Assessment of Private Sector Participation in the Power Sector of Egypt

December, 2014
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I. Acknowledgments

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II. Executive Summary

1. The objective of this note is to provide a high level assessment and areas of improvement of the legal and regulatory framework for private participation in the power sector in Egypt. The note assesses the current status of the sector, identifies barriers to private investment, and proposes a suite of possible options to address them. This analysis of private sector participation in power comprises a component of a broader assessment of Egypt’s energy sector, and its findings are incorporated into a sector White Paper under preparation by the World Bank. Consultations on conclusions and recommendations were conducted with Government of Egypt (GoE) officials over three rounds, as well as with private power developers and international lenders. The assessment findings formed part of the recent energy sector White Paper jointly developed by the GoE and the World Bank.

Sector Status:

2. Egypt faces a major challenge in financing the expansion of power generation capacity. A gap is developing between the required investments and the capacity of the public sector to meet financing requirements from traditional sources. The majority of existing power generation projects are owned and operated by the Egyptian Electricity Holding Company (EEHC), with the role of the private sector limited to engineering, procurement and construction. Private sector investment and ownership in power generation through PPPs / IPPs, however has the potential to relieve the pressure on public financing and deliver reliable, efficient, and cost-effective power supply to the sector. Given Egypt’s world-class solar and wind resources, GoE also has the opportunity to diversify its generation mix away from thermal power by adding a substantial amount of renewable energy at an affordable cost. This will not only provide environmental benefits, but also reduce Egypt’s dependence on foreign fuels and the resulting vulnerability to price fluctuations.

Barriers to Private Participation in Egypt’s Power Sector

3. Despite GoE’s interest in allowing privately-owned power generation, no private projects have been developed since 2003. This is in part due to the political circumstances across Egypt since 2011, which have affected the risk profile for all large investments and GoE’s capacity to engage with power developers. In particular, Egypt’s deteriorating credit rating has limited private interest and increased costs of capital. Beyond the country risk profile, a number of elements of the regulatory framework specific to the power sector may also serve to further discourage private participation, to a greater or lesser degree depending on the project. These include:
a. **Institutional governance and capacity:** the authority to engage the private sector in power development is spread across a number of GoE bodies, creating overlapping and in many cases duplicative roles. Each of the units responsible for attracting private investment has limited experience or is severely understaffed. Building up the same technical capacity at multiple organizations is an inefficient use of GoE resources, and allowing multiple duplicative processes increases the risk to GoE that any given one may not be designed to fairly balance risks or attract private investors. In addition, EgyptERA, the power sector regulator, is functionally situated under the Ministry of Electricity and Renewable Energy, increasing the possibility that regulatory decisions will be made on a political rather than technical basis.

b. **Market risk:** it is not clear that EETC will have sufficient revenues to serve as a fully reliable off-taker of power for the period that would be covered by any bankable PPA. Retail tariffs do not allow EETC to adequately recover its costs, and there does not appear to be a technically-based price-setting methodology in place to guide the determination or approval of tariffs. Reaching the GoE target of cost-reflective tariffs within 5 years will require strong political will to further raise electricity prices, and to establish a clear methodology to ensure they continue to rise if costs climb. Sovereign guarantees are now available for power projects for the first time since 2003, but the initial guarantee language included total liability limits that significantly undermined their value. PPAs must also adequately protect investors from currency or fuel supply risks in order to be considered bankable.

c. **Renewables:** in addition to the above risks, renewable energy projects face unique challenges of their own due to their relatively high initial capital costs, the intermittent nature of the resource, and the often large area and remote locations of the land required. Price support (whether via competitive tenders or feed-in tariffs), a clear basis for land allocation, financial incentives such as tax holidays or investment subsidies, and direct government assistance to acquiring land and connecting to the national grid can all help attract experienced energy developers and with high quality projects. The new renewable energy investment law and feed-in tariffs may provide adequate support in these areas, although their efficiency in attracting private investment will depend in a large part on the details of the regulations and their implementation.

**Measures to Address Power Sector’s Private Participation Barriers**

4. The WBG has identified a number of measures to address these barriers and establish a comprehensive and systematic approach needed to attract private investment in the power sector. The measures introduce certain specific actions and/or institutional arrangements.
needed to address the barriers in a sustainable manner. The following is a summary of these measures:

a. **Define institutional roles and build capacity.** Clearly defining the methods of private power procurement and the respective roles and abilities of each GoE agency will help efficiently allocate public resources, predict and monitor GoE liabilities and risk, and provide a clear, scalable process that attracts high-quality projects. One specific option may be to identify a single, dedicated unit responsible for competitive private power generation. Such a unit could take on the role of developing tender documents and project contracts, promoting opportunities and attracting bidders, managing the tender process, and awarding projects. Regardless of the final institutional structure, GoE would benefit from capacity-building efforts in the relevant institutions, in particular related to commercial and financial expertise to run effective competitive tenders and ensure high-quality projects at fair prices. Beyond the procurement process, increasing the political independence and authority of EgyptERA could help ensure that retail tariffs will rise to cost-recovery levels and instill confidence in EETC as a reliable and creditworthy off-taker.

b. **Ensure access to project guarantees.** External project guarantees can provide additional security to private developers and lenders when off-taker payment abilities are uncertain. In Egypt, one or more guarantees will likely be a critical element in the near-term to obtain commercial debt and keep project costs competitive. MoF will almost certainly need to provide sovereign guarantees on all projects above a nominal size, requiring balancing the needs of private investors against the cost of long-term government fiscal commitments. Project risks can also be addressed with additional guarantees provided by external parties: both WB and MIGA guarantees are proven valuable tools in developing countries, attracting high quality project developers and reducing costs of capital, helping to ensure projects are effective and affordable.

c. **Establish clear, replicable tender process and bankable project documents.** Considering Egypt’s risk profile, it is likely that investors initially will prefer the traditional IPP model with long-term PPAs, similar to those signed in the early 2000s. For thermal projects, developers should be selected via competitive tenders, based (at least in part) on proposed tariff. For renewable projects, developers can either be selected competitively, or (for smaller projects) unsolicited proposals can be approved and licensed on the basis of a feed-in tariff. For competitively-selected projects, a standardized tender process with transparent and predictable stages and evaluation criteria will provide certainty to the market and greatly streamline the competitive bid process. For many competitions, model project contracts (e.g. Power Purchase Agreements or Implementing Agreements) can provide certainty to private developers.
and can reduce negotiation time. They can also help developers arrange their financing quickly and at the lowest cost. As an interim solution to ensure ongoing projects progress while standardized documents and processes are developed, GoE could consider providing limited equity in specific project companies. This might help provide comfort to developers and lenders while still leaving most of the project financing to the private sector.

d. **Continue to implement tariff and subsidy reform.** The principle of cost-reflective tariffs is essential for the long-term viability of the power sector and for attracting sustainable private investment. Developers and lenders need to be certain that the counterparty to their PPA (EETC) will have the funds available to fulfill its payment obligations for the duration of the contract. The July 2014 package of tariff increases and subsidy reforms is an important step, but current tariff levels are still substantially below cost, and the reform did not include an schedule or automatic trigger for further increases to eventually reach (and maintain) cost-recovery levels. A well-considered communication strategy also may be beneficial in increasing public acceptance, and social protection programs can reduce the impact of price increases on those least able to afford them. In addition, a number of measures are needed to improve the financial position of EEHC/EETC, including restructuring debt, writing off accounts payables, and granting a grace period to new loans. These steps will be discussed in detailed a separate chapter of the white paper under development.

e. **Enact the draft Electricity Law and develop secondary regulations.** A draft Electricity Law has been endorsed by the Cabinet and has been in front of Parliament since 2008, but has yet to be approved. The proposed law addresses a number of key issues that currently stand in the way of large scale private investment in the power sector, most critically a fixed tariff-setting methodology and procurement and support mechanisms for renewable energy. However, a more detailed review of the Law would be necessary to ensure coordination with legislation passed since its first drafting and the new Government’s goals and objectives. Particular emphasis should be placed on the Executive Regulations which accompany the Law; the particulars of such will largely define the allocation of risks and costs between GoE and the private sector, and as such will shape whether the sector ultimately attracts investment.

f. **Provide additional support to renewable energy and energy efficiency.** In addition to the policies articulated in the draft Electricity Law, a number of additional measures could be taken to support renewable energy development, as well as energy efficiency and demand side management. These topics are dealt with in more detail in a separate section of the white paper, but public support could include direct tax or investment
incentives to tax incentives, enforceable generation or consumption mandates, regulations that encourage the sale of captive renewable generation back to the grid (e.g. net metering or energy banking regulations). Energy efficiency measures in particular can help reduce consumption and improve EETC's financial position over time, either through the promulgation of efficiency minimum standards, incentives for reduced energy consumption, or technical support to identify and finance opportunities to increase efficiency (e.g. through energy use audits). Demand side management, for example by encouraging power usage at off-peak times, is another important tool to reduce generation costs and improve power reliability.
III. Nature of Financing Challenge in the Power Sector

1. Egypt faces a major challenge in financing the expansion of power generation capacity to meet the expected growth in demand for electricity, especially since public finances are becoming increasingly tight and private financing under the current public-private partnerships is not applicable. As a result, a gap is developing between the required investments and the capacity of the public sector to meet financing requirements from traditional sources. Bridging this gap needs innovative approaches, both to finding additional finance and to using supply capacity more effectively through new technologies, demand management, power market regulation and investment planning. The objective is to revamp the current channels for private financing and develop a business model that ensures sustainable and streamlined procedures to reengage investors.

2. The financing challenge is significant because, inter alia, investment needs in the coming period will be much higher than in the recent past, the financial position of the sector is weak, a framework for private investment has multiple channels that entail overlapping responsibilities between several stakeholders and lack streamlined procedures, and the credit market situation is tight. The government of Egypt therefore has to consider all reasonable options for meeting this challenge.

3. The majority of power generation projects were financed through International Financing Institutions (IFIs), with engineering, procurement, and construction firms hired to prepare bid packages and oversee contractors, with the Egyptian Electricity Holding Company (EEHC) as the owner/operator. Due to the large scale of investments, traditional power plants went over budget, past deadlines, and resulted in increasing O&M costs. All of these translate into additional financial burden on EEHC, and the sector at large. However, the potential of leveraging private finance to increase meet power generation requirements in a timely manner and deliver value for money is yet to be realized. Most importantly, private participation in power generation through PPPs/IPPs has the potential to relieve the pressure on public financing and deliver reliable, efficient, and cost-effective power supply to the sector.

4. The current projections show that about 3GW of electricity generation will need to be added annually in FY10-20, which amounts to more than the installed capacity of 24.7GW in FY2010 (exhibit-1). The generation capacity expansion projections translate into financial investment requirements of about US$3 billion per year on average, which is significantly higher than in the past. Prior to 2008, the average annual investments in electricity supply were of the order of US$0.9 billion, growing to about US$1.5 billion in FY2008 and US$2.4 billion in FY2009. This sharp increase is a
consequence of the larger capacity addition needs, as well as the effort to scale up development of renewable energy with a target of 7,200MW by 2020. Such an increase in a relatively short period of time will be very challenging to meet and maintain. The Government has also been supporting non-price measures to improve supply side and end-use energy efficiency to reduce the size of investment requirements. However, the legal and regulatory framework for energy efficiency measures is not in place.

Exhibit-1 Overall picture of expanding generation capacity and energy mix in 2010-2020

IV. Private Participation in the Egyptian Power Sector

Power Sector Structure and Governance

5. The evolution of the governance of the Egyptian power sector over the past half-century falls into two distinct eras (exhibit-2). The first era lasted from the early 1960s to the early 1990s during which time the power sector was organized and governed under a traditional state-owned monopoly as an arm of government. The second era has lasted from the early 1990s to the present during which time GOE embarked on economic reforms to improve the efficiency of state owned enterprises as part of overall economic reforms, and started the process of commercializing the business of power supply. However, the critical needs to meet demand growth have diverted the government attention from completing the commercialization process. This process won't be sustainably completed without reforming the current - power sector governance and corporate governance of the entities that supply electricity and power services to the power market.
6. Until the mid-1990s, the government was responsible for all aspects of the power generation and supply, with a monopoly over power generation resting initially with the Electricity Production Authority and later transferred to the Egyptian Electricity Authority (EEA). Private participation in generation was first allowed in 1996, with the passage of Law No. 100 that modified the 1976 sector law to allow IPPs on a BOOT basis. The following year, a number of incentives that encouraged private power generation were included in a broader investment law, including a five year tax holiday, full profit repatriation, currency conversion and protection against nationalization and expropriation.

7. In the early 2000s, the EEA was converted into a holding company, with generation, transmission and distribution activities unbundled across 13 (public) subsidiary companies. The new Egyptian Electricity Holding Company (EEHC) was intended as a step towards eventual partial divestiture of assets across the power sector value chain, although this privatization has yet to occur. In addition, the New & Renewable Energy Authority was established to catalyze renewable energy power generation, with a mandate both to develop its own projects as well as support potential private development of renewable energy resources.

8. The state-owned EEHC owns and oversees seven public generation companies, nine regional distribution companies, and the Egyptian Electric Transmission
Company (EETC). EETC itself owns and operates high-voltage transmission assets, serves as the system dispatcher, manages imports and exports, and now signs PPAs with generators as the single buyer of power in the country (exhibit-3). Current law allows private sector participation, both foreign and local, in generation and distribution. IPPs are allowed to sell electricity to eligible consumers, as there is non-discriminatory access to the grid, and set their own prices (Law #8, 1997; Amendment of Law #162, 2000). However, wheeling tariffs need to be negotiated with EETC.

**Exhibit-3: Power Sector Structure**

9. In the case of renewable energy, public wind projects are developed, owned and operated by NREA. These projects are financed by multilateral and bilateral financing agencies, as well as national government concessional financing and grants, and are open to public bidding. The commercial wind program consists of two components: a competitive bidding large-scale IPP commercial wind program and a commercial wind program for small-scale IPPs benefitting from a feed-in tariff (FiT). The key features of the three schemes are described in Exhibit-4. Land allocation is entirely under the responsibility of NREA while EETC and distribution companies (for specific project size using the FiT scheme only) will be the off-takers.
### Exhibit-4: Incentive Mechanisms

<table>
<thead>
<tr>
<th>Item</th>
<th>NREA</th>
<th>Competitive Bidding</th>
<th>Feed-In-Tariff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program size</td>
<td>2200 MW</td>
<td>2500 MW</td>
<td>2500 MW</td>
</tr>
<tr>
<td>Single Wind Farm Size</td>
<td>Large (100-400 MW)</td>
<td>Large ten modules (each of 250 MW)</td>
<td>Medium and Small below or equal 50 MW</td>
</tr>
<tr>
<td>Developer</td>
<td>NREA</td>
<td>Private (most probably international)</td>
<td>Private (focus on local)</td>
</tr>
<tr>
<td>Finances</td>
<td>Governmental and soft financing from international development agencies</td>
<td>Commercial Finance</td>
<td>Commercial Finance</td>
</tr>
<tr>
<td>Tariff Setting</td>
<td>Proposed by Egypt Era and approved by the Cabinet of Ministers</td>
<td>According to the bid outcome</td>
<td>Proposed by Egypt Era and approved by the Cabinet of Ministers</td>
</tr>
<tr>
<td>Contracting</td>
<td>20 years</td>
<td>Long term PPA mostly for 20 years</td>
<td>15 years</td>
</tr>
<tr>
<td>Off taker</td>
<td>Grid</td>
<td>Grid or distribution system</td>
<td></td>
</tr>
<tr>
<td>O/M</td>
<td>NREA</td>
<td>Developer</td>
<td>Developer</td>
</tr>
<tr>
<td>Construction Responsibility</td>
<td>NREA through EPC</td>
<td>Developer</td>
<td>Developer</td>
</tr>
</tbody>
</table>

Source: EgyptERA

10. A draft Electricity Law has been in front of Parliament since 2008, but its approval is not expected before late 2015 or 2016. The law would introduce a number of competitive reforms and incentives for renewable energy. A separate renewable energy investment law is likely to be approved in 2014, which would operationalize the recently announced (September, 2014) feed-in tariff program. Furthermore, a new law/decree is under development to allow open up the use of public land by the developers of renewable energy projects using the FiT program. A decree is also likely to be submitted for ratification that would allow NREA to officially enter into joint ventures with renewable energy developers.

11. The power sector is regulated by the Egyptian Electricity Utility and Consumer Protection Regulatory Agency (EgyptERA), which was established originally in 1997 and reformed in its present form by Presidential Decree 329 in 2000. In addition to upholding legal and technical standards, EgyptERA is responsible for reviewing sector planning, ensuring fair costs and utility returns, setting regulations that ensure “lawful competition” in the power sector, and issuing licenses for power generation, transmission, distribution, and sales projects.¹ However, EgyptERA does not have tariff

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setting power, and its board is chaired by the Minister of Electricity and Renewable Energy (MERE), subjecting its rulings to direct MERE's influence.

**IPPs in Egypt to Date**

12. From 1996-2003, three IPPs were developed (SidiKrir, EdF Suez and Port Said, with a total capacity of 2048 MW) under a Build Own Operate Transfer (BOOT) scheme with 20-year power purchase agreements with EEHC. These plants are steam turbines burning natural gas. The selection of the companies was done based on tender and direct negotiations for Power Purchase Agreements (PPA) between the Independent Power Producers (IPPs) and EEHC. EEHC assumed a number of the important project risks; prices were denominated in US dollars, increases in fuel costs were passed through to EEHC; and EEHC paid for deemed generation up to a plant utilization rate of 65-70%.

13. The PPAs were guaranteed by the Central Bank of Egypt (sovereign guarantee for all off-taker’s obligations at the time) and they are protected from future law changes. As a result, GoE was able to attract high-quality developers financed by both multilateral development agencies and commercial debt from local and foreign banks, and thus secured PPA tariffs that were very low by international standards – although the effective tariff increased substantially after the devaluation of the Egyptian Pound.

14. Despite the currency devaluation and changes in ownership, the three IPPs continue to perform well, both in terms of technical and financial performance; capacity factors are far above the guaranteed 70% level, and availability is above 92%. The IPPs were licensed by EgyptERA, and the regulator monitors their technical and financial performance through a benchmarking scheme. With the exception of 265 MW of power plants serving captive loads, no additional equity investments have been made in Egypt since these three BOOT projects were financially closed.

15. In 2009, requirements for pre-qualifications for wind IPPs were published, initially for a 250 MW plant in the Gulf of Suez (site potential: 2500 MW). The process was administered by EETC, and 10 international bidders were pre-qualified. The World Bank supported the drafting of the Request for Proposal (RFP), including PPA, Implementation Agreement, Land Lease Contract, Sovereign Guarantee, Interconnection Agreement, and Draft Grid Code for wind farms, but the process was interrupted by the Arab Spring in March 2011. The RFP has since been re-issued, and the deadline for proposals is currently November 2014 and likely to be extended to March 2015.

16. In addition, work on the 2,000 MW Dairut gas-fired IPP has resumed, with the IFC providing transaction advisory support to EEHC’s BOOT unit responsible for conducting thermal generation competitive tenders. The RFP is currently out for bid, with the expectation that proposals will be received in first quarter of 2015. A potential PPA is under development, with the terms of the fuel supply contract a critical element of the eventual allocation of risk (and project bankability).
Renewable Energy Resources and Planned Projects

17. Egypt has excellent conditions for developing of solar and wind power, which – under the appropriate financial and regulatory environment -- can be developed to serve both domestic and external electricity markets. However, wind and solar energy share only grew from 0.3 percent to 1.2 percent in 2002-2012, which exemplifies the real challenge of meeting the target of 20 percent share of renewable energy in the energy mix by 2020. Therefore, the GOE has adopted an ambitious renewable energy program, which seeks to increase the share of renewable to 20 percent by 2020, consisting mostly of wind and hydro, but with the important introduction of solar. GoE has stated its intention for 2/3 of future renewable energy capacity to be developed privately, with the remaining third developed by NREA. It is not clear, however, by what means NREA selects specific sites for its own development and reserves others to bid out for private generation.

18. Wind power will dominate renewable development and is expected to increase from approximately 550 MW by end-2011 to over 7,200 MW of installed wind power capacity by 2020. Exploiting the potential of solar energy sources would require the right financing incentives to overcome the high capital cost of solar technologies. Furthermore, the recently introduced FiT program envisages a capacity of 2GW for wind and 2.3GW for solar by 2017 but it does not describe how this wind capacity will be aligned with 2020 target.

Wind

19. Egypt has world-class wind resources, in particular near the Gulf of Suez. The largest wind development to date has taken place in the Zafarana district, where average wind speeds measure close to nine meters a second. NREA owns and operates 550 MW of wind capacity in the region through a series of linked plants. NREA has also set aside approximately 700 km2 in the Gebel el-Zayt region for wind power development. NREA has entered into a joint venture where it would share equity with a private company to develop wind projects. 2 Funding for NREA projects has been provided by bilateral organizations, and NREA has signed 15-year PPAs with EETC after cabinet approval.

20. In addition to the Gulf of Suez IPP mentioned above, there are plans for a 400 MW wind power plant to be developed privately and sell power to a private industrial consumer. In part based on this example, a tender process was initiated by NREA in 2013 for 6x100 MW sites. EETC did not guarantee a PPA, as developers were expected to identify their own customers for direct sale. However, in early July, GoE announced that

it had selected a winning bidder. 3 The timeframe of developing these projects has not yet been clarified, in particular since land acquisition does not appear to be complete.

21. The World Bank (using CTF funds) financed a 280 Km 500 kV double circuit transmission line from the backbone of the integrated transmission grid to the Gulf of Suez to ensure sufficient transmission capacity for up to 2500 MW of wind capacity. Originally, most of these projects Egypt’s competitive bidding program for wind power consists of initially tendering a 250MW wind farm on a predetermined site in the Gulf of Suez area in 2010, with 2 x 250 MW to be tendered in each of the subsequent three years and a final 3 x 250 MW in the year thereafter. However, the first 250MW BOO is now three years behind schedule and bidding is not concluded. These 6x100MW were originally planned as BOO projects with the grid as off-taker and now they are IPPs for captive consumers. Hence, the structure of projects in the Gulf of Suez has changed and now the majority will be through donor financing or public projects (exhibit-5) and with significant delays.

Exhibit- 5: Updated operational dates for planned wind farms in the Suez Gulf area

<table>
<thead>
<tr>
<th>Financier/Sponsor</th>
<th>Government entity</th>
<th>Revised operation date</th>
<th>Wind Farm Size (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Development Partners (EDPs)</td>
<td>NREA</td>
<td>February, 2014</td>
<td>200</td>
</tr>
<tr>
<td>Japan International Cooperation Agency (JICA)</td>
<td>NREA</td>
<td>July, 2016</td>
<td>220</td>
</tr>
<tr>
<td>Spanish Government</td>
<td>NREA</td>
<td>July, 2016</td>
<td>120</td>
</tr>
<tr>
<td>Wind BOO, Gulf of Suez</td>
<td>EETC</td>
<td>December, 2016</td>
<td>250</td>
</tr>
<tr>
<td>Cooperation with Masdar (UAE)</td>
<td>NREA</td>
<td>January, 2018</td>
<td>200</td>
</tr>
<tr>
<td>European Development Partners (EDPs)</td>
<td>NREA</td>
<td>2018</td>
<td>200</td>
</tr>
<tr>
<td>Financing options under review</td>
<td>NREA</td>
<td>2018</td>
<td>200</td>
</tr>
<tr>
<td>IPP</td>
<td>NREA</td>
<td>2018</td>
<td>6x100</td>
</tr>
<tr>
<td>Wind BOO, Gulf of Suez</td>
<td>EETC</td>
<td>2019</td>
<td>2x250</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>2,490</strong></td>
</tr>
</tbody>
</table>

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Solar

22. Egypt has very high solar irradiation levels, and solar PV and thermal technologies could provide substantial generation. The only large scale solar project is a 20 MW solar thermal (parabolic trough) component of a 140 MW combination solar-combined cycle plant at Kuraymat. The solar portion was developed and is owned entirely by NREA. This project was supported by the World Bank through GEF financing. According to NREA, solar projects are “considered one of the main aspects to increase the contribution of renewable energy and the 5th year plan (2012 - 2017)” 4. NREA’s project’s pipeline includes 550MW of solar PV projects in the area of Kuraymat (50MW), Kom Ombo (300MW of which 10x20MW on BOO basis), and West/East Nile (200MW). However, the BOO projects will be managed by EETC but the implication of the recently introduced FiT on these projects is yet to be defined.

23. In addition, the Ministry of Tourism is planning to competitively tender the development of a non-grid connected solar photovoltaic plant to displace diesel consumption at certain hotels. However, the project will be procured competitively under the aegis of the formal PPP process under the Ministry of Finance (MoF) (described in Section III). Feasibility studies are expected to begin in February 2015.

V. Approaches to Private Power Procurement

24. As is evident from the previous description, the authority to engage the private sector in power development is spread across a number of GoE bodies. At least six separate processes are currently in place to select private power developers (although many are only applicable to renewable energy), with all six undertaken simultaneously and for the most part independent of each other or partially coordinated. Five of these processes are for renewable energy and one for thermal generation as described below. A schematic comparison, with the roles of each GoE organization and the private sector, is provided in exhibit 6.

i) **NREA Joint Venture**: NREA directly (i.e. noncompetitively) selects a company with which it establishes a special purpose vehicle (SPV) to share equity and project development expertise. The SPV is responsible for site identification, pre-feasibility studies, and project development, and sells power under a PPA to EETC.

ii) **NREA competitive tender (“IPP”s)**: NREA identifies the site (officially with input from EETC, although the process and criteria for allocating land between the two authorities is unclear), performs the pre-feasibility studies, and releases a competitive tender. This
process only applies for wind projects and, in fact, has been introduced in 2013 through splitting the originally planned capacity from wind BOO projects into 600MW IPPs and 750MW BOO projects. The eventual developer will not sign a PPA with EETC, but rather is expected to sell power to eligible private customers, with a wheeling charge payable to EETC for use of the transmission system. NREA evaluates the bids based on technical and financial criteria and receives a flat compensation of 2% of the value of generated electricity for the site of land value, whichever is higher.

iii) **Feed in Tariff (FiT):** FiT regulations were passed in September 2014 that provide guaranteed wholesale tariffs and grid access for renewable energy projects under or equal 50 MW, with a total cap of 4,300 MW for the program. Private developers may use their own land, or else public sites that are allocated to private developers on a first-come first serve basis. A FiT unit has been created in EETC to manage the process and conducts a technical review of the project prior to commissioning and purchases the power under a PPA. However, for those projects using the FiT but which have to connect through the distribution system, there is no clear institutional arrangement established.

iv) **EETC competitive tender (BOO):** Since 2009, a dedicated unit within EETC runs a competitive tender for BOO projects (wind and solar) at sites among those allocated to it by NREA and where NREA has already conducted a pre-feasibility study. EETC selects the developer and purchases the power through a long-term PPA. However, the recent changes that relocated 600MW for NREA’s IPP program has led to several adjustments to the wind farms site master plan. The implication of these changes is yet to be determined, and therefore, a careful review is essential at this stage to avoid any adverse impact on the ongoing tenders.

v) **EEHC competitive tender (IPPs):** A dedicated unit within EEHC runs a competitive tender for IPP projects at sites it has identified as part of the long-term power generation plan. EEHC selects the developer, and EETC purchases the power under a PPA. Three projects are current planned in this process, Dairut (CCGT, 2,250MW), Aiaat (steam, 1,950MW), and Qena (steam, 1,300MW).

vi) **PPP process (Ministry of Tourism):** As dictated by the PPP Law of 2010, the Ministry selects the site and performs the pre-feasibility study, which must be approved by the Supreme Committee. The Ministry runs the tender with the assistance and approval of the PPP Central Unit (PPPCU) and selects the developer. The one project being considered under this framework does not plan to sell power to EETC, although there is no legal prohibition for doing so. NREA is also in the process of exploring the application the PPP procurement process in selected future projects.
VI. The Egypt PPP Regime

Legal Basis

25. Law number 67 of 2010 (the PPP Law), together with the associated Executive Regulations issued by Prime Minister’s Decree No.238 of 2011, established formal legal procedures for the procurement and establishment of contracts with private partners for the provision of infrastructure and public services. The law establishes a dedicated, cross-sectoral PPP unit (the PPPCU) that provides technical supervision to the ministries and a Supreme Committee that approves projects and monitors the allocation of funds to ensure financial obligations to private partners are fulfilled. While the PPP Law represents a significant departure from Egypt’s previous sector-specific concession agreements, it is important to note that its passage did not repeal existing concession laws. In order to qualify, PPP projects must have a total contract value of at least 100
million EGP ($17.7 million) and involve a concession or off take agreement of five years or more in duration.

26. The PPP Law indicates a strong commitment on the part of GoE to private participation in the provision of public services. The law and its regulations contain a number of practices that can help ensure high-quality projects at competitive prices. It specifies a clear and systematic competitive procurement process that ensures high-quality feasibility studies, appropriate pre-qualifications, feasible technical and financial proposals, and a transparent selection process.

Relationship of PPP Process to Power Projects

Benefits of PPP process

27. As noted, the PPP process (annex-1) does not currently apply to power sector projects as EEHC and EETC, are not considered Administrative Authorities but rather government-owned companies. The process, however, would confer certain advantages to power projects if available but also contains provisions that are likely unnecessary or less relevant, as discussed below.

28. The process allows the MoF to seek professional advice to provide fiscal support (direct and/or contingent) to IPPs. It requires and funds the use of independent transaction advisors and establishes a process to ensure best firms are selected; as the PPPCU develops more experience with individual firms - as the case in several countries - it will be able to provide even further guidance as to the effectiveness and value of each. However, the sector technical knowledge remains in the respective government entity. The PPPCU provides guidance on a number of issues important to the ultimate bankability of the project, including:

i) Project guarantees: The Law explicitly suggests (although does not mandate) that the MoF may guarantee the payments owed by the AA to the project company, as detailed in the Direct Agreements between the AA, the project company’, and the company’s financiers. MoF approval via the PPP process may also facilitate the process of obtaining sovereign guarantees for a project.

ii) Lender step-in rights: The law indicates the importance of lender step-in rights, suggesting that Direct Agreements may also include provisions whereby lenders can assume the role of the project company or appoint a new investor in case of default.

iii) Dispute Resolution: Disputes would be resolved through arbitration rather than through Egyptian courts. Under the new rule, arbitrations would be carried out at the Cairo International Arbitration Centre and be based on the regulations and procedures of the United Nations Commission on International Trade Law (UNCITRAL)
Limitations for power projects

29. The law, however, only extends to GoE organizations considered to be Administrative Authorities, typically only Line Ministries themselves, and thus does not apply to EEHC, EETC. Unlike most ministries for whom the PPP process was designed, EEHC and EETC have experience in tendering and monitoring private projects. As a result, the mandatory approval of every document may be unnecessary and could add a number of repetitive steps to the process. Other specific provisions, such as the sealed public sector comparator or the mandated 0.5% success fee, are not typical of power projects and could add significant expense and delay.

30. Instead, as most power projects (using a given generation technology) are relatively similar, the determination of how much power should be developed privately is taken on a sector-wide rather than project-by-project basis. For a similar reason, the approval of each individual project by the Supreme Committee may be revisited. The strict selection process may limit the options for tender design, as there are no provisions to bid multiple projects as part of an auction (as was done in South Africa, described below), nor to adjust the bid evaluation to a more sophisticated or dynamic process as the tendering authority gains experience.

31. Also, certain provisions to protect either government or private sector may not go far enough to ensure their intended purpose: for example, many power project developers will look for arbitration in a neutral site with an appropriate legal framework (often London or New York); on the other hand, there is no clear procedure to ensure the second-best proposal will be developed in case the initial winner is not able to reach financial closure (in particular given the timing of the return of the bid bond).

Relevant International Examples

32. Egypt is not unique in creating a PPP framework after several IPPs are in place, and retroactively trying to reconcile the PPP framework with the legal and regulatory framework specific to the power sector. Jordan, for instance, recently enacted a PPP Law that envisages covering the power sector, in particular for renewable energy. Jordan plans to develop guidelines and toolkits specifically for such projects.

33. Many other countries have prioritized private sector involvement in power generation over other infrastructure sectors (Pakistan, Colombia, Philippines, etc.). One of the reasons driving this is the interest of private investors in power generation—IPP are easier to ring fence and finance on a non-recourse basis, and the IPP model is less complex to replicate than a concession for a water system, or a toll road, or a port. By the time countries figure out that PPPs are worth pursuing in other sectors, the power sector
has already advanced to a point in which they no longer favor PPPs, but a fully liberalized and privatized sector—more like telecoms.

**International Best Practices**

34. A quick review of global experience in PPPs shows that key requirements for successful PPPs include:

- An adequate enabling environment, which includes legal, regulatory and institutional capacity that are conducive to private sector involvement in key infrastructure sectors and public services through long-term contractual relationships with governments/public sector.

- Availability of long-term private and public capital (debt and equity) for financing of PPPs;

- Cost recovery tariffs or a well-structured and predictable subsidy mechanism

- Well-structured projects with a balanced risk allocation so as to meet public sector objectives whilst being attractive and bankable for the private sector; and

- Government capacity to implement PPPs and to manage the long-term contracts with private sector.

**The Case of South Africa**

35. In December 2010 the Government of South Africa (GoSA) established an Inter-Ministerial Committee (IMC) supported by an Inter-Departmental Task Team on Energy (IDTTE) to address security of electricity supply and long-term electricity price certainty to enable the private sector (as well as the lenders to Eskom) to invest and/or lend towards the development of new electricity infrastructure within an affordable price path.

36. The resulting Renewable Energy Independent Power Producer Procurement Program (REIPPPP) has successfully channeled substantial private sector expertise and investment into grid-connected renewable energy in South Africa at competitive prices. To date, a total of 64 projects have been awarded to the private sector, and the first projects are already in operation. Private sector investment totaling US$14 billion has been committed, and these projects will generate 3922 megawatt (MW) of renewable power.

37. The implementation of REIPPPP was done against an historical background of institutional shortcomings in the country’s energy sector. The Department of Energy (DOE) took control of the program. But DOE also recognized that, like Eskom, it had little institutional capacity to run a sophisticated, multi-project, multibillion-dollar
international competitive bidding process for renewable energy. As a consequence, DOE sought the assistance of the National Treasury’s Public-Private Partnership (PPP) Unit to manage the process. A small team of technical staff from DOE and the PPP Unit established a project office, known as the DOE IPP unit, which functioned effectively outside of the formal departmental structure of national government to act as a facilitator for the REIPPPP process.

38. The key success factors in the REIPPPP included:

- The PPP Unit member of the team was familiar with private sector infrastructure projects
- Dialogue with private sector counterparts on key REIPPPP design and implementation issues began almost immediately and continued throughout the process
- High standards were set and maintained throughout the bidding process, including security arrangements and transparent procurement procedures. Documentation was extensive, high quality, and readily available on a specially designed program website
- Professional management style was maintained throughout - efforts were made to meet most of the program’s announced deadlines
- By successfully accessing funding from sources like the Development Bank of Southern Africa (DBSA), donors, and a National Treasury jobs fund - the program was able to remain largely off the formal government budget through the first three bidding rounds.
- The program was exempt from PPP Regulations, given that Eskom was signing the PPAs (and Eskom being a corporate entity is exempt from the application of the PPP Regulations)
- A final, very important aspect of the program’s management style involved the extensive use of private domestic and international advisers to design and help manage the program, review bids, and incorporate lessons learned into the program as it progressed through the bid rounds

Next steps:

- The program is now extended to include Independent Power Producer Procurement Program (IPPPP). In respect of base load/mid-merit capacity IPPs, targets are as follows in line with the IRP2010;
• 2500 MW coal to be connected to the grid between 2014 and 2024;
• 2652 MW natural gas (conventional i.e. natural gas and liquefied natural gas as well as unconventional gas such as shale gas and coal bed methane) to be connected to the grid between 2021 and 2025; and
• 2609 MW from imported hydro to be connected to the grid between 2022 and 2024.

VII. Barriers to Private Participation in Egypt’s Power Sector

39. While both the Electricity and PPP legal frameworks encourage private sector participation in power generation, no IPP projects have been developed since 2003. Certain risks, whether project-specific or sector wide, may limit private sector interest or make commercial financing prohibitively expensive. Several issues are specific to private investment in power generation, whether thermal or renewable-based. Many of the issues listed below are interrelated (e.g. the regulator’s lack of independence increases the probability of below-cost pricing, which in turn increases the risk of utility non-payment). Nonetheless, the key barriers can be considered as follows:

Country Risks

40. Some issues are not specific to the power sector, but rather reflect political and economic considerations for any large investment in Egypt. In particular, the risk profile of the country has increased significantly since the Arab Spring; for example, a number of international developers were interested in wind projects prior to March 2011, but tenders were removed from circulation as the political situation grew unstable. Even now that political stability has been achieved, the lasting effect of multiple, rapid changes in government on an investors’ perception of political and regulatory risk will need to be considered.

41. In addition, Egypt’s deteriorating credit rating has limited private interest and increased costs of capital. This, coupled with the lack of liquidity in global financial markets, suggest that investors in Egypt may favor shorter terms and higher margins than are typically available in power generation. The credit rating has stabilized recently, however, and there are signs it may be raised. Recent currency devaluations also make it unlikely that foreign investors will accept payment in Egyptian pounds.

Institutional governance and capacity

42. Institutional roles: The current multiplicity of processes for procuring private power generation create overlapping and in many cases duplicative roles. NREA, EEHC
and EETC are all authorized to release tenders for private renewable energy projects, with no clear indication of what would determine which agency is responsible in what cases. Creating separate, duplicate processes and building up the same technical capacity at multiple organizations is an inefficient use of GoE resources, and allowing multiple duplicative processes increases the risk to GoE that one of the other may not be designed to fairly balance risks and thus could either provide an undue advantage to the private sector or attract no private interest at all. In all cases, the specific activities to be carried out by GoE should be clearly assigned to an organization with the mandate and technical capacity to carry them out, and the mandates for each organization should reflect their skills and core functional role. In particular, allocating both the mandate to develop public projects and to competitively procure private projects can cause either a real or a perceived conflict of interest, as the private projects can be seen as direct competitors to their core business.

43. Regulatory independence: As currently structured, EgyptERA is functionally under the auspices of MERE; the Minister of Energy serves as the chairman of its board of directors and has the power to nominate up to seven additional board members. While this situation may give the regulator additional influence it might not otherwise enjoy, it also increases the possibility that regulatory decisions will be made on a political rather than technical basis. On a sector-wide level, political influence can lead to sudden changes in regulatory principles, for example tariff reductions that defy previously-established methodologies. The potential of political influence can also increase risks on a project level, for example by reducing the transparency of the licensing process.

44. Technical capacity: Currently all the units within MERE responsible for attracting private investment have limited experience or are severely understaffed. Multiple small teams comprise very few technical experts in each of EETC, EEHC and NREA. Some of these teams work with advisors but none has taken a private power plant to financial closure and successful commissioning since they were established in 2008. Even the PPPCU has seen high turnover in the past few years and has a small team with limited power sector experience (although more experience dealing with infrastructure investments and commercial lenders in recent years.)

**Market risk**

45. Power prices not based on technical, cost-based methodology: Although recent sector reforms have included substantial electricity price increases and fuel subsidy reform, retail tariffs do not allow utilities to adequately recover their costs, and there does not appear to be any technically-based price-setting methodology in place to guide the determination or approval of tariffs. EEHC’s average CPT-adjusted tariff yield declined over 50% between 1994 and 2011: the current level of average tariff revenue yield of about $0.035 billed covers only 40% of the economic cost.
46. As fuel costs increase and Egypt moves towards renewable energy, generation costs may increase further: reaching the GoE target of cost reflective tariffs within 5 years will require strong political will to further raise electricity prices, and to establish a clear methodology to ensure they continue to rise if costs climb. Prices are currently set by MERE, however, and the methodology for determining prices is not transparent. EgyptERA does not have the regulatory authority to set or approve tariffs, whether retail power tariffs or the wholesale prices received by generators. The agency’s mandate includes ensuring that costs are fair to all parties and that power prices ensure a fair return to utilities, but without jurisdiction over individual tariffs themselves, it is unclear how this responsibility is exercised.

47. In addition, the lack of a tariff-setting methodology means that potential IPPs must negotiate with EETC both the tariffs and the terms of the PPA. This adds time to the development process as well as considerable uncertainty to developers and financiers, as IPPs are at the mercy of EETC decisions which are not known in advance and whose basis may not be entirely clear.

48. Utility credit risk: In part due to the setting of electricity prices below costs, it is not clear that EETC will have sufficient revenues to serve as a fully reliable off-taker of power for the period that would be covered by any bankable PPA. As of 2011, EEHC (and now presumably, EETC) suffered both from declining profitability and significant cash flow obligations (both due to rising costs and large long-term debts to other GoE agencies, which may have partially accounted for the company’s positive, albeit thin, profit margins in previous years). Combined with increasing leverage ratios and an ambitious investment plan, developers and lenders may not be certain that power generated will be purchased and paid for in a timely fashion. In this case, external project-level guarantees will be necessary to minimize the risk of default and provide comfort to lenders. The subsidy reform package announced in July is a step in the right direction, but EETC is still far from breaking even on revenue alone.

49. EEHC’s internal management and governance does not adhere to international best practices. In addition, dispatch based on factors other than cost increase overall generation costs. The form of competition envisioned in the draft Electricity Law could address both issues, although a thorough cost of service study, if it has not already been done, would be important to identify the true impact of each, and thus the likely efficiency gains from competition.

50. Sovereign guarantees: In many countries, the risk of utility non-payment is offset by sovereign guarantees from a separate, solvent, government body with a mandate and commitment to make up any shortfall from the utility. Such sovereign guarantees were provided by the Central Bank of Egypt (CBE) to the three existing IPPs, helping facilitate their development. However, since the new Banking Law No. 82 restricted CBE guarantees to “public juristic entities” in 2003, CBE is no longer legally allowed to provide
sovereign guarantees to EEHC (a private juristic entity) or its affiliated companies. In 2013, a law was passed that gives the MoF explicit authority to guarantee EEHC and its affiliates, but the language of the initially proposed MoF guarantees included total liability limits that significantly undermined their value. Two guarantees were announced by the MoF, namely, US$2.5 billion for the Dairut IPP, and US$660 million for the first 250 MW wind BOO project.

Cost uncertainty

51. Currency risk: While the three existing IPPs were protected from local currency risk, it is not clear whether the same protection will apply to future projects. Given the history of devaluation, requiring the private sector to take all currency risk would severely constrain private investment, likely limiting interest only to domestic companies.

52. Fuel supply and price (thermal only): In part due to generous subsidies that contribute to consumption inefficiencies, there are concerns regarding the long-term supply of natural gas and liquid fuels. As a result, private thermal producers will likely require contractual arrangements that shift at least some of the risk of price increases either to the consumer (via tariff increases) or the fuel supplier (via long-term purchase contracts). If physical availability is an issue, project lenders may also require the off-taker (or another GoE body) to guarantee a certain payment level if the plants need to curtail generation due to a lack of fuel.

Renewables

53. All the issues mentioned above (except fuel supply) are as relevant to renewable energy projects as to thermal, and many affect renewables even more as the sector has higher technical risk to begin with. However, renewables face unique challenges of their own, and additional barriers must be addressed to encourage their development. In addition to the NREA institutional overlaps already discussed, these include:

54. Price Incentives: While NREA currently has the mandate to competitively tender renewable energy projects, there is not yet a price incentive mechanism in place to help compensate IPPs for the relatively higher cost of renewable energy generation. Under a competitive (price-based) tender, financial support would need to be made available to the off-taking utility – or else passed on to the end user. Under a feed-in tariff regime, prices for certain types of projects (typically smaller projects) are established in advance, and the price paid by the off-taker can be directly supplemented by another funding source.

55. Guaranteed dispatch: As the output of most renewable energy projects varies with the strength of the resource and is not under the operator’s control, renewable IPPs typically require guarantees that all (or at least most) of their output will be purchased, regardless of when it is generated (i.e. priority dispatch), and even if the grid operator
has more cost-effective options available. In the case of projects not competitively tendered (e.g. developed via a feed-in tariff), projects will also need certainty that they will be connected to the grid.

56. Land allocation: For renewable projects, it is not clear what sites will be allocated to what processes and on what basis decisions will be made. In practice, it is understood that the majority of the sites expected to be developed by the private sector, whether through competitive tenders or feed-in tariffs, will be located on land currently owned by NREA, with the rest coming from a wide range of public land sources. Given that NREA has to reserve sites for its own developments (and other agencies for their own uses), it is not clear to potential developers what land will be available for their use nor how they are expected to identify and choose their preferred sites. The same may hold true for EETC regarding sites available for them to tender. It is understood that NREA will prepare a Master Plan which should be designed to clearly resolve these issues.

VIII. The Draft Electricity Law

57. Some, but not all, of the barriers mentioned above could be addressed by the draft Electricity Law under consideration, and accompanying secondary legislation. The proposed law has been endorsed by the Cabinet and has been in front of Parliament since 2008, but has yet to be approved. The Law was drafted by the EgyptERA with support from bilateral agencies and international consulting organizations. The law proposes Egypt adopt many of the key elements of competitive power markets, including:

i) Bilateral contracts for “eligible consumers”

ii) Third party access to the transmission network

iii) EETC to become an independent Transmission System Operator (TSO), responsible for system operation, market operations, and system planning

iv) EgyptERA regulatory approval of monopoly tariffs

v) Transparent and internationally accepted tariff methodology

vi) Updated grid code (although a new grid code is expected to be published in 2014)

58. The structure of the market provides for a transition period during which the existing (regulated) market co-exists with a competitive market (exhibit-7). More specifically, three stages are envisioned:

i) **Stage 1**: A mixed market with some bilateral contracts and a regulated market served by economic dispatch. The TSO is separated from EEHC and takes the role of the
dispatcher and balancing market operator; high voltage consumers become eligible for bilateral contracts; a publicly-traded company buys electricity to resell to distribution companies.

ii) **Stage 2**: Once Stage 1 has achieved stable operations, the pool of eligible customers will expand; balancing is priced-based on market mechanism, and private generators can compete.

iii) **Stage 3**: Full competition, perceived to be 8 to 10 years into the future. All customers can freely negotiate prices with generators in the competitive market, or opt to remain in the regulated market subject to regulated prices. Balancing service will be provided by the Transmission System Operator at market prices (E.G.: through a Power Exchange).

Exhibit-7: Competitive and Regulated Power Market

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**Treatment of Renewable Energy**

59. The new draft law includes important provisions that will determine how the next phase of renewable development proceeds. The law sets out the procedures for the construction of grid-connected renewables and the compensation of EETC for the purchase of power at higher prices than alternatives. Renewable IPPs are envisioned mostly on the BOO (Build-Own-Operate) concept in predetermined sites where wind and solar measurements have been carried out before the bidding. Targets are set by the Supreme Council of Energy in view of: demand growth, supply growth, and the feasibility of alternative energies. GoE, represented by MERE has to fulfil the obligation.
60. Article 45 of the draft law sets out the process for the procurement of electricity generated by renewable plants. It provides for several options combining competitive bidding and feed-in tariff, with the latter targeting (initially) projects smaller than 50 MWs. Under the competitive bidding system NREA may call for tenders for the construction and operation of plants to sell electric power to the EETC at a rate proposed by the regulatory agency and approved by the Cabinet. Alternatively EETC, in coordination with NREA, can call for public tenders to build, own, and operate plants under which the successful bidder will agree to a power purchase agreement with EETC. It is intended, but not specified in the law, that the domestic content will be a part of the criteria for selection. It is also foreseen that investors may, of their own volition, build plants and sell to EETC on the basis of a standard PPA of a take-or-pay character valid for 15 years, approved, and announced by the Cabinet.

61. Article 46 obliges the holders of transmission and distribution licenses to connect renewable generators to their own network and to cover the corresponding investment needed for strengthening them.

62. Articles 47 - 50 provide for a fund, to be named the "Fund for Development of Power Generation from Renewable Energies", established by and affiliated to the cabinet of ministers. The purpose of the Fund is to compensate EETC for the purchase of electric power from the renewable generators. The Fund will be financed mainly from allocations of the public budget of the State. The Fund’s statutes and governance are to be set by Decree.

IX. Renewable Energy Investment Law and Feed-in Tariffs

63. A new law currently under consideration by the State Council would provide additional incentives for investment in renewable energy. A draft of the law is under preparation, but it is understood a key provision will be to legally implement the recently-developed feed-in tariff scheme for wind and PV projects under 50 MW, up to a total cap of 4,300 MW.

64. According to discussions with the GoE, the FiT will provide for guaranteed dispatch, 20 year PPAs for wind and 25-year for solar, and tariff revisions no more than every two years. The offtaker will be EETC for projects between 500 kW-50 MW, and the relevant distribution company for projects under 500 kW. Projects are defined as being on a single (presumably contiguous) site with a single substation connection, on land either belonging to the developer or leased from a GoE entity through a standardized usufruct agreement.

65. The land owner will receive 2% of the value of the energy as compensation for the land, but it is not clear what basis specific parcels of land will be identified or defined. It is understood that, at least for large wind projects, the assumed energy generated for the purposes of calculating the land fee will be subject to a minimum level implying a
capacity factor of approximately 51%. Much of the land is expected to come from NREA, although it is worth noting that it will thus be required to determine the land allocation between its own projects, EETC competitive tenders, and feed-in tariff projects. Also unclear is whether NREA will receive additional compensation for land where it has already performed resource assessments or pre-feasibility studies. In addition, it will be important to understand whether standard PPAs have been developed or are under consideration, and whether any form of project guarantees are envisioned (and if these include sovereign guarantees, whether MoF was consulted in the determination of the total capacity cap and rates and is prepared to assume the contingent liabilities they entail).

X. Measures to Address Barriers and Ensure Sustainability of Private Investments in the Power Sector

66. Included below are a suite of options to help in addressing the barriers to establishing a comprehensive and systematic approach needed to attract private investment in the power sector. To the extent the report describes certain specific actions or institutional arrangements, these are not meant as firm recommendations but rather possible approaches requiring further consideration, deliberation, and feedback from respective stakeholders.

a) Define institutional roles and build capacity

67. Clearly defining the methods of private power procurement and the respective roles and abilities of each GoE body (as well as the private developer) will help allocate GoE resources efficiently, predict and monitor GoE liabilities and risk, and provide a clear, scalable process that attracts high-quality projects.

1. Clear and distinct mandates: Specifically, GoE would benefit from carefully considering which agencies are best placed to execute each public-sector activity in the process of procuring private development, including those listed below. The first step in the process could involve a review of existing legislation to define and circumscribe existing mandates and identify overlaps or gaps.

- Identify sites and lease land
- Perform pre-feasibility studies
- Conduct public tenders and select developers
- Negotiate PPA terms and tariffs
- Develop retail and wholesale tariff methodology and approve final tariffs
- Implement renewable energy incentives
- Administre renewable energy support funds
• Develop permitting process and award licenses for resource exploration and development, power generation, and supply
• Develop the grid codes
• Develop standardized contracts and agreements (e.g. PPAs, system use agreements, RFPs)

1.1 It may be appropriate to have multiple organizations collaborate on a single process, or to have more than one approach operating in parallel, but in all cases the roles of the agencies in each process must be clear, and the purpose of each approach clearly targeted to meet a specific and unique objective. For example, it would be practical to design a unique process for private generators who plan to sell directly to commercial or industrial customers, as the involvement of -- and risks to -- GoE may be much lower.

1.2 In addition to the commercial responsibilities described above, MERE has a responsibility to conduct technical work in renewable energy, including research and development, pre-feasibility studies, resource mapping, technical certification. It is worth noting that the technical and commercial skill sets are substantially different, and it is rare that a single agency would be expected to both serve as a technology and research center and also develop its own commercially competitive projects.

2. Conflict of interest: In addition to a lack of clarity, dual mandates that raise the potential for conflict of interest may discourage investment or lead to lower-quality projects and/or higher final costs of power. For example, two authorities currently responsible for attracting private investment to their competitively-tendered renewable projects (EETC and NREA) are also responsible for developing generation facilities. NREA in particular is also responsible for determining which sites it develops in house (or via a joint venture; whereby NREA may end up carrying the same risks as if it were developing the project entirely on its own) and which are eligible for private development, either via the FIT or an EETC competitive tender. Given that project development is likely a much greater source of revenue than leasing land, this could pose a significant conflict of interest.

3. Relation to PPP framework: One particular element that must be considered is the role of the PPP Law and PPPCU in the power sector. As described in Section III, the PPP framework identifies a number of good practices, and the staff within the PPPCU can bring unique skills- experience, and relationships to improve the competitive process – and likewise, the unique power sector experience within EEHC and EETC can strengthen the PPP process. However, certain elements of the PPP Law may not be best suited to power projects. Given that the key entities in the power sector are not currently bound by the law, a simple solution may be to agree to follow select steps in the formal PPP process or include members from the PPPCU in the development and management of power sector tenders. On the other hand, power-
specific guidelines could be adopted that adapt the PPP Law and Executive Regulations to the unique circumstances of the power sector or describe a new process that shares certain elements with the PPP framework.

4. **Technical capacity:** In addition to clarifying organizational responsibilities and minimizing duplication, GoE could support strong leadership and capacity-building efforts in the relevant institutions. This could come through a mix of training and the strategic hiring of both staff and advisors. The most urgently needed technical competencies are those related to commercial and financial expertise to run effective competitive tenders and ensure good projects at fair prices, including project finance, project management and financial analysis skills. Also highly valuable would be a dedicated point person who can bring together the required competencies and be given both the responsibility and resources to bring projects to close.

5. **Dedicated unit:** One specific option may be to identify a single, dedicated unit responsible for competitive private power generation. Such a unit could take on the role of developing tender documents and project contracts, promoting opportunities and attracting bidders, managing the tender process, and awarding projects (similar to the dedicated IPP unit described in the South Africa example above). Such a unit would look to incorporate the wider range of expertise currently found across GOE and could integrate staff from EEHC, EETC, the PPPCU, NREA, and other agencies as appropriate. Such a unit would almost certainly benefit from the assistance of international transaction advisors, including teams of legal and technical consultants, but the ultimate decision-making authority would remain within GoE. In addition, the engagement of the best international experts could prove an effective way to build capacity “on the job” within the new unit.

6. **Regulatory independence:** Separate from the considerations of the procurement process itself, EgyptERA’s institutional position as part of MERE reduces its ability to make difficult political decisions, including raising retail tariffs to ensure EEETC can recover its costs and remain financially viable in the long run. This could result either in lower private sector appetite for investment, higher financing costs, or the prolonged need for sovereign guarantees. While the draft Electricity Law would for the first time vest tariff approval authority with EgyptERA, it does not address the regulator’s dependence upon MERE leadership for final oversight.

b) **Ensure access to project guarantees**

68. Under the IPP model with long-term PPAs, external project guarantees can provide additional security to developers. In cases where off-taker payment abilities are
uncertain, such as in Egypt, one or more guarantees will likely be a critical element to obtain commercial debt and keep project costs competitive.

1. **Sovereign guarantees:** As discussed above, CBE no longer has the ability to provide sovereign guarantees to EEHC and its affiliates. As a result, MoF will almost certainly need to provide sovereign guarantees on all projects above a nominal size. The provision of sovereign guarantees requires balancing the requirements for private investors against the cost of long-term government fiscal commitments. On a project-by-project basis, MoF will need to legally commit to guaranteeing EETC payments in the event the utility defaults, as well as establish clear procedures to define defaults and determine how and when funds would be set aside and transferred to the IPP. While such conditions can be negotiated individually in each PPA, a publicly-communicated policy applicable to all projects would do far more to attract private interest in the sector. On the other hand, offering guarantees to more projects than necessary, or to particularly risky projects, can result in MoF being financially responsible for significant cash outlays over 15-20 years for energy that is no longer the most cost-effective option. Therefore, MoF must work closely with MERE to determine which projects should be developed privately and thus be eligible for MOF guarantees. One possible approach is for the tendering authority to work hand in hand with staff members from the PPPCU (for example as part of the type of joint dedicated unit described above) which could evaluate the requests for such guarantees and advise the MOF on their need, scale and justification; as well as inform the MOF on the cumulative magnitude created by providing these guarantees. PPPCU approval could even be required before guarantees would be issued.

2. **External guarantees:** Project risks can also be addressed with additional guarantees provided by external parties. The World Bank Group in particular can make available different guarantees and risk mitigation instruments from. Both the World Bank (WB) Multi-lateral Investment Guarantee Agency (MIGA) guarantees are proven valuable tools in developing countries through attracting high quality project developers and reducing costs of capital, helping to ensure projects are effective and affordable.

c) **Establish clear, replicable tender process and bankable project documents**

69. The Government of Egypt has shown a commitment to increasing the role of the private sector in power generation, and has adopted the best practice of competitive tenders as its primary (although not only) selection mechanism.

1. **International Best Practices:** For thermal projects, it is best practice to competitively select developers through tenders, based (at least in part) on proposed tariff. For renewable projects, developers can either be selected competitively, or (for smaller
projects) unsolicited proposals can be approved and licensed on the basis of a feed-
in tariff. With the introduction of the new feed-in tariff regulations and renewable
energy law, both processes will exist in Egypt. In all cases, the procurement process
itself must be run according to international standards, and based on principles such
as nondiscrimination, efficiency, accountability, risk sharing, and fiscal responsibility.
Tender documents must include well-formulated eligibility and selection criteria,
clear financial proposal guidelines, safeguards against conflicts of interest and fraud,
and environmental and social protection measures. For renewable projects, tenders
can include a number of provisions that are of particular importance to renewable
development and can help reduce the cost differential with fossil-fuel plants,
including pre-acquired permits for land allocation, usufruct lease agreements, initial
environmental assessments prepared, reduced customs duties, long-term PPAs, and
guaranteed dispatch. Many of these provisions are in place or planned, either in
existing tenders or the new FIT process.

2. Standard, replicable tender process: A standardized tender process, with transparent
and predictable stages and evaluation criteria will provide certainty to the market
and greatly streamline the competitive bid process. The initial process must be
developed with broad consultation within government and from potential bidders
and their lenders, and must get the necessary approvals. Following projects, however,
can then be bid out quickly and will full confidence that the documents and processes
are appropriate and supported, saving time and GoE resources. If, for example, a
dedicated IPP unit were established, one of its first tasks could be to develop such a
process. As discussed above, the standardized tender process may include certain
elements from the existing PPP process, as agreed by the EEHC, EETC and the PPPCU.

3. Standardized bankable contracts: A model PPA that follows international best
practice provides a high degree of risk certainty to private developers and can greatly
reduce negotiation time. It can also be useful for developers to arrange their financing
quickly and at the lowest cost. For large IPPs, a certain degree of flexibility to
negotiate individual terms is likely in the interest of both parties, but a fully
standardized PPA may be appropriate for smaller renewable energy projects. Model
documents could include both PPAs and associated project documents (e.g. fuel
supply contracts, land usufruct agreements, project guarantees). In all cases, all
project documents must allocate risks clearly between the parties involved in
language that is precise and legally binding. Statements of intent or those that leave
any room for alternate interpretations will rarely be sufficient to give developers –
and especially lenders – the confidence to proceed with a project. Model contracts
must be developed in a collaborative process between GoE and private stakeholders
with the input from experienced technical, financial and legal advisors.
4. **Provide GoE equity in priority projects already identified:** Developing a standard tender process and documents may take 1-2 years, a number of high-priority projects planned for private development are already in the planning or tender stage. It would not necessarily be in the best interests of Egypt to suspend all projects while a new process is developed. One option that may be considered, if strong private interest is not seen for certain projects, could be for GoE to provide a limited amount of equity (minority stake) in the project company. This could help provide comfort to developers and lenders while still leaving most of the project financing to the private sector. It would need to be clear, however, that such an approach would only be considered as an interim solution until fully bankable documents are prepared.

d) **Continue to implement tariff and subsidy reform**

70. The principles of cost-reflective tariffs are essential for the long-term viability of the sector and for attracting sustainable private investment. Developers and lenders need to be certain that the counterparty to their PPA (EETC) will have the funds available to fulfill its payment obligations for the duration of the contract. The ideal way to ensure this is for retail tariffs to cover the full cost of generation and supply. As long as sufficient revenues are channeled back to EETC to cover its own costs, then prospective investors can be comfortable that the off-taker is creditworthy and can pay its debts.

71. A significant package of tariff increases and subsidy reforms was announced in July 2014, sending a positive signal to the market that GoE is aware of the importance of cost-reflective tariffs to the sustainability of the sector. Nevertheless, current tariff levels are still substantially below cost, and the reform did not include an schedule or automatic trigger for further increases to eventually reach (and maintain) cost-recovery levels. In addition, since implementing full cost-recovery tariffs is politically challenging and can cause significant cost of living increases among those least able to afford them, certain social protection subsidies will be needed appropriate. Given the high proportion of subsidies that accrue to the middle and upper income populations, a well-considered communication strategy also may be beneficial in increasing public acceptance. In either case, as much as possible, implicit subsidies such as fuel price reductions should be replaced with an explicit, transparent subsidy to directly offset low-income consumers' electricity expenditures.

72. In the short term, before the tariff reform process is complete, IPPs still need to be certain that EETC will have sufficient funds available to pay for the power it purchases. If these funds will not come from consumer tariffs, then then GoE should make clear the source and amount of available supplemental funding or subsidies, as well as the process required for EETC to obtain them. Likely, some form of external guarantee will also be needed.
73. Improve EEHC/EETC financial position. In addition, a number of measures are needed, such as restructuring EEHC debt to National Investment Bank of Egypt (NIB), writing off much of its accounts payables to increase working capital, and granting a grace period on new loans. To the extent such measures have been taken, it would be valuable to assess their impact on EETC’s key financial indicators and whether they have been sufficient.

e) **Enact the draft Electricity Law and develop secondary regulations**

74. In general, the draft Electricity Law provides a good basis to attract investment in IPPs. As discussed above, it addresses a number of key issues that currently stand in the way of large scale private investment in the power sector, most critically a fixed tariff-setting methodology and support mechanisms for renewable energy projects. As the draft Law has been drafted and is in front of Parliament in its current form, it is assumed that altering individual provisions would not be feasible at this time. As a result, it is suggested that the draft Law be passed quickly and in current form, with any additional remaining barriers or uncertainties dealt with on an individual basis after enactment, or where possible, through the Executive Regulations.

75. However, it is recommended to carry out a more detailed review of the draft Law in view of both the legislation that has been passed since its first drafting and the new Government’s goals and objectives. Particular emphasis should be placed on the Executive Regulations which accompany the Law and specify its implementation in more detail. The particulars of such Regulations will go a long way towards defining the allocation of risks and costs between GoE and the private sector, and as such will shape whether the sector ultimately attracts investment. Examples of Regulations likely to be necessary include:

- Precise tariff-setting methodology and regulatory approval process (including the authority to refuse non-conforming tariffs)
- Open access/use-of-system regulations (e.g. defining eligible customers, transmission charges, contractual relationships between EETC and distribution companies)
- TSO charter
- Grid code, including allocation of connection and grid upgrade costs
- Feed in tariff regulation (specifying both tariff levels and grid connection/dispatch principles)
- Renewable energy licensing procedures
- Energy efficiency standards and incentives

76. A number of studies that provide, information, options and recommendations will be required to inform the drafting of Regulations, and it may be useful to have some
completed (or at least begun) before the passage of the draft Electricity Law. Studies could address, if they have not already been done, cost of service calculations, the tariff-calculation methodology, an assessment of transmission and fuel supply bottlenecks, the design of social protection subsidies, the design of the renewable energy support fund, feed-in tariff levels, transmission charges, or the phasing of competitive markets.

f) **Provide additional support to renewable energy and energy efficiency**

77. In addition to the policies articulated in the draft Electricity Law, a number of additional measures could be taken to support the development of renewable energies, including cogeneration and captive power, as well as energy efficiency and demand side management. Renewable energy support could range from direct tax or investment incentives to enforceable RE generation or consumption mandates. The latter could be facilitated through a tradable renewable certificate market, allowing flexibility and minimizing the overall costs of compliance. Similarly, regulations that encourage the sale of captive renewable generation such as rooftop solar panels to sell power back to the grid (e.g. net metering or energy banking regulations).

78. Energy efficiency measures in particular can help reduce consumption and improve EETC’s financial position over time, either through the promulgation of efficiency minimum standards, incentives for reduced energy consumption, or technical support to identify and finance opportunities to increase efficiency (e.g. through energy use audits). Demand side management, for example by encouraging power usage at off-peak times, is another important tool to reduce generation costs and improve power reliability.
XI. A Blueprint for Gradual Transformation to a New Commercial Framework

**2015-2017**

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<tr>
<th>Off-taker</th>
<th>NREA JV</th>
<th>NREA “IPP”</th>
<th>EETC BOO</th>
<th>FIT</th>
<th>EEHC</th>
<th>PPP (eg MoT)</th>
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**Potential activities**
- Legal review of existing laws and regulations, institutional mandates
- Technical / commercial trainings held for NREA, EETC, EEHC
- Ministers of Energy and Finance sign MOU between MoF and MERE, announce establishment of dedicated IPP unit in EETC or EEHC
- IPP Unit identifies approach & stakeholders to develop standardized tender process, documents, and PPAs, and implements on pilot project
- NREA (and other agencies) develop master plan for land allocation to renewable energy
- IPP unit develops standardized tender process and bankable document
- NREA develops simplified process to auction / lease land to private

**2017-2020**

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<tr>
<th>Off-taker</th>
<th>NREA JV</th>
<th>NREA Pure Private</th>
<th>EETC/EE HC IPP Unit</th>
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**Potential activities**
- Begin to tender new processes under the IPP Unit
- Prepare power sector PPP guidelines (if desired) based on process developed by IPP Unit
- Electricity Law passed; draft roadmap for sector reform developed
Potential activities

- Begin implementation of Electricity Law
- NREA budget stabilized, phase out of JV program
- Additional funds allocated to NREA for core R&D, certification, analysis activities
- IPP Unit process matures, develops and shares technical and commercial expertise
Annex-1 PPP Law: Project Selection, Tendering and Contracting

The PPP Law and Executive Regulations set forth a clear and legally binding process for the selection of projects, tendering of bids, and selection of awards. The key steps are detailed below:

1. The Administrative Authority (AA) prepares, “under the supervision” of the PPPCU, a feasibility study incorporating technical, economic, environmental, social, legal, financial aspects, as well as rules and conditions to ensure a high-quality project. The study, related project data, information and explanations, and the PPPCU’s recommendations, are submitted to the Supreme Committee for approval.

2. Upon approval, the AA has the option to manage the tender itself or delegate the process entirely to the PPPCU. The remainder of the process assumes the tender is run by the AA.

3. The PPPCU competitively selects and procures independent transaction advisors according to principles and criteria specified in the Executive Regulations.

4. The AA prepares an information memorandum with general project information, which must be approved by the PPPCU.

5. The PPPCU determines if an Expression of Interest (EOI) is necessary. If so, the AA prepares the EOI, which must be approved by the PPPCU.

6. The AA creates a pre-qualification document and draft invitation for pre-qualification, which must be approved by the PPPCU.

7. The AA publicizes the invitation in a manner specified in the Executive Regulations.

8. The AA reviews submissions for pre-qualification and determines preferred bidders. Rejected bidders can appeal directly to the PPPCU, which is entitled but not required to consult with the AA in its final decision.

9. The AA forms a committee to prepare tender, including at least one member of the PPPCU.

10. The committee drafts the tender documents, which must include heads of terms of the PPP contract. The PPP Law outlines the substantive provisions required in a PPP agreement, which include the sale price, regulatory risk, termination rights and compensation, insurance, and quality control. Other mandatory provisions include a bid fee (capped at 255 he cost of preparing the tender) and a bid bond. The tender document and PPP agreement must be approved by the PPPCU.
11. PPCCU develops and maintains a website dedicated to the project that serves as the data room for the tender.

12. The AA and the PPCCU must provide an estimated public sector comparator cost (minus financial cost). The AA estimates the technical portion, and is required to hire a technical advisor to assist. The PPCCU adds the costs of financing and additional factors unique to privately-developed projects. – requires hiring technical advisor. This estimate must be approved by the Supreme committee and is sealed until after the bids are opened.

13. The AA has the option to elect a two-phase approach to the bid process, with the first phase a non-binding technical and financial bid, after which the AA may hold competitive dialogue meetings with bidders and request clarification or additional information. All bids in the second phase are final and binding.

14. The bidding process must be a sealed, two-envelope bid. Technical proposals are opened and evaluated first, and the committee disqualifies any non-compliant technical proposals. Technically disqualified bidders may appeal to committee comprising the Minister of Finance, the Head of PPCCU, two deputies to the President of the State Council, and one outside expert.

15. Once all technical appeals are resolved, the committee opens the financial bids. Proposals may evaluated either on a purely financial basis or by weighting technical and financial criteria.

16. All bid bonds for non-selected proposals are returned within one day after the financial envelopes are opened.

17. Following selection, the AA must provide a copy of all contracts to the sector regulator, form a committee to monitor construction and quality of service, and issue AA issues a certificate accepting the quality standards of the works, or products or services provided, before which no payment can be made.