

28 January 2013

Chair, CDM Executive Board
UNFCCC Secretariat
Martin-Luther-King-Strasse 8
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Germany

Dear Chair and Members of the Board



RE: Request for review:

**Request for registration 6548 Gansu Jingyuan Coal Mine Group Jieneng
Thermoelectricity Company CMM Power Generation Project**

In response to the review requested for the 6548 Gansu Jingyuan Coal Mine Group Jieneng Thermoelectricity Company CMM Power Generation Project, ERM CVS would like to respond in writing to provide further guidance on the issues raised and how they have been addressed in the FVR (final validation report) and/or PDD. After very careful review and consideration of the issues raised, ERM CVS and the Project Participants believe that the issues raised have been addressed in the documentation and therefore have not made revision to the FVR or PDD.

The following comments summarizing our response to the issues raised (document references in the form "[doc xx]" refer to the document list in the validation report):

1) The DOE is requested to further justify the choice of benchmark of 15% equity IRR (post tax) for coal mining sector as it appears that the project participant, Baiyin Jieneng Thermoelectricity Co Ltd., appears to be purely an energy generation company. In doing so, please clarify the core operation of Baiyin Jieneng Thermoelectricity Co Ltd. Please refer to VVM v 1.2 paragraph 112.

- As set out in the FVR, section 3.6, Baiyin Jieneng Thermoelectricity Co Ltd is wholly owned by Jingyuan Coal Group and the core business of the Jingyuan Coal Group is the coal sector. The purpose of the Baiyin Jieneng Thermoelectricity Co Ltd is to implement and operate the captive power plant that utilizes CMM to supply electricity to the coal mine of Jingyuan Coal Group. ERM CVS notes that many of the documents and key decisions are in the name of the Jingyuan Coal Group (e.g. the FSR approval, the equipment purchase contract, the board meeting decision to proceed with the project) which further demonstrates that this project is an investment by the Jingyuan Coal Group and that key decisions were being made by the group. As the project is generating electricity for captive consumption solely by Jingyuan Coal Group and is wholly



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owned by Jingyuan Coal Group it is appropriate to consider the project to be an investment in the operation of the core business.

- The FVR justifies the choice of the 15% benchmark in line with VVM v1.2 paragraph 112 as follows: “The benchmark for the coal sector is applicable because the project activity is a captive power generation project and Baiyin Jieneng Thermoelectricity Co Ltd, is wholly equity owned by Jingyuan Coal Group and hence belongs to Jingyuan Coal Group,[Doc 131] which is in line with the information note EB51 Annex 59 ‘For projects in which the electricity was being produced for captive consumption the benchmark of the core business was considered to be appropriate, as the project was considered to be an investment in the operation of the core business’” (page 23) and: “The coal production is the core business for Baiyin Jieneng Thermoelectricity Co Ltd, because Jingyuan Coal Group is wholly owned of the power generation company. This was confirmed with relevant 3rd party evidence [Doc 131] and consistent with the guidance of selection of Benchmarking for waste gas projects EB 51 Annex 59 [Doc 132]” (page 24).
- The benchmark of 15% utilized by the project is therefore appropriate for this project. The FVR describes how this has been validated in accordance VVM v1.2 paragraph 112, so it is not considered necessary to revise the FVR in respect of this issue.

2) The DOE is requested to further substantiate the investment analysis:

a) Tax calculation, in particular, to clarify why various taxes (VAT, educational surcharge, urban maintenance and construction tax and income tax) have been accounted as costs in the cash outflow considering that the revenues are based on the avoided costs of electricity and coal.

- The financial attractiveness of the project was assessed on the basis that the electricity generated by the project displaces electricity that would otherwise be purchased from the grid (please see section 3.6 of the FVR, Table ‘Validation of financial analysis’, under ‘inclusion of all costs and revenues’ and ‘electricity tariff’). The fact that these savings are ‘avoided costs’ does not mean they are not considered as revenues. Any saving made by the company leads to higher profits and hence has an income tax liability and any added value has a VAT liability. It is therefore correct and in line with financial theory to include this increased tax liability as a cost in the project cashflow.
- The appropriateness of the treatment of these taxes was validated by ERM CVS and this was described in the FVR as follows:
 - VAT was validated on page 25 of the FVR: “Local accounting practices were followed [Doc 83]. According to this document if revenues and expenditures are calculated based on prices including VAT, VAT amount shall be included in the cash flow...Given the project activity’s revenues are calculated based on avoided power and coal costs with prices including VAT, so it is reasonable that VAT into all cost and savings be accounted in the cash flow”.
 - Income tax was included, as stated on page 23 of the FVR (for example): “the type of benchmark applied (post-tax equity IRR) is suitable for the

type of financial indicator presented in the PDD: A post-tax equity IRR is calculated which is consistent with the benchmark". Also, on page 73: "The taxation adapted for the project activity is consistent with the local Chinese regulation, which is consistent with the chosen equity benchmark"

- According to the Interim Regulations on City Maintenance and Construction Tax of the People's Republic of China [Doc 88] and the Decision of the State Council on Amending the Interim Provisions on the Collection of Education Surcharges [Doc 89], educational surcharge and urban maintenance and construction tax are charged whenever VAT is charged and are calculated as a percentage of the VAT that a company actually pays to the government. Therefore if the VAT liability of the company increases, these taxes also increase. Therefore, it is appropriate and in line with local accounting practices to include these taxes as cash outflows in the financial analysis. The FVR validates the two taxes as follows (page 29): City maintenance construction tax "The value is derived from the Interim Regulations on City Maintenance and Construction Tax of the People's Republic of China [Doc 88]. The tax rate is mandatory in China and applicable since 1985." Additional tax rate of education: "The value is derived from the Decision of the State Council on Amending the Interim Provisions on the Collection of Education Surcharges [Doc 89]. The value is applicable for this project."
- The calculation of taxes is appropriate according to ERM CVS's sectoral and local expertise, the combined experience of the validation team, comparison with other projects and experience with previous validations. The treatment of VAT, educational surcharge, urban maintenance and construction tax and income tax in the financial analysis of this project is the same as for many registered CDM projects where the main revenue in the financial analysis is an avoided cost (e.g. #5898, #5489).
- The FVR describes how these taxes were validated in accordance with the VVM v1.2 and therefore ERM CVS considers that the FVR does not need to be revised in this respect.

b) NCV of coal based on China Energy Statistical Yearbook, in particular, whether the value applied is conservative in comparison to the actual NCV of the type of the coal used in the baseline.

- ERM CVS validated that the coal used in the baseline would likely have zero marketable value, so it is very conservative to assume that it would have any value at all in the baseline scenario (please see FVR page 29-30, under the validation of the 'raw coal price'). The lowest quality coal for which there is reliable data for NCV and price is raw coal so this was used to give a conservative value to the coal that was used in the baseline. Using NCV and cost of a higher quality coal would give a higher total value of coal used in the baseline, but as the coal used is lower quality even than raw coal, this would not be realistic.

- As stated on page 30 of the FVR: “The NCV value is selected to be consistent with the assumed price above, i.e. the NCV of raw coal in China is used. Whilst the NCV of the low quality coal used in the baseline is likely to be lower than this, the NCV of this low quality coal is not known (and anyway would vary) so in order to be consistent with the price assumption, the NCV of raw coal is applied. Considering that the coal used in the baseline would likely have zero marketable value, the calculation is still considered highly conservative.” Furthermore, page 29 states: “Cost savings from the thermal energy component were included in the analysis in order to be conservative. In reality, based on ERM CVS’s validation of the proposed project and informed by its sectoral and local knowledge and expertise, including the expertise of the CMM expert included in the validation, these savings are likely to be very small or even zero because the mine uses excess low quality coal that has no marketable value and is not sold on the market. Therefore overall, the financial analysis is very conservative”.
- Cost savings from the thermal energy component have been included in the financial analysis in a conservative manner and this has been described in the FVR. Therefore, ERM CVS considers that the FVR does not need to be revised in this respect.

c) the O&M cost, in particular, what Material purchasing cost of 1,007,500 RMB consists of and if it includes cost of CMM. Please refer to VVM v 1.2 paragraph 111.

- The FVR does not include a breakdown of material purchasing cost. Material purchasing cost is one component of O&M costs. Material purchasing cost was validated, as one of the components of O&M costs, and ERM CVS did not consider it necessary to further break down all component values into further sub components, since the components themselves (such as material purchasing cost) were already validated to be reasonable. The FVR (page 32) does state that the material purchasing cost does NOT include CMM cost: “The operation & maintenance (O&M) costs had been reviewed by ERM CVS, including the breakdown of these costs in the FSR. The breakdown of costs in the IRR spreadsheet [Doc 14] was found to be reasonable and in line with the third party FSR. There is no CMM cost included”. Furthermore on page 109 (CL 33): “No cost for CMM is included in the calculation spreadsheet or in the PDD. This is in line with the approved third party FSR”. This is also stated in the PDD (footnote 38): “The CMM gas is obtained from the coal mines for free”
- As described in the FVR, ERM CVS has validated that material purchasing cost is based on the approved third party FSR, and that actual material purchasing costs in 2009 were higher than FSR estimations based on a third party report, and furthermore that the material purchasing cost is reasonable based on ERM CVS’s sectoral knowledge. Therefore all the requirements of VVM paragraph 111 have been fulfilled. Therefore, ERM CVS considers that the FVR does not need to be revised in this respect.

3) The DOE is requested to further substantiate how it has validated that all possible options that are technically feasible were included, for example, retrofitting of the existing system that operated with high concentration CMM between 2004 and February

2008 to operate with the new concentration. Please note that the list of options in the applied methodology are not exhaustive and possible options are not limited to those listed in page 6 of the methodology. Please refer to VVM v1.2 paragraph 83.

- The methodology (Identification of the baseline scenario, step 1) requires PPs to 'Identify technically feasible options for capturing and/or using CBM or CMM or VAM'. Based on ERM CVS's local and sectoral knowledge, producing a CMM engine that can safely operate with low methane concentration is very specialist and is not something that can be simply retrofitted on to an existing engine. The sale agreement of the original equipment [Doc 136] gives the exact specification of the 2MW gas turbines that were used originally – confirming that they were gas turbines and therefore not suitable for utilising low concentration methane. If the methane concentration is less than 30% then an internal combustion engine is the only safe option because of the risk of explosion. As such retrofitting was not considered a feasible option, and for this reason it was not identified in step 1 since it is not one of the technically feasible options for capturing and/or using CBM or CMM or VAM. ERM CVS did not discuss non-feasible options in the FVR, since the methodology only requires 'all technically feasible options' to be identified, and ERM CVS has confirmed that all technically feasible options had indeed been identified and assessed.
- The FVR explains why the former system cannot be used anymore (page 5): "Prior to project activity implementation, ERM CVS confirmed that Jingyuan Coal Group operated two sets of 2,000kW gas engine generators using high concentration CMM (above 30%) for power generation supplied by Dashuitou and Weijiadi coal mines, since 2004. However, a retrofitting of the post-mining drainage systems was carried out between 2006 and early 2008 for safety reasons [Doc 138, 139], which included the installation of moveable pumps underground and fixed pumps above ground to extract coal mine methane at the upper corners of the mining panels and goafs, to extract additional CMM [Doc 139]. As result of these activities, the total methane concentration was dramatically reduced and the CMM could not reach the minimum generator requirement anymore (i.e. 30% CH₄); therefore, the high CH₄ concentration power generators operation was ceased and formally stopped on 1 February 2008. The old high concentration CMM power generation system (principally consisting of the two sets of 2,000kW gas engine generators and gas storage tanks) has been abandoned and sold in 2011 [Doc136, 137, 138 and 139]."
- The methodology requires the PP to "Identify technically feasible options for capturing and/or using CBM or CMM or VAM." Since this option is not technically feasible, it is not considered necessary for it to be identified. As stated on page 15 if the FVR: "ERM CVS considers, based on its local and sectoral knowledge, that all reasonable and credible baseline alternative has been included from consideration." Since all reasonable and credible alternatives have been considered, ERM CVS therefore considers that the FVR does not need to be revised in this respect.

- Furthermore, the validated PDD (section A.4.3, page 6) gives the following explanation about why no other options for CMM are applicable: "Generators that can safely generate electricity under such conditions are limited to the 500GF1-3RW, Shengdong Company, which will be employed by the proposed project. This generator model is composed of an anti-explosion device against methane and technologies to combust low-concentration methane. The generator was approved by the State Administration of Work Safety in July 2005; and the low-concentration methane transport system was approved in December 2005. It was the first officially approved low-concentration methane transport system in China." Since the above mentioned generator manufactured by Shengdong Company was validated to be the only technically feasible option, it was concluded that all technically feasible options were included.

4) The DOE is requested to further substantiate the elimination of scenario 4 Use for additional grid power generation, in particular, to justify how it has validated the discount rate of 15% (post tax equity IRR benchmark) for coal sector, considering that this alternative considers 100% export to the grid. Please refer to VVM version 1.2 paragraph 83.

- The investment comparison analysis was conducted to compare the financial attractive of two alternatives, therefore the same discount rate was used, otherwise the comparison would not have been meaningful. The FVR states (page 18): "The discount rate is equal to the benchmark for the industrial sector. This is correct, as otherwise the analysis would not be consistent with the additionality assessment by means of investment analysis presented in section B.5 of the PDD, and validated below in section 3.6 of this validation report".
- It is a national requirement that electricity generated from CMM must be used for captive purposes first, it is therefore not a realistic scenario for the PP to operate a power plant to utilize CMM and export 100% of the electricity generated to the grid. The demand for electricity on site (which is more than 7 times higher than the amount of electricity that would be generated by the project) means that it is unlikely that there would be any surplus of electricity to export the grid. This was validated in the FVR, page 17: "At policy level, according to the Notice on Implementing the Opinions of Power Generation by Coalmine Methane issued by the National Development and Reform Commission on 2 April 2007 [Doc 123], it states that "*electricity generated by coalmine methane (CMM) shall be used for captive purpose firstly, and then the grid company shall permit the surplus electricity to supply to the grid, if any*". Based on this Notice, additional grid power supply is not possible because there is no surplus of electricity, since all the electricity generated will be consumed internally by the Jingyuan Coal Group. This has been confirmed with the balance between the estimated power generation by the project activity (27,805 MWh annually) and the historical power consumption for Jingyuan Coal Group in the three years prior to project activity implementation (204,711MWh, 209,780.6MWh and 215,604.8MWh from 2006 to 2008, respectively)/Doc 122/, which shows clearly that all electricity generated can be consumed internally." This means that the alternative is not realistic, hence the discount rate used

does not have any bearing on the end result of the additionality assessment. The purpose of the investment comparison analysis was to compare the attractiveness of a purely captive plant with one that exports to the grid and to demonstrate that *even if it were possible* for the plant to export electricity to the grid *and* it was able to export 100% of the electricity to the grid, it would still not be more attractive than a captive power plant.

- Therefore ERM CVS considered that all the requirements of VVM v2.1 paragraph 83 had been fulfilled, and hence ERM CVS does not consider it necessary to revise the validation report in this respect.

5) The DOE is requested to further substantiate how the electricity consumption by the project activity is monitored by clarifying how the monitoring plan ensures that all electricity consumption that results from the project activity are captured by monitoring the net electricity supply to the Jingyuan Coal Group's grid. Please refer to VVM version 1.2 paragraph 123 (a).

- The monitoring plan in the PDD states: "The electric power consumption of the proposed project will be supplied through the same power lines that supply power from the project to the transformation. The electric meters are bidirectional. And therefore the electricity imported from the grid will be deducted from the electricity supplied by the project to the internal grid and the net power supply will be accounted and cross-checked against the Electricity Transaction Notes" (page 67). Furthermore, the PDD also states "Net electricity supplied to the grid by the project (which is the difference between the electricity supplied by the proposed project to the internal grid that is connected to the NWCPG and electricity delivered from the NWCPG to the proposed project)" (page 61) and "Both electricity supplied by the proposed project to the internal grid which is connected to the NWCPG and electricity delivered from the NWCPG to the proposed project will be metered by electric meters. The electric meters are bidirectional. And the net electricity supply to the internal grid which is connected to the NWCPG is the difference between the two measurements"(page 62).
- Also the meter location in the line diagrams on page 65 and 66 of the PDD shows that the all electricity consumption will be captured because all electricity to and from the project flows through the internal grid. Furthermore, the table on page 61 of the PDD says that GENy is "Net electricity supplied to the grid by the project".
- Based on the validated PDD, GENy is the net electricity supplied to the grid. All electricity that is generated by the project and delivered to the grid and all electricity from the grid that is consumed by the project passes through the bidirectional meters as shown in the line diagrams in the PDD. Therefore all electricity consumption that results from the project activity is captured by the monitoring system.
- The FVR states (page 20): "The parameter is calculated as the difference

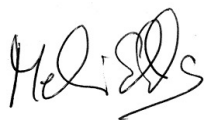
between the electricity supply to the internal grid and electricity imported from the NWCPG grid if this would be necessary. The electricity will be measured by the bidirectional electricity meter continuously". The FVR also describes the equipment as follows (page 20): "bidirectional electricity meters (to measure GENy , including both electricity supplied to the internal power grid and project electricity consumption supplied by the NWCPG, if any)...The bidirectional electricity meters are installed at internal power transformation side of Jingyuan Coal Group, measuring electricity supplied to the internal grid of two mines and the project electricity consumption supplied by the NWCPG, if any. And the net electricity supply to the internal grid which is connected to the NWCPG is the difference between the two measurements."

- The FVR describes how this was validated in line with VVM version 1.2 paragraph 123 (a), therefore ERM CVS considers that the FVR does not need to be revised in this respect.

We trust that the above information provides sufficient clarification for the EB's review of this project and explains why we conclude that no revisions to the PDD or FVR are necessary.

We are very happy to provide any further clarifications or documentation as requested.

Kind regards



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