requests for review.

Issue 1: The DOE is requested to justify the appropriateness of a benchmark of year 1995 when assessing the additionality with an investment decision made in 2005/06.

The project proponent has compared the project financials against a benchmark of 10%. DNV has verified that the selected benchmark is in accordance with the document SL16-95 "*Economic evaluation code for small hydropower projects*", issued by the Ministry of Water Resources of China. Though this document was issued by the Chinese ministry in the year 1995, it is the only source till date which clearly defines the expected minimum returns from such type of hydropower projects. The benchmark of 10% is most commonly used in China for assessing the financial viability of such projects. This can also be seen from other similar hydropower projects in China, recently registered under CDM, such as Nansha Hydropower project in Yunnan Province (2133), Shangri-La Langdu river 4TH level hydropower station (2057), Shangri-La Lantayong hydropower station (2059), Sichuan Chenjiaheba 20 MW Hydropower Project (1589), etc.

The applicability of the same benchmark for the proposed CDM project activity can further be demonstrated from the list of existing regulations for hydropower plants in China provided in the annexure of "*Notice on the current technical standard of water resources*" (2006, No.05), published by the division for construction and management, Ministry of Water Resources of China[1] and Chinese Hydraulic Engineering Society (CHES)'s website[2], which provides the complete list of regulations for the hydropower sector including expired regulations, regulations under amendment and existing regulations in China. The start date of the project activity is on 18 January 2006, which has been evidenced by the construction start permission letter for the project activity, and DNV has verified the construction permission during the validation process. As a conclusion, DNV is able to confirm benchmark of year 1995 is still valid when assessing the additionality with investment decision made in October 2005.

[1] http://www.mwr.gov.cn/tzgg/qt/20060926000000479251.aspx
[2] www.ches.org.cn/jishubiaozhun/001.asp

DNV would also like to state that in the approved Feasibility Study Report (FSR), the financial projections of the project activity have also been compared against the same benchmark of 10%. The FSR was prepared in April 2004 by an officially qualified designing institute, Sichuan University Engineering & Designing Institute, and was approved on 15 July 2004 by Liangshan Yi Autonomous Prefecture Development and Reform Commission. DNV verified the approval letter during the validation process. The approval of the FSR by Liangshan Yi Autonomous PDRC also adds to the fact that the benchmark of 10% is still considered appropriate in China, as the benchmark is a decisive factor in China for the rejection or approval of the projects.

Furthermore, according to the "*Economic evaluation code for small hydropower projects*", the code of 10% is applicable to small scale hydropower projects with an installed capacity below 25 MW, and to small scale hydropower projects with an installed capacity below 50 MW in the rural hydropower region. DNV would like to indicate that it is appropriate to use a benchmark of 10%, considering the fact that the project activity has an installed capacity of 20 MW, which is below the installed capacity of 25 MW.

Issue 2: The PP/DOE are requested to confirm whether the start date quoted in the PDD (18 January 2006) complies with the CDM glossary of terms, in particular as the PDD made available for global stakeholder consultation listed the start date as being May 2005.

In the PDD version 1 dated 12 April 2007 submitted for the Global stakeholder's consultation from 10 August 2007 to 8 September 2007, the chapter C1.1 related to the starting date of the project activity was 1 May 2005. However, during interviews on 21 September 2007, it was noticed that this was incorrect as it was not the real date of the permit of starting construction. A CAR was written in the draft validation report and the starting date of Guohe project was corrected in the PDD version 4 dated 30 July 2008 submitted for registration. In the course of the preparations for this response to the request for review, it was clarified that the contract for the purchase of the turbine[3] is dated 25 November 2005. As this date is prior to the construction permit, it reflects the earliest date of any real action with regard to the project implementation, an is chosen as the project starting date[4]. The contract for the purchase of the turbine was submitted to DNV by the project proponent, and verified by DNV.

Issue 3: The DOE should clarify how it has validated the common practice analysis and the selection criteria, thereby taking into account that it is more appropriate to consider as "similar" projects all hydro projects in a capacity range between + and - 50%, i.e. 10 and 30 MW.

In the additionality tool version 03, definition of similarity is outlined as "*Projects are considered similar if they are in the same country/region and/or rely on a broadly similar technology, are of a similar scale, and take place in a comparable environment with respect to regulatory framework, investment climate, access to technology, access to financing, etc.*".

Comparable hydropower projects have been selected within Sichuan province. The geographical area of a province in China is quite large. Besides, policies and regulations differ from province to province

[3] Contract for the purchase of the turbine for the Sichuan Guohe hydropower station, dated 25 November 2005.
[4] Consent order, signed by Sichuan Hydropower & Electric Power Engineering Construction Consultancy Center – refGHGZ/SG-01, dated 18 January 2006

even though the general requirements of the Chinese central government are the same. Sichuan province is selected as the region to conduct this analysis; this is considered appropriate by DNV as hydro resources are rich in Sichuan province and the policies are different in different provinces. With these reasons, the geographical boundary was considered appropriate.

For the 20 MW hydropower plant, the common practice analysis was conducted for hydropower plants less than 30 MW in the data source "Yearbook of China Water Resources"[5]. This data source only covers hydropower plants above 25MW. Hence the common practice analysis was only from 25 MW – 30 MW. Even though the larger scale of power plants generally indicate more financially attractive conditions, DNV acknowledge that there can be some powerplants below 25 MW that might be financially attractive. DNV therefore requests the project participants to also use local data sources to consider powerplants in the range 10 MW – 30 MW. For powerplants realized from 2002 without CDM, possible reasons related to funding, investment per kW or investment per kWh need to be considered in order to establish whether hydropower plants in this range is common practice under similar conditions.

Ten projects with installed capacity between 25 MW to 30 MW appear in the Yearbook of China Water Resources 2006, but the Zhongju project is applying CDM[6], hence it should be excluded from the common practice analysis. Finally, nine projects were analysed in addition to the proposed project.

Among the projects identified according to the above criteria, seven similar hydro power projects were completed before 2002 by CSPC (China State Power Corporation) which had the monopoly for generating power. At that time, most of the plants were constructed by the national or the local governmental funds, or the government provided the loan guarantee for the companies, so the developers did not have financing difficulties. Meanwhile, the government developed policies to support power plants at that time; the tariff for each power plant was determined with the principle of full cost recovery; each developer could obtain some profit as well as the full-cost recovery during a certain period; so they did not have any investment risks. Hence these are not similar to the proposed project activity

The Niujiaowan Cascade-3 power plant was commissioned in 2002 but started before 2002; so similarly as for the 7 other projects commissioned before 2002, it enjoyed favourable polices.

The last identified project was Baishuihe, located in an area which is rich in water resources and the project was verified by DNV to have 20% higher operating hours (6 633h)[6] compared to the "Sichuan Guohe 20 MW Hydropower Project" (5 525 hours), hence higher annual electricity generation and better income.

In conclusion, DNV was only able to assess similar hydropower plants with installed capacity from 25 MW and above, and requests the project participant to conduct an analysis also taking local data sources into consideration to ensure a complete list of similar hydropower plants in Sichuan Province.

Issue 4: The data used to calculate the grid emission factor in the PDD submitted for registration was not available at the commencement of validation (April 2007). The PP and DOE are therefore requested to amend the grid emission factor using data which was available at this date.

[5] Which is publicly available
[6] China Water Resources Yearbook 2006

The PDD published for the global stakeholder's consultation was dated 12 April, and was inserted on DNV's webpages on 9 August 2007. This date is defined as the commencement of the validation. On 9 August 2007, the following sources for calculating the grid emission factor for the project were available and the most recent:

1. China Electric Power Yearbook 2004 – 2006 (published December 2006)
2. China Energy Statistical Yearbook 2004 – 2006 (published March 2007)
3. 2006 IPCC guidelines (final version published end of 2006)

As the PDD published on 9 August 2007 used no data vintages after 2004, whereas data vintages from 2005 were already available, DNV requested the project proponent to update the calculation to the most recent data, as per the methodology. The PDD sent for registration was hence updated as per DNV's request, using the most recent data available at the time of the commencement of validation.

Issue 5: The PP/DOE should explain and correct the discrepancy between the PDD and VR regarding the reservoir and its monitoring requirement as per the methodology.

During follow-up interviews on 21 September 2007, DNV discovered that a reservoir of 106 334 m^2 was described in the Feasibility Study Report (p34), while an incorrect value was stated in the PDD version 1 dated 12 April 2007 submitted for global public consultation. The mistake needed to be clarified and corrected and was as addressed in CL1 in the validation report. The project developer corrected this mistake in the updated PDD version 4 dated 30 July 2008. The correct value of the surface area from the PDD version 4 and in the VR is 106 334 m^2 and 188 W/m^2 is the correct power density.

According to the methodology ACM0002 version 6, it does not require the monitoring of the area of the reservoir during operation, but only at the start of the project which was carried out during the validation process and was validated by the DNV during interviews through FSR.

We sincerely hope that the Board accepts our aforementioned explanations.

Yours faithfully
for DET NORSKE VERITAS CERTIFICATION AS

H.W. Brinks

Hendrik W. Brinks
Technical Director for CDM
DNV Climate Change Services