

5.6 Others

(1) Chemical Substances

The Government of Egypt signed the Stockholm Convention in May 2002 and started to take measures on Persistent Organic Pollutants (POPs). Development of the National Implementation Plan (NIP) is underway with the support of Global Environment Facility.

The content of the NIP include:

- Preliminary assessment of the stockpiles of POPs and waste products contaminated with POPs.
- Safe handling methods, including opportunities for disposal.
- Build capacities to report Conference Of Parties
- Build capacities to identify sites contaminated by POPs.

So far, this project developed preliminary inventory and founded 10 sources including cement, chemical and hospital wastes. Action Plan will be developed by June 2005.

Moreover, Table 5.36 shows all treaties that Egypt has already signed regarding chemical substances.

Table 5.36: International Accords Regarding Hazardous Substances

Accords	Date of Ratifications
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal	01 Aug. 93 (Accession)
Stockholm Convention on Persistent Organic Pollutants (POPs)	17 May 2002 (Signature) 02 May 2003 (Ratification)
Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa	30 Jan. 1991 (Signature)
Convention on Civil Liability for Damage Caused during Carriage of Dangerous Goods by Road, Rail and Inland Navigation Vessels (CRTD), Geneva, 1989	-
Amendment to the Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention), Basel, 1989	13 Dec. 2003 (Ratification) 22 Sep. 1995 (Signature)
Convention on the Transboundary Effects of Industrial Accidents, Helsinki, 1992	-
Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region (Waigani Convention), Waigani, 1995	-
European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR), Geneva 1957	-
FAO International Code of Conduct on the Distribution and Use of Pesticides, Rome, 1985	-
Convention on Liability and Compensation for Damage in	-

Accords	Date of Ratifications
Connection with the Carriage of Hazardous and Noxious Substances by Sea (HNS), London 1996	

Note: - unknown

Source: Data from web-page 'Countrywatch.com' <http://aol.countrywatch.com/>

(2) CDM and Energy

1) CDM

Egypt signed the Kyoto Protocol on March 15, 1999, and ratified on January 12, 2005 (Kyoto Protocol was put in effect on February 16, 2005). Climate Change Unit of EEAA was listed as a focal point for Kyoto Mechanism in Egypt.

The Climate Change Unit was designated as a central unit for promoting CDM strategy in Egypt, and currently has five staffs working on the case. The council for capacity development was established in September 2004. There has no concreted project (as of Study Team's visit in late November, 2004) for CDM project, but CDM projects are expected to be executed in the following field after the Protocol put into effect on February 16, 2005: farmland, waste management, afforestation and industry. Within industrial arena, NOx (Alexisandria), fertilizer, project in Upper Egypt, textile (conversion of energy to natural gas), wind-farm (Alexandria) are anticipated.

CDM Projects

CDM projects have been reviewed in June 2002. Table 5.37 shows the portfolio of the projects.

Table 5.37: List of CDM Project Under Consideration in Egypt

Project Code	Project	Initial Investment (M\$)	GHG reduction (t-C/y)	CSC (\$/tC)	Pbp (years)
1. Electricity Generation					
I.1 Electricity Generation by Wind Farm					
1.1.1	60MW Wind Farm	54	40138	30	No Pbp
I.2 Electricity Generation by Integrated Solar Thermal System					
I.2.1	CDM Integrated Solar Thermal Combined Cycle System 300MW	240	49664	107.5	No Pbp
II. Other renewable Energy Applications					
II.1 Other Solar Energy Applications					
II.1.1	Toshka PV Water Pumping	0.6	39.4	2141	No Pbp
II.1.2	Solar Food Dehydration	2	1691	156.8	No Pbp
III. Transportation Projects					
III.1 Railway Electrification Projects					
III.1.1	Cairo-Alex. Railway Electrification	355	21073	1604.5	No Pbp
III.2 Underground					
III.2.1	Alex. Underground	687	11579	3169.9	NoPbp

Project Code	Project	Initial Investment (M\$)	GHG reduction (t-C/y)	CSC (\$/tC)	Pbp (years)
III.3 Waterway Transportation					
III.3.1	Development of Cargo River Nile	174	31855	97	No Pbp
III.4 Switching to N.G in Transportation					
III.4.1	Install dedicated NCG engines to replace low efficiency diesel engines.	12.3	2580	-300.6	3.8
IV. Energy Efficiency					
IV.1 Control Systems and Energy Saving Equipment					
IV.1.1	Control Systems and Energy Saving Equipment at Zenotex Dyers	1.1	1932	-76.2	6.2
IV.2 Waste Heat Recovery					
IV.2.1	Using N.G & Regenerative Burners in Ezz Steel Co.	4.0	3956	-21.3	9.5
IV.3 Cogeneration					
IV.3.1	Beni Soeif Cement	8.3	6336	-125	8.5
IV.3.2	Industrial Investments Co.	0.3	185	-174	7.8
IV.3.3	Misr Elmonifia (Textile)	1.6	911	-237	6.3
IV.3.4	Mohm (Metal Works)	0.3	369	-133	5.5
IV.3.5	Egypt Air Hospital (Building)	0.3	59	-488	8.5
V. Waste Management					
V.1 Solid Waste Management					
V.1.1	Feed Stock from Organic Waste	1	377336	-3.9	6.1
V.1.2	Organic Solid Waste Digestion	40	127000	163	No Pbp
VI. Land Use, Land-Use Change and Forestry (LULUCF²)					
VI.1 Protecting Some New Cities By Tree Plantations Using Sewage Water					
VI.1.1	Establishment of Forest Plantation and Shelters Around 10 th of Ramadan City	0.473	1,946	12.29	Not applicable n.a
VI.1.2	Establishment of Forest Plantation and Shelters around El-Arish Sewage Water Station	0.653	349	32.62	n.a.
VI.2 Protection of Irrigation and Drainage Canals					
VI.2.1	Protection of Ei-Hager Canal and El-Omom Main Drainage Canal by Windbreaks	0.151	281	14.11	n.a.
VI.3 Stabilization of Coastal Sand Dunes					
VI.3.1	Sand Dune Fixation of North Sinai Governorate	0.170	1,019	7.11	n.a.
VI.4 Protection of Road and Highway					
VI.4.1	Afforestation of a Part of Cairo-Aswan Highway	0.274	428	17.71	n.a.
Shaded region Projects evaluated to have the highest possibilities.					

Note: GHG: Greenhouse Gas, CSC: Cost of Saved Carbon:, Pbp: Payback Period
Source: TIMS/E2RC, 'Egypt's Strategy on CDM', June 2002

² Land Use, Land-Use Change and Forestry

In private sector, activities of the NGO, which was established in 1999³ covers Kyoto Protocol issues and preparing for CDM investment and identify joint implementation and sponsorship by petroleum capital for CDM projects.

2) Energy

Energy sector in Egypt contributes 6.7% of the country's Gross Domestic Products. According to the New & Renewable Energy Authority (NREA), the current share of renewable energy in Egypt is approximately 1 % (excluding hydropower), and NERA is aiming to increase the figure to 3 % by 2010.

Table 5.38: Contribution of Energy Sector in GDP

Unit: million LEI

Year	GDP	Contribution of Energy Sector			Share		
		Petroleum	Electricity	Total	Petroleum	Electricity	Total
2001/2002	299,300	14,400	5,800	20,200	4.18%	1.94%	6.75%
2000/2001	290,300	14,000	5,600	19,600	4.82%	1.93%	6.8%
Growth rate	3.1%	2.9%	3.6%	3.06%			

Source: Organization for Energy Planning, 'Energy in Egypt 2001/2002'

a) Hydropower

Hydropower accounts for approximately 20% of electricity generated in Egypt. Installed capacity of the hydropower is as follows: Aswan Reservoir 615MW, Aswan High Dam 2,100MW, and Esna Hydropower Station 90MW. Also, there are 165MW of hydropower potential at Nagah Hamady and Assiut.

b) Coal

Coal is extracted in Bedah, Thoura, Eioun Mousa, Klabcha, and Maghara. Maghara is especially important for Egypt with 27 million tons of coal reserves. Egypt imports approximately 1.6 million tons of coal annually.

c) Solar Energy

Egypt lies between latitudes 22 and 32 degrees North with a daily sunshine of 9 to 11 hours. An average solar radiation in all regions is about 1,900 - 2,600kWh/m²/year. About 220,000 domestic hot water collectors using solar energy have been constructed and are used particularly in new desert cities. Besides using solar energy for hot water, Egypt also has been pushing Photo Voltaic (PV) technology, in facilities/industry of: water pumping, desalination, the ice industry, refrigeration for vaccines, navigation aids, wireless stations, highway billboard illumination, lighting of remote areas, and petroleum pipelines cathode protection.

³ Energy Services Business Association (ESBA)

Ms.Laila Abd-El-Kawy of NREA, vice chairman for R&D Technical Affairs, expressed desires to the Study Team to promote Solar Thermal Cooling system especially in Sinai Peninsula. Furthermore, she also mentioned the issues to be tackled in near future as follows: increasing efficiency of PV cells, development of energy strategy for remote areas (needs for F/S), information gathering, water pumping and irrigation from Nile River by electricity generated by solar energy.

d) Wind Energy

Egypt enjoys considerable wind energy resources with an average wind speed of 10 meter per second in Gold of Suez and 7 meters per second in East Owainat area. Wind farm with capacity of 140MW has already been in operation while another 205MW worth of wind farm is underway. Combined with existing wind farm, Egypt plans to produce 2.4 billion KWh/year by the year 2010. (This will save about a half million tons of oil equivalent per year).

e) Biomass Energy

Production of biomass energy using agricultural, animal, human, and solid wastes has high potential. This can be a cheap source of thermal energy and fertilizer, as well as improving the environment by disposing of wastes. Future challenge lies in development of inexpensive technology and technical transfer for using biomass resources. However, attention should be paid for occurrence of the Black Smoke episodes emerged in recent years.

Furthermore, development of a testing facility will be necessary for agricultural wastes derived bio-fuel.

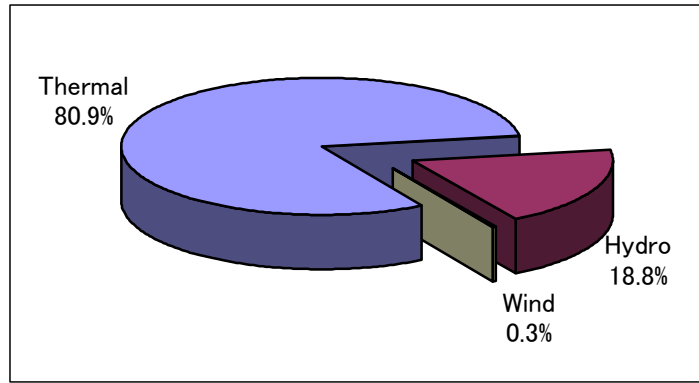
Table 5.39: Primary Energy Production

(MTOE)

Primary Energy	2001/2002	2000/2001	Growth Rate
Crude Oil	30.784	32.115	(4.14%)
Natural Gases	31.729	25.344	25.19%
Natural gas	26.151	20.390	-
Condensates	4.272	3.599	-
LPG	1.306	1.355	-
Hydropower	3.277	2.997	-
[T.W.h]	[15.130]	[13.697]	10.46%
Coal	0.025	0.039	(35.9%)
Total	65.815	60.495	8.79%

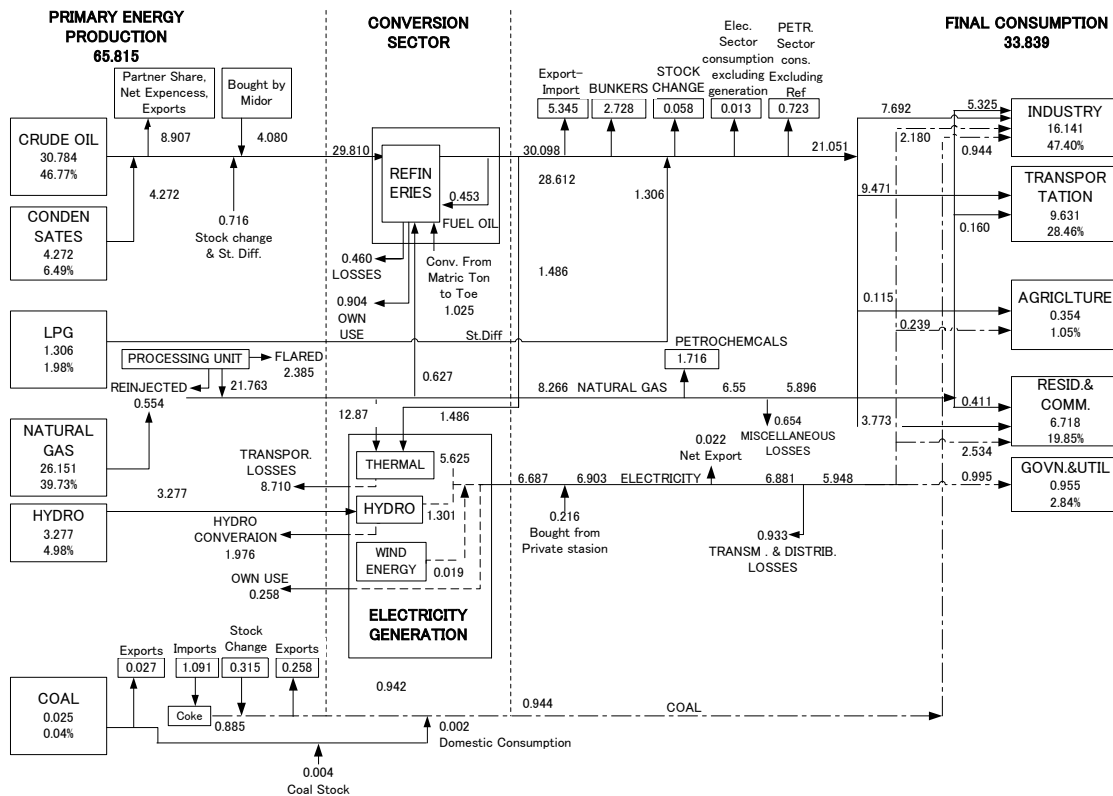
TOE: Tons of Oil Equivalent

Source: Organization for Energy Planning, 'Energy in Egypt 2001/2002'



Source: Data from Organization for Energy Planning, 'Energy in Egypt 2001/2002'

Figure 5.12: Supply of Electricity by Generation Methods in 2001/2002



Source: Organization for Energy Planning, 'Energy in Egypt 2001/2002'

Figure 5.13: Energy Balance in Egypt in 2001/2002

(3) EPAP: Egyptian Pollution Abatement Project

1) Cleaner Production

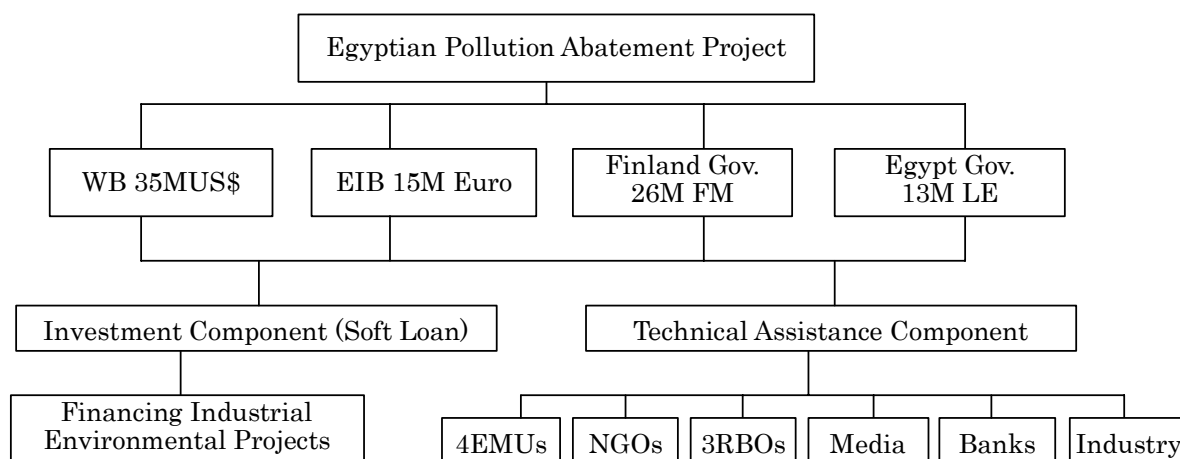
The World Bank estimated that Egyptian environmental pollution costs, excluding industrial sector, in 1999 reached to 4.8% of GDP. Industrial sector was excluded because of the lack of necessary data on pollution and the difficulties of quantifying impact of environmental

pollution. Although the Government of Egypt has been implementing anti-pollution measures like development of the standards over the past several years, the capacity of Egyptian government to enforce the law remained relatively limited due to the institution deficiency.

The main sources of air pollutions in big cities are automobile exhaust emissions, and factory smoke is also major source in Helwan, Alexandria and Suez. Major sources of water pollution are domestic wastewater and wastewater drainage from factories located in particular area. Small factories of lead secondary smelting (lead), bark tannery (Cr, COD), brick making (SO₂), textile, detritus, coal, lime are also considered as major sources of pollution as well as other large plants. The Government has been relocating these plants from the Greater Cairo, however, many of plants are still remained in the vicinity and generating quantity of pollutants. Recently, the Government with supports from other donors has been introducing End-of-Pipe (EoP) facilities and Cleaner Production equipments to these small factories. Examples of Cleaner Production projects are the Achieving Compliance with Environmental Regulation in Industry (ACI) provided by DANIDA and Egyptian Pollution Abatement Project (EPAP) with supports of the World Bank, FINNIDA, EIB etc. EEAA is a counterpart of both projects.

2) EPAP1

Figure 5.14 shows the component of EPAP1, implemented from 1997 to March 2005. EPAP was a project targeted both public and private businesses and aimed to reduce industrial pollution.



4 Governorates(EMUs); Cairo, Qualiobia, Alexandria, Suez
3 RBOs; Cairo, Alexandria, Suez

Figure 5.14: Component of EPAP

EPAP1 consists of soft and technical components, providing CP and EoP facilities to businesses as soft and technical components. The soft component is financed with 35 million US\$ from

the WB and 15 million Euro from EIB. 26 million FM from the Government of Finland and 3 million LE from the Government of Egypt support technical component.

3) EPAP2

As stated above, EPAP1 was concluded in March 2005 and EEAA is considering implementation of EPAP2 with loans from the WB, GEF, Carbon Fund and JBIC. According to the pollution control division of the EEAA, GoE has intention to officially request the assistance to JBIC, but it is uncertain to when the Ministry of Foreign Affairs of Egypt and president will approve this matter. Greater Cairo area, Alexandria and two cities in the Gulf of Suez, Suez and Ismailia will be the target in EPAP2.

(4) NGOs

The Government of Egypt recognizes NGOs as an important partner for development and enacted Law 153/1999 in order to promote the development of the civil society. Areas that NGO could operate had been limited for only 7 areas by the previous law 53/1999, but the Law 153/1999 removed the restriction specified in the previous law. Some of the eased restriction includes allowing international NGOs to operate in Egypt and foreigners to join Egyptian NGOs.

As an example of new NGO activities in environmental arena, the EESBA (Egyptian Energy Service Business Association), which was established in 1999, is promoting the energy manager training, cleaner productions, switching to CNG in automobiles and global warming countermeasures.

The following Table 5.40 is the list of NGOs.

Table 5.40: Domestic and Regional NGOs

Names of NGOs	Governorates	Yr. Established	Activities
Friends of Trees Association	Cairo	1973	Environmental protection, education and regional development
Egyptian Association for Packaging Development	Cairo	1974	Environmental protection
Arab Office for Youth and Environment (AOYE)	Cairo	1978	Environmental protection and regional development
Association for the Protection of the Environment (APE)	Cairo	1984	Environmental protection
Central Association for Environmental Protection	Cairo	1989	Environmental protection
Egyptian Association for Development of Local Communities	Cairo	1993	Environmental protection and regional development
Friends of the Environment and Development Association (FEDA)	Cairo	1993	Environmental protection

Names of NGOs	Governorates	Yr. Established	Activities
Association of Enterprises for Environmental Conservation	Cairo	1996	Environmental protection and regional development
Participation and Conversation Forum for Development	Cairo	2000	Environmental protection and regional development
Liberty Association for Community Development	Alexisandria	1966	Environmental protection and regional development
Friends of the Environment Association	Alexisandria	1990	Environmental protection
Egyptian Association for Industry and Environment	Alexisandria	1991	Environmental protection
Association of Commendable Efforts in Shebin El Kom	Menoufia	1982	Environmental protection and regional development
Association for Development and Environment	Ismilia	1993	Environmental protection and regional development
Coptic Evangelical Organization For Social Services (CEOSS)	Minya	1960	Environmental protection and regional development
The National Association for Environmental Protection	El Arosh	1989	Environmental protection
Baladi Association	Portside	1973	Environmental protection and regional development
Association of Islamic Youth	Beni suef	1967	Environmental protection and job training
Association for Local Community Development	Beni suef	1982	Environmental protection and regional development
Association of Environmental Conservation in Fayoum	Fayoum	1991	Environmental protection
Association for Environmental Protection and Children Protection in Etay El Baroud	Beheira	1996	Environmental protection and regional development
The Women Association for Health Improvement	Sohang	1966	Environmental protection and medial services
Association for Environmental Protection in Assiut	Assiut	1991	Environmental protection
Association for Development and Environmental Protection in Dakahliya	Dakahliya	1993	Environmental protection and regional development
Association For Community Development and Environmental Protection in Kafr El Dawar	Beheira	1995	Environmental protection and regional development
Association for Environment and Family Development in Qena	Qena	1991	Environmental protection and regional development
Association for Local Community Development	Sharkyia	1983	Environmental protection and regional development
Association for Community Development in the New Salhyia	Sharkyia	1984	Environmental protection and regional development
Hurghada Environmental Protection and Conservation	Hurghada	1992	Protection and conservation of land and marine ecosystem,

Names of NGOs	Governorates	Yr. Established	Activities
Association			and coral reef in and around Red Sea.

Source: JICA, "Country Profile on Environment -Egypt" Feb. 2002

Table 5.41: International NGOs

Names of NGOs	Governorates	Yr. Established	Activities
Near East Foundation	Cairo	1915	Promotion of sustainable development, equal distribution and efficient use of resources, enhancement of manpower possibility and improvement of service delivery system in host countries.
Cooperative for American Relief Everywhere (CARE)	Cairo	1954	Development of small enterprises, regional development, environmental development and food preservation.
Catholic Relief Services	Cairo	1956	Release economical and social distresses of people who live in old and new areas of upper Egypt.
Ford Foundation, Cairo Office	Cairo	1957	Reduction of poverty and corruptions, enhancement of democratic values, enhancement of international corporation and advancement of people's achievements.
Agricultural Cooperative Development International	Cairo	1963	Increase trades and support for agro-related organization and independent organizations.
Medicins Sans Frontiers	Cairo	1975	Provide services regarding environment and sanitation through corporations with local institutions.
Institute of Cultural Affairs Middle East and North Africa (ICA)	Cairo	1976	Organizational improvement through program, which is highly participated and corporate with other organizations.
Plan International	Cairo	1980	Support environmental improvement, establish and repair clinics and hospitals.
Save the Children/USA	Cairo	1982	Risk reduction of hygiene aspect by providing sanitary system for sewage, waste and drainage.
Fredrich-Ebert foundation	Giza	1976	Economical reform and job in small size industries

Source: JICA, "Country Profile on Environment -Egypt" Feb. 2002

Table 5.42: NGO Networks

Name of Network	Governorate	Yr. Established	Activities
Arab Network for Environment and Development (RAED)	Cairo	1978	Collect, release and exchange information regarding various environments and development problems
The National NGOs Center for Population & Development (NCPD)	Cairo	1995	Networking, capacity building, proposal development and provide technical support for local NGOs through money required for project maintenance.
Cooperation and Development Association for Egyptian and European Youth (CDAEEY)	Giza	1997	Cultural, educational, social and charity projects, meeting, conversation, seminar, training program, competition, environmental recreation through festivals, sports activities

Source: JICA, "Country Profile on Environment -Egypt" Feb. 2002