

United Nations Development Programme
Country: EGYPT
PROJECT DOCUMENT



Project Title: Low Emission Capacity Building Project

UNDAF Outcome(s): UNDAF Outcome 2: Environmental Sustainability

UNDP Strategic Plan Environment and Sustainable Development Primary Outcome: Catalyzing environmental finance

UNDP Strategic Plan Secondary Outcome: National capacities are strengthened to mainstream climate change policies into national development plans.

Expected CP Outcome(s): Sustainable Management of environment and natural resources incorporated into poverty reduction strategies/key national development frameworks and sector strategies.

Expected CPAP Output (s): Enhanced capacity of central and local government to integrate sustainable development and environmental and natural resources management into national development frameworks and sector strategies.

Executing Partner: UNDP Egypt

Implementing Partner: Egyptian Environmental Affairs Agency (EEAA) / Ministry of State for Environmental Affairs (MSEA)

Brief Description

In accordance with the commitment of all parties to the UNFCCC to support climate change efforts at the national level, the project will enable Egypt to strengthen national capacities to do the following: 1) Design a low-emission development strategy (LEDS); 2) Identify opportunities for Nationally Appropriate Mitigation Actions (NAMAs) in the context of national development; 3) Facilitate the design and adoption of mitigation actions by selected industries; and 4) Design systems for Measuring, Reporting, and Verifying (MRV) mitigation actions. The Project will target the Public and Private (Industrial) Sectors.

The project will, also, develop the capacity of experts and institutions in Egypt to respond to opportunities that have been identified for engaging Public Sector and Industry support and participation in addressing the issue of climate change. The Project seeks to build on various initiatives already developed by UNDP and partners, including the National Communication Support Programme (NCSP).

Programme Period:	2012 – 2014	Total resources required	US\$ 1,137,900
Atlas Award ID:	00061973	Total allocated resources	
Project ID:	00079144	(including GMS):	US\$ 1,037,900
PIMS #	4802		
Start date:	August 2012	• Regular	US\$ 1,037,900
End Date	July 2015	• Other:	
Management Arrangements	NEX	○ Government	_____
PAC Meeting Date	1 August 2012	○ In-kind	US\$ 100,000
		○ Other	_____

Agreed by:	Name/Title	Signature/Date
Executing Agency:	Dr. Fatma Abou Shouk CEO, Egyptian Environmental Affairs Agency	<i>F. Abou Shouk</i> 13/3/2013
Government:	H.E. Amb. Omar Abou Eish, Deputy Assistant Foreign Minister and Director of International Cooperation, Ministry of Foreign Affairs	<i>Omar Abou Eish</i> 20/1/2012
UNDP	Anita Nirody Resident Representative	<i>Anita Nirody</i> 31/03/2013

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Acronyms

APR	Annual Progress Reports
AWP	Annual Work Plan
CCCCD	Climate Change Central Department
CDM	Clean Development Mechanism
CGE	Consultative Group of Experts
CoP	Conference of the Parties
CPAP	Country Programme Action Plan
DESERTEC	A concept proposed by DESERTEC Foundation for making use of solar and wind energies
DNA	Designated National Authority
EE	Energy Efficiency
EEAA	Egyptian Environmental Affairs Agency
EER	Energy and Environment Review
ENCPC	Egypt's National Cleaner Production Center
ENPEP	Energy and Power Evaluation Programme
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHGs	Greenhouse Gases
GoE	Government of Egypt
GPG	Good Practice Guidance
HFCs	Hydrofluorocarbons
INC	Initial National Communication
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
MALR	Ministry of Agriculture & Land Reclamation
MDGs	Millennium Development Goals
MFT&I	Ministry of Foreign Trade & Industry
MoFP	Ministry of Family & Populations
MoT	Ministry of Transport
MSEA	Ministry of State for Environmental Affairs
NC	National Communication
NCSP	National Communications Support Programme
NEX	National Execution
NGOs	Non-governmental Organizations
NPM	National Project Manager
NSS-CDM	National Strategy Study for Clean Development Mechanism
PAM	Policies and Measures
PFCs	Perfluorocarbons
PIR	Project Implementation Report
PIU	Project Implementation Unit
PSC	Project Steering Committee
PO	Project Officer
QA/QC	Quality Assurance/Quality Control
QPRs	Quarterly Progress Reports
SBAA	Standard Basic Assistance Agreement
SF6	Sulphur hexafluoride
SNC	Second National Communication
SRES	Special Report on Emission Scenarios
SWITCH	Sustainable Water Management Improves Tomorrow's Cities' Health

TL	Team Leader
TNA	Technology Needs Assessment
TNC	Third National Communication
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	US Dollar (\$)
V&A	Vulnerability and Adaptation [to climate change]
WHO	World Health Organization
WMO	World Meteorological Organization

1. SITUATION ANALYSIS

Egypt ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1994. The Intergovernmental Panel on Climate Change (IPCC), in its *Third Assessment Report (TAR)* in 1995, identified Egypt's Mediterranean coast and the Nile Delta as vulnerable regions to sea level rise. Significant vulnerabilities were also anticipated in Egypt's Initial National Communication (INC) and Second National Communication (SNC) reports to the UNFCCC, which were submitted in 1999 and 2010, respectively, as well as in international reports such as the 2007 IPCC *Fourth Assessment Report* and UNDP's 2007/2008 Human Development Report, *Fighting Climate Change*. In 2007, the World Bank carried out a study regarding the impacts of Sea Level Rise (SLR) on developing countries. Among all 84 countries under that study, Egypt was considered as one of the most impacted countries.

According to the INC and SNC, Egypt's most vulnerable sectors to climate change are: 1) coastal zones, 2) water resources, and 3) cultivated lands. Sea level rise is the cause of the most serious climate change impacts and threatens the densely populated River Nile Delta which includes extensive infrastructure and fertile cultivated lands. In this respect, sea level rise is expected to inundate large areas of low lying lands in the Nile Delta and sea water intrusion will increase water logging conditions and soil salinity in other lands. There is also a high degree of uncertainty regarding climate change impacts on the annual Nile flood, while expecting decline in precipitation along the Northern Coast and a projected increase in the population estimated between 115 and 179 million by 2050. Moreover, temperature rise is expected to reduce the productivity of major crops, increase crop water requirements coupled with an expected water stress and loss of some lands and fertility in the Nile Delta and consequently the overall food production may be significantly reduced. Impacts of climate change on other vulnerable sectors to climate change will be further investigated in the TNC. Accordingly, climate change risks may threaten Egypt's efforts to achieve the MDGs and to face those threats. Both the INC & SNC have presented many mitigation actions, as well as several adaptation measures to climate change, in the course of playing an effective role in achieving the main objectives of the UNFCCC.

Assessment of GHG emissions for Egypt in the year 2000 revealed that the total emissions were about 193 MtCO₂e, compared to about 117 MtCO₂e in 1990, representing an average increase of 5.1%, annually. Estimated total GHG emissions in 2008 are about 288 MtCO₂e. GHG emissions by gas type reveal that CO₂ represents 66% of emissions, with CH₄ representing 20%, N₂O representing 13%, PFCs representing 1%, SF₆ representing 0.06% and HFCs representing 0.03%. The energy sector, including transportation, is the primary contributor to GHG emissions, followed by agriculture, industrial processes and then the waste sector. GHG emissions per capita showed a 37% increase in 2000, relative to 1990. Meanwhile, GHG emissions per thousand US\$ of Egypt GDP went down from 3.32 ton CO₂e to 1.98 ton CO₂e, indicating the use of low carbon activities. Egypt's share of the total world GHG emissions in 1990 was 0.4%, and was still limited to 0.58% in 2000.

The Egyptian Environmental Affairs Agency (EEAA) was founded in 1982, followed by the establishment of the Ministry of State for Environmental Affairs in 1997. In response to the IPCC TAR in 1995, Egypt set up a climate change institutional structure at the national level, including the establishment of a Climate Change Unit (CCU) in 1996 in the EEAA. This Unit was the cornerstone of the Central Department for Climate Change (CDCC), which was established in 2009 in the EEAA in order to strengthen the climate change institutional structure on the national level. The CDCC includes three main directorates (sub-Depts.), namely, Mitigation & CDM, Adaptation, and Technology Issues.

Environmental policies in Egypt are directed at halting environmental degradation, creating conditions for rehabilitation of polluted areas and promoting the sustainable use of natural

resources. The Law No. 4/1994 and its amendments on Environmental Protection form the basis for environmental management in Egypt. The law addresses the prevention and reduction of pollution, sustainable management of natural resources, and provides binding provisions for environmental impact assessment.

In 2007, the Egyptian Prime Minister's Decree No. 272 instituted the reform of the National Climate Change Committee that was established in 1997. The new National Climate Change Committee is chaired by the Minister of State for Environmental Affairs and includes members representing a wide range of governmental and non-governmental institutions. In addition, two Climate Change Ministerial Committees have been established in the Ministry of Agriculture & Land Reclamation and the Ministry of Irrigation & Water Resources. A "Climate Change Information Centre" in the Agriculture Research Centre has also been established. However, many barriers still exist that are challenging Egypt's efforts to comply with the UNFCCC, such as inadequate capacity and weak coordination and cooperation between governmental bodies, NGOs and the private sector. Furthermore, there is a lack of mainstreaming of climate change measures in the national planning process.

In January 2005, Egypt ratified the Kyoto Protocol and established a Designated National Authority for the Clean Development Mechanism ("DNA-CDM"). Egypt participated with some North African Countries during 2003-06 in a UNEP regional program, "*Capacity Development for the Clean Development Mechanism (CD4CDM)*". This program assisted Egypt in building one of the largest CDM portfolios in Africa, with an investment cost of initially approved projects estimated in 2011 at around USD 3.05 billion. The projects are expected to reduce GHG emissions by around 9.4 million tons CO₂ equivalent per annum. In the meantime, seven projects are internationally registered and claiming CERs.

Since 1990, UNDP has been supporting Egypt in terms of sustainable environmental development, including assistance towards compliance with international environmental conventions, aiming at: (a) promoting environmental governance in mainstreaming sustainable development and implementing relevant policy, legal and regulatory measures, (b) preparation of the first and second "National Environmental Action Plans" in 1992 and 2003, respectively and (c) capacity development to implement global environmental conventions primarily through Egypt's First and Second National Communications to the UNFCCC.

Also, the "*UN Joint Programme on Climate Change Risk Management*" aims to assist Egypt in aligning its climate risk management and human development efforts in pursuing the achievement of MDGs to face climate change and the anticipated serious threats to the country. Meanwhile, a "*Climate Change Adaptation Strategy*" and "*Climate Change Socio-Economic Impact Study*", in addition to the "*Third National Communication*" are currently under preparation. Furthermore, the Ministry of Agriculture has established several climate change adaptation programs, currently ongoing, and others are planned in the "*Agriculture Sustainable Development Strategy*" up to 2030.

However, climate change has an ever-increasing impact on the way Egypt defines its development strategy. This impact involves not only the need to understand and manage a tremendous amount of technical information, but also the need to bring a wide range of stakeholders together to address climate change concerns in a coherent manner. A primary challenge is the effective allocation of scarce resources in order to ensure that climate change activities, programmes, and projects are not isolated from other pressing development needs. With this in mind, the LECB project will provide Egypt with substantive input and support for its efforts to integrate climate change into strategies and plans, ensuring appropriate linkages between policy making and options for financing.

But climate change cannot be tackled by the government alone. Industry (petrochemical, cement, iron and steel, fertilizers, etc.) plays an equally important role in any concerted effort to reduce GHG emissions and adapt to climate change. Responding to climate change and achieving low-carbon growth and development will be a major challenge which will require significant action and cooperation from both the Public Sector and Industry.

Industry's enormous role in meeting this challenge will consist of spearheading the investment and technological innovation that will underpin low-carbon growth; providing financing for mitigation and adaptation; adopting low-carbon production processes; and encouraging and facilitating more climate-conscious purchasing decisions by consumers. Nevertheless, reporting tools and technical expertise must be made available and public, and there must be state-led action to create incentives. The LECB Project will act as a liaison between Industry and the Public Sector to achieve this cooperation.

2. STRATEGY

The global path of CO₂ emissions already surpasses the worst case SRES^(*) scenario of the IPCC. Although there are uncertainties with regard to exact consequences, there is high confidence (IPCC 2007) that impacts from climate change, even under significantly more modest emission scenarios than the current trends predict, will affect the functioning and integrity of key ecosystems worldwide. While the impacts are being felt globally, the effects of climate change will likely impact African continent heavily. This is a region with substantial, but intrinsically fragile, natural capital, and where there are a number of climate sensitive regions (climate hotspots).

In this context, the outcomes of the UNFCCC Conference of the Parties (COP), held in Cancun in December 2010, brought up important opportunities and challenges. From a development policy perspective, the Cancun package affirmed that "addressing climate change requires a paradigm shift towards building a low-carbon society that offers sustainable opportunities and ensures continued high growth and sustainable development". This has been affirmed by the COP 17 held in Durban in December 2011.

The **goal** of this project is to assist Egypt in the design of low-emission development strategy (LEDS), as well as developing Public Sector and Industry capacities in terms of Nationally Appropriate Mitigation Actions (NAMAs) portfolio development and mitigation action plans, including the associated Measurement, Reporting and Verification (MRV) requirements, within the context of national development needs.

Yet, even with increased action and cooperation on the parts of the Public Sector and Industry, the capacity for establishing MRV systems of mitigation actions remains weak in Egypt. In order to fulfill its reporting obligations under the UNFCCC, Egypt must improve capacities to establish national MRV systems for GHG emissions and national mitigation actions. Egypt also faces obstacles in defining NAMAs and designing a LEDS. Industry's participation in adopting mitigation actions, particularly in carbon-intensive sectors, has been limited to date. The Global Support Component of the LECB Programme will help Egypt develop these capacities.

(*) SRES (Special Report on Emission Scenarios) prepared by the IPCC in 2001. The worst case scenario, A1FI, assumed business as usual and runaway expansion in the use of fossil fuels.

The proposed project **outcomes** are:

Area 1: Public Sector (i.e. executive administrative entities that are public)

Outcome 1: Up to 6 detailed NAMAs formulated in the key sectors of energy and transport within the context of national development priorities

Outcome 2: LEDS formulated within the context of national development priorities

Outcome 3: MRV systems have been designed to support implementation and evaluation of associated NAMAs and LEDS

Area 2: Industry (i.e. industrial entities that are either public or private)

Outcome 4: Mitigation action plans have been established in the cement and fertilizer industries^(), including up to 4 full-documented mitigation projects developed*

Outcome 5: MRV systems have been designed to support implementation and evaluation of mitigation action plans in the cement and fertilizer industries.

While the focus in the **public** sector is on formulation of effective NAMAs in the energy and transport sectors and a LEDS, attention will also be paid to improving MRV systems. This will be done by establishing appropriate indicators for monitoring mitigation actions, as well as by creating the conditions necessary to support future investment in mitigation measures. The focus will be on establishing scopes, metrics/indicators, reporting mechanisms, verification mechanisms, and time frames. An improved MRV system will take into account whether NAMAs are implemented autonomously, through support from developed countries, or through an international crediting mechanism. Suggested criteria for the MRV systems include: credibility, cost effectiveness, timeliness, and a simple and clear procedure which provides enough flexibility for a wide range of mitigation actions.

In the field of **industry** capacity building, national and regional policies translate into specific requirements for private and/or public industry, which trigger performance improvements in production processes. This component will focus on the aims and needs of at least two selected industries (i.e., cement and fertilizer, and possibly iron & steel at a later stage), and the intent is to encourage industry to uptake and scale up mitigation actions. Work will start from the industry's perspective of enhancing profitability by means of energy efficiency improvements and cost savings. During the inception phase, contacts will be made with programme representatives of the EU and UNDP and industrial organizations in the country in order to identify high priority mitigation actions and potential domestic barriers.

Enhancing the knowledge and capabilities of industry is a crucial element in aiding the adoption of mitigation actions. Efforts in this respect will foster the use of synchronized procedures for providing reliable, comparable information on mitigation needs, action, and results. This will aid in obtaining financial support and assessing progress in meeting efficiency goals in terms of energy and emissions. Besides capacity building for Industry, the Project will create national networks for the exchange of data and best practices. These networks will empower and qualify focal points and industrial organizations to deliver necessary training and technical support on international standards.

When appropriate, coordination with the Public Sector will be encouraged (in the form of workshops or seminars, for example) in order to promote synergies and cooperation. (Of course, this is also true in the opposite direction: activities in the Public Sector to achieve specific objectives may also coordinate with Industry.) Synergies will also be sought and exploited through the work carried out by various UN agencies or practice groups. In particular, the joint UNEP/UNIDO programme for

(*) The iron & steel industry, which ranked as third priority, will also be engaged if the project budget and duration allows for its inclusion at a later stage.

National Cleaner Production Centres may be involved, where appropriate (Egypt's National Cleaner Production Centre (ENCPC) was established in 2005 by the Ministry of Trade and Industry under this initiative). The work proposed in this area is also complementary to activities underway in the SWITCH⁽¹⁾ initiative, and so experience gained from SWITCH and ENCPC will be taken into account.

Strategy to Link Project Process and Outcomes to Relevant Planning and Decision Making Processes

The strategy is based on the following:

- Project outcomes will be linked to national development priorities, processes and plans.
- Project outcomes will be particularly linked to the sub-national / sectoral development strategies, plans and processes within the sectors specified for implementing the project, namely: energy and transport sectors for NAMAs and MRV, and Cement and Fertilizer sectors (and possibly Iron & Steel) for industrial mitigation actions, including MRV.
- Synergies are to be strengthened at the sub-national and national levels with other relevant initiatives, such as the Third National Communication (TNC), green technology initiatives, New Electricity Law, World Bank and African Development Bank carbon funds, GEF project pipeline vis-a-vis energy efficiency and climate-friendly applications, DESERTEC⁽²⁾ initiative, industry modernization initiatives, etc.
- Synergies are to be created with other relevant initiatives at the regional and global levels, particularly with developing countries involved in this LECB programme.
- Project results are to be mainstreamed to the national institutions incorporated in the climate change abatement strategies, policies, plans, programmes and projects.
- Stakeholder engagement is essential in all phases of the project implementation.
- Project outcomes will be reflected in the stakeholders' projections for future activities.
- Ensuring sustainability and replicability of the project via perusing finance for the relevant sectors and mainstreaming economic, environmental and social benefits of the project results.
- Challenges in mainstreaming the project's results must be addressed collectively and cooperatively among all stakeholders involved.

(1) SWITCH is short for Sustainable Water Management Improves Tomorrow's Cities' Health. SWITCH is an EU funded project for water management. The main goal of SWITCH was finding new solutions to increase the efficiency of urban water systems through rethinking old paradigms and developing new solutions. To achieve this goal SWITCH improved the scientific basis and shared knowledge to ensure that future water systems are robust, flexible and adaptable to a range of global change pressures.

(2) DESERTEC is a concept proposed by the DESERTEC Foundation for making use of solar energy and wind energy. This concept will be implemented in North Africa and the Middle East by the consortium Dii GmbH, formed by a group of European companies and the DESERTEC Foundation. The DESERTEC concept was initiated on 20 January 2009 under the auspices of the Club of Rome and the German Trans-Mediterranean Renewable Energy Cooperation (TREC). Construction of the Desertec's first 500 MW solar farm in Morocco is scheduled to start in 2012.

3. PROJECT RESULTS FRAMEWORK

<p>This project will contribute to achieving the following Country Programme Outcome as defined in CPAP or CPD: Sustainable Management of environment and natural resources incorporated into poverty reduction strategies/key national development frameworks and sector strategies</p>				
<p>Country Programme Outcome Indicators: Enhanced capacity of central and local government to integrate sustainable development and environmental and natural resources management into national development frameworks and sector strategies.</p>				
<p>Environment and Sustainable Development Key Result Area: Catalyzing environmental finance</p>				
	Indicator	Baseline	Targets End of Project	Source of verification
Project Objective¹	<ul style="list-style-type: none"> Increased capacity to Public Sector to design LEDS, NAMAs and MRV, and establishment of mitigation action plans and MRV systems in selected industries. 	<ul style="list-style-type: none"> Mitigation actions identified in Initial and Second National Communications. Environmental Action Plans Environmental Protection Law. Environmental & Climate Change Treaties. Climate Change current activities (supported by UNDP, EU, WB, GEF...etc.). 	<ul style="list-style-type: none"> Up to 6 NAMAs and a LEDS formulated, and associated MRV systems designed Mitigation action plans established for 2-3 industries, and associated MRV systems designed Final reports and findings will be adopted by the relevant institutions. 	<ul style="list-style-type: none"> UNFCCC and UNDP documentation. Reports produced; process established.
Outcome 1² <i>Up to 6 NAMAs have been formulated in the energy and transport sectors within the context of national development priorities</i>	<ul style="list-style-type: none"> Groups of stakeholders identified Policy objectives identified Preferred Measures identified Activities and emissions to identify emission reduction potential analysed NAMAs selected, consulted and refined MRV data needs identified Detailed NAMA proposals prepared (with stakeholder consultation). 	<ul style="list-style-type: none"> Only CDM project portfolio in place. No base year or timeframe determined. Inadequate technical expertise in scenario modeling. 	<ul style="list-style-type: none"> Data needed to develop, implement and MRV selected NAMAs are determined. Up to 12 NAMAs concept Notes / Fact Sheets are prepared. Up to 6 detailed NAMA Proposals are prepared 	<ul style="list-style-type: none"> Project documentation. Plans and Programs of relevant institutions. External expert review.
Outcome 2 <i>LEDS has been formulated within the context of national development priorities</i>	<ul style="list-style-type: none"> Scoping and Planning of LEDS. Baseline and low-emission (mitigation) scenarios developed Mitigation options determined in the key sectors. MRV data and indicators identified. 	<ul style="list-style-type: none"> Only mitigation targets and/or objectives specified in the Country's Policy documentation, NCs, EAPs, and sectoral Strategies are in place. No national strategy in place. 	<ul style="list-style-type: none"> Final document and findings of the LEDS will be adopted by the government and all relevant institutions. 	<ul style="list-style-type: none"> Sectoral strategies Stakeholders review. External expert review.

¹ Objective (Atlas output) monitored quarterly ERBM

² All outcomes monitored bimonthly and quarterly.

	Indicator	Baseline	Targets End of Project	Source of verification
Outcome 3 <i>MRV systems have been designed to support implementation and evaluation of NAMAs and LEDS</i>	<ul style="list-style-type: none"> Capacity built in MRV-related activities in order that high government officials can support NAMAs and LEDS. MRV system designed to support the implementation of NAMAs and LEDS. National technology systems developed for information and monitoring. 	<ul style="list-style-type: none"> Only MRV systems created to support implementation and evaluation of registered CDM projects and those applied for registration are in place. 	<ul style="list-style-type: none"> MRV system designed to support implementation and evaluation of NAMAs and LEDS will be adopted by project implementing bodies. 	<ul style="list-style-type: none"> Standardized methods that help ensure that the information provided can be compared and verified.
Outcome 4 <i>Mitigation action plans have been established in cement and fertilizer industries, including up to 4 mitigation projects developed</i>	<ul style="list-style-type: none"> Sectoral approaches identified Setting baselines and targets set Comprehensive mitigation assessments conducted. Mitigation options screened Mitigation Action Plans established 	<ul style="list-style-type: none"> Only programs containing measures to mitigate climate change provided by SNC exist. Mitigation projects implemented and/or under implementation within the CDM Egypt's Portfolio. Mitigation programs specified by key economic sectors in their sectoral plans. 	<ul style="list-style-type: none"> 4 mitigation projects fully determined in key industrial sectors At least 2 mitigation action plans established in cement and fertilizer industries (and possibly in iron & steel) 	<ul style="list-style-type: none"> Standardized mitigation assessment modalities and procedures. Industry led management review. External expert review.
Outcome 5 <i>MRV systems have been created to support implementation and evaluation of Mitigation Action Plans in the cement & fertilizer industries</i>	<ul style="list-style-type: none"> Capacity built in MRV-related activities in order that industry can report on mitigation actions MRV systems designed to support the implementation of mitigation action plans 	<ul style="list-style-type: none"> Only MRV systems created to support implementation and evaluation of registered CDM projects and those applied for registration are in place. 	<ul style="list-style-type: none"> MRV systems that support implementation and evaluation of mitigation action plans designed 	<ul style="list-style-type: none"> Standardized methods that help ensure that the information provided can be compared and verified. MRV plan described within mitigation action plan documentation.

4. TOTAL BUDGET AND WORKPLAN

Award ID:	000 00000	Project ID(s):	000 00000
Award Title:	Low-Emission Capacity Building Project		
Business Unit:	XXXXXX		
Project Title:	Increased capacity to Public Sector to design LEDS, NAMAs and MRV, and establishment of mitigation action plans and MRV systems in selected industries		
PIMS no.:	00 00		
Implementing Partner (Executing Agency)	Ministry of State for Environmental Affairs (MSEA): Egyptian Environmental Affairs Agency (EEAA); Climate Change Central Department		

Outcome/Atlas Activity	Responsible Party/Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Total (USD)
OUTCOME 1: Up to 6 NAMAs have been formulated within context of national development	MSEA/EEAA	30079	EU and German Govt	71200	International Consultants	\$20,000	\$14,000	\$0,000	\$34,000
				71300	Local Consultants	\$20,000	\$20,000	\$10,000	\$50,000
				72100	Contractual services - Companies	\$20,000	\$20,000	\$10,000	\$50,000
				71600	Travel	\$5,000	\$5,000	\$5,000	\$15,000
					Equipment	\$10,000	\$0,000	\$0,000	\$10,000
				Total Outcome 1	\$75,000	\$59,000	\$25,000	\$159,000	
OUTCOME 2: LEDS has been formulated within context of national development	MSEA/EEAA	30079	EU and German Govt	71200	International Consultants	\$20,000	\$10,000	\$0,000	\$30,000
				71300	Local Consultants	\$15,000	\$10,000	\$5,000	\$30,000
				72100	Contractual services - Companies	\$20,000	\$10,000	\$0,000	\$30,000
				71600	Travel	\$5,000	\$5,000	\$0,000	\$10,000
					Equipment	\$5,000	\$5,000	0,000	\$10,000
				Total Outcome 2	\$65,000	\$40,000	\$5,000	\$110,000	
OUTCOME 3: MRV systems have been designed to support implementation and evaluation of NAMAs & LEDS	MSEA/EEAA	30079	EU and German Govt	71200	International Consultants	\$30,000	\$10,000	\$0,000	\$30,000
				71300	Local Consultants	\$20,000	\$15,000	\$5,000	\$40,000
				72100	Contractual services - Companies	\$20,000	\$0,000	\$0,000	\$20,000
				71600	Travel	\$10,000	\$5,000	\$0,000	\$15,000
					Equipment	\$5,000	\$5,000	\$0,000	\$10,000
				Total Outcome 3	\$75,000	\$35,000	\$5,000	\$115,000	

Outcome/Atlas Activity	Responsible Party/ Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Total (USD)	
OUTCOME 4: Mitigation action plans in cement & fertilizer industries have been established, including development of up to 4 mitigation projects	MSEA/EEAA	30079	EU and German Govt	71200	International Consultants	\$35,000	\$30,000	\$15,000	\$80,000	
				71300	Local Consultants	\$30,000	\$20,000	\$10,000	\$60,000	
				72100	Contractual services - Companies	\$20,000	\$10,000	\$10,000	\$40,000	
				74500	Miscellaneous Exp	\$10,000	\$5,000	\$5,000	\$20,000	
					Equipment	\$0,000	\$0,000	\$0,000	\$0,000	
					Total Outcome 4	\$95,000	\$65,000	\$40,000	\$200,000	
OUTCOME 5: MRV systems have been designed to support implementation and evaluation of Mitigation Action Plans in cement & fertilizer industries	MSEA/EEAA	30079	EU and German Govt	71200	International Consultants	\$30,000	\$20,000	\$10,000	\$60,000	
				71300	Local Consultants	\$20,000	\$15,000	\$5,000	\$40,000	
				72100	Contractual services - Companies	\$20,000	\$0,000	\$0,000	\$20,000	
				71600	Travel	\$10,000	\$5,000	\$0,000	\$15,000	
					Equipment	\$5,000	\$5,000	\$0,000	\$10,000	
					Total Outcome 5	\$85,000	\$45,000	\$15,000	\$145,000	
Project Management, including Monitoring and evaluation	MSEA/EEAA	30079	EU and German Govt		Contractual Services- Individual	\$42,000	\$42,000	\$42,000	\$126,000	
				71405						
				72200	Equipment and furniture	\$10,000	\$0,000	\$0,000	\$10,000	
				72505	Offices Supplies	\$5,000	\$3,000	\$2,000	\$10,000	
				72100	Contractual Services – Companies	\$20,000	\$10,000	\$0,000	\$30,000	
	Information Technology Equipment	\$10,000	\$5,000	\$0,000	\$15,000					

Outcome/Atlas Activity	Responsible Party/ Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Total (USD)
				74500	Miscellaneous Expenses (Learning & Knowledge Sharing)	\$20,000	\$20,000	\$10,000	\$50,000
					Total Management	\$107,000	\$80,000	\$54,000	\$241,000
PROJECT TOTAL						\$502,000	\$324,000	\$144,000	\$970,000
UNDP General Management Support (GMS) 7% Fee									67,900
PROJECT TOTAL									1,037,900

Summary of Programmable Funds:

	Amount Year 1	Amount Year 2	Amount Year 3	Total
Donor 1 (EU)	\$502,000	\$330,000	\$164,000	\$970,000
Donor 2 (other donors)	\$	\$	\$	\$
Donor 3 (in-kind) e.g. Government	\$30,000	\$30,000	\$40,000	\$100,000
TOTAL	\$532,000	\$360,000	\$204,000	\$1,070,000

WORKPLAN

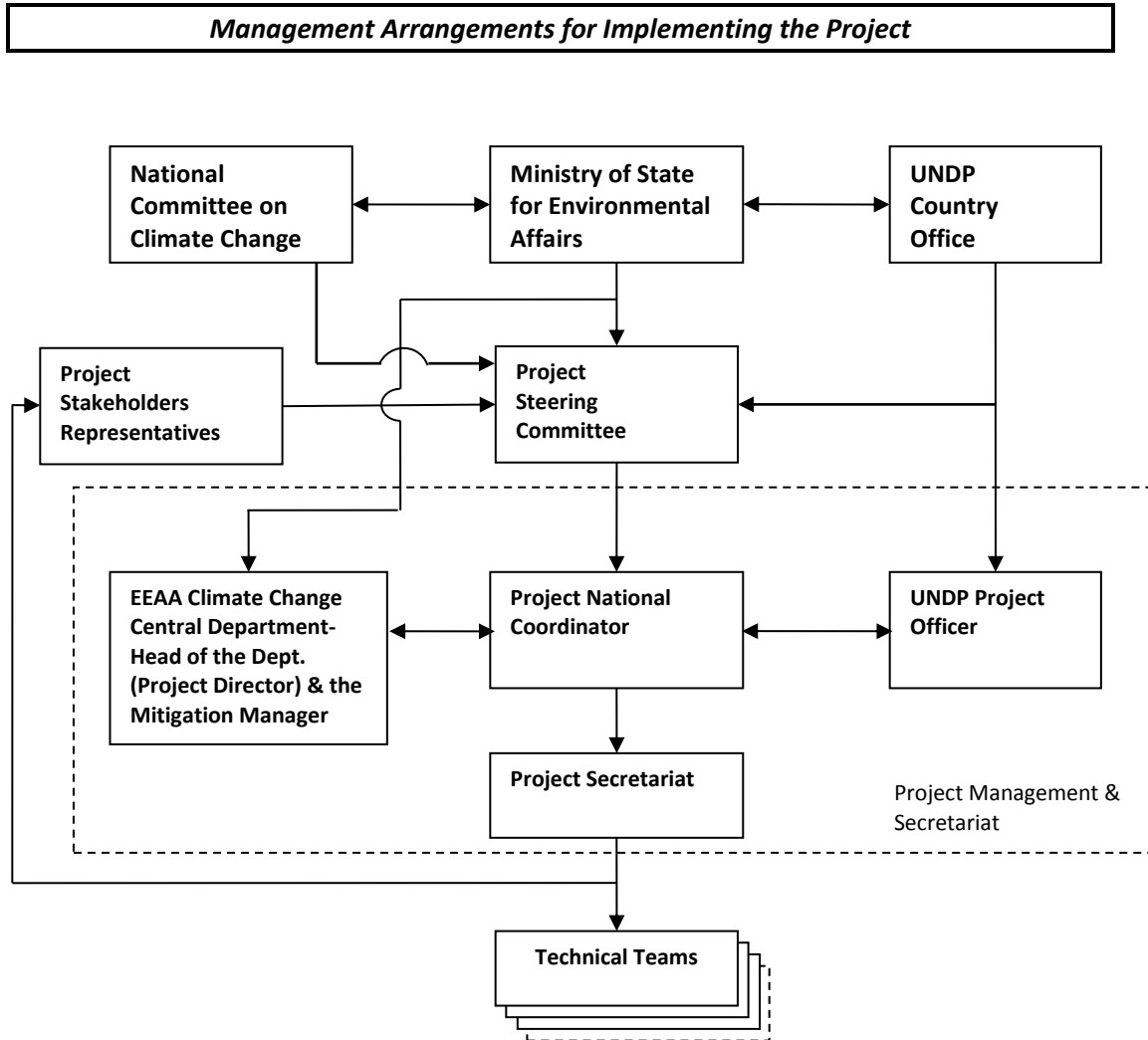
Outcomes/Activities	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Implementation Arrangements and Project Inception:												
1. Contract the project Office Staff	■											
2. Establish Technical Teams	■											
3. Establish the Project Steering Committee (PSC)	■											
4. Organize Project Inception Workshop	■											
5. Organize a Scoping Meeting	■											
Outcome 1: Up to 6 detailed NAMAS have been formulated in energy and transport sectors within the context of national development priorities												
Output 1: Groups of Stakeholders identified	■	■										
Output 2: Potential NAMAs identified and scored		■	■									
Output 3: Possible NAMAs prioritized and selected			■	■								
Output 4: 12 NAMA concept notes prepared and presented to key stakeholders					■	■	■	■				
Output 5: Up to 6 detailed NAMA proposals prepared							■	■	■	■		
Outcome 2: LEDS has been formulated within the context of national development priorities												
Output 1: LEDS scoping and planning undertaken		■	■									
Output 2: Reference and low-emission (mitigation) scenarios developed			■	■	■	■	■					
Output 3: Determine mitigation options determined in the key sectors						■	■	■				
Output 4: Financing of mitigation options assessed									■	■	■	■
Output 5: Plan for implementing, monitoring, and MRV of LEDS prepared									■	■	■	■
Outcome 3: MRV Systems have been designed to support implementation and evaluation of NAMAs and LEDS												
Output 1: Capacity developed in MRV-related activities in order that high government officials can support NAMAs and LEDS				■	■	■	■	■	■			
Output 2: MRV system to support the implementation of NAMAs and LEDS designed							■	■	■			
Output 3: National technology systems for information and monitoring designed							■	■	■	■		
Outcome 4: Mitigation Action Plans in at least 2 Selected Industries have been Established, including development of up to 4 mitigation projects												
Output 1: Sectoral Approaches in selected industries identified		■										
Output 2: Baselines and targets set			■									
Output 3: Comprehensive Mitigation Assessments conducted				■	■	■	■	■				
Output 4: Sectoral Mitigation Action Plans formulated, and up to 4 mitigation projects developed									■	■	■	■

Outcomes/Activities	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Outcome 5: MRV Systems have been designed to support implementation and evaluation of Mitigation Action Plans in the Cement & Fertilizer Industries												
Output 1: Capacity built in MRV-related activities in order that industry can report on mitigation actions												
Output 2: MRV systems designed to support the implementation and evaluation of industrial mitigation action plans												
Project Management, including M&E												
1. Compile Documentation for the Project Implementation Report (PIR) / Annual Progress Report (APR) and Terminal Report (TR).												
2. File Regular Reporting Documents for UNDP and donors, including Quarterly Progress Reports (QPRs).												
3. Conduct Independent Financial Audit of the Project Annually.												
4. Compile and Distribute Lessons-learned Notes (LLNs) on the Project Process.												

5. MANAGEMENT ARRANGEMENTS

5.1 Project's Organizational Structure

The following figure presents the institutional management structure for project implementation:



5.2 Roles and Responsibilities of the Key Parties

Key parties include government ministries which are the government cooperating agency / implementing partner, National Committee on Climate Change, Project Steering Committee, UNDP country office, UNDP project officer, project director, project coordinator and project secretariat.

5.2.1 Government Ministries

Of the 31 ministries present in Egypt, 14 are concerned with climate change and its consequences: Ministry of State for Environmental Affairs, Ministry of Electricity and Energy, Ministry of Transport, Ministry of Petroleum, Ministry of Water Resources and Irrigation, Ministry of Agriculture and Land Reclamation, Ministry of Foreign Trade and Industry, Ministry of Tourism, Ministry of Higher Education and State for Scientific Research, Ministry of Housing, Utilities & Urban Development,

Ministry of Investment, Ministry of State for International Cooperation, Ministry of Local Administration Development and Ministry of Foreign Affairs.

The only ministry in charge of directly targeting climate change is the Ministry of State for Environmental Affairs. Nine other ministries can have a major indirect impact on Egyptian CO₂ emissions through their own initiatives, programs and projects and are briefly described below.

- *Ministry of State for Environmental Affairs:* the Egyptian Environmental Affairs Agency (EEAA) is the executive arm of the Ministry of State for Environmental Affairs, according to the Law 4/1994 for the Protection of the Environment. The EEAA defines environmental policies and projects, implement them and promote environmental relations with the other states. A Non-Governmental Organizations (NGOs) unit was established by the EEAA Board of Directors in June 2002. This Unit is used to identify civic environmental work priorities, to organize environmental awareness raising campaigns or to follow-up environmental projects implemented with NGOs. The Climate Change Unit was created and upgraded to Central Department for Climate Change to directly tackle climate change issues.
- *Ministry of Electricity and Energy:* within this ministry four affiliated authorities work on solutions to produce low CO₂-emissions energy: the New and Renewable Energy Authority (NREA), the Hydropower Projects Executive Authority (HPEA), the Nuclear Power Plants Authority (NPPA) and the Egyptian Electricity Holding Company (EEHC). The NPPA is not in charge of significant activities for the moment. As energy production is at the origin of most Egyptian emissions, most of concrete projects to fight climate change in Egypt are concentrated in this sector.
- *Ministry of Petroleum:* this ministry is in charge of the fossil primary energy exploration, production, refining, transport and distribution. It is considered a key-actor in Egypt in terms of abating both of the air pollutants and GHG gases.
- *Ministry of Agriculture:* this ministry is in charge of the total cultivation activities and animal wealth all over Egypt. It is responsible of producing around 16.39% of the total Egypt's GHG emissions.
- *Ministry of Transport:* this ministry is in charge of the transport (roads, railways, public transport, marine transport, etc.). It is becoming a key-actor in Egypt in order to reduce air pollution and mitigate climate change.
- *Ministry of Water Resources and Irrigation:* this ministry plays an important role in the Egyptian access to renewable energies, as it is the one in charge of the dams, as the Aswan dam and the High dam. It is also this ministry which will have to find solutions to fight climate changes impacts on water resources.
- *Ministry of Housing, Utilities & Urban Communities:* this ministry is one of the ministries in charge of the urban, communal and economic development. As this ministry participates to the development of infrastructure networks (roads, bridges, potable water and sewerage plants, etc.) and of construction standards, it is an essential actor for sustainable development and for facing climate change.
- *Ministry of Investment:* This ministry is in charge of fostering investment in Egypt and of the 9 public holding companies, which gather 152 companies under their umbrella, in various sectors (e.g. chemical, medicine, transportation, etc.). For the last 8 years, a Unit for Environmental Affairs within this Ministry has followed up environmental issues in public holding companies in order to know if such companies have been complying with the environmental law. Recently, a new office was created in order to advise the Minister on sustainable development and environmental issues. This ministry is in charge of promoting investments in all sectors of the economy. Its role in providing climate finance and incentives has become of great importance.

- *Ministry of Foreign Trade and Industry*: This ministry is in charge of all industrial activities. It is, today, a key-actor in Egypt for mitigating GHG emissions resulted from industrial processes.
- *Ministry of Local Administration Development*: This ministry is in charge of all municipalities in Egypt. Solid waste collection and disposal has become strictly linked to generation of GHG emissions and their mitigation activities.

5.2.2 Government Coordinating Agency / Implementing Partner

The Egyptian Environmental Affairs Agency (EEAA) is the Government Coordinating Agency: This Agency is responsible for defining, assessing, and monitoring project outputs towards country-level outcomes. The EEAA will work closely with UNDP to ensure that the plan of the project includes necessary aspects, including identification of activities required to achieve the expected outcomes.

The EEAA represents, also, the Government Cooperating Agency, which is the governmental unit directly responsible for the government's participation in this project. It is typically responsible for the functions or areas being addressed by the project.

In this context, the EEAA is the Implementing Partner, who is the entity responsible and accountable for managing the project, including the monitoring and evaluation of project interventions, achieving project outputs, and for the effective use of UNDP resources.

5.2.3 National Committee on Climate Change

This committee was restructured in 2007 and became the national coordinator concerning climate change issues. It is to provide Egypt with the national vision and goals needed to frame policies and strategies targeting climate change. It also suggests mechanisms for implementation.

5.2.4 Project Steering Committee (Project Board)

At the overall project management level, a Project Steering Committee shall be set up as a mechanism for consultation. The Project Steering Committee is responsible for oversight of the project implementation, as well as its contribution to the UN efforts. The Project Steering Committee is as a minimum composed of the Heads (or their designated representatives) of the EEAA (Government Coordinating Agency) and UNDP Office, respectively.

The Project Steering Committee is the group responsible for making management decisions by consensus for the project when guidance is required by the Project Coordinator, including recommendations for UNDP/Implementing Partner approval of project plans and revisions. In order to ensure UNDP's ultimate accountability, Project Steering Committee decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition. In case a consensus cannot be reached within the Project Steering Committee, final decision shall rest with the UNDP Project Coordinator.

In addition, the Project Steering Committee will play a critical role in project evaluations by quality assuring the evaluation process and products, and using evaluations for performance improvement, accountability and learning. Project reviews by this group are made at designated decision points during the running of the project, or as necessary when raised by the Project Coordinator. This group is consulted by the Project Coordinator for decisions when the Project Coordinator's tolerances (normally in terms of time and budget) have been exceeded (flexibility). Based on the approved annual work plan (AWP), the Project Steering Committee may review and approve project quarterly

plans when required and authorizes any major deviation from these agreed quarterly plans. It is the authority that signs off the completion of each quarterly plan as well as authorizes the start of the next quarterly plan. It ensures that required resources are committed and arbitrates on any conflicts within the project or negotiates a solution to any problems between the project and external bodies. In addition, it approves the appointment and responsibilities of the Project Manager and any delegation of its Project Assurance responsibilities.

5.2.5 UNDP Country Office

The UNDP Country Office is responsible for developing and executing the UNDP Project to ensure that the Project outputs are delivered as planned, contributing to the achievement of Project outcomes as per UNDAF and CPD (as agreed with national counterparts). They are also responsible for ensuring that there is efficient and effective use of project resources. The Country Office is also responsible for assessing implementing Partner capacity, appraisal/ approval of the project and oversight of project implementation.

5.2.6 UNDP Project Officer

The UNDP Project Officer is responsible for the successful project execution and contribution to the achievement of project outcomes. The Project Officer is also responsible for the developing an evaluation plan and commissioning and using evaluations in accordance with the UNDP evaluation policy. Through execution of the Project, the Project Officer ensures that the project continues to contribute to Project outcomes through delivery of planned outputs, via efficient and effective management of resources. Monitoring of interdependencies between projects and managing changes within and among projects will be a key focus area of this role. The UNDP Resident Representative holds the role of the Project Officer, and can designate this role to another UNDP staff.

5.2.7 Project Director

The Project Director (also called Executive) is the individual representing the project ownership. The head of the Government implementing agency (EEAA) will hold this function.

As a representative of the Government and project's executing agency, the National Project Director has the main responsibility to ensure that the project is executed in accordance with the project document and the UNDP guidelines for nationally executed projects.

His/her main duties and responsibilities include:

- supervising the work of the Project Coordinator through meetings at regular intervals to receive project progress reports and provide guidance on policy issues;
- certifying the annual and, as applicable, quarterly work plans, financial reports and requests for advance of funds, ensuring their accuracy and consistency with the project document and its agreed amendments;
- authorizing the project contracts, following the approval of UNDP;
- unless otherwise agreed, chairing the Project Steering Committee and representing the project in other required meetings; and
- taking the lead in developing linkages with the relevant authorities at national, provincial and governmental level and supporting the project in resolving any institutional or policy related conflicts that may emerge during its implementation.

5.2.8 Project Coordinator

The Project Coordinator has the authority to run the project on a day-to-day basis on behalf of the Implementing Partner, within the constraints laid down by the Project Steering Committee. The Project Coordinator is responsible for day-to-day management and decision-making for the project. His/her prime responsibility is to ensure that the project produces the results (outputs) specified in the project document-, to the required standard of quality and within the specified constraints of time and cost. The Implementing Partner appoints the Project Coordinator, who should be different from the Implementing Partner’s representative in the Project Steering Committee.

5.2.9 Project Secretariat

The Project Secretariat provides project administration, management and technical support to the Project Coordinator as required by the needs of the individual project or Project Coordinator. It is necessary to keep Project Support and Project Assurance roles separate in order to maintain the independence of Project Assurance.

5.3 Summary of the Stakeholder Consultations

Stakeholder consultations and the validation process used for the preparation of the project proposal are summarized in the following table.

Name of Institutions / Stakeholders Consulted	Reason for Inclusion	Role in the Context-assessment Process
Egyptian Environmental Affairs Agency (EEAA)	Leading institution of the environment protection and climate change tackling efforts	Consultation and provider of baseline data.
Ministry of Electricity & Energy	Leading institution in the energy sector	Consultation and provider of baseline data.
Ministry of Petroleum	Leading institution in the energy sector	Consultation and provider of baseline data.
Ministry of Foreign Trade & Industry	Leading institution of the industrial sector	Consultation and provider of baseline data.
Ministry of Transport	Leading institution of the transport sector	Consultation and provider of baseline data.
Ministry of Agriculture	Leading institution of the agriculture and land reclamation sector	Consultation and provider of baseline data.
Ministry of Foreign Affairs	Leading institution of international affairs, international cooperation and foreign policy	Provider of political and legal framework and the context of Egypt- international relations.
Cabinet	Leading Executive Body	Consultation and provider of national plans perspective.
New and Renewable Energy Authority	Leading Executive Authority in the energy sector	Consultation and provider of baseline data.
Building Research Center, Ministry of Housing, Utilities & urban Development	Leading institution of energy efficiency studies and research	Consultation and provider of scientific base knowledge.
Cairo University	Leading institution of the higher education & research sector	Consultation, deep insight and guidance.

Name of Institutions / Stakeholders Consulted	Reason for Inclusion	Role in the Context-assessment Process
Agriculture Research Center	Think tank of the agriculture and land reclamation sector	Consultation, deep insight and guidance
Federation of Industries	Leading NGO of industrial sector	Consultation and provider of baseline data
Consulting firms (for energy, industry, waste, etc.)	Non-governmental think tank	Consultation and provider of scientific as well as executive support.
ESCOs	Leading institutions of the NGOs and civil society sector	Providers of project-based services in the energy field.
LECB project donors	Leading institutions of the international support	Activity promoters and providers of finance.

6. MONITORING AND EVALUATION FRAMEWORK

In accordance with UNDP's Programme and Operations Policies and Procedures (POPP) user guide, and following deliberations between the National Project Coordinator and the UNDP Project Officer, the project will be monitored and evaluated through the following activities.

6.1 Project's Inception

A Project Inception Workshop will be held within the first 2 months after recruitment of the Project Manager with those with assigned roles in the project organization structure, the UNDP Country Office and technical policy and project advisors, as well as other stakeholders. The Inception Workshop is the cornerstone for building ownership regarding the project results and to prepare the Year 1 annual work plan.

The Inception Workshop will address the following key issues:

- a) Assist all partners to fully understand and take ownership of the project. Discuss the roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms.
- b) Based on the Project Results Framework (Section 3), finalize the Year 1 annual work plan. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks.
- c) Provide a detailed overview of reporting, monitoring and evaluation requirements. The M&E work plan and budget will, also, be agreed and scheduled.
- d) Discuss financial reporting procedures and obligations.
- e) Plan and schedule Project Steering Committee meetings. Roles and responsibilities of all project organisation structures should be more clarified and meetings planned. The first Project Steering Committee meeting will be held within the first 12 months following the Inception Workshop.

The Inception Workshop Report should be kept as a key reference document and must be shared with participants to formalize various agreements and plans decided during the meeting. It shall be considered a key deliverable of the project.

The Project Inception Report will be prepared immediately following the Inception Workshop. It will include a detailed First Year Work Plan divided in quarterly timeframes detailing the activities and progress indicators that will guide implementation during the first year of the project. The Report will also include the detailed project budget for the first full year of implementation, prepared on the basis of the Annual Work Plan, and including any monitoring and evaluation requirements to effectively measure project performance during the projected 12 month time-frame.

The Inception Report will include a more detailed narrative on the institutional roles, responsibilities, coordinating actions and feedback mechanisms of project related partners. In addition, a section will be included to cover progress on project establishment and start-up activities and an update of any changed external conditions that may affect project implementation.

As part of the Inception Report, the project team will also prepare a draft Reports List, detailing the technical reports that are expected to be prepared on key areas of activity during the course of the Project, and tentative due dates. Where necessary this Reports List will be revised and updated, and included in subsequent PIR/APRs. Technical Reports may also be prepared by external consultants and should include comprehensive, specialized analyses of clearly defined areas of research within the framework of the project. These technical reports will represent, as appropriate, the project's substantive contribution to specific areas, and will be used in efforts to disseminate relevant information and best practices at local, national and international levels.

When finalized, the Inception Report and Reports List will be circulated to project counterparts who will be given a period of three calendar weeks in which to respond with comments or queries. Prior to this circulation of the Inception Report, UNDP Egypt and the Project Steering Committee will review the document.

An Issue Log shall be activated in Atlas and updated by the Project Coordinator to facilitate tracking and resolution of potential problems or requests for change.

6.2 Periodic Monitoring

A detailed schedule of project review meetings will be developed by the project management team, in consultation with project implementation partners and stakeholder representatives and incorporated in the Inception Workshop Report. Such a schedule will include: (i) tentative time frames for Steering Committee Meetings, (or relevant advisory and/or coordination mechanisms) and (ii) project-related M&E activities.

Day to day monitoring of implementation progress will be the responsibility of the Project Coordinator, based on the project's Annual Workplan and its indicators. The Project Coordinator will inform the UNDP CO of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely and remedial fashion.

Periodic monitoring of implementation progress will be undertaken by the UNDP CO through quarterly meetings with the project proponents, or more frequently as deemed necessary. This will allow parties to take stock and to troubleshoot any problems pertaining to the project in a timely fashion to ensure smooth implementation of project activities.

Within the annual cycle

- On a quarterly basis, a Project Progress Report (PPR), including quality assessment shall record progress towards the completion of key results, based on quality criteria and methods captured in the Quality Management table below.

- *Quarterly Progress Reports:* Short reports outlining main updates in project progress will be provided quarterly to the local UNDP Country Office by the project team.
- An Issue Log shall be activated in Atlas and updated by the Project Coordinator to facilitate tracking and resolution of potential problems or request for change.
- Based on the information recorded in Atlas, a Project Progress Report (PPR) shall be submitted by the Project Coordinator to the Project Board through Project Assurance, using the standard report format available in the Executive Snapshot.
- A project Lesson-learned log shall be activated and regularly updated to ensure on-going learning and adaptation within the organization, and to facilitate the preparation of the Lessons-learned Report at the end of the project
- A Monitoring Schedule Plan shall be activated in Atlas and updated to track key management actions/events

Annually

- **Annual Project Review.** Based on the above reports, an annual project review shall be conducted during the fourth quarter of the year or soon after, to assess the performance of the project and appraise the Annual Work Plan (AWP) for the following year. This report will be submitted in the format designated in the UNDP Enhanced Results Based Management Platform. In the last year, this review will be a final assessment. This review is driven by the Project Board and may involve other stakeholders as required. It shall focus on the extent to which progress is being made towards outputs, and that these remain aligned to appropriate outcomes.
- **Annual Financial Audit.** The Government will provide the Resident Representative of the UNDP with certified periodic financial statements, relating to the status of EU/UNDP funds according to the established procedures set out in the Programming and Finance manuals. The project will be audited by an independent legally recognized auditor according to the UNDP rules and regulations.

6.3 End of Project

During the last three months, the project team will prepare a brief terminal report. The terminal report will summarize the results achieved (objectives, outcomes, outputs), lessons learned, problems met and areas where results may not have been achieved. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the project's results.

6.4 Learning and Knowledge Sharing

Up to 5 percent of national resources shall be dedicated to capturing best practices and lessons learned, and raising the visibility of the project – both internally and externally. Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums at the sub-national, national, regional, and global levels. The national management unit will work closely with the Programme's Global Support Component in this context. For more detailed information on project visibility components, please refer to Appendix B.

The project team will also identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation through

lessons learned, including those of the UNFCCC Conference of the Parties and Subsidiary Body for Scientific and Technological Advice.

The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects. There will be a two-way flow of information between this project and other projects of a similar focus, supported by the Programme's Global Support Unit.

In particular, learning and knowledge sharing at the national level will be mainly designed to be achieved through the following activities:

- During the life cycle of the project, two national symposia will be held, one in Cairo and one in Alexandria (or another selected city).
- Annual paper will be prepared for participation in regional or international conferences/workshops/symposia.
- Periodic Pamphlets, highlighting best practices and lessons learned, will be published and distributed locally, regionally and internationally, either through media instruments or conferences/workshops/symposia.
- Best practices and lessons learned will be disclosed via Web Sites of the project's main stakeholders, particularly EEAA.
- Regular (monthly or quarterly) information sharing opportunities between the project's technical working groups AND with the TNC teams for inventories and mitigation will be established.
- Other key stakeholders in these information sharing sessions, e.g. CDM counterparts, Ministry reps will be included as appropriate.
- Ways to engage with the Cleaner Production Centre, as well as the industry engagement will be identified.

Monitoring and Evaluation (M & E) Workplan

Type of M&E activity	Responsible Parties	Time frame
Inception Workshop and Report	<ul style="list-style-type: none"> ▪ Project Coordinator ▪ UNDP CO, UNDP EEG 	Within first two months of project start up
Quarterly report on <i>output and implementation</i> (Atlas and ERBM)	<ul style="list-style-type: none"> ▪ Oversight by Project Coordinator ▪ Project team ▪ UNDP CO 	Quarterly
Periodic status/ progress reports	<ul style="list-style-type: none"> ▪ Project coordinator and team 	Annually
Project Terminal Report	<ul style="list-style-type: none"> ▪ Project coordinator and team ▪ UNDP CO 	At least three months before the end of the project
Audit	<ul style="list-style-type: none"> ▪ UNDP CO ▪ Project coordinator and team 	Annually

7. LEGAL CONTEXT

This Project Document, together with the CPAP, shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement between the Government of Egypt and the United Nations Development Programme, signed by the parties on 19 January, 1987.

Consistent with the Article III of the Standard Basic Assistance Agreement, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner.

The implementing partner shall:

- a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
- b) assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

This project forms part of an overall programmatic framework under which several separate associated country level activities will be implemented. When assistance and support services are provided from this Project to the associated country level activities, this document shall be the "Project Document" instrument referred to in: (i) the respective signed SBAs for the specific countries; or (ii) in the [Supplemental Provisions](#) attached to the Project Document in cases where the recipient country has not signed an SBA with UNDP, attached hereto and forming an integral part hereof.

This project will be implemented by the Egyptian Environmental Affairs Agency (EEAA) / Ministry of State for Environmental Affairs (MSEA) ("Implementing Partner") in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.

The responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNDP's property in the Implementing Partner's custody, rests with the Implementing Partner. The Implementing Partner shall: (a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried; (b) assume all risks and liabilities related to the Implementing Partner's security, and the full implementation of the security plan. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

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8. APPENDIX A: TECHNICAL COMPONENTS OF THE PROJECT PROPOSAL

1. Description of Project Outcomes and Key Activities

The **goal** of this project is to assist Egypt in the design of low-emission development strategy (LEDS), as well as developing Public Sector and Industry capacities in terms of Nationally Appropriate Mitigation Actions (NAMAs), portfolio development and mitigation action plans, as well as the associated Measurement, Reporting and Verification (MRV) requirements, within the context of national development needs.

The proposed project **outcomes**, which are described further below, are:

Area 1: Public Sector (i.e. executive administrative entities that are public)

- Outcome 1: Up to 6 detailed NAMAs formulated in the key sectors of energy and transport within the context of national development priorities
- Outcome 2: LEDS formulated within the context of national development priorities
- Outcome 3: MRV systems have been designed to support implementation and evaluation of associated NAMAs and LEDS

Area 2: Industry (i.e. industrial entities that are either public or private)

- Outcome 4: Mitigation action plans have been established in the cement and fertilizer industries as priority industrial sectors for mitigation action plans (the iron & steel industry is ranked the third if the project budget allows for its inclusion), including up to 4 full-documented mitigation projects developed
- Outcome 5: MRV systems have been designed to support and monitor mitigation actions.

Area 1: Public Sector (i.e. executive administrative entities that are public)

- Outcome 1: Up to 6 detailed NAMAS have been formulated in the energy and transport sectors within the context of national development priorities**

Scope: Why Energy and Transport Sectors?

The Energy Sector

Promotion of energy efficiency and utilization of renewable resources of energy not only contribute to the reduction of greenhouse gases but also are consistent with the long-term development goals of the Egyptian economy. Various policies and measures related to internalizing renewable energies, energy efficiency and reduction of GHG emissions, as advocated in the UNFCCC, have been developed in Egypt.

Accelerated developments are taking place for introducing renewables, fuel switching in industry and transport, domestic and industrial efficiency programs, energy-efficient buildings, agriculture and plantation schemes to enable establishment of an economic structure that prioritizes energy efficiency. This reflects Egypt's basic policy direction and measures for greenhouse gas reductions to contribute to the global efforts to mitigate climate change, though not legally required to do so.

The annual consumption of primary fuels reached 59.5 million tons in 2008, and the annual growth rate reached 7.1%. The CO₂ emissions amounted to 172.58 million tons, having emission factor of 2.9 ton CO₂ per ton of primary fuel mix. The analysis for historical primary fuel consumption and the

anticipated consumption till 2020 shows that the average annual growth rate in CO₂ emissions is 4% to 7.1% for fuel growth rate, due to increase in Natural Gas share in primary fuel.

The major consumers of primary fuel are the electricity sector and the industrial sector, at a share of 36.18% and 27.8%, respectively.

The forecasts of hydrocarbons consumption by sector for the period 2006/07-2026/27 according to the various scenarios are as follows:

- Scenario (1): the business as usual case (BAU)
The total petroleum products and natural gas consumption is expected to increase from about 61 million ton oil equivalent (MTOE) in 2006/07 to about 123 MTOE in 2016/17 and about 251 MTOE in 2026/2027, with an average annual growth rate of about 7.3% during this period.
- Scenario (2): Mitigation measures integrated in the strategy, include 5000 MWe Nuclear power and 20% renewables
The total petroleum products and natural gas consumption is expected to increase from about 61 MTOE in 2006/07 to about 117 MTOE in 2016/17 and about 205 MTOE in 2026/27, with an average annual growth rate of about 6.2% during this period.
- Scenario (3): Mitigation measures integrated in the strategy include 5000 MWe Nuclear power, 20% renewables, in addition to 20% reduction due to an energy efficiency improvement program
The total petroleum products and natural gas consumption is expected to increase from about 61 MTOE in 2006/07 to about 101 MTOE in 2016/17 and about 192 MTOE in 2026/27, with an average annual growth rate of about 5.9% during this period.

Forecasts of fuel consumption for energy production underscore the urgent need for measures to reduce GHG emissions.

The Transport Sector

The transport sector inventory is based on national statistics for national transportation facilities (vehicles, railway tractors, national aviation, etc.). Data was collected from fuel producers (Ministry of Petroleum, and the Egyptian General Petroleum Corporation) as well as fuel distribution companies. Calculations were primarily based on data available from international sources, which took into account variations in local operating conditions (Hindawi, 2007).

The total number of vehicles registered in Egypt increased from 1,025,060 in 1990 to 2,292,576 in 2000, and railway locomotives increased from 774 to 870 units over the same period. The CO₂e emissions from the transportation sector increased from 21.368 Mt in 1990 to 27.21 Mt in 2000. The aggregate transportation sector inventory resulting from the total fuel combustion amounted to 27.27 Mt CO₂e per year and check-up by detailed bottoming-up calculations yielded 25.18 MtCO₂e per year. The compatibility of the two results shows rationality of the two approaches.

The transport sector accounted for about 27% of Egypt's GHG emissions in 2000. It is the most rapidly growing source of GHG emissions in Egypt, and the energy intensity in this sector is particularly high due to the low efficient-engines using hydrocarbon fuels (gasoline and diesel oil), and to the primary reliance on road transport as the main means of transportation.

Based on a Cabinet of Ministers decision, the Ministry of Transport developed a strategy for improving national transport and urban traffic, in addition to controlling exhaust emissions from road-going vehicles in Egypt. Other mitigation options considered include public transport initiatives, energy efficiency improvements, fuel switching and new propulsion technologies.

Implemented mitigation measures in the transport sector to date have entailed energy efficiency through improvement of vehicle maintenance and tune up; awareness campaigns for using natural gas in commercial vehicles; extending the electrified underground transportation to new areas in Greater Cairo; intensifying the use of environmentally sound river transport; and facilitating the replacement of old taxis.

For more detailed information on Egypt's energy and transport sectoral emissions, please refer to Appendix C.

Methodological approach

Egypt plans to follow the methodological approach described by the Energy Research Center of The Netherlands (ECN) in its discussion paper, *On Developing A NAMA Proposal* (2011). The main steps of this approach are briefly described below and reflected in Figure 1.

Step 1: Identification and scoring

A first step requires identifying opportunities for mitigation actions that can be packaged as potential NAMAs, and making a first assessment of costs and benefits, and feasibility of implementation. This step involves technical research and is typically executed by the government body dealing with climate change. Ideally, during this initial fact-finding step, ministries, departments and agencies in any way connected to these potential NAMAs, are involved and kept informed. Such involvement is considered crucial for buy-in later on in the development process. The outcome of the first step is a long-list of potential NAMAs and their attributes.

The outcome of step 1 will be a long-list of potential NAMAs and associated *fact sheets* (or 'score cards') for use in the following *prioritization and selection* step. In reality however, it may be desirable to make a pre-selection based on priorities of the government and support providers. This can save time and resources and limit the amount of potential NAMAs to analyze and score.

Step 2: Prioritization and selection

Building on the factual information acquired, the second step is for the government to prioritize the potential NAMAs and select those to be further elaborated at that time. This is essentially a political choice and thus requires the involvement of high level government/political decision makers. The outcome of the second step is a short-list of 5 potential NAMAs.

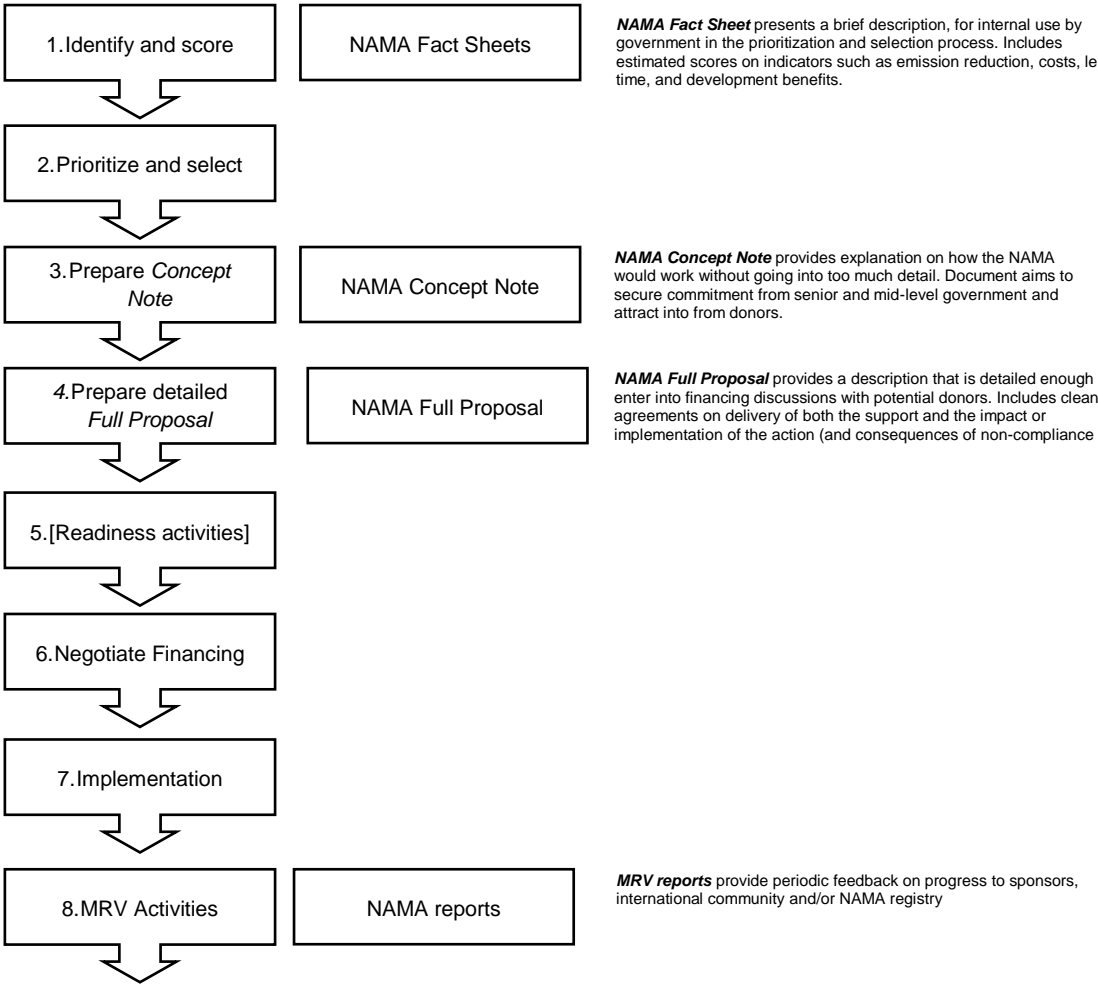
Step 3: Preparation of "concept notes"

This step involves outlining the complete (conceptual) picture of what the NAMA could look like, but not in comprehensive detail. This should be done by policy makers, possibly with input from technical assistance. This *NAMA concept note* facilitates discussions with potential donors and provides a basis for further examination. The main stakeholders in this step are mid- to high-level government decision makers and potential donors (bilateral and multilateral).

Step 4: Detailed NAMA proposals

The fourth step is the development of *full NAMA proposals*, detailed enough to be a basis for negotiation of support and implementation conditions between government and sources of support. Key challenges in the development of a full NAMA proposal will be to develop a robust financing and MRV arrangement. The outcome of this step is one or more detailed NAMA proposals. The target audiences for the detailed NAMA proposals are the policy makers that will need to decide on the NAMA, and the potential financiers.

Figure-1: Main Steps in the Development of a NAMA and Supporting Documents



2010-2011 ECN Policy Studies.

In Egypt, the work will focus more narrowly on the identification of concrete **NAMAs** that can be implemented in selected sectors (i.e., energy and transport), based on the prioritization exercises undertaken during the context-assessment workshop. The proposed outputs and activities are as follows:

Output 1: Groups of stakeholders identified

Output 2: Potential NAMAs identified and scored (result: NAMA fact sheets)

- Activity 1: Identify Key Policy Objectives
- Activity 2: Develop selection criteria / process for actions
- Activity 3: Draft Preferred Measures (including stakeholder consultations)
- Activity 4: Score preferred NAMAs and score (including stakeholder consultations)
- Activity 5: Prepare NAMA fact sheets

Output 3: Potential NAMAs prioritized and selected

- Activity 1: Test political support by engage decision makers and other key stakeholders.
- Activity 2: Consult with other departments and stakeholders.

Output 4: 12 NAMA concept notes prepared and presented to key stakeholders (result: NAMA concept notes)

- Activity 1: Analyze NAMAs to Identify Emission Reduction Potential and other benefits
- Activity 2: Prepare NAMA fact sheets to discuss with decision-makers and other key stakeholders
- Activity 3: Consultation process to agree on NAMAs for detailed proposals

Output 5: Up to 6 detailed NAMA proposals prepared

- Activity 1: Determine what data is needed to develop, implement and MRV the NAMAs
- Activity 2: Describe specific activities, activity levels, emission factors, emission reductions potential, and sustainable development benefits
- Activity 3: Prepare detailed implementation plan, including timeline and responsibilities
- Activity 4: Prepare detailed mitigation analysis
- Activity 5: Prepare Financial plan (costs, own contributions, need for support)
- Activity 6: Describe MRV plan
- Activity 7: Finalize detailed proposal NAMAs (with stakeholder consultation)

Outcome 2: Low-Emission Development Strategy (LEDS) has been formulated within the context of national development priorities

Scope

The decision on the scope of the LEDS will be finalized during the first stage of a national consultation process, using an analysis of the national situation, including:

- national development priorities and trends, including economic, social, poverty eradication, sustainable development, energy security, green job creation and how they relate to low emission development goals;
- the position of Egypt and its commitments under the UNFCCC and the Kyoto Protocol;
- existing relevant programmes and strategies e.g. national and sectoral programmes that affect GHG emission (e.g. renewable energy or energy efficiency programmes, land-use and waste management initiatives, national sustainable development strategies etc.), on-going and past climate change related projects (e.g. in the UNDP/GEF pipeline, under the UNDP MDG Carbon Facility, other initiatives).

The result of the analysis of the scope and objectives will be presented in the form of a **Low Emission Development Concept (LEDC)**, which is a concise policy document that outlines the objectives of a LED strategy, its links and contribution to the Egypt's national development goals.

In Egypt, very few communications, strategies or initiatives deal directly with climate change. However, some initiatives are indirectly tackling the causes or the impacts of climate change and will be very relevant to the LED process. Among the most relevant are the following:

Within the Ministry of State for Environmental Affairs (MSEA)

- Egypt's *Initial National Communication on Climate Change* was prepared by the EEAA and communicated to the UNFCCC in June 1999. This document gave a first view of the Egyptian situation concerning climate change and helped launch the first National Plan for Climate Change. The *Second National Communication on Climate Change* was published in May 2010 in order to prepare for the Copenhagen climate talks.
- *EEAA Action Plan for Climate Change (2002-2007)*: This plan set national goals to increase information to better tackle climate change consequences. It laid emphasis on cooperation with international community. Among the components of this project were: raising public awareness on climate change, including its economic dimensions; capacity building; identifying international financial and technical aid; technology transfer; policy-making; adaptation programs and impact studies; and the role of Non-Governmental Organizations.
- *National Environmental Action Plan, NEAP (2002-2017)*: This plan was launched to set up the Egyptian agenda concerning environmental actions. The pursued goal is to integrate environmental considerations into all relevant national policies and programs. Even if climate change is not the core of this plan, the tackled issues are often linked to its consequences (air quality and the decreasing of air pollution) or to the fields which will be concerned by these consequences (desertification, water quality or management of land resources).

Within the Ministry of Electricity and Energy

- In 2003, the Egyptian government set a new goal for energy sector: to reduce by 10%-20% the energy intensity on the production side (electricity and hydrocarbons) and on the demand side (industry and residential). To pursue that goal, labelling programs and consumption standards have started to be developed.
- In 2007, the Egyptian government publicly declared its intention to start a program of building nuclear power plants. In February 2008, a first call to find a proper consultant was made. The first commission should occur in 2017.
- *The National Strategy for Wind Energy (until 2020)*: Egypt has a high potential of wind energy. In February 2008, the Supreme Council of Energy of Egypt launched a plan, aiming to reach 20% of the electricity produced by renewable energies by 2020, with a contribution of wind energy by 12%. This wind power plan will built about 7,200 MW grid-connected wind farms. This plan includes private investments.

Within the Ministry of Finance (MoF)

- *National Programme for Taxi replacement*: This National Programme was launched in March 2009, following two consecutive pilot phases executed by the EEAA. The programme aims at replacing all Cairo taxis older than 20 years by 2011. 34,000 taxis in Greater Cairo Region are

concerned, which corresponds to about 40% of the city's black & white taxi fleet. In order to afford a new vehicle, each driver will receive EGP 5,000, will benefit from MoF's subsidies covering custom duties and value added taxes and will be offered a loan by partnering commercial Banks.

Methodological approach

The Low-Emission Development Strategy (LEDS) will outline the intended overall economic, energy, and emissions trajectory for Egypt and helps to identify trigger points for policy intervention (including ensuring coherence between NAMAs and national development goals).

The approach to be used is that described in UNDP's How-to Guide: *Low-Emission Development Strategies and Nationally Appropriate Mitigation Actions: Eastern Europe and CIS* (UNDP, 2010).

The **base year and timeframe** for the analysis are still to be determined, but consideration will be given to the UNFCCC negotiations outcomes, where medium-term (up to 2020) and the long-term (2050) emission trends and targets are being discussed.

With respect to the scenario development, Egypt has already developed BAU scenarios, modelled using ENPEP^(*), for its national communications to the UNFCCC. These existing scenarios will be analyzed to check whether any updates are required in the light of revised economic development scenarios and national and sectoral policy decisions.

Egypt plans to undertake some initial groundwork on NAMAs before commencing the LEDS. The work on NAMAs in the energy and transport sectors will continue in parallel to the overarching LEDS development process.

The proposed outputs and activities are as follows:

Output 1: LEDS Scoping and Planning undertaken

- Activity 1: Main principles of LEDS development discussed with key stakeholders (awareness raising)
- Activity 2: Scope and objectives determined
- Activity 3: Institutional arrangements and process planning agreed and established

Output 2: Reference and low-emission (mitigation) scenarios developed

- Activity 1: Review existing projections and models and gather data for GHG emission scenarios
- Activity 2: Choose analytical tools for development of GHG emissions scenarios
- Activity 3: Determine base year and timeframe for the analysis
- Activity 4: Develop reference emission scenario(s)
- Activity 5: Develop mitigation emission scenario(s)

Output 3: Mitigation options determined in key sectors

- Activity 1: Identify potential GHG abatement opportunities in the key sectors
- Activity 2: Review potential climate change mitigation policy instruments

(*) ENPEP: Energy and Power Evaluation Program (ENPEP): The Windows version of the Energy and Power Evaluation Program (ENPEP-BALANCE) is the premier energy systems analysis software in use in over 80 countries. ENPEP-BALANCE has been developed by CEEESA with support from the U.S. Department of Energy (DOE). ENPEP-BALANCE allows users to evaluate the entire energy system (supply and demand sides) and the environmental implications of different energy strategies. The latest ENPEP-BALANCE version takes full advantage of the Windows operating environment.

- Activity 3: Priorities mitigation measures
- Activity 4: Quantify GHG reductions and the costs of the chosen measures and policies and formulate PAMs or NAMAs

Output 4: Financing of mitigation options assessed

- Activity 1: Determine financing needs for mitigation measures and policies
- Activity 2: Identify available domestic financial resources
- Activity 3: Determine the need for external financial support
- Activity 4: Identify sources and opportunities for obtaining support
- Activity 5: Identify links with on-going processes, e.g., GEF projects, etc.

Output 5: Prepare plan for implementing, monitoring and MRV of LEDS

- Activity 1: Prepare implementation plans and processes for LEDS
- Activity 2: Describe arrangements for MRV
- Activity 3: Identify priority pilot projects
- Activity 4: Submit Requests for Obtaining Support

Outcome 3: MRV systems have been created to support implementation and evaluation of NAMAs and LEDS

MRV can serve a wide range of purposes in a new climate agreement. It can provide an important means of tracking parties' progress individually and collectively toward the Convention's ultimate objective. The very process of measurement can facilitate parties' actions by establishing baselines and helping to identify mitigation potentials. The reporting of actions can allow for their recognition internationally. The review or verification of parties' actions can enhance action through expert advice on opportunities for improvement.

MRV could play a particular role in the linkage between developing countries' action and support for those actions. Finally, credible MRV can strengthen mutual confidence in countries' actions and in the regime, thereby enabling a stronger collective effort.

Scope

While the main focus of Egypt's public sector activities is the formulation of effective NAMAs and LEDS, attention will be paid to improving MRV systems. This will be done by establishing appropriate indicators for monitoring mitigation actions, as well as by helping to create conditions necessary to support future investment in mitigation measures.

Methodological approach

The focus will be on establishing scopes, metrics/indicators, reporting mechanisms, verification mechanisms, and time frames. An improved MRV system will take into account whether NAMAs are implemented autonomously, through support from developed countries, or through an international crediting mechanism. Suggested criteria for the MRV systems include: credibility, cost effectiveness, timeliness, and a simple and clear procedure which provides enough flexibility for a wide range of mitigation actions.

Although there are still no adopted guidelines on MRV, there will be some overarching principles of good practice, such as using the GHG estimation and reporting processes described in the IPCC guidance materials for GHG inventories. Some considerations in this context include:

1. *GHG National Inventory System in place.* The NIS provides the framework for a clear and transparent system for accounting, recording, monitoring data and emissions, as well as underlying assumptions and data/information sources.
2. *Performance indicators and a clear process for measuring and reporting on NAMA/LEDS/PAM implementation are to be established.* Timeframe and frequency at which data is submitted are to be identified. QA/QC system is to be put in place.
3. In many cases, GHG emissions/carbon intensity are clear measures of performance. However, policies and measures that create incentives for private sector engagement, that change consumer behavior, or aim to create green economy jobs will have less direct links to GHG emissions reductions and will most likely require alternative measurement indicators. How would GHG intensity or renewable energy capacity be measured? In addition to needing to identify the most suitable proxy indicators, introducing a range of varying metrics may create difficulties where aggregation of reporting on NAMAs is desired. These trade-offs will need to be considered. In these cases, it is likely that a supplement to the national GHG inventory will be required.
4. Greater capacitating efforts will be required if the private sector and/or local and sub-national governments must report on GHG emissions – especially if complex methodologies are required for estimating emissions (e.g., in the phosphate, copper, and cement industries) and/or for measuring & verifying (e.g., carbon pool measurement and verification for land-use change and forestry actions). Lack of data is a commonly cited constraint in this context. There is a need to think carefully about the underlying data requirements of selected NAMAs, LEDS and/or MAPs.

In this context, Egypt will also draw upon its experience with reporting under the CDM, as well as its experience in preparing GHG inventories as part of the National Communications process under the UNFCCC. It should be noted that Egypt will put in place a National Inventory System as part of its Third National Communication, which is just starting implementation.

The main outputs are:

Output 1: Capacity built in MRV-related activities in order that high government officials can support NAMAs and LEDS

This includes Ministries such as those of Environment and Finance. Activities will consist primarily of tailor-made information sessions. Guidance materials will be prepared, including an MRV system training toolkit and compilations of case studies of MRV Protocols, and LEDS Protocols.

Output 2: MRV systems designed to support the implementation of NAMAs and LEDS

Among other things, work here includes the selection of appropriate methodologies and monitoring protocols; training for the use of protocols and tools; establishment and organization of a reporting process; and selection of verification bodies.

Output 3: National technology systems designed for information and monitoring.

This activity will be built on the GEF-funded current initiatives on technology needs assessments (TNA). TNA is a process intended to prioritize technology types appropriate to basic economic sectors in Egypt (Energy, Industry, Transport, Waste and Agriculture) for achieving green economy

development. This assessment provides a baseline input to the overall objectives of the LEDS. Technology systems that are established throughout this process will be subject to MRV designs and support.

Linkages to other relevant initiatives: public sector component

Clearly, all the proposed work in the public sector components has direct linkages to the National Communications process. In this context, it is worth noting that Egypt also has undertaken some GHG inventories at the sub-national level and consideration of how to incorporate this work, as appropriate, will be taken into account. Under the Third National Communication, which is commencing implementation, Egypt will establish a national GHG inventory system.

Furthermore, the previously prepared MSEA document regarding the "National Action Plan on Climate Change", the UNFCCC supported document on the "National Economic, Environment and Development Study (NEEDS) for Climate Change, the UNDP supported document on the "Potential Impacts of Climate Change on the Egyptian Economy", the World Bank supported document on the "Arab Republic of Egypt: Country Environmental Analysis", the UNDP supported document on the "Identification of CDM Projects in the Industrial Sector of Egypt" and the two USAID supported documents on the "Solid Waste Strategy for Egypt" and the "Egypt's Energy Efficiency Strategy" will provide an elaborated background work for the effort needed to capacity building in establishing LEDS.

Egypt's CDM portfolio and pipeline, as well as GEF-financed mitigation projects, will also provide insights for this work, including potential indicators for the MRV strategies for selected NAMAs and the LEDS.

Institutional and political considerations: public sector component

NAMAs and the LEDS will need to be embedded in national development policies and within the existing institutional framework at the national level. The challenge is to build and sustain high-level stakeholder support (both public and private). Cross-sectoral cooperation will be encouraged under the LECB project, with stakeholder engagement firmly embedded. Working arrangements will need to be defined at several levels (e.g., stakeholders, political leaders, technical, sub-national).

Regular stakeholder engagement to address political roadblocks will be enhanced, with particular attention paid to national institutional processes and potential to improve the enabling environment. Highlighting approaches and policies being undertaken in other countries as constructive inputs for policy makers will be conducted.

As with the GHG national inventory system, it will be important to raise awareness of all key stakeholders on the necessity for MRV to ensure full engagement. It may be useful to consider developing a strategy to engage key providers of data and ensure they are adequately trained.

Capacity considerations: public sector component

Through its National Communications, Egypt has developed a general overview of possible mitigation options but without the detailed analysis required to implement them, as appropriate. More detailed mitigation assessments will require addressing identified capacity gaps in the following areas: use of specific models for mitigation analysis at the sectoral level; development of baseline and mitigation scenarios to estimate emission reduction potential; development of socio-economic scenarios; and feasibility analysis of the mitigation options identified, including cost assessments.

As a new area of work emerging under the UNFCCC, Egypt has yet to develop its capacity and experience in the design of LEDS. Specifically, there is a need to enhance Egypt's understanding and skills to bring mitigation actions into a coherent strategy that is adequately linked to national development. Preliminary capacity constraints in this area include: use of appropriate tools to assess and prioritize LEDS in the context of development needs; design of institutional frameworks to ensure appropriation of strategies by the relevant stakeholders; and estimation of resources (financial and technical) required for the implementation of LEDS.

More broadly, there is also a need to increase institutional capacities to provide appropriate mechanisms of support and coordination when addressing climate risks. This includes strengthening technical knowledge in order to better understand and make use of climate information, and increasing relevant data and access to data for planning and decision making. In these areas, the LECB project will play an important role in helping Egypt understand how to take climate change into account more effectively when developing planning strategy and designing and implementing policies.

New methodologies are being developed by different organizations for the development and adoption of MRV systems. Complex procedures will need to be designed and adopted by Egypt to include MRV under the project. Common capacity constraints include: use of tools to track and assess impacts of actions adopted to address GHG emissions; design of mechanism for coordination and regular reporting of mitigation and other related actions in the context of NAMA or LEDS; use of approaches to develop verification procedures for actions that Egypt may implement under NAMA or LEDS; and design of organizational structure required for MRV systems.

Specific capacity building activities will be identified via the project inception workshop.

Area 2: Industry (i.e. industrial entities that are either public or private)

Sectoral programmes in the industry sector, categorized in the Bali Action Plan as "cooperative sectoral approaches and sector-specific actions", could play an important part in Egypt's low-carbon growth strategy. Sectoral programmes (i.e., a group of associated NAMAs designed to achieve a sectoral goal) would allow Egypt to continue to grow its industry, but in a more climate-friendly manner and without compromising Egypt's sustainable development.

The main goal is to facilitate uptake and scale up of mitigation actions in at least two selected sub-sectors in Egypt: **cement and fertilizers** (and possibly **iron & steel**, if budget and time allows) taking sector characteristics and national circumstances into consideration. This will be achieved by developing industry's capacity to:

- Manage greenhouse gas emissions data (e.g. capacity to measure emissions and monitor how these change if processes are adapted) for instance through the use of existing standards, protocols and guidelines.
- Identify and (self) assess technology/management options to improve energy efficiency and reduce emissions while improving productivity (e.g. identification of detailed energy consumption and saving possibilities; modeling of optimization of processes).
- Access information on technologies and services supplied by environmental industries.

- Tap on additional sources of financing that will allow industry to carry out the necessary investments if wanted/needed (e.g. World Bank, EDB, etc.) or policy instruments that encourage lower emissions (e.g. opportunities provided by carbon markets).
- Identify and possibly overcome mitigation barriers, both regulatory and private.
- Exchange best practices and information.
- Assist enterprises in understanding and formulating the argument as to why lower emissions are 'better for business'.

Scope: Why Cement, Fertilizers and Iron & Steel Industries?

According to the 1996 IPCC document "*Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*" (IPCC, 1996), the main sources of GHG emissions from industrial processes entail the cement industry, limestone and dolomite production and use, iron and steel industry, N₂O production for nitric acid and fertilizers production, PFCs from aluminum smelting, emissions related to the consumption of HFCs and other substitutes of ozone depleting substances, as well as SF₆ from magnesium production and electrical equipment.

In Egypt, the energy consumption of high intensive energy consumers represents about 53% of the total consumption of the industrial sector in 2010. The distribution of high intensive energy consumers in Egypt during 2010 is 35% for steel, 25% for cement, 22% for fertilizers, and 18% for others.

Emissions from Egyptian industries by gas type. Emissions primarily entail CO₂, with the largest contributors being the cement and iron & steel production sectors. The primary source of N₂O emissions is nitric acid production for the fertilizer industry, while aluminum production (smelting process) is the primary source of PFCs. These main sources contribute about 28 Mt of CO₂e per year, representing more than 99% of the total emissions of Egypt's industrial sector. Other minor sources are ozone depleting substances and the lime industry.

Egypt's open market economy attracted energy-intensive industries such as cement and fertilizer industries, which are highly dependent on the consumption of natural resources, including natural gas. In 2000, the GHG emissions due to cement, iron & steel and fertilizers industries represented 95.8% of the total emissions of Egypt's industrial sector. This resulted in a 275% increase of the GHG emissions of the industrial sector for 2000 relative to those of 1990, while the increase in the overall GHG emissions of Egypt amounted to 165% for the same period. For more detailed information on Egypt's cement, fertilizers and iron & steel industries, please refer to Appendix D.

Linkages to other relevant initiatives

Clearly, the work undertaken under this component has a direct linkage to the National Communications process. Egypt also has undertaken some GHG inventories at the sub-national level and consideration of how to incorporate this work, as appropriate, will be taken into account.

In addition, work of the "Cleaner Production Technology Center" (CPTC), undertaken for CDM projects and work linked to using cleaner technology in selected industries or for institutionalizing cleaner production technology in the Egyptian industries in general have also tight linkages to the work under this component. Indicators being used in mitigation projects financed by the GEF or other sources will also provide insights for the MRV strategy.

Outcome 4: Mitigation Action Plans in at least two selected industries have been established

Methodological approach

A UNDP funded fast track study for Iron & Steel, Cement and Fertilizers Industries entitled: "Analysis of Industrial Sector Eligible for NAMAs in Egypt" has been conducted to analyze the potential for emissions reductions in the three industrial sectors, for recommending the priority sector(s) for the industrial component. The study concluded that the cement sector was the highest priority, followed by fertilizers, and then iron & steel.

Egypt intends to build the work under this component on the basis of the methodology provided earlier on a UNFCCC presentation paper entitled "Structure of a Mitigation Assessment". The main steps of this approach are briefly presented below and summarized in Figure-2.

The main outputs are as follows:

Output 1: Sectoral approaches identified in selected industries (i.e., cement and fertilizers)

Sectoral approaches have mainly pursued two major models: i) sectoral bottom-up approaches and ii) sectoral carbon finance approaches. Both of these approaches will be analysed, taking into account Egypt's experience to date. Consideration will also be given to existing transnational or global sectoral approaches launched by industry organisations such as the Cement Sustainability Initiative (CSI) with the World Business Council on Sustainable Development (WBCSD), technology cooperation initiatives such as some established partnerships, and policy based approaches such as Sustainable Development Policies and Measures (SD-PAMs).

At least the latter two of the above initiatives and approaches generally have lower requirements both regarding MRV and data collection and use. However, a precondition for participation in the carbon market is to ensure integrity of the credits, i.e. assurance that a "tonne is a tonne". The establishment of sector baselines requires a lot of data. Nevertheless, participating in a sectoral approach needs to provide donors of technology and finance as well as buyers of credits with sufficient information and data, and convince them that a strategy is credible, notably monitorable, reportable and ultimately verifiable.

All of the above would suggest that at a minimum, however, the implementation of these two major models of sectoral approaches will require the following:

- To assess technical opportunities and to establish baselines (or some other performance goals);
- To monitor, report and verify sectoral performance to the extent that benefits from such performance can be quantified and credited in accordance with the pre-determined baselines/goals; and
- To collect and compile data of adequate quality to support the previous two points.

Output 2: Baselines and targets set

In case of selecting the sectoral approach, the industrial sector constructs a baseline and makes the case for it. In establishing and documenting the baseline, the government (MSEA/ EEAA/ MFT&I) will quantify the costs and potential emission reductions resulting from policy interventions and their combination. The information and data should be of quality acceptable by the international partners, e.g. industry and/or countries, and in approval by the bodies governing international cooperation,

e.g. the UNFCCC Secretariat. The domestic expertise and skills needed to administer the whole process may be substantial and far greater than for the current CDM.

This is especially important for the sectoral bottom-up model, where the baseline or target is usually constructed by taking into account the combined mitigation effects of multiple existing and planned PAMs. The institutional and technical capacity needed to develop, implement and evaluate PAMs should be developed under the project.

Baselines and targets are usually based on benchmarks, such as performance indicators of energy intensity (energy use per unit of output) or GHG intensity. Performance indicators or benchmarks enable industry or the government to compare the sector's (or plant's) performance levels with some reference performance levels or standards. The government (MSEA/ EEAA/ MFT & I) and industry will need to obtain and process significant data for benchmarking. As a side effect, benchmarking can help identify costs of abatement for industrial sectors. This however can require extra data and expertise.

Since the essential capacity needs in Egypt for baselines and targets relate to providing reliable data, such needs logically extend to putting measurement protocols in place and the ability to operate them. Thus the techniques and methodologies will be naturally complemented by know-how and expertise on the ground. A crucial aspect is organizing the processes and institutional set-up to make sure data is available and accessible.

Output 3: Comprehensive mitigation assessments conducted

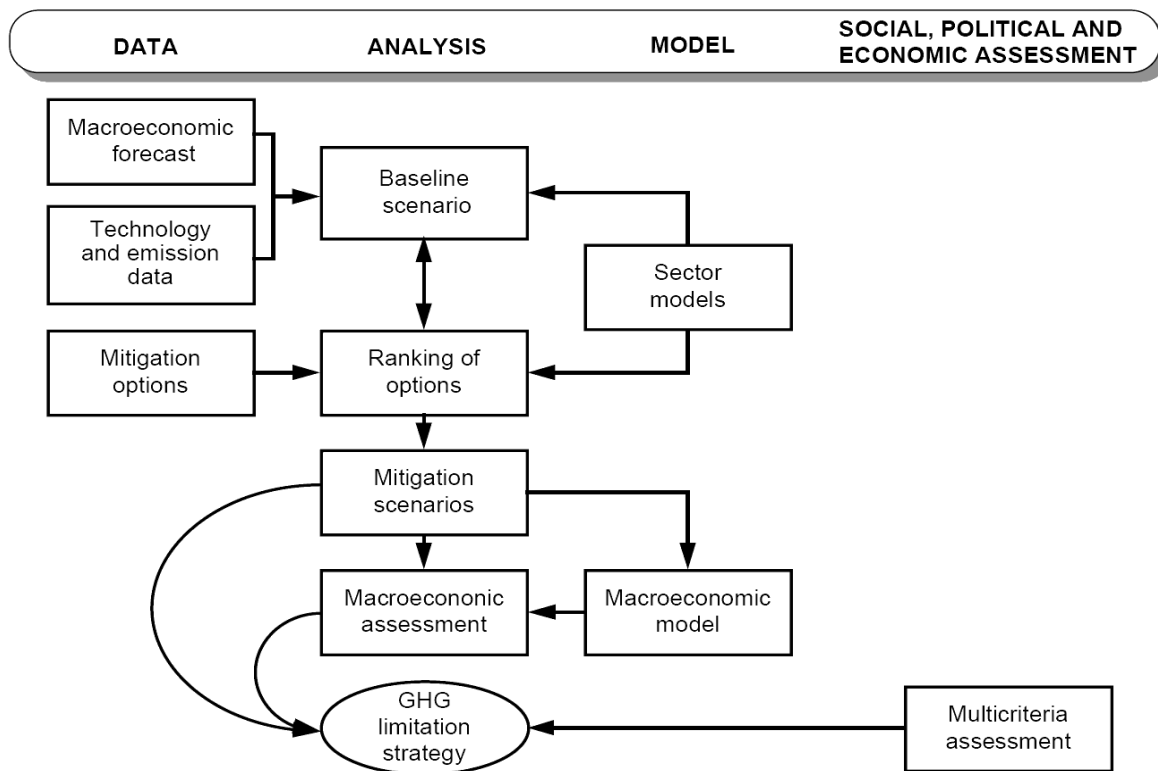
The development of mitigation assessments will require close cooperation among a wide range of stakeholders. At a minimum, the Ministries of Electricity & Energy, Foreign Trade & Industry, Environment and Finance will all need to be involved. Mitigation assessments are not simply technocratic exercises: they involve much broader judgments about how mitigation activities can fit into national development priorities. Thus, the context for defining mitigation priorities will in large part depend on the process by which priorities are expressed in the industry sector (e.g. whether priorities are set by the Government alone or in consultation with other stakeholders such as NGOs, private industries, the scientific community, etc.).

The key activities under this outcome will be:

- Activity 1: Data collection
- Activity 2: Definition of scope, timeframe, and other key parameters
- Activity 3: Assemble base year/historical data on activities, technologies, practices and emission factors.
- Activity 4: Calibrate base year to standardized statistics such as national energy balance or emissions inventory.
- Activity 5: Prepare baseline scenario(s).
- Activity 6: Screen mitigation options (potentially using cost curves)
- Activity 7: Prepare mitigation scenario(s) and sensitivity analyses.
- Activity 8: Assess impacts (social, economic, environmental)

The structure of the mitigation assessment is depicted in Figure-2 below.

Figure-2: Structure of a Mitigation Assessment



Output 4: Sectoral Mitigation Action Plans formulated, and up to 4 mitigation projects developed

The sectoral mitigation action plans will identify how to reach the agreed targets. There will be an emphasis on implementation, with strong local control and ownership. The mitigation action plans will also include aspects that increase public awareness of climate change, as well as the industry sector’s contribution to mitigating climate change. The action plans will be considered living documents, and part of a broader ongoing national process to address climate change.

One key element of this work will be the identification of up to 4 “quick win” mitigation projects that can be fast-tracked to achieve early results in the selected sectors.

Institutional / political considerations

Establishing an enabling environment to incentivize the private sector to implement mitigation action plans and adopt new technologies will be essential. A strategy should be developed to overcome the potential barriers, which could include:

- intellectual property payments that limit technological adoption in many industries;
- the high cost of more environmentally friendly technologies;
- the lack of technical capacity to establish and maintain new technologies;
- inadequate macro-economic policies and incentives to promote technology transfer;
- the lack of appropriate financial systems, especially for medium-size industries, to improve their production schemes;
- insufficient government support to industry’s involvement in GHG emissions reduction; and
- a lack of local data (e.g. technological performance, financing, insurance) for the adequate design of investment projects and for appraisal (MRV).

Capacity needs

There will be more than one form of support for capacity building needed to implement sectoral approaches, involving a range of activities, from developing data reporting instructions to training local staff in target industries in Egypt, as well as the development and implementation of procedures for data collection and MRV. Therefore, six key areas have been identified for supportive actions under the LECB project:

1. *Assessing the current level of capacity in the selected industrial sectors for data collection and needs for capacity building targeted at improvements in reliability and availability of data at technical and institutional levels.* One of the reasons for distinguishing data collection and bringing it to the fore are the systemic barriers that are different in each sector that impede not only data collection itself, but also the rest of the capacity-building process. They would have to be addressed at an early stage.
2. *Testing measurement protocols as well as analyse and assess the current level of capacity for their successful operation.*
3. *Analysing and assessing the applicability of certain types of sectoral approaches for the selected industrial sectors.*
4. *Definition of assurance measures for data collection*
5. *Gain international acceptance of data collection systems and measurement protocols.* This could be advanced through, for example, the UNFCCC process and the International Organization for Standardization/ International Electrotechnical Commission (ISO/IEC) process aimed at standardisation of measurement and reporting protocols, simultaneously in collaboration with international organisations such as the IEA which has already developed energy efficiency indicators. It is important to involve stakeholders and experts from the public and private sectors. In fact the fourth and fifth step could occur simultaneously.
6. *Further improvement of the technical and institutional capacity for MRV, depending on the agreed protocols, metrics, benchmarking methodologies etc.*

Available resources for capacity building will be allocated in the most efficient way. This could be achieved through one of the following two paths. The first is to prioritise supportive actions and activities according to a time-frame aligned with sectoral approach implementation phases. The other would be to direct the resources towards the targeted opportunities in specific sectors while mainstreaming the existing institutions. As there is sufficient space to develop Egypt's own initiatives with its own resources, capacity building could lead to a growing confidence in the government and an increasing trust in its institutions. Such a development would encourage donor countries to provide further assistance where necessary.

Outcome 5: MRV systems have been designed to support implementation and evaluation of Mitigation Action Plans in cement and fertilizer industries

Industry should be able to monitor, report and verify emissions, and track the levels of emissions or other variables (e.g. energy use) for individual facilities and their aggregate within the sector. Reliable and accurate data is absolutely essential, e.g. GHG inventories, and so is access to it by national/ international supervisory authorities. A respective high degree of robustness for achieved emissions reductions, i.e. low error margin, is needed to ensure a “tonne is a tonne” for credits sold on the international carbon market.

The main outputs under this outcome will be:

Output 1: Capacity built in MRV-related activities in order that industry can report on mitigation actions

Output 2: MRV systems designed to support the implementation of mitigation action plans

Among other things, work here includes the selection of appropriate methodologies and monitoring protocols; training for the use of protocols and tools; establishment and organization of a reporting process; and selection of verification bodies.

Capacity needs

Capacity activities will focus on addressing the following specified areas:

Lack of practical experience:

The lack of reliable emissions data in particular in most cases is one of the reasons for not using carbon intensity as a performance indicator. Additional efforts to remedy this reliability problem could significantly improve the accurate measurement of mitigation benefits on the one hand but significantly increase the administrative costs of setting up sectoral programs on the other.

There is often a significant gap in data availability between modern or large-scale plants and small-to-medium-size or old-technology plants in the key sectors. Often, the largest and newest facilities in public or private sectors are built and operated by large multinational companies who are more accustomed to such data reporting. The old public companies may be less experienced in such efforts.

Cost data is the most difficult to obtain. It is usually unavailable not only from the cement sectors but also from many plants in other sectors. Confidentiality and competitiveness concerns further complicate collection of cost data. This makes it difficult to estimate costs especially on a plant basis, which may become the basis for identifying the exact scale of support needed.

Thus in spite of sector-specific variations, the most common problems world-wide remain those associated with detailed plant-level data, especially cost-related, as opposed to aggregate sector data. Taking into account these constraints, attempts to evaluate mitigation options, potentials, or opportunities in a whole sector (with a corresponding lack of precision) may prevail, relying to a lesser extent on cost data from individual plants.

Lack of coordination:

In some cases data is collected by individual plants or companies but not in a coordinated manner within the sector. Moreover, data is not necessarily comparable across countries (for comparative purposes) or across institutions. The energy institutions, or industry-led approaches have originally used different data formats. Gradually, formats are being made compatible.

Lack of coordination in sector boundary and characterisation:

The cement sector has been most advanced in compiling an international database, referred to Getting the Numbers Right (GNR). However, the coverage is not complete. Many plants are not fully covered for several reasons including regional unevenness. Another limitation of that database is

differences between countries or regions in setting the sector boundaries, which is part of sector characterisation.

Among others, sectoral characterisation needs to describe following aspects:

- Whether and how far to go upstream and downstream in the product life cycle and the industry value chain, or whether to use process-based rather than product-based method for determining the boundary.
- How to deal with indirect emissions, primarily those from electricity consumption. This aspect has connotation for choosing energy use rather than GHG emissions as a performance indicator for certain sectoral benchmarks. One of the key issues is the electricity used instead of combusting fuel in certain sectors and in certain processes (e.g. in the iron & steel sector). Using indirect emissions also has implication for differentiated incentives and possible economic-environmental tradeoffs. Reducing energy intensity is economically efficient, but there is a technological limit beyond which further emissions reduction is only possible with increased energy input, as in carbon sequestration. In addition, it is necessary to decide how to reward on-site electricity co-generation, such as combined heat and power (CHP) or even renewable sources.
- What criteria can be used to assess compatibility with certain regulatory and market instruments. One possible criterion is to avoid double counting, such as overlap with sectors covered by different policy instruments. Clear sector boundaries are also essential for facilitating unambiguous regulation and monetization of emissions reductions.

These aspects are largely influenced by industry structure of the sector and the country. The differences in industry structures combined with the regional and national differences in the way sector boundaries are being set for regulatory or other purposes make international comparisons more difficult. This in return encourages the expert teams to adapt the coordinated or agreed boundary conditions to national industry structure.

At least measurement protocols and data collection systems under each separate sectoral programme need to be consistent with the sectoral characterisation including sector boundaries, and with the chosen performance standards calculation methods that are incorporated in the programme design.

There are internationally recognized methodologies and protocols, such as those developed under global voluntary initiatives in the, iron & steel and cement sectors (e.g. the CO₂ Accounting and Reporting Standard for the Cement Industry, developed by the CSI). While such protocols hold important lessons and may form the basis for national and global efforts on measurability, it is important that the project implementing teams maintain 'ownership' when implementing the existing protocols in respective sectors and plants. That is to say project's actors are likely to fully support only those protocols that they believe match their circumstances, as in the selected sectoral approach design features. Hence, there will be always an element of adaptation to national industry structure or sector boundary conditions. The key question will be how much adaptation is acceptable to achieve international comparison of sectoral performances.

9. APPENDIX B: VISIBILITY & OUTREACH UNDER THE LECB PROJECT

CONTEXT

The Low Emission Capacity Building Programme is considered by its donors as an innovative pathfinder project – allowing national governments to build capacities to plan their own low-emission development pathways within the context of national circumstances and national development goals. National teams are in the best position to identify on-the-ground experiences that can be collated and disseminated.

As such, national LECB project teams are encouraged to program approximately 5% of their budget for learning, knowledge sharing, communication and outreach activities and materials^(*). Visibility is a major criterion from donors for measuring success and national teams are encouraged to develop an outreach strategy the beginning of the project that is regularly monitored. At times, national teams may be called upon to provide updates on their project progress for featuring in donor publications.

Required Visibility Products

National Fact Sheet/Case Study

Each national team is expected to prepare a National Factsheet/Case study that can be used at the national and global levels (via the LECB Programme's global website, newsletter, and other outreach tools) to promote national project results and activities.

Lesson Learned/Best Practices Documents

Each national team is expected to produce a lessons learned/best practices document at the completion of each project component to showcase their results and impacts. The Global Support Unit will provide guidance on how to develop these best-practice documents, which will also be used as guidance for other developing countries embarking on a LEDS/NAMA process.

Contributions to LECB Programme newsletter

The Global Support Unit will prepare a quarterly newsletter. National teams are required to contribute with at least one newsletter article during the life of the project.

Recommended Visibility Products

National web page

National teams are requested to develop a web page or, at minimum, post relevant project activities on the most appropriate institutional website. The Global Support Unit will link to the national page from the global programme site, www.lowemissiondevelopment.org, and encourages similar linkages to the global site wherever programme promotion is featured.

National media reports

National teams are requested to liaise with the communications focal point in the UNDP Country Office regarding any media produced by or about the project, and to share media reports with the Global Support Unit for global promotional efforts, including featuring on the programme website, www.lowemissiondevelopment.org.

^(*) It is noted that these funds may be embedded in other activities, such as producing a Lessons Learned document at the end of a project component, or developing a joint webpage with the government ministry implementing the project and need not appear as a separate budget line or activity.

10. APPENDIX C: OVERVIEW OF SELECTED SECTORS FOR NAMAS

ENERGY SECTOR

A growing economy and rapidly rising population are driving energy demand, while on the supply side liberalisation is seeing a growing role for the private sector. A push to increase proven hydrocarbons-reserves is seeing increased exploration in new areas and major investments are being made in the electricity sector in line with expectations that demand double within 15 years.

Primary Energy: Oil and Gas

Egypt's consumption of primary energy for all uses rose 3.5% to 76.3m tonnes of oil equivalent (toe) in 2009, from 73.9m toe in 2008. This rise came in spite of a 1.1% fall globally, according to the "Statistical Review of World Energy" published by BP in June 2010. Consumption rose by 62.3% over the preceding decade, from 47m toe in 1999. This growth came on the back of a 180% rise in demand between 1980 and 2000.

Natural gas is Egypt's single largest source of primary energy, contributing 50.2% of the total, followed by oil (44.2%), hydroelectricity (4.1%) and coal (1.4%). The Ministry of Petroleum and Mineral Resources is undertaking a substantial expansion of hydrocarbons exploration. Additionally, it is encouraging investment in the sector with the aim of boosting proven reserves to 18.2bn barrels of oil equivalent (boe) and output to 2m boe per day.

While not a huge producer on the level of some of its MENA neighbours, Egypt has sizeable oil reserves and the sector is a major economic contributor. Output has been rising of late. Oil accounts for around 40% of Egypt's goods exports (excluding services such as tourism, often seen as an "export" sector).

The Western Desert is Egypt's leading oil-producing region, accounting for around one-third of total output. Other important regions include the Gulf of Suez (for some decades the leading production area), the Eastern Desert, the Mediterranean (predominantly a gas region with some oil reserves) and, increasingly, offshore areas in deeper sea. Egypt had 4.4bn barrels (600m tonnes) of proven oil reserves as of the end of 2009, 0.3% of the global total, according to BP. Due to the success of ongoing exploration, proven reserves increased from 4.2bn barrels at the end of 2008. While extraction has continued, new discoveries mean that proven reserves are now higher than in 1989 (4.3bn barrels) and 1999 (3.8bn barrels).

Production of oil reached 742,000 barrels per day (bpd) in 2009, amounting to 35.31m tonnes per annum (tpa), up 2.8% from 722,000 bpd (34.61m tpa) in 2008. Egypt's oil consumption averaged 720,000 bpd in 2009, taking full-year (FY) consumption to 33.7m tonnes, up 3.6% on 693,000 (32.6m tpa) in 2008, and comprising 0.9% of total world demand. Consumption rose considerably over the preceding decade, from 573,000 bpd (and 27.8m tpa) in 1999. While oil usage rose on average, the increase has not been steady. It slipped to 534,000 bpd (25.2m tpa) in 2002, and fell slightly from 629,000 bpd (29.8m tpa) in 2005 to 610,000 bpd (28.7m tpa) in 2006, before rising again to some 650,000 bpd (30.6m tpa) in 2007.

Egypt's reserves-to-production (R/P) ratio, which also indicates the number of years that proven reserves would last at current levels of production, is relatively low, at 16.2, compared to the global level of 45.7. The ratio for Africa (including Egypt) is 36 and for the Middle East, which, by BP's definition, does not include Egypt is 84.8. However, the experience of recent years and the continued drive for exploration suggest that the R/P ratio may be bolstered and may not fall as quickly as initially expected. On the other hand, growing domestic demand and increasing refining capacity are

likely to boost production significantly. Official estimates suggest Egypt's oil reserves will last 40 to 45 years.

In recent months oil prices have been buoyed by supply concerns linked to ongoing instability in the Middle East and North Africa, and Libya in particular. As a result, in early April benchmark Brent crude was trading at around \$125 per barrel, a two-and-a-half year high.

Domestically, demand for oil and petroleum products is expected to expand strongly as a result of economic and demographic growth.

Shifting energy usage patterns is also having an effect on the downstream market and the type of products demanded. As Egypt looks to free up more oil for domestic consumption, the proportion of electricity generated from fuel oil may decrease. The shifting dynamics are being watched closely by energy companies.

Regulations require international oil companies (IOCs) to form a joint venture (JV) with a national oil company (NOC, a state-dominated firm) to exploit oil resources. Production is split between the partners to cover capital and operational expenditure under a production-sharing contract (PSC), and the IOC usually takes responsibility for human resource management and training. On average, the government takes a 60% stake in the JV and the IOC 40%.

The scope of the potential for further exploration and exploitation is vast. Egypt is looking to attract substantial new investments and sign agreements with international companies to boost oil research and exploration, particularly in Upper Egypt, as it looks to increase its energy self-sufficiency and security.

Deep-water reserves in the Gulf of Suez and the Mediterranean Sea are also becoming increasingly appealing to oil companies. Drilling slowed when oil prices slumped in 2009, but with prices now relatively high and likely to remain so, the incentive for investing in the more expensive exploration and extraction of deep-water reserves has returned.

Going forward, as oil resources in Egypt and beyond become more difficult and more costly to extract due to their heavier composition and deeper locations, enhanced oil recovery (EOR) techniques, which boost crude oil output beyond that allowed by regular "primary and secondary" extraction, will become increasingly important. Egypt has the advantage of having many years of experience using EOR, particularly in the geologically complex Gulf of Suez, but also for activities in the Western Desert.

Egypt's crude oil refining capacity is approximately 975,000 bpd, though refineries with potential for output of a further 600,000 bpd are under construction, according to a February 2011 report from the US Energy Information Administration.

Egypt's proven natural gas reserves totaled 2.19trn cu metres (tcm), or 77.3trn cu ft (tcf), as of end-2009, 1.2% of the global total, according to BP's "Statistical Review of World Energy". Due to successful exploration, 2009 levels represented a 1.9% rise on 2.15 tcm in 2008, and almost doubled the 1.22 tcm proven in 1999. Indeed, discoveries over the past two decades have massively increased Egypt's proven reserves from only 0.35 tcm in 1989.

Natural gas production overtook that of oil in the last decade and has maintained its leading position. In 2009 Egypt produced 62.7bn cubic metres (bcm) of natural gas, equal to 56.4m toe, 2.1% of the global total. As with oil, natural gas output rose against the international trend as world production fell 2.1%. Despite the effects of the global recession, natural gas output rose 6.6% from 59 bcm

(53.1m toe) in 2008. Output rose steadily over the previous decade, from 16.8 tcm (15.1m toe) in 1999.

Egypt's natural gas R/P ratio is 34.9, somewhat lower than the global level of 45.7 and well below 77.3 for Africa. However, exploration activities continue and new reserves are likely to be proved in the coming years, though demand is also rapidly on the rise for energy, industrial and domestic use.

Egypt's gas consumption increased by 4.4% in 2009, to 42.5 bcm (38.3m toe), from 40.8 bcm (36.8m toe) in 2008, accounting for 1.4% of the global total, while international consumption fell 2.1%. As with output, demand has risen steadily over the course of the last decade, having increased from only 16.4 bcm (14.8m toe) in 1999. The state-owned Egyptian Natural Gas Holding Company (EGAS) expects a 7% increase in consumption in 2010/11.

The majority of Egypt's gas, 58% of total output, goes to power generation, with industry consuming another 26%. Household demand is likely to increase significantly over the coming years as the government executes its plan to connect more residential units to natural gas supplies. In the 2008/09 fiscal year, 3.5m households were linked to the gas network, a number that the authorities intend to raise to 6m, with a drive to improve connections in Upper Egypt in particular.

The Mediterranean Basin and Nile Delta, in the north of Egypt, account for around four-fifths of natural gas production. Additionally, the Mediterranean has significant potential for further exploration activities.

For the short to medium term, gas is set to maintain its position as the country's leading energy source due to its abundance, relatively low cost and ongoing exploration efforts. In the longer term, it will be increasingly supplemented by renewable sources. In January 2010 the EGAS announced that it would be offering 19 areas for exploration through international tender. Two areas are in the Nile Delta and 17 are in the Mediterranean.

Hydroelectric Power and Coal

Hydroelectric power is a significant part of Egypt's energy mix. In 2009 3.1m toe of hydroelectric power were consumed, down 5.1% from 3.3m toe in 2008 and 3.5m toe in 2007. However, this was still higher than the 2.9m toe consumed in 2004-06. The Aswan High Dam produces 2.1 GW of hydroelectric power. Other dams include the Aswan Low Dam and Assiut Barrage.

Egypt also generates a small proportion of its energy from coal. Coal consumption fell 3% in 2009 to 1.1m toe, from 1.2m toe in 2008, and 1.3m toe in 2003. Hard coal demand is around 1.2m tpa, much of which is accounted for by a steelworks in Helwan, southern Cairo. Egypt's only coal mine is at Maghara in the Sinai Peninsula. Production is around 360,000 tpa of non-coking coal, which is blended with imported metallurgical coal for metal production or is used in small-scale industrial processes.

Energy Subsidies

The subsidy regime is being incrementally scaled back as part of the pro-market reform programme. Transport subsidies have been recalibrated in recent years and the process of phasing out subsidised fuel for energy-hungry industries such as steel and cement has begun, albeit haltingly.

Subsidies are still a major factor in the Egyptian economy, not least in the energy sector, and are expected to amount to around LE100bn (\$17.42bn in the 2012. Energy accounts for around 65% of

all subsidies, taking 15% of the government's annual budget as of 2010/11. CI Capital estimates that subsidies to the electricity sector alone totaled LE4.37bn (\$761m) in 2009/10.

Butane, for example, which is used at home, in restaurants and in small industries, is so heavily subsidised that a canister that should fetch a market price of around LE40 (\$6.90) can be sold for as little as LE3 (\$0.52).

One possibility for reducing subsidies on fuels such as butane would be to introduce a coupon system for the poorest people and perhaps for small businesses. Others would be required to pay a higher rate that would eventually come to meet the market price.

Subsidies are being reformed gradually as they are considered politically and economically sensitive. In a country in which many people are still very poor, and inflationary pressures have been rather high in the recent past, they help keep prices of essentials- in this case fuel, but also bread- down, bolstering the spending power of the poorest, who spend a large proportion of their incomes on basic goods.

Renewables

Egypt's electricity demand is expected to more than double to 50MW by 2025. To ensure that supply keeps pace, the government hopes to attract \$110bn in investment by 2027, with the private sector playing a greater role in construction, power generation, management and financing.

The government aims to generate 20% of the country's power needs from renewable energy sources by 2020. The New and Renewable Energy Authority (NREA), an organisation established under the Ministry of Electricity and Energy in 1986, is a central driving force behind renewable development. Sector experts believe that 2024 may be a more realistic date for the 20% goal, but the government is maintaining its 2020 target for the time being to "keep the pressure on".

Egypt is one of the first countries to tap into a new \$5.2bn World Bank fund to finance the expansion of renewable energy capacity. It plans to supplement the \$300m it has accessed from this source with additional cash from a variety of sources, including private sector firms, AfDB and development agencies.

Egypt's geography makes it ideal for renewable energy generation, particularly solar and wind. Egypt has huge areas of desert, which are well-suited to be developed for solar power generation. The country's average solar energy irradiance is 612 W per square metre, more than three times the global average of 200 W per sq metre.

The western shore of the Gulf of Suez, one of the windiest places on earth, is regarded as the prime location for wind farm development. The NREA calculates that wind speeds there average between eight and 10 metres per second, and the area largely consists of large swathes of uninhabited deserts-though it is also conveniently close to the densely populated areas of Greater Cairo, the Delta and the Suez Canal Zone, home to tens of millions of Egyptians and much of the country's heavy industry.

Other areas for development, with slightly lower wind speeds of seven to eight metres per second, include the Beni Suef and El-Minya Governorates on the west bank of the Nile, south of Cairo, and the Kharga Oasis, 200 km west of the Nile in Upper Egypt.

Developing renewable energy is likely to be a longterm concern in Egypt. Costs per energy unit for renewables are still high compared to the fossil fuels which the country has in abundance. Given

consumers' limited financial resources and the additional cost of subsidising renewable energy, there are some disincentives to investment.

But as technology develops and becomes cheaper, the opportunities for increasing renewable output in Egypt are likely to grow. The potential for the development of wind power production in Egypt is displayed by the fact that the government is already thinking to export some of the electricity generated, even with rapidly growing domestic demand.

Wind capacity had a compound annual growth rate (CAGR) of 16% between the 2004/05 and 2008/09 fiscal years. CI Capital expects installed wind capacity to total 7200 MW by 2020. According to MoEE, 63% of the investment in wind expansion will come from the private sector. As of 2008/09, the last period for which data was available, there were two wind farms in Egypt, both on the west shore of the Red Sea: Zafarana, with 425 MW of installed capacity and 941 GW hours (GWh) of produced energy, and Hurghada, with 5 MW of installed capacity and 7 GWh, according to the NREA.

By late 2010 total installed capacity had been increased to 550 MW, thanks to the launch of new units at Zafarana, according to the NREA, and a large number of new projects are in the pipeline, including three farms at the Gulf of El Zayt, with total capacity of 540 MW; a several-phase 300-MW plant in the Gulf of Suez; and two potential projects on the West bank of the Nile. Most of these have international backing and some will be independent power producer projects, allowing the private sector to take the lead in development.

The government has been active in promoting investment in wind power and a range of incentives are available for wind farm development, particularly for those in Upper Egypt (where there are ongoing efforts to push forward economic and social development) and export-oriented projects.

The MoEE's electricity supply agreements extend up to 30 years, giving the wind farm operator a reliable income outlook. Customs duties on wind farm components have been reduced and in some cases abolished, concession agreements are offered on plots of land for the facilities, logistical costs (including shipping costs) are subsidised for development in Upper Egypt, and companies in a number of Upper Egypt governorates, such as Beni Suef and Minya, are eligible for export rebates.

The government is actively seeking funding for renewable projects, with the aim of capitalising on Egypt's natural advantages to develop renewables as a long-term solution to the world's energy needs. January 2011 saw the launch of Egypt's first solar plant, contributing 20 MW of solar energy at a 140-MW integrated combined cycle plant, which also uses natural gas, at Kuraymat, 90 km south of Cairo. The plant was commissioned through international tender by the NREA and construction was completed by Germany firm Solar Millennium.

In December 2010 the Minister of Electricity and Energy announced plans to develop a 100-MW solar station in Kom Ombo, Upper Egypt and another solar plant in Hurghada on the Red Sea using photovoltaic cells. The \$270m Kom Ombo plant will be funded with \$100m from the Clean Technology Fund (CTF), a fund backed by organisations including the World Bank and AfDB, to develop low-carbon technology. The remaining \$170m will come from a loan provided directly by the World Bank.

Progress on developing solar power is already being made at a micro level, where arguably it is best suited at present. This is mainly due to the level of technological development and its ability to bring power to areas with a great deal of solar energy located along way from other generation plants.

In December 2010 MoEE announced that, for the first time in Egypt, two villages were to be supplied with power generated entirely by solar plants. The villages, Oum Al Sagheer and Ein Zahrah, are in

the remote Siwa Oasis area, 800 km west of Cairo near the Libyan border. The solar energy will supply power to houses, businesses, streets, schools, mosques and other local services, and the project is being paid for through a LE3m (\$522,000) fund that is supported by the Italian government.

TRANSPORT SECTOR

With control of the Suez Canal and 1500 km of the Nile, Egypt is strategically placed to become a leading transport and logistics centre in the region, and is finally dedicating significant resources towards that goal. However, according to a report by the World Bank, transport infrastructure spending as a percentage of GDP dropped from 7% to 2% between 1987 and 2007. In its 2010 sector round-up, the General Authority for Investment (GAFI) reported that the country has 67,728 km of roads, 6700 km of rail, 15 seaports, six dry ports and Nile River transport facilities, but acknowledged that "major capacity shortfalls are forecast over the coming 5-10 years.

The government is now taking steps to address the limitations of its transport network, including expanding port capacity, modernising the railway, extending the length of roads and improving their quality. During the global economic downturn, a large part of the state stimulus package was directed at the transport sector. However, recovery from the crisis brought new demands on transport infrastructure as trade flows picked up and tourism growth continued.

Traffic came to a standstill in January and February 2011 when protesters took over streets across the country, including Tahrir Square in the capital. As the country's political situation moves forward, work is resuming to get people and goods back on the roads and enhance the transport infrastructure that carries them. Private investors are being courted to share the financial burden of expansion, while the state is also looking at alternative means of cargo transport - such as train, river or air- to take the pressure off of the road network.

It is important that the government maximise other forms of transportation, such as water and rail, for domestic shipments as the country's current road infrastructure is not capable of handling future demand.

While the global crisis slowed Egypt's rapid economic growth, which had averaged 7% in previous years, there were some benefits for the transportation sector, which received significant investment as part of the government's stimulus package. In mid-2009, the Ministry of Investment announced that it would tender 52 large-scale infrastructure development projects totaling LE137bn (\$23.87bn). These include construction of ports, a ring road for Alexandria, a coastal highway from Port Said to Marsa Matrouh and a light rail system for the Cairo suburb of Heliopolis.

In November 2010, local press reported that another stimulus package valued at \$20bn was imminent, and would include road and port projects. While the parameters of the investment may have changed in the wake of the new political order, the stimulus money will go through as a means to counteract the dip in domestic productivity and foreign investment caused by the political unrest.

The sector needs ample investment to fulfill its potential as a powerful vehicle for economic growth. The government is working hard to engage the private sector in this effort. According to GAFI, transport and logistics received LE21bn (\$3.67bn) of investment in 2008/09, just over a third (34%) of which came from private companies.

According to a 2010 World Bank report entitled "Infrastructure and Economic Growth in Egypt", by increasing infrastructure expenditure (across all sectors) from 5% to 6% of GDP, the government can raise GDP growth by 0.5% over the next 10 years, and 1% in the decade that followed. However, the

state does not have the resources to deliver this level of funding all on its own. EFG-Hermes, a leading investment bank in the MENA region, estimates that \$45bn will be needed over the next five years to meet Egypt's infrastructure needs. In December 2010 former Finance Minister said that the government could only shoulder 30-40% of that figure, leaving a significant shortfall.

To further bridge the gap between infrastructure supply and demand, the government is passing public-private partnership (PPP) legislation, which was approved by parliament in May 2010 and is slated to go into effect in 2011. As it is unclear what impact the events of early 2011 will have on investor interest, the Central Authority for Development, a branch of the Ministry of Housing, Utilities and Urban Development (MHUUD), has pushed back the submission dates for the inaugural PPP transport project. The 20-year concession for a Rod El Farag toll road has been commissioned in August 2011. The eight-lane road will stretch a distance of 34 km, connecting the Cairo Ring Road to the Alexandria Desert Highway. The project also includes construction of bus stations, bridges and a toll plaza.

Several other PPPs for road projects have been floated, including a LE546m (\$95.11m) freeway stretching 231 km between Egypt's two largest cities, Cairo and Alexandria; a LE129m (\$22.47m) highway linking the districts of Shubra and Banha, which would have daily capacity for 125,000 vehicles; and the 10th of Ramadan Ring Road, one of many proposals aimed at relieving traffic in the capital.

With a population of over 16m people (expected to reach 21m by 2022), Cairo is notorious for its traffic gridlock. At the start of 2010, there were 2.1m registered private vehicles in the capital, and drivers are often faced with hours-long commutes. 11% of cars on the roads are more than 35 years old, which has taken a severe toll on air quality. Moreover, the streets are dangerous due to reckless drivers, lax enforcement of traffic laws and poor road conditions. According to the World Bank, around 1000 Cairenes are killed annually in car accidents, with about half of these pedestrians.

Public Transport

To address the negative effects of congestion - both in terms of economic productivity and public safety - the government is extending public transportation options in the capital, including the addition of new metro lines. Cairo's metro is already Africa's largest with two lines running from Helwan to El Marg (43 km) and Shubra El-Khaima to Giza (21.6 km), respectively, which carry around 1.8m commuters daily, according to the National Authority for Tunnels. The state plan foresees the construction of four more lines by 2022. Construction of the third line, which will stretch 33 km from the Imbaba district in the north-west to Heliopolis in the north-east and the Cairo International Airport, is being carried out by a consortium of France's Alstom and local construction giant Orascom. The first phase of the project is valued at LE 1 bn (\$174.2m) and slated for completion in October 2011. The line will increase the metro system's daily capacity to 4.5m passengers. Alstom was also responsible for the \$24.4m electrical and track renovation of the first metro line, which debuted at the start of 2011. In October 2010, the Ministry of Transport (MoT) released plans for a 24-km fourth line running from El Malek El Saleh past the pyramids of Giza to the Sixth of October suburb. Local press reported that the Japanese government has been approached to fund the LE 15bn (\$2.6bn) project.

Green Traffic

The World Bank is collaborating with the MoT to develop clean transportation and reduce Cairo's carbon emissions, which at 14m tonnes account for 40% of the national total. One of the first PPPs on schedule is the upgrade of the Heliopolis tram system to light rail and its extension to New Cairo.

Increasing Nile River transportation, especially for cargo, has also been touted as an environmentally friendly means of reducing traffic, as it requires lower fuel consumption. According to the European Federation of Inland Ports, one river barge can carry the equivalent of 45 truckloads of goods.

Bridges, tunnel and transverse axes are also being built to reduce congestion in the downtown area, while the government is looking at moving some of its ministries outside of the city, potentially to the Smart Village technology park in Sixth of October. These projects would reduce Cairo's traffic by 40% and save the city LE140m (\$24.4m) annually in terms of fuel and time spent in traffic.

Commercial Ports

The country has 15 commercial ports, of which six are on the Mediterranean and nine on the Red Sea. Their activity is controlled by four government bodies: the Alexandria Port Authority, the Port Said Port Authority, the Red Sea Port Authority and the Damietta Port Authority. Alexandria is the largest port, handling around 55% of foreign trade.

The Department of Maritime Transport's annual statistics round-up shows that 123.1m tonnes of cargo was handled by Egypt's ports in 2009, with around a 70:30 breakdown between local (imported and exported) and transit cargo. The greatest share of local cargo was dry bulk at 36%, followed by general cargo (22.1%). Egypt imports large volumes of agricultural products (e.g. wheat and corn) and construction materials. Its main exports include natural gas, fertilisers and metals.

The global shipping industry relies heavily on the Suez Canal as a quick link between the Mediterranean and the Red Sea and the Indian Ocean. This has become even more pronounced in 2010 as the price of bunker fuel soared. To accommodate growing international traffic, the cargo capacity of the nation's sea ports has been increased from 58.5m tonnes in 2003 to 133.9m tonnes in 2009, representing a compound annual growth rate (CAGR) of 15%. In line with the global trend, container traffic in particular has taken off, rising 15.7% to 4.66m tonnes over the course of 2010. Around 63% of container traffic is for transit, while 20% is exports and the remaining 17% imports.

As the Port Said Port Authority and Damietta Port Authority handle nearly all transit container traffic their ports are being targeted for future development. The largest of these projects is at East Port Said, located at the top of the Suez Canal, which handles around 40% of the country's container traffic. The project will see two new terminals constructed to handle more than 13m 20-foot equivalent units (TEUs) by 2030, up from its current 2.7m TEUs.

Additionally, the capacity of Sokhna Port on the southern end of the Nile will be doubled to 1.75m TEUs. The closest container port to Cairo, Sokhna saw an 88% jump in export cargo and 60% import cargo in 2009/10, as Europe-Asia trade recovered from the global crisis and traffic increased.

Nile Transport

Egypt has claim to 1500 km of the Nile, but this resource has been historically under- utilised as a means of cargo transport, with less than 1% of the nation's internal trade passing down rivers. This compares poorly to developed nations with major inland waterways, such as, for example, the Netherlands where the percentage of goods moved via rivers is 34%. In recent years, however, river cargo volume has increased - between 2003 and 2008, it had a CAGR of 11%, rising from 1.28m tonnes to 2.16m tonnes over the five-year period.

The government wants to increase the share of river transport to 20% of the total. To that end, Nile Logistics, part of Egyptian private equity firm CI Capital, has purchased stakes in two Nile logistics companies, National River Port Management Company (NRPMC) and Nile Cargo. A new port was

opened by NRPMC in Tanash, north of Cairo, in February 2010. It will be instrumental to a five-year contract with the General Company for Silos and Storage, a state-run grains importer and distributor, to transport 2m tonnes of wheat annually.

Transporting wheat via river barges will save the state up to 20% of what it would have paid to transport by truck. In 2008 Nile Logistics also signed a contract with the Al Nasr Company for Coke and Chemicals to transport coal and coke via the river, another boost to river traffic.

Tenders have been issued for river ports in Alexandria and Qena, while four more are also expected. At the end of 2010, the River Transport Authority announced it would conduct a study with the French Development Agency on the viability of increasing freight and passenger transport on the Nile.

Rail Transport

Founded in 1854, the Egyptian rail network is the world's second-oldest after England's, and was once the pride of the country. Unfortunately its modernisation has not kept pace with the times. Only 15% of the 6700 km of rail is electrified, and only 28.4% of the rail lines are double track and 0.39% four track. Train carriages tend to be overcrowded and unventilated. Major accidents in recent years, including a fire in 2002 which left over 370 passengers dead, have drawn international attention to the dilapidated condition of the state-run railway, leading the government to pursue a major investment programme to upgrade the network.

The Egypt National Railways Restructuring Project, launched in 2009, is being financed in part by the World Bank, which dedicated \$270m for signalling system upgrades on the Arab El Raml-Alexandria line and track renewal for the Cairo-Aswan and the Benha - Port Said lines. The state also provided \$35m for this project. Many of Egypt's recent accidents have been attributed to human error, which technological advances such as a computerised signalling system could help avoid. At the end of 2010, the World Bank approved another loan of \$330m to upgrade the signalling system on the Beni Suef-Asyut line.

The Egyptian Railways Authority (ERA) launched a tender in September 2010 to purchase 207 new train carriages at a price of LE517.5m (\$90.15m). Around 400 modern carriages are to be purchased in total over the next three years. The first tranche will be put into service on the high-traffic Cairo-Alexandria and Cairo/ Alexandria-Aswan lines.

In addition to rehabilitating the existing network, Egypt is considering the possibility of laying new track to accommodate the ever growing passenger numbers. In October 2010, the ERA was reported by local press to be eyeing a LE10bn (\$1.74bn) bond issue to finance future rail projects, including a high-speed train between Alexandria and Cairo and a 77-km line between Cairo and 10th of Ramadan City. Another proposed PPP would relocate the Matrouh railway line away from the coast to free up prime real estate for construction.

Increasing the share of rail dedicated to freight is another long-term goal, as 90% of Egypt's train traffic is devoted to passenger travel at present. Up to 95% of freight transport takes place on Egypt's overburdened road network, and moving more cargo by alternate means such as railway would both relieve congestion and increase national freight capacity. According to GAFI, rail transport is 40% cheaper than road, and the rail network's existing 12m-tonne freight capacity is fully utilised. In a 2009 report "Connecting Egypt: Challenges and Opportunities in Freight Transportation and Logistics", the consultancy Frost & Sullivan recommended that certain freight corridors be privatised, as has been done in India, to improve their efficiency and make Egypt more attractive as a logistics centre for MENA.

Civil Aviation

The Ministry of Civil Aviation, founded in 2002 has an ambitious 10-year investment programme in place for the nation's airports, particularly those that see tourist traffic. Up to 2012, LE16.2bn (\$2.82bn) are being spent on their modernisation and expansion. Approximately two-thirds of tourists arrive in the country by air, and capacity at international airports such as Cairo International Airport and Sharm El- Sheikh International Airport has been all but maxed out as tourism expanded in recent years. After growing 73% between 2003 and 2008 to 14.4m, passenger traffic at Cairo flat-lined in 2009 on account of the global crisis, then recovered in 2010 to reach a record high of 16.1m.

Air Cargo

The air cargo segment remains underdeveloped. Operated by Egypt Air, the Air Cargo Airport in Cairo has five cargo terminals, which can handle 400,000 tonnes annually, although not all of this capacity is utilised. According to the airline's most recent annual report from 2008/09, the volume of air cargo dropped from 186,520 tonnes in the previous financial year to 167,735 tonnes, due to the global trade slowdown. GAFI indicates that targets set by the government envision reaching 900,000 tonnes in air cargo annually by 2025, which would require significant infrastructure expansion.

Logistical Challenges

Domestic consumption of imports is on the rise, and local businesses are also eager to access export markets. Given its strategic location between Europe, Asia and Africa, Egypt has the potential to become the dominant trade logistics centre for the region - for local and transit trade. It takes ships from European ports around one week to reach Egypt and connect to the growing MENA market, while the Suez Canal saves significant time by cutting out the need to navigate around Africa for Asia-European trade.

Container traffic has more than quadrupled in the past decade but to accommodate the growth, the nation's multimodal transportation capabilities need to be improved. A 2007 study by the International Centre of Transport for Sustainable Development (ICTSD) found that the logistics industry was hindered by weak road, railway and river ports infrastructures.

Legislative Framework

One challenge is the lack of a legal framework for their liability. If a trucker loses his cargo, he often does not have enough liability insurance to cover the loss. Legislation standardising the procedure for transport contracts and guaranteed insurance coverage would boost confidence in the logistics sector. Overly complex Customs regulations are another problem cited by the ICTSD. As of 2007, it took standard dry cargo containing more than one company's goods three to four weeks to clear Customs, compared to one to two days in Turkey. Also, there is a lack of refrigerated transport and warehouses as additional hindrances.

To support development the government has announced plans to construct 24 industry and logistics zones by 2013. The zones will cost some LE40bn (\$6.97bn), and are to be built in the industrial cities outside Cairo, including 10th of Ramadan City, Sixth of October City, Sadat City and Borg El Arab City. Sadat City will be the site of the first zone, covering 500,000 sq metres and requiring investment of LE 1 bn (\$174.2m).

Outlook

Increasing capital investment in the transport sector, as the government has done in response to the global economic crisis, is bound to have a range of positive knock-on effects for the economy. The overcrowded road network has reached a critical level, especially in Cairo, and measures being taken to expand public transportation options are set to increase productivity and hopefully improve health indicators in the city. In the air, Cairo will look to solidify its position among the world's leading airports as tourists return to the country. It will also work towards developing its status as a regional transit hub to Africa. Meanwhile, the Suez Canal remains a major revenue earner as container traffic continues its ascendancy. The next challenge is making more use of the Nile as a transport route.

11. APPENDIX D: DETAILED INFORMATION ON INDUSTRIAL SECTORS (CEMENT, FERTILIZERS AND IRON & STEEL)

1. EGYPT CEMENT INDUSTRY

Background

Egypt is one of the oldest countries in cement manufacturing in the region, as it started cement production in 1927 with the construction of Torah Cement Company. In 1929, Helwan Cement Company was established, followed by Alexandria Cement Company in 1948 and National Cement Company in 1956. In the 70s, the production capacities of the 4 cement companies reached around 4mn tons.

The construction boom witnessed in the late 70s and 80s created high demand for cement that was met through imports because of the limited local production capacities, despite the opening of 3 new cement companies, Suez, Assuit and Amiryah, which started production throughout that period. In the mid 80s, Egypt became one of the largest cement importing countries in the world.

During the 90s, 6 new cement companies were established to cope with the increasing construction activity and the resulting increasing cement demand, especially with the appearance of new sub-urban cities such as, Al-Sherouq, Al-Obour, 6th of October, 10th of Ramadan and Al-Sadat. However, Egypt's cement net importing position prevailed during the 90s and the early years of the 21st century.

Consequently, cement producers in Egypt increased their production capacities and enhanced their production lines to meet the surging local cement demand. In 2002, Egypt turned out to be a net exporter of cement and later in 2004 Egypt stopped importing cement and became one of the largest cement exporting countries in the world.

Similarly, cement distribution and pricing evolved over time and went through 3 phases of development. The first phase started in 1932 with the establishment of the cement store by the sole cement producers then, Torah and Helwan, to organize selling their production. Later in 1957, the government replaced the cement store with the cement selling office, which was responsible for marketing cement in the local and export markets. However, the government's centralized management of that office led to price distortions and production bottlenecking in the cement sector. Therefore, the cement selling office was terminated in 1991 and cement producers became free to set their prices based on the market forces.

Currently, grey cement manufacturers in Egypt reached 13 players with a total production capacity of 43.3mn ton. Out of the 13 market players, there are 9 cement companies controlled by 6 leading multinational companies, who entered the Egyptian market mainly through the privatization of the state-owned cement companies, which started in 1996. The entrance of these multinational companies significantly contributed to enhancing the productivity and efficiency of the local cement industry.

Ordinary Portland Cement (OPC) is the most common type of cement produced in Egypt. This type of cement is the most widely used in every aspect of the construction works. In addition, the production mix is not limited to OPC, it also includes, seawater cement, rapid hardening cement, slag cement and white cement. These other types of cement are more specific purpose cement and differ from OPC in their composition.

The average energy consumption for cement industry in Egypt is around 852 kcal/kg. clinker. The state of the art technology with alternative fuels consumes 30% less energy on average.

The Egyptian cement industry has been growing vigorously over the past 5 years, on the back of the high activity experienced in the construction and real estate sectors. Egypt's cement consumption has been growing at a CAGR of approximately 6% over the past 40 years.

Over the past 5 years, the overall cement sector capacity utilization rate kept increasing, with some companies operating over 100% of their installed capacities, driven by the strong growth in cement consumption, which outpaced production growth.

At the end of 2008, Egypt's cement production capacity reached 43.3mn tons, compared to 41.8mn ton in 2007, recording a growth rate of 3.9%. The increase in the production capacity was attributable to the opening of South Valley Cement new production lines. The distribution of the current cement capacities in Egypt is found to be more concentrated in Suez and Sinai.

In order to meet the growing local cement consumption, Industrial Development Authority (IDA) held an auction in October 2007 to bid for new cement capacities licenses, either by new entrants or existing players wishing to expand their capacities. The bid resulted in the sale of 8 out of the 10 offered new licenses against a total sum of LE1.14bn, to add 12MTA of cement capacity.

Later in January 2008, IDA offered the remaining two licenses in El-Wadi El-Gedid and Sohag governorates for bidding. The bid resulted in the sale of El-Wadi El-Gedid license, whereas Sohag license was postponed, after all the companies applied for the license have been disqualified. Accordingly, total new cement capacities additions resulting from IDA auction summed up to 13.5mn ton tons of cement capacity, which are planned to start production between 2010 and 2011.

Cement new capacities licenses winners

Company	License cost (LE mn)	Governorate	Capacity (MTA)	Expected commencement date
Wadi Al-Nil Cement	251	Beni Suef	1.5	2010
El-Sewedy Cement	201	Suez	1.5	2010
Arab National Cement	200	El-Menya	1.5	2011
Al-Nahda for Industries	83	Qena	1.5	2011
North Sinai Cement	44	North Sinai	1.5	2011
Construction Material	22	Assuit	1.5	2010
El-Wadi Cement	-	El-Wadi El-Gadid	1.5	2011
Total Greenfield capacities	801		10.5	
Assuit Cement	202	Assiut	1.5	2010
Beni Suef Cement	135	Beni Suef	1.5	2010
Total expansion capacities	337		3.0	
Total new capacities	1,138		13.5	

Source: Industrial Development Authority (IDA) & Global Research.

In addition, there are approximately another 5mn ton of additional capacities that were licensed in prior periods to the latest auction. These new capacities are due to come on stream between 2009 and 2010.

Therefore, Egypt cement production capacity is expected to add around 18.5mn tons between 2009 and 2011, growing at a CAGR of 12.6% over the next 3 years. Accordingly, Egypt cement production capacity will come very close to 62mn ton.

2. EGYPT FERTILIZERS SECTOR

Egypt is one of the world's leading producers of phosphate-based (P) fertilizer, and one of its largest consumers of nitrogen-based (N) fertilizers.

Fertilizer production grew by a compound annual growth rate (CAGR) of 4% between 2003/2004 and 2009/2010, reaching 14.1m tonnes. Egypt's overall fertilizer consumption grew by a CAGR of 7.3%, and N- fertilizers by 16.2% between 2006/2007 and 2008/2009, and reached 3.33m tonnes on N-fertilizer and 775,800 tonnes of P- fertilizer in 2009/2010. This gave Egypt a nominal 3.44x production-to-consumption ratios. However, as 81% of Egypt's output is N- fertilizers, ratios vary from category to category. For N- fertilizers, it was around 4x in 2006/2007, the latest year for which data is available, while it was only 1x for P- fertilizers, which make up the remaining 19%. Overall self-sufficiency levels are high, and imports had a market share of only 3% in 2009/2010. Most imports are also N- fertilizers.

There are 10 major firms manufacturing fertilizer in Egypt, with the biggest four accounting for three-quarters of production: Egyptian Fertilizers Company, owned by Orascom Construction Industries, part of the Orascom conglomerate, with 30% of total output; Helwan Fertilizers Company (15%); Alexandria Fertilizer Company (AlexFert, 15%) and Misr Fertilizer Production Company (14%). N-phosphate output is reliant on the availability of feedstock, particularly natural gas; this bodes well for the sector, as Egypt's proven natural gas reserves have risen in recent years to 2.19trn cu metres, or 77.3trn cu feet at end -2009, according to the 2010 "Statistical Review of World Energy" published by BP. Gas is also relatively inexpensive in Egypt – if not as cheap as in the gulf states – keeping costs down for producers. Egypt has undertaken a drive to expand and diversify fertilizer production in recent years. Helwan and AlexFert were established in 2006/2007, adding an extra 2.4m tonnes per year initially, and now contributing 2.9m tonnes per year after Helwan's expansion. In 2009 Egyptian Financial and Industrial Company, the Middle East's biggest publicly traded producer of phosphate-based fertilizers, doubled its ammonium sulphate capacity to 300,000 tonnes a year, having boosted its sulphuric acid production the previous year.

The domestic market is heavily regulated. Producers must sell to a single government-owned distributor, to ease pricing pressure on small farmers, and fertilizers are subsidized, costing the state \$226m annually. In the longer term, subsidies and controls are likely to be eased as part of the liberalization programme, and in February 2010, the price of fertilizer nitrates was raised from \$218 to \$244 per tonne to reflect market shifts.

The outlook for the international and domestic fertilizer market is excellent. CI Capital forecasts that Egypt's fertilizer consumption will grow by a CAGR of 19% to 12m tonnes in the 2015/2016 fiscal year, with N-fertilizer consumption growing at a CAGR of 21% and P-fertilizers at 11%. A major demand driver will be the execution of the government's plans to increase agricultural land area by 360 ha per year. Broader efforts raise output in less fertile areas without over-exploiting water resources are also likely to lead to increasing fertilizer consumption. CI Capital projects that global consumption will grow at an average of 10% a year from 2011 to 2014, after 2.1% annual expansion in the previous five years. There are risks for exporters, including the well-being of the global economy, policy prerogatives in China (a huge market), the effects of India's fertilizer subsidy scheme, crop prices and currency fluctuations. However, even if growth was lower than expected, it is likely that the international market will be strong in the medium term, benefitting Egypt's export-oriented producers.

In 2010 firms were lining up sizeable increases in investment to boost output, aimed at both the local and the overseas market- with several players well positioned to tap into international demand.

Some \$523m may be invested in 65 new fertilizer plants over the next three years, according to press reports. CI Capital forecasts that domestic fertilizer production will also grow rapidly, to 33m tonnes in 2015/2016. If current plans are put into action, Egypt's P- fertilizer output will increase more than twelvefold to 6.2m tonnes in 2012/2013, reaching 6.4m tonnes in 2015/2016, with N-fertilizer production growing at a CAGR of 4% to 16m tonnes that year.

3. EGYPT STEEL SECTOR

Despite the negative economic conditions that prevailed in the international markets in 2008, Egypt was able to realize an enormous 6.8% growth in its industrial production over the year. That is why the Country was ranked third after Brazil and China.

The Egyptian steel industry represents one of the cornerstones of Egypt's economic growth and development, due to its linkages to almost all other industries that stimulate economic expansion. Industries such as construction, housing, infrastructure, consumer goods and automotive, all rely heavily on the steel industry and so, the importance and development of the steel sector is imperative for the progress of the Egyptian economy in general.

Evolution of the industry

The first fully integrated public steel company in Egypt was the Egyptian Iron and Steel Company that was founded in 1954. The company was a perfect example of state involvement in the steel sector in particular and in the economy in general. Egyptian Iron and steel produced both long products and flat products and was the main market player for several years. Until the nineties, the steel sector was controlled by the public sector, a theme that was recurrent throughout the Middle East and North Africa in general, and focused on generating profitably in the social sense, while economic profitability was secondary. However, in the nineties, the situation changed dramatically, as the private sector was finally granted access to the industry. The entry of the private sector into the steel industry was symbolic to a decade, which witnessed the beginning of economic reforms vision adopted by many nations throughout the MENA region. Moreover, profitability in the social sense vanished, as private investor pumped billions of pounds to revolutionize the sector, using sophisticated technologies and expected to earn large profits in return. Even though the introduction of new technologies massively enhanced and developed the steel sector in Egypt, it also impacted employment within the sector, as less workers and more sophisticated technicians are now required by the steel companies.

Period of exceptional performances

Over the past four years, the Egyptian steel sector has been enjoying one of its most successful periods, as the stunning boom witnessed in the real estate and construction sectors has elevated the industry to new highs and profit records. Since the FY2005/06, the construction sector kept growing at an average rate of 15% annually. Regardless of the plunge witnessed in the world construction sector, the sector in Egypt is highly performing, as it grew by 12% over the period from July to March 2008/09, compared to the same period of the last year. In the meantime, the real estate sector in Egypt recorded a growth of 4% annually starting from 2005/06 until 2007/08. Also, the sector inclined by 4% over the 9-month period ending March 2009, as opposed to the same period a year earlier, despite the world financial crisis.

The tremendous demand–supply gap within the housing sector, coupled with a wave of optimism following the economic reforms adopted by the government since 2004, and the flourishing real

estate and construction sectors, caused steel producers to intensify their production levels in order to meet the massive local consumption.

Market Players

The steel sector in Egypt constitutes of 27 producers, with an annual capacity of 5.5mn tons of long products and 2.7mn tons of flat products. Since most of the demand on steel in Egypt comes from infrastructural and housing projects, the majority of the production is dedicated to long products.

Major Steel Companies in Egypt-2008

Company Name	Capacity (Thousand tons)	Products
Al Ezz Steel Rebars	1,000	Long
Al Ezz Dekheila Steel Company	2,900	Long and Flat
Al Ezz Flat Steel	1,000	Flat
Al Ezz Rolling Mills	400	Long
Delta Steel Mill	85	Wire Mesh
Egyptian Iron and Steel Co. HADISOLB	1,000	Long and Flat
Beshay Steel	2,000	Rebars and Wire Rods
Kandil Steel	1,000	Long and Flat
Kouta Steel Group	360	Long
Misr National Steel Company (Attal)	360	Long
National Port Said Steel	400	Long
Suez Steel Company	500	Billets

Source: Zawya, Companies' Websites, *Global Research*.

Consumption

Despite the financial crisis and its implications on various sectors, including steel, consumption grew at 15.3% Y-o-Y in 2008, and reached 6.0 tons, up from 5.2mn tons in 2007. This came on the back of the robust construction sector, the growing Egyptian population and consequently the rising needs for housing units.

Recent Developments

In August 2007, the government announced plans to gradually remove subsidies on energy prices for energy-intensive industries. The plan was to increase energy prices gradually over a three year period from US\$1.25 to US\$2.65 per Million British Thermal Unit (MBTU), which was the amount by which the government subsidized energy prices. However, in 2008, the government declared that the prices of natural gas used as fuel would rise from US\$1.7 to US\$3 per MBTU.

Expansion plans

By the end of 2007, four local producers were granted licenses to build new factories and expand their capacities after submitting successful bids.

Moreover, the world's largest steel producer Arcelor Mittal has had a successful bid in 2008, to obtain a license to build two steel factories.

Another foreign company that has successfully obtained a steel making license was Al Kharafi Group of Kuwait. Moreover, in January 2009, the Kuwaiti company obtained a second license to produce steel pellets in Egypt. The new project will cost around US\$800mn and is expected to deliver an

additional 6mn tons of steel pellets. In July 2009, four companies submitted requests for licenses to establish new steel rebars plants. Despite these announced new capacities, the majority of these projects are to face delays for lack of financing or lower investment costs under the current global economic situation.

12. Appendix E: TERMS OF REFERENCE

Terms of Reference for National Project Coordinator

Managerial and Technical Skills

- Assume operational management of the project in consistency with the initiation plan.
- Assume overall responsibility for successful execution and implementation of the initiation plan and the achievement of the output: formulation of the project document.
- Ensuring successful completion of the project in accordance with the stated outcomes and performance indicators summarized in the project's results based matrix and within the planned schedule and budget otherwise.
- Serve as the focal point of the project for coordination of the project activities with UNDP, the Government and other partners.
- Liaise with UNDP project officer on a regular basis to ensure proper monitoring and realization of results.
- Identify the need for national experts and consultancy teams and develop their scopes of work and terms of reference and other procurement documentation required to identify and facilitate recruitment of experts and consultants in consultation with Project Steering Committee (PSC).
- Follow up on the deliverables of the national consultants contributing to the NAMAs, LEDS, MRV and Mitigation reports.
- Monitor all expenditures and ensure the project proceeds in compliance with EU-UNDP budget, accounting and procurement guidelines.
- Ensuring effective dissemination of and access to information on project activities and results, (including an regularly updated project website).
- Lead the preparation for and organization of seminars, workshops and training activities, as needed.
- Prepare all needed reports within the project cycle.

Qualifications and Experience

- A minimum of Master's Degree and 15 years' experience in environment-related issues and other related disciplines.
- Good understanding of the national environment/development issues as well as national obligations towards the UNFCCC with an institutional development experiences.
- At least five years of experience relevant to the project and management.
- Excellent communication (Written and Oral) Skills.
- Demonstrated experience in project coordination.
- Demonstrated experience in working with government, donors and the United Nations system.
- Appropriate experience working with government, structures at local levels, and working with NGOs and private sector.
- Excellent inter-personal skills as well as working well within a team environment.
- Good command of English.

TOR for National Project Team Leader

Duties

The National Project Team Leader should work in consultation with, and under the guidance and supervision of, the National Project Coordinator. Specifically, his/her responsibilities are, but not limited to, the following:

- Assists the National Project Coordinator in establishing the team of experts for performing technical tasks on the basis of the roster of experts.
- Oversees the training –of –trainers sessions.
- Assists National Project Coordinator to organize Project relevant training and workshops.
- Prepares a detailed work-plan on the basis of the overall project work plan.
- Provides periodic progress report to the NPM on the Project thematic areas.
- Develops the scope of work and respective terms of reference for the team members.
- Leads the data collection process, including surveys.
- Leads and oversees the team to conduct technical tasks.
- Ensure the timely and effective management of the activities as scheduled.
- In consultation with National Project Coordinator, selects and implements the methodologies for conducting technical tasks.
- Identifies gaps and key sectors.
- Incorporates comments received from the review process.
- Drafts the Project Report and the respective part of executive summary.
- Leads and coordinates updating the Procedures in the light of the new findings under project items.
- Archives new data and estimates.

Qualifications and Experience

- An advanced degree in industrial processes, energy, environmental management or other fields relevant to the project.
- A minimum of 7 years of working experience in the area relevant to the Climate Change.
- Substantial involvement in the preparation of Climate Change Studies is highly preferred.
- Good understanding of GHGs processes and demonstrable knowledge of UNFCCC and IPCC.
- Good knowledge / experience on MRV systems.
- Demonstrated ability of analytical and drafting work.
- Familiarity with computers and data processing (EXCEL; ACCESS).
- Fluency in English.

Terms of Reference for Assistant Team Leader for Mitigation Analysis in Industry

Duties

The Assistant Team Leader for scenarios mitigation development analysis in selected industrial sectors should work in consultation with, and under the guidance and supervision of, the National Project Coordinator. Specifically, his/her responsibilities are, but not limited to, the following:

- Assists the National Project Coordinator and the Team Leader in establishing the team of experts for performing the mitigation PAM analysis on the basis of the roster of experts.
- Prepares a detailed work-plan for GHGs abatement for the PAM analysis in selected industrial sectors on the basis of the overall project work plan.
- Provides periodic progress report to the National Project Coordinator on the PAM analysis in selected industrial sectors and/or by thematic area.
- Develops the scope of work and respective terms of reference for the team members.
- Leads the data and information collection process.
- In consultation with National Project Coordinator, decides on methodologies for the elaboration of scenarios for sectoral activities.
- Leads and oversees the scenario development and update.
- Organize the scheduled consultations/workshops and ensure their success.
- Ensures synergies with other relevant sectors and/or projects.
- Ensure the timely and effective management of the activities as scheduled.
- Incorporates comments received from the review process.
- Drafts the PAM Report in selected industrial sectors and reviews related respective work of Egypt's TNC and other related works of linked initiatives.
- Oversees the documentation of the studies made and archiving.

Qualifications and Experience

- An advanced degree in industrial processes, energy, environmental management or other fields relevant to the project.
- A minimum of 7 years of working experience in the area relevant to the Climate Change. Special experience in Cement, fertilizers and iron & steel industries is an advantage.
- Good understanding of GHGs inventory process and projection in industry.
- Good understanding of mitigation scenarios development for industrial processes.
- Good knowledge / experience on MRV systems for industrial projects.
- Demonstrable knowledge of IPCC Assessment Reports and other key works in Climate Change.
- Demonstrated ability of analytical and drafting work.
- Familiarity with computers and word processing.
- Strong proficiency in English.

Terms of Reference for Assistant Team Leader for MRV Systems

Duties

The Assistant Team Leader for developing MRV systems should work in consultation with, and under the guidance and supervision of, the National Project Coordinator. Specifically, his/her responsibilities are, but not limited to, the following:

- Assists the National Project Coordinator and the Team Leader in establishing the team of experts for developing MRV systems in different project-areas.
- Conducts required work for designing MRV systems to support implementation and evaluation of mitigation action plan in selected sectors for NAMAs as well as selected industries.
- Provides guidance and leadership in establishment of scopes, metrics/indicators, reporting mechanisms, verification mechanisms and time frames for projects in different project-areas.
- Provides guidance and leadership in improving MRV systems to take into account whether NAMAs are implemented autonomously, through support from developed countries, or through an international crediting mechanisms.
- Assists in creating eligible criteria, cost effectiveness, time lines and procedures providing enough flexibility for a wide range of mitigation actions.
- Provides insight in setting-up appropriate MRV guidelines for each concerned economic / industrial sector.
- Provides Assistance in framework setting for a clear and transparent systems for accounting, recording, monitoring data and emissions in target sectors and data/ information sources.
- Provides guidance and leadership for establishment of performance indicators and processes of measuring and reporting on NAMAs / LEDS / PAM implementation.
- Assists in putting QA/QC systems in place in the target sectors.
- Leads the efforts for designing technology system for information and monitoring.

Qualifications and Experience

- An advanced degree in industrial processes, energy, environmental management or other fields relevant to the project.
- A minimum of 7 years of working experience in the area relevant to the Climate Change.
- Good knowledge / experience on MRV systems for industrial projects.
- Demonstrable knowledge of IPCC Assessment Reports and other key works in Climate Change.
- Special experience in MRV systems for project categories in target sectors.
- Good knowledge of the IPCC guidance materials estimation and reporting processes for GHG emissions.
- Experience with performance indicators for projects in the variety sectors of economy.
- Demonstrated ability of analytical and drafting work.
- Familiarity with computers and word processing.
- Strong proficiency in English.

Terms of Reference for Project Technical Assistant

Duties

- Reporting to the Project Coordinator.
- Support the staff members directly on special tasks e.g.: preparing short issue specific reports and briefing notes, drafting letters, speaking notes, reviewing contact information to find special areas of cooperation.
- Provide research and background materials.
- Maintain project and organization-wide databases.
- Schedule events or meetings.
- Contribute to the preparation, production, and revision of project and meeting documents.
- Provide formatting and filing of documents when necessary.
- Assist with consultation, communication and promotion in respect of the project activities.
- Assist with monitoring and reporting on the operational performance of the project, including assisting with the generation of appropriate management information and updating the project website.
- Assist in the preparation for an organization of seminars, workshops and training activities, as needed.
- Perform other tasks as requested.

Qualifications and Experience

- University degree in Science/Engineering or Environment - related disciplines; with minimum grade very good (recent graduates are preferred)
- High efficiency in using computer, Microsoft package.
- Good understanding of climate change phenomena and its impacts.
- Excellent communication skills (written and Oral) Skills.
- Excellent inter-personal skills as well as working well within a team environment.
- Good command of English.

Terms of Reference for Project Steering Committee (PSC)

Duties and Responsibilities

The Project Steering Committee (PSC) is the main body to supervise the project implementation in accordance with UNDP rules and regulations and referring to the specific objectives and the outcomes of the project with their agreed performance indicators;

The main functions of the PSC are:

- General monitoring of the project progress in meeting of its objectives and outcomes and ensuring that they continue to be in line with the national development objectives;
- Facilitating the co-operation between the different Government entities, whose inputs are required for successful implementation of the project, ensuring access to the required information and resolving eventual conflict situations raising during the project implementation when trying to meet its outcomes and stated targets;
- Supporting the elaboration, processing and adoption of the required institutional, legal and regulatory changes to support the project objectives and overcoming of the related barriers;
- Facilitating and supporting other measures to minimize the identified risks to project success, remove bottlenecks and resolve eventual conflicts;
- Approval of the annual work plans and progress reports, the first plan being prepared at the outset of project implementation;
- Approval of the project management arrangements; and
- Approval of any amendments to be made in the project strategy that may arise due to changing circumstances, after the careful analysis and discussion of the ways to solve problems.

PSC Structure

The PSC will be chaired by the Project Director or the EEAA CEO, if different. The PSC will include a representative from each of the key Ministries and Agencies involved in the project, a representative of UNDP and, as applicable, representatives of project's other co-financing partners. Other members can be invited by the decision of the PSC, however by taking care that the PSC still remains operational by its size. The project manager will participate as a non-voting member in the PSC meetings. When and as needed, the meetings of the PSC can be extended to Technical Advisory Group meetings

Rules under which Project Steering Committee Operates

- The National Project Coordinator serves as Moderator of the PSC meetings. The National Project Director chairs the PSC meetings.
- The Project Steering Committee meets not less than three times during the project life-time. In special cases, the Project Steering Committee shall meet upon the initiative of the National Project Director.
- When the Project Steering Committee does not meet, the National Project Director and National Project Coordinator may request inputs and support from individual members of the Project Steering Committee.

13. APPENDIX F: ENDORSEMENT LETTER

Day, Month, 2012

UNDP Resident Representative
Cairo – Egypt
Fax:
Email:

Dear Sir,

Subject: Letter of Endorsement

It gives me pleasure to inform you that the Government of Egypt , represented by the Chief Executive Officer of the Egyptian Environmental Affairs Agency (EEAA), Ministry of State for Environmental Affairs endorses the attached Project Document entitled: "EU-UNDP Climate Change Capacity Building Project" to be executed in Egypt during the period: 2012-2014.

We would like to seize this opportunity to acknowledge the continuing support of the EU-UNDP for Egypt for tackling climate change and building capacity in this domain, particularly through this project, which focuses on the design of low-emission development strategy (LEDS) as well as developing Public Sector and Industry capacities in terms of NAMAs Portfolio development and MRV in relevant industries and candidate sectors within the context of national development needs.

With my best regards.

Chief Executive Officer of the EEAA
Chemist/ Hosam Hegazy



Annual Work Plan

Egypt - Cairo

Project: 00061973
Project Title: UNDP-EU National CC Capacity Building Programme

Report Date: 8/26/2013

Year: 2013

Output	Key Activities	Timeframe		Responsible Party	Planned Budget				
		Start	End		Fund	Donor	Budget Descr	Amount US\$	
00079144 ClimateChange CapacityBuilding	LEDs Formulated	1/1/13	31/12/15	EGY-Egyptian Environmental Aff	30079	EU	71600	Travel	2,000.00
				EGY-Egyptian Environmental Aff	30079	EU	71300	Local Consultants	5,000.00
				EGY-Egyptian Environmental Aff	30079	EU	75100	Facilities & Administration	490.00
	MitigationActionPlans&Proje	1/1/13	31/12/15	EGY-Egyptian Environmental Aff	30079	EU	71300	Local Consultants	5,000.00
				EGY-Egyptian Environmental Aff	30079	EU	75100	Facilities & Administration	630.00
				EGY-Egyptian Environmental Aff	30079	EU	71600	Travel	4,000.00
	MRV Systems4MA Plans&P	1/1/13	31/12/15	EGY-Egyptian Environmental Aff	30079	EU	71300	Local Consultants	5,000.00
				EGY-Egyptian Environmental Aff	30079	EU	71600	Travel	4,000.00
				EGY-Egyptian Environmental Aff	30079	EU	75100	Facilities & Administration	630.00
	MRV Systems4NAMAs&LED	1/1/13	31/12/15	EGY-Egyptian Environmental Aff	30079	EU	71600	Travel	5,000.00
				EGY-Egyptian Environmental Aff	30079	EU	71300	Local Consultants	5,000.00
				EGY-Egyptian Environmental Aff	30079	EU	75100	Facilities & Administration	700.00
	Project Management Unit	1/1/13	31/12/15	EGY-Egyptian Environmental Aff	30079	EU	72500	Supplies	3,000.00
				EGY-Egyptian Environmental Aff	30079	EU	72100	Contractual Services-Companies	5,000.00
				EGY-Egyptian Environmental Aff	30079	EU	72200	Equipment and Furniture	10,000.00
				EGY-Egyptian Environmental Aff	30079	EU	74500	Miscellaneous Expenses	10,000.00
				EGY-Egyptian Environmental Aff	30079	EU	75100	Facilities & Administration	3,500.00
				EGY-Egyptian Environmental Aff	30079	EU	73100	Rental & Maintenance-Premises	4,000.00
	Project Proposal Completed	19/7/11		UNDP	30079	EU	71400	Contractual Services - Individ	9,504.71
				UNDP	30079	EU	75100	Facilities & Administration	665.33
UNDP				30079	EU	71600	Travel	0.00	
UNDP				30079	EU	71300	Local Consultants	0.00	
Upto 6 NAMAs Formulated	1/1/13	31/12/15	EGY-Egyptian Environmental Aff	30079	EU	71600	Travel	3,000.00	
			EGY-Egyptian Environmental Aff	30079	EU	75100	Facilities & Administration	770.00	
			EGY-Egyptian Environmental Aff	30079	EU	71300	Local Consultants	8,000.00	
TOTAL								112,890.04	
GRAND TOTAL								112,890.04	



Annual Work Plan

Egypt - Cairo

Project: 00061973
Project Title: UNDP-EU National CC Capacity Building Programme
Year: 2014

Report Date: 8/26/2013

Output	Key Activities	Timeframe		Responsible Party	Planned Budget				
		Start	End		Fund	Donor	Budget Descr	Amount US\$	
00079144 ClimateChange CapacityBuilding	LEDs Formulated	1/1/13	31/12/15	EGY-Egyptian Environmental Aff	30079	EU	72100	Contractual Services-Companies	10,000.00
				EGY-Egyptian Environmental Aff	30079	EU	71200	International Consultants	10,000.00
				EGY-Egyptian Environmental Aff	30079	EU	75100	Facilities & Administration	2,800.00
				EGY-Egyptian Environmental Aff	30079	EU	71300	Local Consultants	10,000.00
				EGY-Egyptian Environmental Aff	30079	EU	72200	Equipment and Furniture	5,000.00
				EGY-Egyptian Environmental Aff	30079	EU	71600	Travel	5,000.00
	MitigationActionPlans&Proje	1/1/13	31/12/15	EGY-Egyptian Environmental Aff	30079	EU	72100	Contractual Services-Companies	10,000.00
				EGY-Egyptian Environmental Aff	30079	EU	75100	Facilities & Administration	4,550.00
				EGY-Egyptian Environmental Aff	30079	EU	71200	International Consultants	30,000.00
				EGY-Egyptian Environmental Aff	30079	EU	74500	Miscellaneous Expenses	5,000.00
				EGY-Egyptian Environmental Aff	30079	EU	71300	Local Consultants	20,000.00
	MRV Systems4MA Plans&P	1/1/13	31/12/15	EGY-Egyptian Environmental Aff	30079	EU	71300	Local Consultants	15,000.00
				EGY-Egyptian Environmental Aff	30079	EU	71600	Travel	5,000.00
				EGY-Egyptian Environmental Aff	30079	EU	72200	Equipment and Furniture	5,000.00
				EGY-Egyptian Environmental Aff	30079	EU	71200	International Consultants	20,000.00
				EGY-Egyptian Environmental Aff	30079	EU	75100	Facilities & Administration	3,150.00
	MRV Systems4NAMAs&LED	1/1/13	31/12/15	EGY-Egyptian Environmental Aff	30079	EU	71600	Travel	5,000.00
				EGY-Egyptian Environmental Aff	30079	EU	75100	Facilities & Administration	2,450.00
				EGY-Egyptian Environmental Aff	30079	EU	72200	Equipment and Furniture	5,000.00
				EGY-Egyptian Environmental Aff	30079	EU	71200	International Consultants	10,000.00
EGY-Egyptian Environmental Aff				30079	EU	71300	Local Consultants	15,000.00	
Project Management Unit	1/1/13	31/12/15	EGY-Egyptian Environmental Aff	30079	EU	72200	Equipment and Furniture	5,000.00	
			EGY-Egyptian Environmental Aff	30079	EU	75100	Facilities & Administration	5,810.00	
			EGY-Egyptian Environmental Aff	30079	EU	72500	Supplies	3,000.00	
			EGY-Egyptian Environmental Aff	30079	EU	73100	Rental & Maintenance-Premises	8,000.00	
			EGY-Egyptian Environmental Aff	30079	EU	74500	Miscellaneous Expenses	20,000.00	
			EGY-Egyptian Environmental Aff	30079	EU	71400	Contractual Services - Individ	42,000.00	
			EGY-Egyptian Environmental Aff	30079	EU	72100	Contractual Services-Companies	5,000.00	
Upto 6 NAMAs Formulated	1/1/13	31/12/15	EGY-Egyptian Environmental Aff	30079	EU	71300	Local Consultants	20,000.00	



Annual Work Plan

Egypt - Cairo

Project: 00061973

Report Date: 8/26/2013

Project Title: UNDP-EU National CC Capacity Building Programme

Year: 2014

Output	Key Activities	Timeframe		Responsible Party	Planned Budget				
		Start	End		Fund	Donor	Budget Descr	Amount US\$	
	Upto 6 NAMAs Formulated	1/1/13	31/12/15	EGY-Egyptian Environmental Aff	30079	EU	75100	Facilities & Administration	4,130.00
				EGY-Egyptian Environmental Aff	30079	EU	72100	Contractual Services-Companies	20,000.00
				EGY-Egyptian Environmental Aff	30079	EU	71200	International Consultants	14,000.00
				EGY-Egyptian Environmental Aff	30079	EU	71600	Travel	5,000.00
TOTAL									349,890.00
GRAND TOTAL									349,890.00



Annual Work Plan

Egypt - Cairo

Project: 00061973
Project Title: UNDP-EU National CC Capacity Building Programme
Year: 2015

Report Date: 8/26/2013

Output	Key Activities	Timeframe		Responsible Party	Planned Budget				
		Start	End		Fund	Donor	Budget Descr	Amount US\$	
00079144 ClimateChange CapacityBuilding	LEDs Formulated	1/1/13	31/12/15	EGY-Egyptian Environmental Aff	30079	EU	75100	Facilities & Administration	4,410.00
				EGY-Egyptian Environmental Aff	30079	EU	70000	Operating Expenses	58,000.00
				EGY-Egyptian Environmental Aff	30079	EU	71300	Local Consultants	5,000.00
	MitigationActionPlans&Proje	1/1/13	31/12/15	EGY-Egyptian Environmental Aff	30079	EU	70000	Operating Expenses	86,000.00
				EGY-Egyptian Environmental Aff	30079	EU	71300	Local Consultants	10,000.00
				EGY-Egyptian Environmental Aff	30079	EU	72100	Contractual Services-Companies	10,000.00
				EGY-Egyptian Environmental Aff	30079	EU	74500	Miscellaneous Expenses	5,000.00
				EGY-Egyptian Environmental Aff	30079	EU	75100	Facilities & Administration	8,820.00
				EGY-Egyptian Environmental Aff	30079	EU	71200	International Consultants	15,000.00
	MRV Systems4MA Plans&P	1/1/13	31/12/15	EGY-Egyptian Environmental Aff	30079	EU	71300	Local Consultants	5,000.00
				EGY-Egyptian Environmental Aff	30079	EU	70000	Operating Expenses	76,000.00
				EGY-Egyptian Environmental Aff	30079	EU	75100	Facilities & Administration	6,370.00
				EGY-Egyptian Environmental Aff	30079	EU	71200	International Consultants	10,000.00
	MRV Systems4NAMAs&LED	1/1/13	31/12/15	EGY-Egyptian Environmental Aff	30079	EU	71300	Local Consultants	5,000.00
				EGY-Egyptian Environmental Aff	30079	EU	70000	Operating Expenses	65,000.00
				EGY-Egyptian Environmental Aff	30079	EU	75100	Facilities & Administration	4,900.00
	Project Management Unit	1/1/13	31/12/15	EGY-Egyptian Environmental Aff	30079	EU	73100	Rental & Maintenance-Premises	8,000.00
				EGY-Egyptian Environmental Aff	30079	EU	70000	Operating Expenses	46,000.00
				EGY-Egyptian Environmental Aff	30079	EU	74500	Miscellaneous Expenses	10,000.00
				EGY-Egyptian Environmental Aff	30079	EU	75100	Facilities & Administration	7,560.00
				EGY-Egyptian Environmental Aff	30079	EU	72500	Supplies	2,000.00
EGY-Egyptian Environmental Aff				30079	EU	71400	Contractual Services - Individ	42,000.00	
Upto 6 NAMAs Formulated	1/1/13	31/12/15	EGY-Egyptian Environmental Aff	30079	EU	75100	Facilities & Administration	6,230.00	
			EGY-Egyptian Environmental Aff	30079	EU	72100	Contractual Services-Companies	10,000.00	
			EGY-Egyptian Environmental Aff	30079	EU	71600	Travel	5,000.00	
			EGY-Egyptian Environmental Aff	30079	EU	71300	Local Consultants	10,000.00	
			EGY-Egyptian Environmental Aff	30079	EU	70000	Operating Expenses	64,000.00	
TOTAL								585,290.00	



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GRAND TOTAL

585,290.00