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Att: CDM Executive Board

Your ref.:  
UNFCCC Ref # 8870

DNV responsible ref.:  
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| QUESTIONS RAISED BY CDM EXECUTIVE BOARD MEMBERS   | RESPONSE SUMMARY FROM DNV  | ACTION TAKEN ( IF RELEVANT)   |
|---|--|---|
| <p><b>1) The DOE shall further explain how it has validated the suitability of the input values to the investment analysis, in particular:</b></p> <p><b>(a) the investment costs (hard CAPEX and soft CAPEX) given that the source of the input value and the source used for cross checking are same;</b></p> <p><b>(b) the OPEX (both fixed and variable) given that the operational expenditure budget used for cross checking is neither third party nor public available sources. Please refer to VVS version 2, paragraph 120 (b).</b></p> | <p>(a) As shown in section 4.9.5 of the validation report, there are no similar projects to the proposed project in South Africa: the 3 existing coke plants in South Africa use coke batteries with by product recovery technology. Therefore it is not possible to cross-check the CAPEX figures for the proposed project with other similar projects in South Africa. Further, the tendering and procurement process for the proposed project has not yet been completed and it is not possible therefore to cross-check the CAPEX figures in the Prefeasibility Study Report for the proposed project with actual contracts for equipment procured.</p> <p>(b) As shown in section 4.9.5 of the validation report, there are no similar projects to the proposed project in South Africa: the 3 existing coke plants in South Africa use coke batteries with by product recovery technology. Therefore it is not possible to cross-check the OPEX figures for the proposed project with other similar projects in South Africa. Further, since the project is still at the prefeasibility stage, it is not possible to cross-check the OPEX figures in the Prefeasibility Study Report for the</p> | <p>(a) Some quotes received during the initial design stage of the proposed project activity from 2008-2010 has been assessed to crosscheck the hard CAPEX moreover public available sources have been used to cross check the total CAPEX in the validation report. The crosscheck confirmed that the adopted figures are suitable and conservative.</p> <p>(b) Public available sources have been used to cross check the total OPEX in the validation report. The crosscheck confirmed that the adopted figures are suitable and conservative.</p> |

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|  | proposed project with actual costs of operation and maintenance.   |  |
| <p><b>2) The DOE shall further substantiate the extent of use of WECM in the greenfield coke plant in the absence of the CDM project activity, in particular, how it has validated that the project facility without any use of the waste energy is the only alternative design of the project facility given that the manufacturer of the project facility should be invited to submit an alternative design including the usage of WECM. Please refer to ACM0012 version 4, Annex 1, option 2.</b></p> | <p>As far as the project activity is concerned, a combined process and financial model was developed by the project activity PFS authors to determine the optimum steam conditions for the steam cycle and the number of waste gas heat generators and turbines. The Process Concept Design report documents the process and financial modelling to determine the optimum process solution for the project activity. A number of different configurations were considered including:</p> <ul style="list-style-type: none"> <li>- Different steam conditions (32 bar(a) and 410°C, 45 bar(a) and 445°C, 65 bar(a) and 485°C);</li> <li>- Heat recovery boiler configuration (2 or 4 WHRSGs);</li> <li>- Turbine configuration (this considered only 2 x 30 MW steam turbines).</li> </ul> <p>The maximum number of configurations based on the variables above is 6 and the optimisation model developed considered all 6 of these possible configurations. The study concluded that the optimum (most financially attractive) configuration is: four Waste Heat Steam Generators (WHSGs), and two Turbines at 65 bar(a) and 485°C steam condition.</p> <p>This scenario is the project activity without CDM and given that it is the most financially attractive of the 6 possible configurations, considering this configuration only in the analysis in Annex 1, option 2 is deemed conservative.</p> | <p>The PDD has been revised to include a levelized cost analysis and an investment comparison analysis of the following three scenarios (the third one has been included for completeness, even if it has been not considered as a real option at the prefeasibility stage):</p> <ol style="list-style-type: none"> <li>1. Scenario 1: project facility is constructed with no usage of WECM. WECM is combusted (flared) and vented to the atmosphere and power would be supplied from the national grid;</li> <li>2. Scenario 2: project facility with usage of all the available WECM, i.e. WECM is recovered for power generation;</li> <li>3. Scenario 3: project facility with usage of 50% of the available WECM for power generation. While the plant load factor remains the same, the installed generation capacity of Scenario 3 is assumed to be half (30 MW) of the capacity of Scenario 2. The electricity generated in Scenario 3 is equal to the 50% of power generation in Scenario 2. For comparison purposes, the remaining 50% of electricity (in scenario 2) is assumed to be supplied from the national grid.</li> </ol> <p>The analysis shows that scenario 1 is more attractive than scenarios 2 and 3, i.e. no usage of WECM and purchase of equivalent amount of power from the grid. This option also represents significantly less risk for the project owner as the proposed project is not common practice in South Africa. Therefore the project participant demonstrated, through levelised cost analysis, that the</p> |

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|  |  | <p>alternative design of scenario 1 (project facility with no usage of WECM) would have been the baseline scenario for the waste energy generated in the Greenfield facility.</p> <p>As a consequence, DNV revised its assessment and found the analysis made by the project participant to be in compliance with Option 2 of Annex 1 of the methodology ACM0012 (version 04.0.0).</p> |
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