A. Country and Sector Background

1. Egypt is undergoing a major political and social transformation in the aftermath of the January 2011 revolution. Experience in other countries suggests that this process may unfold over a relatively long period of time, during which the situation will remain fraught with significant risks and uncertainties, and during which external assistance can yield significant social returns. Indeed, poverty, socially inclusive economic development, transparency, citizen participation, and governance have come to the forefront of the political and social debate. In spite of the political turmoil, Egypt retains its solid administrative capacity, including the capacity to implement externally financed operations.

2. With a population of 80 million people of which about half live in rural areas, Egypt has achieved steady economic growth over the past decade. The recent international economic slowdown has reduced the country’s GDP growth rate from over 7 percent in 2006-2008 to 4.5 percent in 2009. The economy was showing positive signs of recovery from the mild effects of the global crisis, the GDP registering a 5.6 percent increase in the first half of Fiscal Year 2011 (FY2011), up from 5.1 percent in FY10. Growth is estimated to have declined to 1.8 percent for the whole FY2011, reflecting the impact of the political events, but is expected to rebound in FY2012 if political situation remains stable and economic activities resume. Egypt is expected to face, however, increased fiscal and balance-of-payments pressure in the next few years.

3. The key feature of the electricity sector in Egypt is a fast growing demand, which was driven by overall economic growth, development of energy intensive industries, and increasing use of electrical appliances, especially air-conditioners. Peak demand in FY2005 was 15,678 MW; by the summer 2009 it reached 21,330 MW, a 36 percent aggregate increase. The reported demand growth of more than 10 percent in 2010 was even higher than in the previous years, leading to significant rotating blackouts during this summer and raising public concerns about energy security. The demand growth may have slowed in 2011 due to the economic slowdown, but is likely to rebound in tandem with economic growth.
4. The high demand growth has put a significant pressure on the supply side, both in the power sector and in the fuel production and supply chain. The power generation capacity has not been able to match the growth in demand, as it grew only by 27 percent between FY05 and FY09, from 18,404 MW to 23,502 MW respectively. As a result, the nominal reserve margin – the difference between the nominal generation capacity and the peak demand -- fell from over 17 percent in FY05 to about 10 percent in FY09. The actual reserve margin is even lower, as the capacity of the combined cycle plants – which have acquired an increasing share in the generation capacity mix during the recent years -- falls below the nominal during summers (when the system demand is at its peak and the generation capacity needed the most) due to de-rating caused by high summer ambient temperatures.

5. The government’s strategy to balance electricity supply and demand includes measures on both sides. On the supply side, the government-owned Egyptian Electricity Holding Company (EEHC), a holding structure responsible for electricity supply, has increased investments in new power plants. About 6,500 MW of plants currently under construction, financed by EEHC, should be completed between 2010 and 2014 as part of the 2007-2012 sector investment plan. The 2012-2017 investment plan calls for the construction of more than 10,500 MW in traditional technologies, to be financed both by EEHC and the private sector. After a ten-year hiatus, the government in early 2010 invited private investors to construct a 1,500-2,250-MW Dairut Independent Power Plant (IPP) with combined cycle gas turbine technology (CCGT). The activities in pursuing this project have slowed down during the last six months due to the political events, but the project is expected to proceed as the situation stabilizes.

6. On the demand side, the government has been gradually increasing electricity and fuel prices since 2004, although the prices still remain below cost of supply. The difference has been financed by the government through budget transfers to the energy companies in the order of US$11 billion (largely to fuel suppliers) or absorbed by the energy sector companies. Although EEHC benefits from low fuel prices, because of still low electricity prices it is in a tight financial position, saddled with large debt and highly leveraged. The government is taking actions to restructure EEHC debts. The fiscal support for energy consumption is likely to increase in the short term given the social implications of energy pricing.

7. The government recognizes the need to promote non-price measures to improve end-use energy efficiency. EEHC is implementing a program of replacing the incandescent light bulbs with the compact fluorescent light (CFL) bulbs. Energy efficiency standards for some domestic appliances have been developed and implemented. Energy efficiency codes for new buildings have also been prepared, although they remain voluntary for the residential sector. In the transport sector, there are some initiatives with energy efficiency dimensions. The Supreme Council of Energy has set up an inter-agency Energy Efficiency Coordination Council with a small Secretariat Unit in May 2009, with the objective of streamlining energy efficiency activities nationally. These efforts, however, need to be intensified and scaled up. The World Bank is undertaking an energy efficiency study for Egypt, designed to develop policy recommendations for scaling up energy efficiency through institutional and regulatory reform, and identification of financing and implementation mechanisms and priority areas for investments.

8. The government is developing a strong program in renewable energy. About 500 MW of wind turbines have been installed; the government plan calls for about 7,000 MW by 2020 toward meeting the target of having 20 percent of electricity generated from renewable resources (including large hydropower plants already in operation) by then. The World Bank and CTF are supporting the program through the Wind Power Development Project, approved in June 2010, financing the construction of a high voltage transmission line to link the wind power plants in the Red Sea region to the national grid. In addition, a 140-MW integrated CCGT-solar power plant at Kureymat (with a 20-MW concentrated solar thermal field), supported by a US$50 million GEF grant administered by the World Bank, is about to be completed. Egypt is participating in the CTF-sponsored regional investment plan for scaling up CSP technology with a 100-MW Kom Ombo CSP plant, whose construction is expected to start in 2012.
9. The power sector institutional structure includes: the Ministry of Electricity and Energy (MoEE), which is the principal policy agency in the sector; Supreme Council for Energy, established in 2006 as a Committee of the Prime Minister’s Cabinet and reporting to the President, which deals with strategic issues in the energy sector, including major policy initiatives, investment programs, and energy pricing; the Egyptian Electric Utility and Consumer Protection Regulatory Agency (EEUCPRA), which issues licenses, establishes performance standards and monitors performance of the licensees, but has no tariff-setting authority, which is the prerogative of the Cabinet of Ministers; EEHC, the principal utility organized as a holding structure in 2000 and reporting to MoEE, which includes sixteen subsidiaries: six electricity production companies, nine regional distribution companies, and a transmission-and-dispatch company (Egypt Electricity Transmission Company – EETC), with EETC also acts as a single-buyer of electricity at the wholesale level; and the New and Renewable Energy Agency (NREA), also reporting to the MoEE, in charge of renewable energy projects, excluding hydropower, which is the responsibility of the Hydropower Projects Authority.

B. Objectives

The project development objective is to contribute to improving the security and efficiency of electricity supply within the Borrower’s territory by adding new generation capacity based on efficient thermal power generation technology.

C. Rationale for Bank Involvement

10. Over the last several years the World Bank has developed a sizable portfolio of operations and activities in the energy sector in Egypt, in its effort to assist in developing this key sector underpinning economic activities and social services. The investment operations have created conditions for the Bank to develop its policy dialogue and technical assistance for a number of priority issues which are part of the Government’s energy strategy: demand-side management, generation planning, public-private partnership, electricity market financial transactions management, carbon capture and storage, etc. In the policy dialogue, the Bank has focused in particular on the following areas:

- development of renewable energy: scaling up development of privately-funded wind power, energy efficiency measures in the transport sector, and development of solar energy, including through support from the Clean Technology Fund (CTF);
- energy pricing and subsidies: analytical work on energy pricing and subsidies
- private investment in traditional generation technologies (gas-fired power plants): analytical work and technical assistance on options for public-private partnership in electricity generation; and
- regional energy integration: participation in regional Concentrated Solar (CSP) program, supported by CTF, and analytical work on integration of electricity and gas networks in the Mashreq region, in collaborating with the Arab League.

11. Through these investment operations and technical assistance activities, the Bank has become an important development partner in the Egypt energy sector, achieving a number of important outcomes:

- Helping securing adequate electricity supply by supporting increase in electricity generation capacity;
- initiating the move toward a more sustainable investment environment through the analytical work on pricing and private investment;
• taking concrete steps to attract private investment in the power sector in traditional and renewable technologies;

• developing an increasingly active partnership between the Government of Egypt and the Bank in regional and global forums, promoting more sustainable energy solutions for the region, including through scaling up renewable energy and regional integration, both within MENA region and between MENA and its neighboring regions.

12. The power sector in Egypt is moving toward a number of important changes: getting private sector involved in financing both traditional and renewable generation technologies; scaling up and commercializing renewable energy development as well as energy efficiency and demand side management; and continuing with financial consolidation of the sector, which has come under stress. All this needs to be done simultaneously with the major efforts to maintain the security of supply and dealing with social and economic issues in the political developments in the country and the region. Private sector investment is not likely to ramp up its investment sufficiently quickly to fully finance the investment program in generation for the next several years, given its long absence from the sector and the need to create a successful track record of private involvement, especially under the current circumstances. Thus, there is a need for the state-owned utility, EEHC, to finance a portion of new generation capacity, albeit a portion which is presumably to decrease over time. The Bank’s support to this agenda remains very important, in partnership with the Government and other multilateral and bilateral financing and development agencies.

13. The Bank loan for additional financing for the Giza North power plant will further help fill the critical financing gap that the private sector cannot do in time to help sustain the increase in generation capacity necessary to keep up with growing demand. It will also strengthen the Bank’s credibility as a partner which can help address sector priorities in a timely manner, combining its financial and knowledge instruments to assist the sector in maintaining its services while transitioning toward a more sustainable and more efficient structure

D. Description of the activities under additional financing

14. The proposed project activities to be financed by the additional financing include construction of: (i) a third 750-MW unit at the Giza North Power Plant; and (ii) a 105-km gas pipeline to ensure sufficient supply of natural gas to the expanded power plant; and (iii) two single circuit 500 kV transmission lines each with a length of approximately 25 km, which are upgraded from the originally designed 220 kV lines to accommodate the larger power plant.

E. Financing

Source: ($m.)
Borrower 293.00
International Bank for reconstruction and Development (existing) 240.00
International Bank for Reconstruction and Development (new) 164.00
European Investment Bank  
Total 792.00

F. Implementation

15. The power plant component will be implemented by Cairo Electricity Production Company (CEPC), an affiliate of EEHC, under EEHC supervision and the same arrangement as for the original project. The transmission line component will be implemented by Egypt Electricity Transmission
Company (EETC), an EEHC subsidiary, under the supervision of EEHC. The gas pipeline component will be implemented by GASCO, an affiliate of Egypt Gas Holding Company (EGAS), responsible for operating and maintaining gas transmission infrastructure under EGAS supervision.

16. In terms of lending arrangement and flow of funds, there will be a Loan Agreement between the Bank and the government, represented by the Ministry of International Cooperation; a Project Agreement between the Bank and EEHC; and a Project Agreement between the Bank and GASCO. The government will on-lend the Bank loan proceeds to EEHC and GASCO through subsidiary loan agreements.

G. Sustainability

17. Sustainability of the project depends on the ability of EEHC/CEPC/EETC and EGAS/GASCO to implement and operate the project successfully. That ability has been proven through a number of large investment projects implemented by these organizations.

18. Giza North power plant employs the combined cycle gas turbine (CCGT) technology, which is of standard design and similar to a number of power plants already in operation in Egypt. Similarly, the construction of the gas pipeline does not pose any unusual challenges. The cost estimates for the project reflect the current level of prices and their expected movements during the project implementation period.

19. There is a strong commitment to the project by both the project implementing agencies and the government. Project preparation documents – the technical feasibility studies, ESIsAs, and the RPFs -- have been completed successfully. The government has been very proactive in obtaining project financing from the external agencies.

20. Giza North power plant is likely to have a secure market for its output because of the growing electricity demand in the country and the competitiveness of the plant in terms of its operational efficiency and high ranking in the dispatch merit order. The ability of the plant to operate both on natural gas and light diesel should further strengthen its sustainability.

H. Lessons Learned from Past Operations in the Country/Sector

21. All Bank-financed investment projects in the energy sector in Egypt are being implemented well. This successful experience has been carried over to the design of Giza North project, especially in terms of project implementation arrangements, which includes a number of supply-and-install contracts procured through international competitive bidding. This arrangement combines in an optimal way the capacity of the project implementing agency (EEHC) and its engineering consultant with those of the contractors. The experience with the Gas Connection project, implemented by EGAS (and its gas distribution affiliate Town Gas), has also been excellent.

22. The previous investment projects also demonstrated the importance of a pragmatic and balanced approach to the Bank involvement in addressing sector priorities. The Bank operational portfolio in the energy sector in Egypt has evolved into a broad range of activities that encompass investment operations in traditional and renewable energy, gas distribution, and associated analytical and policy work in energy pricing, sector reforms, and private investment. Such approach strengthened the Bank’s credibility as a partner who is able and prepared to recognize and assist in addressing the sector priorities. The large investment operations which help maintain security of supply are important to create conditions for the policy makers to devote their attention to other strategic policy issues and to serve as a platform for the Bank to offer its assistance in those areas. The framework for private investment which is being developed and implemented as part of the Giza North project and other activities that are pursued in parallel (scaling up wind power, pursuing CSP program, the work on energy efficiency, etc.), should help
gradually shift the paradigm in the sector toward developmentally more sustainable policies where public and private sectors partner in ensuring that the sector keeps providing reliable and efficient service.

I. Safeguard Policies (including public consultation)

23. The addition of the third module to the existing Giza North power plant and all construction-related activities will take place on the site already belonging to EEHC. Associated infrastructure, particularly the outgoing transmission line may require some land acquisition (tower footings). A Resettlement Policy Framework (RPF) was prepared for the original Giza North power plant project and will apply to the expanded scope of the plant. An additional RPF has been prepared by GASCO to cover any impacts by the Noubaria – Mitnama pipeline. Most of the land acquisition for the gas pipeline will be temporary and limited to the construction period -- only about 4 feddans are expected to be acquired permanently for the valve rooms. With regard to temporary land acquisition, Egypt has a well-established and transparent crop compensation system that is in compliance with Bank safeguard policies. Farmers will be compensated for loss of agricultural income prior to the start of physical works. This approach has successfully been applied in several previous Bank-funded projects. Compensation rates are well known and detailed records are kept. Farmers interviewed generally expressed satisfaction with the system.

24. The Environmental and Social Impact Assessment (ESIA) for the power plant has been updated to reflect the increased scope of the project. A separate ESIA was prepared for the gas transmission pipeline. The ESIs include Environmental and Social Management Plans (ESMPs), detailing the institutional arrangements, the mitigation measures, and the monitoring plan for the potential impacts resulting from the construction and operation of the facilities. Quantitative Risk Assessments (QRAs) are included as part of the ESIs. The project remains classified as category A according to the World Bank’s Operational Policy 4.01 on environmental assessment.

25. The Giza North power plant will be connected to the Egyptian high-voltage electricity transmission grid through 220-kV underground cables (4 cables, each about 2.5 km in length) and overhead line (once double circuit of about 10 km), and two 25-km 500-kV overhead lines. A generic Environment and Social Management Plan (ESMP) for transmission has been included in the ESIA of Giza North Power Plant. The exact alignment for the transmission line routes and tower footings will be known only during implementation after actual ground survey, after which a site-specific ESMP and Resettlement Action Plan (RAP) will be prepared. Before finalization of the transmission lines design, the ESMP and RAP will be reviewed by the Bank’ safeguards team and disclosed to ensure compliance with the Bank policies.

26. In addition to continued consultation during the ESIA process for the original project, formal consultations were also undertaken for the additional financing project to discuss the ESIA/ESMP and RPF. A scoping session for the original project was held on October 21, 2009, and a second public consultation meeting on January 11, 2010. Public consultation sessions for the additional financing were convened at the draft ESIA stage. Public consultative meetings were held on February 17, 2011 for the Noubaria – Mitnama pipeline, and on April 19, 2011 for the power plant. The details of these meetings are given in the ESIs reports.

27. The updated ESIA report for the power plant and the new EISA for the gas pipeline were disclosed by EEHC and GASCO respectively in English and Arabic on their websites on May 31 and June 23, 2011. The ESIA documents were disclosed by the Bank Infoshop on June 23 and June 28, 2011. The ESIA for the power plant was slightly revised thereafter and re-disclosed by EEHC on its website on September 2011 and by the Bank Infoshop on September 13, 2011.
28. The addition of a third 750 MW unit triggers the policy on Projects on International Waterways (OP 7.50). Therefore, the Bank notified the riparian states along the River Nile that the GOE is currently preparing the Additional Financing for Giza North Project on August 11, 2011 and provided with them 30 days for any comments and response. No question was raised and no objection was received from the riparian states as September 12, 2011. The team’s assessment is that the proposed project activities will not cause appreciable harm to the other riparian states,

29.

J. List of Factual Technical Documents
   - Feasibility study report for the third module of Giza North
   - Feasibility study for the Gas Pipeline

K. Contact point

Contact: Jianping Zhao
Title: Senior Energy Specialist
Tel: (202) 458-0171
Fax: (202) 614-4022
Email: Jzhao@worldbank.org

L. For more information contact:

The InfoShop
The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 458-4500
Fax: (202) 522-1500
Email: pic@worldbank.org
Web: http://www.worldbank.org/infoshop