CONSULATE GENERAL OF EGYPT
COMMERCIAL OFFICE
SYDNEY

Letter No. 64 /2014	Date: 17/10/2014
File No.:403/8/5	Attachment: CD

Dear Mr. HON Bruce Scott MP,
Chair – Joint Committee on Foreign Affairs , Defence and Trade
Parliament of Australia

We have the pleasure to contact you concerning the status of the Egyptian economy through the recovery economic indicators and investment opportunities in electricity and renewable energy sectors in Egypt.

You can find attached within the CD which contains a detailed overview for the electricity sector in Egypt showing the current status and utilization of the available sources of generating electricity in addition to promoting electricity interconnection to reduce costs and the future plane to face the increasing demand through energy efficiency strategies.

As well as, you can find attached the new pricing system for the solar and wind power that is being produced by entities or Private Corporation to participate in developing the energy performance in Egypt through the upcoming 3 years until 2017 with a plan to reach 4300 M.W to be distributed as follow:

1- 300 M.W from Residential low capabilities
2- 2000 M.W from medium and high capabilities from solar power
3- 2000 M.W from Wind power.

In addition to this, the Egyptian government is giving investment incentives in the renewable energy sector such:

a- the commitment of the Egyptian government to buy the production of the private companies (both transmission and distribution) investing in the renewable energy sector and providing

the necessary link the mother network.

b- Providing public land allocation through usufruct rights covering public private partnership system (PPP) lifetime.

c- Providing bank loans from the ministry of finance with competitive interest rate of 4 % .

Hopefully this information will be supporting tool to clear the view of the investment environment in Egypt, please don't hesitate contact us for further information.

Best regards

Yours sincerely

Aiman Mostafa Elabd

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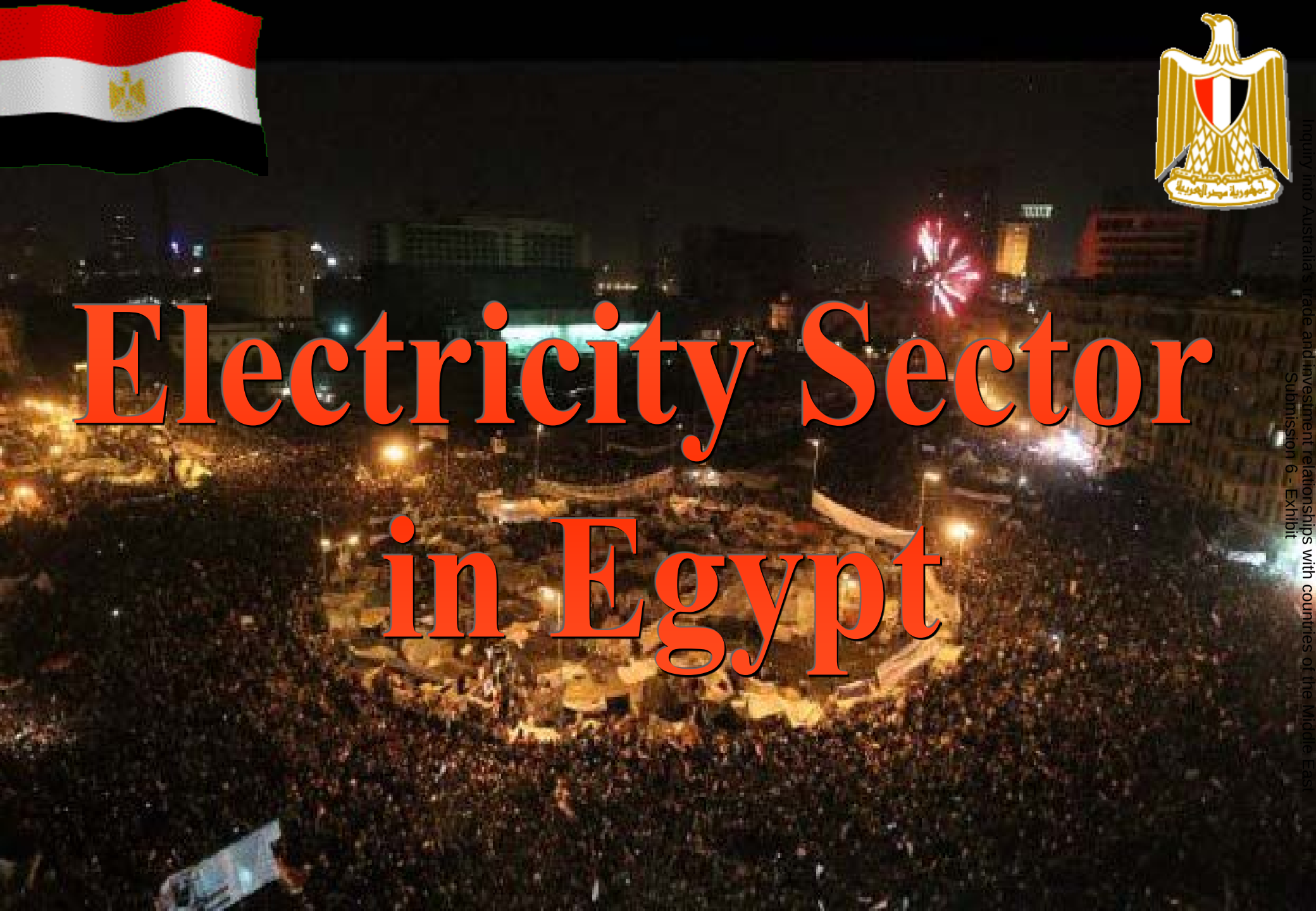


Electricity Sector in Egypt

Main Objectives of Electricity Sector Strategy

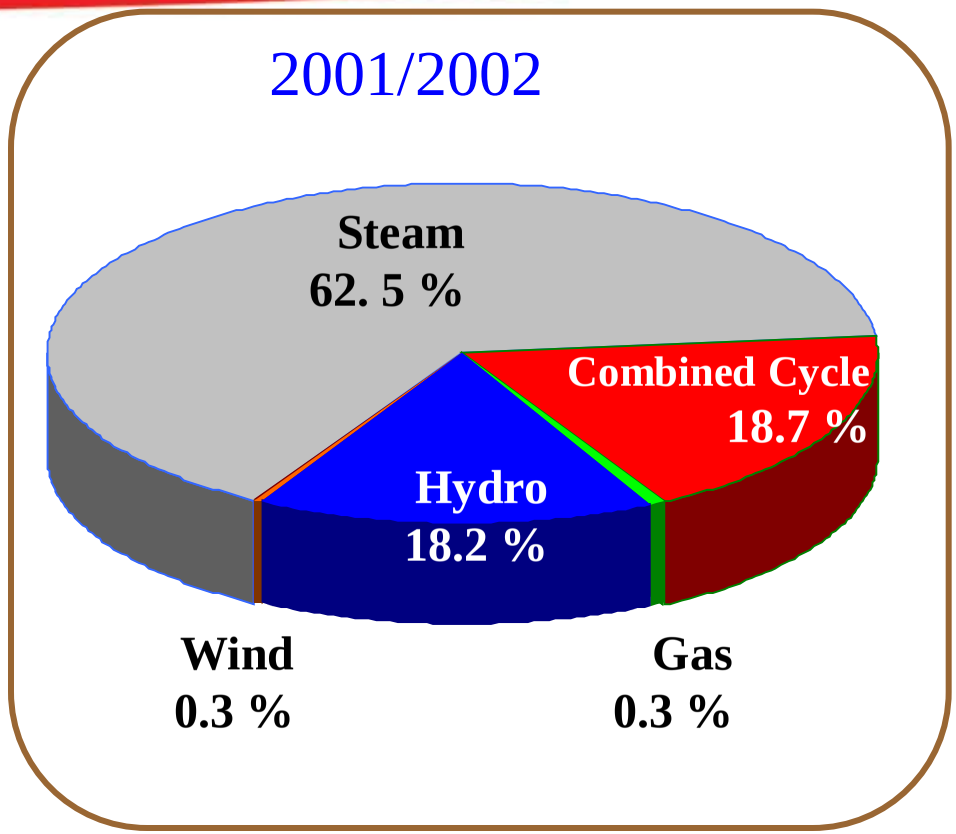
- **Utilization of all available resources.**
- **Promoting utilization of renewable energy.**
- **Promoting electricity interconnection.**
- **Improving energy Efficiency through adopting Energy Efficiency strategies.**
- **Environment conservation through adopting necessary measures on the supply side.**
- **Future planning to face the increasing demand.**

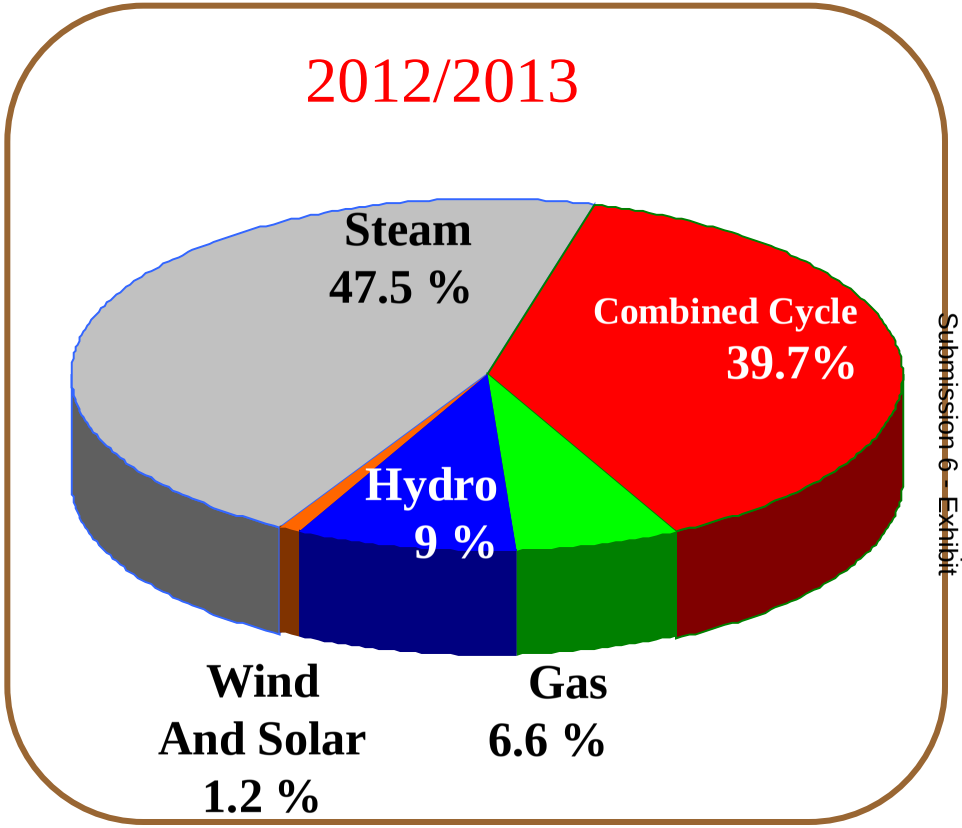
Current Status

Important Indicators

	2013	2002
Installed Capacity (MW)	30800	16650
Max Load (MW)	27000	13320
No. of Consumers (million)	30	18.1
Electricity Share per Capita (kwh)	1950	1350

Diversifying Energy Resources in Generation





Based on Generated Energy

About 23% of the generated energy in 2011 from renewable sources

Performance Indicators Comparison (2002 - 2011)

The fuel consumption of the thermal plants has reached about 31863 thousands toe, 79 % natural gas and 21 % heavy fuel oil.

Rate of Fuel Consumption :

Improved by 5.4% to reach 208.1 gm/kWh

Percentage of Electrical Energy Loss :

Improved by 21.1% to reach 10.6%

Rate of Carbon Emissions:

Improved to reach 0.54 kg/kWh

Renewable Energy National Strategy

On February 2008, the Supreme Energy Council approved the Egyptian Renewable Energy National Strategy to Satisfy 20% of the generated electricity by 2020 using renewable energies,

For Wind Energy:

This strategy includes providing 12% of the generated electricity (7200 MW) from wind energy by 2020.

For Solar Energy:

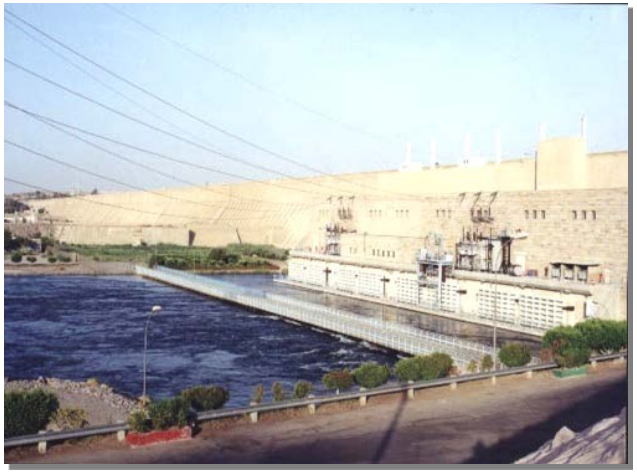
On July 2012 the Cabinet approved the Egyptian Solar Plan which includes adding 3500 MW (2800 MW CSP, 700 MW PV) of Solar Energy by 2027

Hydro Energy

Hydro Power

Installed capacity from hydro is 2843 MW

Hydro power represents 9% from the generated electrical energy.

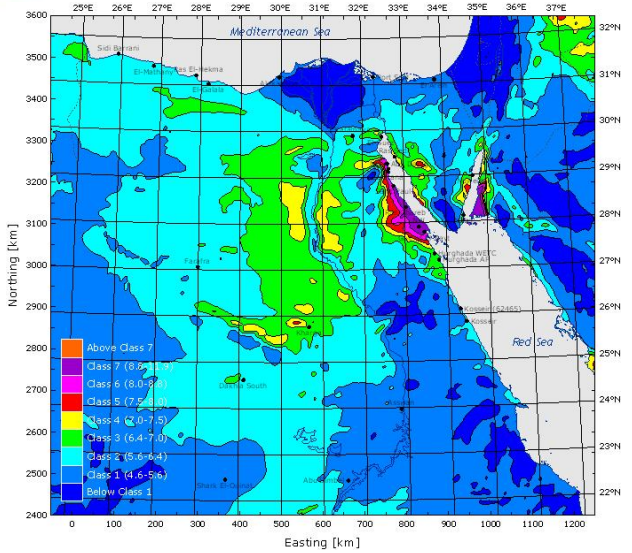


Currently, Assuit Hydro Power Project with 32 MW is under implementation and it is planned to be operated by 2017

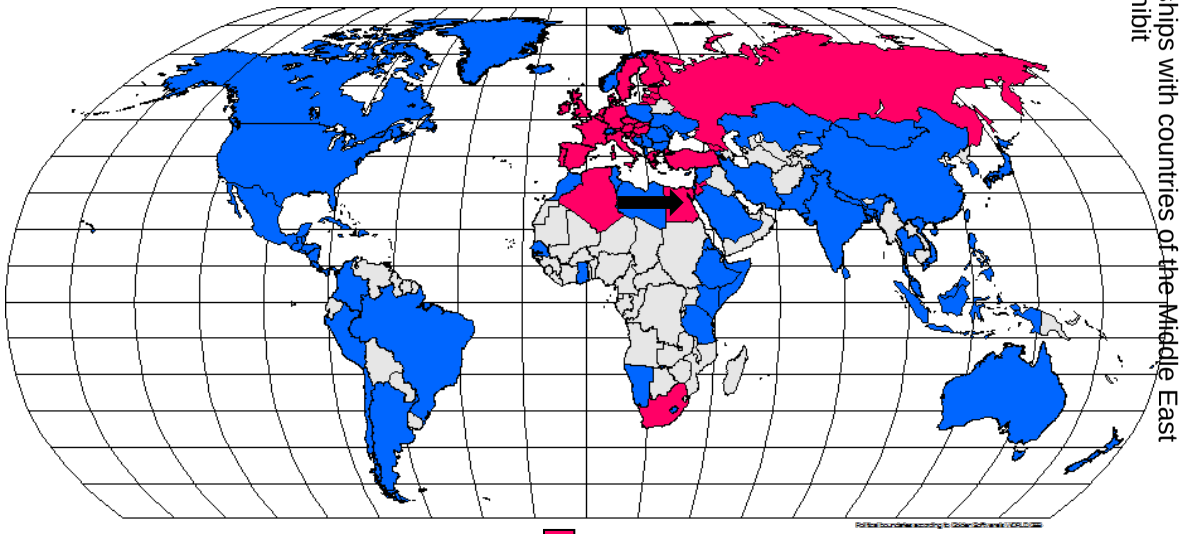
Wind Energy

Wind Atlas

- Egypt enjoys an excellent wind regime, particularly along the Suez Gulf where the average wind speed reaches about 10.5 m/sec.



- Egypt is one of 38 countries in the world that published a National Wind Atlas



Countries have National Wind Atlas
Countries have Wind Atlas in some regions
Countries don't have Wind Atlas

Source: www.windatlas.dk

Large Scale Wind Farms

Installed capacity : 550 MW

- **On going 4 CDM applications with Denmark , Japan , Spain and EU**

540 MW Projects is under Construction

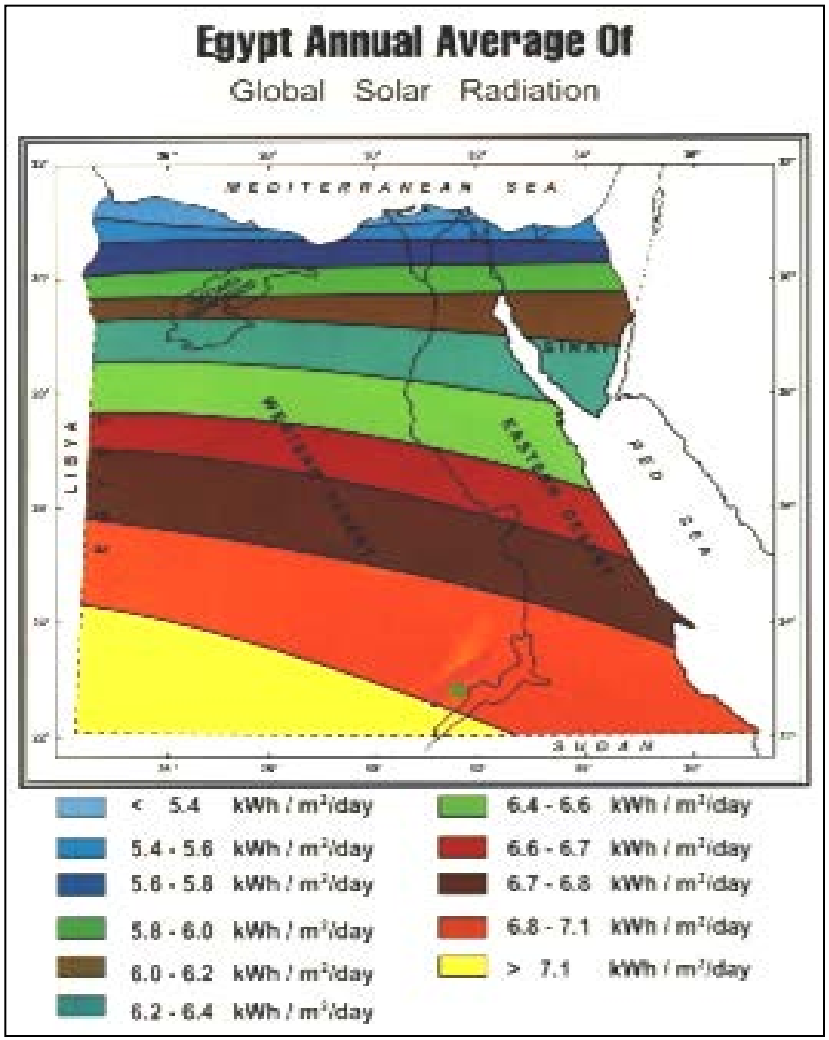
800 MW is under preparation for financing

Solar Energy

Solar Atlas

- **The Solar Atlas was issued, and indicated that Egypt is considered as one of the sun belt countries where it is endowed with high intensity of direct solar radiation ranging between 2000 – 3200 kWh/m²/year from North to South.**

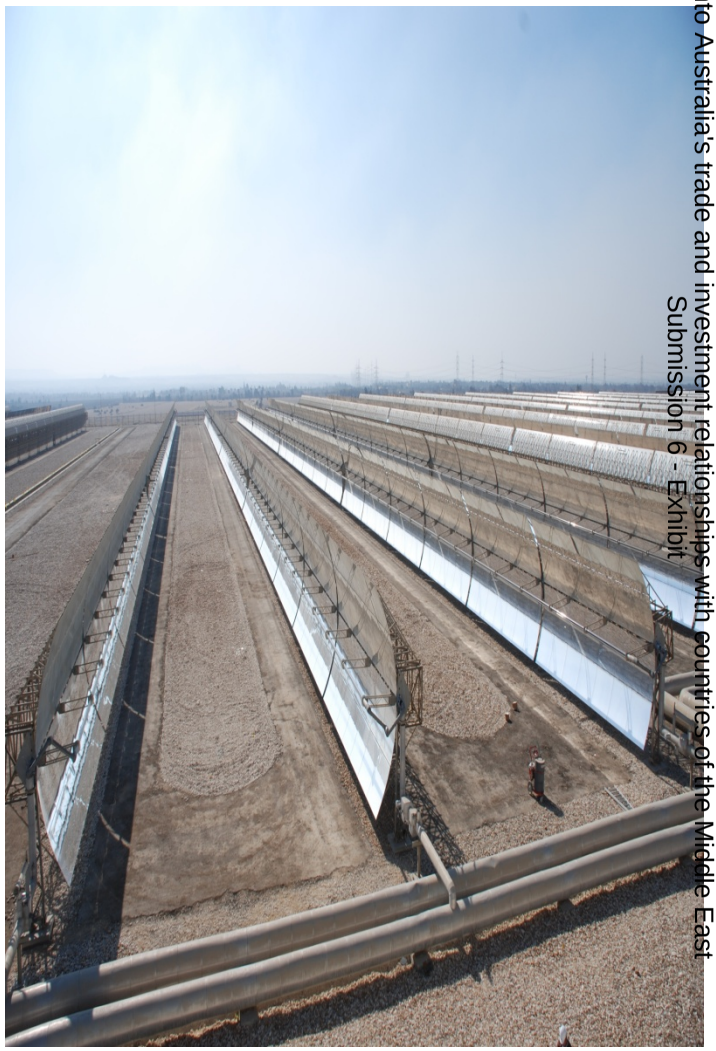
- **The sun shine duration ranges between 9-11 hr/day from North to South, with very few cloudy days.**



Solar Thermal Electricity Generation

140 MW Solar thermal power plant at kuraymat

- **The 1st CSP plant is 140 MW including solar field of 20 MW**
- **The total investment is about $US 340 mio.**
- **The GEF Grant for the Solar Island of US $ 49.8 M.**
- **JBIC covered the finance of the Combined Cycle island & Consultancy Services with about (20 Billion Yen).**
- **The project started operation commercially in July 2011.**



Solar Photovoltaic Systems

- Two remote settlements (100 houses + some facilities) in Matrouh Governorate were electrified by PV systems since 2010.

- The Total Installed Capacity of PV Systems in Egypt is more than 10 MW for lightening, Water Pumping, Wireless Communications, Cooling and Commercial Advertisements on highways.

MoEE Initiative for Disseminating PV systems

MoEE Initiative for Disseminating PV systems

- **The Initiative includes implementing no. of 18 units with total capacity of 700 K.W. in the main buildings of the power generation, transmission and distribution companies .**
- **The first unit has been implemented on the roof of the Ministry Building with:**
  - **The PV unit is 2*40 k.w.**
  - **10 Street lighting poles.**

Egypt is a Hub for Electrical Interconnection

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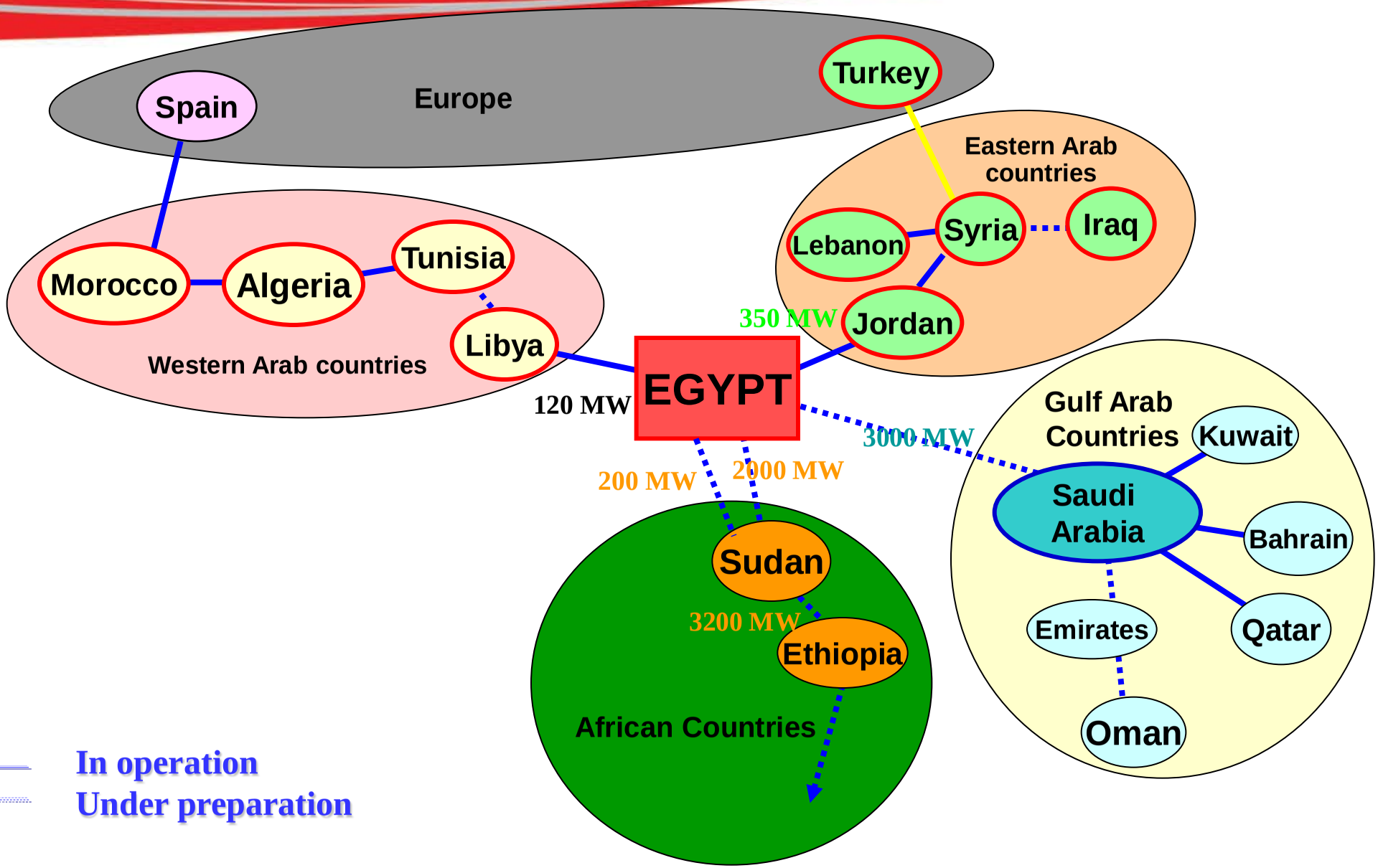

Future Expansion of Electricity Sector

Power Projects Plan 2012- 2017

Thermal Power Plants

- Governmental Projects : 10950 MW.
- Private Sector Projects (BOO) : 2250 MW

Renewable Energy Power Plants

- Governmental Projects : 1512 MW.
- Private Sector Projects : 1670 (BOO : 950 MW) , (IPP : 720 MW)

Thermal Power Projects Plan 2012- 2017

Governmental Projects			
Project Name	**Capacity (MW)**	**Type**	**Estimated Operation Date**
Banha (under construction)	**750**	**Combined Cycle**	Simple cycle 12/2013 Combined cycle 5/2014
North Giza(1,2,3) (under construction)	**2250**	**Combined Cycle**	Simple cycle 10/2013 , 5,6/2014 Combined cycle 1/2014 , 4/2015
6 October	**600**	**Gas**	6/2014
Suez (under construction)	**650**	**Steam**	1/2016
South Helwan (under construction)	**1950**	**Steam**	3,6,9/2017
Damanhour	**1500**	**Combined Cycle**	7/2015
West Cairo	**650**	**Steam**	6/2017

Thermal Power Projects Plan 2012- 2017

Governmental Projects			
Project Name	**Capacity (MW)**	**Type**	**Estimated Operation Date**
Al - syouf	**750**	**Combined Cycle**	7/2015
Al – Mahmoudya	**450**	**Combined Cycle**	6/2015 7/2016
Asyout	**650**	**Steam**	6/2017
Conversion Al – shabab	**500**	**Combined Cycle**	4,6/2016
Conversion west Damytta	**250**	**Combined Cycle**	3/2016

Thermal Power Projects Plan 2012- 2017

Private Sector Projects (BOO)			
Project Name	**Capacity (MW)**	**Type**	**Estimated Operation Date**
Dairut	**2250**	Combined Cycle	Simple cycle 4/2016 Combined cycle 4/2017

- **Currently, biding procedures for Bany Swef & Qena 3550 MW to be operated by 2018, 2019.**

Renewable Power Projects Plan 2012- 2017

Governmental Projects		
Project Site	**Capacity (MW)**	**Estimated Operation Date**
1.Wind		
Gulf of Suez (under construction)	**200**	2014
Gulf of Suez (under construction)	**220**	2015
Gulf of Suez (under construction)	**120**	2016
Gulf of Suez	**200**	2016
Gulf of Suez	**200**	2016
Gulf of Suez	**200**	2017
West of Nile	**200**	2017
2.Solar thermal power		
Kom Ombo	**100**	2017
3.Photo Voltaic		
PV Hurghada	**20**	2016
PV Kom Ombo	**20**	2017
4. Hydropower		
Assiut (under construction)	**32**	2017

Renewable Power Projects Plan 2012- 2017

Private Sector Projects		
Project Site	**Capacity (MW)**	**Estimated Operation Date**
Wind		
•Gulf of Suez **(IPP)**	**120**	2014
•Gulf of Suez **(BOO)**	**250**	2015
•Gulf of Suez	**500**	2017
(Competitive biding)		
•Gulf of Suez **(IPP)**	**(6 ×100)**	2017
Solar		
•Kom Ombo (BOO) PV	**20×10**	2017

Current Private Sector Wind projects1470 MW

- **Wind Farm 120 MW in cooperation with Italian company.**
- **Wind farm 250 MW (BOO Scheme) – the short list has been selected, and currently the short list is invited to summit their offers by 20/1/2014.**
- **Wind farm 500 MW (2 * 250 MW) competitive bids (The bidding will be issued after the first phase completion).**
- **Wind farm 600 MW (6 * 100 MW) will be implemented in IPP scheme, Currently, the bid is in analyzing phase.**
- **Pre-Qualification Request for 10 × 20 MW PV plant at Kom Ombo (total capacity 200 MW) BOO scheme, deadline 4 December 2013.**

Power Projects Plans Until 2027

During the next 3 × 5 year plan 70342 MW will be added:

2012-2017	16382 **(MW)**
2017-2022	26410 **(MW)**
2022-2027	27550 **(MW)**
TOTAL	**70382 (MW)**

This installed capacity will be diversified from oil, gas, solar, wind, Hydro and nuclear resources

Nuclear Energy

Egyptian Nuclear Power Program

- The program aims at adding about 5000 MW by the end of 2027, while the 1st unit would be in operation by 2022.
- A contract with an international consultant was signed in June 2009 to support NPPA in the implementation of NPP.
- A Nuclear Law " N0. 10 – 2010 " was issued in March 2010, and its executive regulation in Oct. 2011.

Incentives for Private Investments In Renewables

Incentives for Private Investments in Renewables

- **An area of about 7845 km2 on the Gulf of Suez region and the Nile Banks has been allocated for NREA for implementing wind energy projects, Permitted lands are provided to Investors through Land Use agreement against 2% of annual generated Energy from the project or its value.**
- **Assessment of environmental impact, including bird migration.**
- **Guarantee of financial obligations under a long term Power Purchase Agreement, PPA .**
- **Exempting renewable energy equipment from customs duties.**
- **Investors will benefit from selling Certified Emission Reductions, CERs, resulted from the implemented project .**
- **Renewable Energy Fund.**

Incentives for Private Investments in Renewables

Feed-in Tariff

- **Private Sector contribution in Wind Energy is planned to start by Competitive Bidding (750 Mw) followed by Feed-in Tariff.**

- **This Policy will also be applied to Solar Plan approved in July 2012 by the Cabinet.**

- **Egyptian Regulatory Agency (Egypt ERA) has finalized the study of the Feed-in Tariff system for wind farm with capacity less than 50 Mw.**

Electricity Prices

Electricity Prices

- The GoE set a program in 2004 to gradually increase (5%) the prices of petroleum products supplied to electricity sector and the electricity prices to end use customers to cover cost by year 2013/2014.
- Consequently, the GoE decided to increase the electricity prices on different sectors annually according to various percentages
- Also in 2008, the Government increased substantially the price of natural gas and electricity to energy intensive industries.
- Due to the world financial crisis, no increase in electricity prices took place since the 10/2008 increase.
- Due to the increasing demand on electricity and also the increase in cost and subsidies offered to the customers, the Cabinet of ministers has approved on 21/11/2012 to modify the electricity prices to be implemented on two stages to be implemented on two stages :
  - the first stage start on 1/12/2012 with 7.5% increase in electricity price.
  - the second stage start on 1/1/2013 with an increase of 7.5%.
- The Prime Minister approved the increase the prices of Natural Gas to reach 3 $/million BTU and electricity for industrial companies.

Energy Efficiency

ENERGY EFFICIENCY IMPROVEMENT

On the Supply Side:

- Optimizing the share of the combined cycle power plants.
- Usage of super critical steam technology.
- Conversion of old thermal power plants to work in dual firing system.
- Improve power plants efficiency and rehabilitation and renewal of transmission and distribution networks to reduce fuel consumption and electrical losses .

ENERGY EFFICIENCY IMPROVEMENT

On the Demand Side:

In the residential sector :

Over 12 million CFL lamps were distributed with half price and 18 months guarantee targeting to more 12 million by 2015.

In street lighting sector:

About 533 thousand efficient lamps were installed to replace conventional lamps among target of one million lamps by 2015.

Other programs:

- Energy conservation measures (mainly efficient lighting and power factor correction) in many administrative buildings.
- Labeling and standards program for home appliances.
- Energy efficiency codes for residential, commercial and public buildings.

Energy label for refrigerator

Energy Efficiency Action Plan 2012-2015

- On 5th of November 2012 MoEE launched the National Energy Efficiency Action Plan (NEEAP) of Electricity Sector (2012 - 2015) aiming to reach Energy Efficiency Improvement up to 5% compared to the last five years electricity consumption using some procedures in the residential, governmental and tourism sectors.
- The NEEAP has been prepared following the guidelines framework fro Energy Efficiency Improvement issued by the League of Arab States guided by the EU Directive EC/32/2006.

New Electricity Law

- **A new electricity law has been developed by the Ministry of Electricity & Energy and it is subject to the constitutional approvals.**

- **The law has been designed to reflect the ongoing market reform as well as to strengthen the regulatory agency.**

- **The new law will establish a gradually liberalized electricity market regulated by EgyptERA.**

- **It includes articles supporting renewable energies, and Improving Energy Efficiency and encouraging private sector contribution**

Local Manufacturing

-The Ministry Of Electricity & Energy (MOEE) established a localization program for Design , Installation and manufacture of Components of electrical equipment . The following are now achieved:

- 100% of the Transmission Networks up to 66 kV and all Distribution Network components.
- 100 % in the Transmission Networks up to 220 kV.
- 42 % of power plants components.
- 30% of the wind energy equipment (70% at the end of 2020).
- The local share in the 1st solar thermal power plant project is 50%.
- 10 factories have been established for energy compact fluorescent lamps (CFL).

Challenges facing Egyptian Electricity Sector

Challenges facing Egyptian Electricity Sector

- Reducing the dependence on thermal power generation through diversifying energy resources (conventional – renewable (wind- solar- geothermal)- Nuclear).
- The increasing irrational consumption of Energy.
- Shortage of fuel supply.
- Energy Conservation & Energy Efficiency (EC & EE) obstacles :
  - Lack of Public Awareness
  - Lack of financing for new projects in EC & EE

Challenges facing Egyptian Electricity Sector

- Increasing the investments required for the enforcement and improving the efficiency of the existing infrastructure and future projects.
- Governmental Guarantee for private sector involvement in power plants implementation.
- Defining and applying Feed-in Tariff to attract investments in the field of Renewable Energy.
- Subsidized pricing and setting a pricing mechanism for compromising the benefits between energy producer & consumer (considering the social impact).

Thank You

EGYPT