



Mr. Hans Jurgen Stehr
Chair, CDM Executive Board
UNFCCC Secretariat
CDMinfo@unfccc.int

November 13th 2007

Re: Request for review of the request for registration for the CDM project activity "Shree Chhatrapati Shahu RE Project" (Ref. No. 1297)

Dear Mr. Stehr

SGS has been informed that the request for registration for the CDM project activity "Shree Chhatrapati Shahu RE Project" (Ref. No. 1297) is under consideration for review because four requests for review have been received from members of the Board.

The requests for review are based on the same reason outlined below. SGS would like to provide an initial response to the issues raised by the request for review:

Request 1, 2, 3 and 4:

1. Further substantiation should be provided regarding the limiting of the period of assessment for the investment analysis to seven years, as non-CDM benefits will continue to accrue beyond this period.

SGS's Response on the Comments

Before dealing with the above issue of the IRR, the project participants wish to highlight that the following are key elements of demonstration of the additionality of the project:

The project activity takes place within a cooperative sugar mill. This means the farmers are the owners of the factory. The investment situation facing a cooperative mill is totally different to that faced by a privately owned company. In 2003/4 121 out of 137 of the sugar factories in Maharashtra were cooperatives – Maharashtra is the largest sugar producing state in India, but because of the cooperative structure, uptake of bagasse cogeneration for export to the grid has been minimal. There is a large volume of evidence illustrating the barriers facing uptake of electricity generation for export to the grid in the cooperative sugar sector including:

<http://sify.com/finance/fullstory.php?id=14180638>

<http://www.teriin.org/events/docs/pdf/6wagh.pdf>

<http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1019&context=ucias>

<http://www.wbcsd.org/web/projects/climate/ghg-forum2006/kala.pdf>

There are 500 sugar factories in India of which 306 are cooperative factories¹. Despite the large number of sugar cooperatives, their participation in the CDM has been extremely minimal. An initial analysis shows that there are 13 registered Indian bagasse projects using ACM0006, 2 using AM0015 and 7 small scale projects using AMS1D. However, only 1 registered project takes place at a cooperative (project number 0313). The CDM was instrumental in allowing this project to achieve financial closure as demonstrated in the registered PDD and validation report.

As highlighted in the 2005 University of California study referred to above:

“... it is evident that the primary barrier to bagasse cogeneration in cooperative sugar mills is their financial weakness. Sugar cooperatives have been an excessive burden on the state exchequer and have defaulted on loans running into millions of Rupees. For this reason, financial institutions run by the national government and other private financial institutions have declined any further lending to the cooperatives. Although our field research shows awareness of the practice of bagasse cogeneration, the financial health of the cooperatives has prevented them from seeking the necessary investment for such projects. Thus the institutional practices of the cooperatives and their poor financial health have prevented them from making the investment in technology upgrade that some of their private counterparts have been able to make.”

The Shree Chhatrapatti Shahu project was undertaken with the assistance of a project financed by the UK Foreign and Commonwealth Office's (FCO) Global Opportunities Fund (GOF). The GOF is the FCO's newest programme budget and has been created to fund projects around the world relating to the FCO's eight strategic international policy priorities².

Electricity generation from sugar-cane residues combats climate change, contributes to energy security and helps sugar mills diversify their revenue streams. Around the world many entities involved in the milling of sugar cane are benefiting from this technology. However, this success has not been replicated in the vast Indian cooperative sugar sector, largely due to barriers to investment. The GOF funded programme evaluated novel funding structures, including carbon finance, which can overcome these barriers. It was expected that the study would result in an actual investment at a sugar mill.

The Shree Chhatrapatti Shahu project has successfully overcome the above barriers, and the role of carbon finance in achieving this is very important. Firstly, the project applied to, and was accepted by, the Austrian JI/CDM programme and an ERPA has been signed. The project is financed by a loan from the Bank of India and through a loan from the Sugar Development Fund. This was validated during the discussion with the project proponent and thus accepted. This has provided assurance to the bank in lending to a cooperative and has also helped the management of the factory convince stakeholders (farmers) of its viability. Since in India banks never mentioned the reason for approval or rejection of loan and hence reason for loan approval was not mentioned in loan approval document from Bank of India.

Turning to the investment horizon, we accept that 7 years may be too short and hence the investment analysis was revised considering period for 10 years which is suited to an investment decision in an Indian cooperative sugar mill, with all its attendant risk³ should be 20 years is unrealistic. The revised financial analysis sheet for the project activity is attached herewith as Annex 4.

¹ http://india.gov.in/sectors/food_public/sugar.php

² This project also provided assistance to the only other registered Indian sugar cooperative project ref: 0313.

³ In 2003 130 cooperative mills had a negative net worth

Under the cooperative structure, in any year that the factory makes a surplus this is passed back to the farmers, and thus a cooperative cannot build financial reserves. A 20 year investment decision period may make sense in a developed European utility situation, but not in this situation when the very existence of the mill is a risk. Nearly 40 per cent of the cooperative mills are losing money and facing closure. In the state of Maharashtra 71 mills are sick, and in region alone (where the factory is located), 17 are either sick or have already gone under liquidation⁴. In addition it must be remembered that the financial situation of the Maharashtra State Electricity Distribution Company (MSEDCL) is not strong, and the payment risk on the PPA is real.

A more reasonable investment horizon is 10 years, with a terminal value for the scrap value of the equipment at year 11. The benchmark of the PLR used in the PDD was not realistic and in no way reflects the risk of lending or investing in a cooperative factory. A conservative figure for a benchmark would be 20%⁵. WACC value benchmark was decided based on the benchmark from the other companies in the sugar manufacturing in India. The detail regarding the WACC was attached as Annex 5 with the response. The IRR without CDM revenue is well below this level. However, this should not form the key basis of additionality given the extreme barriers faced by cooperative sugar factors, not least the financing (rather than financial) barrier. This was found realistic and thus accepted by DOE. Revised validation report attached as Annex 2

2. DOE shall further clarify how they have assessed and validated the following issues:
 - a. The operational lifetime of the project is 20 years and consequently the financial analysis should be undertaken for 20 years and not for 7 years
 - b. According to the PDD investment needed for project implementation equals to 5034 Rs lacs. In Appendix 1 (excel sheet) bank loan is 80%, i.e. 4027 Rs lacs, while in the validation report (page 40, response to CAR 13) other value was presented: "Bank loan documents have been provided which mentions the loan of 3000 lacs."
 - c. In calculations of the IRR, loan conditions (loan interest and repayment period) are not reflected.
 - d. Based on the assumptions and figures presented by PPs, the project IRR is 7.89% without CER revenues, and 12.47% (i.e. more than the benchmark IRR=11,5%) when CER revenues are included. However, with adjustments the real estimated IRR for 20 years time period is about 19% without CERs and about 23% with CERs revenues, much more than benchmark IRR.

SGS's Response on the Comments

- a. Please refer to the response to point 1 (above).
- b. Bank loan documents were provided for 4465 lacs, which is 88.69% of the total project cost.
Term Loan from Bank of India – Rs 3000 Lac⁶ – sanctioned and disbursed
Loan from Sugar Development Fund- 1465 Lac – sanctioned but not disbursed
Pls. find attach the bank loan document from Bank of India and loan document against loan under Sugar development fund as Annex 3 with the reply.

⁴ <http://www.indiatogether.org/2007/apr/agr-sugarcoop.htm>

⁵ The figure of 20% has been confirmed through discussions with Directors of Indian private sugar factories. This figure is further demonstrated to be reasonable by the calculation of the weighted average cost of capital of the 4 largest sugar companies in India. The average of the WACC of these 4 companies (Bajaj Hindusthan, Balrampur Chini, Triveni and Dhampur) is 20.7%.

⁶ 1 lac = Rs 100,000



- c. Loan conditions are not considered nor should they be included as the IRR calculated is the project IRR⁷. The revised IRR calculation sheet was attached as Annex 4 herewith.
- d. Please see point 1 and the attached financial spreadsheet as Annex 4 which analyses the project over 10 years with the inclusion of a terminal value.

3. Editorial corrections should be made to PDD:

- a. It is not explained in the PDD what is Rs lacs and reader is forced to find definition of this term (Rs lacs means 100,000 rupee).
- b. In the PDD (pages 18-19) the monitored parameter Plant name and relevant table is given twice, moreover first table is filled incorrectly:
- c. Explanation of parameters PET_y, Ny and EF_{km,CO2,y} is given twice (page 12 and page 14), parameter AVD_y used on both pages is explained only on page 14.

SGS's Response on the Comments

- a. The term 'Lac' is now explained in the revised PDD attached herewith as Annex 1.
- b. The monitored parameter "Plant name" is given twice as it is needed for the calculation of the Operating margin and the Build margin. The plants that make up each of these samples are different and hence the reason for different plant name parameters, this is in line with the methodology ACM0002.
- c. The parameters are given twice as section B6.1 (page 12) asks us to set out the methodological choices whilst section B6.3 (page 14) asks us to calculate the emission reductions which entails the application of the equations in B6.1. Parameter AVD_y has also been included in section B 6.1 of the revised PDD.

We feel that the clarification sought by board members has been taken into account. We do however apologize if this was not sufficiently clear from the earlier verification and certification report.

Vikrant Badve (+91 9860365556) will be the contact person for the review process and is available to address questions from the Board during the consideration of the review in case the Executive Board wishes.

Yours sincerely

Sanjeev Kumar
Lead Auditor
Sanjeev.kumar@sgs.com
T: +91 124 4313600
M: +91 98717 94628

Siddharth Yadav
Technical Reviewer
Siddharth.yadav@sgs.com
T: + 44 1276 697837
M: + 44 7712 785772

Annex 1: Revised PDD version 5
Annex 2: Revised Validation Report
Annex 3: Loan documents from Bank of India and Loan under Sugar development Fund

⁷ Including loan repayments and loan interest would reduce flows back to the project and therefore reduce the IRR. However as mentioned loan principal and interest payments should not be included in the calculation of the project IRR and this is in line with the guidance provided on the Additionality tool footnote 6.



Annex 4: Excel spreadsheet giving the Project IRR calculations
Annex 5: WACC benchmark