Response to Request for Review for

8MW Waste Heat Recovery based Captive Power Project at OCL

(Ref. No.: UNFCCC 00000367)

Comment 1

Total electricity generated and auxiliary electricity consumption were not measured, but calculated. Further clarification is required on how the DOE verified total electricity generated and auxiliary electricity consumption in accordance with approved methodology.

Response by the Project Proponent

As per the Registered Project Design Document, power is generated in the Captive Power Plant (CPP) of OCL with steam from

- 4nos. Waste Heat Recovery Boilers (WHRB) and
- 1no. Fluidized Bed Combustion (FBC) Boiler

Therefore the 'Total electricity generated by the CPP ($EG_{GEN\ CPP}$)' and 'Total auxiliary consumption of the CPP ($EG_{AUX\ CPP}$)' is attributed to steam generated both by the Waste Heat Recovery Boilers (*i.e.* the project activity) and the Fluidized Bed Combustion Boiler. In view of the above, the Registered PDD has made a provision for calculating the 'Total electricity generation (EG_{gen})' and 'Auxiliary consumption of electricity EG_{aux})' by the project activity based on the

- Total electricity generated by the CPP ($EG_{GEN\ CPP}$), Enthalpy (total heat content) of WHR Steam (H_1) and Enthalpy (total heat content) of FBC Steam (H_2)
- Total auxiliary consumption of the CPP ($EG_{AUX\ CPP}$), Enthalpy (total heat content) of WHR Steam (H_1) and Enthalpy (total heat content) of FBC Steam (H_2)

Please refer to Section D.2.1.1 and 'Annex-4: Monitoring Plan' for details on the same. Determination of 'Total electricity generation (EG_{gen})' and 'Auxiliary consumption of electricity (EG_{aux})' by the project activity following the above procedure has been validated by the DOE (involved during validation) and formally accepted by the Executive Board of UNFCCC during the registration process. This justifies the choice of the project proponent to follow the same procedure for determination of the 'Total electricity generation (EG_{gen})' and 'Auxiliary consumption of electricity (EG_{aux})' by the project activity for computation of emission reductions from the project activity during the verification period under consideration.

Furthermore the 'Annex-4: Monitoring Plan' of the Registered PDD requires the project proponent to measure the

- Total electricity generated by the CPP ($EG_{GEN\ CPP}$), monitored as per the guidance of the methodology
- Total auxiliary consumption of the CPP ($EG_{AUX\ CPP}$), monitored as per the guidance of the methodology
- Flow of WHR Steam to Common header, Avg. Temperature of WHR steam before Common header and Avg. Pressure of WHR steam before Common header for determination of Enthalpy (total heat content) of WHR Steam (H_1)
- Flow of Steam to Common header, Avg. Temperature of FBC steam before Common header and Avg. Pressure of FBC steam before Common header for determination of Enthalpy (total heat content) of FBC Steam (H_2)

The project proponent has monitored all the parameters following the guidance of the Registered PDD without any deviation to the Registered Monitoring Plan and computed the 'Total electricity generation (EG_{gen})' and 'Auxiliary consumption of electricity (EG_{aux})' by the project activity and hence the emission reductions from the project activity during the verification period under consideration in accordance with the guidance of the Registered PDD.

Comment 2

Net Calorific Value for the diesel consumption has not been measured, but the IPCC value was applied. Although this parameter is not included in the monitoring plan, the methodology requires to measure the NCV. Further clarification is required on how the DOE verified the value in line with approved methodology.

Response by the Project Proponent

The monitoring plan of the Registered PDD does not require the project proponent to monitor the Net Calorific Value of diesel consumed in the Diesel Generator Set at OCL. However, during site verification by the Verifier, it was observed that in few months during the verification period under consideration, there was some diesel consumption due to emergency situations. In view of the above and the subsequent Corrective Action Request of the Verifier, the project proponent has computed the project emissions following the guidance of the methodology based on

- Diesel Consumption of the Diesel Generator Set and
- The Net Calorific Value and Emission Factor of Diesel Oil

However since for the verification period under consideration, the Net Calorific Value of diesel oil has not been monitored (which is as per the Monitoring Plan of the Registered PDD), the project proponent has selected the IPCC default value for computation of project emissions. For subsequent verification, the project proponent will monitor the Net Calorific Value of diesel oil consumed in the Diesel Generator Set.

Comment 3

Oxidation factor of diesel ($OXID_i$) should be included in the formula of the project emission calculation in the emission reduction calculation spreadsheet.

Response by the Project Proponent

The project emissions resulting from the project activity is calculated following the guidance of the methodology based on

- Diesel Consumption of the Diesel Generator Set and
- The Net Calorific Value of Diesel Oil and
- The Emission Factor of Diesel Oil

The Emission Factor of diesel oil is calculated as a product of:

- Carbon emission factor per unit of energy of fuel (IPCC default value of 74.1tCO_2/TJ is used, Source: 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Table 2.2) and
- Oxidation Factor of diesel oil (IPCC default value of 1.0 is used, Source: 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Pg/- 2.6)

Therefore the oxidation factor of diesel oil has already been considered while determining the project emissions resulting from the project activity.