



October 31, 2004

## **MEMORANDUM**

**FOR:** Director, USAID/Egypt, Kenneth C. Ellis

**FROM:** Regional Inspector General/Cairo, David H. Pritchard /s/

**SUBJECT:** Sustainability of USAID-Financed Utility Infrastructure Activities in Egypt (Report No. 6-263-05-001-S)

This memorandum transmits our final report on the subject survey. In finalizing the report, we considered your comments on our draft report and have included your response as Appendix II.

Although this report is not an audit report, it contains two suggestions for your consideration.

I appreciate the cooperation and courtesy extended to our staff during the survey.

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## Background

According to USAID/Egypt's financial records, USAID has invested \$5.8 billion in utility infrastructure projects in Egypt since 1975. These projects focused predominately in the power, telecommunications, and water and wastewater sectors.

USAID/Egypt's applicable strategic objective is "Access to Sustainable Utility Service in Selected Areas Increased." USAID/Egypt's 2003 Annual Report also said that the "Mission's program therefore emphasizes the sustainability of U.S. government and Government of Egypt infrastructure investments."

USAID/Egypt planned to close out its utility infrastructure program by September 30, 2006.

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## Survey Objectives

We conducted this survey to:

- Describe the history and status of USAID/Egypt utility infrastructure projects.
- Analyze cost recovery levels of the power, telecommunications, and water and wastewater sectors.
- Describe the status of policy sector reform efforts in the power, telecommunications, and water and wastewater sectors.
- Report the major on-going impediments to sustainability for USAID-financed infrastructure projects.
- Report options available to USAID/Egypt.

Appendix I provides details on the survey's scope and methodology.

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## Survey Results

### History and Status of USAID/Egypt's Utility Infrastructure Projects

**Prior Conditions in Egypt** — A 1994 USAID evaluation<sup>1</sup> and other USAID documents mentioned the following conditions of each utility sector prior to the start of USAID's investments.

**Power** — According to the 1994 USAID evaluation, Egypt's electric power sector in the 1970s and 1980s had significant problems including: insufficient capacity for new firms; frequent brown-outs and blackouts; poor

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<sup>1</sup> "Capital Projects: Egypt Case Study" A.I.D. Evaluation Technical Report No. 20, February 1994

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electrical quality, such as interruptions and voltage spikes; and deliberate load shedding.<sup>2</sup>

**Telecommunications** — According to the 1994 USAID evaluation, Egypt's telephone system in the mid to late 1970s was antiquated and extremely congested, with a telephone line density of one telephone per 100 people. Repair attempts were often futile because the equipment was so old that cables disintegrated when touched. The country had not made any investments in modernizing its network for over 10 years. There were long waiting lists to obtain phone connections. Some international firms seeking an operations base in the Middle East were reluctant to establish offices in Egypt since telecommunications were so inadequate.

The 1994 USAID evaluation further noted that telephone reception was also very poor. To make a local call required many dialing attempts, and sometimes the dial tone could not be obtained for hours. Lines were frequently out of order, the connection rate was estimated to be only 25 to 40 percent, and disconnections amid conversations were common. At one company in Cairo, an average of only six calls per hour could be completed during the workday on each of its lines; this rate was the result of constant dialing and repeated attempts to obtain the desired connection. A transportation study reported that 30 percent of the road traffic in Cairo was due to inadequate telephone service. Because the telephone system was so unreliable, Cairo businesses used thousands of couriers to deliver messages.

**Water and Wastewater** — According to the 1994 USAID evaluation, by the mid-1970s Egypt's water and wastewater systems were severely overloaded. By 1970 Cairo's sewerage system, designed for a population of two million, broke down under the pressure of serving a population of six million. Cairo had two small wastewater treatment plants and five pumping stations dating to 1915. According to a 1978 USAID project paper, additions to the system had been made without broad planning. The 1978 USAID project paper also said that the wastewater treatment facilities on the east side of the Nile River were totally ineffective and that the wastewater treatment facilities on the west side of the river were also very limited in effectiveness. Consequently, raw sewage often flooded neighborhood streets in more than 200 areas of Cairo. Cairo's water supply system was also overloaded. The amount of treated water was 25 percent less than demand. In addition, the water transmission, distribution, and storage systems were in need of major repairs.

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<sup>2</sup> According to USAID/Egypt's Chief of Power and Telecommunications, a brown out occurs when a major portion of the electric power system loses service in an unplanned manner. A black out occurs when the entire electric power system fails. Load shedding is a deliberate decision by the utility to disconnect certain portions of the system in anticipation of demand being greater than available supply.

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A 1981 USAID project paper amendment identified the following health-related problems in Cairo.

- 46 percent of infant and child mortality was due to diarrheal diseases.
- The incidence of cholera in Cairo was twice the national average.
- One of the most onerous and hazardous physical events that occurred in unsewered homes was the overflowing of raw sewage from trenches into the confines of the homes or immediately in front of the home. Because women spent a large part of their daily lives within this area, they and their young children were continually exposed to the health hazards posed by the presence of raw sewage and suffered the indignities of seeing, smelling, and breathing the resulting foulness.

The Alexandria wastewater system was under similar pressure. In Alexandria, raw sewage ponded in low-income residential streets and was discharged along its Mediterranean Sea beaches.

**USAID’s Investments in the Utility Infrastructure Program** — According to USAID/Egypt’s financial records, since 1975, the USAID utility infrastructure program in Egypt has funded \$5.8 billion in the areas of power, telecommunications, and water and wastewater. The largest of these has been the water and wastewater sector with \$3.4 billion of investments. The second largest has been in the power sector with \$1.8 billion of investments. The third sector, telecommunications, has received about \$600 million of investments.

**Power** — USAID has funded \$1.8 billion in upgrades to the power grid, thus supporting about 35 percent of the increase in total power capacity since the mid-1970s, according to USAID/Egypt documents. USAID’s investments, as summarized in Table 1, have been nation-wide including the Aswan High Dam, Cairo, Alexandria, Middle Egypt, and the city of Ismailia along the Suez Canal.

Table 1: List of USAID/Egypt's Power Projects

<b>Number</b>	<b>Project Title</b>	<b>Years</b>	<b>Funding<sup>3</sup></b>
263-0001	Electric Power Distribution	1973-1980	\$29,834,000
263-0008	Gas Turbine Generators Talkha-Helwan	1976-1980	\$67,299,000
263-0009	Ismailia Thermal Power Plant	1976-1988	\$249,576,000
263-0023	National Energy Control Center	1976-1987	\$42,296,000
263-0030	Shoubra El Kheima Thermal Power Plant	1979-1991	\$261,503,000
263-0033	Urban Electric Power Distribution Equipment	1977-1991	\$97,128,000
263-0123	Energy Policy Planning	1982-1992	\$20,856,000
263-0140	Energy Conservation and Environment	1987-1998	\$140,975,000
263-0160	Aswan High Dam Power Station	1982-1995	\$139,516,000
263-0194	Alexandria Electrical Network Modernization	1989-1998	\$49,488,000
263-0196	Talkha Combined Cycle Plant	1982-1991	\$64,674,000
263-0215	Power Sector Support I	1989-2004	\$460,656,000
263-0224	Power Sector Support II	1994-2005	\$172,300,000
		<b>Total =</b>	<b>\$1,796,101,000</b>

**Telecommunications** — According to USAID/Egypt's financial records, beginning in 1978, USAID has funded five telecommunications projects as summarized in Table 2. According to USAID/Egypt documents, this has led to the installation of more than 800,000 telephone lines or about 15 percent of all new telephone lines, the institutional strengthening of Telecom Egypt, and the improvement and expansion of telecommunications networks in Cairo, Alexandria, and Port Said.

Table 2: List of USAID/Egypt's Telecommunications Projects

<b>Number</b>	<b>Project Title</b>	<b>Years</b>	<b>Funding</b>
263-0054	Telecommunications I	1978-1983	\$40,000,000
263-0075	Telecommunications II	1979-1985	\$80,000,000
263-0117	Telecommunications III	1979-1989	\$121,063,000
263-0177	Telecommunications IV	1988-1996	\$81,676,000
263-0223	Telecommunications Sector Support	1993-2006	\$281,900,000
		<b>Total =</b>	<b>\$604,639,000</b>

<sup>3</sup> For completed power, telecommunications, and water and wastewater projects in Tables 1, 2, and 3, we used expended amounts. For on-going projects, we used authorized amounts for the life of the projects.

**Water and Wastewater** — According to USAID/Egypt’s financial records, since 1975, USAID/Egypt has funded \$3.4 billion in water and wastewater infrastructure and associated institutional strengthening programs. According to a USAID/Egypt 2002/2003 status report, assistance initially targeted the emergency provision of sewerage infrastructure to relieve the flooding of raw sewage in Cairo and Alexandria, and the replacement and rehabilitation of services in the war-damaged cities along the Suez Canal. In the early 1980s and 1990s, USAID programs focused on the needs of Cairo and Alexandria. Since the mid-1990s, the program focus has shifted to smaller urban areas in the Delta, South Sinai, and Middle and Upper Egypt. In addition, the program has focused on institutional development. Table 3 summarizes these USAID projects.

Table 3: List of USAID/Egypt’s Water and Wastewater Projects

<b>Number</b>	<b>Project Title</b>	<b>Years</b>	<b>Funding</b>
263-0017	Water Use and Management	1976-1984	\$12,995,000
263-0038	Cairo Water I	1977-1989	\$97,265,000
263-0048	Canal Cities Water and Sewerage	1978-1988	\$165,332,000
263-0089	Alexandria Sewerage I	1977-1984	\$14,639,000
263-0091	Cairo Sewerage I	1978-1988	\$128,275,000
263-0100	Alexandria Wastewater System Expansion I	1979-1997	\$422,076,000
263-0161	Provincial Cities Development (Middle Egypt)	1982-1991	\$384,229,000
263-0173	Cairo Sewerage II	1984-2005	\$816,000,000
263-0174	Canal Cities Water and Wastewater II	1987-2000	\$377,078,000
263-0193	Cairo Water II	1988-1998	\$144,840,000
263-0236	Secondary Cities Development (Upper Egypt and Delta region)	1994-2005	\$325,000,000
263-0241	Alexandria Wastewater System Expansion II	1997-2004	\$203,000,000
263-0270	Egypt Utilities Management (Middle Egypt and Alexandria)	1997-2005	\$318,000,000
		<b>Total =</b>	<b>\$3,408,729,000</b>

**Selected Results of USAID’s Investments in Utility Infrastructure** — The following sub-sections provide examples of results in the power, telecommunications, and water and wastewater sectors.

**Power** — According to a USAID/Egypt 2002/2003 status report and the Government of Egypt<sup>4</sup>, from 1976 to 2002, the total installed capacity increased

<sup>4</sup> Government of Egypt Ministry of Electricity and Energy Egyptian Electricity Holding Company 2001/2002 Annual Report

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from 3,789 megawatts to 16,648 megawatts. According to USAID/Egypt documents, USAID's investments supported about 35 percent of the increase in total capacity since the mid-1970s.

**Telecommunications** — Egypt's telephone system saw large improvements. For example, according to annual reports of Telecom Egypt, the number of telephone lines increased from 510,000 to 10.3 million between 1981 and 2002. Subscriber waiting lists dropped from one million to 200,000 in the two years from 2000 to 2002. Over the 20 year period from 1981 to 2001, the telephone line density increased from 1.2 percent to 10.2 percent, the number of international circuits increased from 160 to 10,573, and the number of countries with automatic access to Egypt increased from 29 in 1981 to 234 in 2000. According to USAID/Egypt documents, specific USAID investments have added 800,000 telephone lines. According to a USAID/Egypt 2002/2003 status report, developing the telecommunications sector has been important to Egypt's ability to increase trade and investment.

**Water and Wastewater** — The following examples illustrate results in the water and wastewater sector.

According to USAID/Egypt documents for the Alexandria Wastewater Project, USAID programs have provided primary treatment of two thirds of the city's wastewater. These project documents further note that indicators of public health, such as infant mortality rates and water-borne diseases, had marked decreases. For example, infant mortality rates decreased 53 percent from 1983 to 1993. Water-borne disease rates for typhoid and hepatitis decreased 79 percent and 22 percent, respectively, for the period from 1987 to 1995. In addition to health improvements, the project documents noted that the wastewater program largely eliminated ponding in streets and discharges into the Mediterranean Sea.

According to the 1994 USAID evaluation, during a 10-year period from 1977 to 1987<sup>5</sup>, Egypt's diarrhea-related death rate for infants dropped about 50 percent from 48 to 26 per 1,000 live births. During the same period, diarrhea-related deaths for children ages 1 to 4 dropped two-thirds from 9 per 1,000 to 3 per 1,000. The 1994 USAID evaluation said that a number of international studies have demonstrated that improvements in water supply and sanitation reduce rates of disease and death.

### **Cost Recovery Levels of the Power, Telecommunications, and Water and Wastewater Sectors for Operation and Maintenance**

The percentage of operation and maintenance costs, excluding capital replacement costs, covered by revenue varied among the three utility sectors. According to USAID/Egypt's analysis of its performance indicators for cost recovery by utility

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<sup>5</sup> "Capital Projects: Egypt Case Study". A.I.D. Evaluation Technical Report No. 20, February 1994



sector, both power and telecommunications sectors reported nearly 100 percent or more cost recovery for operation and maintenance costs—99 percent and 115 percent respectively—for the most recent year reported, 2003. In contrast, the water and wastewater sector reported 90 percent cost recovery for operation and maintenance in 2003. However, this was a significant improvement from the 1999 baseline figure of 61 percent.

**Power** — According to USAID/Egypt analysis, Egypt’s electric power sector will continue to need expansion as both population and use increase. However, power is a capital intensive industry. USAID/Egypt’s analysis, seen in Table 4, shows that operation and maintenance cost recovery for the power sector has been stable for the last four years and was 99 percent for the most recent year reported, 2003. Operations and maintenance are being covered by revenue, leaving a gap in collected revenues being able to cover or partially cover future expansion requirements.

Table 4: Percentage of Operation and Maintenance Costs (Excluding Capital Replacement) Covered by Revenue in the Power Sector According to USAID/Egypt Analysis

Year	Actual Percentage	Target Percentage
1999	108%	---
2000	107%	108%
2001	105%	109%
2002	103%	110%
2003	99%	95%*
2004	---	97%*
2005	---	99%*

Note: \* indicates an adjusted goal figure due to the prospects of foreign exchange related difficulties continuing in the future. Foreign exchange-related difficulties arise when the exchange rate between the Egyptian pound and major foreign currencies falls sharply.

**Telecommunications** — The telecommunications sector revenues have exceeded operations and maintenance costs. However, as seen in Table 5, cost recovery has recently eroded. According to USAID/Egypt analysis, one probable cause is an expansion of services at a time of economic downturn. For example, the Egyptian telephone company added close to one million telephone lines in 2002. The considerable expansion in the number of telephone lines over the past decade has meant that a larger portion of the customer base is now among those with lower incomes—those most likely to be pinched financially in a faltering economy and thus unable to pay their bills on time.

Table 5: Percentage of Operation and Maintenance Costs (Excluding Capital Replacement) Covered by Revenue in the Telecommunications Sector According to USAID/Egypt Analysis

Year	Actual Percentage	Target Percentage
1999	149%	---
2000	138%	150%
2001	139%	152%
2002	130%	153%
2003	115%	120%*
2004	---	125%*
2005	---	130%*

Note: \* indicates an adjusted goal figure due to the prospects of foreign exchange related difficulties continuing in the future. Foreign exchange-related difficulties arise when the exchange rate between the Egyptian pound and major foreign currencies falls sharply.

**Water and Wastewater** — USAID and Government of Egypt officials said that the most basic issue with the water and wastewater sector was tariff rates that were too low and would require hard political decisions to raise them to economically viable levels. Even as low as water rates were nationally, the water rates in Cairo have been even lower.

In spite of this, according to USAID/Egypt analysis, some improvements in cost recovery occurred over the last four years to diminish the necessity of Government of Egypt subsidies. According to USAID/Egypt documents and interviews with Mission officials, with USAID encouragement, there has been some movement on the part of the Government of Egypt to address the issue of tariff reform. For example, according to USAID/Egypt’s technical comments on a draft of this report, the Government of Egypt has just enacted (September 2004) a major tariff increase in Cairo. It is premature to determine results.

According to USAID/Egypt analysis as noted in Table 6, operation and maintenance cost recovery for the water and wastewater sector has improved over the last four years and was 90 percent for the most recent year reported, 2003. According to Mission officials and documents, many Egyptian water and wastewater utilities made strides in cost recovery by reducing costs, improving billing and collection and, in some cases, increasing tariffs. However, this performance indicator only measured the results from nine water and wastewater utilities in which USAID projects were on-going or would take place during the planning period. These projects covered many of the larger Egyptian cities and regions (Alexandria, Fayoum, Minia, Beni Suef, Mansoura, Aswan, Luxor, and South Sinai) except Cairo.

Table 6: Percentage of Operation and Maintenance Costs (Excluding Capital Replacement) Covered by Collected Revenue in the Water and Wastewater Sector According to USAID/Egypt Analysis

Year	Actual Percentage	Target Percentage
1999	61%	---
2000	72%	62%
2001	73%	69%
2002	86%	79%
2003	90%	87%*
2004	---	92%*
2005	---	95%*

Note: \* indicates an adjusted goal figure due to the prospects of foreign exchange related difficulties continuing in the future. Foreign exchange-related difficulties arise when the exchange rate between the Egyptian pound and major foreign currencies falls sharply.

### **Status of Policy Sector Reform Efforts in the Power, Telecommunications, and Water and Wastewater Sectors**

In all three utility sectors, USAID/Egypt facilitated policy sector reform.

**Power** — According to USAID/Egypt, all legal and regulatory milestones for the power sector in USAID/Egypt’s strategy have been achieved. USAID/Egypt supported the reform of the electric power sector since 1992 through a number of initiatives. According to USAID/Egypt, its investments in infrastructure were linked to actual progress made to restructure the former Egyptian Electricity Agency into a holding company<sup>6</sup>, the Egyptian Electricity Holding Company, and affiliated generation, distribution, and transmission companies. The holding company was established in 1998, and the affiliated companies were separated in July 2001. In addition, the Egyptian Electric Utility and Consumer Protection Regulatory Agency was established by Presidential Decree in August 2000. According to USAID/Egypt, the Mission promoted this restructuring and also provided technical assistance. USAID/Egypt also implemented three financial management programs that introduced budget forecasting, loan tracking, and cash management models to the affiliated companies beginning in 1999 and finishing in 2002. USAID/Egypt’s programs also strengthened the Egyptian Electric Utility and Consumer Protection Regulatory Agency. Another USAID program, completed in 2003, established the financial system whereby electricity was sold and purchased between the transmission, distribution, and generation companies.

<sup>6</sup> According to a USAID/Egypt official, holding companies were formed in compliance with Egyptian Law and were 100 percent owned by the Government of Egypt. Holding companies consolidated and coordinated the activities of their respective sectors and reported aggregated financial results.

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**Telecommunications** — According to USAID/Egypt, all legal and regulatory milestones for the telecommunications sector in USAID/Egypt’s strategy have been achieved. According to USAID/Egypt, it has promoted policy reforms to enhance the sustainability of the sector and USAID investments. In 1994, the Government of Egypt agreed to a program for reforms such as market pricing, cost recovery, and fiscal autonomy. Until 1998, all of Egypt’s telecommunications services (including operation and regulation) were provided by one organization—Arab Republic of Egypt National Telecommunications Organization. In 1998, by Government of Egypt law, this organization was replaced by two independent entities—(1) Telecom Egypt which provided telecommunications services and was incorporated as a stock company and (2) the National Telecommunications Regulatory Authority which was established as an independent regulatory body.

**Water and Wastewater**— The sector reform initiatives in water and wastewater were more difficult for several reasons. First, due to the decentralized nature of the delivery of the service, the sector had many more legal entities including Government of Egypt Ministries, sub-ministry organizations including the National Organization of Potable Water and Sanitary Drainage and the New Urban Communities Authority, 7 public economic authorities, 4 economic authorities in Cairo and Alexandria, public companies, and local water and wastewater departments. Second, accountability was diffused. Third, as senior USAID officials noted, the very nature of water and wastewater made this sector difficult to be commercially viable for three reasons.

1. People generally have considered water as a free commodity—much more than telecommunications and power. Thus, tariff reform was generally more difficult than for the power and telecommunications sectors.
2. Power and telecommunications were either functionally working or not. In contrast, wastewater could be passed through a plant without adequate treatment and it would not be immediately obvious. Thus, people were more willing to pay for power and telecommunications service because the benefits were more directly obvious.
3. Due to health benefits resulting from water and wastewater projects, subsidies could be justified.

In spite of these roadblocks, according to USAID/Egypt, it has worked to strengthen institutions and to promote sector reform including private sector participation, cost recovery, and regulation. For example, according to USAID/Egypt’s technical comments on a draft of this report, with USAID encouragement, two presidential Decrees were signed on April 27, 2004, that set up a holding company for water and wastewater utilities and a single regulatory authority that will carry out functions such as improving customer service and setting economically-based tariffs. These reforms in the water sector follow a parallel path with organizations already established in the power and telecommunications sectors.

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## **Major On-Going Impediments to Sustainability For USAID-Financed Infrastructure Projects**

Major on-going impediments to sustainability for USAID-financed water and wastewater projects exist for several reasons—the primary reason being inadequate cost recovery according to USAID/Egypt officials. According to USAID/Egypt’s technical comments on a draft of this report: this sector’s operations and maintenance costs are only partially being recovered in revenues; policy sector reform is in the early stages; and regulatory as well as holding company entities are not yet operational. This sector also has inherent difficulties such as more legal entities, diffused accountability, perceptions of water as a free commodity, less visibility of operational capability (phones and electrical power are obviously either working or not working), and justification of subsidies due to health benefits from water and wastewater projects.

USAID and Government of Egypt officials said that the most basic issue with the water and waste-water sector is tariff rates that are too low and that difficult political decisions will be required to raise them. Nevertheless, according to USAID/Egypt’s technical comments on a draft of this report, the Government of Egypt has just enacted (September 2004) a major tariff increase in Cairo. Although it is premature to determine results, this change (if sustained) increases the prospects for sustainability in this sector.

### **Options Available To USAID/Egypt**

USAID/Egypt intends to close out active utility infrastructure activities by September 30, 2006. Within this framework, we make the following suggestions.

USAID and Government of Egypt officials believe that major impediments to the sustainability of USAID-financed projects continue in the water and wastewater sector—specifically in insufficient cost recovery levels. The USAID policy sector reform efforts are focused on developing mechanisms that will assist this process. Consequently, we suggest that:

- USAID/Egypt develop a documented exit strategy that specifically addresses on-going impediments to the sustainability of its infrastructure investments in the water and wastewater sector.

Both Automated Directives System (ADS) 203.3.11 (Strategic Objective Close Out Reports) and USAID/Egypt Mission Order No. 202-4 (Close Out of Strategic Objectives, Projects and Programs) require close-out reports of strategic objectives. The ADS lists a number of required items to be included in each close-out report including costs, significant changes, lessons learned, summary of performance indicators, list of evaluation and study reports, prospects for long-term sustainability, and the summary of overall impact.

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During the course of this review, we noted a distinct gap in collected and organized information that addresses the impacts and outputs of USAID/Egypt's utility infrastructure projects. Documentary evidence on project impacts (and to less extent outputs) is scanty and is often based on anecdotal rather than analytical evidence. Given the size, duration, and importance of this USAID/Egypt strategic objective, we suggest that:

- USAID/Egypt prepares an evaluation that (to the extent possible, given age and the availability of records) thoroughly documents the impacts and outputs of USAID's infrastructure investments in accordance with requirements of Automated Directives System 203.3.11 and Mission Order 202-4.

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## **Evaluation of Management Comments**

USAID/Egypt fully agreed with both suggestions and has developed actions plans to implement each suggestion.

In regard to the first suggestion, the Mission noted that it is already implementing a set of complementary activities that focus on sustainability. According to the Mission, these activities focus primarily on:

- (1) improving the management of utilities through training and the establishment of management and financial systems;
- (2) improving the commercial orientation of utilities;
- (3) supporting regulatory agencies to carry out functions such as improving customer service, licensing and rationalizing tariffs;
- (4) encouraging private sector participation through support for outsourcing of key functions to private contractors; and
- (5) supporting private sector financing of infrastructure.

According to USAID/Egypt, the basic elements of an exit strategy have been planned and are being implemented. The need is to incorporate all the activities into one document and to clearly explain how they will combine to enhance the sustainability of USAID's investments after the close-out of the infrastructure program. USAID/Egypt plans to immediately commence drafting a concise exit strategy, utilizing USAID staff and, as needed, contractor inputs.

In regard to the second suggestion, the Mission plans to commence the evaluation in January 2006. USAID/Egypt noted that guidance is provided in ADS 203.3.6.1, *When Is an Evaluation Appropriate?* This says that the Agency recommends that strategic objective teams conduct at least one evaluation aimed at assessing results achievement and lessons learned during the life of each strategic objective. According to the Mission, the Office of Inspector General's suggestion comes at an opportune time.

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**Scope and Methodology****Scope**

The Regional Inspector General/Cairo conducted this survey of the sustainability of USAID-financed utility infrastructure activities in Egypt. Our survey was not an audit and covered the history of USAID-financed utility infrastructure investments—power, telecommunications, and water and wastewater—from 1975 to 2004. According to USAID/Egypt’s financial records, the USAID utility infrastructure program in Egypt has funded \$5.8 billion in the areas of power, telecommunications, and water and wastewater.

We reviewed prior reports of the Office of Inspector General to identify conditions that are relevant to the current status of sustainability. In August 1994, the Office of Inspector General issued a comprehensive audit report reviewing the operation and maintenance of nine water and wastewater projects. The audit covered \$1.6 billion in project funding and entailed site visits to 41 facilities. Subsequently, the Office of Inspector General issued relevant audit reports in 1995, 1997, and 1999. The 1995 audit report relied on the work of the audit completed in 1994. The 1997 audit report reviewed results reporting of the water and wastewater area. The 1999 audit report looked at the accuracy of reported results for two performance indicators in the power and telecommunications areas.

This assignment was part of the Office of Inspector General fiscal year 2003 audit plan and was originally scheduled to be an audit with the following audit objective: “Has USAID/Egypt ensured the sustainability of USAID funds invested in infrastructure?” We changed this assignment to a survey because of (1) the lack of consistently defined criteria, (2) the scale of the program both in funding and timeframes, and (3) the necessity of reviewing older projects.

Our survey originally included an objective to review maintenance records at selected utility infrastructure facilities. As a result, we visited 22 power, telecommunications, and water and wastewater sites in Egypt. Although we were able to note that most sites had documented maintenance systems, the depth of our survey was not sufficient to reliably conclude on the adequacy of these systems to ensure the continued and sustainable operational effectiveness of each facility.

We conducted this survey at USAID/Egypt in Cairo, Egypt. Preliminary survey work was conducted from October 7, 2002, to February 2003. The fieldwork was resumed from October 15, 2003, through March 17, 2004.

**Methodology**

During this survey, we interviewed USAID, local government utility, and contractor officials; and reviewed related documentation covering background, organization,

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historical funding, project information, and management. We did not independently validate information.

For our survey objective to describe the history and status of USAID/Egypt utility infrastructure projects, we reviewed numerous historical USAID documents and reviewed USAID/Egypt's financial records.

For our survey objective to analyze cost recovery levels of the power, telecommunications, water and wastewater sectors, we reviewed USAID/Egypt's analyses of its performance indicators and interviewed USAID and local government utility officials.

For our survey objective to describe the status of policy sector reform efforts in the power, telecommunications, and water and wastewater sectors, we reviewed Mission documents describing its sector reform efforts and interviewed Mission officials.

For our survey objective to report the major on-going impediments to sustainability for USAID-financed infrastructure projects, we synthesized the views of USAID and Government of Egypt officials through interviews and a review of USAID documents.

For our survey objective to report options available to USAID/Egypt, we identified actionable items that the Mission can implement to facilitate the Mission's planned exit from sustainable infrastructure activities after about 30 years.

USAID/Egypt has been managing its infrastructure investments without a formalized definition of sustainability. Given that USAID/Egypt's major investments in utility infrastructure are nearing their end, it is too late to assert a definition to guide project management. This lack of a working definition in turn did not provide us sufficient criteria for measuring progress towards sustainability. For this review, we did not presume to define sustainability. We also did not cover a number of other elements that USAID and contractor staff also noted as being important. For example, other elements include the following.

- availability and procurement of spare parts
- potentially excessive utility staffing levels
- utility staff training
- projected gaps for future capital requirements—in particular for water and wastewater projects
- sustainability of Government of Egypt subsidies for the utility sectors
- ability of utilities to access private financing such as from capital markets
- political will of the Government of Egypt to raise tariffs—particularly in the water and wastewater sector



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- economic environment in the utility infrastructure sectors and whether this will attract private investment
  - affordability and ability to shift revenues from the Government of Egypt to consumers

**Management  
Comments**

**MEMORANDUM**

**TO:** RIG/Cairo, David H. Pritchard

**FROM:** D/DIR, Mary C. Ott /s/

**SUBJECT:** Report on Sustainability USAID-Financed Utility Infrastructure Activities  
in Egypt – Draft Report

Following is the Mission’s response to the OIG draft report and its two suggestions made to Mission management.

**Suggestion No. 1:**

USAID/Egypt should develop a documented exit strategy that specifically addresses on-going impediments to the sustainability of its infrastructure investments in the water and wastewater sector.

**USAID/Egypt Response:**

The Mission fully agrees with the RIG suggestion to develop a documented exit strategy that supports sustainability of USAID’s successful infrastructure program. While there is not a formal exit strategy document for the infrastructure program, the strategic plan for 2000-2009 emphasized that SO18 should implement a number of activities to provide for a “... logical graduation strategy for a mature program ... protecting USAID’s massive capital investments to date.” Consequently, a set of complementary activities that focus on sustainability, in support of the strategy, are currently being implemented. These activities focus primarily on: (1) improving the management of utilities through training in management/leadership, administration, and operations as well as the establishment of management and financial systems; (2) improving the commercial orientation of utilities through support for restructuring of utilities into holding and affiliate

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companies that have improved management and financing autonomy, enhanced salary and employee incentive structures, and the ability to retain revenue surpluses for the improvement of operations; (3) supporting regulatory agencies to carry out functions such as improving customer service, licensing and rationalizing tariffs; (4) encouraging private sector participation through support for outsourcing of key functions to private contractors – utilizing assistance on feasibility studies and transaction support; and (5) support for private sector financing of infrastructure through the establishment of a DCA financing facility.

A brief example may be useful to illustrate how the USAID has been assisting with the critical issue of sustainability. Within the limitations of funding and the remaining time of SO18, we provided assistance that analyzed issues and assisted the GOE in drafting a presidential decree which established a water sector regulatory agency. Sustainability of utility service in Egypt can only be assured if the GOE makes hard decisions such as raising water tariffs and, in the past, this has been extremely difficult for a number of reasons including the lack of proper analysis. The regulatory agency will provide a structure to systematically analyze issues such as the cost of service, customer service standards and their ability to pay.

In sum, the point of these activities is to improve the management and operational capability of utilities as a “leave behind” when the USAID program ends, provide a better regulatory environment for utilities, assist in establishing a commercial orientation among utilities and to replace USAID resources with those of banks and private sector service delivery enterprises. Thus, we believe the basic elements of an exit strategy, within the resource limitations of USAID, have been planned for and are currently being implemented. The need articulated by RIG is to incorporate all the activities into one document and to clearly explain how they will combine to enhance the sustainability of USAID’s massive investments after the close-out of the infrastructure program.

With regard to new interventions that promote sustainability, potential options are limited due to decreasing staffing and funding for Egypt. However, the SO18 Strategy states, “As the Infrastructure program ends in FY2006, management of a few activities will pass to two other programs. This hand-over will include the transfer of management responsibilities as follows: (i) shifting small-scale construction activities to the Democracy/Governance SO in support of its local government and citizen participation efforts, and (ii) passing the management of bank financing under the Development Credit Authority, private sector participation and support for the establishment of a regulatory agency in the water sector to the Economic Growth program.” In particular, the Mission has already agreed to consider continued support for the development of an operational

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water sector regulatory agency and holding company, but only if significant sector reform implementation progress is made against meaningful milestones.

Our plan is to immediately commence drafting a concise exit strategy, utilizing USAID staff and, as needed, inputs from our contractors. This task should not be onerous as most of the work that is possible to implement within staffing and funding constraints is already ongoing – SO18 is not scheduled to get more funding. If additional interventions to ensure sustainability of USAID’s massive infrastructure investments are deemed necessary, it appears inevitable that additional funding and time be provided. However, potential high development pay offs could probably be achieved with limited technical assistance to further develop an operational water regulatory agency (current assistance is limited to the development of legislation to establish the entities to provide initial, start-up support). Additional productive assistance could entail management/leadership training and management systems development within holding companies that operate the power, telecommunications and water/wastewater utilities.

In view of the Mission’s ongoing actions in implementing the graduation strategy and agreement to write a formal exit strategy, we believe that the first suggestion in the RIG report can be addressed shortly. This suggestion is fully accepted by the Mission and it will be completed upon acceptance by Mission management of the formal exit strategy document.

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### **Suggestion No. 2:**

USAID/Egypt prepare an evaluation that (to the extent possible, given age and the availability of records) thoroughly documents the impacts and outputs of USAID’s infrastructure investments in accordance with requirements of both ADS 203.3.11 and Mission Order 202-4.

### **USAID/Egypt Response to the second Suggestion**

The Mission fully agrees with the RIG suggestion to develop a comprehensive evaluation of impact and outputs. The tremendous impact of this incredibly successful infrastructure program, as well as valuable lessons learned, should be documented and disseminated broadly. Further, preliminary examination indicates that a full evaluation of the \$5.0 billion invested to improve Egypt’s infrastructure could greatly improve the public perception of the USAID program. While SO18 implements a comprehensive performance management system, this provides a picture of implementation progress

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against expected, targeted milestones. It does not provide an in-depth assessment of a number of important development issues. Regarding the Infrastructure Program, these include issues of sustainability, cost-effectiveness and lessons learned that might guide other Missions or development partners in the design and implementation of future programs. Additional guidance is provided in ADS 203.3.6.1, When Is an Evaluation Appropriate? This states “The Agency recommends that SO Teams conduct at least one evaluation aimed at assessing results achievement and lessons learned during the life of each SO.” The RIG suggestion comes at an opportune time to respond to the ADS.

In this context, the Mission fully agrees with the RIG suggestion to prepare an evaluation that documents the outputs and impacts of USAID’s infrastructure program which is scheduled to be closed out on September 30, 2006. In order to complete this large, complex task on time, the Mission proposes to commence the evaluation in January 2006, utilizing PD&S funding to hire a contract evaluation team.

As noted in the RIG report, ADS 202.3.11 and Mission Order 202-4 provide guidance to program managers on the close-out of SOs, projects and contracts, which is relevant to the Infrastructure Program. Some of the topics within this guidance, such as the close-out of contracts and certain financial information, relate to actions other than program impact. This information will be included in a separate SO close-out report, in accordance with Mission and ADS policy, to supplement the evaluation suggested by RIG.

SO 18 intends to coordinate the development of the statement of work for the evaluation with RIG, to ensure that all issues noted in the RIG report are addressed. In view of the Mission’s plan to carry out the evaluation and close-out activities that comply with ADS 202.3.11 and Mission Order 202-4, we believe that actions have been identified that will, at the appropriate time, fully address the second suggestion in the RIG report.

SO18 also intends to transmit separately to RIG a number of technical and editorial comments that do not affect the RIG suggestions or Mission Responses. These minor issues have already been informally discussed between SO18 and RIG and need not be included herein.