

Clean Development Mechanism Benefits, Opportunities and Implementation in Egypt

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Introduction

The National Strategy Study NSS builds on earlier work on greenhouse gas emission abatement and Clean Development Mechanism CDM in Egypt. On the national level, two main documents were the principle source of information that deals with Egypt's activities as related to climate change. Those documents are Egypt's Initial National Communication INC submitted to United Nation Framework Convention on Climate Change UNFCCC secretariat in July 1999 and Egypt's National Action Plan ENAP on Climate Change - finalized in August 1999. Other national and international documents were also used specially, the Support for National Action Plan (SNAP) Reports, Egypt National Greenhouse Gases Inventory and the negotiating documents of the UNFCCC secretariat dealing with the CDM as well as other CDM strategies prepared under the NSS of the World Bank.

Benefits of the Clean Development Mechanism for Egypt

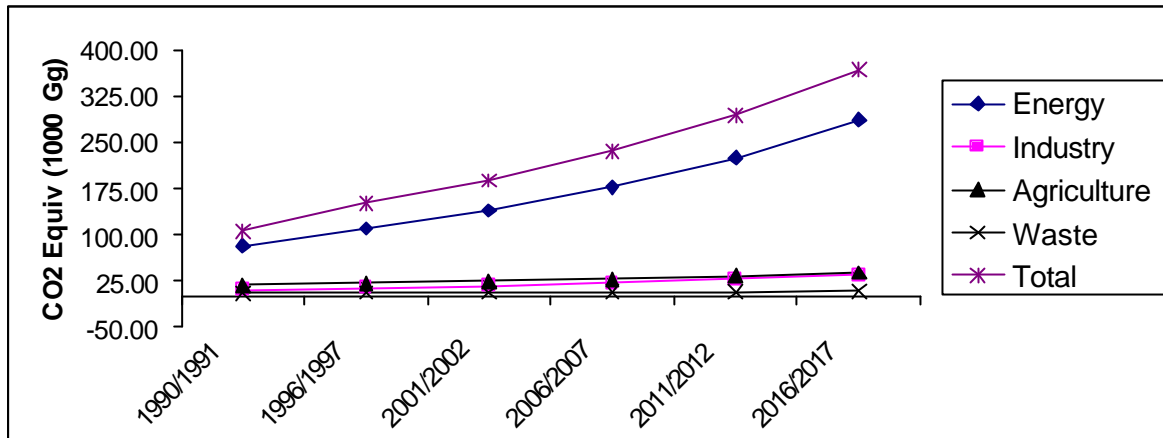
Egypt has a large potential for the implementation of CDM projects. Egypt has to develop efficient, transparent and strong criteria and institutions for the marketing, approval, and control of CDM projects which on the one hand assure the next mentioned benefits and on the other hand make the country attractive for international CDM investors.

- ? Increased project profitability as certified emission reductions can usually be sold at a profit.
- ? Increase of foreign investment and source of foreign currency for Egypt.
- ? Renewal of important infrastructure such as power stations, transport systems, sewage treatment plants, etc.
- ? Transfer of appropriate clean and reliable technology strengthens Egyptian industry, brings local environmental benefits such as pollution reduction and capacity building.
- ? CDM activities within land use, land use change and forestry, LULUCF, will support the current afforestation activities in Egypt.
- ? CDM investments create employment opportunities for local labour and therefore contribute to welfare.
- ? Successful CDM projects may become a point of departure for other foreign investments, strengthening the Egyptian economy.
- ? Capacity building in clean technologies may allow Egyptian suppliers and consultants to export equipment and services for CDM projects in the region.

Emission projection in Egypt

The main emitters of GHG in Egypt are fuel combustion in the energy (22%), industry (21%), transport (18%), sectors. The total energy-related emissions ("All energy") are responsible for 71% of the total GHG emissions.

The estimation of Egypt's GHG emission projection until 2017 for the all energy sector is based on the SNAP project at (OEP) . For the waste sector, the GHG emission growth rate was estimated at 1.6% annually based on the assumed annual average population growth rate.



**GHG Emission Projection for all Sectors
(in 1000 Gg of CO₂ equivalent)**

On the basis of these rough assumptions for all sectors, the total GHG emissions of Egypt are expected to raise to 345% above 1990 levels until 2017, a projected increase typical for developing countries. The all energy sector is expected to remain by far the major source for GHG emissions in the future and to increase its share with the highest growth rate

Priority technologies

Regarding priority technologies and sectors, energy efficiency, co-generation, fuel switch and renewable energy are identified as promising technologies for CDM in Egypt, mainly in power production, industry and transport sectors. Waste digestion might be another promising technology with a more limited replication potential. A national strategy might focus on these technologies, leaving it open to investors and project hosts to select also additional areas for CDM projects.

The Energy Efficiency technologies

The Energy Efficiency technologies (combustion control, cogeneration, waste heat recovery and fuel switching) show the highest priority in terms of the "no regret scenario" where the cost of saved carbon is negative, which means that the GHG reduction is accompanied by direct financial savings. Implementing the energy efficiency in different sectors in Egypt may result in GHG reduction between 1 to 2 million Tons of Carbon under the conservative and optimistic scenarios respectively.

Investors in CDM

The potential investors for CDM projects in the developing countries can be represented in governments, private sector companies and GHG funds, which are interested in investing in the developing countries. The foreign investors in general are always seeking to minimize the risk surrounding his investment at different levels; country risk, industry risk, and company risk. Therefore, most international investors aim at diversifying their investment portfolio through different countries, regions and different sectors.

Egypt has a competitive and comparative advantage as cheap labor, tax exemptions for investment projects, etc. This in fact is reflected in low Marginal Abatement Costs (MAC)

that has favorable implications for the successful implementation of CDM projects in Egypt. However, to ensure the successful implementation of CDM projects in Egypt, there are several domestic prerequisites that need to be fulfilled.

Institutional Needs for the Implementation of CDM in Egypt

Existing governmental and private sector institutions and Non Governmental Organizations (NGOs) are the key players and potential participants in the CDM. This strategy has attempted to identify the present institutional set-up in Egypt as related to CDM projects. That means, identifying the role of various institutions as regards their significance and relevance to CDM project implementation in Egypt. In addition, the legislation and regulatory framework pertaining to CDM project implementation in Egypt was reviewed.

With regard to CDM awareness, there is a need to increase awareness amongst various institutions and authorities especially those related directly to investment to ensure their full participation in the CDM process.

Many issues related to CDM project implementation and CDM cycle like baseline determination, project validation and project monitoring, verification and certification need to be more understandable for the potential project host as well as any other national institutions that could take part within different activities related to project cycle. Capacity building is a vital element to create, build and sustain such capacities in Egypt. Those capacities can participate on both national and regional CDM projects.

Furthermore, relevant information on CDM is to be posted on a number of web sites including those of (EEAA), Federation of Egyptian Industries (FEI), etc. All such activities need to be supplemented by seminars/workshops for various stakeholders to promote CDM projects.

National CDM Committee and CDM Unit

As for the institutional framework, two levels of coordination are proposed, the first is a national committee for CDM and the second is CDM implementation unit.

The mandate of such a CDM unit will include the following:

- ? Undertaking CDM activities as pertains to awareness and promotion;
- ? Issuing guidelines for the proposed CDM projects as well as following up CDM project activities initiated in Egypt
- ? Acquiring various approvals and permits on behalf of CDM
- ? Liaise and coordinate with line ministries and governmental agencies to prepare position papers for Egypt on CDM and representing Egypt in international meetings and conferences in this field.
- ? Coordinating technical capacity building.
- ? Facilitating pilot CDM projects and build relations with potential CDM investors.

The proposed CDM Unit will be responsible for the day-to-day activities of CDM. It will be the executive secretariat of the National Committee on Climate Change (NCCC) in the area of CDM. This Committee nonetheless, will be regarded as the executive board or policy-making body for the CDM in Egypt.

Role of the Egyptian Government

Components to be considered in a CDM strategy include the level of involvement of the Egyptian Government in the CDM market, the design and line-up of the domestic framework for CDM, the type of international investor targeted and the priorities among sectors and technologies for CDM projects.

Other tasks related to the facilitation of CDM and to the CDM project cycle such as information dissemination, project verification and certification can be carried out by both governmental and private entities. These additional tasks should be fulfilled using whenever possible existing institutions, networks and skills. As foreign investors generally prefer private companies as project partners, and in line with Egypt's efforts towards strengthening the private sector and privatization, the private sector will play a very important role in CDM in Egypt, being it as project hosts, in project design and implementation or even in verification and possibly certification of emission reductions.

CDM Action Plan

The proposed action plan covers the next 2-3 years. Its success should be monitored and evaluated regularly and modifications/corrections should be foreseen.

Any further details or modifications will be of course in hands of the official decision makers and stakeholders. It will need further political decisions to initiate and develop different actions under the proposed plan. The final official action plan should be prepared by the recommended CDM implementation unit for approval by the CDM committee and EEAA Board of Directors.

Proposed Modules of CDM Action Plan

Module 1:	Institutional Setting
Module 2:	Establishment of national Criteria and baseline for CDM
Module 3:	Awareness Raising
Module 4:	Technical Capacity Building
Module 5:	Investor Relations and monitoring of international offset market
Module 6:	Project Package Preparation
Module 7:	Project pipe-line and national Registration
Module 8:	CDM Handbook for Egypt
Module 9:	Evaluation / Feedback / Corrections

The CDM Project Portfolio for Egypt

The project's selection was elaborated by contacting associations, private companies and governmental bodies so as to consider their preferences and inputs and also to collect needed data. On the national level, all sectors of the economy were covered and screened for suitable projects. However, most effort was focused on those with the highest GHG emission reduction potential, such as energy generation, transport sector, renewable energy applications and energy efficiency in industry and LULUCF.

A portfolio of 22 projects is selected as a result of an overall assessment of possible CDM-project areas in Egypt. The most promising projects are tabulated blow.

Proposed CDM Projects from Project Pipeline

Project # 1	Cogeneration Project of 3.5 MW Capacity at Misr Elmonifia Company (Spinning)
Project # 2	Control System and Energy Saving Equipment at Zenotex
Project # 3	Installing Dedicated CNG Engines to Replace Low Efficiency Diesel Engines
Project # 4	Establishment of Forest Plantations and Shelterbelts Around 10 th of Ramadan City
Project # 5	Afforestation of a Part of Cairo-Aswan Highway
Project # 6	CDM 60 MW Wind Farm in Comparison with BAU 45 MW Steam Turbine (Mixed Fuel)
Project # 7	Organic Solid Waste Digestion

Conclusion:

The implementation of CDM projects in Egypt is considered as one of the supports to the national sustainable development. The opportunities of implementation of CDM projects need some enhancement regarding more detailed studies about the targeted area, the specific projects and the capacity building as well. Also some advantages should be added to attract the investors to the CDM projects regarding custom, taxes, ... etc.

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List of Abbreviations

CDM	Clean Development Mechanism
ECEP	Energy Conservation and Environment Project
EEAA	Egyptian Environmental Affairs Agency
ENAP	Egypt's National Action Plan
FEI	Federation of Egyptian Industries
Gg	Giga gram
GHG	Green House Gases
INC	Initial National Communications
LULUCF	Land Use, Land Use Change and Forestry
MAC	Marginal Abatement Costs
NCCC	National Committee on Climate Change
NGO	Non Governmental Organizations
NSS	National Strategy Study
OEP	Organization for Energy Planning
SNAP	Support for Nation Action Plan
TCAPP	Technology Cooperation Agreement Pilot Project
TOE	Tons of Oil Equivalent
UNFCCC	United Nations Frame Work Convention on Climate Change
USAID	United States Agency for International Development