



Response to Request for Review Shree Chhatrapati Shahu RE Project, Project Activity 1297

Dear CDM Executive Board,

In response to the requests for review please find below our responses.

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.

This point was raised in all requests for review.

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.

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

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

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 Chhatrapati 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 Chhatrapati 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. A key reason for the granting of the Bank of India loan was that an agreement for the sale of CERs had been reached. The CER revenue will be in Euros with a first rate counterparty and the CER sales price is fixed. 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.

Turning to the investment horizon, we accept that 7 years may be too short. However to suggest that an investment decision in an Indian cooperative sugar mill, with all its attendant risk³ should be 20 years is unrealistic.

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 quoted as losing money and facing closure and in the state of Maharashtra 71 mills quoted as being sick⁴. In addition it must be remembered that the financial situation of the Maharashtra State Electricity board 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. The IRR without CDM revenue is well below this level. However,

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

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 Hindustan, Balrampur Chini, Triveni and Dhampur) is 20.7%.

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.

The PDD has been revised to reflect the above points more fully.

2. The 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

Please refer to the response to point 1.

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."

Bank loan documents have now been provided for 4,465 Lac⁶ as follows.

Term Loan from Bank of India – Rs 3000 Lac
Loan from Sugar Development Fund- 1465 Lac

This is 89% of the project investment cost, somewhat higher than the 80% originally envisaged. In the revised financial analysis, the 80% has been left at its original value as this has no impact on the project IRR (see point below).

c. In calculations of the IRR, loan conditions (loan interest and repayment period) are not reflected.

Loan conditions are not considered nor should they be included as the IRR calculated is the project IRR⁷.

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.

Please see point 1 and the attached financial spreadsheet 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).

⁶ 1 Lac = Rs 100,000

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.

Lac is now explained in the revised PDD.

b. In the PDD (pages 18-19) the monitored parameter Plant name and relevant table is given twice, moreover first table is filled incorrectly;

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. Explanation of parameters PETy, Ny and EFkm,CO2,y is given twice (page 12 and page 14), parameter AVDy used on both pages is explained only on page 14.

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 AVDy should have also been included in section B6.1 and this change will be incorporated in the revised PDD.