

UNFCCC Secretariat
Attn. CDM Executive Board
Martin-Luther-King-Strasse 8
D – 53153 Bonn
Germany

**Response to the request for review for the CDM project activity
" JIANLI KAIDI BIOMASS POWER PROJECT" (Ref. no.: 3044)**

2010-02-25

Dear Members of the Executive Board,

The DOE TÜV Rheinland Japan Ltd. was informed on 2010-02-11 that the CDM project " JIANLI KAIDI BIOMASS POWER PROJECT" (Ref. no. 3044), is under request for review because three requests for review have been received from members of the board.

All of these requests for review contain the same four issues. We would like to provide our response to that issue raised on the following pages.

In summary, we understand the issue raised in the "Request for Review" and regret if the previous Validation Report did not reflect and describe the validation results in sufficient detail. However, we hope that the input by the project participants and this explanation will find acceptance among the members of the Executive Board.

Yours sincerely

Dr. Manfred Brinkmann
CDM Program Manager
TÜV Rheinland Japan Ltd.

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Issue 1 raised:

Further clarification is required on how the DOE has validated the suitability of input values in line with the version 1.1 of VVM (paragraphs 109 a, b and 111 c), particularly the:

- (a) lower operational hours than other similar projects (e.g., project 2230 applies 6,975 hours);***
- (b) net electricity supplied to the grid and auxiliary consumption;***
- (c) heat price;***
- (d) if heat price includes the cost of the pipeline for transportation of steam to offsite location or/and the capital cost of the baseline coal fired boiler;***
- (e) electricity tariff; and***
- (f) higher O&M cost in comparison to the GSP PDD.***

DOE response:

The validation team has confirmed that all the parameter values used in the PDD are fully consistent with the Feasibility Study Report approved by the local government. The suitability of input values and the cross-checking as per VVM's paragraph 111(c) is described in the following.

(a) Operational hours

There are currently 12 biomass power plants registered as CDM projects and applying the methodology ACM0006 in China, for which the operational hours range within 5500hrs and 6,500hrs per year (i.e., five projects with 5500hrs, four projects with 6000hrs and three with 6,500hrs). The project under validation ranges well within this field and is not unusual as compared to the other projects. For details, see Table 1 (page 7ff).

Only the project #2230 assumes a significantly higher amount of operating hours. Whereas the reason for this exceptionally high availability is not traceable without detail knowledge of that project, it should be noted that both projects cannot be directly compared due to the different technology (fluidized bed vs. grate) applied and fuels used (rice husk in the project activity).

The validation team also cross-checked the assumptions underlying the estimated operational hours on the basis of the equipment availability rate, generation load rate, and backup ratio for load or accident. The scheduled equipment maintenance days are 54 days and a corresponding equipment availability rate is 0.852. The average load factor is 0.9 depending on the type of biomass, and the backup ration for load or accident is expected to be 0.1. The result of the annual operation hours is 6,045 hours. Therefore the project annual operation hour is expected to be 6000 from the design company. In Audit Team's opinion, 6000 hours of operation hour is a reasonable value for this biomass project.

(b) Net electricity supplied to the grid and auxiliary consumption

Among the projects listed in Table 1, the in-house load rate varies within 8% (#1366) and 21% (#0811), with an average of 12.9%. The proposed project's in-house load rate is 12%, sourced from the approved Feasibility Study Report. Generally, Circulating Fluidized Bed boilers have a higher self-consumption than e.g. grate-fired boilers due to the operation of blowers. The in-house load of 12% is considered a plausible load factor for Circulating Fluidized Bed boilers, especially when the additional load for operating the heat-exporting facilities is taken into account.

Since the installed capacity of 24MW was validated on-site, annual operational hours of 6000hrs and the in-house load rate 12% are all verified and cross-checked by Validation Team, the net electricity supplied to the grid and the auxiliary consumption can be confirmed as the suitable ones.

(c) & (d) Heat price

The heat price is 29.85 RMB/GJ (excluding VAT) is sourced from the approved Feasibility

Study Report. The heat price was cross-checked with the levelised cost of heat supply from small coal-fired boiler. The calculation result of the levelised cost is 31RMB/GJ and was verified by the Audit Team, as the Annex 1. Furthermore, the project IRR can reach the investment benchmark only if the steam price increased by 73 %, indicating that the heat price is not a sensitive parameter.

It should be noted that the pipeline for transporting the steam will be constructed and financed by the local government, as confirmed by interview with the Development and Reform Bureau of Jianli County and the Government of Jianli County. The coal-fired boilers providing heat in the baseline scenario are all existing boilers, owned and operated by the heat users themselves. The Validation Team can confirm that the heat price does not include the cost of the pipeline or the capital cost of the baseline coal fired boiler. The validation team concludes that the employed heat price is indeed reasonable and realistic.

(e) Electricity tariff

The electricity tariff of the proposed project activity is ruled by the regulation *Renewable Energy Electricity Tariff and Cost Management Trial Regulations* (fagaijiage [2006] 7), issued by the National Development and Reform Commission on 4 January 2006. In article 7 of the Regulation, the electricity tariff of a biomass project is set forth as the electricity tariff of provincial de-SO₂ coal fired power plants, plus an additional 0.25 RMB/kWh. This additional tariff will last during the initial 15 years of the project's operation and will be ended after that. The electricity tariff in FSR was fully in line with the regulation, and the correct implementation in the IRR calculation spreadsheet was verified by the validation team. The electricity tariff applied is reasonable.

(f) O&M cost

The O&M cost in the PDD submitted for registration was verified by Audit Team. It is in line with the approved FSR. The original one in the GSP PDD is an editorial error.

Issue 2 raised:

The DOE is requested to provide further clarifications on how they have validated baseline scenario is appropriate for the project, given that: (i) the DOE has not explained the contradiction that the biomass residues are either dumped or left to decay in absence of the project activity and at the same time carry a purchase price as applied in the investment analysis; (ii) the baseline alternative H6 has not been sufficiently substantiated; (iii) it is not clear that heat, in absence of project activity, would have been generated from coal and not from any other less carbon intensive fossil fuel or renewable sources; (iv) all the users of steam have not been identified and it is not clear whether PP has control over all the users of the steam; and (v) there is an uncertainty that the: (a) heat displaced will not change/vary with the identification of user of the steam; (b) residual life of the boilers displaced in the baseline would be sufficiently large so that they will not be replaced anyway on its own; (c) the project boundary is steady and will not change with the identification of user/ consumer of the steam; and (d) forecasted baseline emissions claimed from heat are conservative.

DOE response:

The baseline scenario is determined as per “Combined tool to identify the baseline scenario and demonstrate additionality” and the methodology’s requirements. The further clarifications are the following.

Ad (i)

The biomass cost of 241 RMB/t is applied as per the approved FSR and based on the purchasing price from the supplier (agriculture plants or local farmers) and other costs related with the biomass handling like transportation, uploading and unloading, etc.

Although in the absence of the project activity the biomass residues are either dumped or left

to decay, it should be noted that those biomass residues arise from agricultural processes, i.e. they are not generated by the project owner's internal processes and are not the project owner's property in the first place, but belong to local farmers. As long as no demand for other utilization exist, no price can be issued. However, with the proposed project activity being constructed, actual demand is created that leads to the local farmers expecting a purchasing price that at least covers cost for collection and transportation.

Furthermore, the assumed biomass cost has been cross-checked with other registered biomass projects during 2007 to 2008 from 'http://UNFCCC.int'. The research found out the biomass cost in those projects varies between 150 RMB/t and 300 RMB/t (though mostly > 200RMB/t), which confirms that the biomass cost assumption is plausible.

Ad (ii) & (iii)

In ACM0006, two approaches are selected from paragraph 48 of the CDM modalities and procedures, i.e. "Existing actual or historical emissions, as applicable" or "Emissions from a technology that represents an economically attractive course of action, taking into account barriers to investment".

For the baseline alternative of heat, the current situation and the existing actual emissions is the individual small coal fired boilers, as per Annex 2 to this response and as confirmed by on-site assessment of those heat users. The PDD limits the monitoring of heat to the three identified users of heat, which currently use coal-fired boilers to generate heat.

A switch to other resources during the crediting period is also unlikely because

- the remaining lifetime of the coal-fired boilers is longer than the crediting period
- according to the observations made during the on-site assessment and interviews performed, the industrial park is not connected to the natural gas system
- cost considerations would impede the use of other less emission intensive fuels

Ad (iv) & (v)

a) All the users of steam are identified in Table A-1 of the PDD, i.e. three different plants:

- Jianli Grandmother Pharmaceutical Co.,Ltd. owns three coal-fired boilers of 20T/h, 10T/h and 10T/h.
- Double Crane Pharmaceutical Co.,Ltd. owns two coal-fired boilers, 6T/h and 4T/h.
- Dafeng Paper Co.,Ltd. owns two coal-fired boilers, 20T/h and 10T/h.

These plants and boilers were all verified during site visit by Audit Team, and no further heat consumers are envisaged in this project.

b) The lifetimes of the existing boilers, and their date of commissioning were verified by Audit Team on the basis of the Annex 2 and confirmation of the commissioning dates during on-site assessment.

c) It is clarified in the revised PDD (B.7.2) that the only the heat users identified in the PDD will be considered for monitoring of heat supply and according calculation of emission reductions.

d) The forecasted baseline emissions claimed from heat are considered conservative as they are based on actual average demand by the identified heat users and fuel used. The amount of energy (heat) delivered will be monitored directly, therefore the forecasted baseline emissions will not affect the actual calculation of emission reductions.

Issue 3 raised:

The methodology ACM0006 (version 6) on page 6 and 7 requires the PDD to document the type and capacity of the new/existing boilers and the types and quantities of fuels used/would be used in absence of the project activity. The PDD and the Validation report does not mention how this requirement is complied for both project site as well as end-users of steam in the project boundary.

DOE's response:

The individual requirements regarding the type / capacity of boilers and types / quantities of fuels are addressed as follows:

- *For each power plant that was operating at the project site during the most recent three years prior to the start of the project activity: the type and capacity of the power plant, types and quantities fuels have been used in the power plant during the most recent three years prior to the start of the project activity and whether the plant continues operation after the start of the project activity;*
=> During the onsite assessment it was confirmed that the project site was not occupied before the project implementation, and that there has not been any other power plant operational at the project site;
- *For each boiler or other heat generation equipment that was operating at the project site during the most recent three years prior to the start of the project activity: the type and capacity of the boiler, types and quantities of fuels have been used in the boiler during the most recent three years prior to the start of the project activity and whether the boiler continues operation after the start of the project activity;*
=> During the onsite assessment it was confirmed that the project site was not occupied before the project implementation, and that there has not been any other boiler or heat generation equipment operational at the project site;
- *For each boiler or power plant installed under the project activity: the type and capacity of boilers and/or power plants and which types and quantities of fuels are planned to be used;*
=> The boiler parameters of the project activity are specified in Table A-2 of the PDD and have been verified by comparison with the FSR and during the on-site assessment. Storage of some of the indicated fuel types (rice husk, straw) could already be observed during the on-site assessment.
- *For each new boiler or power plant that would be installed in the absence of the project activity: the type and capacity of the new boilers and/or power plants and which types and quantities of fuels would be used.*
=> The proposed project activity will replace the heat previously generated from identified existing boilers at three sites, not at the project site. The type and capacity of the new/existing boilers and the types of fuels used/would be used in absence of the project activity are documented in Table A-1 of the PDD, and have been verified by Validation Team during the on-site assessment. The quantities of fuels used in the existing boilers are also referred from the statement of local government as Annex 2, which the validation team has been verified by Audit Team.

Issue 4 raised:

The DOE is requested to further clarify that monitoring of the heat at generation end and not at the user end will result in real, conservative and actual emission reductions.

DOE's response:

Monitoring of the Net quantity of heat generated from firing biomass in the project plant ($Q_{\text{project plant, y}}$) is required in the methodology ACM0006. In order to prevent an over-estimation of emission reductions, the project participants have amended the PDD such that also the heat consumed at the identified users's sites will be monitored. By counter-checking with sales receipts and the amount of fuels used in the project, the application of the smaller value (among heat generated in the project plant vs. heat metered at users' sites) should account for any heat losses in the pipeline system and therefore result in real, conservative and actual emission reductions.

The heat at generation end will be cross-checked by the sum of the heat consumption through

the heat supplying pipelines at the user end. The smaller value will be used for emission reductions calculation.

Annex 1: Levelised cost calculation for coal-fired boilers

Annex 2: JianGongZhiHan[2010]3: Supplementary introduction to the industrial boilers in Chengdong Industrial Park

Table 1: List of CDM projects registered in China based on ACM0006

No.	UNFCCC No.	Project title	Province	Installed capacity (MW)	Operation hours	Auxiliary consumption rate	Biomass Price (RMB/ton)	Biomass Types	Technology of the boiler
1	0778	Hebei Jinzhou 24MW Straw-fired Power Project ¹	Hebei	24	5500	NA	190	corn and wheat straw	two 75t/h Vibration grate stoker boiler
2	0811	Shandong Yucheng Xinyuan Biomass Heat & Power ("Yucheng Biomass CHP") ²	Shandong	15	6000	21%	NA	xylose residue and furfural residue	two 75t/h CFB boiler

¹ <http://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1164107745.28/view>

² <http://cdm.unfccc.int/Projects/DB/TUEV-SUED1166191210.61/view>

3	0819	Zhongjieneng Suqian 2*12MW Biomass Direct Burning Power Plant Project ³	Jiangsu	24	6500	15%	300	Rice husk,wheat straw, rice straw, oil seed rape straw, maize straw and cotton straw	two 75t/h middle temperatur e and middle pressure CFB boiler
4	0820	Zhongjieneng Jurong 2*12MW Biomass Direct Burning Power Plant Project ⁴	Jiangsu	24	6500	15%	300	Residues of paddy rice, papeseed, wheat and corn	two 75t/h middle-te mperature middle-pre ssure vibrating chain boiler
5	0825	Henan Luyi 25MW Biomass Cogeneration Project ⁵	Henan	25	5500	12%	209	wheat, corn and cotton straws	two 80t/h boilers, technology employed

³ <http://cdm.unfccc.int/Projects/DB/TUEV-SUED1166630587.15/view>

⁴ <http://cdm.unfccc.int/Projects/DB/TUEV-SUED1166632076.5/view>

⁵ <http://cdm.unfccc.int/Projects/DB/DNV-CUK1166770787.62/view>

									is from Denmark BWE
6	1032	Shandong Shanxian 1*25MW Biomass Power Plant Project ⁶	Shandong	25	6000	15%	300	cotton and corn straw	This project is a national pilot project for renewable resource utilization and new Danish technology for the core boiler system will be introduced to the PRC.
7	1263	Shandong Wudi Biomass Generation Project ⁷	Shandong	24	N/A	N/A	200	cotton straw	the core boiler system will be

⁶ <http://cdm.unfccc.int/Projects/DB/TUEV-SUED1175012571.81/view>

⁷ <http://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1185428818.84/view>

									introduced to the PRC.
8	1293	Heilongjiang Tangyuan Biomass Cogeneration Project ⁸	Heilongjiang	24	N/A	N/A	150	maize straw	two 75t/h middle temperature and middle boiler
9	1366	Biomass generation project, in Sheyang county, Jiangsu province, P.R. China ⁹	Jiangsu	25	5500	8%	240	cotton straw	one 130t/h water-cooling librated boiler with high temperature and high presssure made in China authorized by Denmark

⁸ <http://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1187227326.51/view>

⁹ <http://cdm.unfccc.int/Projects/DB/TUEV-SUED1190986543.01/view>

									BWE Company
10	1375	Shandong Gaotang 30MW Biomass Power Generation Project ¹⁰	Shandong	30	5500	12%	260	cotton stalk	one 130t/h water-cooli ng librated boiler with high temperatur e and high pressure made in China authorized by Denmark BWE Company
11	1546	Straw generation project in Wei county Hebei province, P.R. China ¹¹	Hebei	25	5500	8%	208	cotton straw	one 130t/h water-cooli ng

¹⁰ <http://cdm.unfccc.int/Projects/DB/TUEV-SUED1191857086.36/view>

¹¹ <http://cdm.unfccc.int/Projects/DB/TUEV-SUED1200569734.96/view>

									librated boiler with high temperature and high pressure made in China authorized by Denmark BWE Company
12	1892	Jiangsu Longyuan Donghai Biomass Power Project ¹²	Jiangsu	24	6000	13%	220	wheat straw, rice straw and peanut husk	two 75t/h middle temperature and middle pressure vibrating water cooled grate

¹² <http://cdm.unfccc.int/Projects/DB/DNV-CUK1214576941.88/view>

									boilers
13	2161	Straw-fired Power Generation Project in Chuzhou District, Huaian City, Jiangsu Province ¹³	Jiangsu	33	6000	16%	290	straw from wheat and paddy rice	two 75t/h middle pressure straw biomass combustion boiler
14	2230	Jiangsu Rudong Biomass Power Generation Project ¹⁴	Jiangsu	25	6975	10%	258.75	rice , wheat and cotton straw	one 110t/h high-temperature high-pressure straw-fired grate-type boiler
15	2440	Anhui Anqing 30MW Biomass Power Generation Project ¹⁵	Anhui	30	6500	10%	248	agricultural stalk	two 75t/h middle-temperature middle-pre

¹³ <http://cdm.unfccc.int/Projects/DB/DNV-CUK1218633290.89/view>

¹⁴ <http://cdm.unfccc.int/Projects/DB/DNV-CUK1220516280.01/view>

¹⁵ <http://cdm.unfccc.int/Projects/DB/DNV-CUK1237358274.02/view>

									ssure vibrating chain boiler
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