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Att: CDM Executive Board

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Your ref.:	Our ref.:	Date:
CDM Ref 1648	MLEH/KCHA	2 September 2008

Response to request for review
Top Gas Pressure Recovery based Power Generation from 'G' Blast Furnace (1648)

Dear Members of the CDM Executive Board,

We refer to the requests for review raised by three Board members concerning DNV's request for registration of project activity 1648 "Top Gas Pressure Recovery based Power Generation from 'G' Blast Furnace" and would like to provide the following initial response to the issues raised by the requests for review.

Comment 1:
The DOE is requested to explain further how it has validated that the project is additional based on the results of the investment analysis, in particular with reference to the applied benchmark.

DNV Response:
While assessing the applicable internal benchmark of the company, DNV has assessed the IRR of all improvement type projects approved for installation as well as projects rejected by the board of Tata Steel in the period 2004-2007. The list of rejected projects during this period is attached as **Annex-I**. The list clearly indicates that projects with IRR lower than 20% have not been approved for implementation. It was also observed from the list of approved projects during this period that out of 24 projects only 3 projects were approved which had IRR less than 20%. However, all three projects were approved because of reasons other than IRR. The list of approved projects is attached as **Annex-II**. It has also been explained in Annex-II why the three projects have been approved in spite of having a lower IRR. Hence, as required by the "Tool for the demonstration and assessment of additionality", it is in our opinion sufficiently demonstrated that this benchmark has been consistently used in the past for approving improvement type projects in Tata Steel. This has been further corroborated by interviews with the project approval team in Tata Steel (Investment Management Committee) as well as from the Chief Financial Officer (Corporate) (**Annex-III**). DNV has thus accepted the internal benchmark of Tata Steel for improvement type projects to be 20%.

Comment 2:
Further clarification is required on how the DOE has validated the baseline determination, in particular that the continuation of current situation - import of power from a captive power plant is a more economically attractive alternative than the project activity undertaken without CDM.

DNV Response:

DNV would like to note that the additionality of the project was determined by applying benchmark analysis and not by comparing economic attractiveness of different scenarios. While determining the baseline for the project, four alternatives were considered:

i) Importing of power from Damodar Valley Corporation (DVC) grid to meet electrical energy requirements and keeping the pressure energy potential of GBF top gas un-utilised.

ii) Use of pressure energy potential of top gas other than for electricity generation.

iii) Implementation of project activity without CDM benefit.

iv) Continuation of the current situation, i.e. import of power from Jojobera Thermal Power Plant

The methodology ACM0004, version 2 requires that *"Among the alternatives that do not face any prohibitive barriers, the most economically attractive alternative should be considered as the baseline scenario."*

It was observed during the site visit that the power from DVC is costlier than the power from Jojobera. Since the project activity involves displacement of power, it is reasonable to assume that the costlier source of power would have been displaced preferably and hence power from DVC should have been considered as the baseline scenario instead of Jojobera thermal power plant. However, it was also observed that the HT motors within the steel plants require a very high initial current during start-up. This is known as the kick-in load. The power source for the kick-in load is selected such that the source can accommodate the sudden instantaneous surge in power demand without jeopardizing the power generation capability of the source. For Tata Steel, the kick-in loads are sourced from DVC through the national grid. Since the grid has virtually infinite (in context of the project loads) power capacity, small variations do not affect the grid but the same would have let to sudden surge and trip in the captive power plant. Thus only the loads with very high kick-in loads are connected to DVC through the national grid and the other base load requirements for the plant is met by Jojobera thermal power station. Since only the kick-in loads are connected to the national grid and the power requirement for those loads cannot be met by the captive power plant, the project proponent has assumed that the power generated from the TRT will displace the power from the Jojobera plant and not DVC. It has also been confirmed that the contract demand for Tata Steel from DVC has not been altered due to the project activity. Hence, option 1 is in our opinion not a plausible baseline scenario as the steel plant continues to consume electricity from DVC and the project thus displaces electricity generation by the Jojobera plant.

It was demonstrated that option 2 is not a feasible option since the waste pressure has no other effective use.

Option 3, which is the project activity without CDM benefits, faces barriers in implementation since the IRR from the project is lower than the benchmark of the company.

Thus only one feasible baseline option remains, which is the continuation of the current situation, i.e. import of power from Jojobera Thermal Power Plant. This baseline alternative does not require any investments as the Jojobera Thermal Power Plant is already in operation. Hence, it was in our understanding of the Board's "Guidance on the assessment of investment analysis", which in paragraph 15 states that "The benchmark approach is therefore suited to circumstances where the baseline does not require investment", not necessary to demonstrate whether the project activity without CDM benefits is economically more attractive than the current situation which does not require any investment.

We sincerely hope that the Board accepts our aforementioned explanations.

Yours faithfully
for DET NORSKE VERITAS CERTIFICATION AS

Michael Lehmann
Technical Director
International Climate Change Services

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Annex-I

Projects of Improvement Category Not Approved at Tata Steel Limited in between 2004-2007		
Serial No.	**Project Activity**	**IRR**
FY 2004-2005		
1	Modification of tailing disposal system	19%
2	Installation of classifier & iron exchange softner in the furnace cooling water circuit at Joda	7%
3	Installation of hydraulic electrode slipping hoisting & clamping system for furnace # 1&2 at Joda	7%
FY 2005-2006		
4	Transmission Electron Microscope	9%
5	Procurement & Installation of CNC Cylindrical Grinding Machine at Machine Shop	19%
6	Technology Upgradation in Furnace # 2 at FAP, Joda	19%
7	Provision of Buffer Vessel in the Oxygen Network to maintain uniform pressure	16%
8	Scanning Electron Microscope (SEM) with Field Emission Gun	16%
9	Technology upgradation of Furnace No. I at FAP, Joda	16%
10	Installation of new 1000 KVA DG Set with Panels at FAP, Joda	15%
11	New Electro Static Precipitator (ESP) for Sinter Plant # 2	15%
12	X-ray diffractometer with texture goniometer	15%
13	Productivity improvement machines, material handling equipments, tools & tackles in Spares & Services and Mechanical Maintenance	12%
14	Glow Discharge Optical Emission Spectroscopy (GDOES)	12%
15	Development of underground mining at Sukinda Chromite Mines (SCM)	12%
16	Variable Frequency (V/F) Drive with new Invertor duty motor for eight numbers of FD Fans at Power House # 4	11%
FY 2006-2007		
17	Technology Upgradation in Furnace # 2 at FAP, Joda	19%
18	Centralised Attendance Recording System	16.41%
19	Human Resource Management Information System (HRMIS) for Non Officers	15.18%
20	Development of mechanized coal yard with one stacker cum reclaimer in the lower cooling pond	15%
21	Productivity improvement machines, material handling equipments, tools & tackles for Spares & Services and Mechanical Maintenance	15%
22	Installation of new 750 KVA DG Set with Panels at FAP, Joda	15%
23	Providing instrumentation and automation at Processing Plants of Noamundi & Joda	15%
24	Replacement of Heavy Earthmoving Mobile equipment at Sukinda	15%
25	Opening of 9 seam, Sijua Colliery	13.00%
26	Development of underground mining at Sukinda Chromite Mines (SCM)	12.00%
27	Procurement of Digital Control update of Gleeble-1500 and Gleeble-3800 with Hot Torsion and Max Strain Facility	12%
28	Replacement of Coke Oven Battery no.3	11%
29	Automation of Wagon Tippler and Shuttle conveyor and Up gradation of different conveyors, chutes and coke screen at RMBB	11%
30	Automation of receiving circuit and sinter despatch	8%
31	Upgradation and automation of Sinter Plant # 1	8%

Annex-II

Approval of Projects of Improvement Category at Tata Steel Limited in between 2003-2007					
Serial No.	**Scheme No.**	**Project Activity**	**IRR**	**Special Comments**	**Remarks**
FY 2003-2004					
1	WBC-C/0006	Dewatering of thickener under flow (tailings) through high frequency screen at Washery # 3 - West Bokaro	50%		
2	AUT-C/0005	Automatic surface inspection system (ASIS) at HSM	22%		
3	ENG-C/0001	Stove Automation in 'A' Blast furnace	54%		
4	WBC-C/0015	Procurement and installation of 2nos."Ash Analyser" at Washery # 2 & 3 at WBC	125%		
5	ENG-C/0032	Upgradation & conversion of curved mould caster to vertical mould caster & augmentation of RH Degasser Unit at LD # 2	19%	This is conceived as a facility improvement scheme which will directly lead to increased productivity. Approval of this scheme is essential to improve the core business performance of Tata Steel Limited *i.e.* steel production.	Since this scheme leads to increased steel productivity, the approval of the project is also driven by the subsequent improvement in the business performance of Tata Steel Limited. Therefore the same is excluded from benchmark analysis.
6	ENG-C/0077	Procurement of Stamping Simulation Software and Hardware for R&D	23%		
7	AUT-C/0023	Up-gradation of Computer Aided Quality Control System (CAQC)	32%		
FY 2004-2005					
8	CRW-C/0003	Upgradation of DC Drive and PLC at Z Hi Mill	30%		
9	JHA-C/0020	Upgradation and Instrumentation at Jamadoba Coal Preparation Plant (JCPP)	46%		

10	ENG-C/0108	Installation of Coke Dry Quenching (CDQ) at Coke Oven Battery No. 5, 6 and 7.	18%	This is a model project developed in co-operation with New Energy and Industrial Technology Development Organization (NEDO) under International Techno-Financial Aid. The same is facilitated by Government of India through Ministry of Finance and Ministry of Steel as a "Technology Transfer" project with an objective to introduce Japanese Coke Dry Quenching (CDQ) energy conservation technology, which is one of the major energy conservation technologies in the steel industry, to India's steel sector in order to demonstrate the technology and ultimately to disseminate the same in India.	This scheme is developed in assisstance with International Organisation through Government of India as a model project for Indian Steel Industry. Therefore the same is excluded from benchmark analysis.
11	FMS-C/0018	Maintenance Shop for heavy equipments at Sukinda Chromite Mines (SCM)	25.89%		
12	FMS-C/0020	Shifting of existing Magazine building at Sukinda Chromite Mines (SCM)	43%		
13	ENG-C/0143	Construction of stockyard hub at Faridabad	20%		
FY 2005-2006					
14	BRG-C/0012	Automation of Assembly, Grinding & Rolling Elements – Bearings Division	23%		
15	SPL-C/0011	Procurement of additional 12 nos. Torpedo Ladle Cars (TLCs) and balancing facilities for maintenance	28.8		
16	SPL-C/0012	Installation of Top Recovery Turbine (TRT) for 'G' Blast Furnace	24.2%		
17	JHA-C/0044	Introduction of High Frequency Screen for efficient desliming operation at Bhelatand Coal Preparation Plant	22%		
18	ENG-C/0080	Installation of Roll Coating & Drying system at CGL 2	17%	This scheme is approved purely on environmental consideration as this is required for conforming to PCB norms consistently.	Since environmental issues were given priority for approval of this scheme, therefore the same is excluded from benchmark analysis.

FY 2006-2007					
19	ENG-C/0178	Electrostatic oiler for Skin Pass Mill at CRM	52%		
20	WBC-C/0039	Recovery of clean coal from tailings circuit through installation of additional flotation cell and belt filter at washery # 3	23%		
21	WBC-C/0035	Installation of Belt filter and improved centrifuges for coarse coal dewatering at washery #2	39%		
22	WBC-C/0034	Installation of High frequency screens and scrolled evolute cyclone at washery #3	42%		
23	WBC-C/0033	Installation of high rate thickner and optics automation system at washery #3	49%		
24	JHA-C/0047	Procurement & installation of two online ash analysers at jamadoba washery and bheltaland washery	20%		

Annex-III

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TO WHOM IT MAY CONCERN

This is to certify that projects under the Improvement Category are assessed at Tata Steel Limited by using 'Internal Rate of Return (IRR)' as the financial indicator.

It may further be noted that the Tata Steel Limited's internal benchmark IRR for project approval for the Improvement Category for the period 2003-2007 was 20%.

The list of Improvement Category projects approved at Tata Steel Limited during the period 2003-2007 have been enclosed herewith which reaffirm that projects with IRR more than 20% are approved unless the project essentiality is directly linked with other factors like sustaining productivity or productivity increase or environmental considerations.

The project activity of "Top Gas Pressure Recovery based Power Generation from 'G' Blast Furnace" falls under Improvement Category with no essentiality linked with sustenance of production or productivity increase or environmental considerations and was approved based on its IRR with the consideration of carbon revenue.

Chief Financial Controller (Corporate)

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