

**Memorandum of Understanding  
on Japan - India Cooperation  
for Pre-primary Study of Efficiency and Environmental  
Improvement of Coal Fired Power Stations**

\*\*\*\*\*

**1. Background**

The both parties from India and Japan have been going through a series of intense discussion to materialize the bilateral cooperation, based on the spirit of cooperation in the Power and Coal Sectors as envisaged in the Joint Statement, at the Japan-India Energy Policy Dialogue on September 17, 2008.

Furthermore, the discussion during the Steering Committee and the subsequent Working Group of Japan-India Energy Policy Dialogue on March 16, 2009, brought Japan and India respectively represented by METI and MOP, to an agreement that the efficiency improvement in existing thermal power stations in India is a highly prioritized area of cooperation.

India on its own is implementing a National Program for Renovation and Modernization (hereinafter referred to as "R&M") of existing thermal power stations, which is aimed at efficiency improvement through life extension and/or capacity upgradation, etc. METI and MOP have agreed to extend their cooperation in sharing of technical expertise as well as in actual implementation of mutually agreed techno-economical R&M solutions.

The upcoming cooperation for efficiency and environmental improvement through renovation of coal-fired power stations, upon which JCOAL and CEA will each play a major role, is to be a comprehensive program that will address the issues shared by the National Program for R&M.

2. Accordingly, this Memorandum of Understanding (hereinafter referred to as MOU), made and entered into on April 30, 2010 by and between :
- (i) Japan Coal Energy Center, the only institution in Japan which plays a major role through upstream to downstream of the coal chain organized and existing under the laws of Japan and under the jurisdiction of the Ministry of

Economy, Trade and Industry of Japan (hereinafter referred to as "METI"), having its principal office at 9F Meiji Yasuda Seimei Mita Building, 3-14-10 Mita, Minato-ku, Tokyo 108-0073 Japan ( hereinafter referred to as "JCOAL"), and

- (ii) Central Electricity Authority, a full-time body under the Ministry of Power (hereinafter referred to as "MOP"), which has the responsibility among others of formulating the National Electricity Plan in accordance with the National Electricity Policy and remains the main technical as well as policy advisor of the Central Government organized and existing under the laws of India, and having its principal office at Sewa Bhawan, R.K.Puram, New Delhi -110066 (hereinafter referred to as "CEA").

#### **WITNESSETH:**

Whereas, JCOAL and CEA (hereinafter referred to as "parties"), intend to facilitate efficiency and environmental improvement of coal-fired power stations in India.

Now, therefore, in consideration of the mutual agreements contained herein, the both parties hereto agree on the terms of reference of the cooperation as follows:

### **3. Purpose**

The purpose of this MOU is to carry out necessary diagnostic activities for few candidate coal-fired power plants pertaining to Energy Efficient Renovation & Modernisation works and finding out measures to overcome barriers for promoting R&M, towards carrying out efficiency and environmental improvement of coal-fired power plants in India.

Expected outcome of this MOU is to make clear scheme of actual diagnosis activity including training program.

### **4. Activities**

- a. Drafting of a long list of national and state-owned generation facilities in India that is under consideration for improvement of facilities and / or operation, in order to conduct efficiency and environmental improvement.
- b. Identification of 10 (ten) facilities to be prioritized, concerning which a survey

with a questionnaire will be conducted to learn the precise condition of the facilities, operation and maintenance.

- c. Collection and preliminary study of performance data for the said facilities.
- d. Joint identification of about three (3) candidate sites for upcoming diagnosis activities through the above preliminary study and visit to the sites to discuss and identify diagnosis items, process and necessary expertise of the upcoming diagnosis.
- e. Update on the current and future policy trend of R&M in India.
- f. Consideration of the identified barriers of R&M to find out those which could be overcome through mutual collaboration by the both parties.
- g. Identification of gaps in the existing O&M practices and suggested remedial action.
- h. Study adoptability of CDM.

The work sharing of the parties is as listed in Table 1 of Appendix 1  
Japanese side and Indian side bear respective expert cost in this MOU.

#### 5. Duration

This MOU shall come into effect on the date of its signing and shall remain effective for a period of one (1) years and can be extended thereafter if mutually agreed on by both parties.

#### 6. Amendment

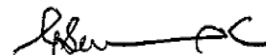
This MOU may be modified only in writing signed by authorized representatives of both parties.

In witness of this MOU, both parties have executed this MOU  
on this 30<sup>th</sup> day of April, 2010.



Mr. Toru Namiki  
President

Japan Coal Energy Center (JCOAL)



Mr. Gurdial Singh  
Chairperson

Central Electricity Authority (CEA)