CLEAN DEVELOPMENT MECHANISM

CDM-PA8767-RULE01

Ruling note

Request for issuance for “Cerro Pabellon Geothermal Project (Apacheta)”

Version 01.0

United Nations
Framework Convention on
Climate Change

1. The CDM-Executive Board decided to reject the proposed request for issuance for CDM Project Activity (PA) 8767 “Cerro Pabellon Geothermal Project (Apacheta)”, for the monitoring period of 01 January 2015 - 31 December 2020, on 08 November 2025 in accordance with the “CDM project cycle procedure for project activities” (PCP-PA), ver. 03.0, paragraph 245. Further, in accordance with paragraph 251 of the PCP-PA, the ruling shall contain an explanation of the reasons and rationale for the final decision, which are as follows:

    (a) The DOE E-0051: KBS Certification Services Ltd. (KBS) failed to submit a request for approval of changes (PRC) and verify the application of alternative values and alternative approach for the monitoring of average mass fraction of carbon dioxide and methane in the produced steam in year y ($\omega_{steam,CO2,y}$, $\omega_{steam,CH4,y}$) and quantity of steam produced in year y ($M_{steam,y}$), in accordance with paragraphs 276 of “CDM validation and verification standard for project activities”, ver. 03.0 (VVS-PA), paragraph 231 (b)(ii) of the project standard for project activities, ver. 03.0 (PS-PA) and paragraph 137 of the activity cycle procedure, ver. 03.0 (PCP-PA) and the monitoring of %NCG in steam as per the applied methodology.

    (b) The relevant requirements are:

        (i) VVS-PA, paragraph 276 states that “If the DOE determines that the proposed or actual post-registration changes to the registered CDM project activity comply with the relevant CDM rules and requirements, the DOE shall issue a positive validation opinion and submit a request for approval of changes either prior to or together with the submission of the request for issuance of CERs in accordance with relevant requirements in the “CDM project cycle procedure for project activities”.

        (ii) PCP-PA, paragraph 137 states that “The request for approval of changes shall contain: (a) A duly completed “Post-registration changes request form” (CDM-PRC-FORM); (b) A validation report on the changes by the DOE prepared in accordance with the “CDM validation and verification standard for project activities”; (c) A revised PDD (in both clean and track-change versions) or a monitoring report, as applicable; (d) Supplemental documentation, as appropriate”.

        (iii) PS-PA, paragraph 231 (b)(ii) states that “If the project participants are temporarily unable to monitor the registered CDM project activity in accordance with the monitoring plan in the registered PDD, the applied methodologies, the applied standardized baselines, or the other applied methodological regulatory documents, the project participants shall describe the nature, extent and duration of the non-conforming monitoring period in the monitoring report, and (b) apply the following most conservative values approach when alternative monitoring arrangements are not proposed. This does not require approval by the Board: (ii) Apply the values assuming that the source of GHG emissions is operated at the maximum capacity for the entire non-conforming monitoring period. In the case of project GHG emissions related to the consumption of electricity, add 10 per cent to account for transmission and distribution losses”.

(iv) The applied methodology (ACM0002 ver. 13 - Consolidated baseline methodology for grid-connected electricity generation from renewable sources) requires that for non-condensable gases sampling should be carried out in production wells and at the steam field-power plant interface using ASTM Standard Practice E1675 for Sampling 2-Phase Geothermal Fluid for Purposes of Chemical Analysis (as applicable to sampling single phase steam only).

(c) The reason and rationale for the final decision is:

(i) The DOE failed to issue a positive validation opinion and submit a request for approval of changes either prior to or together with the submission of the request for issuance of CERs in particular an independent validation opinion on consideration of the most conservative values and approach and propose alternative monitoring arrangements for the monitoring of ωsteam,CO2,y, ωsteam,CH4,y and Msteam,y.

(ii) The DOE failed to substantiate how it verified the values considered for defining the most conservative values for ωsteam,CO2,y and ωsteam,CH4, the %NCG in steam since:

a. The consideration of not claiming ERs when the monitoring plan was not fully implemented is not in compliance with para 231(b)(ii) of PS-PA considering that there were project emissions during the period when the emission reduction was not claimed due to the operation of the plant during the 2017, 2018 and Q1/Q2 of 2019.

b. There were no verification opinion on significant variances in values monitored for the parameter ωsteam,CH4,y during 2021 to 2025 resulted from 10.20 to 369.90 CH4 ppm in NCG.

c. For the %NCG/Steam, the revised verification report (p 21) states that the most conversative value of the monitored data is 0.7% while the applied value for Q1 and Q4 2020 is 0.55% and the applied value for Q3 and Q4 of 2019 and Q2 and Q3 of 2020 is 1.26%. Further, the DOE did not provide its verification opinion on where and how %NCG in steam was the continuously monitored by the PP while the applied methodology requires to carry out sampling of non-condensable gas in production wells and at the steam field-power plant interface.

(iii) The DOE failed to provide a validation opinion on the proposed alternative monitoring arrangements of using a totalized flowmeter for the Msteam,y, which were different from the monitoring plan (which requires the use of a Venturi flow meter located at the upstream of the flash steam turbine) for the period of 08/05/2017 to 31/12/2019, since:

a. The DOE clarified that the PRC was approved on 20/02/2023 that allowed the use of a totalized Venturi flow meter for Msteam,y. However, the approved PRC is related to the changes to the project design, i.e. increase the total installed capacity from 73.66 MW to 83.81 MW and the implementation of binary-cycle technology from flash steam technology; and the registered PDD and the revised PDD approved on 20/02/2023 require the continuous measurement by a

Venturi flow meter located at the upstream of the flash steam turbine while the DOE verified that the actual monitoring of Msteam,y was done by three orifice plate flow meters installed at three platforms at the upstream of the flash steam turbine.

(iv) Furthermore, it is observed that binary cycle geothermal technology is not applicable under the applied version of the methodology, i.e. version 13 of ACM0002 since a later version of the applied methodology (version 17, available since 13 May 2016) includes binary-cycle geothermal power plants to account project emissions due to physical leakage of: (i) Non-condensable gases; (ii) Working fluid (hydrocarbon).

2. Please note that, in accordance with paragraph 258 of the PCP-PA, ver. 03.0, the DOE may re-submit the request for issuance with revised documentation if the reasons for the rejection can be addressed by means of a revised verification report, based on a revised monitoring report as appropriate.

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Document information

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