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Mr. Clifford Mahlung
Chair, CDM Executive Board
UNFCCC

Response to the request for review for the CDM project activity "*Rincon Verde LFGTE Project*" (Ref. no.: *3432*)

2010-12-02

Dear Mr. Mahlung,

The DOE TÜV Rheinland Japan Ltd. was informed on 04th Nov. 2010 that the CDM project "*Rincon Verde LFGTE Project*" (Ref. no. 3432), 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 two* issues. We would like to provide our response to the 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:
The DOE shall explain how it has validated the suitability of input values to the investment analysis, in particular the wheeling costs (roughly 50% of the tariff), the reference for the electricity tariff and distribution losses (30%) in line with VVM v1.1 paragraph 113 (a) and (c).

VVMANUAL states:

113. The validation report shall:
(a) Describe in detail how the parameters used in any financial calculations have been validated;
…
(c) Confirm whether the underlying assumptions are appropriate and the financial calculations are correct.

PDD version 06 stated:
Electricity Tariff [€/MWh] 98 €/MWh
Wheeling [€/MWh] 46 €/MWh
Distribution Losses [%] 30%
Although the electric tariff for public services is relatively high, the wheeling costs for low voltage, disperse charges in densely populated areas is also elevated since they depend on the electrical losses of the area (ranging 30-35%) as stated in the calculation methodology defined by the Energy Regulatory Commission.

PDD version 07 states:
Electricity Tariff [€/MWh] 98 €/MWh
Wheeling [€/MWh] **42** €/MWh
Distribution Losses [%] 30%
Although the electric tariff for public services is relatively high, the wheeling costs for low voltage, disperse charges in densely populated areas is also elevated since they depend on the electrical losses of the area (ranging 30-35%) as stated in the calculation methodology defined by the Energy Regulatory Commission.

Validation Report revised version 08 states
d) Electricity Tariff: a value of 98 EURO/MWh has been adopted.
The validation team confirmed the value by accessing the information contained in the website http://www.cfe.gob.mx/negocio/conocetarifa/Paginas/Tarifas.aspx, and by review of the calculations performed in the calculations spreadsheet /27/ based on the information available on the mentioned link.

DOE Response:

In Mexico the single grid company is CFE (Comisión Federal de Electricidad), which regulates the energy distribution from all the energy generator entities. This means that the final consumer will pay energy consumption as if CFE generated it, thus the publicly available tariff suits the revenues from the electricity sales of the project activity. Furthermore, as a specific tariff applies for each region of the Country (see details below) the tariff is realistic in view of market conditions. Due to these reasons, the DOE validates the reference source is relevant to determine the prospective tariff for the project.

In México the grid company divides the complete grid into regions (project location is Estado de México which is part of the CENTRO Node[1]) and establishes prices for each region in every sector

[1] Information available at page 81, Map 3:

(i.e. public services, industrial sector, commercial, domestic, and others). The project participant opted to make an annual average with the monthly prices for the complete 2008 for the established tariff in public lighting services and in the same way for the service for water pumping; this is conservative, since the data taken on account to calculate the tariff considers the different changes during the year (i.e. electricity tariff in Mexico increases during the second semester of the year).
Furthermore, to calculate the tariff presented in the PDD, the PP calculated a weighted average based on:
50% of the energy generated will be used for public lighting
25% of the energy generated will be used for service for water pumping
25% of the energy will be used during peak periods established by CFE.

The validation team then revised for the region in which Estado de Mexico is located the established price for the Tariff 5 - For public lighting services and the Tariff 6 - Service for water pumping (drinking or waste water). The validation team considers the sector chosen as appropriate since the electricity will be used in Municipality services.

Given the above, it is confirmed that the value was correctly selected, correctly applied in all calculations, and in line with VVM v1.1 paragraph 113 (a) and (c).

e) Wheeling charges: a value of **42** €/MWh has been adopted. (A Corrective Action Request has been raised as part of CAR2)

The calculation method of the wheeling charges was validated by reviewing the document issued by the CRE (Energy Regulatory Commission) contained in the website http://www.cre.gob.mx/documento/1321.pdf and by reviewing its correct application in the excel calculation spreadsheet provided by project participants /27/.

The expressed document developed by the CRE at the Annex TC provides the procedures to determine the charge for wheeling in 69 kV voltages or lower, which is the project's case. According to this methodology, the total costs of wheeling to spread charges (see page 25) are composed by fixed charges and energy loss charges:

$$CTMD_a = \left(C_f\right)_a + \left(C_p\right)_a$$

Where:
CTMDa = charge for wheeling in 69 kV voltages or lower
(*Cf*)*a* = fixed charge
(*CP*)*a* =energy loss charge

The fixed charges are defined by the CRE yearly with information from the last year (page 25), and the energy loss charges are calculated with the following formula provided in page 26:

$$C_p = EP \times \left(\frac{P_{erz}}{100 - P_{erz}}\right) \times P_{mt}$$

Where:
EP = Electricity delivered by the energy generator entity in the interconnection point to be transported to the different delivery points

http://www.sener.gob.mx/res/PE_y_DT/pub/Prospectiva_electricidad%20_2009-2024.pdf

Perz = Percentage of losses in the **determined Region** (30% please see discussion under f) Distribution losses)
Pmt = Average energy tariff during the month (please see discussion above under d) Electricity Tariff)

In version 06 of the PDD, the PP estimated the fixed charges (*Cf*)*a* as 10% of the average energy tariff *Pm* as there was no confirmed information regarding this cost. In this situation and in order to be conservative, for the final version of the PDD the Project Participants decided not to account for fixed wheeling charges and to estimate the wheeling cost only on the basis of Loss Charges, as they are considered the main contributor for CTMD.

As can be seen, the costs of wheeling for this project are high. This is due to the high Distribution losses found in Central Area of the country, which are higher than those for the rest of the country. In the document POISE 2010-2024 by CFE http://www.cfe.gob.mx/QuienesSomos/publicaciones/Paginas/Planeaci%C3%B3n%20del%20sistema%20el%C3%A9ctrico%20nacional.aspx, it is possible to find further explanation on Transmission and Distribution Losses. Page 59, figure 2.9 of this document states that in 2008 distribution losses for LyFC (Luz y Fuerza del Centro: the (meanwhile liquidated) electricity provider for Central Area of Mexico) were 32.73% in comparison to the 10.35% of CFE in the rest of the country areas and 16.83% in the National Electric System.

The Institute of Electrical Studies in México (IIE) in the document: “Estimation of the source and energy prospective of the waste in Mexico” // provided evidence supports (page 11), wheeling costs for LFGTE projects are expected to be high, since the common systems (mainly public lighting) tend to be connected in low and medium voltages which increases related costs, as is the case of this project activity.

In addition to the explanations above, and to provide an idea of what wheeling costs represent for the project activity, these are justified by the fact that Net electricity generated (EL_{LFG}) by the project activity would be transmitted to the remote charges through the national electrical grid infrastructure, which for the Central Area presents energy distribution losses of 30% average (as presented before), and finally occurs that 30% of the energy generated would not be really delivered to those remote charges, so an equal amount of energy would be supplied by energy generated by CFE and paid at the actual electrical tariff.

f) Distribution Losses: a value of 30% has been adopted.

The validation team verified the value by review of the document issued by the Energy Secretariat available on http://www.sener.gob.mx/webSener/res/304/PDF-LFC/LFC%20-%20PERDIDAS%20DIST.pdf, which details the yearly energy losses in medium and low voltage distribution systems. To choose a middle value of 30% is considered to be appropriate, since according to the source the following looses are identified in the recent years:
2006 -31.7%
2007 -34.3%
2008 -34.4%

As can be noticed, the distribution looses in medium and low voltage, as well as for the Central area of the Country are even higher than 30%, thus the approach is considered appropriate to the project activity location and grid connection modality, it is thus considered conservative for the investment analysis. The value was also checked by review of the calculations performed in the calculations spreadsheet /27/.
Note: Distribution losses are only relevant for calculation of the wheeling charges; they do not affect the calculated Electricity Generation and according revenues.

Given the above, it is the validation team opinion that the distribution losses are considered consistent and according to the public information available and addressed in a conservative manner, complying with VVM v1.1 paragraph 113 (a) and (c).

Issue 2 raised:
The DOE shall explain how it has validated that the prevailing practice barrier claimed would prevent the implementation of the project activity, in line with VVM v1.1 paragraph 114 (a).

VVMANUAL states:

114. If barrier analysis has been used to demonstrate the additionality of the proposed CDM project activity, the PDD shall demonstrate that the proposed CDM project activity faces barriers that:

(a) Prevent the implementation of this type of proposed CDM project activity;

Barriers are issues in project implementation that could prevent a potential investor from pursuing the implementation of the proposed project activity. The identified barriers are only sufficient grounds for demonstration of additionality if they would prevent potential project proponents from carrying out the proposed project activity undertaken without being registered as a CDM project activity.

PDD version 06 stated:
Barrier Analysis
Sub-step 3a. Identify barriers that would prevent the implementation of the proposed CDM project activity:

[1] *Prevailing Practice:*
_ In terms of electricity generation in the Host Country, the Energy Regulatory Commission (CRE) has granted 724 electricity generation permits, and only one is using LFG as primary fuel. In a further analysis we identified that from the 724 permits, 82 are similar in scale to the Project Activity (from 6-10 MW of installed capacity), and from this list we identified that 67 projects (82%) are fossil fuel based, 13 projects (16%) include imports, small-scale renewable and cogeneration and 2 projects (2%) include biogas (only 1 LFG) as primary fuel.
_ The Host Country, is rich in oil and gas reserves, and the national policy indicates that fossil fuel based technologies will continue to be preponderant in the system as shown in table 5 …"

PDD version 07 states:
N/A

DOE Response:
Since the "Tool for the demonstration and assessment of additionality" allows whether to develop Step 2. "Investment analysis" or Step 3. "Barrier analysis", only one of these analysis should be presented mandatorily. Thus, if additionality in the PDD is demonstrated by means of the Investment analysis, the identified "Barriers due to prevailing practice" may not be relevant or supportive to demonstrate the project's additionality.
Furthermore, if it cannot be plausibly demonstrated how presented barriers would prevent the project implementation, such barriers should not be stated in the PDD.
Given the above, the DOE requested the PP to assess if Step 3 of the tool is deemed to be relevant to demonstrate additionality, and to provide a complete explanation on how this barrier would prevent the implementation of the project activity. The previously issued CAR 02 has been amended accordingly.
The Project Participants have consequently revised sections B.4 and B.5 of the PDD, and removed the discussion of barriers due to prevailing practice. The CAR02 has thus been resolved and closed, and the Validation report Section 3.5.4 has been amended accordingly:

Validation Report revised version 08 states :
Since the followed “Tool for the demonstration and assessment of additionality” allows whether to develop Step 2. “Investment analysis” or Step 3. ”Barrier analysis”, only one of the analysis should be presented mandatorily, thus for this project the additionality in the PDD is demonstrated by means of the Investment analysis.
No barrier analysis presented in the PDD version 7.

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-- End --

Attachments

“Annexes to the Transmission Agree Model” (http://www.cre.gob.mx/documento/1321.pdf)
with translation of Annex TC, p25-27

ANEXO 1 - ESTIMACIÓN DEL RECURSO Y PROSPECTIVA ENERGÉTICA DE LA BASURA EN MÉXICO (http://www.sener.gob.mx/webSener/res/168/A1_Basura.pdf)
With translation of “Estimation of Resource and Energy Perspective of Waste in Mexico” (IIE, p. 11)

Programa de Obras E Inversiones del Sector Electrico, 2010-2024
(http://www.cfe.gob.mx/QuienesSomos/publicaciones/Paginas/Planeaci%C3%B3n%20del%20sistema%20el%C3%A9ctrico%20nacional.aspx)
Figure 2.9 including Translation and further explanation