**Response to Request for Review for**

**Abatement of Green House Gas (GHG) emissions through biomass residue based cogeneration at Claris Lifesciences Limited**

**(UNFCCC Ref. No.: 00001852)**

**1. The PP/DOE are requested to justify prior consideration of the CDM following EB 41 guidance, Annex 46, paragraph 5 and 6.**

In accordance with EB 41, Annex 46, paragraph 5, "*The project participant must indicate awareness of the CDM prior to the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project. Evidence to support this would include, inter alia, minutes and/or notes related to the consideration of the decision by the Board of Directors, or equivalent, of the project participant, to undertake the project as a CDM project activity*."

The Management of Claris Lifesciences Limited had decided to set up a Lignite based steam and power generation unit to cater to the requirements of the different facilities within "Clarion". *(Refer to Annexure I-Minutes of Meeting on 10th September, 2004).* All work pertaining to setting up the lignite based facility was under progress and the facility was commissioned with lignite as fuel on 27th October, 2005.(*Annexure II- Commissioning Report by Thermax*).

Claris Lifesciences Limited decided to set up a biomass based steam and power generation unit solely keeping in view of abating Green House Gas emissions which are emitted by lignite. In this regard we approached M/s Thermax Limited (*Refer to Annexure III)* and sought their expert advice on this fuel switch arrangement .M/s Thermax Limited appraised us the on the difficulties of such switch. It expressed its appreciation for a unit to shift from one fuel feeding system to other with in a year of commissioning and recommended that we could avail the benefits of CDM revenues. (*Refer to Annexure IV)*

Our financial team assessed the unit cost of steam generation and it was found that the unit cost of steam generation for our biomass based unit was coming to be much higher than our already existing lignite based unit. (*This was included in the PDD submitted for registration)*. But our Management decided to set up a biomass based unit on the 20th of March, 2006 inspite of all the unfavourable factors bearing in mind the benefits associated with CDM .(Refer to *Annexure V-Minutes of Meeting on 20th March, 2006).*

In accordance with EB 41, Annex 46, paragraph 6,*"The project participant must indicate, by means of reliable evidence, that continuing and real actions were taken to secure CDM status for the*

*project in parallel with its implementation. Evidence to support this should include, inter alia, contracts with consultants for CDM/PDD/methodology services, Emission Reduction Purchase Agreements or other documentation related to the sale of the potential CERs (including correspondence with multilateral financial institutions or carbon funds), evidence of agreements or negotiations with a DOE for validation services, submission of a new methodology to the CDM Executive Board, publication in newspaper, interviews with DNA, earlier correspondence on the project with the DNA or the UNFCCC secretariat;"*

We present here the chronology of events to establish that we have taken real initiatives for securing our project through the CDM route:

| Events | Timeline of Activities | Remarks |
|---|---|---|
| Board Resolution to set up a biomass based unit with CDM | 20th March,2006 | Annexure V |
| Minutes of Meetings -For appointing a personnel responsible for carbon credit project | 4th April,2006 | Annexure VI |
| First mail communication with consultants | 7th August,2006 | Annexure VII-a |
| Minutes of Meetings - status update of the project. | 3rd August 2006 | Annexure VIII |
| Mail communication to consultants | August,2006 onwards | Same as Annexure VII-b<br>Refer to the entire trail of mails with consultants |
| Signed Engagement Letter with Consultants | 5th December 2006 | Annexure IX |
| Submission of the First Draft PDD to client | 31st April,2007 | Same as Annexure VII-b |
| Submission of Project Design Document (PDD) and Project Concept Note (PCN) to Ministry of Environment & Forests (MoEF),<br>Government of India-Application for Host Country Approval (HCA) from Indian DNA | 6th August,2007 | Annexure X-Letter to Indian DNA. |
| Presentation at Ministry of Environment | 21st | Annexure XI-DNA invitation |

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|---|---|---|
| &<br>Forests (MoEF), Government of India for HCA | November,2007 | for presentation |
| Contract with DOE (DNV) | 14th<br>September,2007 | Annexure XII |
| Uploading of PDD for International Stakeholders Consultation | 02 October 2007 | http://cdm.unfccc.int/Projects/Validation<br>/DB/6M7NXUJBITFS2Z54B3REGS5NLGGW41<br>/view.html |
| Host Country Approval | 6th May,2008 | Annexure XIII |

**2. The DOE is required to explain how the surplus of biomass and possible leakage have been validated.**

Claris Lifescienecs Limited has conducted extensive surveys in and around the region from where biomass fuels are procured. We have followed a methodology which is exhaustive and have interviewed the biomass suppliers to ensure that the estimates are accurate. All competing use of biomass has been taken into account. (*Refer to the Biomass Availability Report –Annexure XIV*

In addition to the above, we have agreements with several of biomass suppliers for supply of DOC and saw dust:

1. Contract Agreement with M/s Agrawal Enterprise and Claris Lifesiences Limited on the 7th of June 2007 for a period of 5 years. *(Refer to Annexure XV)-Pg-5*
2. Letter from Ardip Agencies for supply of DOC for the next 5 years dated 15th January, 2008. *(Refer to Annexure XVI)*
3. Letter from N.K Proteins dated 5th January, 2008 *(Refer to Annexure XVII)*

Thus the survey conducted and interviews with traders and the farmers have helped identifying all competing use of the biomass used in the project activity and estimates have been provided on the quantum of biomass available taking into consideration the other possible use of the biomass fuels. It has been established that the quantity of available biomass in the region is much higher than the benchmarked 25% after considering the total quantity of biomass that is utilised including the project activity. Hence leakage emissions are neglected.

3. **The DOE is required to explain how a) the annual net quantity of steam/heat displaced by the project activity, and b) the 2 MW captive electricity (part of phase I, 16 TPH boiler) are accounted for in the baseline emission calculations.**

It is clarified that although the title of the project activity implies that the plant is a cogeneration plant, the project is not a cogeneration but a combined steam and power plant. *A detailed explanation on the same has been provided in the submitted validation report (on page no 12 in the validation report.*

The following timeline will provide a better picture of the pre-project and post project scenario:

| S.No | Equipments | Baseline Scenario | Date of Commissioning | Project Activity Scenario | Status in the project activity scenario |
|---|---|---|---|---|---|
| 1 | Steam Turbo Generator (STG) | 2 MW | 27th October 2005 | 2 MW | The STG remains the same in baseline and project scenario. |
| 2 | Boiler (B1) | 16 TPH FBC 44kg/$cm^2$ and 430$\pm$ $5^0$ C. LIGNITE FIRED | 27th October 2005 | 16 TPH FBC boiler 44kg/$cm^2$ and 430$\pm$ $5^0$ C. BIOMASS FIRED | The plant was running successfully with the lignite for 9 months and based on CDM availability the project has been shifted to biomass. The thermal energy displaced/generated in both the baseline and project are status quo, except for the fuel being used |

The above table clearly shows that the 2 MW STG and 16 TPH FBC boilers (operating at same conditions) are identical under baseline as well for the project activity. The project activity only displaces the steam produced from a lignite based boiler in the baseline scenario with a biomass based boiler. All the other set up is identical for both the project and the baseline and hence the rationale that baseline emissions will be computed from the total quantity of steam DISPLACED by the project activity, given the fact that the entire set up remains the same. A part of the steam from the boiler outlet is suitably conditioned through PRDS (Pressure Reducing Desuperheating Station) to cater to the process requirements and the balance high pressure steam from the boiler is fed to the turbine. In

the absence of the project activity, the same quantity of steam as required in the process and the turbine would have been generated at the lignite fired boiler end. Hence the project activity displaces the entire quantity of steam produced from a lignite based boiler which could have catered both the steam and power demand of the plant.

Thus the project activity displaces technology using fossil fuel with renewable energy and hence conforms to paragraph 6 of the methodology AMS-I.C, version 12. As per paragraph 6, *"For renewable energy technologies that displace technologies using fossil fuels, the simplified baseline is the fuel consumption of the technologies that would have been used in the absence of the project activity times an emission coefficient for the fossil fuel displaced.*

For steam/heat produced using fossil fuels the baseline emissions are calculated as per paragraph 10 of the methodology which is :

$$BEy = HGy * EF\ CO_2 / \eta_{th}$$

Since the project is not a co-generation activity, computation of baseline emissions as per Paragraph 12 is ruled out and baseline emissions are computed as per Paragraph 10, the rationale being that the project activity displaces the entire quantity of steam from a lignite based boiler; a part of which is used for process requirements and the balance for electricity requirements. For this purpose all monitoring is in accordance with paragraph 10. Hence the total quantity of steam at the boiler outlet is monitored along with the temperature and pressure.