Comments to the request for review by the EB for the Solar Kitchen project

Comments by Till Danckwardt, Factor Consulting + Management AG

July 1st, 2006

Reasons for request (taken from request number 4, summarising all objections)

1. It is unclear from the PDD why it is assumed that diesel is the baseline fuel. Cooking may also be based on renewable or non-renewable biomass for which the methodology used would not apply.
2. It is unclear how potentially new locations in the bundle will be treated, as these would not have been validated. According to the PDD the bundling organisation reserves the right to replace projects being part of a bundle, while at the same time this replacement is based on the assumptions that the overall emission reductions of the bundle will not increase by replacing a project being part of the bundle. There is a clear decision by EB 21 that the composition of a bundle must not change over time.
3. According to an EB 21 decision, it has to be demonstrated that the bundle will remain below the limit in every year of the crediting period; there is no proof in the PDD that the project activity is below the 15MW – it is simply stated as a fact without any calculations to show that this is the case.
4. There is a special form or submission of bundles, which as not been used by the PPs.
5. The project activity started as of March 1st, 2005. The starting date if the crediting period is June 1st, 2006 while the earliest date for registration is the day after the period for requesting a review, i.e. June 11th, 2006.

Answers to the request

Comments to 1:

a) The original project bundle contained two projects where the baseline fuel was non-renewable biomass. Since the applied methodology AMS I.C excluded non-renewable biomass as baseline fuel, these two projects were taken out of the bundle. Some possible references to biomass in the PDD are a relic of the original project outline.

b) A prerequisite for all projects taken into the bundle is the use of diesel fuel, which is supervised by the bundling organisation. Most of the project sites use even the old diesel boiler still as backup system during rainy season, when solar radiation is to low. Some others replace the existing old diesel system with new and more efficient diesel backup systems. Switching from diesel to wood in an existing boiler system is technically not possible.

c) Annex 7 clearly indicates for each of the projects in the bundle what fuel is replaced by the solar steam system.

d) The yearly monitoring report indicates for each of the projects what fuel type has been consumed. Non-conformance with the methodology requirements can therefore be excluded.

Comments to 2:

The project outline and the PDD had been drafted before detailed rules regarding bundling of projects had been officially discussed and decided. Originally, it was planned that a project in planning stage can be replaced, if it will not be implemented due to reasons, which are beyond the control of the bundling organisation, and the total emission reductions are not increased. This in order to ensure the agreed amount of emission reductions for reaching the carbon neutrality of the "Renewables" Conference in Bonn in 2004. However, to conform with the new decisions the project participants accepts that only the 18 projects listed in Annex 7 are part of the bundle, and non of them can and will be replaced, nor any new projects will be added. The respective argumentation in the PDD will be removed.

Comments to 3:

Yes, the proof that the total capacity is below the 15 MW limit is missing. Values are only given on a per project basis. The total capacity can be calculated as:

- Total number of installed Schefferl units (all projects): 354
- Capacity per Schefferl unit: 2.5 kW
- Total capacity of the project bundle: 0.885 MW

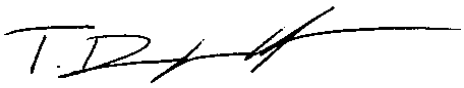
→ which is below the 15 MW ($15MW_{elec}$ and $45MW_{thermal}$) limit for small-scale projects

Comments to 4:

Revisions to the procedures for submitting project bundles were decided at EB23. The results of this EB meeting (including the bundling form for submitting project bundles for registration) had been published on March 3rd, 2006. Since this project was submitted for registration on April 28th, which is within the 8 weeks period where old procedures and criteria don't need to be considered. The special form for submission of bundles does not need to be used therefore. However, the form will be prepared and submitted to the DOE and the UNFCCC.

Comments to 5:

Submission for registration was on April 28th, 2006. The registration date June 1st, seemed appropriate, since we not expected a request for review. It is clear that the emission reductions between June 1st and the date of the final registration will not be accounted for.



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CLEAN DEVELOPMENT MECHANISM
FORM FOR SUBMISSION OF BUNDLED SMALL SCALE PROJECT ACTIVITIES
(SSC-CDM-BUNDLE)

SECTION A. General description of the Bundle

A.1. Title of the Bundle:

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Solar steam for cooking and other applications

A.2. Version and Date :

>>

Version 1, July 1st, 2006

A.3. Description of the Bundle and the subbundles :

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The project activity includes the implementation and operation of solar community kitchens and similar solar steam applications (hereafter referred to as solar community kitchens) in various regions in India (18 projects in total are part of the bundle). The project uses solar energy to prepare food and warm drinks for around 28'000 people on a regular basis. Doing so, the project substitutes conventional fossil fuel (diesel). The project has multiple direct contributions to sustainable development such as reduction of local air pollution, job creation, and improvement of working conditions.

Projects being part of the bundle are (details see PDD Annex 7):

1) Sringerie Mutt, Sringeri / Karnataka
2) Veerayatan, Kutch / Gujarat
3) Army in Leh, Leh, Ladakh / Jammu und Kashmir
4) Swami Vivekanand, Goraj / Gujarat
5) Perk School, Coimbatore / Tamil Nadu
6) Wagad Hospital, Bhachau / Kutch, Gujarat
7) Satyabhama College, Chennai / Tamil Nadu
8) Deevalaya Fulwadi Dharampur, Valsad District / Gujarat
9) St. Xavier Technical Institute, Baroda / Gujarat
10) Yogi Devine Society School, Kamrej, Surat / Gujarat
11) Yogi Devine School, Jhadeshwar, Bharuch / Gujarat
12) ITC Food, Bangalore / Karnataka
13) Sanghi Cement, Sanghipuram / Kutch, Gujarat
14) TVS Motors, Hosur / Tamil Nadu
15) BHEL EDP Plant, Bangalore / Karnataka
16) Continental Engines, BHIWADI, DIST ALWAR / RAJASTHAN
17) Kannipakam Temple, Kannipakam, Chittor District / Andhra Pradesh
18) Sanskar Dham, Sananand near Ahmedabad / Gujarat

A.4. Project participants:

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Name of Party involved	**Private and/or public project participant**	**Does the Party involved wish to be considered as project participant?**
India (Host), Non-Annex 1	Gadhia Solar Energy Systems Pvt Ltd., Valsad, India *(= contact for the CDM project activity)*	no

This project is an unilateral CDM project activity.

SECTION B. Technical description of the Bundle:

B.1. Location of the Bundle:

B.1.1. Host Party(ies):

>>
India

B.1.2. Region/State/Province etc.:

>>
Detailed description of the locations specified in Annex 7 of the PDD

B.1.3. City/Town/Community etc:

>>
Detailed description of the locations specified in Annex 7 of the PDD

B.1.4. Details of physical location, including information allowing the unique identification of this Bundle:

>>
The organisation that installs, monitors and represents the CDM project activity is located in Valsad.

Gadhia Solar Energy Systems Pvt.Ltd.
86, Old GIDC Gundlav
Valsad - 396035.
Gujarat. India.

Please note that the CDM project activity consists of installations that are located at various locations in India. These installations are bundled by Gadhia Solar Energy Systems Pvt Ltd., Valsad, India (hereafter referred to as bundling organisation). A list of all project locations and respective contact addresses is given in Annex 7 of the PDD.

B.2. Type(s), category(ies) and technology/(ies)/Measure/(s) of the bundle:

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The project is a small-scale CDM project activity. The project type, as defined in UNFCCC's Appendix B of the simplified modalities and procedures for small-scale CDM project activities, is type 1.C: *Renewable energy projects; thermal energy for the user.*

Following the categorisation of the CDM Gold Standard, the renewable energy used can be specified as *solar thermal energy that generates heat*.
The project activity is implementing a steam based thermal solar energy technology. The technology has been developed over the past years by a cooperation between German physicists Wolfgang Scheffler and various Indian institutions. The heart of the technology are parabolic concentrators (Scheffler concentrators) that directly concentrate sunlight to a heat exchanger (receiver), where steam for cooking purposes and other thermal applications is generated.
Above the receiver is an insulated header pipe filled half with water. The cold water enters the receiver through an inner pipe, gets heated due to the high temperature of the concentrated solar rays and the heated water then moves back to the header pipe. The cold water again enters through an inner pipe and the cycle continues till steam is generated. The steam gets stored in the upper half empty portion of the header pipe building up the working pressure. The steam is then sent to the kitchen through an insulated pipeline.
The used technology is environmentally safe and sound and is manufactured locally.
Gadhia Solar is specialised in this technology and has manufactured and installed solar steam cooking system on turn-key basis - starting from system for 500 people per day (1,000 meals per day) to 15,000 persons per day (30,000 meals per day). For further details on the technology, please refer to http://www.gadhiasolar.net.

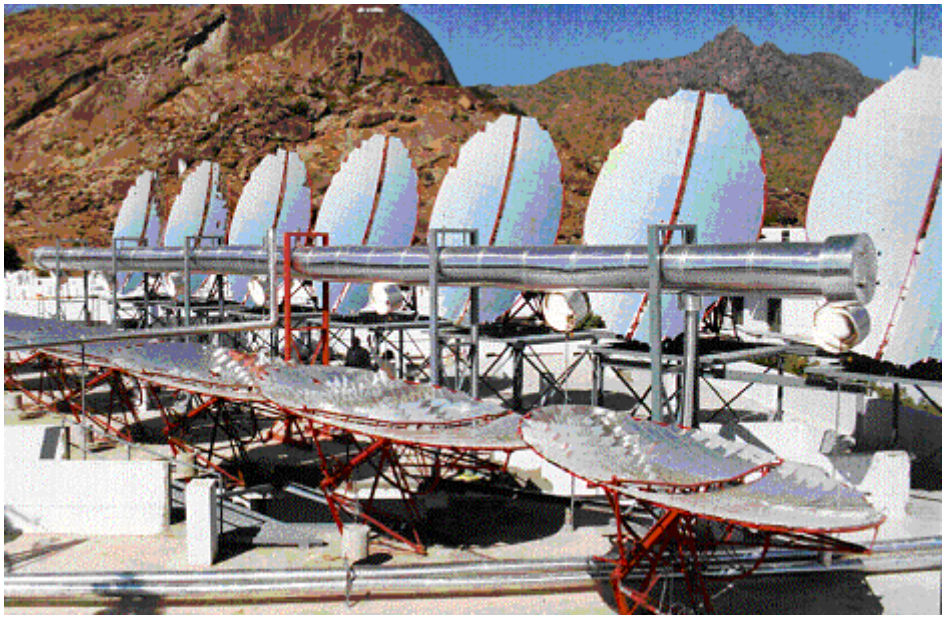

Figure: Example of a solar community kitchen using Scheffler reflectors to generate steam for cooking purposes (Abu Road, India). Photo: Christoph Sutter.

B.3 Estimated amount of emission reductions over the chosen crediting period:

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Table: Anticipated GHG emission reductions during the crediting period. Note: the emission reductions have been calculated based on assumptions provided in Annex 8. Detailed calculations for each project in the bundle are available to the DOE.

Years	***Annual estimations of emission reductions in tonnes of CO2e***

2006	*155*
2007	*581*
2008	*640*
2009	*640*
2010	*640*
2011	*640*
2012	*640*
Total estimated reductions (tonnes of CO2e)	*3'936*
Total number of crediting years	*7*
Annual average over the crediting period of estimated reductions (tonnes of CO2e)	*562*

SECTION C. Duration of the project activity / Crediting period:

C.1. Duration of the Bundle

C.1.1. Starting date of the Bundle:

>>
01/03/2005 (DD/MM/YYYY)

C.2. Choice of crediting period and related information:

>>
Renewable crediting period is selected

C.2.1. Renewable crediting period:

C.2.1.1. Starting date of the first crediting period:

>>
11/06/2006 (DD/MM/YYYY)

B.2.1.2. Length of the first crediting period:

>>
7y-0m

C.2.2. Fixed crediting period:

>>
n.a.

C.2.2.1. Starting date:

>>
n.a.

C.2.2.2. Length:

>>

n.a.

SECTION D. Application of a monitoring methodology:

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The project uses the methodology as defined in Appendix B of the simplified modalities and procedures for small-scale CDM project activities, category I.C.: "renewable energy projects, thermal energy for the user", Version 07, 28 November 2005.

The selected small-scale methodology 1.C mentioned above (for justification see section B.2) foresees three options for monitoring. The option 9 (a) is used for this project activity*: Metering the energy produced by a sample of the systems where the simplified baseline is based on the energy produced multiplied by an emission coefficient.*

Rationale: The two other options given are not applicable. The project activity is neither a co-generation project nor are the emission reductions per system less than 5 tonnes of CO2 per year.
Since all systems in the project activity will be metered no sample needs to be defined. Or in other words: the sample is 100% of all systems.