



The Egyptian Nuclear Power Program

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Contents

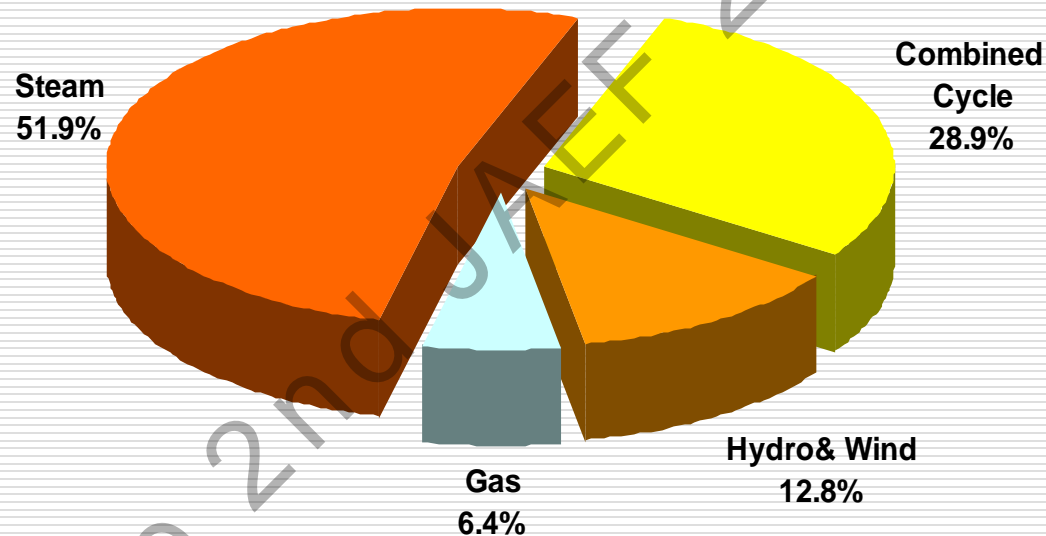
- Electricity demand and concerns
- The introduction of nuclear power in Egypt
- Hiring an International Consultant
- Development of Infrastructure
 - The Egyptian nuclear and radiation law
 - Establishment of an Independent Regulatory Body
 - The site of nuclear power plant
 - Development of human resources
- Project management
- Conclusion



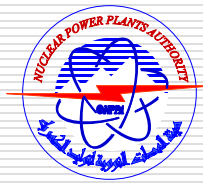
Electricity Demand And Supply

- ❑ Electricity demand increased at an average annual growth rate of 7% in the last decade. In 2006 growth rate was 10.3%.
- ❑ In 2008 peak load was 20 GW.
- ❑ Current total installed capacity is 23 GW, and it is expected to reach 63 GW by year 2027.
- ❑ Hydro sources are currently almost fully utilized.
- ❑ Wind Energy installed capacity at the Red Sea coast are 230 MW (~1% of total installed capacity).
- ❑ The first integrated solar-thermal power plant (140 MW with solar contribution by 20 MW) is financed from the Global Environmental Facility and the Japan Bank for International Development, and commercial operation of the project was scheduled to be mid 2010, now it is under commissioning.

Electricity distribution



The mix of the electrical energy generated in 2008 by Egyptian Electricity Sector



Key concerns of Egypt

- **The growing demand for energy in Egypt and limited recourses of oil and natural gas mean that we must be more concerned with nuclear energy and with diversifying sources of energy.**
- **Consideration of nuclear energy as an option for electricity generation in Egypt has been revived by Presidential Decision to go ahead in October 2007**
 - Start a program to construct a number of Nuclear Power Plants for electricity generation;
 - Start the implementation of the necessary steps to construct the first Nuclear Power Plant for electricity generation;
 - Start legislative and structural procedures related to the energy sector in general, and the mechanisms and bodies specific to nuclear energy in particular.



The Introduction Of Nuclear Power In Egypt

- ❑ Within the framework between the IAEA and Egypt, Assistance was specifically requested in the areas of nuclear safety, comparative energy assessment and siting;
- ❑ An action Plan in support of Egypt's ongoing studies concerning the feasibility of introducing nuclear power into the national energy mix has been set in March 2007;
- ❑ A work plan in cooperation with the IAEA has been developed for the period 2009-2011 in compliance with the IAEA NG-G-3.1 "Milestones in the Development of a National Infrastructure for Nuclear Power";
- ❑ Egypt is proceeding with its Nuclear Power Program.

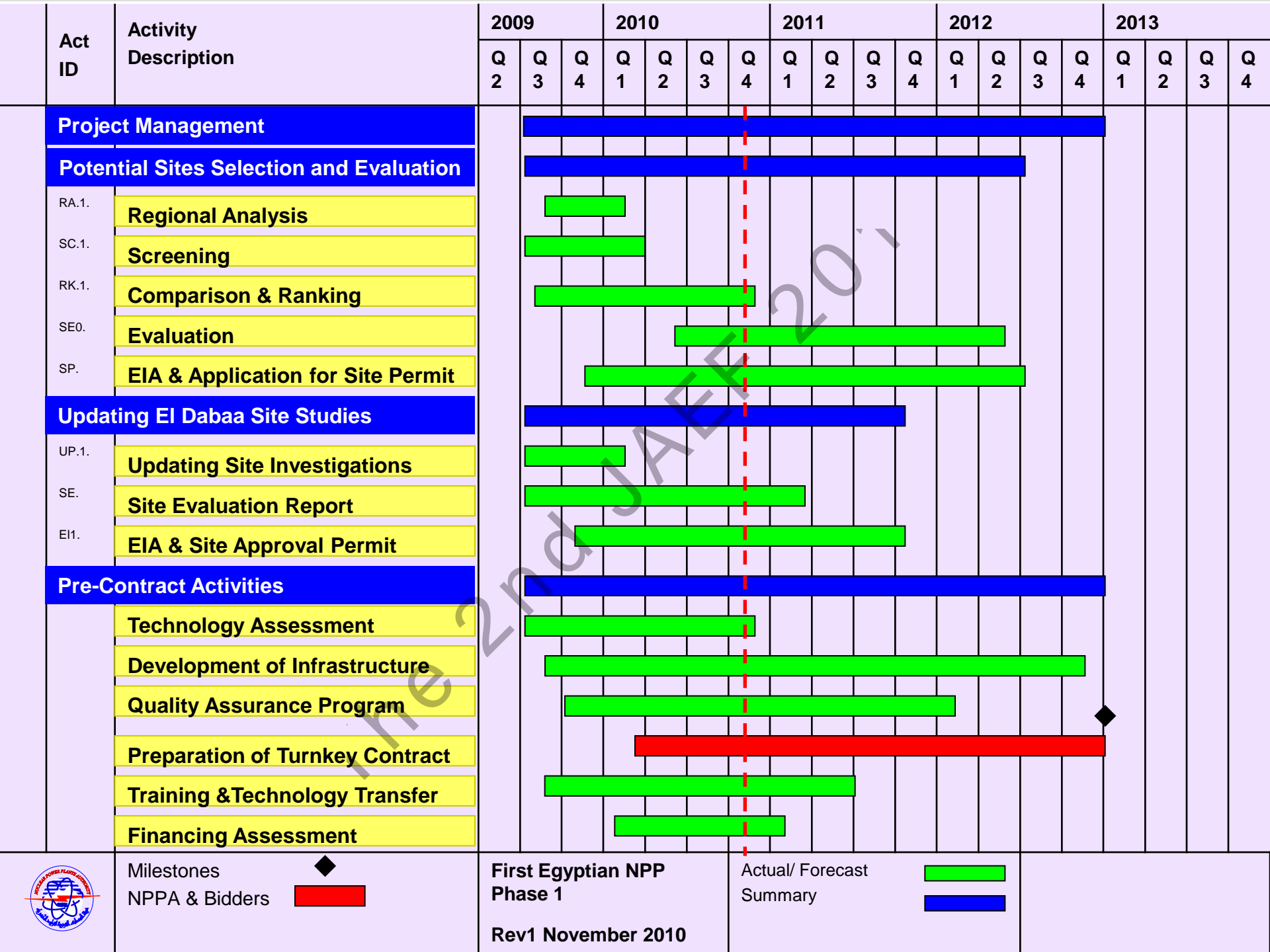
Hiring an International Consultant

Bid invitation for consulting services announced in February 2008. Bid evaluation process completed, and Contract concluded on June 18th, 2009.

The Consultant Scope of Supply and Services:

- Sites Selection and Evaluation, and Pre-contract Activities:
 - Updating El-Dabaa site studies;
 - Selection of Additional Sites;
 - Pre-contract activities including Technology Assessment, Development of Infrastructure, Quality Assurance Program, Preparation of Contract, Training and Technology Transfer to NPPA Personnel, and Financial Assessment.
- Consultation Services for Project Implementation:
 - Construction management,
 - Field engineering,
 - Start-up and commissioning services.





Development of Infrastructure

The Egyptian Nuclear and Radiation Law:

- The law was drafted based on the practices of 24 countries and IAEA documents, and reviewed by the Egyptian stakeholders and IAEA experts.
- The Law on Regulating Nuclear and Radiation Activities (LRNRA) No. 7/2010 was approved by the parliament, and ratified by the Egyptian President on 29 of March 2010.
- This law aims at setting a legislative framework that regulates nuclear installations and activities in order to ensure the protection of facilities, individuals and property.
- The law deals with licensing of nuclear facilities and installations, nuclear safety and security, safeguards, nuclear emergencies, civil liability, and management of radioactive waste and spent fuel.



Development of Infrastructure

Establishment of an Independent Regulatory Body:

- An independent “Nuclear and Radiation Control Authority” (NRCA) shall be established, having a legal individuality, and shall be affiliated to the Prime Minister.
- The functions, power, resources, and responsibilities of the NRCA are defined in the respective articles of the LRNRA regarding safety, security and safeguards of nuclear installations.



Development of Infrastructure

The site of the first nuclear power plant in Egypt:

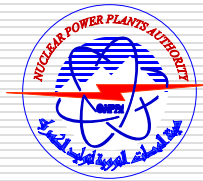
- A presidential decree has been issued on 25 August 2010 confirming that Al-Dabaa, east of Marsa Matrouh, had been selected as the site of the nuclear generator.

The 2nd JAEC 2010

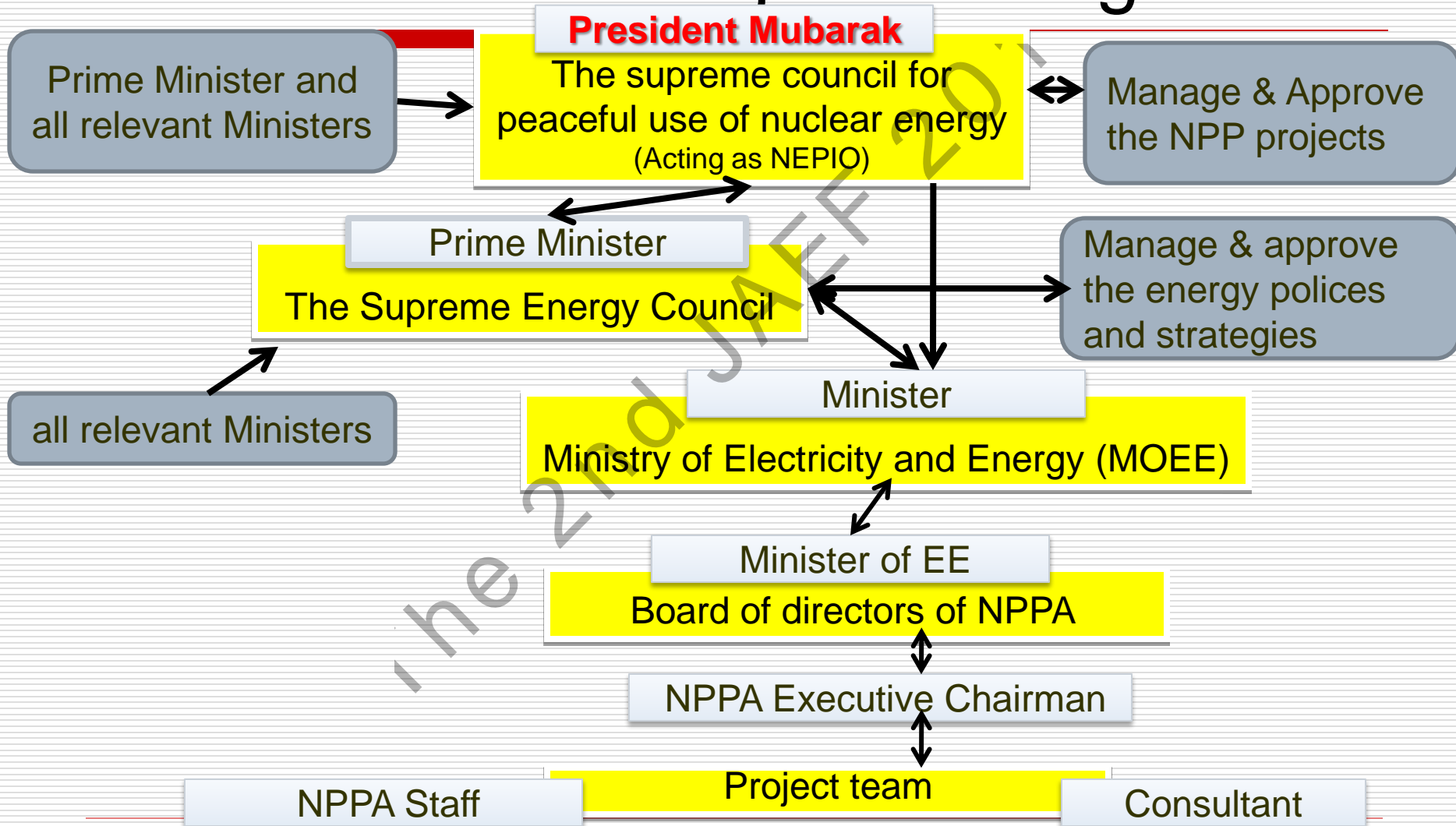
Development of Infrastructure

Development of Human Resources:

- ❑ Cooperation with IAEA through training courses, workshops and expert missions.
- ❑ Cooperation with EU where a project for technical cooperation has been concluded with the objective of increasing the capabilities of the R.B. in performing its tasks and function competitively (Reviewing site report, Granting site permit).
- ❑ Reactivate the bilateral cooperation with nuclear technology supply countries (U.S.A , France, Russia, Canada, China, Korea Republic, Germany) where NPPA has received training proposals from USA, France and Russia
 - Training on bid specification preparation and site selection was done in Russia for 21 trainees and a second group has been trained on fuel cycle and security and physical protection in November and December 2010;
 - Work shop on the Human Resource Development With USA Experts will held in Cairo, 18 – 20 Oct 2010;
 - For HRD sustainability NPPA cooperate with Areva to train the trainer.
- ❑ Training by the consultant
- ❑ NPPA New comers Training



Stakeholders & Project Management



CONCLUSION

- ❑ **The growing demand for energy in Egypt and limited recourses of oil and natural gas mean that we must be more concerned with nuclear energy and with diversifying sources of energy.**
- ❑ **An integrated work plan has been developed between NPPA and the IAEA to support the Egyptian Nuclear Program.**
- ❑ **Bid invitation for consulting services announced in February 2008. Bid evaluation process completed, and Contract concluded on June 18th, 2009;**
- ❑ **The scope of services include Sites Selection and Evaluation, and Pre-contract Activities for the first phase;**
- ❑ **The national infrastructure has been developed in many areas.**

Thank you for your kind attention

