

**SECTION A. General description of project activity****A.1 Title of the project activity:**

- MSPSPL Waste Heat Recovery Based Captive Power Project
- Version: 03
- Date (dd/mm/yyyy): 14/12/2006

**A.2. Description of the project activity:**

- MSP Steel & Power Limited (MSPSPL) is a greenfield integrated steel complex involved in the manufacture of sponge iron, billet castings and TMT bars with a capacity of 192,000 million tonnes per annum (Mtpa), 95,109 Mtpa and 80,000 Mtpa respectively in the state of Chhattisgarh. The integrated steel complex produces direct reduced iron (DRI) from iron ore (iron oxide) using solid reductant (coal). To produce DRI, the oxygen in the iron oxide is chemically removed by reacting with carbon monoxide (CO) and/or hydrogen (H<sub>2</sub>) at very high temperatures at about 900 °C in the kiln. This results in generation of waste gas stream which is at high temperatures. The traditional pollution control method of dealing with this waste gas stream which is high in both temperature and particulates is by installation of a wet scrubbing system.

The project activity is intended to recover the waste heat of the gases emanating from the kiln. The recovery of the sensible heat contained in the waste gases getting generated from the DRI kiln will be used for generation of electrical energy. The waste heat recovery unit will also have an electrostatic precipitator to clean the dust laden gas and effective utilization of the energy contained within it, which would have otherwise been vented after conditioning.

- The purpose of the project activity is to generate 16 MW electrical power through waste heat recovery boilers (WHRB) to meet the in-house requirements of MSPSPL which would have otherwise been met by the predominantly coal based grid power.

- The project activity contributes towards sustainable development by employment of latest technology resulting in reduced emissions, generation of employment and also reduction in global warming.

The traditional pollution control method of dealing with the waste gas stream emanating from the DRI kiln (which is high in both temperature and particulates) is through installation of a wet scrubbing system.

Although such a system cools the gas and removes the particulates there are a number of environmental and economic impacts associated with it. These include:



- Σ High water consumption for cooling the gas resulting in loss of heat energy and water
- Σ Generation of high particulate content, acidic liquid waste which requires removal of solids and lime addition for pH neutralisation
- Σ High energy consumption resulting in consumption of non-renewable fossil fuels and generation of air emissions, including greenhouse gases
- Σ High maintenance and operating costs as a result of pumping of water and liquid waste, neutralisation plant and cleaning and disposal of waste solids.

A more effective method of dealing with the waste gas stream is through the waste heat recovery process as utilised in the project activity. The project activity would be generating electrical power through waste gas and thereby would displace similar quantum of electricity that would have been generated by the grid which is predominantly coal based; thence reducing significant amount of GHG emissions.

A Chhattisgarh State Electricity Board (CSEB) survey<sup>1</sup> projects Chhattisgarh as a power deficit state in the future. Thus with project activity's ability to reduce an equivalent demand of electricity on the grid is an advantage to the state grid in combating against power shortage and making it available for other important processes.

The project activity is also a step towards conservation of natural resources and reduction in dependence of fossil fuels. The usage of pollution control equipments like ESP in the project activity would also ensure that the project gives the desired output with minimal adverse impacts to the local community and environment.

A.3. Project participants:

Name of Party involved* ((host) indicates a host Party)	Private and/or public entity(ies) project participants (as applicable)	The Party involved wishes to be considered as project participant (Yes/No)
Government of India (host)	MSP Steel & Power Limited	No

<sup>1</sup> <http://www.chhattisgarh.nic.in/opportunities/Power.pdf>