

Date: 22/07/2008

To Whom It May Concern

This is with reference to the requests for review for the proposed CDM project activity "Energy efficiency measures in "Technopolis" (Ref. no. 1794) of Phoenix Software Limited (PSL). Please find enclosed with this letter, our response to the clarifications raised by Executive Board of UNFCCC.

Along with the response, please find enclosed for your kind perusal the following supporting documents in line with our response:-

- 1) Annexure 1: Letter from PSL to Blue Star Limited (dated 17/03/2006)
- 2) Annexure 2: Property Management Services Agreement (dated 17/12/2007)
- 3) Annexure 3: Letter from CII – Sohrabji Godrej Green Business Centre to PSL, dated 21/11/2004
- 4) Annexure 4: Proof for CDM consideration by PSL management during project approval
- 5) Annexure 5: Appointment to Architect - M/s Agrawal and Agrawal
- 6) Annexure 6: Contract with M/s. Entask Electrics for Mechanical & Engineering Services (including HVAC design) for Technopolis
- 7) Annexure 7: Contract with M/s. Environmental Design Solutions for Energy Simulation
- 8) Annexure 8: Preliminary Concept Note and Elevation Design from Agrawal and Agrawal (Architects Planner and Interior Designer)
- 9) Annexure 9: Appointment of CDM Consultant
- 10) Annexure 10: Board Approval for Final Building Designs
- 11) Annexure 11: Submission of Energy Simulation Report by the consultant based on the final interior and exterior drawings and design philosophy



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- 12) Annexure 12: Mail communication from CDM consultant to PSL with submission of draft PDD
- 13) Annexure 13: Invoice from CDM Consultant on submission of PDD to DNA
- 14) Annexure 14: Application to DNA for obtaining HCA
- 15) Annexure 15: DNA Invitation for Presentation
- 16) Annexure 16: Contract with DOE
- 17) Annexure 17: Certificate from Jones Lang Lasalle Meghraj

**For Phoenix Software Limited**

A handwritten signature in black ink, appearing to read "Aditya Mehta".

Aditya Mehta

**Authorize Signatory**

1. The DOE is requested to further clarify with relevant evidence: a) the CDM consideration to demonstrate that CDM revenues are essential to overcome the barriers to this project activity, b) the time gap of almost two years between the project start date and validation (July 2005 and May 2007 respectively, VR, p12). The clarification should include a detailed timeline of activities carried out to develop the project as a CDM project activity.

(a) Phoenix Software Limited (PSL) had the plans of setting up a commercial building for leasing out to companies engaged in IT and IT enabled services to cater to the infrastructure requirement of growing IT sector in the city of Kolkata. The technical consultants suggested PSL to adopt energy efficient measures which would enable reduction in electrical energy consumption in the HVAC system of "Technopolis". PSL then invited proposals from the equipment suppliers. On the basis of the proposals, PSL assessed the incremental investment which indicated that the project activity would entail

Additional capital investment of approximately INR 60 million, which was over and above that required to meet the standards of a conventional IT building with similar size. ***(For further details, please refer to the response to the 2<sup>nd</sup> clarification provided below)***

Apart from the additional capital investment, PSL found that the project activity would also entail additional recurring expenditure as detailed below:

- (i) annual operations and maintenance contract (AMC) with their technology provider for the HVAC system in order to ensure continuous efficient operation of the system, adding onto the recurring expenses to the tune of INR 2 million per annum<sup>1</sup> for the project activity.
- (ii) sub-contracting of the operation and maintenance (O&M) of the BMS of "Technopolis" to a third party in order to ensure energy optimization, proper monitoring, control and recording of the parameters. This would add onto the recurring expenses to the tune of INR 3 million per annum<sup>2</sup> for the project activity under consideration.

Moreover, PSL knew that the financial benefits accrued from electrical energy reduction as a result of the project activity will be obtained by the tenants of "Technopolis". Moreover the additional capital investment and recurring expenditure related to the HVAC system of "Technopolis" would not ever be recovered through higher rent rates for the building. It was thus not an economically attractive option for Phoenix Software Limited to invest in the project activity under consideration.<sup>3</sup>

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<sup>1</sup> Reference: For actual costs please refer to ***Annexure 1: Letter from PSL to Blue Star Limited (dated 17/03/2006)*** regarding annual maintenance and operation contract for the HVAC system.

<sup>2</sup> Reference: For actual costs please refer to ***Please refer to Annexure 2: Property Management Services Agreement (dated 17/12/2007)*** regarding annual operation and maintenance contract for the BMS between PSL and Jones Lang Lasalle Property Services (India) Private Limited.

<sup>3</sup> It may be noted that the Maintenance Charges (which includes air conditioning charges) for baseline building are higher than the actual maintenance charges for Technopolis building, which factors the transfers of the energy reduction benefits related to chiller plant, cooling tower and Chilled water circulation pumps to tenants. The energy reduction benefits related to AHUs also would be obtained by tenant, through lower electricity charges payable as per the meter reading.

At that juncture, they sought advice from Confederation of Indian Industry (CII) – CII Sohrabji Godrej Green Business Centre who in turn acknowledged the incremental investment involved in the project activity and advised PSL to take up the project activity through CDM route<sup>4</sup>. PSL assessed the project activity with the consideration of CDM revenues and found that CDM revenues would provide coverage to the incremental capital and recurring expenses.

The approval of the project activity by PSL Management on the basis of consideration of CDM revenues (***Please refer to Annexure 4***), further substantiate that CDM revenues are essential to recover the additional capital investment involved in the project activity.

**(b) Sequence of events during progress of the project activity through the CDM cycle has been elaborated as follows:**

Sl. No.	Event	Timeline of Activities	Remarks
1	Letter from Principal Counsellor, Confederation of Indian Industry – Sohrabji Godrej Green Business Centre for consideration of CDM revenues to overcome the investment barrier related to the project activity	21/11/2004	Submitted during Validation
2	Project approval by the Board of PSL with the consideration of CDM revenues	15/12/2004	Submitted during Validation
3	Appointment of Architect	13/01/2005	Annexure 5: Appointment to M/s Agrawal and Agrawal
4	Appointment of Consultants for Mechanical & Engineering Services for Technopolis	21/02/2005	Annexure 6: Contract with M/s.Entask Electrics
5	Appointment of Consultants for Energy Simulation	23/02/2005	Annexure 7: Contract with M/s. Environmental Design Solutions
6	NOC from Airport Authority of India for the height clearance of “Technopolis”.	20/05/2005	Submitted during Validation
7	Site inspection, preparation of preliminary drawings (plan and elevation drawings) for facilitation of HVAC and lighting system design	08/07/2005	Annexure 8 : Preliminary Concept Note and Elevation Design from Agrawal and Agrawal (Architects Planner and Interior Designer)

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<sup>4</sup> Source: Letter from CII – Sohrabji Godrej Green Business Centre to PSL, dated 21/11/2004 (***Please refer to Annexure 3***)

8	Contract for air conditioning work	25/07/2005	Purchase order placed to Blue Star Limited for air-conditioning work (dated <a href="#">25/07/2005</a> , considered as <a href="#">project start date</a> ) was submitted during Validation
9	Appointment of CDM Consultants	31/01/2006	Annexure 9: Contract with a management consultant
10	Placement of Work Order of supply, erection & commissioning of building management system to Schneider Electric India Pvt. Ltd.	11/02/2006	Submitted during Validation
11	Approval for 33 KV HV installation obtained from Directorate of Electricity, Govt. of West Bengal	18/04/2006	Submitted during Validation
12	Permanent water/sewerage connection Clearance obtained from local Municipal Corporation.	31/07/2006	Submitted during Validation
13	Sanction of S/W plan and Grant of permission to execute work at the designated Plot No. BP-4, obtained from Bidhan Nagar Municipality.	11/08/2006	Submitted during Validation
14	Submission of <ul style="list-style-type: none"> <li>▪ final approved drawings to PSL after rounds of discussions between Architect, HVAC Consultants and Lighting Consultants</li> <li>▪ final HVAC and Lighting system design based on the final drawings submitted</li> </ul>	30/08/2006	Annexure 10: Board Approval for Final Building Designs
15	Submission of Energy Simulation Report by the consultant based on the final interior and exterior drawings and design philosophy	20/09/06	Annexure 11: Submission letter from Environmental Design Solutions
16	NOC obtained from Office of the Director General, West Bengal Fire & Emergency Services, Govt. of West Bengal	25/09/2006	Submitted during Validation
17	Preparation of Project Design Documents (PDD) fulfilling the requirement of the Approved Small-Scale Methodology-AMS-II.E based on the outcomes of the Energy Simulation Report as baseline	Nov-Dec 2006 <i>Exact date of submission of draft PDD to PSL from the CDM consultant – 17/11/2006</i>	Annexure 12: Mail communication from CDM consultant to PSL Annexure 13: Invoice from CDM Consultant on submission of PDD to DNA
18	Submission of Project Design Document	18/12/2006	Annexure 14:

	(PDD) and Project Concept Note (PCN) to Ministry of Environment & Forests (MoEF), Government of India-Application for Host Country Approval (HCA) from Indian DNA		Application to DNA for obtaining HCA
19	Presentation at Ministry of Environment & Forests (MoEF), Government of India for HCA	26/02/2007	Annexure 15: DNA Invitation for Presentation
20	Receipt of Host Country Approval	02/04/2007	Submitted during Validation
21	Appointment of DOE	13/04/2007	Annexure 16: Contract with DOE
22	Global Stakeholder Consultation for one month <sup>5</sup>	26/05/2007-24/06/2007	

The time-gap of two years is attributed to the fact that the project activity is the first of its kind and substantial background efforts had been put in order

- (a) to identify and evaluate appropriate CDM Consultants
- (b) to freeze the building design and energy simulation on which the PDD preparation was dependant
- (c) to prepare Project Design Documents as per methodology available
- (d) to define monitoring parameters and design the BMS
- (e) to obtain DNA approval for the first energy efficient building
- (f) to update documents as from II.E Version 07 – II.E Version 08
- (g) to complete the Validation process

It may further be noted that PSL's effort towards developing the project activity under the CDM will serve as guidance and will encourage other property builders to develop energy efficient buildings over a smaller cycle time.

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Source:<http://cdm.unfccc.int/Projects/Validation/DB/PB760AXRSGGSSTOHD4SU67N07ELQ89/view.html>

2. The PDD (page 33) indicates that the installation and operation of the HVAC system will not only incur additional costs, but also result in additional cost savings. The PP and DOE are requested to provide more detailed data on both costs and cost savings.

The following table provides detailed break-up of the additional capital costs and recurring expenditure in “Technopolis” compared to the baseline building.

Parameters	Cost in INR million	Details of Documentary Evidence
<b>Detailed break-up of Incremental Capital Cost compared to the baseline building</b>		
<b>Glazing</b>		
The glass used would be plain double glazed glass with a shading co-efficient of 0.656 in the baseline building	14.60	Certificate issued by ALFA Aluminium Private Limited
The glazing used in Technopolis is of high performance double glazed panels coated with reflective low “e”-glass panes and having low U-value and solar heat gain co-efficient. The glass used has been imported from Emicool Glass	24.33	Proforma invoice raised by Emirates Glass to Phoenix Software Limited, dated 04/10/2005.
<b>Differential in cost of glazing between Technopolis and the baseline building</b>	<b>9.73</b>	
<b>Wall Material</b>		
There would be no insulation in the space between the spandril and the sill areas of the baseline building	0	
The space between the spandril and the sill areas is insulated with mineral wool to reduce heat influx in to Technopolis.	1.75	Certificate issued by Blue Star Limited, Ref. SN/10871/A, dated 25/11/07
<b>Differential in cost of wall insulation between Technopolis and the baseline building</b>	<b>1.75</b>	
<b>Roof insulation</b>		
Baseline building	1.79	
<i>Cost of roof insulation in case of baseline would be INR 482/m2 (as per certificate issued by Blue Star Limited), the area of roof insulation being 3723.35 m2</i>		
Technopolis (Project Scenario)	2.14	
<i>Cost of roof insulation in case of Technopolis is INR 575/m2 (as per certificate issued by Blue Star Limited), the area of roof insulation being 3723.35 m2</i>		Certificate issued by Blue Star Limited, Ref. SN/10871, dated 25/11/07

Cost of terrace gardening	0.13	Work order placed to Horticulture Foundation, dated 24/09/2006	Development
<b>Differential in cost of roof insulation between Technopolis and the baseline building</b>	<b>0.48</b>		
<b>Chillers</b>			
Cost of the 2 main air-cooled chillers of COP 3 that would have been installed in baseline building	62		
Cost of the 2 main water-cooled chillers of COP 6.1 in Technopolis	68	Mail received from Blue Star Limited, dated 15/06/2007	
<b>Differential in cost of chillers between Technopolis and the baseline building</b>	<b>6</b>		
<b>HRWs in AHU</b>			
There would be no HRW in the baseline building	0		
Cost of heat recovery wheel installed in each AHU	0.351596	Word order issued by PSL to Blue Star Limited for air conditioning work, dated 25/07/2005	
Number of AHUs in Technopolis	63		
Cost of heat recovery wheels in Technopolis	22.150548		
<b>Additional cost due to HRWs installed in Technopolis</b>	<b>22.150548</b>		
<b>BMS</b>			
There would be no BMS in the baseline building	0		
Cost of installation of BMS ( <i>excluding the cost of all the energy meters which are yet to be installed and integrated with the BMS</i> )	13.950148	Work order from PSL to Schneider Electric India Private Limited for supply, erection and commissioning of BMS, dated 11/02/2006	
<b>Additional cost due to installation of BMS</b>	<b>13.950148</b>		
<b>Additional installation cost incurred due to energy efficiency measures for HVAC system in Technopolis</b>	<b>54.058</b>	PSL has borne the entire incremental capital investment for the HVAC system of "Technopolis"	
<b>Detailed break-up of incremental operating expenses compared to the baseline building</b>			
<b>Additional recurring expenditure owing to annual operations and maintenance contract (AMC) Blue Star Limited for the HVAC system of "Technopolis"</b>	<b>2.4</b>	Letter from PSL to Blue Star Limited (dated 17/03/2006) regarding annual maintenance and operation contract for the HVAC system	

<p><b>Additional recurring expenditure owing to annual operations and maintenance contract for the BMS of "Technopolis" between PSL and Jones Lang Lasalle Property Services (India) Private Limited</b></p>	<p><b>3.66</b></p>	<p>Property Management Services Agreement (dated 17/12/2007) regarding annual operation and maintenance contract for the BMS between PSL and Jones Lang Lasalle Property Services (India) Private Limited.</p>
<p><b>Incremental operating expenses compared to baseline building</b></p>	<p><b>6.06</b></p>	<p>PSL will borne the entire incremental operating cost for the HVAC system of "Technopolis"</p>

<p><b>Detailed data on Costs savings as compared to the baseline building</b></p>		
<p>Baseline Electricity Cost (Chiller Plant + Cooling Tower + Chilled Water Circulation Pumps)</p>	<p>31.95</p>	<p>The electricity cost has been computed based on Grid Charges</p>
<p>Project Activity Electricity Cost (Chiller Plant + Cooling Tower + Chilled Water Circulation Pumps)</p>	<p>11.63</p>	<p>The electricity cost has been computed based on Grid Charges It may be noted that cost savings due to lower electricity consumption resulting from the installation and operation of the HVAC system will be obtained to the tenants and not to PSL.</p>
<p>Energy Cost Reduction (Chiller Plant + Cooling Tower + Chilled Water Circulation Pumps)</p>	<p>20.32</p>	<p>The electricity cost has been computed based on Grid Charges</p>
<p>Baseline Electricity Cost Electricity Cost (AHUs)</p>	<p>2.20</p>	<p>The electricity cost has been computed based on Grid Charges</p>
<p>Project Activity Electricity Cost (AHUs)</p>	<p>10.66</p>	<p>It may be noted that cost savings due to lower electricity consumption resulting from the installation and operation of the HVAC system will be obtained to the tenants and not to PSL.</p>

3. Furthermore the PP and DOE are requested to further clarify how it can be guaranteed that the cost savings due to electrical energy savings will also in future never be recovered from the IT users (tenants of Technopolis).

PSL has entered into a lease agreement with the tenants of “Technopolis”, which covers terms and conditions which have been agreed upon. Therefore it can be guaranteed that the cost savings due to electrical energy reduction will not be recovered from the tenants over the period of the lease agreement.

It may be noted that it is an industry practice for lease of commercial buildings for IT and IT enabled services in Kolkata, to escalate the total occupancy charges at a constant rate at every lease renewal interval during the tenure of the lease<sup>6</sup>. It may be further noted that the total occupancy charges of “Technopolis” will be escalated in line with the real estate industry practice prevailing in Kolkata for IT buildings every three years from the date of commencement of the lease in line with the agreed upon terms and conditions of the lease agreement. Therefore, PSL would not recover cost savings due to electrical energy by way of this aspect. In this respect, PSL would like to bring to the notice of EB an article “Green Revolution” published in a weekly newspaper magazine GRAPHITI (supplement to The Sunday Telegraph) on 27<sup>th</sup> July, 2008<sup>7</sup>. It has been clearly stated that the energy savings in energy go to the tenant and not to the building developer for an energy efficient building, making the developer reluctant to go ahead with the incremental investment for the energy efficiency measures.

4. The figures on the amount of electricity drawn from the eastern regional grid (EGRID, y) and on the amount of electricity consumption of the system (EHVAC,p,y) in section B.7.1 should be corrected .

The figure on the amount of electricity drawn from the eastern regional grid ( $E_{GRID, y}$ ) has been corrected to 27740000 kWh and the figure on the amount of electricity consumption of the system ( $E_{HVAC, p, y}$ ) has been corrected to 3736000 kWh in section B.7.1 in the Version 04 of the PDD.

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<sup>6</sup> Reference – The same has been substantiated from a certification provided by Jones Lang Lasalle Meghraj (**Please refer to Annexure 17**). Jones Lang Lasalle Meghraj (JLLM) the Indian operations of Jones Lang LaSalle (NYSE: JLL), the only real estate money management and services firm named to FORTUNE magazine's "100 Best Companies to Work For" and Forbes magazine's "400 Best Big Companies". For further information, please visit [www.jllm.co.in](http://www.jllm.co.in). JLLM is the premiere and largest real estate service providing company in India, with an extensive geographic footprint across ten cities - Delhi, Mumbai, Bangalore, Pune, Chennai, Hyderabad, Kolkata, Kochi, Chandigarh and Coimbatore. The company provides investors, developers, local corporates and multinational companies with a comprehensive range of services including research, consultancy, transactions, project and development services, integrated facility management, property management, capital markets, residential, hotels and retail advisory.

<sup>7</sup> Please refer to the following link:  
[http://www.telegraphindia.com/1080727/jsp/graphiti/story\\_9600364.jsp](http://www.telegraphindia.com/1080727/jsp/graphiti/story_9600364.jsp)