



Stéphanie Wormser

EGYPT'S ENERGY SECTOR UNDER REFORM

Egypt is facing a serious energy crisis. There is insufficient power capacity to satisfy the rising needs of consumers and this has led to regular power shortcuts and a strain on public finances. A continuous and reliable supply of electricity is required for Egypt's socio-economic development. Accordingly, the government has promoted the development of renewable energy and invited the private sector to participate in the generation of renewable energy. There have been a number of government reforms in order to promote competition in the power market.



AN ENERGY CRISIS

A rapidly increasing demand for electricity due to shifting demographics and urbanisation, along with an extensive use of low-efficiency appliances – especially air conditioning – has exceeded domestic gas production as well as grid and generation capacities, resulting in regular power shortages and blackouts. While Egypt needs additional power capacity, the gas and oil output necessary for the generation of thermal power has decreased. In 2014, Egypt moved from being an exporter of natural gas to a net importer. In parallel, the sector suffers from high generation, transmission and distribution

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AUTHOR

STÉPHANIE WORMSER
SENIOR COUNSEL
EBRD

Email: wormsers@ebrd.com

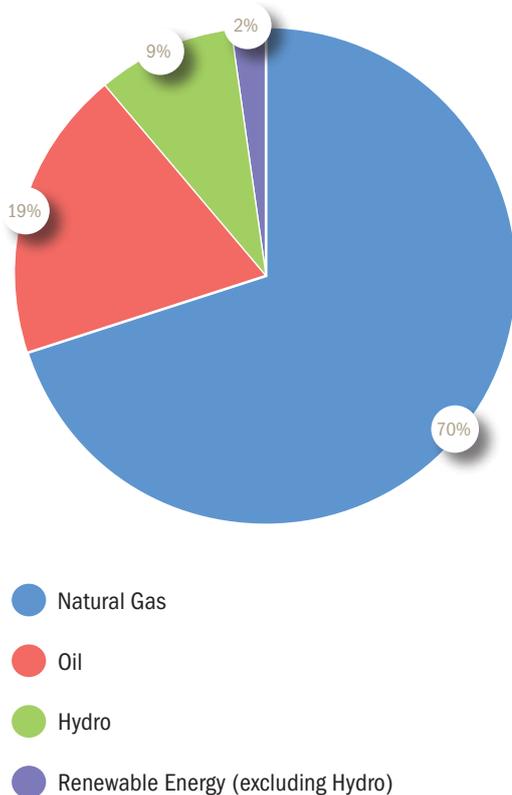


technical losses, stolen energy, unsecured access in remote areas, ageing and polluting installations, as well as poor financial accounts of the state-owned utilities. These factors have constrained power capacity and increased the cost of generation, transmission and distribution, which the existing electricity tariffs do not currently cover. The power sector is therefore heavily subsidised by the government. This has drained the government's fiscal resources and constituted a threat to the Egyptian economy without having secured a power supply for Egypt's population and industry.

To solve this energy crisis, the government has turned to renewable energy and to the private sector.

CHART 1

ELECTRICITY PRODUCTION IN EGYPT



Source: Egyptian Electricity Holding Company Data 2014 Annual Report.

RENEWABLE ENERGY: A SUSTAINABLE SOLUTION IN EGYPT

Thermal (oil and gas) power plants largely dominate the Egyptian power generation scene, representing about 89 per cent of the overall energy production.

Sun is widely available in Egypt and the Gulf of Suez (especially the Gulf of Zeit) features some of the best wind resources in the world. Harnessing the abundant wind and sun resources can contribute to increasing the generation capacity and lowering the country's dependency on natural gas imports (necessary for the generation of conventional electricity). In addition to decreasing the country's reliance on hydrocarbons, renewable energy insulates Egypt from commodity price volatility. Wind and solar energies offer some diversification as, currently, about 89 per cent of Egypt's electricity is fossil fuel based and mostly produced in gas-fired plants. Wind and sun also constitute clean sources of power with low or virtually zero greenhouse gas emissions and limited or no environmental impact. Importantly for a water-stressed country such as Egypt, wind and solar plants also use little or no water in their operation. Such plants are easy to build and low-risk. Solar photovoltaic plants in particular can be commissioned at a much faster pace than thermal power plants. Due to some economies of scale as a result of mass production, improved wind turbine and solar panel designs as well as new technology, the cost of generating both wind and solar energy is now competitive with other forms of electricity generation. Hence, with outstanding natural resources on its doorstep and a generation cost now competitive with that of generating fossil fuel electricity, it has been a natural move for the Egyptian authorities to promote the development of wind and solar energy.

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The overall national strategy for renewable energy was announced in a decision of the Supreme Energy Council in February 2008. It set out an ambitious target of 20 per cent of the electricity consumption to be generated from renewable sources by 2020 (the “Target”). It mainly refers to wind and to a lesser extent, hydroelectric power. This strategy was implemented through a series of state-owned wind farms on the one hand and the involvement of a private developer for the construction, ownership and operation of a 250 MW wind farm in the Gulf El Zeit, on the other. Due to political and economic disruption, these projects have been delayed but 600 MW of state-owned wind power has been commissioned at Zafarana on the Gulf of Suez and in November 2015 a 200 MW state-owned wind farm began operating in the Gulf of Zeit. This strategy was redesigned in 2014 and gave rise to Law No. 203 enacted by presidential decree on 21 December 2014 (the “Renewable Energy Law”). The former Ministry of Electricity was renamed the Ministry of Electricity and Renewable Energy, revealing the increased importance of renewable energy in the government’s strategy to solve the energy crisis.

The 20 per cent Target has remained unaffected by the provisions of the Renewable Energy Law. It constitutes the highest renewable energy target in the Middle East and North Africa region after Saudi Arabia.

INVITING PRIVATE SECTOR PARTICIPATION IN RENEWABLE ENERGY GENERATION

To tackle the energy crisis and increase the power capacity, the government has encouraged the private sector to invest in renewable energy projects in Egypt.

As a result of a policy decision to gradually decrease state intervention in power generation, Egypt's strategy aims to increase the role of private participants through their ownership and finance of power plants. The Egyptian authorities have sought the private sector's involvement in the development of renewable energy projects in three different ways:

- Build, Own and Operate type of wind and solar projects tendered by the Egyptian Electricity Transmission Company ("EETC") acting as wholesale purchaser of electricity pursuant to a long-term power purchase agreement where the private developer builds, owns and operates the plant and sells the electricity output to EETC
- Feed-in-Tariff Programme, where private developers are assured to sell renewable electricity at a fixed price for 25 years (solar) or 20 years (wind) pursuant to EETC's obligation to purchase at a fixed tariff, guaranteed by the Arab Republic of Egypt acting through the Minister of Finance
- merchant renewable energy projects owned and operated by private developers delivering the output to the grid but selling it to commercial and industrial consumers through bilateral agreements.

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THE EBRD'S INVOLVEMENT

The EBRD is a strong supporter of these initiatives which, for the reasons stated above, meet the Bank's sustainable energy agenda as well as the Bank's private sector agenda by introducing a large number of private sector players. The Bank has therefore invested many resources in the programme since the beginning of 2015 which took various forms.

The Bank has initiated extensive policy dialogue through workshops, conferences, meetings and informal discussions with the Egyptian authorities to shape the contractual framework and the regulations applicable to a feed-in-tariff scheme (the "Feed-in-Tariff Programme") launched in 2014 for the generation of 4 GW of wind and solar electricity (some 4,300 MW for the first round only, that is 2,000 MW of wind and 2,300 MW of solar power).

The EBRD has also funded a short-term technical cooperation consultancy under the SEMED Resource Efficiency Policy Dialogue Framework for the drafting of the additional provisions of the high-voltage network code in order to accommodate the specifics of solar photovoltaic plants.

In addition, the EBRD is sponsoring the tender of a 200 MW solar plant in Kom Ombo through the Public-Private Partnership ("PPP") Project Preparation in the Southern and Eastern Mediterranean ("MED 5P"), an EU advisory facility created to support public authorities in the SEMED region in the preparation, procurement and implementation of public-private partnership infrastructure projects. MED 5P is providing €1.5 million in legal, technical and financial advisory services to the Egyptian government for the preparation of the Kom Ombo PPP project.

The EBRD is also supporting the development of long-term renewable energy by providing more than €2 million of technical cooperation funds for a Strategic Environmental and Social Assessment in connection with the second phase of development of the East Nile. This region is expected to be the area of future development of renewable energy after the Gulf of El Zeyt and the Benban sites are fully utilised.

Lastly, the EBRD will provide up to US\$ 500 million to finance a number of renewable solar projects under the first round of the Feed-in-Tariff Programme.

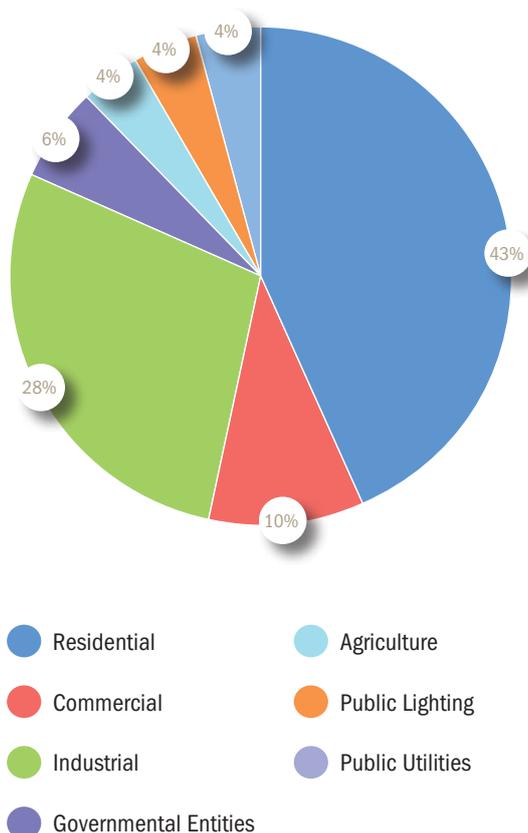
PROMOTING COMPETITION IN THE POWER MARKET

The Egyptian government has not only welcomed the private sector's participation in renewable energy, it has also undertaken various reforms in order to ensure a more private sector investment friendly environment. The efforts include setting a roadmap for a gradual opening of the power market to competition, redefining the mandate and powers of the regulator and unbundling the transmission company/single buyer of bulk electricity as well as restructuring the tariffs and the subsidy scheme.

The unified electricity Law No. 87 of 7 June 2015 enacted by presidential decree (the "Electricity Law") establishes a broad framework for the partial deregulation of the existing power market and the introduction of some competition.

CHART 2

ELECTRICITY CONSUMPTION IN EGYPT BY TYPE OF USER



Source: Egyptian Electricity Holding Company Data 2014 Annual Report.

In the existing Egyptian single-buyer market model, with a vertically integrated supply chain through generation, transmission, distribution and supply, the first step has been to open power generation and supply to competition, while transmission and distribution will remain natural state monopolies which cannot be subject to market forces at this stage.

Two markets will co-exist in practice. The competitive market will only be accessible to eligible consumers ("Qualified Consumers") who will have the right to purchase electricity through bilateral agreements from either: (i) the power generation company of their choice; or (ii) the authorised suppliers (traders) ("Authorised Suppliers") of their choice. Although the term "Qualified Consumer" is not defined in the Electricity Law and will need to be so by secondary legislation, we understand that it should extend to industrial, commercial, administrative and government consumers rather than residential consumers. The latter or non-qualified consumers will have no alternative but to purchase their power on the regulated market pursuant to some standardised agreements and fixed tariffs approved by the Egyptian Electric Utility and Consumer Protection Regulatory Agency ("EgyptERA").

Although not clearly stated, according to some experts, the government's long-term goal is to shape a market where investors will take the risk of generating power without any power purchase agreement or related contractual power purchase undertaking guaranteed by the Ministry of Finance. The state will gradually withdraw from power generation and state-owned power plants will decrease in number following decommissioning or privatisation. As a first step, the Egyptian authorities are aiming for a market of multiple generators and suppliers, respectively, competing among themselves. It is unclear whether full-scale liberalisation of the market where competition is also introduced beyond generation and supply with a full unbundling of the supply chain is contemplated at this stage.

REDEFINING THE MANDATE AND POWERS OF THE STATE-OWNED UTILITIES

The Electricity Law has clarified the role and powers of the EETC. Formerly a state owned subsidiary of the Egyptian Electricity Holding Company (“EEHC”) which was vertically integrated into the supply chain, the EETC will be unbundled and separately owned, gaining some independence from all other utilities participating in the supply chain. In its capacity as transmission system operator, the EETC still enjoys a monopoly over the power transmission activities and management of the network operations. In its capacity as single buyer, it will primarily be responsible for ensuring a power supply to non-qualified consumers as well as an interim power supply to Qualified Consumers (via six-month long agreements). The EETC will be the counterparty to the power purchase agreements to be entered into with the private sector generation companies in connection with the Feed-in-Tariff Programme and the Build-Own-Operate projects.

The Electricity Law has conferred more independence on EgyptERA, the sector regulator. To ensure general oversight and regulation of the power sector, EgyptERA grants licences and approves tariffs applicable to the sale of electricity to non-qualified consumers and tariffs applicable to all for the use of the grid and distribution networks.

The Electricity Law also anticipated a new market operator, which will be an autonomous unit within the EETC, enjoying financial and administrative independence. It will regulate the power supply and demand bids as well as being responsible for accounting and settlement operations.

The newcomers are the Authorised Suppliers which are legal entities licensed by the EgyptERA to deal with the purchase of electricity or related services in the name of and for the account of producers, distributors and consumers. Secondary legislation is expected to provide further details on the role and status of the Authorised Suppliers as well as defining their rights and obligations.

The New and Renewable Energy Authority (“NREA”) was established in 1986 as a state agency responsible for the development of renewable energy. Although it reports to the Ministry of Energy and Renewable Energy, it is independent from EEHC and the other state-owned electricity companies. It advises on the renewable energy targets, strategy and regulatory framework.

In 2014, the NREA’s competencies were amended and the EgyptERA endorsed a more active role in the development of renewable energy through: (i) its involvement in renewable power projects whether managed alone or in collaboration with third parties; (ii) the sale of the electricity produced from such projects to third parties; and (iii) the setting up of joint stock companies, whether alone or in partnership with others, to develop and operate such projects. In addition, the NREA owns and acts as lessor of the public land allocated to the development of wind and solar plants in connection with the Feed-in-Tariff Programme.

A COMPREHENSIVE POWER TARIFF AND SUBSIDY REFORM

Liberalising the energy sector and opening it to private independent power producers requires a necessary change in the tariff-setting regime, including the subsidy scheme, in order to appear attractive to private sector investors and allow proper competition to exist. Without such reform, the actual cost of generating renewable energy compared with the existing subsidised tariff charged to consumers makes merchant projects economically unattractive.

The reform is also necessary in order to relieve the financial burden on the EETC as the purchaser of renewable energy under, among others, the Feed-in-Tariff Programme, at fixed tariffs for 25 years (solar) and 20 years (wind).



The Renewable Energy Law provides for a mechanism of cost sharing with end-users or Qualified Consumers. A percentage of the cost of generating renewable energy will be borne by a category of end-users as the latter will be requested to purchase a quota of their electricity from renewable sources at the applicable tariff. The category of end-users as well as the quota will be defined yearly by the Cabinet on the recommendation of the Ministry of Electricity and Renewable Energy. This mechanism will enable sufficient funding to cover the costs to the EETC of purchasing renewable energy.

The Renewable Energy Law also provides that each MWh of renewable energy produced will give right to a certificate of origin which can be traded independently. Further regulation is required to establish this green certificate scheme. Until the mechanics of the competitive market start to operate and Qualified Consumers are able to choose their respective power supplier, end-users who are subject to the obligation to share the cost of generating renewable electricity will also be able to surrender equivalent volumes of tradeable certificates of origin as an alternative to purchasing an electricity quota from renewable sources.

The gradual liberalisation of power generation and distribution contemplated by the Energy Law will also enable parallel liberalisation of the tariffs, leaving electricity tariffs subject to market forces.

In July 2014, a comprehensive energy subsidy reform was adopted setting out a five-year programme of power tariff increases to reach a level reflecting the true cost of electricity to the consumer.

A ROAD MAP TO A FULL SCALE LIBERALISED MARKET?

The Electricity Law only establishes a broad framework for a gradual liberalisation of the power market. Secondary legislation through either Cabinet decrees or regulations issued by EgyptERA is expected to further address the already-contemplated unbundling of the power utility into multiple generators and suppliers who trade with one another or with other market participants in a competitive wholesale market. A clear implementation timeframe and milestones to achieve reform implementation and competition is therefore required.

Objective and transparent rules for the use of the transmission and distribution networks by market competitors, without any discrimination, will be necessary alongside firm pricing regulation for the use of these networks. The regulator's independence is another key component of a well-functioning, liberated market. In the wholesale market, regulation should focus on preventing anti-competitive abuses of market power. In the retail market, regulation should ensure a balance between the interests of suppliers and consumers.

The focus of the government may shift to a policy role. This is performed with less conflict of interest when the state ceases to act as the main owner, investor and controller of the entities constituting the power supply chain, especially in wholesale generation and retail supply of electricity.

