

# Analysis of CDM Projects: An Indian Anecdote

Namita Rajput<sup>1</sup>, Vipin Aggarwal<sup>2</sup>, Ritika Ahuja<sup>3</sup>

<sup>1,2,3</sup>Sri Aurobindo College (M)

---

## ABSTRACT

*The Clean Development Mechanism (CDM) is an element in the Kyoto Protocol that generates credits – Certified Emission Reductions (CERs) – from emission abatement projects in developing countries. The Clean Development Mechanism of the Kyoto Protocol allows developing countries to profit from climate friendly projects, and India is second only to China in using the mechanism to help reduce its carbon emissions. But, unlike China, India does not have a national policy. India is one of the world's largest hosts of such clean development projects, around one-quarter of the global total – had been registered with India's Designated National Authority for the Clean Development Mechanism. As on 31 October 2013 total Global CDM are 7366 and out of this 1444 projects are registered in India. The consequences of India's liberal approach to the CDM for sustainable development remain unclear. The main objective of this paper is to highlight limitations and issues of CDMs in India. In this paper five CDM projects are analyzed. Our analysis reveals that because of the unclear policy of CDM, there are severe ecological effects like displacement of people, rise in infertility of land, creation of ash pond land degradation, effects on local water bodies, contamination of water and crops etc. Criticisms are mainly focused on high transaction costs and lack of scalability; additional challenges and lack of net mitigation impact; preventing more ambitious targets and changes in emissions paths in developed and developing countries alike; excessive rents and perverse incentives; unbalanced regional distribution; low local sustainable development benefits; corruption and lack of transparency; and lack of technology transfer. Some important steps have to be taken to control the unclean practices of Clean Development Projects so that there is no question on them as to how clean these projects are.*

**Keywords:** CDM, Carbon Credits, sustainability, environmental degradation.

## 1. SECTION 1: INTRODUCTION

The Clean Development Mechanism (CDM) is the world's biggest carbon offsets market. In theory, the CDM allows industrialized countries to support projects that decrease emissions in developing countries and then use the resulting emissions reduction credits towards their own reduction targets under the Kyoto Protocol. Industrialized countries supported the establishment of the CDM because it would provide them with flexibility in how they can meet their Kyoto targets,

particularly if domestic reductions turn out to be more costly than expected. Developing countries supported the CDM because they would receive funds for "sustainable development." Kyoto Protocol which came into effect on 2005 aimed to improve overall environment by reducing the Green House Gases, which are constantly increasing these days leading climate change or Global Warming.

Projects under Kyoto Protocol can be undertaken in three forms:

- I. Clean Development Mechanism (C.D.M)
- II. Joint Emission
- III. Emissions Trading

CDM mechanism under Kyoto Protocol aimed to bring clean and environment friendly technology to developing country and also to help developed country to achieve their emission reduction-cost efficiently. Nowadays there are lots of coal power plants which are being registered under Clean Development Mechanism. Coal power plants generate 40% electricity worldwide and are responsible for over 8 Giga tons of Co<sub>2</sub> emission which is expected to grow 18 Giga tones by 2030. Efficiency of coal power plant ranges from 33%-43% depending on technology being used. There are 3 types of technology being used in coal boiler namely- sub critical unit, super critical unit and ultra super critical units. Government has made it compulsory to use super critical technology though all power projects are still not using it. As mentioned earlier there are various coal projects which are either registered or have applied for getting them registered under CDM. But in reality all power projects including those that are registered under CDM are actually not leading to any addition or they are causing ill effects in environment as well as human life in their surrounding area.

***They manipulate in terms of:***

- Financing: Projects have several pre decided sources of financing because of which they need not depend on CDM support.
- High estimated costs: Those projects that need CDM support show highly unrealistic estimates.
- Alternatives aren't assessed properly: Various projects do not assess realistic and reliable alternative to make coal a successful, environment friendly option.

Another shortcoming that is seen is Emission Reductions are calculated by subtracting emissions from Baseline. For coal baseline is set on basis of emission of less efficient plant. So lower the

assumed efficiency more credits a project will generate leading to artificial CER which aren't based on actual emission reductions.

The main objective of this paper is to analyze five Indian CDM Projects. To achieve the objectives the paper it is divided into following sections, Section I, i.e. the present section gives the insights of Kyoto protocol, and details of CDM. Section II will give the analysis of CDMs in India and its environmental impacts followed by references

## **2. SECTION II: ANALYSIS OF INDIAN CDM PROJECTS**

The following section gives the details of CDMs operational in India.

### **1) SASAN ULTRA MEGA POWER PLANT (UMPP):**

It is a huge thermal power project undertaken by Reliance. It aimed to provide 3960 MW to seven states at the cost of 23000crore. Initially it was started as Special Purpose Company owned by Power Finance Corporation which it through Bid system transferred it to Reliance Power. Various banks like S.B.I, Bank of China, China Development Bank, and Export-Import Bank of China, Export-Import Bank of United States, Standard Chartered Bank came forward in this project. Project aimed to increase overall efficiency by consuming 1.5 million tones less of coal per year compared to other project of same size thereby leading to decrease in reduction of GHG emission by 14%.Sasan UMPP which was based on supercritical coal technology which is considered best technology for mining operations was considered to be the one of the best greenest coal based power plant in India due to which it got CDM status (ref: 3690)thereby allowing Reliance to earn carbon credits. But there are questions being raised on its impact on environment. People living there were given false promises to leave their homes. Many people have died while working at the plant. Even the Ex-im Bank which is official export credit agency of United States government rejected to finance this project on grounds of its carbon policy. But due to political pressure they passed it by making a compromise in form of Memorandum of Understanding to generate 250MW of renewable energy which is very less in terms of 3960MW power that plant will generate. Even the Tata Power Company also filled petition against Reliance for its illegal use of surplus coal from mines which was rejected on 14 April 2009. A nearby village named Harrahaawa village where partial displacement has started, Reliance power ltd wants to build ash pond which will lead to land becoming infertile as well as toxic.

### **2) NALLAKONDA – WIND FARM PROJECT, INDIA:**

Wind power is a great source of renewable energy. Nallankonda Wind farm in Andhra Pradesh generates electricity using wind. Project aims at exporting 50.4 MW of renewable electricity generated using wind electric generators to southern region grid. But it is having negative effect on

environment in form of deforestation, heavy land degradation, biodiversity loss. Local water bodies are also being affected. It has applied for CDM status which is in consideration these days but actually has lots of flaws and also lack parameters that are crucial for registration of CDM projects.

### **3) ADANI'S MUNDRA – ULTRA MEGA POWER PROJECT, INDIA:**

It was registered with UNFCC's CDM project (ref: 2716) named as "Grid connected energy efficient power generation" having approx 606.306. It involves Adani's Power Ltd as well as France's EDF Trading Ltd. It claims to reduce 1839516 metric tons of Co2 equivalent per year. But report commissioned by committee of Indian Ministry Of Environment and Forest says that project is actually violating the environment, harmfully affects local environment, affects fish communities. It also leads to emission of fly ash which refers to ash produced during combustion of coal. It includes substantial amount of silicon dioxide and calcium oxide which not only affects environment but also has negative impact on health of people of the area, contaminates fish, field as well as crops which makes them unfit for consumption. So it can be seen that Adani Mundra Project is violating the mandates of CDM.

### **4) TIMARPUR-OKHLA, WASTE INCINERATION PROJECT, INDIA:**

Project named " The Timarpur –Okla. waste management company pvt ltd. Integrated waste to energy project at Delhi" registered under UNFCC's CDM project (ref#: 1254) illustrates how local cycling economy is in danger by CDM's incinerator projects. Project aims at generating power out of waste which can be considered as a renewable energy source but has various shortcomings like:

- It doesn't reduce GHG. It is actually burning of waste to create energy which in turn leads to GHG.
- It is against sustainable development because burning of waste produces toxic chemicals leading to pollution.
- Dhaka Declaration of Waste Management adopted by South Asian Association for Regional Cooperation (SAARC) also states that a country cannot opt for any burning or any unproven technologies. It goes against that declaration.

### **5) RAMPUR –HYDRO POWER PROJECT INDIA :**

Hydroelectric power project by SJVNL in Himachal Pradesh is registered under UNFCC's CDM project (ref: 4568) is a large scale World Bank hydro power project in Rampur. It is expected to generate about 14 million carbon credits at estimated market value of \$100 million USD. But its addition to the environment is questionable. Various problems like dust, drying up of ground water, negative effects on local agriculture, landslides can be seen.

The table 1 gives the synoptic view of five CDM projects and its possible impact on the environment.

**TABLE 1: ANALYSIS OF INDIAN CDM PROJECTS**

NAME OF THE PROJECT	STATES	STATUS	PARTIES INVOLVED	AMOUNT OF REDUCTION	ECOLOGICAL IMPACTS
Sasan UMPP	Madhya Pradesh	Registered Ref#: 3690	SBI, BANK OF CHINA, CHINA DEVELOPMENT BANK, EXPORT-IMPORT BANK OF CHINA, EXPORT-IMPORT BANK OF U.S, STANDARD CHARTERED BANK	2245875 metric tonne Co2 equivalent p a.	1)People were dispersed from their homes. 2)lost their jobs 3)Creation of ash pond. 4)Over dumping, infertile land 5)scheduled tribe of M.P Baiga tribe were ignored
Nallakonda-wind farm project , India:	Andhra Pradesh	In consideration	INDIA	100135 metric tonne Co2 equivalent per annum	1)Affects local water bodies. 2)Land degradation.
Adani's Mundra-ultra Mega PowerProject, India:	Gujarat	Registered Ref#: 2716	Adani power Ltd. And EDF Trading Ltd	1839516 metric tonne Co2 equivalent per annum	1)Excessive emission of fly ash. 2)Contamination of water and crops 3)Violation of mandates of CDM
Timarpur-okhla, waste incineration project, India:	DELHI	Registered Re#: 1254	M/S Timarpur Okhla Waste Management Company Private Ltd.	262791 metric ton Co2 equivalent per annum	1)Creation of pollution by burning of waste. 2)Violation of international treaties like Dhaka Declaration on Waste Management by SAARC.

Rampur – Hydro Power Project India :	Himachal Pradesh	Registered Re#: 4568	M/S Satluj Jal Vidyut Nigam Limited (SJVN), International Bank For Reconstruction & Development, Swedish Energy Agency	1407658 metric ton Co2 equivalent per annum	1)Landslides 2)Drying up of ground water.
--	------------------	-------------------------	---	---	---

### 3. SECTION 111 REFERENCES

- <http://carbonmarketwatch.org/campaigns-issues/nallakonda-wind-farm-project-india/>
- <http://carbonmarketwatch.org/campaigns-issues/rampur-hydro-power-project-india/>
- <http://carbonmarketwatch.org/campaigns-issues/sasan-coal-power-project-india/>
- <http://carbonmarketwatch.org/campaigns-issues/timarpur-okhla-waste-incineration-project-india/>
- <http://carbonmarketwatch.org/campaigns-issues/timarpur-okhla-waste-incineration-project-india/>
- <http://carbonmarketwatch.org/category/project-campaigns/>
- <http://carbonmarketwatch.org/mundra-ultra-mega-power-project-india/>
- <http://carbonmarketwatch.org/press-release-edf-trading-backs-away-from-adanis-carbon-offsetting-coal-project/>
- <http://carbonmarketwatch.org/category/project-campaigns/>