Bureau Veritas Certification (formerly BVQI) had performed the validation of the **CDM Project No 1292 Power generation from waste heat of new DRI kilns at JSPL.**
Subsequently, there have been three requests for review.

We thank the CDM Executive Board and the Secretariat for giving us the opportunity to clarify about our considerations in validating the said project.

Our responses are described below:

Comment No 1
The project was conceived in 2003 and submitted for validation only in 2006; so given that the CDM was considered necessary to overcome the barriers, further clarification is required on the delay in submission.

Response :

JSPL commissioned Bureau Veritas Certification to validate this project in May 2006.All activities related to validation such as webhosting of PDD, site visit, verification of documentation, meeting with stakeholders were performed from June 2006 onwards.
We have endeavoured to ensure that all issues are thoroughly verified before acceptance of the JSPL waste heat recovery process as a credible CDM project.

It is to be noted here that the PP was already aware of the Kyoto Protocol and CDM mechanism and had already passed a Board Resolution to implement the project activity considering CDM in May 2003 **(Annexure 1).** But the methodology ACM004 was approved by UNFCCC in only September 2005.

We have also verified the correspondence and other forms of interaction between the PP and the consultant during the course of preparation of the PDD and confirm that the PP has about taken six to seven months to evolve the PDD (September 2005 to April 2006). (**Annexure 2**).

Comment No 2
Further clarification is required on the technological barriers purported to create difficulties to project implementation, as the power generation system is already in operation. Furthermore the Validation Report states that “invested in process development for using the available raw material in the country and compensating the losses due to these technological failures”, hence the technological barriers were dealt with, while no information is provided on the extent of so called technological failures nor of the amount of losses referred to.

Response :

While considering the technological barriers we have undertaken a process of analysing the risks involved both in the operation of DRI kilns as well as in the operation of WHRBs which use the waste gases generated from the kilns.

The major risks in the operation of the DRI process is its dependence and sensitivity to chemical and physical characteristics of the locally available raw materials used in the process which can significantly impact the quality of the waste gases flowing into the WHRB and thus on the power generation

The 500 TPD DRI kilns have been indigenously modified and successfully improved by JSPL to suit the Indian conditions. The high capacity DRI kilns using aforesaid technology are not common in Indian sponge iron industry.
We have also verified the breakdown and failures rates of the WHRBs that can be attributable to the quality of the waste gases from the DRI Kilns, which has been quite high (two of the boilers had a breakdown of around 975 hours in 2007) (**Annexure 4**).
Since 2004, the organization has been focusing on standardization of raw material and process parameters in DRI .This has been included as one of key points for action in all the annual report from 2004 onwards (http://www.jindalsteelpower.com) (**Annexure 3**).

The PP has further provided a detailed description of the risks associated with the operations of the kilns and WHRBs in their response.
However we wish to inform you that the details and evidences provided in their documents require further verification before our final confirmation.

Comment No 3

Further information, evidence and justification is required in relation to barriers due to prevailing practice, as the data provided is vague (.There are not many high capacity kilns.; .the few units such units operating etc.) or incomplete.

Response:
We have verified all available sources of information and hereby confirm that the DRI kilns have been indigenously modified and successfully improved by JSPL to suit the Indian conditions. The high capacity DRI kilns using aforesaid technology are not common in Indian sponge iron industry. A high capacity DRI kilns based WHRB unit for power generation is also not the prevailing practice in the region

The Certificate from the Sponge Iron Manufacturers' Association (SIMA) (**Annexure 5)** and the Department of Scientific and Industrial Research (DSIR) **(Annexure 6)** acknowledging the project to be unique is being submitted. As mentioned above the DRI process parameters have not been established to ensure smooth and uninterrupted operations. These justifications needs further investigation.

Comment No 4
The DOE states in the Validation Report that the project activity is unique in terms of the technology of the DRI kilns, its size and capacity. Further clarification and substantiation is required.

Response :
The technology of DRI kilns has been indigenously modified and improved upon by JSPL to suit Indian raw materials and coal. Further, the project has an interconnection arrangement between the waste gases emanating from the high capacity kilns which have been developed by JSPL itself and adopted for the first time in sponge iron plants in India. Also, the use of high capacity DRI kilns (500 TPD) coupled with WHRBs for power generation is not the prevalent in the Indian DRI sector.
The Certificate from the Sponge Iron Manufacturing Association (SIMA and DSIR acknowledging the project to be unique in the region on account of its scale and capacity is being submitted which also substantiates that the project activity is unique and faces prevailing practice barriers. The substantiation of the uniqueness of the technology needs further investigation.

Comment No 5
The Validation Report states that JSPL has also opted for the project activity after taking CDM into consideration and also have opted for higher-pressure configuration, which results in higher efficiencies and thereby higher power generation. Further clarification is required on whether this configuration is also cost efficient and thus a business as usual decision.

Response :
The technology of high capacity - high pressure DRI Kilns (67 kg/cm^2, 500 tpd) has been developed and modified by JSPL itself for ensuring higher efficiency of power generation. JSPL claims that ,It is a novel concept developed inhouse and is not a prevailing practice in the Indian sponge iron industry. The same has been acknowledged by the Sponge Iron Manufacturing Association, New Delhi, India as well as Department of Scientific and Industrial Research (DSIR), Govt. of India.

However we wish to inform you that the explanation provided by the PP needs further verification before our final confirmation.

Comment No 6
The Validation Report states that the Govt of India has been giving 100% income clarification is required on the meaning of more viable and further substantiation on the impact of the mentioned tax exemption on the financial and economic flows of the project, and on whether this subsidy is the main objective of the project and thus a business as usual decision.

Response:
We would like to state here that this is not a statement of the DOE. This issue has been raised by a global stakeholder and we have verified the response by the project proponent. The additionality of the project has been explained through technological barriers.Since income tax benefits would have been applicable.Section 80-IA Clause (1) and (2) of the Income Tax Act(**Annexure 8**) states that any entity in India that generates power or commences transmission or distribution of power is exempted 100% from income tax on the profits and gains derived by the power generation unit. This clause is applicable to all types of power generation / transmission / distribution units (renewable/non-renewable) and is not specific to the project activity.thus, this project activity does not accrue any extra cash inflows on account of

income tax exemption.
The additionality of the project activity has been demonstrated based on technical and operations related barrier and is not business as usual scenario.

Comment No 7
The DOE states in the Validation Report that "The technology being adopted by the project activity (power generation) is well established and no special training is required." Further clarification is required on the consistency of this statement vis a vis the purported technological barriers.

Response:
The statement 'The technology being adopted by the project activity (power generation) is well established and no special training is required.' Is related to the operation of WHRBs and power generation and not to the operation of the DRI Kilns
As described in the previous comments, since the project technology is an outcome of in-house R&D efforts of JSPL, the personnel in the operation of the plant activity have a a integral part of the inhouse development process and therefore did not require and any other specific training.
However we wish to inform you that the details and evidences provided by the PP needs further verification before our final confirmation.

Comment No 8
The Validation Report states that the company is operating the Waste Heat Based power plant for last more than one decade. What is new technology in it. The associate company Monnet Ispat Raipur, also HEG, PRAKASH INDUSTRY CHAMPA, TATA SPONGE keonjhar Orissa are operating waste heat power plant in India for over last 8 to 9 years. Further clarification is required on this statement, the associated companies referred to and its meaning.

Response:

The high capacity DRI kiln technology has been modified and developed by JSPL is different from that being used by other units mentioned in the PDD. JSPL project activity includes a provision of interconnection between the various DRI kilns. The concept of interconnection between the high capacity DRI kilns to facilitate power generation using WHRBs is unique and being used for the first time in the Indian DRI sector . Any failure in the interconnection damper would result in stoppage of kilns thereby leading to production losses.

Also, the Waste heat recovery based power plants by Monnet Ispat Limited an associate company of JSPL and Tata Sponge Iron Limited have been registered as a CDM project activity. The details are as mentioned below:

Name of the company	**Weblink**
Monnet Ispat - Raipur	http://cdm.unfccc.int/UserManagement/FileStorage/58ISI8JFEOBMTD3SE5VZN82TCLMHRN
Tata Sponge Iron Limited – Keonjhar Orissa	http://cdm.unfccc.int/UserManagement/FileStorage/9YMTNG131ND67HWXQKHA73EPQORAFA

Thus, the project activity by JSPL is unique and not a common practice.

We will also further investigate the issue to the uniqueness of technology that has been explained in the earlier comments.

Comment No 9
The Validation Report repeatedly states that "There are barriers associated with the project activity. Thus WHRB based power generation is not the baseline." The project activity is not the baseline as it faces barriers as depicted in the PDD. Essentially technological barriers, prevailing practice barriers and other barriers. However, repetition is not in itself a demonstration. Further substantiation is required.

Response:
This again is a response to the stakeholders comment (Item No 14 Appendix B of the Validation Report).In the second column, the technical and barriers associated has been described. The breakdown

and failure statistics has already been provided in (**Annexure 4 & 7**) to further corroborate the barriers and has been explained in the responses to the Comments above.

As stated in Comments No 2,3,4 and 5, we wish to inform you that the details and evidences provided by the PP needs further verification before our final confirmation.

Comment No 10

Further clarification is required on how the baseline has been established and why a less efficient waste heat recovery system than the project activity has not been analyzed as an alternative; including those systems already established in other existing kilns.

Response:

We have evaluated the possible alternative scenarios explained in the PDD .We have also examined the possibility of consideration of a less efficient waste heat recovery. However, all existing information in the indicates that it is unlikely that in the absence of the project activity a less efficient WHR system based on waste gas from DRI Kilns would have been installed. Hence, the same has not been considered as a baseline alternative to the project activity. Those that are already established in other similar capacity kilns have also been implemented after taking CDM into consideration. Thus, a less efficient system has not been established as the baseline. Since this comment has a linkage to the other above comments related we wish to further investigate the issue.

List of Annexes

Annexure 1 **:** Copy of the Board Resolution to implement the project activity considering CDM benefits.

Annexure 2 **:** Initial correspondence with CDM consultants regarding the project activity.

Annexure 3 **:** Extract from Annual Reports of JSPL (2004-05, 2005-06 and 2006-07)

Annexure 4 **:** Instances of breakdown of the project activity on account of aforesaid technical problems for the project activity

Annexure 5 **:** The Certificate from the Sponge Iron Manufacturers' Association (SIMA), acknowledging the project to be unique in its nature.

Annexure 5(a) **:** Article by Mr. Dinesh K Sindwani (independent expert) on the website of SIMA regarding DRI industry.

Annexure 6 **:** Extract from Technical Report, DSIR

Annexure 7 **:** Breakdown statistics for the less efficient waste heat recovery system.

Annexure 8 **:** Section 80-IA Clause (1) and (2) of the Income Tax Act-Extract