

“To Study the Concept of Clean Development Mechanism”

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Abstract - The Clean Development Mechanism (CDM) is one of the Kyoto Protocol (KP) policy instruments to stabilize the impact on global warming. The aim of the CDM is to simultaneously full fill different purposes for different participants. These purposes are: green-house gas (GHG) reductions for environmental integrity, sustainability for host countries, and cost-effective mitigation for investors. However, since its first implementation, the CDM seems not being able to succeed the role for which it was created. This situation has been presented due to the significant effect on decision-making process derived from issues belonging to technical, institutional authorities and emission trading dimensions. In this study, through a comprehensive review of literatures, we qualitatively analyze the contribution of CDM activities in recent years. The main findings in this study are, firstly, the weakness of the CDM to simultaneously provide benefits among participants and secondly, the key elements in which practitioners should pay attention to improve the role of the CDM in the upcoming future.

Key Words: Clean Development Mechanism (CDM); Sustainable Infrastructure; Climate change; Business response; Co-benefits; low emission development strategy; etc.

1. INTRODUCTION

The Clean Development Mechanism is part of Kyoto protocol environmental agreement. The CDM projects are designed to stimulate sustainable development through people centred participatory developmental activity to reduce greenhouse gas (GHG) emissions. The history of CDM begins from the early 1990s with the increasing recognition and actions by the scientists and others due to increase in GHG emissions from the human activities like heavy industries and big agriculture practices with higher motives of profits and indiscriminate productions, which have added the climatic change and rise in temperature not in the Indian situation, but also at global level.

The Kyoto Protocol to the UNFCCC was adopted in 1997 and requires developed countries and economies in transition to reduce their overall GHG emissions by 5.2% below 1990 levels. The Kyoto Protocol (KP) provided for three flexible market based mechanisms that enables the developed countries to meet their emission limitation and reduction commitments.

These are as such:

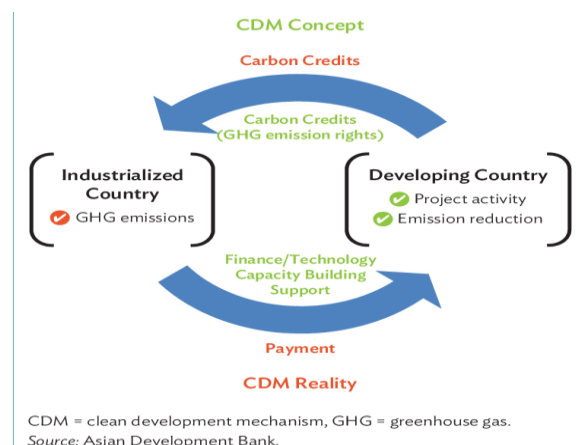
- a. Emission Trading (ET)
- b. Clean Development Mechanism (CDM)
- c. Joint Implementation (JI)

As per article 12 of the Kyoto Protocol, any kind of voluntary emission reduction activity carried out in a Non Annex I country can be used by an Annex I country to meet its compliance with the emission targets set under the Protocol. This has given rise to an innovative market mechanism called Clean Development Mechanism. Every energy efficiency improvement activities will result into onsite as well as offsite GHG emission reductions and these GHG emission reductions generally qualify for the CDM.”

The clean development mechanism (CDM) was designed to meet two objectives:

1. To help developed countries fulfil their commitments to reduce GHG emissions; and
2. To assist developing countries in achieving sustainable development and to contribute to the ‘Ultimate Objective’ of UNFCCC.

In order to qualify for CDM a project must deliver multiple benefits: such as credits for reducing GHG emissions to the investors and sustainable development to the developing country, which hosts the project and contributes to stabilising GHG concentrations in the atmosphere below dangerous levels.



CDM Concept

2. PURPOSE OF THE STUDY

India being a developing or “Non-Annex country” has no restrictions to be followed with respect to emission i.e. there is no cap prescribed on how much emission of greenhouse gas it can emit. Various companies have already made a mark in this field by entering into Clean Development Mechanism Projects. They are deriving benefits in terms of better technological knowledge and carbon trade profits.

The purpose of this study on Analysis of CDM is to-

- Understand the meaning of Clean Development Mechanism.
- Understand the working of Clean Development Mechanism.
- Gain knowledge of how the Indian can gain these credits when it comes to construction sector.
- Identify the various sectors/companies which can benefit from it
- Identify areas of opportunities.

3. LITERATURE REVIEW

Many researchers have done an extensive work in the area of clean development mechanism in various different fields such as building construction, environment sector etc. Some of them which I have studied just to gain the knowledge in which sector and various project it has been applied are discussed below.

[1] Aiga Barisa*, Marika Rosa (2018)

They presents results from the newly developed DTReM-LV model (Dynamic Transport Emission Model) for CO₂ policy mitigation analysis and design in the transport sector. They aims to fill gap by providing a comprehensive tool for CO₂ emission reduction policy analysis in road transport sector at the country level. The overall aim of the model is to improve the knowledge base and modelling capacity underpinning policy decision making in the transport sector.

[2] ICEER (2017)

This research focuses on demonstrating how clean energy policies and Low Emission Development Strategies (LEDS) can help achieve multiple energy, environmental, public health and economic benefits in a cost-effective way. To this aim, the specific target is set to design and develop an analytical approach, which helps policy makers and relevant stakeholders to determine opportunities for LEDS.

[3] E. A. Duquea*, J. D. Gonzálezb, and J. C. Restrepoc

CDM is a globally used method to finance SHP projects. Hence, proposes that the domestic demand could be met through these projects. The results of this study show that sustainable funding mechanisms encourage the development of infrastructure and CDM would increase the development of power generating projects and these can be used in other sectors such as water, waste management, and highways.

[4] Nathan Kibwami*, Apollo Tutesigensi

This paper presents an investigation on how CDM could be integrated into the DAP of buildings in urban Uganda. A method of process modelling was used to describe the existing DAP, and also to design a new DAP. To demonstrate how CDM could be integrated into the new DAP, a typical dwelling unit was used. This study shows that integrating CDM into the DAP of buildings is possible if assessment of carbon emissions is incorporated in the existing DAP.

[5] Srikanth Subbarao, Bob Lloyd*

The authors investigate whether the Clean Development Mechanism (CDM) under the Kyoto Protocol has played a significant role in the development of rural communities, specifically investigating uptake of small-scale renewable energy projects. The paper concludes that the CDM in its current state and design has typically failed to deliver the promised benefits with regard to development objectives in rural areas.

[6] Zhong Xiang Zhanga (2005)

This paper aims to address how CDM projects will be effectively implemented in by examining the major CDM capacity building projects with bilateral and multilateral donors, the treatment of low-cost, non-priority CDM projects, and how a system for application, approval, and implementation of CDM projects is set up and what roles the main institutional actors are going to play in the system.

[7] N. Duic, L.M. Alves, F. Chen ☒, M. da Grac,a Carvalho

The paper shows, by assessing a case of a small island, that although the emission reduction on global scale is small, there is great potential for establishing a strong market presence of renewable energy technologies in developing countries. This paper studies implications of different scenario of development of electrical energy system on the island. The possible influence of the Clean Development Mechanism is assessed. The potential for financing the technology transfer is quantified and its influence on different electricity system planning scenarios estimated.

4. OBSERVATION

It is becoming evident that only if concerted efforts are undertaken to reduce carbon emissions the challenge of climate change be tackled effectively. The clean development mechanism (CDM) scheme is one of such concerted efforts. In research, the building sector, which accounts for a significant proportion of annual global emissions, has been identified as suitable beneficiary of the CDM scheme. Although current carbon market conditions and climate policies are not very effective in facilitating the reduction of GHG emissions, this study provides evidence that economic incentives have a positive effect on business efforts to reduce emissions. The results of this study show that companies are motivated to undertake CDM projects by revenue from investment in CERs and because of their interest in improving the environment.

5. CONCLUSIONS

The review concluded that on how the CDM contributes in various sectors and how the CDM project will be effectively implemented.

- CDM would increase the development of power generating projects and these can be used in other sectors such as water, waste management, transportation sector, building constructions, industries, etc.
- Clean Development Mechanism offers great business opportunities as it does to all developing countries in general (but, of course, we are looking at the benefits Indian Companies can reap exploiting it).
- CDM projects have huge profit margins and hence Indian Companies can make use of this in order to earn profits and full fill their social responsibility.
- The revenue earned through the Clean Development Mechanism projects must be greater than the cost incurred in project registration; cost incurred in machinery etc. because the success in earning credits depends on the project being executed at minimum cost.

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